

DIRAC MORE THAN ELECTRIC HEATING
INDUSTRIES
INNOVATION TOMORROW, TODAY +

2025 CATALOG

**YOUR GLOBAL
SOLUTION PARTNER**

ELECTRICAL HEATING - CONTROL - METALWORKS - WIRE & CABLE



DIRAC MORE THAN ELECTRIC HEATING
INDUSTRIES
INNOVATION TOMORROW, TODAY +



“ Share your project with our engineers and they will help you with the best possible solution for your needs! ”

Bart De Bruycker – Owner

CATALOG EDITION **N°4**

INNOVATION TOMORROW, TODAY +

DIRAC Industries has more than 60 years of experience in the field of electrical industrial heating. With our extensive expertise and our brand new production facility, we can offer you a global solution that meets all your needs.

Thanks to our flexible structure, you can count on a quick and thorough follow-up of your projects. Our teams can provide technical assistance by phone or on site.



EMPOWERING YOUR BUSINESS WITH EXPERT HEATING SOLUTIONS

WITH OVER 60 YEARS OF EXPERTISE,
DIRAC INDUSTRIES IS YOUR TRUSTED
PARTNER FOR INNOVATIVE
AND SUSTAINABLE ELECTRIC
HEATING SOLUTIONS.

WE DELIVER TAILORED DESIGNS AND
SEAMLESS EXECUTION, BACKED BY
CUTTING-EDGE TECHNOLOGY AND
DEDICATED SUPPORT.

“ Each of your projects
is an opportunity to
innovate and shape
the future together. ”

**Bart De Bruycker –
Owner**

**Designing innovative heating solutions to shape
a more sustainable and visionary industry.**

We achieve our mission by continuously innovating,
working hand-in-hand with our clients, and delivering
custom-made A-to-Z solutions.

Our approach is based on three key pillars:

TAILORED SUPPORT: Bespoke solutions for our clients’
unique needs.

CONTINUOUS INNOVATION: Cutting-edge designs
addressing future challenges.

ONE-STOP PARTNERSHIP: End-to-end project support.


**WE DELIVER MORE THAN SOLUTIONS,
WE BUILD LASTING PARTNERSHIPS THAT
DRIVE EFFICIENCY, INNOVATION, AND SUCCESS.**

OUR MISSION

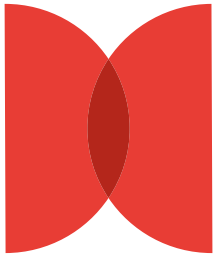


OUR EXPERTISE

**COMBINING CUTTING-EDGE HEATING TECHNOLOGY
WITH ADVANCED CONTROL SYSTEMS.**



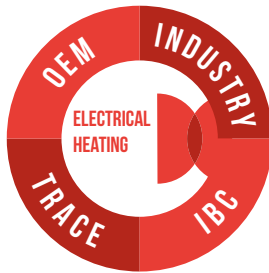
“ At DIRAC, we specialize in providing solutions that are designed to meet the diverse and evolving needs of our clients, ensuring efficiency, reliability, and sustainability across all applications.”



ELECTRICAL HEATING

OUR ELECTRIC HEATING SYSTEMS ARE AT THE CORE OF WHAT WE DO.

Whether for industrial machinery, transport, or process heating, we deliver solutions that provide consistent, high performance heating in the most demanding environments. From custom-made heating elements to high-efficiency systems, our solutions are designed for precision and longterm reliability.

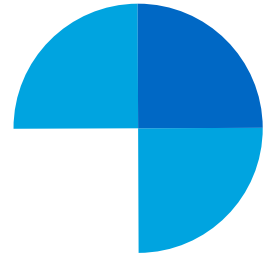
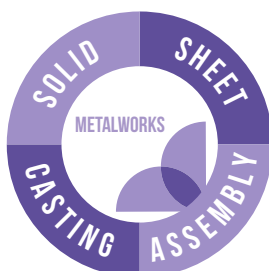


METALWORKS



WE DESIGN AND MANUFACTURE HIGH-QUALITY STEEL STRUCTURES FOR CONSTRUCTION, INDUSTRIAL, AND ARCHITECTURAL APPLICATIONS.

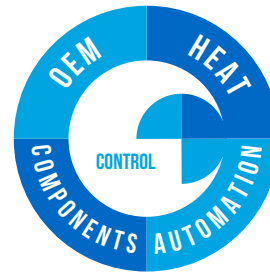
With cutting-edge infrastructure, advanced machinery, and skilled professionals, we ensure precision, reliability, and independent production capabilities. Whether for construction firms, industrial manufacturers, or specialized projects, our metal fabrication solutions are built to match your exact requirements.



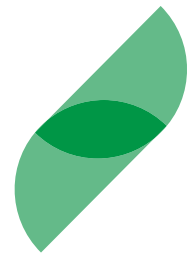
CONTROL

COMPLEMENTING OUR HEATING SOLUTIONS, OUR CONTROL SYSTEMS OFFER PRECISE TEMPERATURE REGULATION, ENSURING OPTIMAL PERFORMANCE AND ENERGY EFFICIENCY.

With DIRAC's control solutions, you gain real-time monitoring, automated adjustments, and intelligent systems that adapt to your needs. These control systems integrate seamlessly with our heating solutions, providing you with a comprehensive, end-to-end solution for your business.

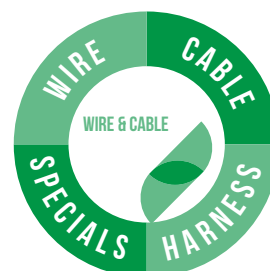


WIRE & CABLE



OUR EXPERTISE IN WIRE EXTRUSION AND CABLE ASSEMBLY ENSURES HIGH-PERFORMANCE SOLUTIONS FOR DIVERSE INDUSTRIES.

We produce resistive wires, power connection cables, and custom wire harnesses, offering options like silicone and Teflon-coated resistive wires and precision-assembled harnesses. With advanced manufacturing capabilities, we deliver durable, high-quality wiring solutions tailored to your needs.



INDUSTRIES

TAILORED ELECTRIC HEATERS FOR MACHINE BUILDERS



OEM

We design and produce custom made electrical heating components for Original Equipment Manufacturers. In addition, in a co-engineering process, we analyze the specific needs, prepare 3D-drawings, samples, and certifications, to finally deliver the best possible product in mass-production. Our new production facility in the Czech Republic has been founded to produce these custom made OEM heating elements.

Associated products & technologies :

Machine components, sheathed elements, immersion & recirculation heaters, alu foil heaters, backup heaters & bottom plate heaters for heat pumps, washing machine heating elements, heating elements for ovens, ...

INDUSTRIAL

Serving maintenance and production engineers is our primary focus. We provide electrical heater spare parts for any machine and assist with production expansion projects requiring electrical heating solutions and control systems. Additionally, our expertise extends to insulation applications, including freeze protection, temperature maintenance, and snow melting on driveways. Our solutions ensure optimal performance for pipes, tanks, and other industrial needs. Our sales engineers are dedicated to supporting your projects and ensuring seamless implementation.

Associated products & technologies :

Machine components, sheathed elements, immersion & recirculation heaters, alu foil heaters, backup heaters & bottom plate heaters for heat pumps, washing machine heating elements, heating elements for ovens, ...

“ We provide unique heating solutions across diverse industries and applications. Our expertise spans from industrial machinery to food processing, ensuring every project benefits from optimal, customized heating performance.”



TRANSPORT

DIRAC Industries supplies heating solutions for two typical ways of bulk transport with liquids that need to remain at a certain temperature or have to be heated up during or after transportation, either in Tank containers or in IBC's.

- For Tank Containers, we developed a heating system to be applied on the tank under the cladding, either by means of Teflon or Mineral insulated heating cable or by our TransHeat mats and controlled by our TransHeat control panels.
- For IBC's, either bag-in-box or bottle-in-cage, our single use aluminum foil heaters or multiple use base board heaters will guarantee a perfect heating.

Associated products & technologies :

Container & cargo heating of dairy, edible oils & fats, single use aluminum heating mats or multi-use baseboard heaters for IBC and bag-in-box heating.

CONSTRUCTION

At DIRAC, we deliver efficient and dependable electric heating systems designed to protect buildings and infrastructure from cold weather challenges. Whether it's generating hot water, maintaining fluid temperatures, or ensuring safe, ice-free access points, our solutions are built to meet your specific needs. Our systems simplify plumbing and mechanical designs, while maintaining exceptional performance and reliability. Known for their durability and safety, our products are

Associated products & technologies :

Heat tracing for piping, valves, flanges, sprinkler piping, heating cables and mats for ramp heating for parking entry and exit areas and entire parking lots; heating cables for cold-and cleanrooms.

APPLICATIONS



FOOD INDUSTRY

CHOCOLATE MACHINES – FOOD PROCESSING –
BAKERY OVEN – COFFEE AND VENDING



LAUNDRY

INDUSTRIAL WASHING MACHINES –
INDUSTRIAL IRONING MACHINES



HEATING

HEAT PUMPS – RADIATORS – AIR CONDITIONING –
WATER BOILERS



MACHINERY

BITUMEN PUMPS – MILK ROBOTS – CONTAINER
UNITS – GALVANIZATION – ELEVATORS –
INCUBATORS – STEAM GENERATORS



PROCESS HEATING

INDUSTRIAL AIR DRYERS



REFRIGERATION

COOLING TOWERS – COMPRESSORS – FREEZERS –
PRESENTATION DESKS – TRUCK/MOBILE UNITS



SCIENCE

ELECTRONIC MICROSCOPES

WELNESS

SAUNA – WHIRL POOL – MASSAGE TABLES

SHAPING TOMORROW'S INDUSTRY, DRIVEN BY THREE CORE VALUES.

OUR VISION

“ Our vision is to shape a responsible, forward-thinking industry through three core values that guide everything we do...”



CONNECTION

We envision a future where the industry thrives by putting people first. With a family spirit, we foster authentic relationships and tailor-made solutions that perfectly meet our clients' needs. Our agile, human-scale approach ensures that we remain close to our clients, listening attentively to their challenges and building lasting, meaningful partnerships.



INNOVATION

Innovation is the driving force behind our vision. We aim to design high-performance solutions that not only fulfill our clients' needs but also address sustainability challenges. Through continuous process optimization, we ensure agility, efficiency, and future-ready solutions that anticipate tomorrow's requirements.



INDEPENDENCE

Independence is at the heart of our DNA. By controlling every step of production in-house, we guarantee quality, customization, and maximum efficiency. This autonomy enables us to respond swiftly to changing needs, minimize overproduction, and drive a more sustainable, responsible industry.

**INDEPENDENCE IS AT THE HEART OF OUR DNA, ENSURING
QUALITY, AGILITY, AND A SUSTAINABLE FUTURE.**

OUR TEAM

Our team of experts - project managers, engineers, and quality specialists - crafts solutions tailored to your needs. From design to testing and scaling, we ensure precision, flexibility, and transparent communication at every step.

Every project, no matter the size, receives the same care and respect for your goals and budget.





“ An entire team dedicated to your success ”

OUR FACTORIES

CORE PRODUCTION (CZ) - CZECH REPUBLIC

Our modern, high-tech production facilities in Kolin - CZ, can rely on an experienced design and manufacturing team ready to take on any challenge. Integrity, innovation, urgency, passion, responsibility and inclusion are at the core of everything we do. In order to be able to offer you the best quality, our suppliers and partners are also selected on these values.

To reduce our ecological footprint, our solar panels generate up to 75% of our total energy consumption.

HSM EXTENSION SITE - NETHERLANDS

Our newly acquired HSM plant in Ede - NL, specializes in turning and milling operations, including high-precision stainless steel components. It is ideally equipped to handle both small production series and complex assemblies, delivering exceptional accuracy and quality in every machined part.

With several factories and recent expansions in the Czech Republic (5,000 m² to 8,000 m²), we have grown into a true **full-service provider**.







SUMMARY 1

CONTENTS

DIRAC Industries is your partner in Sustainable Electric Heating Solutions for heating or maintaining the temperature of gasses, liquids or solids and the regulation required.

The range of DIRAC Industries has expanded enormously in recent years and this catalog is limited to a number of standard products.

For all your questions, our engineers and representatives are ready to analyze each project in detail and discuss it so that a tailor-made solution can be developed for you. This can result in the use of products from our standard range or in the production of custom made elements.

It is our policy to continuously and automatically update our product specifications to at least meet or exceed the standards required by EU legislation.

The European Pressure Directive 2014/68/EU (PED) applies to all systems with a maximum allowable pressure of 0.5 barg or more. DIRAC Industries can offer equipment that meets the requirements of this directive for categories I, II, III & IV.

All our products meet the requirements of the Low Voltage Directive (LVD) 2014/35/EU and, where applicable, the EMC Directive 2014/30/EU.

All our materials are CE approved following IEC 61439-2 norm and DIRAC Industries can offer other certified products if required. Some product ranges are also UL approved and where the environment requires equipment suitable for explosive atmospheres, we also offer a wide range of ATEX certified products (ATEX 114 equipment directive - 2014/34/EU).

DIRAC Industries is fully committed to a quality policy with ISO 9001 certified design offices and production sites. (Quality: ISO9001:2015 - Environment: ISO14001:2015)

DIRAC Industries also holds the following certificates :

- UL Certificat for Tubular Sheathed Heaters : UL471670
- UL Certificat for Crankcase Heaters : UL SA44484
- UL Certificat for IBC Heaters : ETL 5024997
- Certificate of Compliance - EU RoHS Declaration
- Certificate of Compliance - REACH 1907/2006 EC
- Long-term supplier's declaration for products with Preferential Origin Status
- Declaration - CMRT

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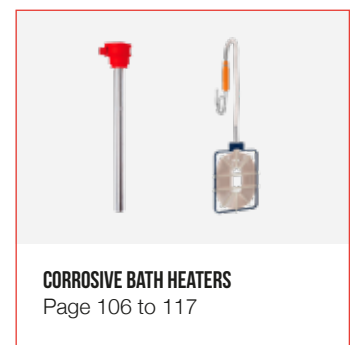
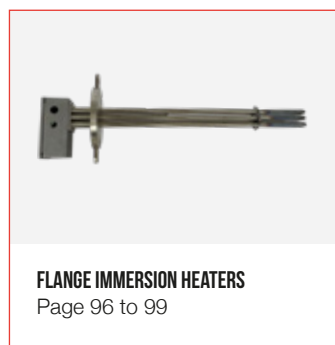
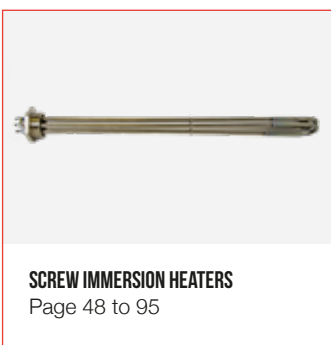
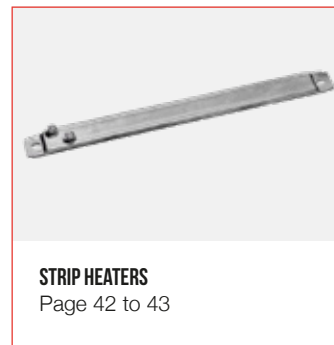
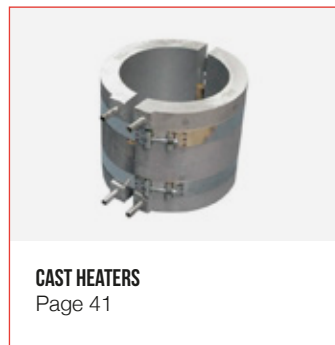
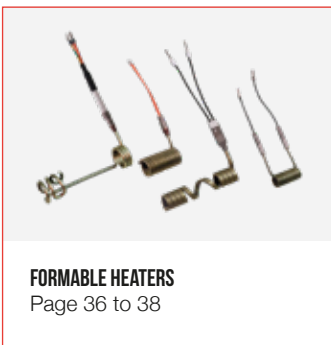
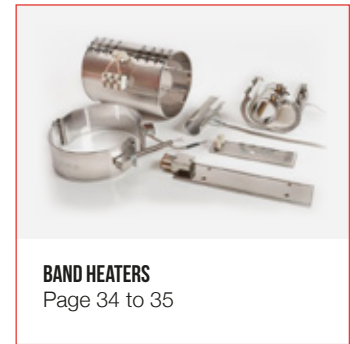
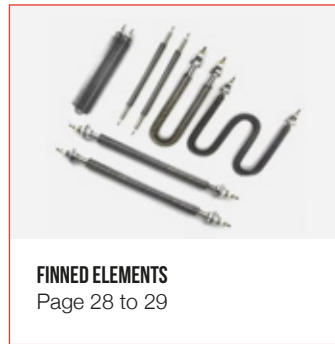
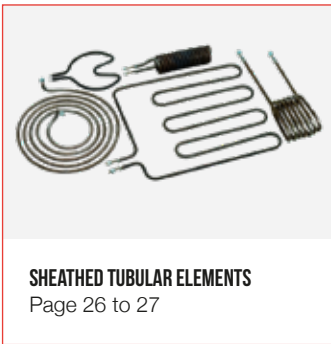
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SUMMARY 2

ILLUSTRATED SYNOPSIS

This index provides you with a visual overview of the different product families. Each category is represented by an illustrated thumbnail with a brief description. This format allows you to quickly identify the product family that meets your needs and explore the available items in more detail.





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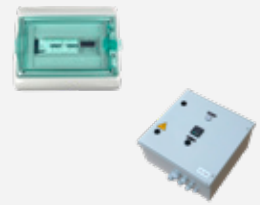
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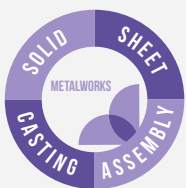
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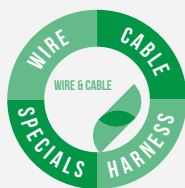
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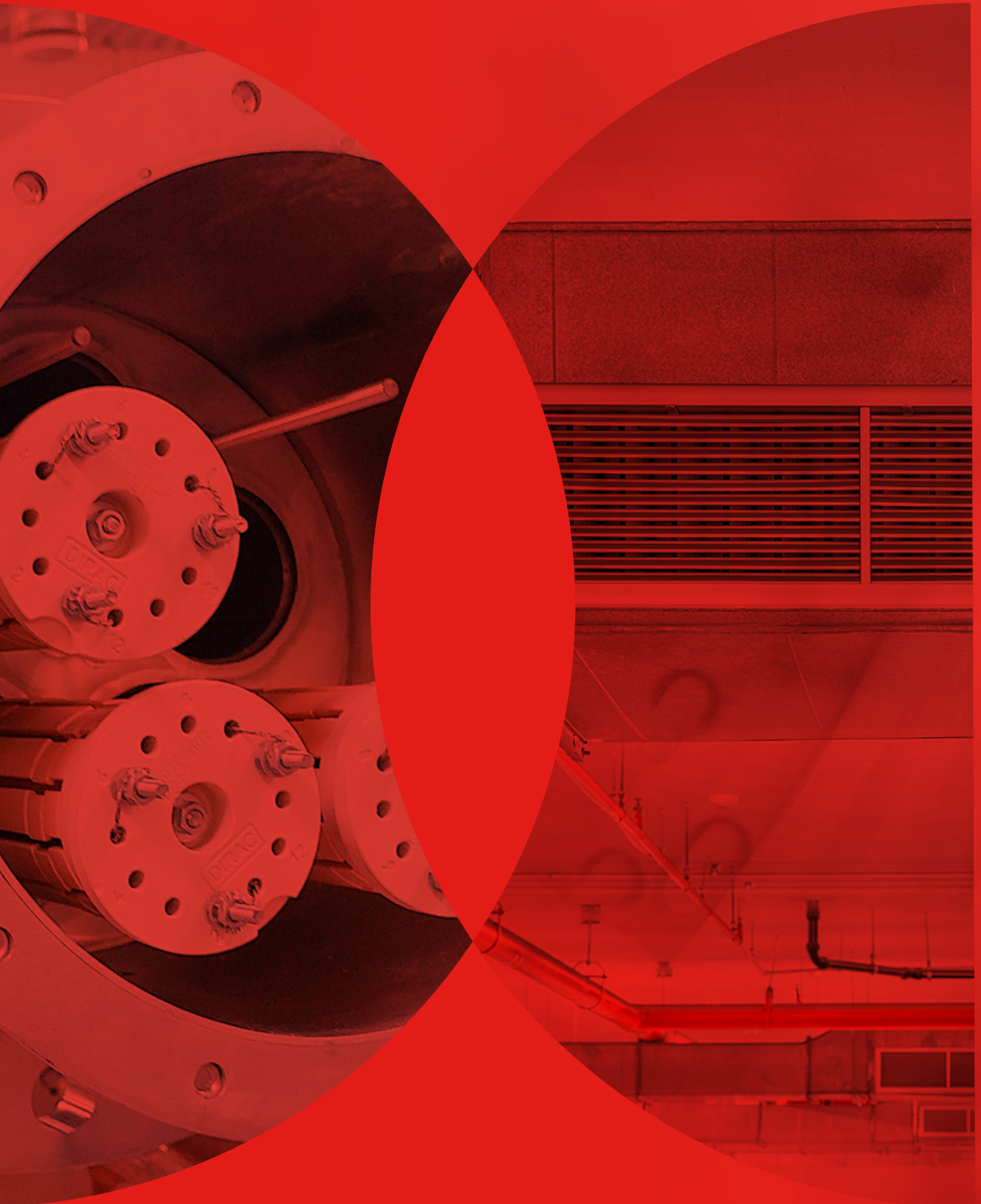
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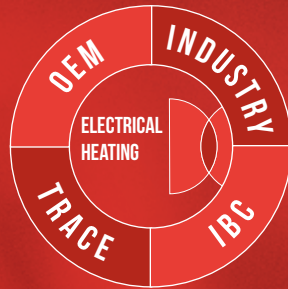
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ELECTRICAL HEATING

Electrical heating is at the core of countless industrial and commercial applications, and we provide solutions that cover the entire spectrum. Our range extends from compact component heaters for precision tasks, to robust systems engineered for demanding processes, and a wide tracing portfolio for pipes, tanks, and surfaces.

Whether it's ensuring process reliability, preventing condensation, maintaining comfort, or delivering targeted heat, our products are built for safety, efficiency, and durability. By combining technical expertise with adaptable designs, we help you select the right heating solution for your environment—no matter how straightforward or complex the application.

Your challenge, our solution — the right heat for every application.

COMPONENT HEATERS

Heating elements designed for direct integration into machines and assemblies.

IMMERSION HEATERS

Efficient solutions for heating liquids directly within tanks, vessels, or containers.

CIRCULATION HEATERS

Skid-mounted units for heating flowing liquids or gases in pipelines and systems.

PROCESS HEATING

Tailored solutions to optimize industrial processes through reliable thermal control.

INFRARED HEATING

Non-contact heating technology for fast, targeted surface and product warming.

CONVECTORS & DUCT HEATERS

Air heating systems for HVAC, ventilation, and process air applications.

TRACING - HEATING CABLES

Flexible cables ensuring frost protection and temperature maintenance along pipelines and tanks.

TRACING - TERMINATION SETS

Complete kits to safely seal and connect power supply and heating cable ends.

TRACING - THERMOSTATS

Control devices for precise regulation of temperature in tracing systems.

TRACING - JUNCTION BOXES

Durable enclosures for safe electrical connections in heating cable networks.

TRACING - ACCESSORIES

Supporting components to simplify installation and extend system lifetime.

TRACING - HEATING MATS & JACKETS

Pre-fabricated solutions for easy, uniform heating of tanks, drums, or vessels.

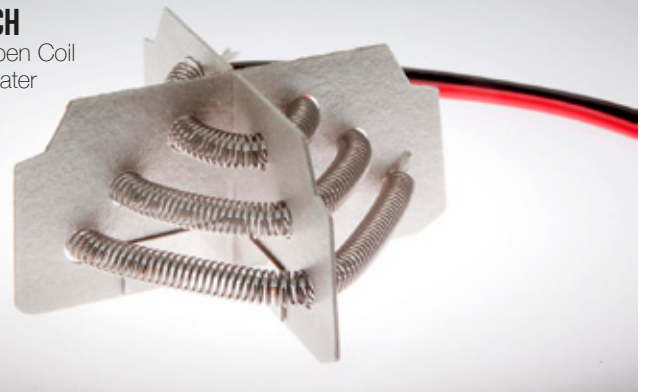
MBH
Mica Band
Heater



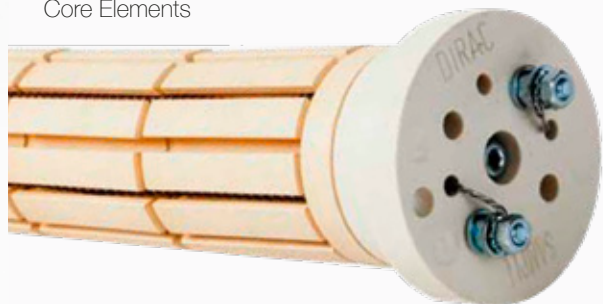
EML
Fast Assembly
Heating Element



OCH
Open Coil
heater



RBC
Ceramic
Core Elements



COMPONENT HEATERS

ELECTRIC HEATING ELEMENTS & RESISTORS

Our electric heating elements and resistors can be components in all kinds of combinations. To find a heating component appropriate for your application, it is very important that you take into account all of the part's characteristics.

Would a flexible or a rigid resistor be better? Are you in a hazardous (i.e. explosive) environment? Do you need an anti-condensation heater? Only the right component for the right application will guarantee maximum safety, reliability and performance. Feel free to contact us. We are glad to help you make the right choice.

TUBULAR ELEMENTS

These are the most polyvalent components.
Can be formed in all kinds of shapes.

FIN ELEMENTS

Tubular elements equipped with dissipation fins for an increase in heat dissipation.

CARTRIDGES

Cartridges in all sorts of sizes and shapes.

STRIP AND RING HEATERS

Flat heating elements might either be tubular or circular.

BAND HEATERS

Band heaters in all sizes and outputs.

FORMABLE ELEMENTS

Elements that can be formed on site.

CAST HEATERS

Aluminium or bronze cast heaters with high inertia.

CERAMIC CORE ELEMENTS

Replacement elements for heating of water or to replace immersion heaters.

BACKUP HEATERS

This supplementary heater integrates seamlessly with a heat pump system and can also complement other heating devices, activating whenever the capacity falls short to ensure consistent heating.

OPEN COIL HEATERS

An open coil heating element is a resistive wire structure commonly used in appliances like ovens or electric heaters and hand dryers to generate heat.

ER/EF

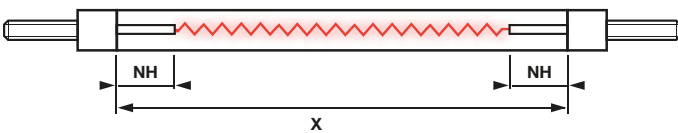
Tubular sheathed heating elements



Metal sheathed heating elements manufactured in straight length (ER) which can be bent to shape in our factory (EF) or by the customer (depending on shape local or full annealing).

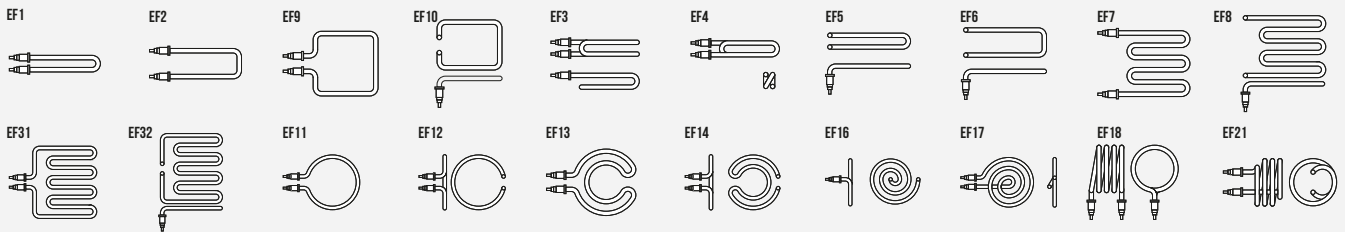
Elements consist of an FeCrAl alloy resistance wire which is welded to terminal pins at either end and centered in a metal tube. The tube is filled with high quality magnesium oxide and compressed by swaging to ensure rapid heat transfer. The terminal pins form a non-heated section of the element (which can be specified by the customer) as well as the terminal arrangement. They are insulated from the metal sheath by ceramic bushes.

When required elements can be fitted with crimped, welded, brazed or compression glands.



- Voltage: 230/400V
- Multiple diameters: Ø 8,5 mm / Ø 14 mm / Ø 10 mm (available soon)
- Tube materials: SS 304 / 316L / 321 - Incoloy 800 / 825 (other on demand)
- Different threaded sleeves
- Watt density dependent of ambient temperature, application and natural/ forced convection
- Different electrical terminals possible
- All shapes on demand according to drawing or obtained sample

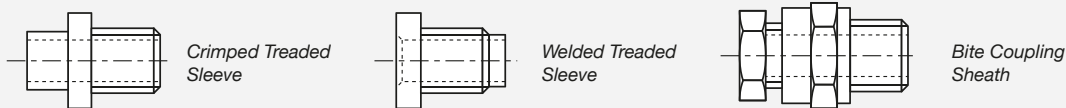
FORMED ELEMENTS ACCORDING TO DRAWING OR SAMPLE



ELECTRICAL TERMINAL TYPES

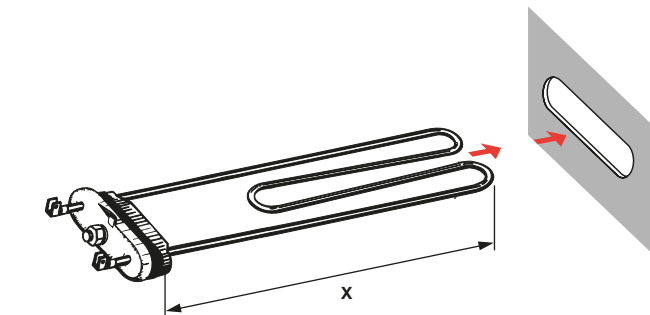


THREADED SLEEVE TYPES



EML

Fast assembly heating element



Fast assembly heating elements with integrated flange and neoprene gasket, typically used for white goods or industrial washing machine applications.

Specifically designed for water heating in small equipment without inner access, counter flange, or weld ring.

These elements are produced in large quantities, usually for Original Equipment Manufacturers (OEM).

- Voltage: 230V
- 1 or 2 heating elements
- Oval flange: 70 x 17,5 mm
- Neoprene sealing
- Pressure: max. 0,5 bar
- Optional thermal fuse
- Connection by faston terminals (others available)
- Shielded elements in SS321 in SS 304
- Mounted on zinc-plated steel flange
- Deformable by tightening central nut

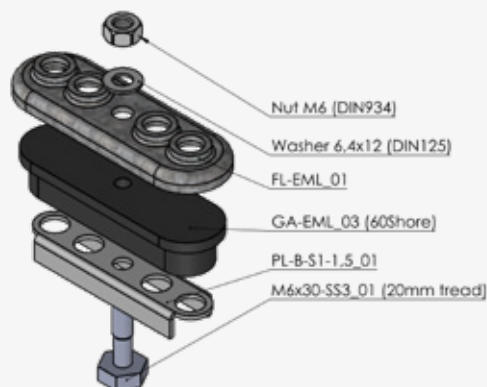
REFERENCE	POWER [W]	LENGTH X [mm]
EML-DIR-01	4000 [2 x 2000]	470
EML-DIR-02	6000 [2 x 3000]	470
EML-DIR-03	4600 [2 x 2300]	325
EML-DIR-04	4000 [2 x 2000]	350
EML-DIR-05	6000 [2 x 3000]	530
EML-DIR-06	3000 [2 x 1500]	325
EML-DIR-07	4000 [2 x 2000]	355
EML-DIR-08	7300 [2 x 3650]	570
EML-DIR-09	9000 [2 x 4500]	810
EML-DIR-10	2000 [1 x 2000]	325
EML-DIR-11	3000 [1 x 3000]	325
EML-DIR-12	5000 [2 x 2500]	350
EML-DIR-13	8000 [1 x 8000]	570

OPTION

BN-DICZ_02

Blinder set for EML heater with central EPDM60 sealing element and threaded bolt for secured installation.

Seals exposed areas and protects unused ports or openings.



ARI

Finned resistors

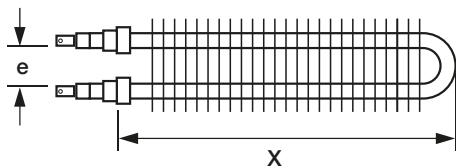


ARI 25

- Ø 8 mm SS321 sheat
- 25 x 50 mm SS 304 fins
- Nickel plated crimped glands Ø 14 / 125 mm
- e = 25

ARI 40

- Ø 12 mm SS 321/316 sheat
- 40 x 80 mm SS 304 fins
- Nickel plated crimped glands Ø 24 / 150 mm
- e = 40



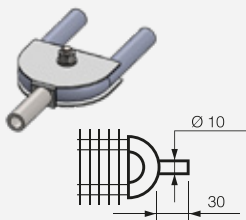
U-shaped heating elements fitted with rectangular fins, designed for comfort heating or for use in ovens. The fixing glands come as standard.

Available accessories are end guides, brackets for floor or wall mounting and terminal enclosures.

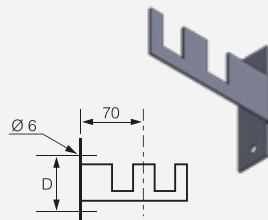
The finned resistors can be used for heating air by natural convection when mounted horizontally or for the heating of moving air (3 m/s minimum velocity for ARI-xxx-HU-2/4 versions).

- Voltage: 230/400V
- Power: 250W - 6000W
- ARI 25 or ARI 40 version
- Fins: SS 304
- Sheath: SS 321 / SS 316L
- Epoxy seal: suitable for temperatures up to 160°C
- Maximim ambient temperature (power ON) around heating part: 200°C

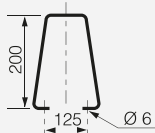
OPTIONS



Detachable end guide (1p) for 1 Element only
ARI 25: SE25-2
ARI 40: SE40-2



Wall bracket anchor clip (2p) for 1 Element only
ARI 25: PM25-2 (D=50)
ARI 40: PM40-2 (D=60)



Floor bracket (2p) for 1 Element only
ARI 25: PS25-2
ARI 40: PS40-2



IP55 aluminium box
ARI 25: 1 Element **7025**
 2 Elements **7822**
 3 Elements **7823**
ARI 40: 1 Element **7040**
 2 Elements **7842**
 3 Elements **7843**

RANGE	REFERENCE		POWER [w]	WATT DENSITY [W/cm ²]	LENGTH X [mm]	WEIGHT [kg]
	230V	400V				
ARI 25	ARI 25002 MU2		250	4,4	170	0,40
	ARI 25005 HU2		500	5,0	230	0,50
	ARI 25005 MU2	ARI 25005 MU4	500	4,4	300	0,65
	ARI 25005 BU2		500	2,8	390	0,85
	ARI 25007 HU2		750	5,0	330	0,70
	ARI 25007 MU2	ARI 25007 MU4	750	4,4	415	0,90
	ARI 25010 MU2	ARI 25010 MU4	1000	4,4	500	1,10
	ARI 25010 BU2	ARI 25010 BU4	1000	2,8	750	1,60
	ARI 25012 MU2	ARI 25012 MU4	1250	4,4	625	1,40
	ARI 25015 MU2	ARI 25015 MU4	1500	4,4	750	1,60
	ARI 25015 BU2	ARI 25015 BU4	1500	2,8	1040	2,30
	ARI 25017 MU2	ARI 25017 MU4	1750	4,4	875	1,85
	ARI 25020 MU2	ARI 25020 MU4	2000	4,4	1000	2,20
	ARI 25025 MU2	ARI 25025 MU4	2500	4,4	1250	2,80
	ARI 25030 MU2	ARI 25030 MU4	3000	4,4	1500	3,40
ARI 40	ARI 40010 HU2	ARI 40010 HU4	1000	5,1	290	1,35
	ARI 40012 HU2	ARI 40012 HU4	1250	5,1	365	1,70
	ARI 40015 HU2	ARI 40015 HU4	1500	5,1	440	2,05
	ARI 40017 HU2	ARI 40017 HU4	1750	5,1	515	2,40
	ARI 40020 HU2	ARI 40020 HU4	2000	5,1	590	2,70
	ARI 40025 HU2	ARI 40025 HU4	2500	5,1	740	3,30
	ARI 40030 HU2	ARI 40030 HU4	3000	5,1	890	3,95
	ARI 40035 HU2	ARI 40035 HU4	3500	5,1	1040	4,75
	ARI 40040 HU2	ARI 40040 HU4	4000	5,1	1190	5,40
	ARI 40045 HU2	ARI 40045 HU4	4500	5,1	1340	6,25
	ARI 40050 HU2	ARI 40050 HU4	5000	5,1	1490	7,00
	ARI 40060 HU2	ARI 40060 HU4	6000	5,1	1640	7,70
	ARI316L 40010 HU2		1000	5,1	290	1,35
	ARI316L 40015 HU2		1500	5,1	440	2,05
	ARI316L 40020 HU2		2000	5,1	590	2,70
ARI316L 40030 HU2		3000	5,1	890	3,95	

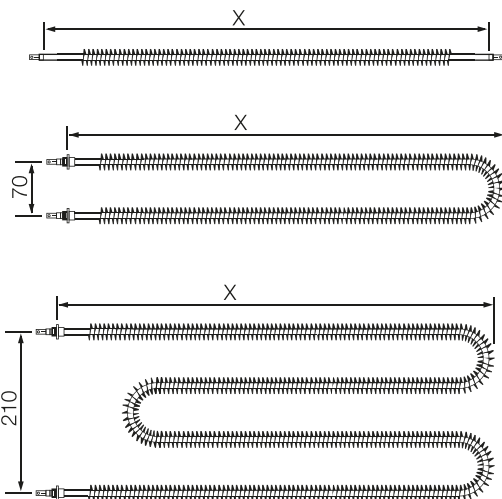
ASI Finned resistors



Sheathed heating elements fitted with a spiral wound stainless steel fin, available in three shapes.

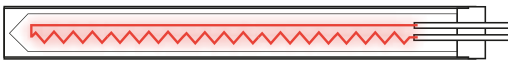
Designed for heating of circulating air in comfort heating, in drying loops for ovens, in load banks, and in other industrial processes up to 200°C.

- Voltage: 230V
- Maximum watt density: 8,5 W/cm² (forced cooling)
- Coiled flanges (fins): Ø 29 mm - SS 304
- Sheath: Ø 10 mm - SS 321
- Processes up to 200°C
- All shapes on demand (with drawing or sample)
- Different electrical terminals possible
- Different threaded sleeves



REFERENCE	OUTPUT [w]	LENGTH X [mm]	WEIGHT [kg]	FORMS
ASI29010	1000	520	0,6	
ASI29011	1000	240	0,6	
ASI29022	2000	220	1,0	
ASI29020	2000	900	1,0	
ASI29021	2000	430	1,0	
ASI29032	3000	315	1,3	
ASI29030	3000	1280	1,3	
ASI29031	3000	620	1,3	
ASI29042	4000	410	1,7	
ASI29040	4000	1660	1,7	
ASI29041	4000	810	1,7	
ASI29052	5000	505	2,1	
ASI29050	5000	2040	2,1	
ASI29051	5000	1000	2,1	
ASI29062	6000	600	2,4	
ASI29060	6000	2410	2,4	
ASI29061	6000	1185	2,4	

HLP Cartridge Heaters



Cartridge heaters, also called heating rods, are cylindrical electrical resistors that must be inserted into solid metal masses, allowing them to be heated very quickly by conduction.

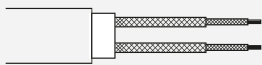
The special construction renders possible an extremely high surface loading and thus a large power in a small area. In this way, the element assembly opens an enlarged field of applications for electric heating to the design engineer.

These products are used to heat solids directly or liquids and gases indirectly.

- Voltage: up to 800 V
- Length tolerance min. ± 2 mm / max. $\pm 1,5\%$
- Cartridge covering: CrNi-steel, SS321
- Surface load: 8 - 35 W/cm²
- Capacity: $\pm 10\%$
- Metric and imperial sizes
- Standard full length heat distribution - possible to define non-heated zone and/or reinforced power zones
- Allows separated switchable power zones
- Available with integrated thermocouple

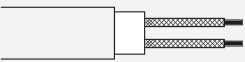
CONNECTION TYPES

NA



Leads Connected Outside

ISAN



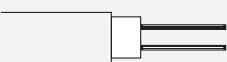
Insulated Connections

DIRFLEX



Leads Directly Coming Out

HLP



Without Any Confectioning

CONNECTION LEADS

LEGLS

Glassfibre Insulated Leads
250°C (perm.) / 350°C (interm.)

LETEM

Temp. Resistant Glassfibre Leads
400°C (perm.) / 600°C (interm.)

LEHOT

Temp. Resistant Glassfibre Leads
up to 450°C (UL-Approved)

LETEF

PTFE-insul. Leads up to 260°C

LESIL

Silicone Insul. Leads up to 200°C

LEPE

Ceramic Beads up to 650°C

KASIL



Silicon Cable

AE

Ferrules

SERD

Earth Lead

PROTECTIVE HOSES

SSL



Protective Hose

WSL



Corrugated Hose (stainless steel)

DRGSL



Wire Mesh Hose

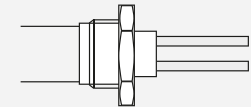
GLSSL



Protective Hose inside the cartridge

ADDITIONAL OPTIONS

EN



Threaded Nipple

WAN



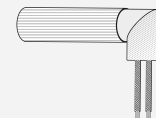
Angular Connection

WAN RUND



Angular Round Connection

WAN 90



Angular Round Connection



NSB4 - VARYBOND REGULAR GRADE
Heat transfer and release coating
Temperature range -188°to +958°C
Tube 100g



NSB-GRIP
Heat transfer grease
Temperature range -30°C till 600°C
Tube 140g

STANDARD AVAILABLE PRODUCTS - METRIC - 230V

Ø 3 ^{-0,01}_{-0,04}

LENGTH [inch]	POWER [w]	GRP	REFERENCE
30	50	IV	300 30 50 230
30	80	> V	300 30 80 230
40	40	II	300 40 40 230
40	50	II	300 40 50 230
40	80	IV	300 40 80 230
40	100	> V	300 40 100 230
50	50	II	300 50 50 230
50	60	II	300 50 60 230
50	100	IV	300 50 100 230
50	125	V	300 50 125 230
60	60	I	300 60 60 230
60	80	I	300 60 80 230
60	125	IV	300 60 125 230
60	160	V	300 60 160 230

Ø 4 ^{-0,01}_{-0,04}

40	30	I	400 40 30 230
40	60	II	400 40 60 230
40	100	IV	400 40 100 230
40	125	V	400 40 125 230
40	160	> V	400 40 160 230
50	40	I	400 50 40 230
50	80	II	400 50 80 230
50	125	IV	400 50 125 230
50	160	V	400 50 160 230
50	200	> V	400 50 200 230
60	50	I	400 60 50 230
60	100	II	400 60 100 230
60	140	III	400 60 140 230
60	180	IV	400 60 180 230
60	220	> V	400 60 220 230
80	60	I	400 80 60 230
80	125	II	400 80 125 230
80	180	III	400 80 180 230
80	220	IV	400 80 220 230
80	280	V	400 80 280 230

Ø 5 ^{-0,01}_{-0,04}

40	40	I	500 40 40 230
40	80	II	500 40 80 230
40	125	V	500 40 125 230
40	160	> V	500 40 160 230
40	200	> V	500 40 200 230
50	50	I	500 50 50 230
50	100	II	500 50 100 230
50	140	III	500 50 140 230
50	180	V	500 50 180 230
50	220	> V	500 50 220 230

LENGTH [inch]	POWER [w]	GRP	REFERENCE
60	60	I	500 60 60 230
60	125	II	500 60 125 230
60	160	III	500 60 160 230
60	200	IV	500 60 200 230
60	250	V	500 60 250 230
80	80	I	500 80 80 230
80	140	II	500 80 140 230
80	180	II	500 80 180 230
80	220	III	500 80 220 230
80	280	IV	500 80 280 230

Ø 6,5 ^{-0,02}_{-0,08}

40	100	II	650 40 100 230
40	125	III	650 40 125 230
40	160	IV	650 40 160 230
40	175	IV	650 40 175 230
40	200	V	650 40 200 230
50	100	II	650 50 100 230
50	160	III	650 50 160 230
50	200	IV	650 50 200 230
50	250	V	650 50 250 230
60	125	II	650 60 125 230
60	200	III	650 60 200 230
60	250	IV	650 60 250 230
60	315	V	650 60 315 230
80	125	I	650 80 125 230
80	180	II	650 80 180 230
80	280	III	650 80 280 230
80	350	IV	650 80 350 230
100	160	I	650 100 160 230
100	220	II	650 100 220 230
100	350	III	650 100 350 230

Ø 8 ^{-0,02}_{-0,08}

40	100	II	800 40 100 230
40	160	III	800 40 160 230
40	200	IV	800 40 200 230
40	250	V	800 40 250 230
50	125	II	800 50 125 230
50	200	III	800 50 200 230
50	250	IV	800 50 250 230
50	315	V	800 50 315 230
60	100	I	800 60 100 230
60	140	II	800 60 140 230
60	220	III	800 60 220 230
60	280	IV	800 60 280 230
60	350	V	800 60 350 230
80	160	I	800 80 160 230

LENGTH [inch]	POWER [w]	GRP	REFERENCE
80	200	II	800 80 200 230
80	315	III	800 80 315 230
80	400	IV	800 80 400 230
100	180	I	800 100 180 230
100	280	II	800 100 280 230
100	400	III	800 100 400 230

Ø 10 ^{-0,02}_{-0,08}

40	100	I	1000 40 100 230
40	125	II	1000 40 125 230
40	200	III	1000 40 200 230
40	250	IV	1000 40 250 230
40	315	V	1000 40 315 230
50	100	I	1000 50 100 230
50	160	II	1000 50 160 230
50	250	III	1000 50 250 230
50	315	IV	1000 50 315 230
50	400	V	1000 50 400 230
60	125	I	1000 60 125 230
60	180	II	1000 60 180 230
60	315	III	1000 60 315 230
60	400	IV	1000 60 400 230
60	500	V	1000 60 500 230
80	160	I	1000 80 160 230
80	250	II	1000 80 250 230
80	400	III	1000 80 400 230
80	500	IV	1000 80 500 230
80	630	V	1000 80 630 230
100	220	I	1000 100 220 230
100	350	II	1000 100 350 230
100	560	III	1000 100 560 230
100	700	IV	1000 100 700 230
100	850	V	1000 100 850 230
130	315	I	1000 130 315 230
130	500	II	1000 130 500 230
130	800	III	1000 130 800 230
160	400	I	1000 160 400 230
160	630	II	1000 160 630 230

Ø 12,5 ^{-0,02}_{-0,08}

40	100	I	1250 40 100 230
40	160	II	1250 40 160 230
40	250	III	1250 40 250 230
40	315	IV	1250 40 315 230
40	400	V	1250 40 400 230
50	100	I	1250 50 100 230
50	200	II	1250 50 200 230
50	315	III	1250 50 315 230

ELECTRICAL HEATING

STANDARD AVAILABLE PRODUCTS - METRIC - 230V

Ø 12,5 ^{-0,02}
_{-0,08}

LENGTH [inch]	POWER [w]	GRP	REFERENCE
50	400	IV	1250 50 400 230
50	500	V	1250 50 500 230
60	125	I	1250 60 125 230
60	200	II	1250 60 200 230
60	315	III	1250 60 315 230
60	400	IV	1250 60 400 230
60	500	V	1250 60 500 230
80	200	I	1250 80 200 230
80	315	II	1250 80 315 230
80	500	III	1250 80 500 230
80	630	IV	1250 80 630 230
80	800	V	1250 80 800 230
100	250	I	1250 100 250 230
100	400	II	1250 100 400 230
100	630	III	1250 100 630 230
100	800	IV	1250 100 800 230
100	1000	V	1250 100 1000 230
130	400	I	1250 130 400 230
130	630	II	1250 130 630 230
130	1000	III	1250 130 1000 230
130	1250	IV	1250 130 1250 230
160	500	I	1250 160 500 230
160	800	II	1250 160 800 230
160	1250	III	1250 160 1250 230
200	630	I	1250 200 630 230
200	900	II	1250 200 900 230

Ø 16 ^{-0,02}
_{-0,08}

40	100	II	1600 40 100 230
40	250	III	1600 40 250 230
40	315	IV	1600 40 315 230
40	400	V	1600 40 400 230
50	160	I	1600 50 160 230
50	250	II	1600 50 250 230
50	400	III	1600 50 400 230
50	500	IV	1600 50 500 230
50	630	V	1600 50 630 230
60	160	I	1600 60 160 230
60	250	II	1600 60 250 230
60	400	III	1600 60 400 230
60	500	IV	1600 60 500 230
60	630	V	1600 60 630 230
80	280	I	1600 80 280 230
80	400	II	1600 80 400 230
80	630	III	1600 80 630 230
80	800	IV	1600 80 800 230
80	1000	V	1600 80 1000 230
100	350	I	1600 100 350 230

LENGTH [inch]	POWER [w]	GRP	REFERENCE
100	500	II	1600 100 500 230
100	800	III	1600 100 800 230
100	1000	IV	1600 100 1000 230
100	1250	V	1600 100 1250 230
130	500	I	1600 130 500 230
130	700	II	1600 130 700 230
130	1100	III	1600 130 1100 230
130	1400	IV	1600 130 1400 230
130	1800	V	1600 130 1800 230
160	630	I	1600 160 630 230
160	900	II	1600 160 900 230
160	1600	III	1600 160 1600 230
160	1800	IV	1600 160 1800 230
200	800	I	1600 200 800 230
200	1250	II	1600 200 1250 230
200	2000	III	1600 200 2000 230
250	1000	I	1600 250 1000 230
250	1600	II	1600 250 1600 230
300	1250	I	1600 300 1250 230
300	1800	II	1600 300 1800 230

Ø 20 ^{-0,02}
_{-0,08}

60	200	I	2000 60 200 230
60	315	II	2000 60 315 230
60	500	III	2000 60 500 230
60	630	IV	2000 60 630 230
60	800	V	2000 60 800 230
80	350	I	2000 80 350 230
80	500	II	2000 80 500 230
80	800	III	2000 80 800 230
80	1000	IV	2000 80 1000 230
80	1250	V	2000 80 1250 230
100	450	I	2000 100 450 230
100	630	II	2000 100 630 230
100	1000	III	2000 100 1000 230
100	1400	IV	2000 100 1400 230
100	1600	V	2000 100 1600 230
130	630	I	2000 130 630 230
130	900	II	2000 130 900 230
130	1400	III	2000 130 1400 230
130	1800	IV	2000 130 1800 230
130	2200	V	2000 130 2200 230
160	800	I	2000 160 800 230
160	1100	II	2000 160 1100 230
160	1800	III	2000 160 1800 230
160	2200	IV	2000 160 2200 230
200	1000	I	2000 200 1000 230

LENGTH [inch]	POWER [w]	GRP	REFERENCE
200	1600	II	2000 200 1600 230
200	2500	III	2000 200 2500 230
250	1250	I	2000 250 1250 230
250	2000	II	2000 250 2000 230
300	1600	I	2000 300 1600 230
300	2200	II	2000 300 2200 230

STANDARD AVAILABLE PRODUCTS - IMPERIAL - 230V

Ø 1/8 ^{+0,05}
_{+0,02}

1 1/4	50	IV	311 30 50 230
1 1/4	80	> V	311 30 80 230
1 1/2	40	II	311 40 40 230
1 1/2	50	II	311 40 50 230
1 1/2	80	IV	311 40 80 230
1 1/2	100	> V	311 40 100 230
2	50	II	311 50 50 230
2	60	II	311 50 60 230
2	100	IV	311 50 100 230
2	125	V	311 50 125 230
2 1/4	60	II	311 60 60 230
2 1/4	80	II	311 60 80 230
2 1/4	125	IV	311 60 125 230
2 1/4	160	V	311 60 160 230

Ø 1/4 ^{+0,05}

1 1/2	100	II	622 1 1/2 100 230
1 1/2	125	III	622 1 1/2 125 230
1 1/2	160	IV	622 1 1/2 160 230
1 1/2	175	IV	622 1 1/2 175 230
1 1/2	200	V	622 1 1/2 200 230
2	100	II	622 2 100 230
2	160	III	622 2 160 230
2	200	IV	622 2 200 230
2	250	V	622 2 250 230
2 1/2	125	II	622 2 1/2 125 230
2 1/2	200	III	622 2 1/2 200 230
2 1/2	250	IV	622 2 1/2 250 230
2 1/2	315	V	622 2 1/2 315 230
3 1/4	125	I	622 3 1/4 125 230
3 1/4	180	II	622 3 1/4 180 230
3 1/4	280	III	622 3 1/4 280 230
3 1/4	350	IV	622 3 1/4 350 230
4	160	I	622 4 160 230
4	220	II	622 4 220 230
4	350	III	622 4 350 230

STANDARD AVAILABLE
PRODUCTS - **IMPERIAL - 230V**
Ø 5/16 ^{+0,05}

LENGTH [inch]	POWER [w]	GRP	REFERENCE
1 1/2	100	II	787 1 1/2 100 230
1 1/2	160	III	787 1 1/2 160 230
1 1/2	200	IV	787 1 1/2 200 230
1 1/2	250	V	787 1 1/2 250 230
2	125	II	787 2 125 230
2	200	III	787 2 200 230
2	250	IV	787 2 250 230
2	315	V	787 2 315 230
2 1/2	100	I	787 2 1/2 100 230
2 1/2	140	II	787 2 1/2 140 230
2 1/2	220	III	787 2 1/2 220 230
2 1/2	280	IV	787 2 1/2 280 230
2 1/2	350	V	787 2 1/2 350 230
3 1/4	160	I	787 3 1/4 160 230
3 1/4	200	II	787 3 1/4 200 230
3 1/4	315	III	787 3 1/4 315 230
3 1/4	400	IV	787 3 1/4 400 230
4	180	I	787 4 180 230
4	280	II	787 4 280 230
4	400	III	787 4 400 230
5 1/4	250	I	787 5 1/4 250 230
5 1/4	400	II	787 5 1/4 400 230

Ø 3/8 ^{+0,05}

1 1/2	100	I	940 1 1/2 100 230
1 1/2	125	II	940 1 1/2 125 230
1 1/2	200	III	940 1 1/2 200 230
1 1/2	250	IV	940 1 1/2 250 230
1 1/2	315	V	940 1 1/2 315 230
2	100	I	940 2 100 230
2	160	II	940 2 160 230
2	250	III	940 2 250 230
2	315	IV	940 2 315 230
2	400	V	940 2 400 230
2 1/2	125	I	940 2 1/2 125 230
2 1/2	180	II	940 2 1/2 180 230
2 1/2	315	III	940 2 1/2 315 230
2 1/2	400	IV	940 2 1/2 400 230
2 1/2	500	V	940 2 1/2 500 230
3 1/4	160	I	940 3 1/4 160 230
3 1/4	250	II	940 3 1/4 250 230
3 1/4	400	III	940 3 1/4 400 230
3 1/4	500	IV	940 3 1/4 500 230
3 1/4	630	V	940 3 1/4 630 230
4	220	I	940 4 220 230
4	350	II	940 4 350 230
4	560	III	940 4 560 230

LENGTH [inch]	POWER [w]	GRP	REFERENCE
4	700	IV	940 4 700 230
4	850	V	940 4 850 230
5 1/4	315	I	940 5 1/4 315 230
5 1/4	500	II	940 5 1/4 500 230
5 1/4	800	III	940 5 1/4 800 230
6 1/2	400	I	940 6 1/2 400 230
6 1/2	630	II	940 6 1/2 630 230

Ø 1/2 ^{+0,05}

1 1/2	100	I	1257 1 1/2 100 230
1 1/2	160	II	1257 1 1/2 160 230
1 1/2	250	III	1257 1 1/2 250 230
1 1/2	315	IV	1257 1 1/2 315 230
1 1/2	400	V	1257 1 1/2 400 230
2	100	I	1257 2 100 230
2	200	II	1257 2 200 230
2	315	II	1257 2 315 230
2	400	IV	1257 2 400 230
2	500	V	1257 2 500 230
2 1/2	125	I	1257 2 1/2 125 230
2 1/2	200	II	1257 2 1/2 200 230
2 1/2	315	III	1257 2 1/2 315 230
2 1/2	400	IV	1257 2 1/2 400 230
2 1/2	500	V	1257 2 1/2 500 230
3 1/4	200	I	1257 3 1/4 200 230
3 1/4	315	II	1257 3 1/4 315 230
3 1/4	500	III	1257 3 1/4 500 230
3 1/4	630	IV	1257 3 1/4 630 230
3 1/4	800	V	1257 3 1/4 800 230
4	250	I	1257 4 250 230
4	400	II	1257 4 400 230
4	630	III	1257 4 630 230
4	800	IV	1257 4 800 230
4	1000	IV	1257 4 1000 230
5 1/4	400	I	1257 5 1/4 400 230
5 1/4	630	II	1257 5 1/4 630 230
5 1/4	1000	III	1257 5 1/4 1000 230
5 1/4	1250	IV	1257 5 1/4 1250 230
6 1/2	500	I	1257 6 1/2 500 230
6 1/2	800	II	1257 6 1/2 800 230
6 1/2	1250	III	1257 6 1/2 1250 230
8	630	I	1257 8 630 230
8	900	II	1257 8 900 230

Ø 5/8 ^{+0,05}

1 1/2	100	II	1575 1 1/2 100 230
1 1/2	250	III	1575 1 1/2 250 230
1 1/2	315	IV	1575 1 1/2 315 230

LENGTH [inch]	POWER [w]	GRP	REFERENCE
1 1/2	400	V	1575 1 1/2 400 230
2	160	I	1575 2 160 230
2	250	II	1575 2 250 230
2	400	III	1575 2 400 230
2	630	IV	1575 2 630 230
2 1/2	160	I	1575 2 1/2 160 230
2 1/2	250	II	1575 2 1/2 250 230
2 1/2	400	III	1575 2 1/2 400 230
2 1/2	500	IV	1575 2 1/2 500 230
2 1/2	630	V	1575 2 1/2 630 230
3 1/4	280	I	1575 3 1/4 280 230
3 1/4	400	II	1575 3 1/4 400 230
3 1/4	630	III	1575 3 1/4 630 230
3 1/4	1000	V	1575 3 1/4 1000 230
4	350	I	1575 4 350 230
4	500	II	1575 4 500 230
4	800	III	1575 4 800 230
4	1000	IV	1575 4 1000 230
4	1250	V	1575 4 1250 230
5 1/4	500	I	1575 5 1/4 500 230
5 1/4	700	II	1575 5 1/4 700 230
5 1/4	1100	III	1575 5 1/4 1100 230
5 1/4	1400	IV	1575 5 1/4 1400 230
5 1/4	1800	V	1575 5 1/4 1800 230
6 1/2	630	I	1575 6 1/2 630 230
6 1/2	900	II	1575 6 1/2 900 230
6 1/2	1600	II	1575 6 1/2 1600 230
6 1/2	1800	IV	1575 6 1/2 1800 230
8	800	I	1575 8 800 230
8	1250	II	1575 8 1250 230
8	2000	III	1575 8 2000 230
10	1000	I	1575 10 1000 230
10	1600	II	1575 10 1600 230
12	1250	I	1575 12 1250 230
12	1800	II	1575 12 1800 230

GROUPS	WATT DENSITY [W/cm ²]
I	8-11
II	12-19
III	20-24
IV	25-29
V	30-35

ELECTRICAL HEATING

CBH

Ceramic Band heaters
in all sizes and outputs

CUSTOM-MADE, AVAILABLE ON DEMAND



CBH

Ceramic Band Heaters (CBH) are widely used in the plastics industry for heating extruder barrels and injection cylinders, and are also highly practical for laboratory applications. Outer sheaths of the band are available in aluminized steel, stainless steel or inconel.

Available with or without external ventilation system (CBHF). When fitted with a fan, cooling is accelerated, ensuring more uniform temperature distribution. Ideal for high-performance plastics, lab-scale applications, and processes sensitive to temperature gradients.



CBHF

- Voltage: 24V to 415V
- Temperatures: up to 700°C*
- Ø 60 to 630 mm (use multiple heaters for larger diameters)
- Width / Height: 20 to 500 mm
- Integrated insulation
- Maximum 9 W/cm² (depending on regulation temperature)
- Thermocouple hole
- Guard to prevent users burns
- Cooling fans according to installed wattage (optional)

ORDERING INFORMATION

CBHF-D.YYxZZ-QQ-XX

Fan (F) or no Fan (n/a) _____
 Diameter (mm) _____
 Width (mm) _____
 Power (W) _____
 Voltage (V) _____

(*) under certain conditions

OTHER VARIANTS ON DEMAND

MBH

Mica Band heaters
in all sizes and outputs

CUSTOM-MADE, AVAILABLE ON DEMAND

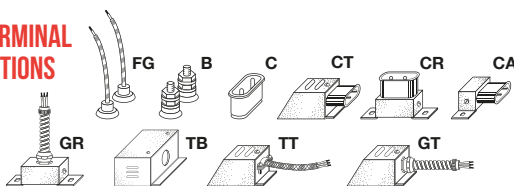


MBH

Mica Band Heaters (MBH) are used extensively in the plastics industry but are also suitable for heating any cylindrical form. They consist of a resistance wire or tape wound onto a mica sheet and protected by a steel cover.

- Voltage: 12V to 415V
- Temperatures: up to 350°C
- Ø 20 to 610 mm (use 2 semi-circular heaters for larger Ø)
- Width's: 18 to 500 mm
- Output: 100W to 9000W (max. 5,4W/cm²)
- Integrated thermocouple J or K
- Nickel plated wires with fibreglass insulation
- Stainless steel sheath
- Integrated insulation or reflector cover
- Special electrical terminations
- Water tight (IP65)

TERMINAL OPTIONS



ORDERING INFORMATION

MBH-D.YYxZZ-QQ-XX

Diameter (mm) _____
 Width (mm) _____
 Power (W) _____
 Voltage (V) _____

OTHER VARIANTS ON DEMAND

SBH

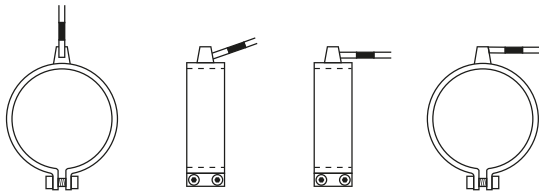
Sealed Mica Band heaters
in all sizes and outputs



Sealed Mica Band Heater (SBH) hermetically sealed against ingress of molten plastic and corrosion resistant.

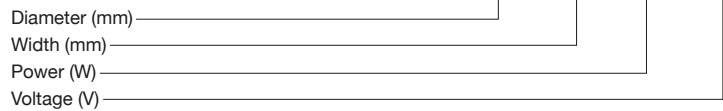
- Voltage: 24V to 415V (230V standard)
- Power: 80 to 1305W (4W/cm² max)
- Temperatures up to **280°C**
- Brass sheath
- Ø 30 to 110 mm
- Width 16 to 70 mm
- Electrical terminations : metal braided nickel plated wire

TERMINAL OPTIONS



ORDERING INFORMATION

SBH-D.YYxZZ-QQ-XX



OTHER VARIANTS ON DEMAND

WIDTH [MM]	16	18	20	22	25	30	34	38	44	55	60	70
Ø [MM]	POWER [W]											
30	80	90	100	110	125	150	170	190	225	280	305	355
32	85	95	110	120	135	160	185	205	240	295	325	380
35	95	105	120	130	150	175	200	225	260	325	355	415
40	110	120	135	150	170	205	230	255	295	370	405	475
45	120	135	150	165	190	230	260	290	335	420	455	530
50	150	165	185	205	230	280	315	355	410	510	560	650
55	150	165	185	205	230	280	315	355	410	510	560	650
56	150	170	190	210	235	285	320	360	415	520	570	665
58	155	175	195	215	245	295	335	375	430	540	590	685
60	160	185	205	225	255	305	345	385	445	560	610	710
63	170	190	215	235	265	320	360	405	470	585	640	745
65	175	200	220	240	275	330	375	420	485	605	660	770
68	185	205	230	255	290	345	390	435	505	635	690	805
70	109	215	235	260	295	355	405	450	520	650	710	880
75	205	230	255	280	315	380	430	480	560	700	760	890
80	215	245	270	300	340	405	460	515	595	745	810	950
85	230	260	290	315	360	430	490	545	635	791	865	1010
90	245	275	305	335	380	455	520	580	670	840	915	1065
95	255	290	320	355	400	480	545	611	710	885	965	1125
100	270	305	340	370	425	510	575	645	745	930	1015	1185
105	285	320	355	390	445	535	605	675	780	980	1065	1245
110	300	335	370	410	465	560	635	710	820	1025	1115	1305

RP Formable Heaters



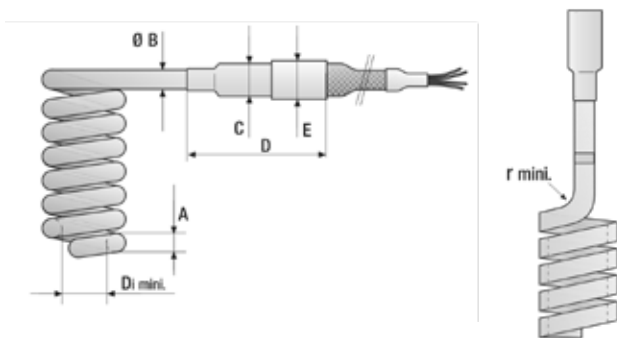
High-performance formable heaters type RP and RP T are low-mass, highly compressed heating elements, in which a very high output can be achieved in a relatively small space.

Due to the good forming possibilities, they are particularly suitable for heating injection nozzles and hot runner manifolds in the plastics industry.

Additional applications include use in chemical laboratories and general machinery, as well as frost protection for railway and tram couplers, heating of welding bars, air heaters, and heating of sealing rollers in the packaging industry.

When coated with Teflon® these heaters can be used within smoke gas analyzers and other aggressive media.

TECHNICAL DATA



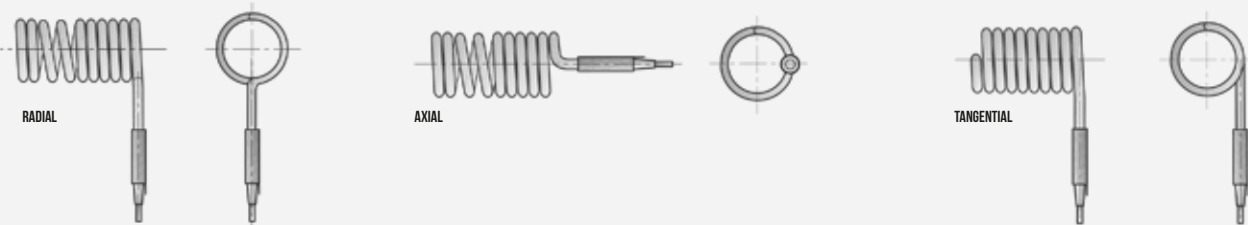
- Voltage: 24 - 400 V
- Heated Length ±2%
- Sheath: CrNi-steel 1.4541 (SS321) or pure nickel 2.406 (nickel 200)
- Available with integrated thermocouple (RPT)
- Maximum 750°C (on the sheath)
- Maximum 200°C (connection)
- RP(T) with single connection, RPZ with double connection

TYPE	SECTION	H x W / DIAMETER / L [mm]					MAX LENGTH [mm]	INT. TC	DI MINI. [mm]	RI MINI. [mm]
		A	B	C	D	E				
RP 1,8	○	1,8	1,8	7,0	25	10	2000		6	3
RP 2,4	○	2,4	2,4	7,0	25	10	2000		6	3
RP 3,0	○	3,0	3,0	7,0	25	10	3000	X	7	3,5
RP 3,3	○	3,3	3,3	7,0	25	10	3000	X	7	3,5
RP 4,0	○	4,0	4,0	7,0	25	10	3000	X	8	4
RP 1,4 x 2,3	▭	1,4 x 2,3	1,8	7,0	25	10	3000		6	4
RP 1,8 x 3,2	▭	1,8 x 3,2	2,75	7,0	25	10	3000		6	4
RP 2,2 x 4,3	▭	2,2 x 4,3	3,5	7,0	25	10	3000	X	7	4
RP 2,5 x 4,0	▭	2,5 x 4,0	3,5	7,0	25	10	3000	X	7	4
RP 3,1 x 3,1	▭	3,1 x 3,1	3,5	7,0	25	10	3000	X	7	4
RP 3,2 x 3,2	▭	3,2 x 3,2	3,5	7,0	25	10	3000	X	7	4
RP 5,5 x 3,9	▭	5,5 x 3,9	5,0	10,0	40	12	3000	X	10	5
RP 9,0 x 4,6	▭	9,0 x 4,6	7,6	10,0	40	12	3000	X	20	8
RPZ 1,2	○	1,2	1,2	5	25	10	2000		5	2,5
RPZ 1,3	○	1,3	1,3	5	25	10	2000		5	2,5
RPZ 1,4 x 2,3	▭	1,4 x 2,3	1,8	5	25	10	3000		6	4
RPZ 1,5	○	1,5	1,5	5	25	10	2000		5	2,5
RPZ 1,8	○	1,8	1,8	7	25	10	2000		6	3
RPZ 2,1	○	2,1	2,1	5	25	10	2000		6	3
RPZ 3,3	○	3,3	3,3	7	25	10	3000		7	3,5

POSSIBLE BENDING FORMS

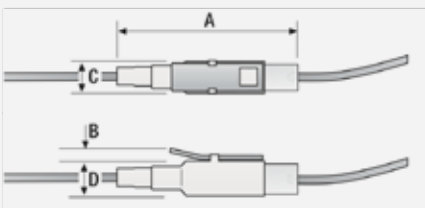


EXIT TYPES



CONNECTION TYPES

PLUGS



	1-POLE [mm]	2-POLE [mm]	3-POLE [mm]	4-POLE [mm]
A	27	31	35	32
B	2,3	2,3	2,3	2,3
C	4,7	7,6	7,6	7,6
D	4,7	5,3	7,7	8,7



- Capacity : 7,5 A
- Temp. Resistance : max. 350°C
- Pull-Out Strength : > 100 N
- Plug housing : VA 1.4301

CONNECTION LEADS

LETEF



PTFE-insul. Leads up to 260°C

GLS



Fibreglass insulated hose

KASIL



3-core silicon insulated cable

DRGSL



Wire Mesh Hose

SSL



Protective Hose

RP/RP T 5,5 x 3,9



1000 mm GLS,
1,5 mm²

RP/RP T Ø 4,0



1000 mm PTFE,
0,75 mm²

RP/RP T 3,2 x 3,2



1000 mm PTFE,
0,75 mm²

RP/RP T Ø 3,0



1000 mm PTFE,
0,75 mm²

RP/RP T 2,5 x 4,0



1000 mm PTFE,
0,75 mm²

RP/RP T 2,2 x 4,3



1000 mm PTFE,
0,75 mm²

RP 1,8 x 3,2



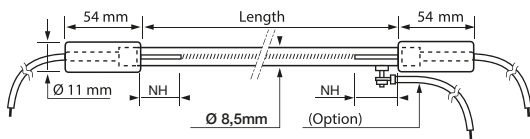
1000 mm PTFE,
0,75 mm²

POWER [w] AT 230 V	HEATED LENGTH [mm]	STRAIGHT LENGTH [mm]	RP - REFERENCE	RPT - REFERENCE
315	300	400	RP-126 500	RP-126 600
500	450	550	RP-126 501	RP-126 601
800	700	800	RP-126 502	RP-126 602
1000	900	1000	RP-126 503	RP-126 603
1500	1350	1450	RP-126 504	RP-126 604
2000	1800	1900	RP-126 505	RP-126 605
200	250	400	RP-129 913	RP-129 914
315	400	550	RP-129 930	RP-129 900
400	600	750	RP-129 931	RP-129 901
500	800	950	RP-129 932	RP-129 902
630	1000	1150	RP-129 933	RP-129 903
750	1200	1350	RP-129 907	RP-129 909
1000	1500	1650	RP-129 908	RP-129 911
180	300	400	RP-129 128	RP-129 123
250	450	550	RP-129 129	RP-129 124
315	550	650	RP-129 130	RP-129 125
400	700	800	RP-129 131	RP-129 126
180	300	400	RP-129 030	RP-129 000
250	450	550	RP-129 031	RP-129 001
315	550	650	RP-129 032	RP-129 002
400	700	800	RP-129 033	RP-129 003
240	295	355	RP-124 551	RP-124 561
400	500	560	RP-124 553	RP-124 563
680	845	905	RP-124 555	RP-124 565
180	300	400	RP-124 200	RP-124 220
250	450	550	RP-124 201	RP-124 221
315	550	650	RP-124 202	RP-124 222
400	700	800	RP-124 203	RP-124 223
500	800	900	RP-124 204	RP-124 224
630	1000	1100	RP-124 205	RP-124 225
750	1200	1300	RP-124 206	RP-124 226
180	300	400	RP-129 170	
250	450	550	RP-129 171	
315	550	650	RP-129 172	
400	700	800	RP-129 173	



DHE

De-frost
Elements



- Diameter : \varnothing 8,5 mm
- Max. length : 7000 mm
- Bending Radius : 40 mm
- Power : **On demand**
- Voltage : **On demand**

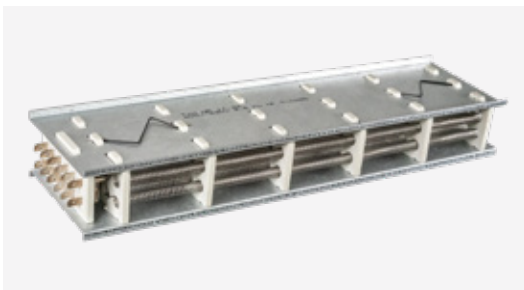
This heating element serves a wide range of purposes, primarily focused on de-icing and aiding in the evaporation process within refrigeration equipment. Its applications span across various refrigeration components, including evaporator fins, glass cabinets, and cold storage units, making it a versatile choice for maintaining optimal operating conditions.

Whether it's preventing ice buildup or ensuring efficient cooling, this heating element offers reliable performance in diverse refrigeration settings.

- Perfect protection against humidity with a shrink sleeve at the end of the elements
- Straight or bent elements; manufactured in accordance with customer's drawing
- Various powers, supply voltages, and lengths available
- Optional earth terminal can be welded onto the element sheath

OCH

Open Coil
heater



Whether your requirements involve pairing an element with a cross flow fan, integrating it into a hand dryer, or any other application, rest assured that we have the ideal element to meet your needs.

Our cross flow fan elements are built using helically wound wire supported on ceramic formers, with metal frames and reinforced by glass fiber cordage. The specific construction depends on airflow and space availability, ensuring a swift and immediate response.

As for our hand dryer elements, specialized design and development have led to their expert manufacture. They are constructed with helically wound wire, supported on either ceramic or mica formers, enclosed in metal frames, and strengthened with glass fiber supporting cordage.

- With thermal cut-outs if required, either inline or external in both auto-reset and PTC hold off
- 110, 230 and 400v units and others are available on demand
- Fan Heaters, Tumble Driers, Door Air Curtains, Chocolate processing are typical uses

ACFH

Aluminium Cast-In Heaters



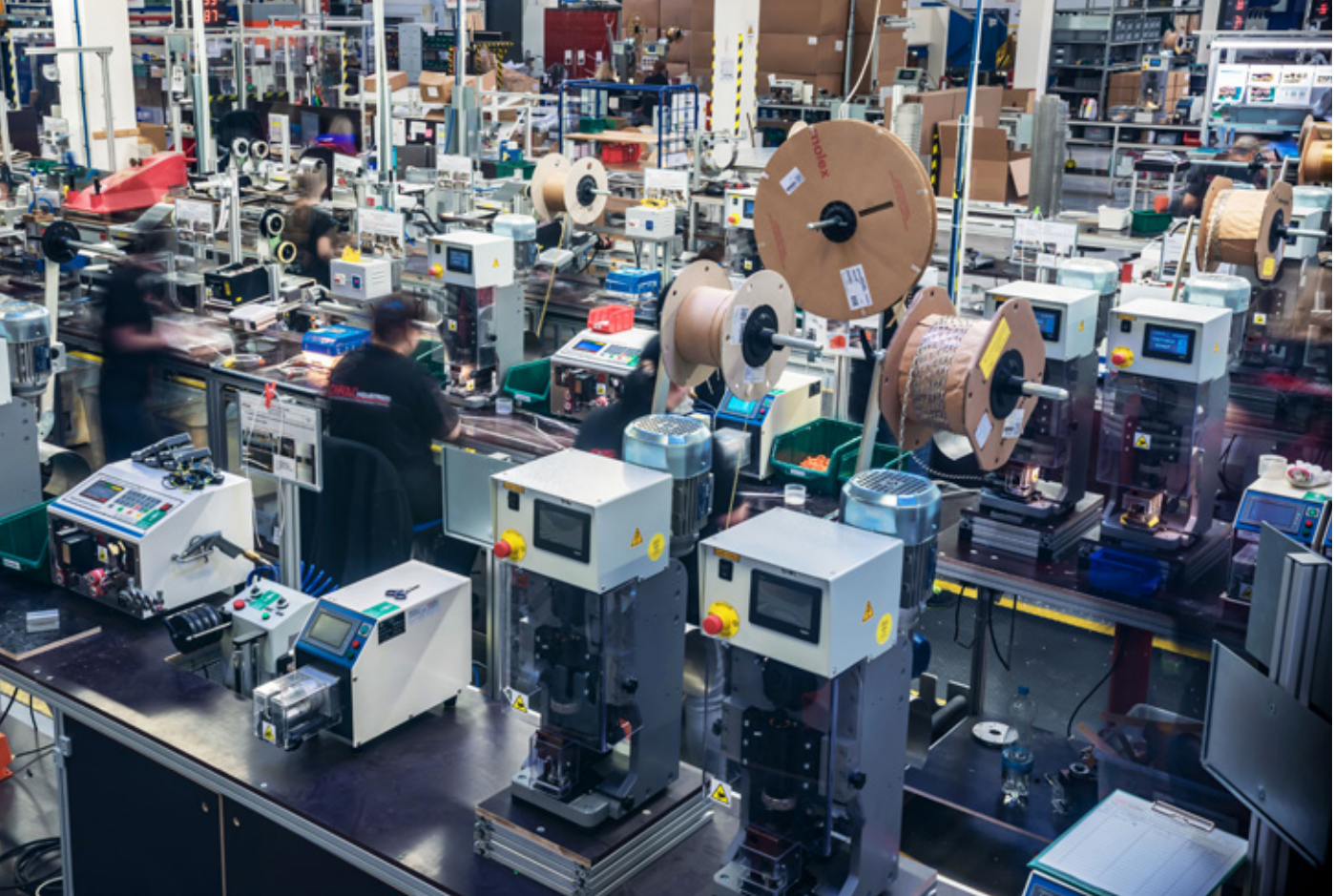
The cast-in heating plates and heating bands are comprised of one or more electrical resistors embedded within a block constructed from aluminum, brass, bronze, or cupronickel alloy, ensuring superb thermal conductivity.

Cast-in heaters are well-suited for tasks that require consistent indirect heating and are commonly employed across various sectors, including the plastics, packaging, and food industries.

Typical applications encompass heating plates used in presses, extruder dies, and sheaths, as well as heating plates for uniform heating (materials like rubber and aerated concrete curing), sealing processes on packaging assembly lines, and milling operations.

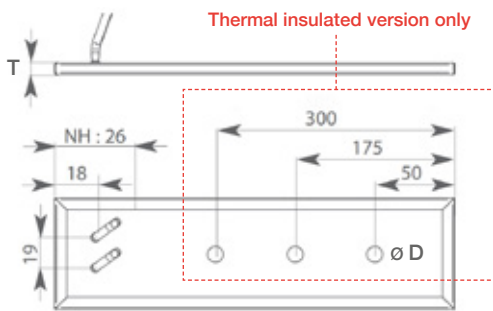


- Indirect heating
 - Block of aluminum alloy
 - Process temperature up to +400°C
 - Max watt density on the heating element: 20 W/cm²
 - Can be equipped with cooling
- circuits to optimize the industrial process
 - Extreme environments from -60°C to +80 °C and onshore as well as offshore (salty environment)



ELECTRICAL HEATING

MSH Mica strip heaters



NH: non-heated part - all units in [mm]
Standard version: T = 3,2 mm
Insulated version: T = 11,0 mm - D: Ø 10,0 mm

Mica strip heaters consist of a heating element electrically insulated by two mica layers and can be supplied either with a protective metal sheath or without. They are available with a direct outlet or under a hood.

This technology allows a wide range of shapes, including rectangular, circular, trapezoidal, L-shaped, and U-shaped designs.

Designed for direct heating of trays or tanks, mica strip heaters must be clamped securely against the surface to ensure effective heat transfer.

- Voltage: 500V AC maximum (single- or three-phase*)
- Max. watt density: up to 4 W/cm²
- Max. operating temp. : 340°C
- Length: 60 - 2000 mm
- Width: 10 - 600 mm
- Sheath: Aluminium (Stainless Steel and Inconel optional)
- Electrical insulation: Mica
- Different electrical connections on demand (with/without cap)
- Earth wiring via stud bolt (option)

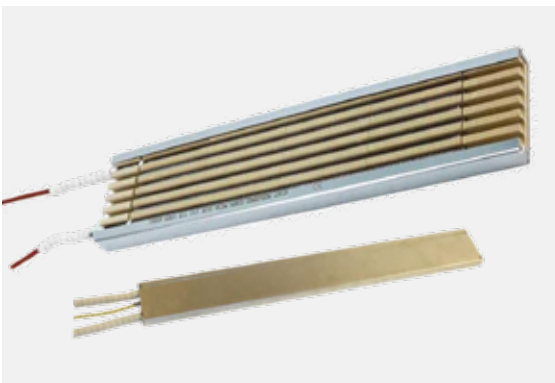
(*) min. width: 90 mm

Standard available models

REFERENCE	LENGTH [mm]	WIDTH [mm]	THICKNESS [mm]	POWER [W]	LENGTH LEADS [m]
Basic version	230	80	3,2	500	2
	380	80	3,2	750	2
Insulated version	380	80	11,0	750	2

OTHER VARIANTS ON DEMAND

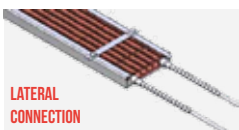
CSH Ceramic strip heaters



Ceramic strip heaters reach up to 600 °C, heating solids directly and fluids or gases indirectly.

Radiant heaters have a heating element isolated by flat ceramic plates, ideal for scroll tunnels or furnaces, while **Rigid heaters** use ceramic-insulated elements in a metal frame, better suitable for molds.

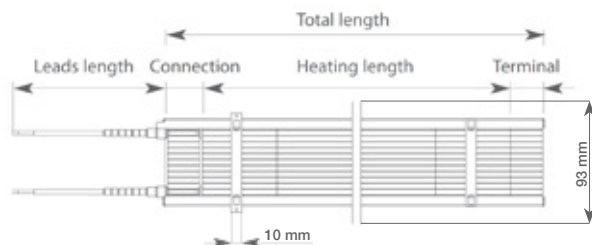
RADIANT VERSION



LATERAL CONNECTION



PERPENDICULAR CONNECTION



	RADIANT VERSION	RIGID VERSION
Voltage	230V or 400V (mono/tri)	230V mono (500V max.)
Max. watt density	up to 7 W/cm ²	up to 6 W/cm ²
Max. operating temperature	900°C	900°C
Length	90 - 2000 mm	80 - 1500 mm
Width	83 mm	15 - 250 mm
Thickness	18 mm	11,5 mm
Electrical Connection	Nickel wire insulated with siliconized glass silk protected by ceramic beads	Nickel wire insulated with siliconized glass silk protected by ceramic beads
Extra information	Stainless steel metal frame (Inconel as option) + Stainless steel brackets	Aluminized enveloping sheet - also available in stainless steel or Inconel

ONLY AVAILABLE ON DEMAND

RIGID VERSION



LEADS 1



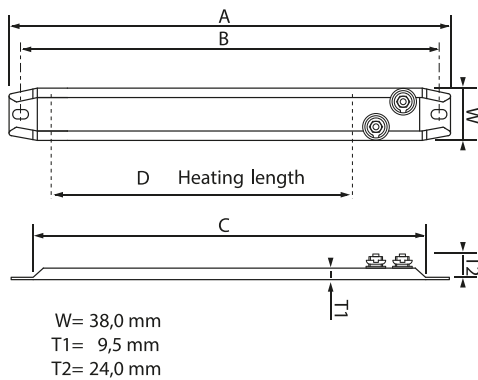
LEADS 2



TERMINALS

OT-US

Sheathed strip heaters



Sheathed strip heaters are constructed with a core element made of nickel-chrome resistance wire, which is meticulously insulated using compressed magnesium oxide. This assembly is enclosed within a robust chrome steel casing.

These heaters find diverse applications, primarily serving as reliable heating solutions for various equipment and processes.

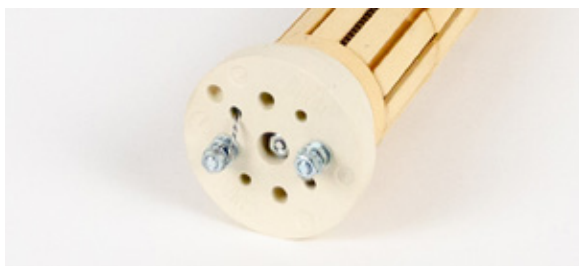
Common uses include heating of press platens, machine tools, degreasing tanks, chemical tanks, and hot plates.

Moreover, sheathed strip heaters offer versatility in their application due to the availability of low watt density versions, which have a maximum rating of 1.5 watts per square centimeter (1.5W/cm²). These low-density variants are particularly valuable as anti-condensation heaters, effectively preventing moisture buildup within control panels and electronic equipment, thus ensuring their uninterrupted and safe operation.

- Monophase voltages
- Max. Watt Density 1,5 W/cm²
- Max. Operating Temp. is 450°C
- Sheath Material is stainless steel
- Different electrical connections possible on demand

REFERENCE	DIMENSIONS				OUTPUT RANGE [W / 240 V]	WEIGHT [kg]
	A [mm]	B [mm]	C [mm]	D [mm]		
OT-07XX US	191	165	152	76	60 - 350	0,2
OT-0702 US	191	165	152	76	200	0,2
OT-08XX US	203	178	165	90	50 - 400	0,25
OT-0802 US	203	178	165	90	250	0,25
OT-0804 US	203	178	165	90	400	0,25
OT-10XX US	267	241	229	152	50 - 625	0,34
OT-1003 US	267	241	229	152	350	0,34
OT-1004 US	267	241	229	152	400	0,34
OT-12XX US	305	279	267	191	50 - 750	0,4
OT-1202 US	305	279	267	191	250	0,4
OT-1203 US	305	279	267	191	350	0,4
OT-1205 US	305	279	267	191	500	0,4
OT-14XX US	356	330	318	241	50 - 900	0,45
OT-1405 US	356	330	318	241	500	0,45
OT-15XX US	387	362	349	273	50 - 1025	0,51
OT-1505 US	387	362	349	273	500	0,51
OT-18XX US	454	429	416	340	50 - 1025	0,63
OT-1805 US	454	429	416	340	500	0,63
OT-1807 US	454	429	416	340	750	0,63
OT-1801 US	454	429	416	340	1000	0,63
OT-19XX US	495	470	457	381	50 - 1375	0,68
OT-1905 US	495	470	457	381	500	0,68
OT-1907 US	495	470	457	381	750	0,68
OT-1901 US	495	470	457	381	1000	0,68
OT-21XX US	533	508	495	419	50 - 1500	0,74
OT-2107 US	533	508	495	419	750	0,74
OT-24XX US	603	578	565	489	50 - 1750	0,82
OT-2405 US	603	578	565	489	500	0,82
OT-2407 US	603	578	565	489	750	0,82
OT-2401 US	603	578	565	489	1000	0,82
OT-2415 US	603	578	565	489	1500	0,82
OT-25XX US	648	622	610	533	50 - 1900	0,94
OT-2507 US	648	622	610	533	750	0,94
OT-2501 US	648	622	610	533	1000	0,94
OT-26XX US	679	654	641	573	50 - 1975	1
OT-2601 US	679	654	641	573	1000	1
OT-30XX US	775	746	733	657	50 - 2375	1,08
OT-3007 US	775	746	733	657	750	1,08
OT-3001 US	775	746	733	657	1000	1,08
OT-3012 US	775	746	733	657	1250	1,08
OT-33XX US	851	826	813	737	50 - 2625	1,22
OT-3307 US	851	826	813	737	750	1,22
OT-36XX US	911	883	870	794	50 - 2775	1,31
OT-3601 US	911	883	870	794	1000	1,31
OT-38XX US	978	953	940	864	50 - 2900	1,45
OT-3801 US	978	953	940	864	1000	1,45
OT-3815 US	978	953	940	864	1500	1,45
OT-43XX US	1080	1051	1038	962	50 - 3350	1,54
OT-4315 US	1080	1051	1038	962	1500	1,54
OT-48XX US	1216	1187	1153	1077	50 - 3500	1,7
OT-4813 US	1216	1187	1153	1077	1350	1,7
OT-4822 US	1216	1187	1153	1077	2250	1,7

RBC Ceramic core immersion heaters

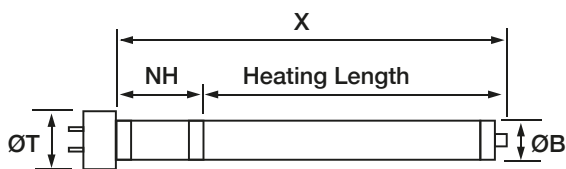


Ceramic core immersion heaters are designed to heat liquids (water, oil, fuel oil, glycol, acid, sodium hydroxide, bitumen, etc.) by natural or forced convection. Ceramic core elements are produced according to the customers' requirements. All parameters can be optimized per specific application. Horizontally or vertically mounted on static or circulating fluid tanks.

These immersion heaters are constructed from resistance wires housed in cylindrical ceramic elements. The entire assembly is protected by a pocket which comes into direct contact with the fluid to be heated.

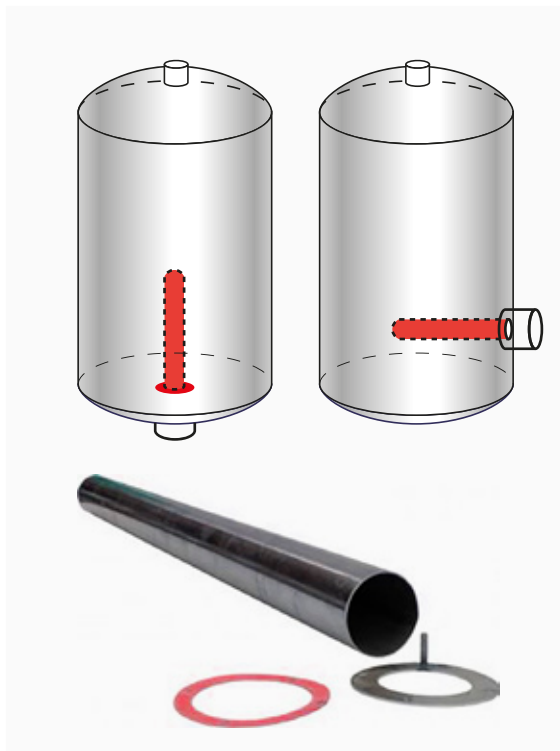
The pocket containing the core heater may be welded directly onto the wall of the tank, screwed onto a threaded sleeve (metric or gas thread) or mounted on a backflange.

This technology allows the core heater to be replaced without entirely dismantling the immersion heater and without draining the tank containing the liquids to be heated.



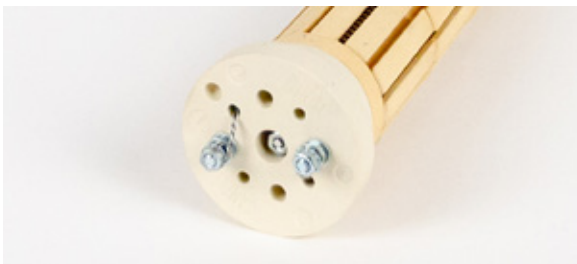
- Standard voltages : 230V-1ph / 230V-3ph (Delta) / 400V-3ph (Star)
- Power: 1kW to 6kW
- Replacement elements for immersion heaters fitted with pockets
- Nickel chrome resistance wire
- High quality ceramic support

- Standard versions: **Ø 45 mm** with maximum 2,5 or 4 W/cm²
- Ø 54 mm** with maximum 2,5 or 4 W/cm² (other Ø on demand)
- Non-heated Length (NH): 44 or 45mm



REFERENCE	Ø B [mm]	LENGTH X [mm]	NH [mm]	POWER [w]	Ø T [mm]	WATT DENSITY [W/cm ²]
RBC 45-22-5	45	216	44	500	60,0	2,3
RBC 45-37-10	45	367	44	1000	60,0	2,3
RBC 45-52-15	45	519	44	1500	60,0	2,3
RBC 45-67-20	45	670	44	2000	60,0	2,3
RBC 45-92-30	45	923	44	3000	60,0	2,5
RBC 45-27-10	45	266	44	1000	60,0	3,5
RBC 45-37-15	45	367	44	1500	60,0	3,5
RBC 45-42-20	45	418	44	2000	60,0	4,0
RBC 45-62-30	45	620	44	3000	60,0	3,8
RBC 45-87-45	45	872	44	4500	60,0	3,9
RBC 54-32-10	54	315	45	1000	64,0	2,4
RBC 54-47-15	54	465	45	1500	64,0	2,2
RBC 54-57-20	54	565	45	2000	64,0	2,4
RBC 54-82-30	54	815	45	3000	64,0	2,4
RBC 54-117-45	54	1165	45	4500	64,0	2,4
RBC 54-22-10	54	215	45	1000	64,0	3,9
RBC 54-32-15	54	315	45	1500	64,0	3,5
RBC 54-37-20	54	365	45	2000	64,0	3,9
RBC 54-52-30	54	515	45	3000	64,0	3,9
RBC 54-77-45	54	765	45	4500	64,0	3,8
RBC 54-97-60	54	965	45	6000	64,0	3,9

RBC HT Ceramic core immersion heaters with prolonged cold end

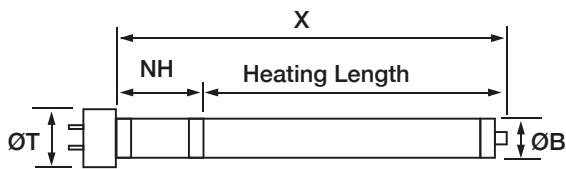


Ceramic core immersion heaters are designed to heat liquids (water, oil, fuel oil, glycol, acid, sodium hydroxide, bitumen, etc.) by natural or forced convection. Ceramic core elements are produced according to the customers' requirements. All parameters can be optimized per specific application. Horizontally or vertically mounted on static or circulating fluid tanks.

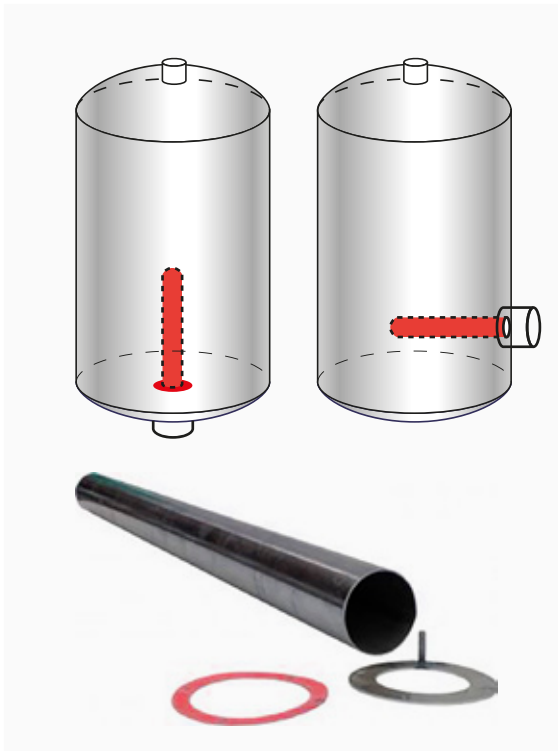
These immersion heaters are constructed from resistance wires housed in cylindrical ceramic elements. The entire assembly is protected by a pocket which comes into direct contact with the fluid to be heated.

The pocket containing the core heater may be welded directly onto the wall of the tank, screwed onto a threaded sleeve (metric or gas thread) or mounted on a backflange. See our standard versions of DTV-RBC for Screwable Pocket with Ceramic core element and our TBR-RBC for Flange Mounted Single- and Multi-Pocket with Ceramic core element(s).

This technology allows the core heater to be replaced without entirely dismantling the immersion heater and without draining the tank containing the fluid to be heated.



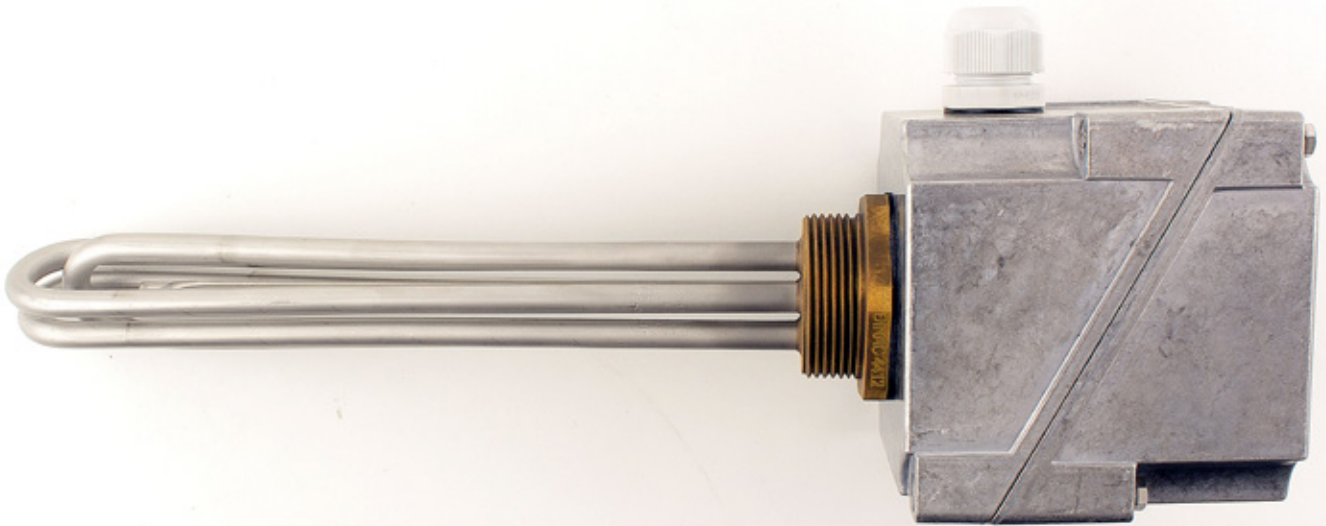
- Standard voltages : 230V-1ph / 230V-3ph (Delta) / 400V-3ph (Star)
- Power: 1kW to 6kW
- Replacement elements for immersion heaters fitted with pockets
- Nickel chrome resistance wire
- High quality ceramic support
- Available versions: **Ø 54mm** with maximum 2,5 W/cm² or 4 W/cm² (other Ø on demand)
- High Temperature version of RBC with prolonged non-heated Length (NH): 145mm



REFERENCE	Ø B [mm]	LENGTH X [mm]	NH [mm]	POWER [w]	Ø T [mm]	WATT DENSITY [W/cm ²]
RBC 54-42-10	54	415	145	1000	64	2,4
RBC 54-57-15	54	565	145	1500	64	2,2
RBC 54-67-20	54	665	145	2000	64	2,4
RBC 54-92-30	54	915	145	3000	64	2,4
RBC 54-127-45	54	1265	145	4500	64	2,4
RBC 54-32-10	54	315	145	1000	64	3,9
RBC 54-42-15	54	415	145	1500	64	3,5
RBC 54-47-20	54	465	145	2000	64	3,9
RBC 54-62-30	54	615	145	3000	64	3,9
RBC 54-87-45	54	865	145	4500	64	3,8
RBC 54-107-60	54	1065	145	6000	64	3,9

DTV RANGE

Standard Range
Immersion heaters
with screw plug



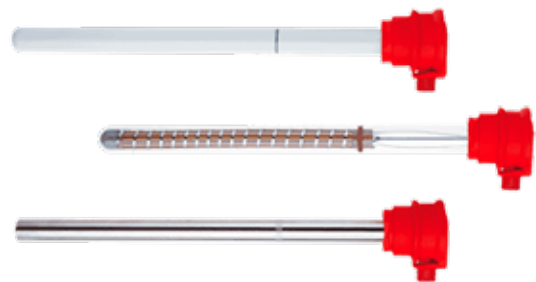
GALVATHERM®

Flat immersion
heaters



ROTKAPPE®

Immersion heaters for heating
of chemical solutions



TBR

Flange Immersion
Heaters



IMMERSION HEATERS

FOR WATER, OIL OR CHEMICAL SOLUTIONS

Immersion heaters heat up water, oil or chemical solutions through direct contact with the liquid (heat conduction). This technique can be used for many different industrial processes. Immersion heaters are very efficient appliances. Since the heat is generated within the liquid itself, virtually no energy is lost. Our immersion heaters are divided into categories based on 3 important characteristics : the kind of liquid they heat up (water, oil or a chemical solution), their shape and whether they are ATEX approved or not. If you want to use an immersion heater in a hazardous area (risk of explosion), it should be considered safe under the European guideline ATEX114.



WATER

Immersion heaters for heating of water



WATER+

Immersion heaters for heating of water with additives



GLYCOL

Immersion heaters for heating of glycol-water



OIL

Immersion heaters for heating of oil (up to 120°C).



HOT OIL

Immersion heaters for heating of oil at high temperature (up to 250°C)

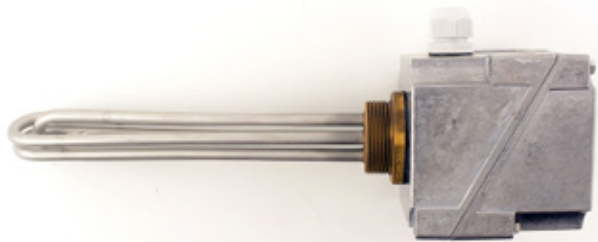


CHEMICAL

Immersion heaters for heating of chemical solutions

DTV45EI

Screw plug immersion heater for water



DTV45EI + DKBA105

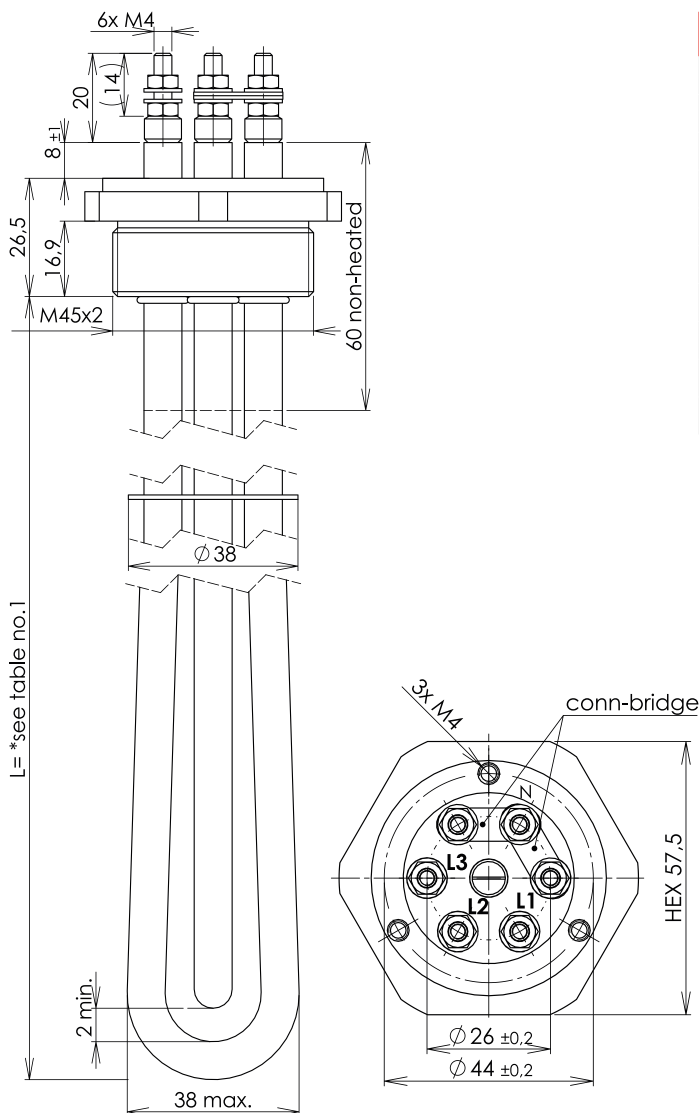


With the DTV45EI we developed a standard set of immersion heaters for the heating of water.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 1 – 12 kW
- Watt density: 10 W/cm²
- Brass screw plug M45
- Heating elements: SS 316L - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional



DIRAC REFERENCE	POWER [W]	LENGTH [mm]
DTV45EI010	1000	116
DTV45EI020	2000	170
DTV45EI030	3000	235
DTV45EI045	4500	335
DTV45EI060	6000	435
DTV45EI075	7500	535
DTV45EI090	9000	635
DTV45EI100	10000	700
DTV45EI120	12000	799

OTHER VARIANTS ON DEMAND

OPTIONS

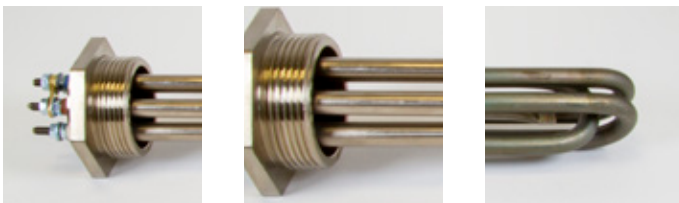
- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



DTV45I

Screw plug immersion heater for water with additives

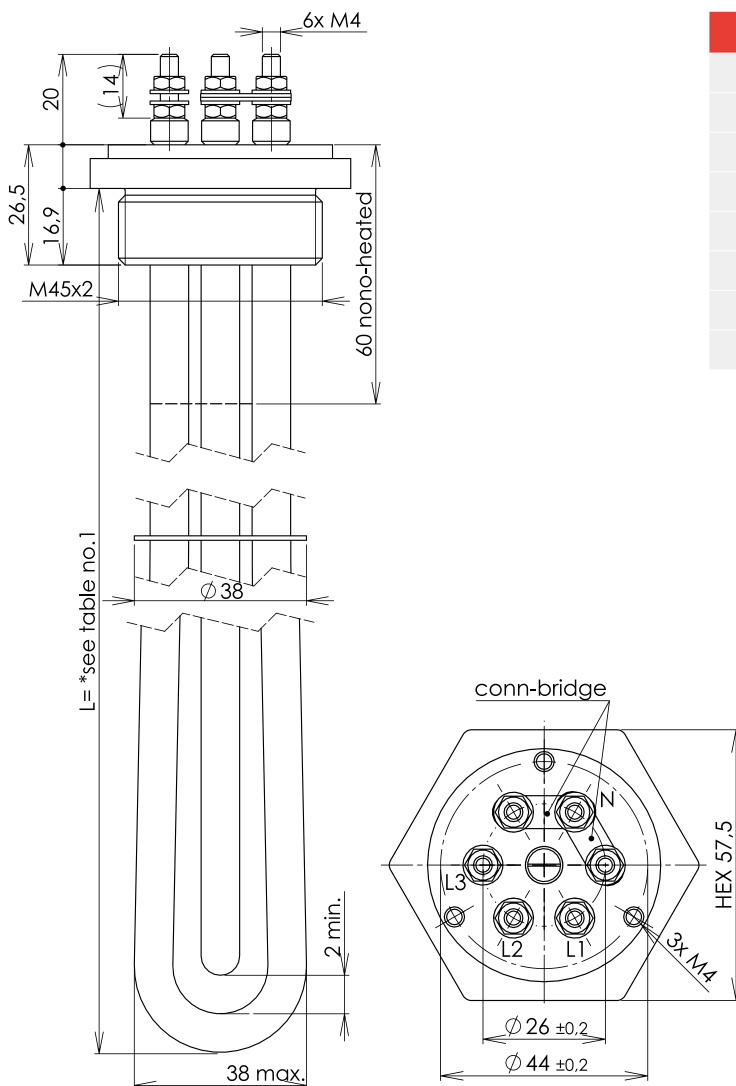


With the DTV45I we developed a standard set of immersion heaters for the heating of water with additives.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 3 – 15 kW
- Watt density: 12,5 W/cm²
- SS 304 screw plug M45
- Heating elements: Incoloy 825 - Ø 8,5 mm
- TIG welding of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional



DIRAC REFERENCE	POWER [W]	LENGTH [mm]
DTV45I030	3000	205
DTV45I045	4500	285
DTV45I060	6000	370
DTV45I075	7500	450
DTV45I090	9000	535
DTV45I120	12000	700
DTV45I150	15000	865

OTHER VARIANTS ON DEMAND

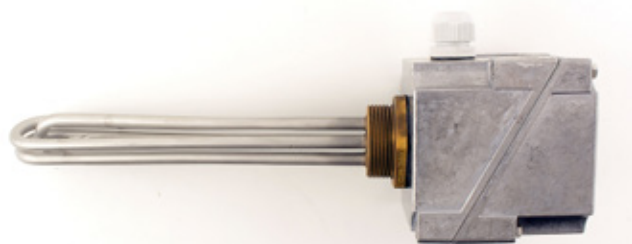
OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page

DTV45EG

Screw plug immersion heater for glycol



DTV45EG + DKBA 105

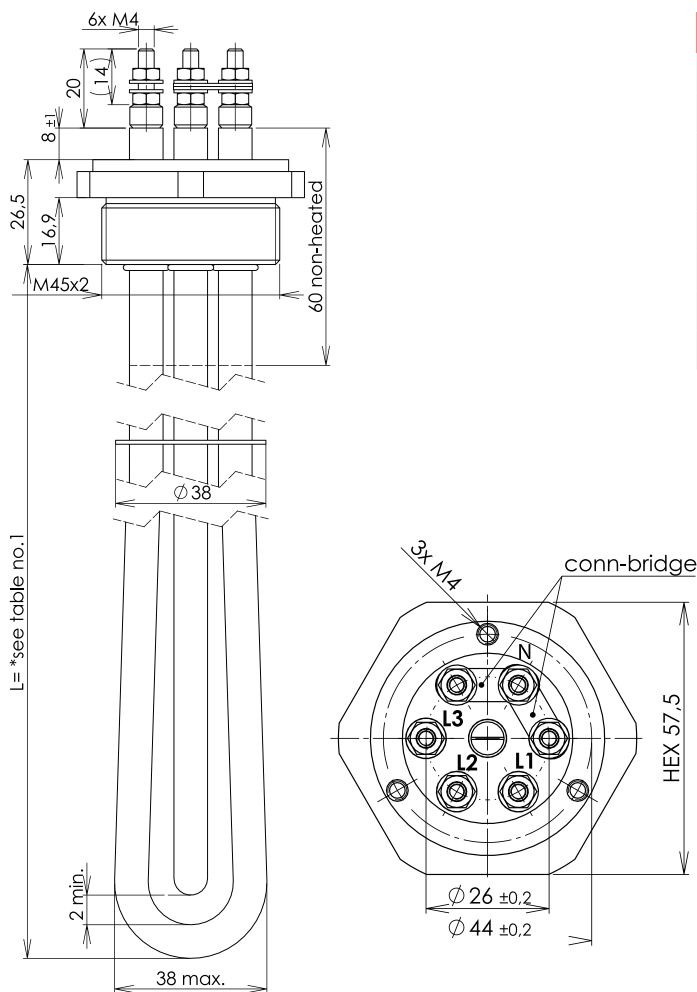


With the DTV45EG we developed a standard set of immersion heaters for the heating of glycol-water (maximum 50%).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 1 – 12 kW
- Watt density: 5 W/cm²
- Brass screw plug M45
- Heating elements: SS 321 - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional



DIRAC REFERENCE	POWER [W]	LENGTH [mm]
DTV45EG010	1000	170
DTV45EG015	1500	235
DTV45EG020	2000	300
DTV45EG030	3000	435
DTV45EG045	4500	635
DTV45EG060	6000	835
DTV45EG120	12000	1530

OTHER VARIANTS ON DEMAND

OPTIONS

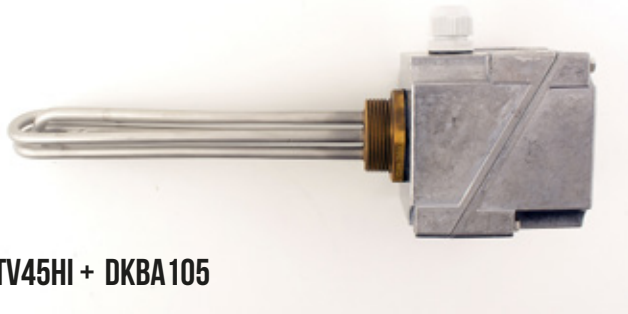
- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



DTV45HI

Screw plug immersion heater for oil



DTV45HI + DKBA105

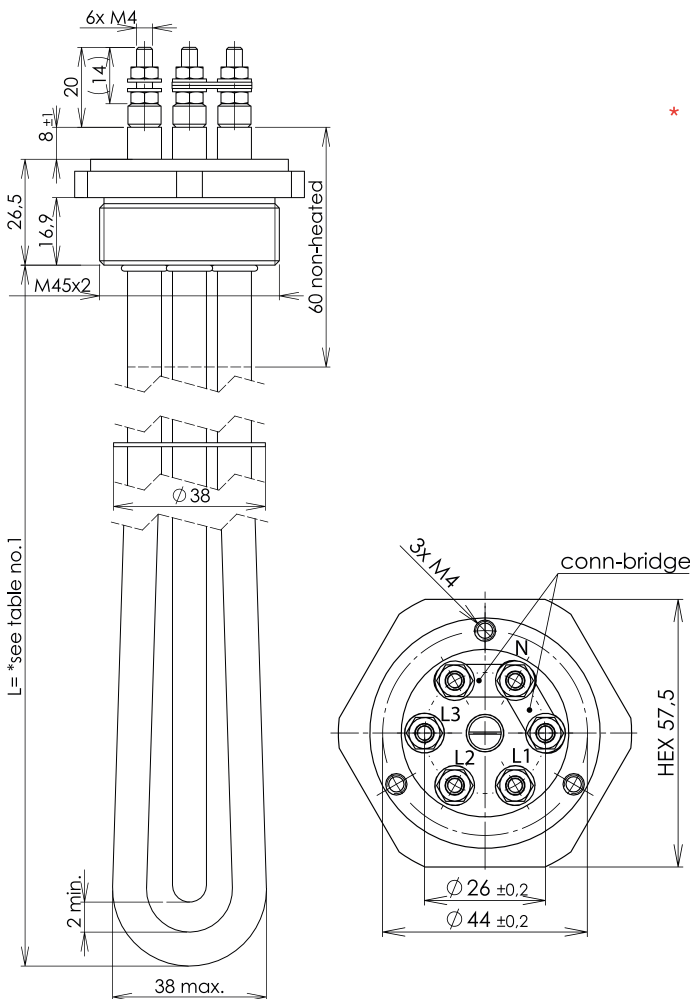


With the DTV45HI we developed a standard set of immersion heaters for the heating of oil (up to 120°C).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 0,5 – 3 kW
- Watt density: 2,5 W/cm²
- Brass screw plug M45
- Heating elements: SS 321 - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional



DIRAC REFERENCE	POWER [W]	LENGTH [mm]
* DTV45HI005	500	170
DTV45HI007	750	235
DTV45HI010	1000	300
DTV45HI015	1500	435
DTV45HI020	2000	570
DTV45HI030	3000	835

(*) only 230V - 1ph

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page

DTV45HDI

Screw plug immersion heater for oil

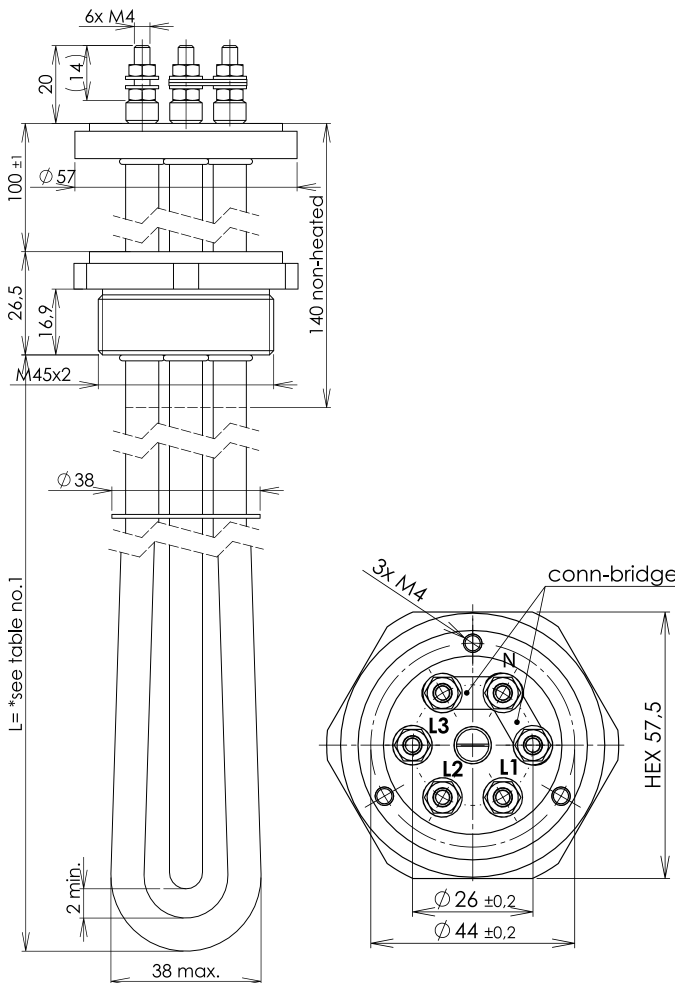


With the DTV45HDI we developed a standard set of immersion heaters for the heating of oil at high temperature (up to 250°C).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 0,5 – 3 kW
- Watt density: 2,5 W/cm²
- Brass screw plug M45
- Brass flange Ø 57 mm, for box mounting
- Heating elements: SS 321 - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large - on flange at 100 mm distance) is optional



DIRAC REFERENCE	POWER	LENGTH
	[W]	[mm]
DTV45HDI005	500	170
DTV45HDI007	750	235
DTV45HDI010	1000	300
DTV45HDI015	1500	435
DTV45HDI020	2000	570
DTV45HDI030	3000	835

(*) only 230V - 1ph

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



OPTIONS

ACCESSORIES BOXES



DKBA078-P1

- Aluminium box Small
 - 78 x 78 x 78 mm
 - no regulation
 - 1 pre-drilled holes :
 • M20 gland for power cable



DKBA105-P1

- Aluminium box Large
 - 105 x108 x 104 mm
 - for thermostat
 - 3 pre-drilled holes :
 • 1 PG 16 gland for power cable
 • 1 PG 11 gland for control cable
 • 1 PG 11 plug for regulation thermostat

ACCESSORIES ASSEMBLY



JSA-DTV45

Fiberglass gasket



JCU-DTV45

Copper gasket



E0045

Brass backnut



EIN45

Stainless steel backnut

THERMOSTATS

	THERMOSTATS	# MORE INFO ON EACH PRODUCT'S SPECIFIC DATASHEET
CAD040-MONO-I	Thermostat 0-40°C - mono	
CAD090-MONO-I	Thermostat 0-90°C - mono	
CAD110-MONO-I	Thermostat 30-110°C - mono	
CAD300-MONO-I	Thermostat 50-300°C - mono	
CAD040-TRI-I	Thermostat 0-40°C - tri	
CAD090-TRI-I	Thermostat 0-90°C - tri	
CAD110-TRI-I	Thermostat 30-110°C - tri	
CAD300-TRI-I	Thermostat 50-300°C - tri	
* CABS4080/98-I	Thermostat 40-80 / limiter 98 - bi-pole	
* CATS4080/98-I	Thermostat 40-80 / limiter 98 - tri-pole	



BIN45

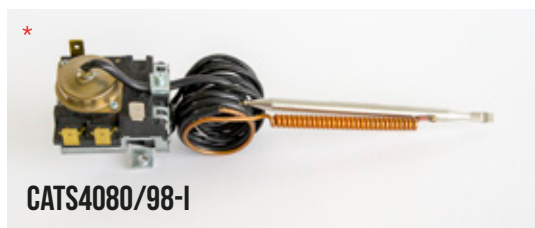
Stainless steel weld ring - treated M45x2

Thermal pocket diameter and length must be checked against thermostat sensor length and diameter, eventually resulting in custom made heaters.
 See next page

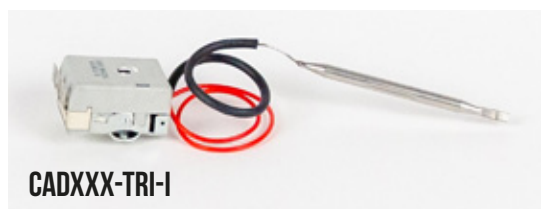
* only possible with custom made heater with thermal pocket Ø 10x0,5 mm



CADXXX-MONO-I



* CATS4080/98-I



CADXXX-TRI-I



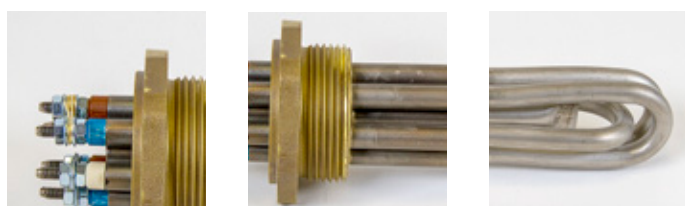
* CABS4080/98-I

THERMOSTAT COMPATIBILITY

DIRAC IMMERSION HEATERS	POWER [W]	LENGTH THERMAL POCKET [mm]	CAD040-MONO-I CAD090-MONO-I CAD110-MONO-I		CAD300-MONO-I		CAD040-TRI-I CAD090-TRI-I CAD110-TRI-I	
			DIRECT	EXT. CONTACTOR	DIRECT	EXT. CONTACTOR	DIRECT	DIRECT
DTV45HI005	500	128	✗	✗	✗	✗	✗	✗
DTV45HI007	750	194	✓	✓	✗	✗	✓	✗
DTV45HI010	1000	258	✓	✓	✗	✗	✓	✗
DTV45HI015	1500	394	✓	✓	✗	✗	✓	✗
DTV45HI020	2000	529	✓	✓	✗	✗	✓	✗
DTV45HI030	3000	794	✓	✓	✗	✗	✓	✗
DTV45HDI005	500	228	✓	✓	✓	✓	✗	✗
DTV45HDI007	750	294	✓	✓	✓	✓	✗	✗
DTV45HDI010	1000	358	✓	✓	✓	✓	✗	✗
DTV45HDI015	1500	494	✓	✓	✓	✓	✓	✓
DTV45HDI020	2000	629	✓	✓	✓	✓	✓	✓
DTV45HDI030	3000	894	✓	✓	✓	✓	✓	✓
DTV45EG010	1000	165	✓	✓	✗	✗	✓	✗
DTV45EG015	1500	230	✓	✓	✗	✗	✓	✗
DTV45EG020	2000	295	✓	✓	✗	✗	✓	✗
DTV45EG030	3000	430	✓	✓	✗	✗	✓	✗
DTV45EG045	4500	630	✓	✓	✗	✗	✓	✗
DTV45EG060	6000	830	✗	✓	✗	✗	✓	✗
DTV45EI010	1000	100	✗	✗	✗	✗	✗	✗
DTV45EI020	2000	165	✓	✓	✗	✗	✓	✗
DTV45EI030	3000	230	✓	✓	✗	✗	✓	✗
DTV45EI045	4500	330	✓	✓	✗	✗	✓	✗
DTV45EI060	6000	430	✗	✓	✗	✗	✓	✗
DTV45EI075	7500	530	✗	✓	✗	✗	✓	✗
DTV45EI090	9000	630	✗	✓	✗	✗	✓ (3X400V)	✗
DTV45EI100	10000	695	✗	✓	✗	✗	✓ (3X400V)	✗
DTV45I030	3000	175	✓	✓	✗	✗	✓	✗
DTV45I045	4500	255	✓	✓	✗	✗	✓	✗
DTV45I060	6000	340	✗	✓	✗	✗	✓	✗
DTV45I075	7500	420	✗	✓	✗	✗	✓	✗
DTV45I090	9000	505	✗	✓	✗	✗	✓ (3X400V)	✗
DTV45I120	12000	670	✗	✓	✗	✗	✗	✗
DTV45I150	15000	835	✗	✓	✗	✗	✗	✗

DTV47EI

Screw plug immersion heater for water

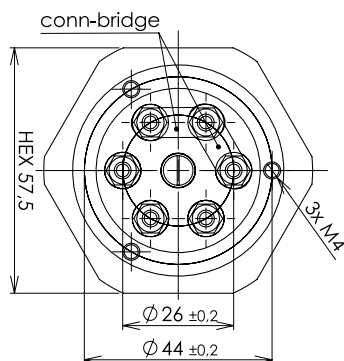
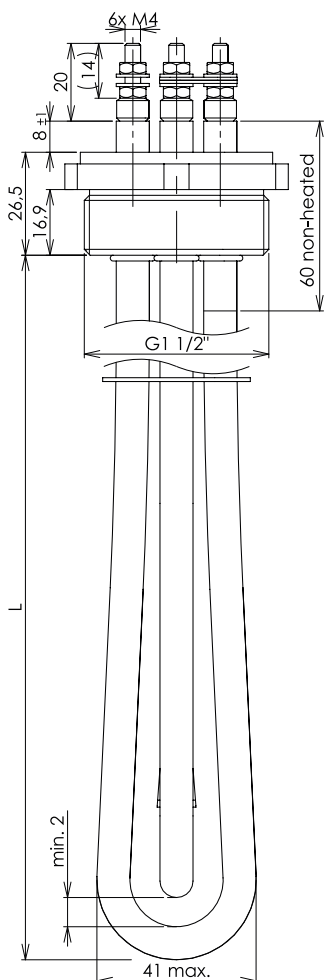


With the DTV47EI we developed a standard set of immersion heaters for the heating of water.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 1 – 12 kW
- Watt density: 10 W/cm²
- Brass screw plug 1½"
- Heating elements: SS 316L - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional



DIRAC REFERENCE	POWER [W]	LENGTH [mm]
DTV47EI010	1000	116
DTV47EI020	2000	170
DTV47EI030	3000	235
DTV47EI045	4500	335
DTV47EI060	6000	435
DTV47EI075	7500	535
DTV47EI090	9000	635
DTV47EI100	10000	700
DTV47EI120	12000	799

OTHER VARIANTS ON DEMAND

OPTIONS

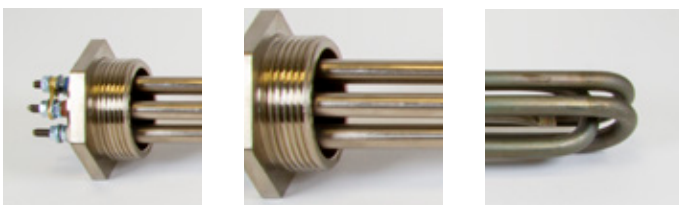
- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



DTV471

Screw plug immersion heater for water with additives

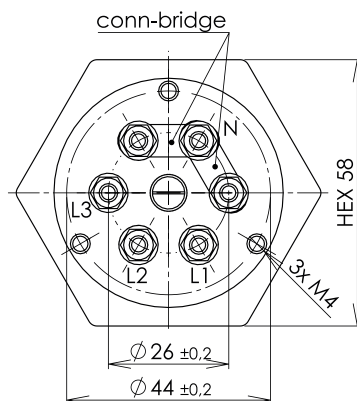
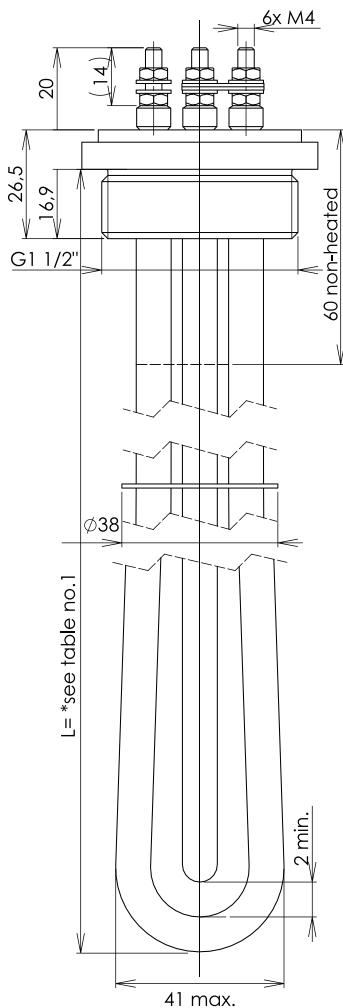


With the DTV471 we developed a standard set of immersion heaters for the heating of water with additives.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 3 – 15 kW
- Watt density: 12,5 W/cm²
- SS 304 screw plug 1½"
- Heating elements: Incoloy 825 - Ø 8,5 mm
- TIG welding of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional



DIRAC REFERENCE	POWER [W]	LENGTH [mm]
DTV471030	3000	205
DTV471045	4500	285
DTV471060	6000	370
DTV471075	7500	450
DTV471090	9000	535
DTV471120	12000	700
DTV471150	15000	865

OTHER VARIANTS ON DEMAND

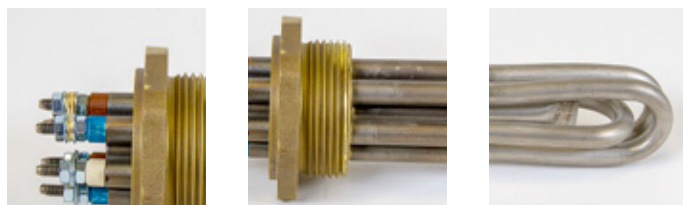
OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page

DTV47EG

Screw plug immersion heater for glycol

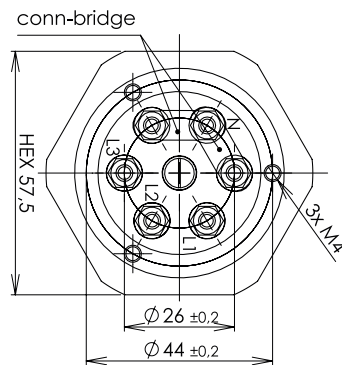
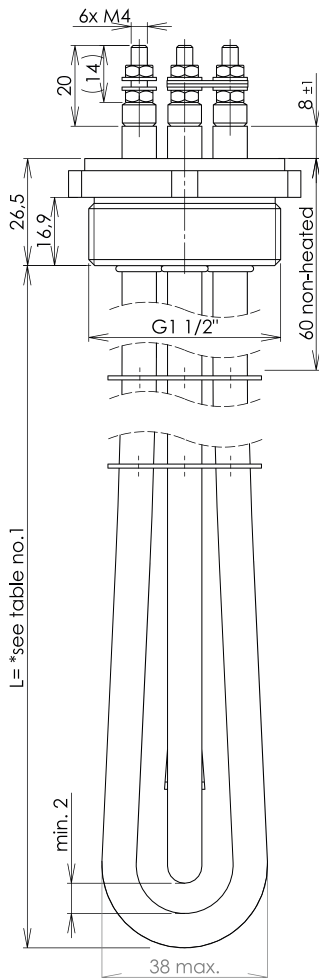


With the DTV47EG we developed a standard set of immersion heaters for the heating of glycol-water (maximum 50%).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 1 – 12 kW
- Watt density: 5 W/cm²
- Brass screw plug 1½"
- Heating elements: SS 321 - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional



DIRAC REFERENCE	POWER	LENGTH
	[W]	[mm]
DTV47EG010	1000	170
DTV47EG015	1500	235
DTV47EG020	2000	300
DTV47EG030	3000	435
DTV47EG045	4500	635
DTV47EG060	6000	835
DTV47EG120	12000	1530

OTHER VARIANTS ON DEMAND

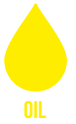
OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page

DTV47HI

Screw plug immersion heater for oil



With the DTV47HI we developed a standard set of immersion heaters for the heating of oil (up to 120°C).

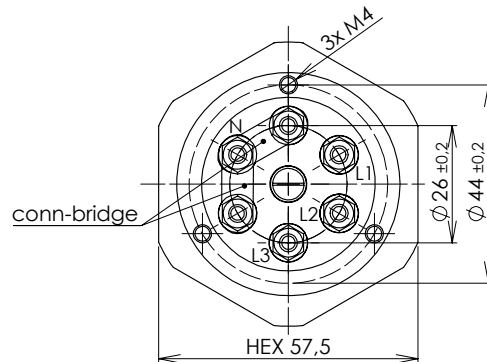
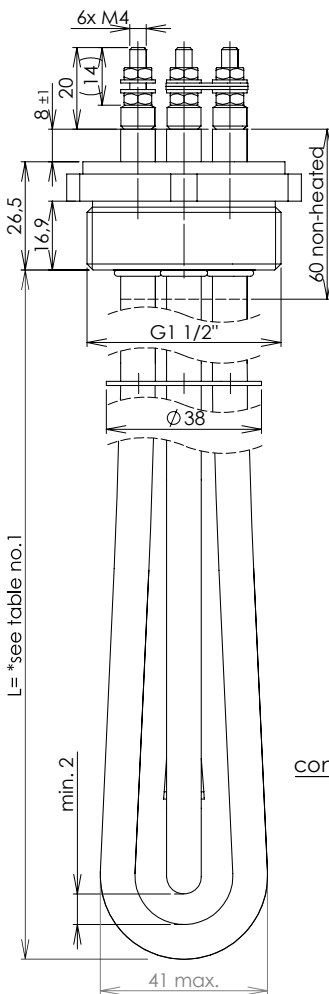
On demand, adjustments can be made if the purchase quantity justifies this.

We can tailor make the desired solution.

DTV47HI + DKBA105



- Voltage: 230/400V
- Output: 0,5 – 3 kW
- Watt density: 2,5 W/cm²
- Brass screw plug 1½"
- Heating elements: SS 321 - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional



DIRAC REFERENCE	POWER	LENGTH
	[W]	[mm]
DTV47HI005	500	170
DTV47HI007	750	235
DTV47HI010	1000	300
DTV47HI015	1500	435
DTV47HI020	2000	570
DTV47HI030	3000	835

(*) only 230V - 1ph

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Small**: DKBA078-P1 (no regulation)
- Aluminium connection box **Large**: DKBA105-P1 (for thermostat)

For more details see full option page

DTV47HDI

Screw plug immersion heater for oil

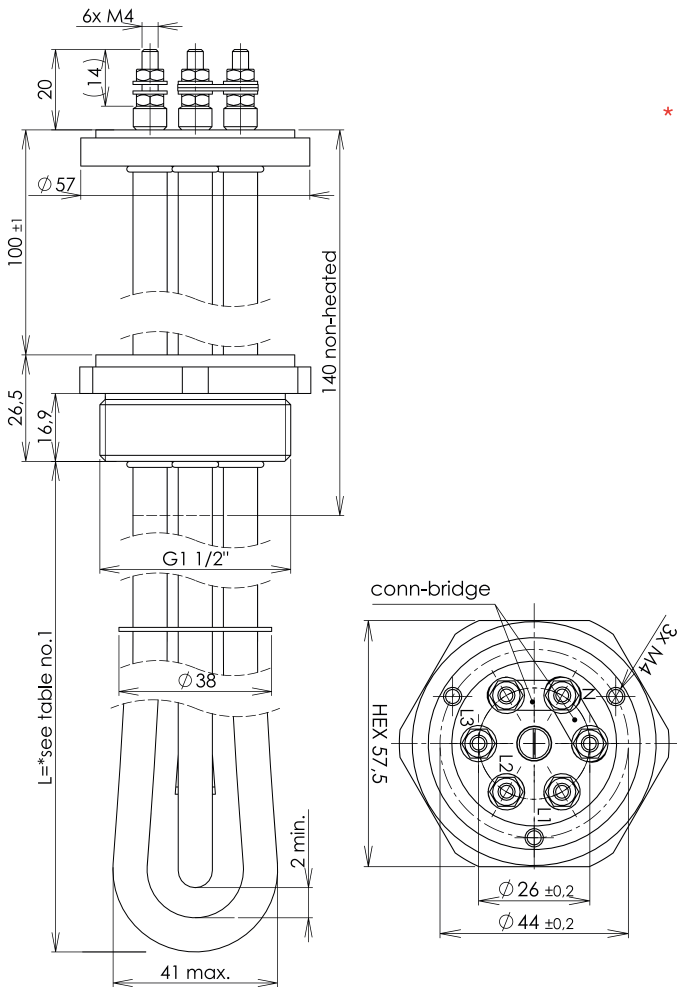


With the DTV47HDI we developed a standard set of immersion heaters for the heating of oil at high temperature (up to 250°C).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 0,5 – 3 kW
- Watt density: 2,5 W/cm²
- Brass screw plug 1½"
- Brass flange Ø 57 mm,
- for box mounting
- Heating elements: SS 321 - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large - on flange at 100 mm distance) is optional



DIRAC REFERENCE	POWER	LENGTH
	[W]	[mm]
* DTV47HDI005	500	170
DTV47HDI007	750	235
DTV47HDI010	1000	300
DTV47HDI015	1500	435
DTV47HDI020	2000	570
DTV47HDI030	3000	835

(*) only 230V - 1ph

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



OPTIONS

ACCESSORIES BOXES



DKBA078-P1

- Aluminium box Small
 - 78 x 78 x 78 mm
 - no regulation
 - 1 pre-drilled holes :
 • M20 gland for power cable



DKBA105-P1

- Aluminium box Large
 - 105 x108 x 104 mm
 - for thermostat
 - 3 pre-drilled holes :
 • 1 PG 16 gland for power cable
 • 1 PG 11 gland for control cable
 • 1 PG 11 plug for regulation thermostat

ACCESSORIES ASSEMBLY



JSA-DTV47

Fiberglass gasket



JCU-DTV47

Copper gasket



E0047

Brass backnut



EIN47

Stainless steel backnut

THERMOSTATS

	THERMOSTATS	# MORE INFO ON EACH PRODUCT'S SPECIFIC DATASHEET
CAD040-MONO-I	Thermostat 0-40°C - mono	
CAD090-MONO-I	Thermostat 0-90°C - mono	
CAD110-MONO-I	Thermostat 30-110°C - mono	
CAD300-MONO-I	Thermostat 50-300°C - mono	
CAD040-TRI-I	Thermostat 0-40°C - tri	
CAD090-TRI-I	Thermostat 0-90°C - tri	
CAD110-TRI-I	Thermostat 30-110°C - tri	
CAD300-TRI-I	Thermostat 50-300°C - tri	
* CABS4080/98-I	Thermostat 40-80 / limiter 98 - bi-pole	
* CATS4080/98-I	Thermostat 40-80 / limiter 98 - tri-pole	



BIN47

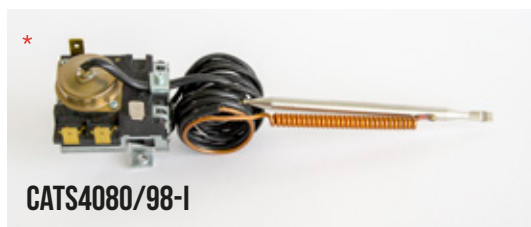
Stainless steel weld ring
 - treated G1 1/2"

Thermal pocket diameter and length must be checked against thermostat sensor length and diameter, eventually resulting in custom made heaters.
 See next page

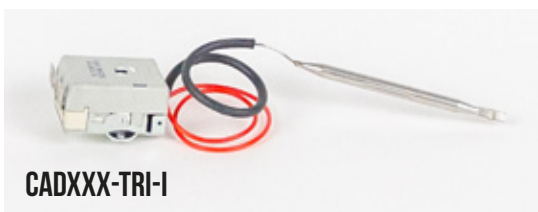
* only possible with custom made heater with thermal pocket Ø 10x0,5 mm



CADXXX-MONO-I



CATS4080/98-I



CADXXX-TRI-I



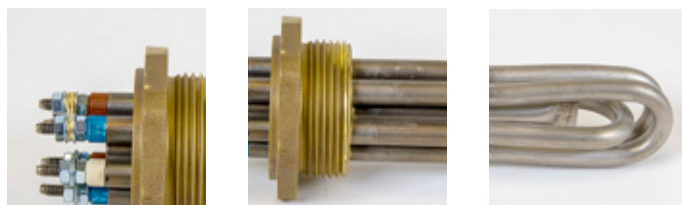
CABS4080/98-I

THERMOSTAT COMPATIBILITY

DIRAC IMMERSION HEATERS	POWER [W]	LENGTH THERMAL POCKET [mm]	CADO40-MONO-I CADO90-MONO-I CAD110-MONO-I		CAD300-MONO-I		CADO40-TRI-I CADO90-TRI-I CAD110-TRI-I		CAD300-TRI-I
			DIRECT	EXT. CONTACTOR	DIRECT	EXT. CONTACTOR	DIRECT	DIRECT	
DTV47HI005	500	128	✗	✗	✗	✗	✗	✗	
DTV47HI007	750	194	✓	✓	✗	✗	✓	✗	
DTV47HI010	1000	258	✓	✓	✗	✗	✓	✗	
DTV47HI015	1500	394	✓	✓	✗	✗	✓	✗	
DTV47HI020	2000	529	✓	✓	✗	✗	✓	✗	
DTV47HI030	3000	794	✓	✓	✗	✗	✓	✗	
DTV47HDI005	500	228	✓	✓	✓	✓	✗	✗	
DTV47HDI007	750	294	✓	✓	✓	✓	✗	✗	
DTV47HDI010	1000	358	✓	✓	✓	✓	✗	✗	
DTV47HDI015	1500	494	✓	✓	✓	✓	✓	✓	
DTV47HDI020	2000	629	✓	✓	✓	✓	✓	✓	
DTV47HDI030	3000	894	✓	✓	✓	✓	✓	✓	
DTV47EG010	1000	165	✓	✓	✗	✗	✓	✗	
DTV47EG015	1500	230	✓	✓	✗	✗	✓	✗	
DTV47EG020	2000	295	✓	✓	✗	✗	✓	✗	
DTV47EG030	3000	430	✓	✓	✗	✗	✓	✗	
DTV47EG045	4500	630	✓	✓	✗	✗	✓	✗	
DTV47EG060	6000	830	✗	✓	✗	✗	✓	✗	
DTV47EI010	1000	100	✗	✗	✗	✗	✗	✗	
DTV47EI020	2000	165	✓	✓	✗	✗	✓	✗	
DTV47EI030	3000	230	✓	✓	✗	✗	✓	✗	
DTV47EI045	4500	330	✓	✓	✗	✗	✓	✗	
DTV47EI060	6000	430	✗	✓	✗	✗	✓	✗	
DTV47EI075	7500	530	✗	✓	✗	✗	✓	✗	
DTV47EI090	9000	630	✗	✓	✗	✗	✓ (3X400V)	✗	
DTV47EI100	10000	695	✗	✓	✗	✗	✓ (3X400V)	✗	
DTV47I030	3000	175	✓	✓	✗	✗	✓	✗	
DTV47I045	4500	255	✓	✓	✗	✗	✓	✗	
DTV47I060	6000	340	✗	✓	✗	✗	✓	✗	
DTV47I075	7500	420	✗	✓	✗	✗	✓	✗	
DTV47I090	9000	505	✗	✓	✗	✗	✓ (3X400V)	✗	
DTV47I120	12000	670	✗	✓	✗	✗	✗	✗	
DTV47I150	15000	835	✗	✓	✗	✗	✗	✗	

DTV48EI

Screw plug immersion heater for water

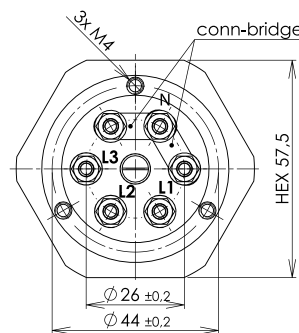
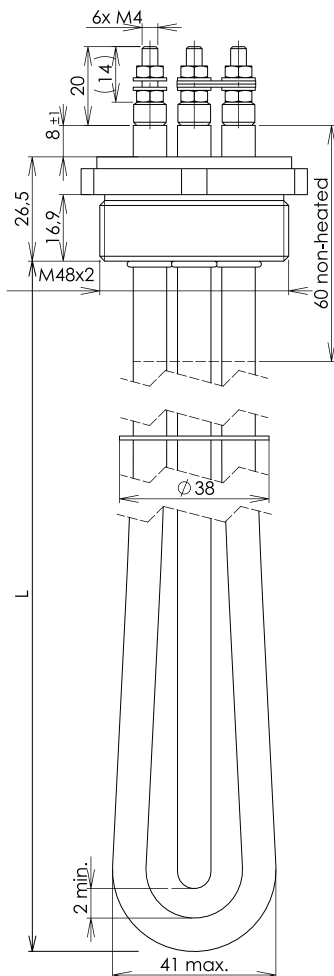


With the DTV48EI we developed a standard set of immersion heaters for the heating of water.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 1 – 12 kW
- Watt density: 10 W/cm²
- Brass screw plug M48x2
- Heating elements: SS 316L - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional



REFERENCE	POWER [W]	LENGTH [mm]
DTV48EI010	1000	105
DTV48EI020	2000	170
DTV48EI030	3000	235
DTV48EI045	4500	335
DTV48EI060	6000	435
DTV48EI075	7500	535
DTV48EI090	9000	635
DTV48EI100	10000	700
DTV48EI120	12000	799

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



DTV48I

Screw plug immersion heater for water with additives

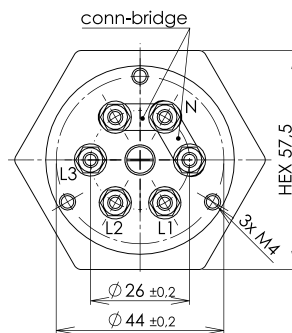
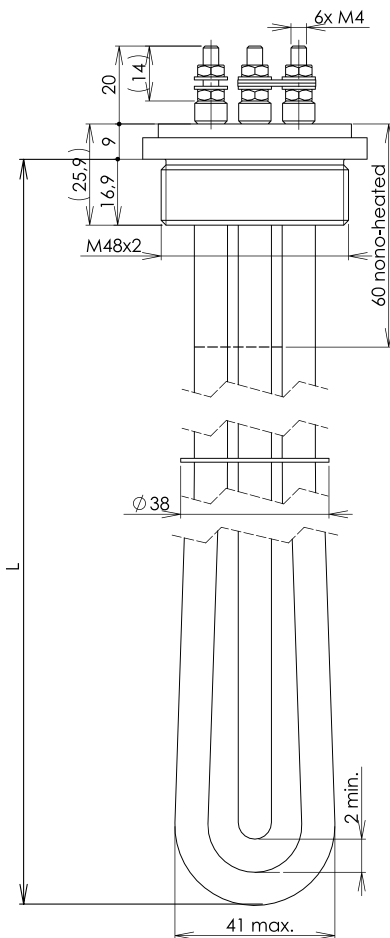


With the DTV48I we developed a standard set of immersion heaters for the heating of water with additives.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 3 – 15 kW
- Watt density: 12,5 W/cm²
- SS304 screw plug M48x2
- Heating elements: Incoloy 825 - Ø 8,5 mm
- TIG welding of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional



REFERENCE	POWER [W]	LENGTH [mm]
DTV48I030	3000	205
DTV48I045	4500	285
DTV48I060	6000	370
DTV48I075	7500	450
DTV48I090	9000	535
DTV48I120	12000	700
DTV48I150	15000	865

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page

DTV48EG

Screw plug immersion heater for glycol



With the DTV48EG we developed a standard set of immersion heaters for the heating of glycol-water (maximum 50%).

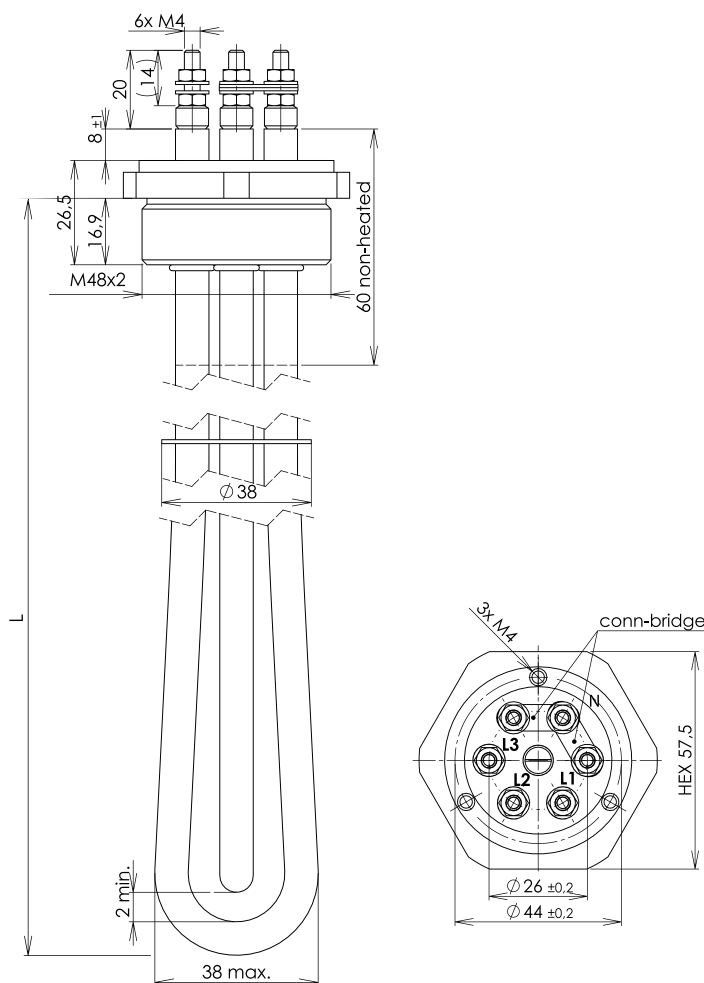
On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 1 – 12 kW
- Watt density: 5 W/cm²
- Brass screw plug M48x2
- Heating elements: SS 321 - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional

REFERENCE	POWER [W]	LENGTH [mm]
DTV48EG010	1000	170
DTV48EG015	1500	235
DTV48EG020	2000	300
DTV48EG030	3000	435
DTV48EG045	4500	635
DTV48EG060	6000	835
DTV48EG120	12000	1530

OTHER VARIANTS ON DEMAND



OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



DTV48HI

Screw plug immersion heater for oil

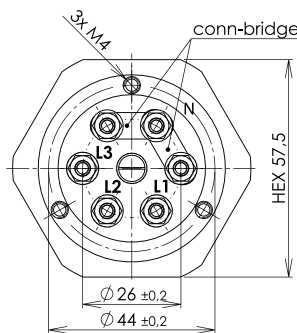
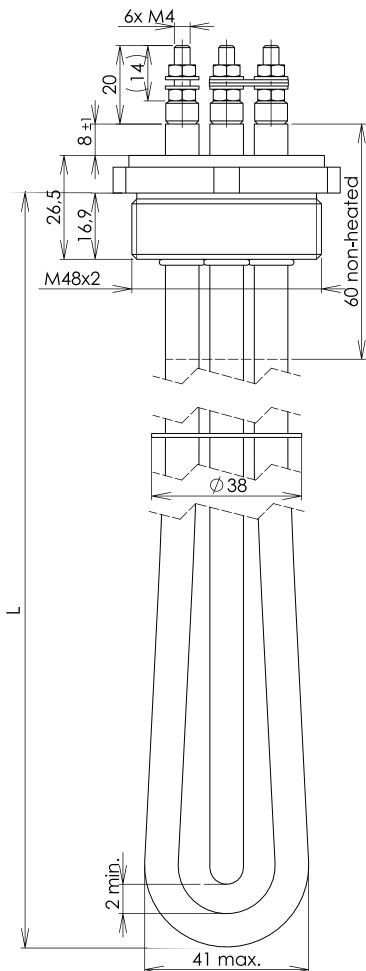


With the DTV48HI we developed a standard set of immersion heaters for the heating of oil (up to 120°C).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 0,5 – 3 kW
- Watt density: 2,5 W/cm²
- Brass screw plug M48x2
- Heating elements: SS 321 - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional



DIRAC REFERENCE	POWER [W]	LENGTH [mm]
* DTV48HI005	500	170
DTV48HI007	750	235
DTV48HI010	1000	300
DTV48HI015	1500	435
DTV48HI020	2000	570
DTV48HI030	3000	835

(*) only 230V-1ph

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page

DTV48HDI

Screw plug immersion heater for hot oil

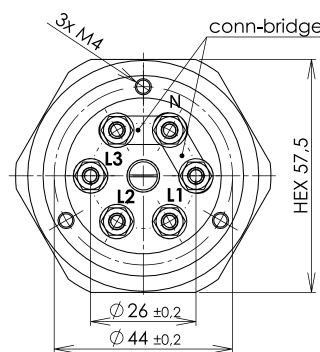
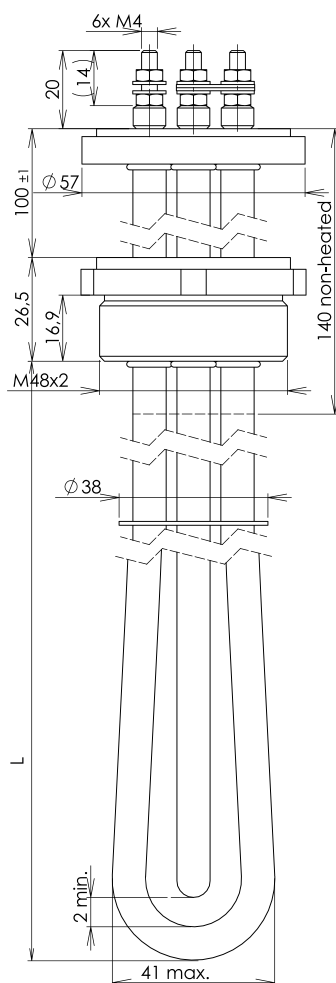


With the DTV48HDI we developed a standard set of immersion heaters for the heating of oil at high temperature (up to 250°C).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 0,5 – 3 kW
- Watt density: 2,5 W/cm²
- Brass screw plug M48x2
- Brass flange Ø 57 mm,
- for box mounting
- Stainless steel 321 heating elements Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large - on flange at 100 mm distance) is optional



REFERENCE	POWER [W]	LENGTH [mm]
* DTV48HDI005	500	170
DTV48HDI007	750	235
DTV48HDI010	1000	300
DTV48HDI015	1500	435
DTV48HDI020	2000	570
DTV48HDI030	3000	835

(*) only 230V-1ph

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



OPTIONS

ACCESSORIES BOXES



DKBA078-P1

- Aluminium box Small
 - 78 x 78 x 78 mm
 - no regulation
 - 1 pre-drilled holes :
 • M20 gland for power cable



DKBA105-P1

- Aluminium box Large
 - 105 x108 x 104 mm
 - for thermostat
 - 3 pre-drilled holes :
 • 1 PG 16 gland for power cable
 • 1 PG 11 gland for control cable
 • 1 PG 11 plug for regulation thermostat

ACCESSORIES ASSEMBLY



JSA-DTV48

Fiberglass gasket



JCU-DTV48

Copper gasket



E0048

Brass backnut



EIN48

Stainless steel backnut

THERMOSTATS

	THERMOSTATS
CAD040-MONO-I	Thermostat 0-40°C - mono
CAD090-MONO-I	Thermostat 0-90°C - mono
CAD110-MONO-I	Thermostat 30-110°C - mono
CAD300-MONO-I	Thermostat 50-300°C - mono
CAD040-TRI-I	Thermostat 0-40°C - tri
CAD090-TRI-I	Thermostat 0-90°C - tri
CAD110-TRI-I	Thermostat 30-110°C - tri
CAD300-TRI-I	Thermostat 50-300°C - tri
* CABS4080/98-I	Thermostat 40-80 / limiter 98 - bi-pole
* CATS4080/98-I	Thermostat 40-80 / limiter 98 - tri-pole

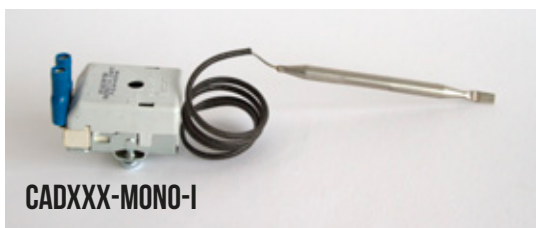
* only possible with custom made heater with thermal pocket Ø 10x0,5 mm



BIN48

Stainless steel weld ring
 - treated M48

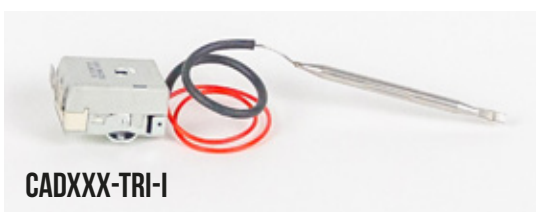
Thermal pocket diameter and length must be checked against thermostat sensor length and diameter, eventually resulting in custom made heaters.
 See next page



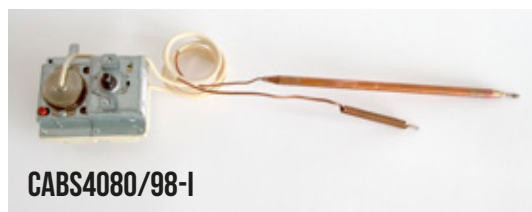
CADXXX-MONO-I



CATS4080/98-I



CADXXX-TRI-I



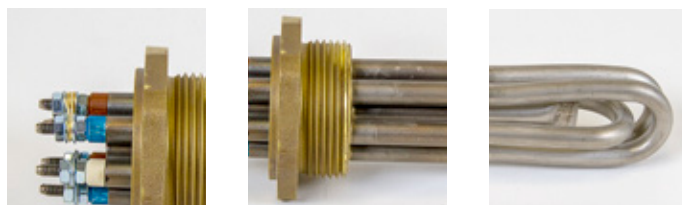
CABS4080/98-I

THERMOSTAT COMPATIBILITY

DIRAC IMMERSION HEATERS	POWER [W]	THERMAL POCKET L [mm]	CAD040-MONO-I CAD090-MONO-I CAD110-MONO-I		CAD300 MONO-I		CAD040-TRI-I CAD090-TRI-I CAD110-TRI-I		CAD300-TRI-I	
			DIRECT	EXT. CONTACTOR	DIRECT	EXT. CONTACTOR	DIRECT	DIRECT		
DTV48HI005	500	170	✗	✗	✗	✗	✗	✗	✗	
DTV48HI007	750	235	✓	✓	✗	✗	✓	✗	✗	
DTV48HI010	1000	300	✓	✓	✗	✗	✓	✗	✗	
DTV48HI015	1500	435	✓	✓	✗	✗	✓	✗	✗	
DTV48HI020	2000	570	✓	✓	✗	✗	✓	✗	✗	
DTV48HI030	3000	835	✓	✓	✗	✗	✓	✗	✗	
DTV48HDI005	500	170	✓	✓	✓	✓	✗	✗	✗	
DTV48HDI007	750	235	✓	✓	✓	✓	✗	✗	✗	
DTV48HDI010	1000	300	✓	✓	✓	✓	✗	✗	✗	
DTV48HDI015	1500	435	✓	✓	✓	✓	✓	✓	✓	
DTV48HDI020	2000	570	✓	✓	✓	✓	✓	✓	✓	
DTV48HDI030	3000	835	✓	✓	✓	✓	✓	✓	✓	
DTV48EG010	1000	170	✓	✓	✗	✗	✓	✗	✗	
DTV48EG015	1500	235	✓	✓	✗	✗	✓	✗	✗	
DTV48EG020	2000	300	✓	✓	✗	✗	✓	✗	✗	
DTV48EG030	3000	435	✓	✓	✗	✗	✓	✗	✗	
DTV48EG045	4500	635	✓	✓	✗	✗	✓	✗	✗	
DTV48EG060	6000	835	✗	✓	✗	✗	✓	✗	✗	
DTV48EI010	1000	105	✗	✗	✗	✗	✗	✗	✗	
DTV48EI020	2000	170	✓	✓	✗	✗	✓	✗	✗	
DTV48EI030	3000	235	✓	✓	✗	✗	✓	✗	✗	
DTV48EI045	4500	335	✓	✓	✗	✗	✓	✗	✗	
DTV48EI060	6000	435	✗	✓	✗	✗	✓	✗	✗	
DTV48EI075	7500	535	✗	✓	✗	✗	✓	✗	✗	
DTV48EI090	9000	635	✗	✓	✗	✗	✓ (3X400V)	✗	✗	
DTV48EI100	10000	700	✗	✓	✗	✗	✓ (3X400V)	✗	✗	
DTV48I030	3000	205	✓	✓	✗	✗	✓	✗	✗	
DTV48I045	4500	285	✓	✓	✗	✗	✓	✗	✗	
DTV48I060	6000	370	✗	✓	✗	✗	✓	✗	✗	
DTV48I075	7500	450	✗	✓	✗	✗	✓	✗	✗	
DTV48I090	9000	535	✗	✓	✗	✗	✓ (3X400V)	✗	✗	
DTV48I120	12000	700	✗	✓	✗	✗	✗	✗	✗	
DTV48I150	15000	865	✗	✓	✗	✗	✗	✗	✗	

DTV60EI

Screw plug immersion heater for water

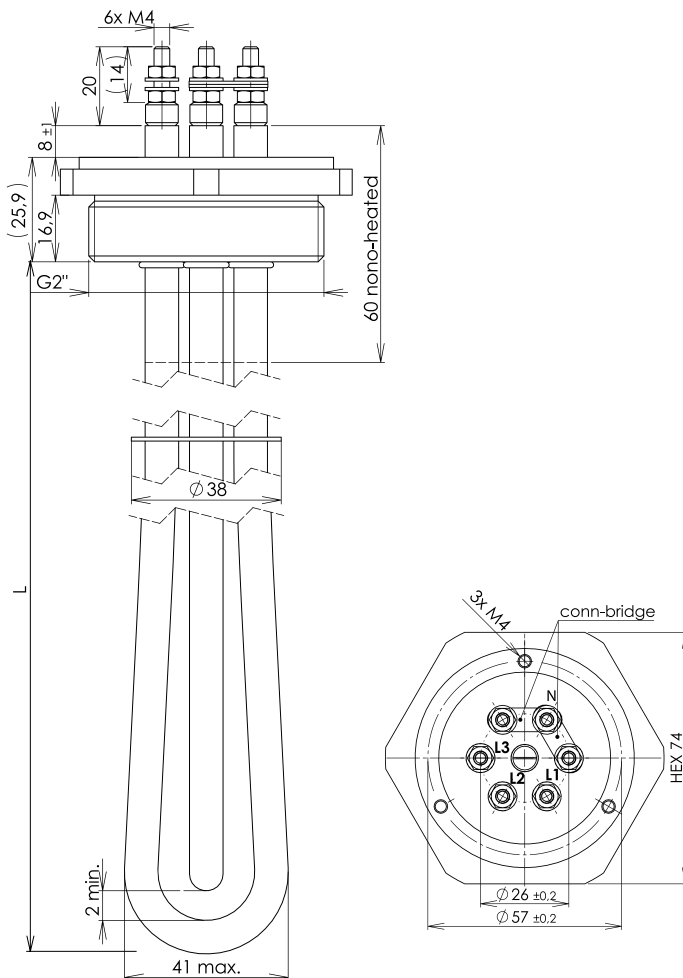


With the DTV60EI we developed a standard set of immersion heaters for the heating of water.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 1 – 12 kW
- Watt density: 10 W/cm²
- Brass screw plug G2"
- Heating elements: SS 316L - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional



REFERENCE	POWER [W]	LENGTH [mm]
DTV60EI010	1000	105
DTV60EI020	2000	170
DTV60EI030	3000	235
DTV60EI045	4500	335
DTV60EI060	6000	435
DTV60EI075	7500	535
DTV60EI090	9000	635
DTV60EI100	10000	700
DTV60EI120	12000	799

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



DTV60I

Screw plug immersion heater for water with additives

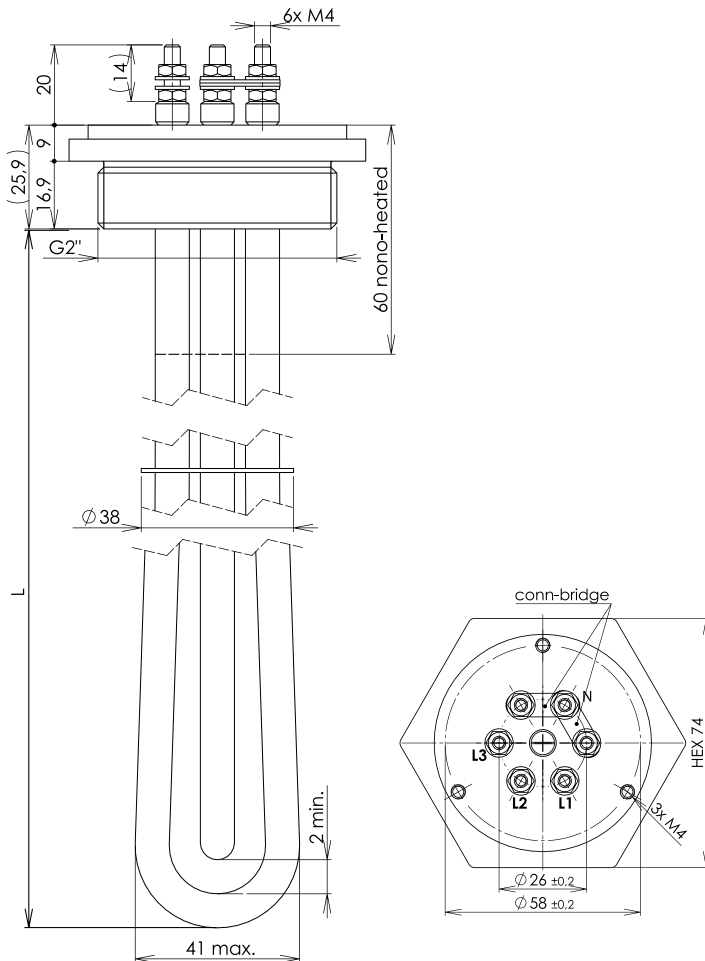


With the DTV60I we developed a standard set of immersion heaters for the heating of water with additives.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 3 – 15 kW
- Watt density: 12,5 W/cm²
- SS 304 screw plug G2"
- Heating elements: Incoloy 825 - Ø 8,5 mm
- TIG welding of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional



REFERENCE	POWER [W]	LENGTH [mm]
DTV60I030	3000	205
DTV60I045	4500	285
DTV60I060	6000	370
DTV60I075	7500	450
DTV60I090	9000	535
DTV60I120	12000	700
DTV60I150	15000	865

OTHER VARIANTS ON DEMAND

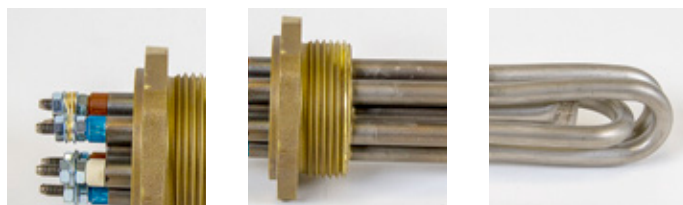
OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page

DTV60EG

Screw plug immersion heater for glycol



With the DTV60EG we developed a standard set of immersion heaters for the heating of glycol-water (maximum 50%).

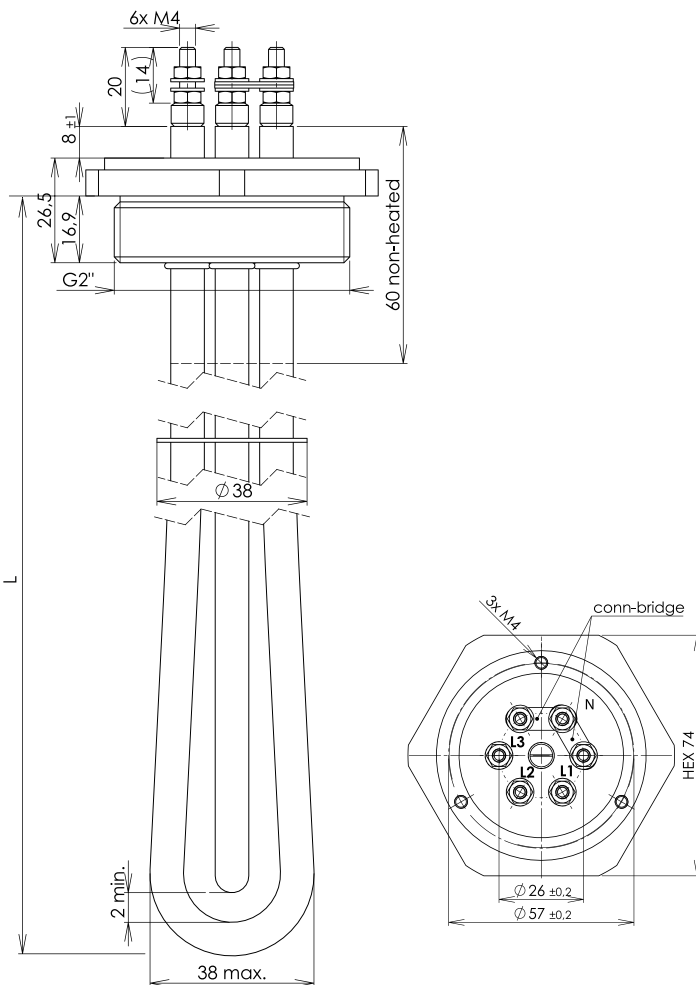
On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 1 – 12 kW
- Watt density: 5 W/cm²
- Brass screw plug G2"
- Heating elements: SS 321 - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional

REFERENCE	POWER	LENGTH
	[W]	[mm]
DTV60EG010	1000	170
DTV60EG015	1500	235
DTV60EG020	2000	300
DTV60EG030	3000	435
DTV60EG045	4500	635
DTV60EG060	6000	835
DTV60EG120	12000	1530

OTHER VARIANTS ON DEMAND



OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



DTV60HI

Screw plug immersion heater for oil



With the DTV60HI we developed a standard set of immersion heaters for the heating of oil (up to 120°C).

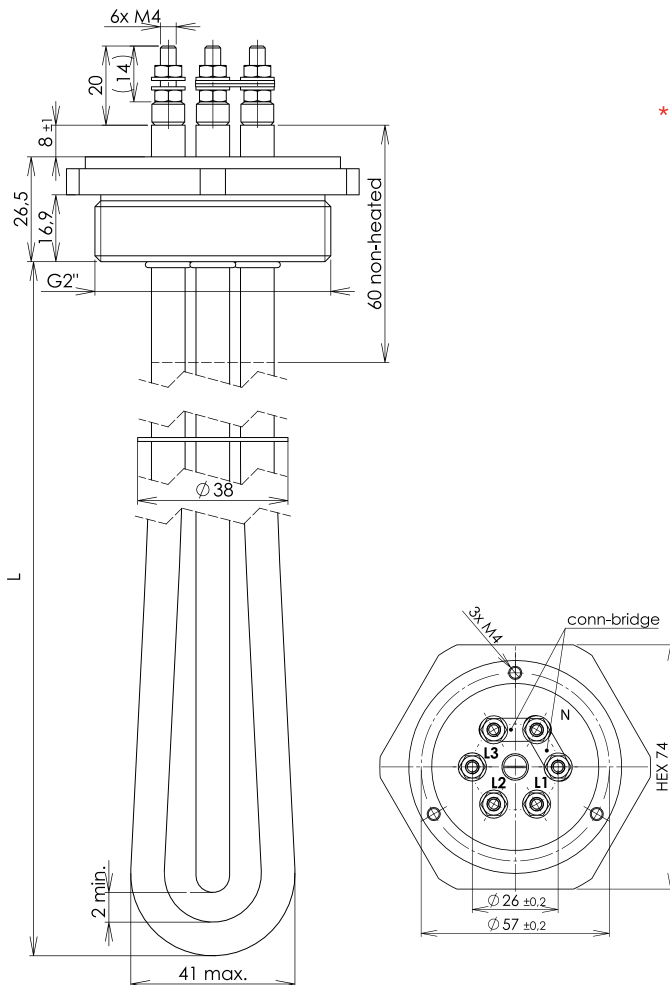
On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 0,5 – 3 kW
- Watt density: 2,5 W/cm²
- Brass screw plug G2"
- Heating elements: SS 321 - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large) is optional

DIRAC REFERENCE	POWER [W]	LENGTH [mm]
* DTV60HI005	500	170
DTV60HI007	750	235
DTV60HI010	1000	300
DTV60HI015	1500	435
DTV60HI020	2000	570
DTV60HI030	3000	835

(*) only 230V-1ph



OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page

DTV60HDI

Screw plug immersion heater for hot oil

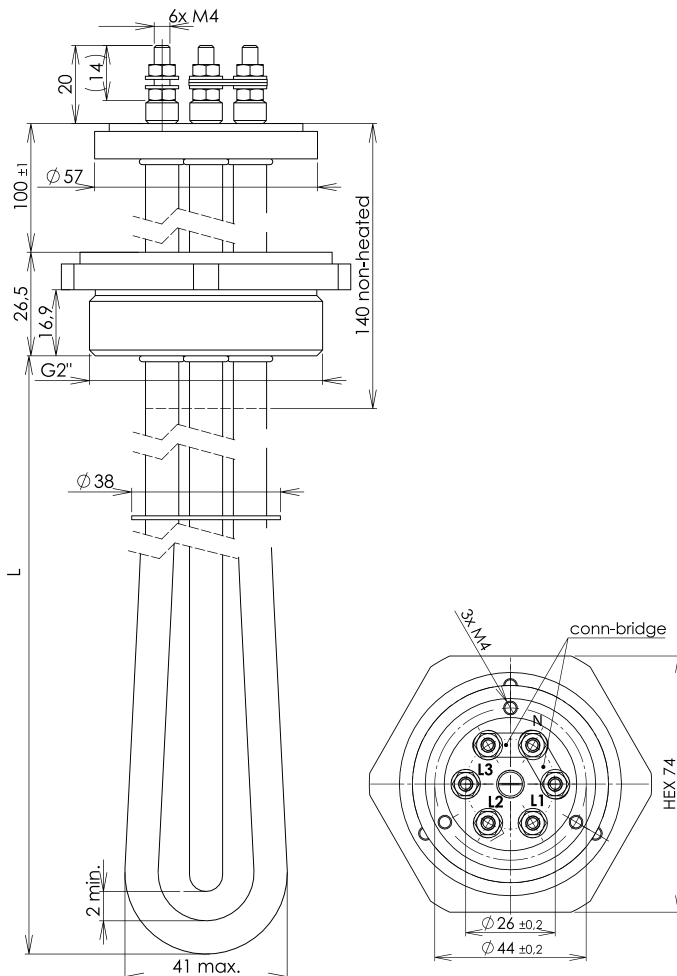


With the DTV60HDI we developed a standard set of immersion heaters for the heating of oil at high temperature (up to 250°C).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 0,5 – 3 kW
- Watt density: 2,5 W/cm²
- Brass screw plug G2
- Brass flange Ø 57 mm,
- for box mounting
- Heating elements: SS 321 - Ø 8,5 mm
- Brazing of elements
- Pocket for thermostat: Ø 8 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (small or large - on flange at 100 mm distance) is optional



REFERENCE	POWER [W]	LENGTH [mm]
* DTV60HDI005	500	170
DTV60HDI007	750	235
DTV60HDI010	1000	300
DTV60HDI015	1500	435
DTV60HDI020	2000	570
DTV60HDI030	3000	835

(*) only 230V-1ph

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Small**: **DKBA078-P1** (no regulation)
- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



OPTIONS

ACCESSORIES BOXES



DKBA078-P1

- Aluminium box Small
 - 78 x 78 x 78 mm
 - no regulation
 - 1 pre-drilled holes :
 • M20 gland for power cable



DKBA105-P1

- Aluminium box Large
 - 105 x108 x 104 mm
 - for thermostat
 - 3 pre-drilled holes :
 • 1 PG 16 gland for power cable
 • 1 PG 11 gland for control cable
 • 1 PG 11 plug for regulation thermostat

ACCESSORIES ASSEMBLY



JSA-DTV60

Fiberglass gasket



JCU-DTV60

Copper gasket



E0060

Brass backnut



EIN60

Stainless steel backnut

THERMOSTATS

	THERMOSTATS
CAD040-MONO-I	Thermostat 0-40°C - mono
CAD090-MONO-I	Thermostat 0-90°C - mono
CAD110-MONO-I	Thermostat 30-110°C - mono
CAD300-MONO-I	Thermostat 50-300°C - mono
CAD040-TRI-I	Thermostat 0-40°C - tri
CAD090-TRI-I	Thermostat 0-90°C - tri
CAD110-TRI-I	Thermostat 30-110°C - tri
CAD300-TRI-I	Thermostat 50-300°C - tri
* CABS4080/98-I	Thermostat 40-80 / limiter 98 - bi-pole
* CATS4080/98-I	Thermostat 40-80 / limiter 98 - tri-pole

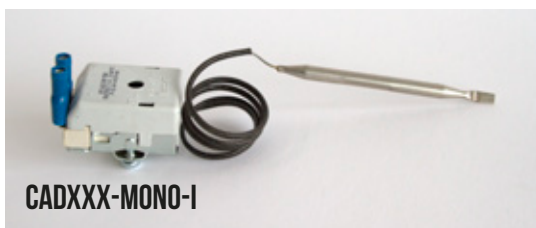
* only possible with custom made heater with thermal pocket Ø 10x0,5 mm



BIN60

Stainless steel weld ring
 - treated G2"

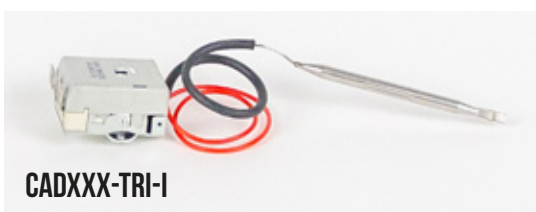
Thermal pocket diameter and length must be checked against thermostat sensor length and diameter, eventually resulting in custom made heaters.
 See next page



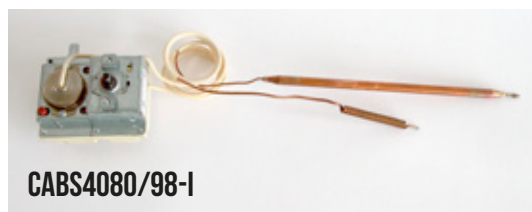
CADXXX-MONO-I



CATS4080/98-I



CADXXX-TRI-I



CABS4080/98-I

THERMOSTAT COMPATIBILITY

DIRAC IMMERSION HEATERS	POWER [W]	THERMAL POCKET L [mm]	CAD040-MONO-I CAD090-MONO-I CAD110-MONO-I		CAD300 MONO-I		CAD040-TRI-I CAD090-TRI-I CAD110-TRI-I		CAD300-TRI-I	
			DIRECT	EXT. CONTACTOR	DIRECT	EXT. CONTACTOR	DIRECT	DIRECT		
DTV60HI005	500	170	✗	✗	✗	✗	✗	✗	✗	
DTV60HI007	750	235	✓	✓	✗	✗	✓	✗	✗	
DTV60HI010	1000	300	✓	✓	✗	✗	✓	✗	✗	
DTV60HI015	1500	435	✓	✓	✗	✗	✓	✗	✗	
DTV60HI020	2000	570	✓	✓	✗	✗	✓	✗	✗	
DTV60HI030	3000	835	✓	✓	✗	✗	✓	✗	✗	
DTV60HDI005	500	170	✓	✓	✓	✓	✗	✗	✗	
DTV60HDI007	750	235	✓	✓	✓	✓	✗	✗	✗	
DTV60HDI010	1000	300	✓	✓	✓	✓	✗	✗	✗	
DTV60HDI015	1500	435	✓	✓	✓	✓	✓	✓	✓	
DTV60HDI020	2000	570	✓	✓	✓	✓	✓	✓	✓	
DTV60HDI030	3000	835	✓	✓	✓	✓	✓	✓	✓	
DTV60EG010	1000	170	✓	✓	✗	✗	✓	✗	✗	
DTV60EG015	1500	235	✓	✓	✗	✗	✓	✗	✗	
DTV60EG020	2000	300	✓	✓	✗	✗	✓	✗	✗	
DTV60EG030	3000	435	✓	✓	✗	✗	✓	✗	✗	
DTV60EG045	4500	635	✓	✓	✗	✗	✓	✗	✗	
DTV60EG060	6000	835	✗	✓	✗	✗	✓	✗	✗	
DTV60EI010	1000	105	✗	✗	✗	✗	✗	✗	✗	
DTV60EI020	2000	170	✓	✓	✗	✗	✓	✗	✗	
DTV60EI030	3000	235	✓	✓	✗	✗	✓	✗	✗	
DTV60EI045	4500	335	✓	✓	✗	✗	✓	✗	✗	
DTV60EI060	6000	435	✗	✓	✗	✗	✓	✗	✗	
DTV60EI075	7500	535	✗	✓	✗	✗	✓	✗	✗	
DTV60EI090	9000	635	✗	✓	✗	✗	✓ (3X400V)	✗	✗	
DTV60EI100	10000	700	✗	✓	✗	✗	✓ (3X400V)	✗	✗	
DTV60I030	3000	205	✓	✓	✗	✗	✓	✗	✗	
DTV60I045	4500	285	✓	✓	✗	✗	✓	✗	✗	
DTV60I060	6000	370	✗	✓	✗	✗	✓	✗	✗	
DTV60I075	7500	450	✗	✓	✗	✗	✓	✗	✗	
DTV60I090	9000	535	✗	✓	✗	✗	✓ (3X400V)	✗	✗	
DTV60I120	12000	700	✗	✓	✗	✗	✗	✗	✗	
DTV60I150	15000	865	✗	✓	✗	✗	✗	✗	✗	

DTV75EI

Screw plug immersion heater for water

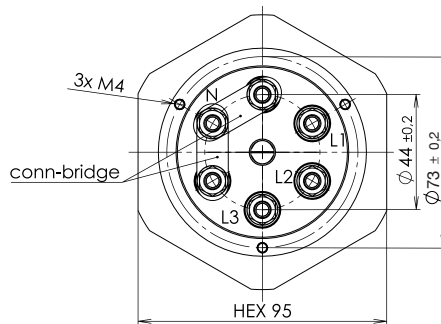
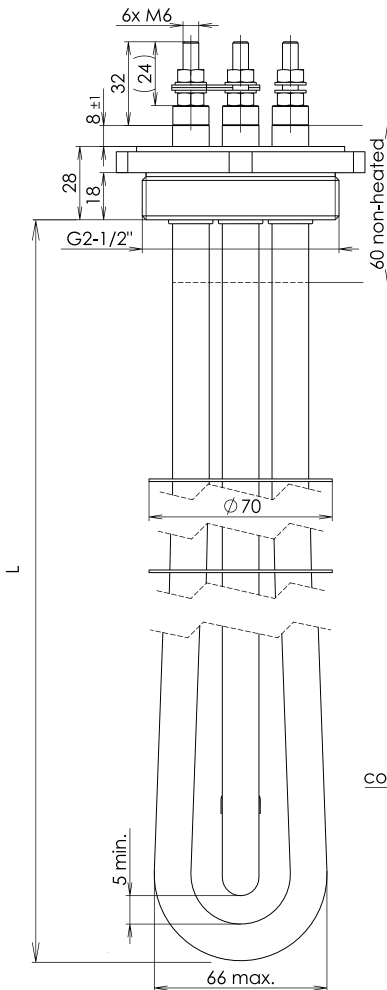


With the DTV75EI we developed a standard set of immersion heaters for the heating of water.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 3 – 32 kW
- Watt density: 10 W/cm²
- Brass screw plug G2 1/2"
- Heating elements: SS 316L - Ø 14 mm
- Brazing of elements
- Pocket for thermostat: Ø 10 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (large) is optional



REFERENCE	POWER [W]	LENGTH [mm]
DTV75EI030	3000	155
DTV75EI060	6000	270
DTV75EI090	9000	385
DTV75EI120	12000	495
DTV75EI150	15000	610
DTV75EI180	18000	725
DTV75EI240	24000	950
* DTV75EI320	32000	1255

(*) only 3x400V Delta

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



DTV75I

Screw plug immersion heater for water with additives

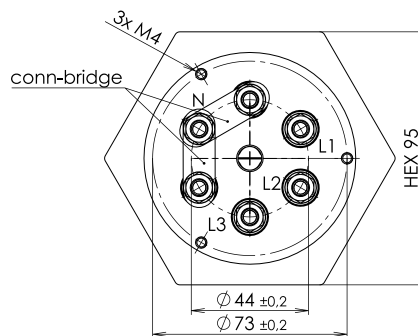
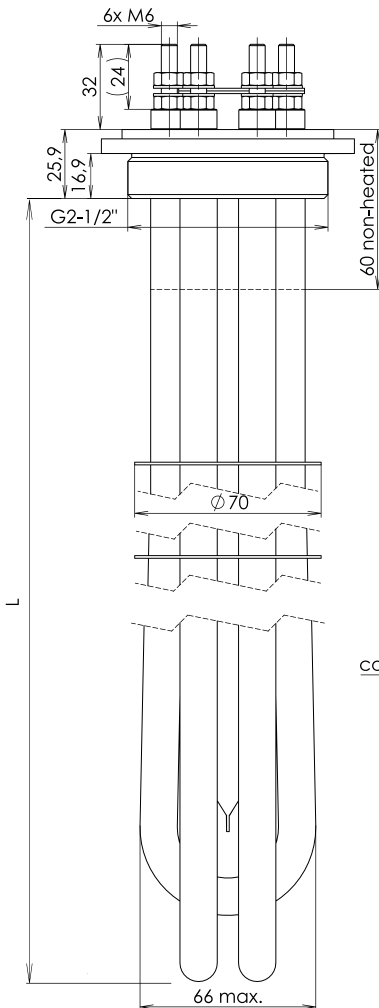


With the DTV75I we developed a standard set of immersion heaters for the heating of water with additives.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 3 – 32 kW
- Watt density: 12,5 W/cm²
- SS304 screw plug G2 1/2"
- Heating elements: Incoloy 825 - Ø 14 mm
- TIG welding of elements
- Pocket for thermostat: Ø 10 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (large) is optional



REFERENCE	POWER [W]	LENGTH [mm]
DTV75I030	3000	140
DTV75I060	6000	235
DTV75I090	9000	325
DTV75I120	12000	415
DTV75I150	15000	505
DTV75I180	18000	595
DTV75I240	24000	780
DTV75I320	32000	1020

*

(*) only 3x400V Delta

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page

DTV75EG

Screw plug immersion heater for glycol



With the DTV75EG we developed a standard set of immersion heaters for the heating of glycol-water (maximum 50%).

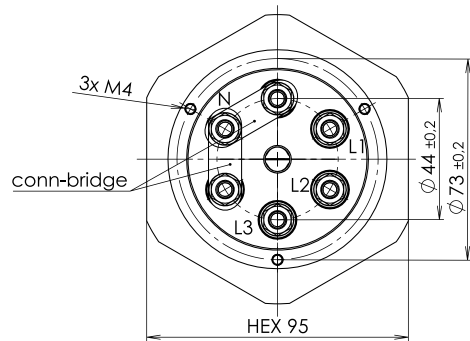
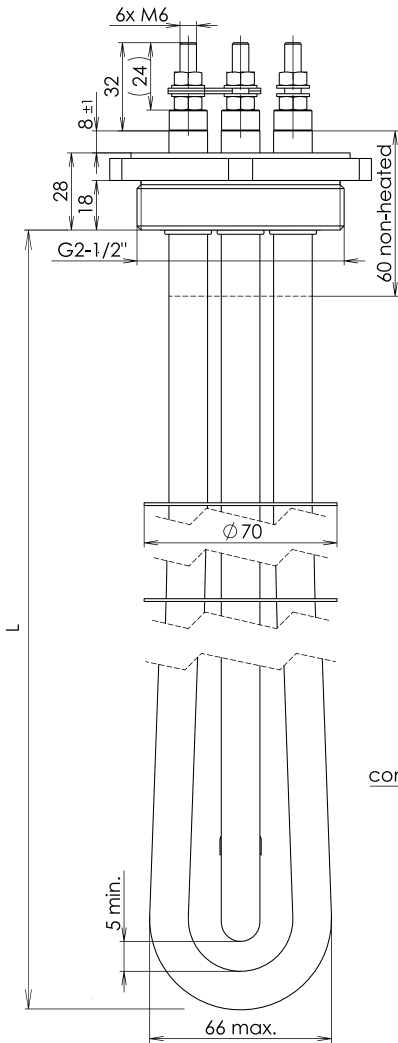
On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 3 – 20 kW
- Watt density: 5 W/cm²
- Brass screw plug G2 1/2"
- Heating elements: SS 321 - Ø 14 mm
- Brazing of elements
- Pocket for thermostat: Ø 10 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (large) is optional

REFERENCE	POWER [W]	LENGTH [mm]
DTV75EG030	3000	270
DTV75EG060	6000	500
DTV75EG090	9000	725
DTV75EG120	12000	955
DTV75EG160	16000	1255
DTV75EG200	20000	1560

OTHER VARIANTS ON DEMAND



OPTIONS

- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



DTV75HI

Screw plug immersion heater for oil



With the DTV75HI we developed a standard set of immersion heaters for the heating of oil (up to 120°C).

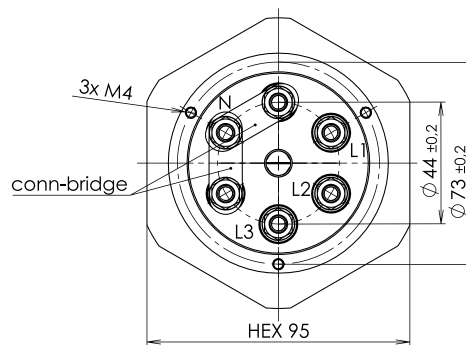
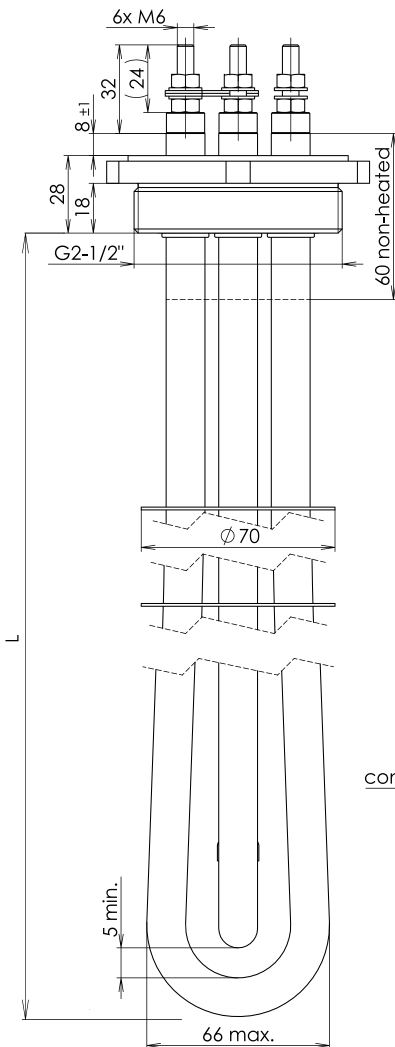
On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 1,5 – 10 kW
- Watt density: 2,5 W/cm²
- Brass screw plug G2 1/2"
- Heating elements: SS 321 - Ø 14 mm
- Brazing of elements
- Pocket for thermostat: Ø 10 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (large) is optional

DIRAC REFERENCE	POWER [W]	LENGTH [mm]
DTV75HI015	1500	270
DTV75HI030	3000	500
DTV75HI045	4500	730
DTV75HI060	6000	950
DTV75HI080	8000	1255
DTV75HI100	10000	1555

OTHER VARIANTS ON DEMAND



OPTIONS

- Aluminium connection box **Large: DKBA105-P1** (for thermostat)

For more details see full option page

DTV75HDI

Screw plug immersion heater for hot oil

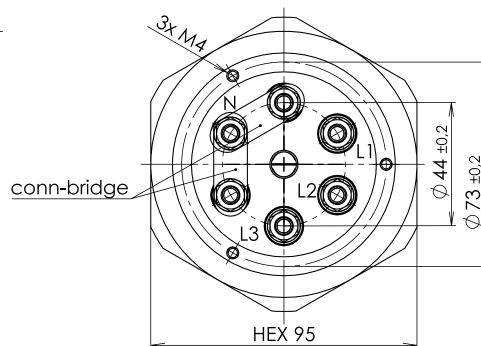
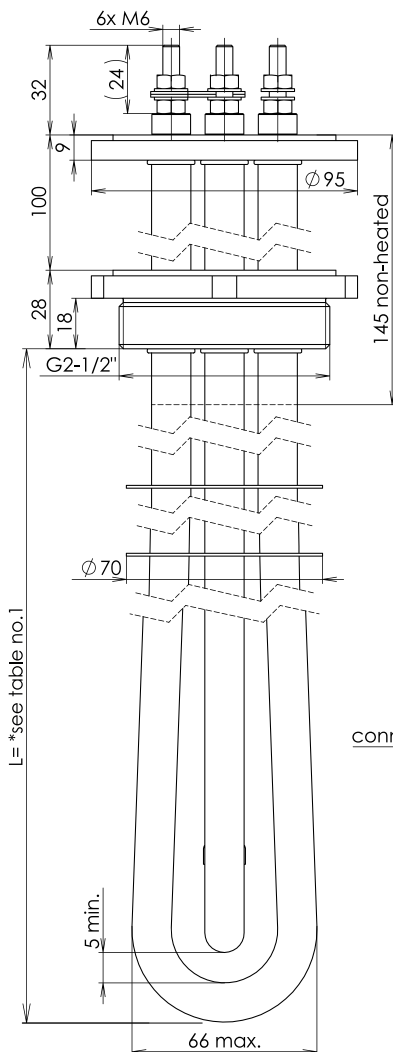


With the DTV75HDI we developed a standard set of immersion heaters for the heating of oil at high temperature (up to 250°C).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 1,5 – 10 kW
- Watt density: 2,5 W/cm²
- Brass screw plug G2 1/2"
- Brass flange Ø 95 mm, for box mounting
- Heating elements: SS 321 - Ø 14 mm
- Brazing of elements
- Pocket for thermostat: Ø10 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (large - on flange at 100 mm distance) is optional



REFERENCE	POWER [W]	LENGTH [mm]
DTV75HDI015	1500	270
DTV75HDI030	3000	500
DTV75HDI045	4500	730
DTV75HDI060	6000	950
DTV75HDI080	8000	1255
DTV75HDI100	10000	1555

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Large:** DKBA105-P1 (for thermostat)

For more details see full option page



OPTIONS

ACCESSORIES BOXES

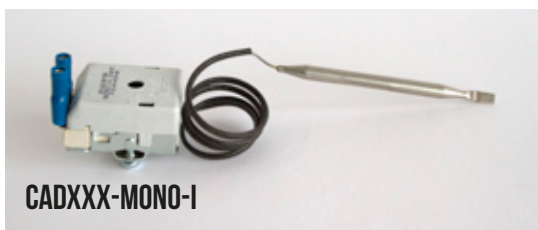


DKBA 105-P1

- Aluminium box Large
 - 105 x108 x 104 mm
 - for thermostat
 - 3 pre-drilled holes :
- 1 PG 16 gland for power cable
 - 1 PG 11 gland for control cable
 - 1 PG 11 plug for regulation thermostat

THERMOSTATS

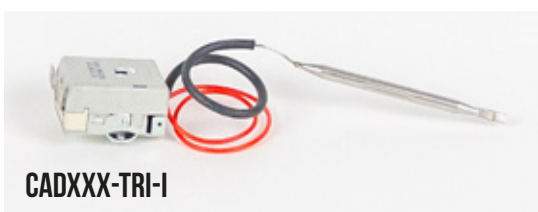
	THERMOSTATS
CAD040-MONO-I	Thermostat 0-40°C - mono
CAD090-MONO-I	Thermostat 0-90°C - mono
CAD110-MONO-I	Thermostat 30-110°C - mono
CAD300-MONO-I	Thermostat 50-300°C - mono
CAD040-TRI-I	Thermostat 0-40°C - tri
CAD090-TRI-I	Thermostat 0-90°C - tri
CAD110-TRI-I	Thermostat 30-110°C - tri
CAD300-TRI-I	Thermostat 50-300°C - tri
CABS4080/98-I	Thermostat 40-80 / limiter 98 - bi-pole
CATS4080/98-I	Thermostat 40-80 / limiter 98 - tri-pole



CADXXX-MONO-I



CATS4080/98-I



CADXXX-TRI-I



CABS4080/98-I

ACCESSORIES ASSEMBLY



JSA-DTV75
Fiberglass gasket



JCU-DTV75
Copper gasket



E0075
Brass backnut



EIN75
Stainless steel backnut



BIN75
Stainless steel weld ring
- treated G2 1/2"

Thermal pocket diameter and length must be checked against thermostat sensor length and diameter, eventually resulting in custom made heaters.
See next page

THERMOSTAT COMPATIBILITY

DIRAC IMMERSION HEATERS	POWER [W]	THERMAL POCKET L [mm]	CADO40-MONO-I CADO90-MONO-I CAD110-MONO-I		CAD300 MONO-I		CADO40-TRI-I CADO90-TRI-I CAD110-TRI-I		CAD300-TRI-I	CABS4080 /98	CATS4080 /98-I
			DIRECT	EXT. CONTACTOR	DIRECT	EXT. CONTACTOR	DIRECT	DIRECT	DIRECT	DIRECT	
DTV75EG030	3000	270	✓	✓	✗	✗	✓	✗	✓	✓	
DTV75EG060	6000	500	✗	✓	✗	✗	✓	✗	✗	✓	
DTV75EG090	9000	725	✗	✓	✗	✗	✓ (3X400V)	✗	✗	✓ (3X400V)	
DTV75EG120	12000	955	✗	✓	✗	✗	✗	✗	✗	✗	
DTV75EG160	16000	1255	✗	✓	✗	✗	✗	✗	✗	✗	
DTV75EG200	20000	1560	✗	✓	✗	✗	✗	✗	✗	✗	
DTV75EI030	3000	155	✓	✓	✗	✗	✓	✗	✗	✗	
DTV75EI060	6000	270	✗	✓	✗	✗	✓	✗	✗	✓	
DTV75EI090	9000	385	✗	✓	✗	✗	✓ (3X400V)	✗	✗	✓ (3X400V)	
DTV75EI120	12000	495	✗	✓	✗	✗	✗	✗	✗	✗	
DTV75EI150	15000	610	✗	✓	✗	✗	✗	✗	✗	✗	
DTV75EI180	18000	725	✗	✓	✗	✗	✗	✗	✗	✗	
DTV75EI240	24000	950	✗	✓	✗	✗	✗	✗	✗	✗	
DTV75EI320	32000	1255	✗	✓	✗	✗	✗	✗	✗	✗	
DTV75HDI015	1500	270	✓	✓	✓	✓	✓	✓	✓	✓	
DTV75HDI030	3000	500	✓	✓	✓	✓	✓	✓	✓	✓	
DTV75HDI045	4500	730	✓	✓	✓	✓	✓	✓	✓	✓	
DTV75HDI060	6000	950	✗	✓	✗	✓	✓	✓	✗	✓	
DTV75HDI080	8000	1255	✗	✓	✗	✓	✓	✓	✗	✓	
DTV75HDI100	10000	1555	✗	✓	✗	✓	✓ (3X400V)	✓ (3X400V)	✗	✓ (3X400V)	
DTV75HI015	1500	270	✓	✓	✗	✗	✓	✗	✓	✓	
DTV75HI030	3000	500	✓	✓	✗	✗	✓	✗	✓	✓	
DTV75HI045	4500	730	✓	✓	✗	✗	✓	✗	✓	✓	
DTV75HI060	6000	950	✗	✓	✗	✗	✓	✗	✗	✓	
DTV75HI080	8000	1255	✗	✓	✗	✗	✓	✗	✗	✓	
DTV75HI100	10000	1555	✗	✓	✗	✗	✓ (3X400V)	✗	✗	✓ (3X400V)	
DTV75I030	30000	140	✓	✓	✗	✗	✓	✗	✗	✗	
DTV75I060	60000	235	✗	✓	✗	✗	✓	✗	✗	✓	
DTV75I090	9000	325	✗	✓	✗	✗	✓ (3X400V)	✗	✗	✓ (3X400V)	
DTV75I120	12000	415	✗	✓	✗	✗	✗	✗	✗	✗	
DTV75I150	15000	505	✗	✓	✗	✗	✗	✗	✗	✗	
DTV75I180	18000	595	✗	✓	✗	✗	✗	✗	✗	✗	
DTV75I240	24000	780	✗	✓	✗	✗	✗	✗	✗	✗	
DTV75I320	32000	1020	✗	✓	✗	✗	✗	✗	✗	✗	

DTV77EI

Screw plug immersion heater for water

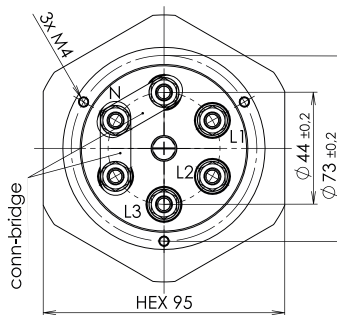
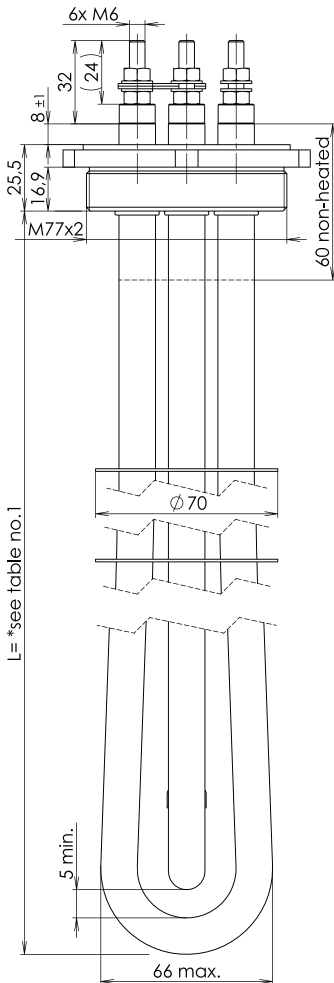


With the DTV77EI we developed a standard set of immersion heaters for the heating of city water.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 3 – 32 kW
- Watt density: 10 W/cm²
- Brass screw plug M77
- Heating elements: SS 316L - Ø 14 mm
- Brazing of elements
- Pocket for thermostat: Ø 10 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (large) is optional



DIRAC REFERENCE	POWER [W]	LENGTH [mm]
DTV77EI030	3000	155
DTV77EI060	6000	270
DTV77EI090	9000	385
DTV77EI120	12000	495
DTV77EI150	15000	610
DTV77EI180	18000	725
DTV77EI240	24000	950
DTV77EI320	32000	1255

*

(*) only 3 x 400V DELTA

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Large: DKBA105-P1** (for thermostat)

For more details see full option page



DTV771

Screw plug immersion heater for water with additives

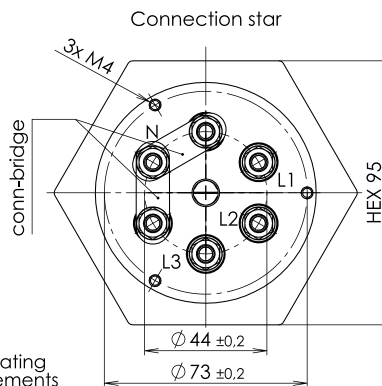
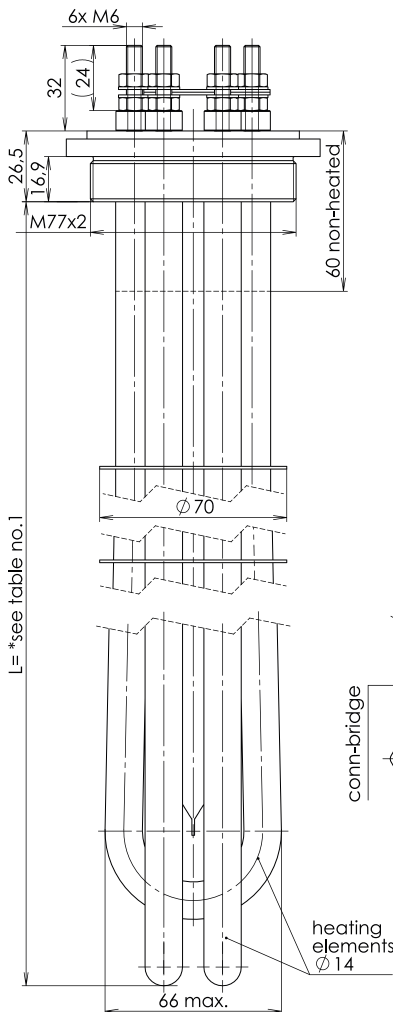


With the DTV771 we developed a standard set of immersion heaters, completely in stainless steel, for the heating of water with additives.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 3 – 32 kW
- Watt density: 12,5 W/cm²
- SS 304 screw plug M77
- Heating elements: Incoloy 825 - Ø 14 mm
- TIG welding of elements
- Pocket for thermostat: Ø 10 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (large) is optional



DIRAC REFERENCE	POWER [W]	LENGTH [mm]
DTV771030	3000	140
DTV771060	6000	235
DTV771090	9000	325
DTV771120	12000	415
DTV771150	15000	505
DTV771180	18000	595
DTV771240	24000	780
DTV771320	32000	1020

*

(*) only 3 x 400V Delta

OTHER VARIANTS ON DEMAND

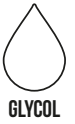
OPTIONS

- Aluminium connection box **Large: DKBA105-P1** (for thermostat)

For more details see full option page

DTV77EG

Screw plug immersion heater for glycol

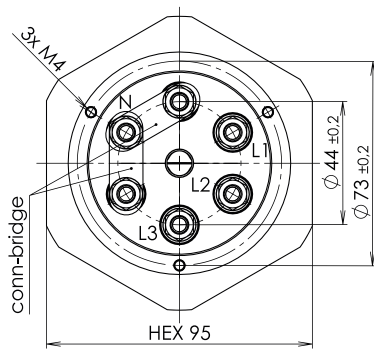
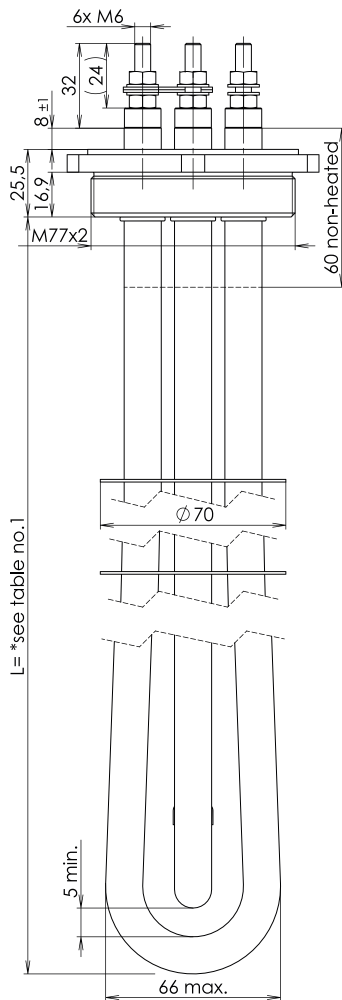


With the DTV77EG we developed a standard set of immersion heaters for the heating of glycol-water (maximum 50%).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 3 – 20 kW
- Watt density: 5 W/cm²
- Brass screw plug M77
- Heating elements: SS 321 - Ø 14 mm
- Brazing of elements
- Pocket for thermostat: Ø 10 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (large) is optional



DIRAC REFERENCE	POWER [W]	LENGTH [mm]
DTV77EG030	3000	270
DTV77EG045	4500	390
DTV77EG060	6000	500
DTV77EG090	9000	725
DTV77EG120	12000	955
DTV77EG160	16000	1255
DTV77EG200	20000	1560

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Large**: **DKBA105-P1** (for thermostat)

For more details see full option page



DTV77HI

Screw plug immersion heater for oil



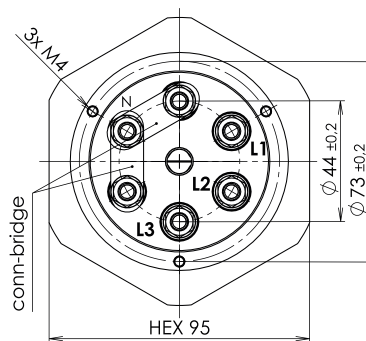
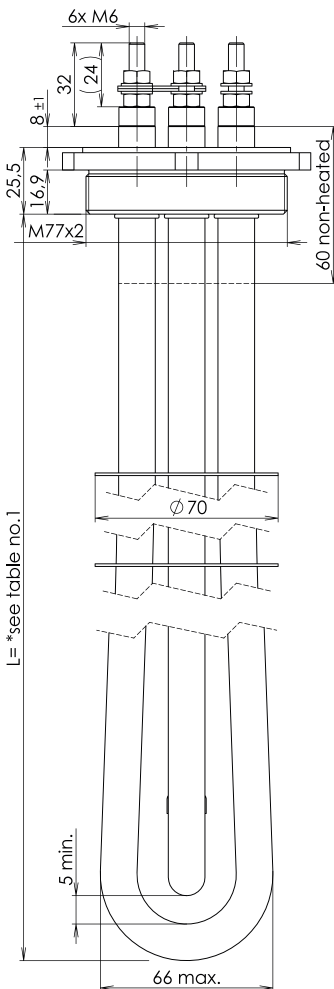
With the DTV77HI we developed a standard set of immersion heaters for the heating of oil (up to 120°C).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 1,5 – 10 kW
- Watt density: 2,5 W/cm²
- Brass screw plug M77
- Heating elements: SS 321 - Ø 14 mm
- Brazing of elements
- Pocket for thermostat: Ø 10 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (large) is optional

DIRAC REFERENCE	POWER [W]	LENGTH [mm]
DTV77HI015	1500	270
DTV77HI030	3000	500
DTV77HI045	4500	730
DTV77HI060	6000	950
DTV77HI080	8000	1255
DTV77HI100	10000	1555



OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Large: DKBA105-P1** (for thermostat)

For more details see full option page

DTV77HDI

Screw plug immersion heater for hot oil

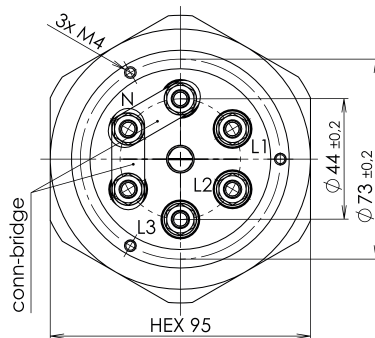
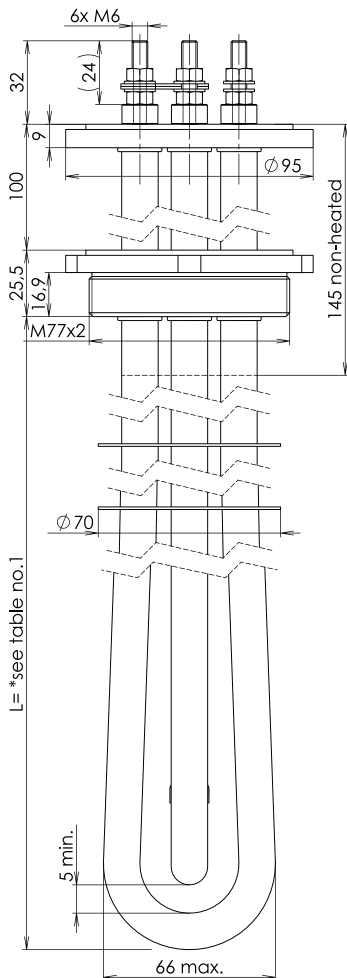


With the DTV77HDI we developed a standard set of immersion heaters for the heating of oil at high temperature (up to 250°C).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Voltage: 230/400V
- Output: 1,5 – 10 kW
- Watt density: 2,5 W/cm²
- Brass screw plug M77
- Brass flange Ø 95 mm, for box mounting
- Heating elements: SS 321 - Ø 14 mm
- Brazing of elements
- Pocket for thermostat: Ø 10 x 0,5 mm
- Pickling & passivation
- Wide range of outputs and lengths available
- Connection box DKBA (large - on flange at 100 mm distance) is optional



DIRAC REFERENCE	POWER	LENGTH
	[W]	[mm]
DTV77HDI015	1500	270
DTV77HDI030	3000	500
DTV77HDI045	4500	730
DTV77HDI060	6000	950
DTV77HDI080	8000	1255
DTV77HDI100	10000	1555

OTHER VARIANTS ON DEMAND

OPTIONS

- Aluminium connection box **Large: DKBA105-P1** (for thermostat)

For more details see full option page



IMMERSION HEATERS

OPTIONS

ACCESSORIES BOXES



DKBA 105-P1

- Aluminium box Large
 - 105 x108 x 104 mm
 - for thermostat
 - 3 pre-drilled holes :
- 1 PG 16 gland for power cable
 - 1 PG 11 gland for control cable
 - 1 PG 11 plug for regulation thermostat

THERMOSTATS

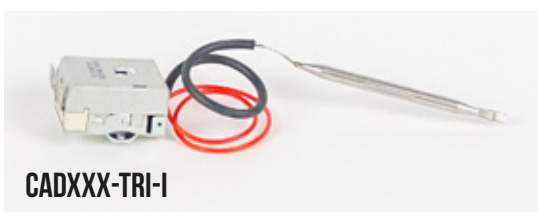
	THERMOSTATS
CAD040-MONO-I	Thermostat 0-40°C - mono
CAD090-MONO-I	Thermostat 0-90°C - mono
CAD110-MONO-I	Thermostat 30-110°C - mono
CAD300-MONO-I	Thermostat 50-300°C - mono
CAD040-TRI-I	Thermostat 0-40°C - tri
CAD090-TRI-I	Thermostat 0-90°C - tri
CAD110-TRI-I	Thermostat 30-110°C - tri
CAD300-TRI-I	Thermostat 50-300°C - tri
CABS4080/98-I	Thermostat 40-80 / limiter 98 - bi-pole
CATS4080/98-I	Thermostat 40-80 / limiter 98 - tri-pole



CADXXX-MONO-I



CATS4080/98-I



CADXXX-TRI-I



CABS4080/98-I

ACCESSORIES ASSEMBLY



JSA-DTV77
Fiberglass gasket



JCU-DTV77
Copper gasket



E0077
Brass backnut



EIN77
Stainless steel backnut



BIN77
Stainless steel weld ring
- treated M77

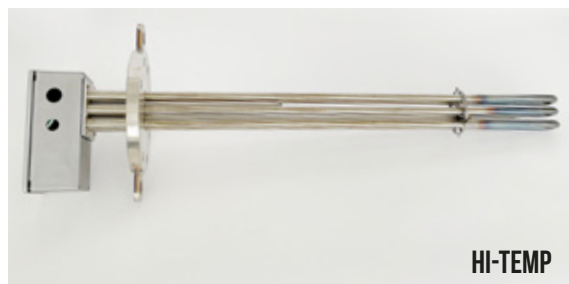
Thermal pocket diameter and length must be checked against thermostat sensor length and diameter, eventually resulting in custom made heaters.
See next page

THERMOSTAT COMPATIBILITY

DIRAC IMMERSION HEATERS	POWER [W]	THERMAL POCKET L [mm]	CADO40-MONO-I CADO90-MONO-I CAD110-MONO-I		CAD300 MONO-I		CADO40-TRI-I CADO90-TRI-I CAD110-TRI-I		CAD300-TRI-I	CABS4080 /98	CATS4080 /98-I
			DIRECT	EXT. CONTACTOR	DIRECT	EXT. CONTACTOR	DIRECT	DIRECT			
DTV77HI015	1500	270	✓	✓	✗	✗	✓	✗	✓	✓	
DTV77HI030	3000	500	✓	✓	✗	✗	✓	✗	✓	✓	
DTV77HI045	4500	730	✓	✓	✗	✗	✓	✗	✓	✓	
DTV77HI060	6000	950	✗	✓	✗	✗	✓	✗	✗	✓	
DTV77HI080	8000	1255	✗	✓	✗	✗	✓	✗	✗	✓	
DTV77HI100	10000	1555	✗	✓	✗	✗	✓ (3X400V)	✗	✗	✓ (3X400V)	
DTV77HDI015	1500	370	✓	✓	✓	✓	✓	✓	✓	✓	
DTV77HDI030	3000	600	✓	✓	✓	✓	✓	✓	✓	✓	
DTV77HDI045	4500	830	✓	✓	✓	✓	✓	✓	✓	✓	
DTV77HDI060	6000	1050	✗	✓	✗	✓	✓	✓	✗	✓	
DTV77HDI080	8000	1355	✗	✓	✗	✓	✓	✓	✗	✓	
DTV77HDI100	10000	1655	✗	✓	✗	✓	✓ (3X400V)	✓ (3X400V)	✗	✓ (3X400V)	
DTV77EG030	3000	270	✓	✓	✗	✗	✓	✗	✓	✓	
DTV77EG060	6000	500	✗	✓	✗	✗	✓	✗	✗	✓	
DTV77EG090	9000	725	✗	✓	✗	✗	✓ (3X400V)	✗	✗	✓ (3X400V)	
DTV77EG120	12000	955	✗	✓	✗	✗	✗	✗	✗	✗	
DTV77EG160	16000	1255	✗	✓	✗	✗	✗	✗	✗	✗	
DTV77EG200	20000	1560	✗	✓	✗	✗	✗	✗	✗	✗	
DTV77EI030	3000	155	✓	✓	✗	✗	✓	✗	✗	✗	
DTV77EI060	6000	270	✗	✓	✗	✗	✓	✗	✗	✓	
DTV77EI090	9000	385	✗	✓	✗	✗	✓ (3X400V)	✗	✗	✓ (3X400V)	
DTV77EI120	12000	495	✗	✓	✗	✗	✗	✗	✗	✗	
DTV77EI150	15000	610	✗	✓	✗	✗	✗	✗	✗	✗	
DTV77EI180	18000	725	✗	✓	✗	✗	✗	✗	✗	✗	
DTV77EI240	24000	950	✗	✓	✗	✗	✗	✗	✗	✗	
DTV77EI320	32000	1255	✗	✓	✗	✗	✗	✗	✗	✗	
DTV77I030	3000	140	✓	✓	✗	✗	✓	✗	✗	✗	
DTV77I060	6000	235	✗	✓	✗	✗	✓	✗	✗	✓	
DTV77I090	9000	325	✗	✓	✗	✗	✓ (3X400V)	✗	✗	✓ (3X400V)	
DTV77I120	12000	415	✗	✓	✗	✗	✗	✗	✗	✗	
DTV77I150	15000	505	✗	✓	✗	✗	✗	✗	✗	✗	
DTV77I180	18000	595	✗	✓	✗	✗	✗	✗	✗	✗	
DTV77I240	24000	780	✗	✓	✗	✗	✗	✗	✗	✗	
DTV77I320	32000	1020	✗	✓	✗	✗	✗	✗	✗	✗	

TBREI

Flange Immersion Heaters for Water



With the TBREI-range we developed a standard set of Flange Immersion Heaters for the heating of city water.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Wide range of outputs and lengths available on different Flange Sizes
- 3kW - 384 kW
- DN80 - DN250 / PN16
- Voltage 3x400V (Star)
- 10 W/cm²
- Stainless Steel SS304 Flange
- Stainless Steel SS316L Heating Elements Ø14mm
- Heating Elements TIG welded on Flange
- 1 Pocket for thermostat Ø10x1mm between elements
- 1 Pocket for limiter Ø10x1mm on the element
- Pickling & passivation
- Standard version with Connection Box on Flange and HT version with Connection Box on 100mm distance from Flange
- Optional : thermostats, temperature sensors

TBREI STANDARD RANGE

FLANGE		DN80 PN16	DN125 PN16	DN150 PN16	DN200 PN16	DN250 PN16
Number of Elements		3	6	9	18	36
REFERENCE	IMMERSION LENGTH [mm]	POWER [kW]				
TBREI-16-DNxxx	155	3	6	9	18	36
TBREI-27-DNxxx	270	6	12	18	36	72
TBREI-39-DNxxx	385	9	18	27	54	108
TBREI-50-DNxxx	495	12	24	36	72	144
TBREI-61-DNxxx	610	15	30	45	90	180
TBREI-73-DNxxx	725	18	36	54	108	216
TBREI-95-DNxxx	950	24	48	72	144	288
* TBREI-125-DNxxx	1255	32	64	96	192	384

(*) only 3x400V DELTA connection

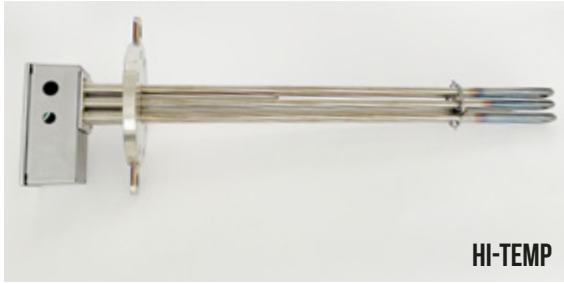
TBREI HI-TEMP RANGE (Connection Box on 100mm distance from Flange)

FLANGE		DN80 PN16	DN125 PN16	DN150 PN16	DN200 PN16	DN250 PN16
Number of Elements		3	6	9	18	36
REFERENCE	IMMERSION LENGTH [mm]	POWER [kW]				
TBREI-HT-16-DNxxx	155	3	6	9	18	36
TBREI-HT-27-DNxxx	270	6	12	18	36	72
TBREI-HT-39-DNxxx	385	9	18	27	54	108
TBREI-HT-50-DNxxx	495	12	24	36	72	144
TBREI-HT-61-DNxxx	610	15	30	45	90	180
TBREI-HT-73-DNxxx	725	18	36	54	108	216
TBREI-HT-95-DNxxx	950	24	48	72	144	288
* TBREI-HT-125-DNxxx	1255	32	64	96	192	384

(*) only 3x400V DELTA connection

OTHER VARIANTS ON DEMAND

TBRI Flange Immersion Heaters for water with additives



HI-TEMP



With the TBRI-range we developed a standard set of Flange Immersion Heaters, completely in stainless steel, for the heating of water with additives.

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.

- Wide range of outputs and lengths available on different Flange Sizes
- 3kW - 384 kW
- DN80 - DN250 / PN16
- Voltage 3x400V (Star/Delta)
- 12,5 W/cm²
- Stainless Steel SS304 Flange
- Incoloy 825 Heating Elements Ø14mm
- Heating Elements TIG welded on Flange
- 1 Pocket for thermostat Ø10x1mm between elements
- 1 Pocket for limiter Ø10x1mm on the element
- Pickling & passivation
- Standard version with Connection Box on Flange and HT version with Connection Box on 100mm distance from Flange
- Optional : thermostats, temperature sensors

TBRI STANDARD RANGE

FLANGE		DN80 PN16	DN125 PN16	DN150 PN16	DN200 PN16	DN250 PN16
Number of Elements		3	6	9	18	36
REFERENCE	IMMERSION LENGTH [mm]	POWER [kW]				
TBRI-14-DNxxx	140	3	6	9	18	36
TBRI-24-DNxxx	235	6	12	18	36	72
TBRI-33-DNxxx	325	9	18	27	54	108
TBRI-42-DNxxx	415	12	24	36	72	144
TBRI-51-DNxxx	505	15	30	45	90	180
TBRI-60-DNxxx	595	18	36	54	108	216
TBRI-78-DNxxx	780	24	48	72	144	288
* TBRI-102-DNxxx	1020	32	64	96	192	384

(*) only 3x400V DELTA connection

TBRI HI-TEMP RANGE (Connection Box on 100mm distance from Flange)

FLANGE		DN80 PN16	DN125 PN16	DN150 PN16	DN200 PN16	DN250 PN16
Number of Elements		3	6	9	18	36
REFERENCE	IMMERSION LENGTH [mm]	POWER [kW]				
TBRI-HT-14-DNxxx	140	3	6	9	18	36
TBRI-HT-24-DNxxx	235	6	12	18	36	72
TBRI-HT-33-DNxxx	325	9	18	27	54	108
TBRI-HT-42-DNxxx	415	12	24	36	72	144
TBRI-HT-51-DNxxx	505	15	30	45	90	180
TBRI-HT-60-DNxxx	595	18	36	54	108	216
TBRI-HT-78-DNxxx	780	24	48	72	144	288
* TBRI-HT-102-DNxxx	1020	32	64	96	192	384

(*) only 3x400V DELTA connection

TBREG

Flange Immersion Heaters for Glycol



With the TBREG-range we developed a standard set of Flange Immersion Heaters for the heating of glycolwater (max 50%).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.



- Wide range of outputs and lengths available on different Flange Sizes
- 3kW - 250 kW
- DN80 - DN250 / PN16
- Voltage 3x400V (Star)
- 5 W/cm²
- Stainless Steel SS304 Flange
- Stainless Steel SS321 Heating Elements Ø14mm
- Heating Elements TIG welded on Flange
- 1 Pocket for thermostat Ø10x1mm between elements
- 1 Pocket for limiter Ø10x1mm on the element
- Pickling & passivation
- Standard version with Connection Box on Flange and HT version with Connection Box on 100mm distance from Flange
- Optional : thermostats, temperature sensors

TBREG STANDARD RANGE

FLANGE		DN80 PN 16	DN 125 PN 16	DN 150 PN 16	DN200 PN 16	DN250 PN 16
Number of Elements		3	6	9	18	36
REFERENCE	IMMERSION LENGTH [mm]	POWER [kW]				
TBREG-27-DNxxx	270	3	6	9	18	36
TBREG-39-DNxxx	390	4,5	9	13,5	27	54
TBREG-50-DNxxx	500	6	12	18	36	72
TBREG-73-DNxxx	725	9	18	27	54	108
TBREG-96-DNxxx	955	12	24	36	72	144
TBREG-126-DNxxx	1255	16	32	48	96	192
TBREG-156-DNxxx	1560	20	40	60	120	240

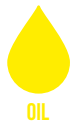
TBREG HI-TEMP RANGE (Connection Box on 100mm distance from Flange)

FLANGE		DN80 PN 16	DN 125 PN 16	DN 150 PN 16	DN200 PN 16	DN250 PN 16
Number of Elements		3	6	9	18	36
REFERENCE	IMMERSION LENGTH [mm]	POWER [kW]				
TBREG-HT-27-DNxxx	270	3	6	9	18	36
TBREG-HT-39-DNxxx	390	4,5	9	13,5	27	54
TBREG-HT-50-DNxxx	500	6	12	18	36	72
TBREG-HT-73-DNxxx	725	9	18	27	54	108
TBREG-HT-96-DNxxx	955	12	24	36	72	144
TBREG-HT-126-DNxxx	1255	16	32	48	96	192
TBREG-HT-156-DNxxx	1560	20	40	60	120	240

OTHER VARIANTS ON DEMAND

TBRHI

Flange Immersion Heaters for Oil



With the TBRHI-range we developed a standard set of Flange Immersion Heaters for the heating of oil (up to 120°C).

On demand, adjustments can be made if the requested quantity is justified.

We can tailor make the desired solution.



- Wide range of outputs and lengths available on different Flange Sizes
- 1.5kW - 120 kW
- DN80 - DN250 / PN16
- Voltage 3x400V (Star)
- 2,5 W/cm²
- Stainless Steel SS304 Flange
- Stainless Steel SS321 Heating Elements Ø14mm
- Heating Elements TIG welded on Flange
- 1 Pocket for thermostat Ø10x1mm between elements
- 1 Pocket for limiter Ø10x1mm on the element
- Pickling & passivation
- Standard version with Connection Box on Flange and HT version with Connection Box on 100mm distance from Flange
- Optional : thermostats, temperature sensors

TBRHI STANDARD RANGE

FLANGE		DN80 PN 16	DN 125 PN 16	DN 150 PN 16	DN200 PN 16	DN250 PN 16
Number of Elements		3	6	9	18	36
REFERENCE	IMMERSION LENGTH [mm]	POWER [kW]				
TBRHI-27-DNxxx	270	1,5	3	4,5	9	18
TBRHI-50-DNxxx	500	3	6	9	18	36
TBRHI-73-DNxxx	730	4,5	9	13,5	27	54
TBRHI-95-DNxxx	950	6	12	18	36	72
TBRHI-126-DNxxx	1255	8	16	24	48	96
TBRHI-156-DNxxx	1555	10	20	30	60	120

TBRHI HI-TEMP RANGE (Connection Box on 100mm distance from Flange)

FLANGE		DN80 PN 16	DN 125 PN 16	DN 150 PN 16	DN200 PN 16	DN250 PN 16
Number of Elements		3	6	9	18	36
REFERENCE	IMMERSION LENGTH [mm]	POWER [kW]				
TBRHI-HT-27-DNxxx	270	1,5	3	4,5	9	18
TBRHI-HT-50-DNxxx	500	3	6	9	18	36
TBRHI-HT-73-DNxxx	730	4,5	9	13,5	27	54
TBRHI-HT-95-DNxxx	950	6	12	18	36	72
TBRHI-HT-126-DNxxx	1255	8	16	24	48	96
TBRHI-HT-156-DNxxx	1555	10	20	30	60	120

OTHER VARIANTS ON DEMAND

DTV-RBC

Screwable Pocket for RBC

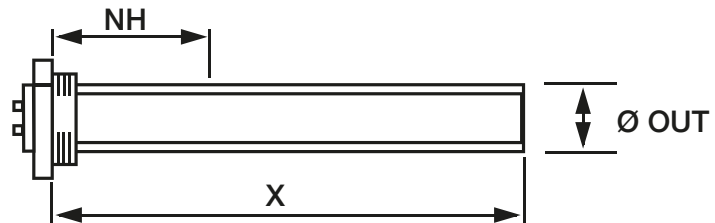
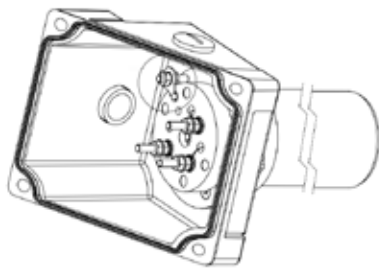


Standard screw plug immersion heater with pocket for fitting of ceramic core elements (RBC).

This technology allows the RBC heater to be replaced without entirely dismantling the immersion heater and without draining the tank containing the fluid to be heated.

The DTV-RBC is supplied with our aluminium DKBA connection box, offering an easy-to-assemble solution with three pre-drilled entries for power, control, and regulation.

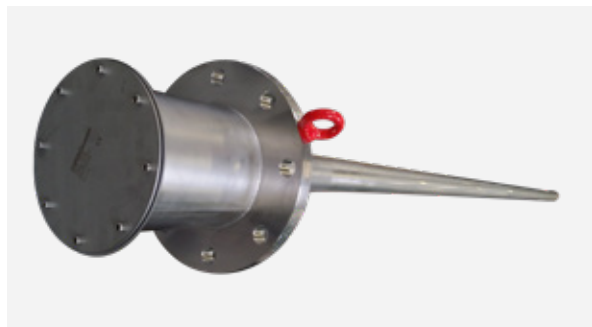
- Voltage: 230 V / 400 V
- Output: 1 kW - 6 kW
- 2,5 or 4 W/cm²
- Screwable Pocket for RBC HT: Ø 54 mm and NH 145 mm
- Screw plugs: G2 ½" and M77x2
- Tig welded pocket in SS304
- Pickling & passivation
- DKBA: 105 x108 x 104 mm with 3 pre-drilled holes (IP55)
 - * PG16 gland: power cable
 - * PG11 gland: control cable
 - * PG11 plug: regulation thermostat



REFERENCE	SCREWPLUG TYPE	SCREWPLUG MATERIAL	RBC Ø [mm]	Ø OUT [mm]	LENGTH X [mm]	NH (*) [mm]	OUTPUT [W]	WATT DENSITY [W/cm ²]
DTV-RBC-G25-42-10	G2 ½"	1.4301 / SS304	54	60,3	415	135	1000	2,4
DTV-RBC-G25-57-15	G2 ½"	1.4301 / SS304	54	60,3	565	135	1500	2,2
DTV-RBC-G25-67-20	G2 ½"	1.4301 / SS304	54	60,3	665	135	2000	2,4
DTV-RBC-G25-92-30	G2 ½"	1.4301 / SS304	54	60,3	915	135	3000	2,4
DTV-RBC-G25-127-45	G2 ½"	1.4301 / SS304	54	60,3	1265	135	4500	2,4
DTV-RBC-G25-32-10	G2 ½"	1.4301 / SS304	54	60,3	315	135	1000	3,9
DTV-RBC-G25-42-15	G2 ½"	1.4301 / SS304	54	60,3	415	135	1500	3,5
DTV-RBC-G25-47-20	G2 ½"	1.4301 / SS304	54	60,3	465	135	2000	3,9
DTV-RBC-G25-62-30	G2 ½"	1.4301 / SS304	54	60,3	615	135	3000	3,9
DTV-RBC-G25-87-45	G2 ½"	1.4301 / SS304	54	60,3	865	135	4500	3,8
DTV-RBC-G25-107-60	G2 ½"	1.4301 / SS304	54	60,3	1065	135	6000	3,9
DTV-RBC-M77x2-42-10	M77x2	1.4301 / SS304	54	60,3	415	135	1000	2,4
DTV-RBC-M77x2-57-15	M77x2	1.4301 / SS304	54	60,3	565	135	1500	2,2
DTV-RBC-M77x2-67-20	M77x2	1.4301 / SS304	54	60,3	665	135	2000	2,4
DTV-RBC-M77x2-92-30	M77x2	1.4301 / SS304	54	60,3	915	135	3000	2,4
DTV-RBC-M77x2-127-45	M77x2	1.4301 / SS304	54	60,3	1265	135	4500	2,4
DTV-RBC-M77x2-32-10	M77x2	1.4301 / SS304	54	60,3	315	135	1000	3,9
DTV-RBC-M77x2-42-15	M77x2	1.4301 / SS304	54	60,3	415	135	1500	3,5
DTV-RBC-M77x2-47-20	M77x2	1.4301 / SS304	54	60,3	465	135	2000	3,9
DTV-RBC-M77x2-62-30	M77x2	1.4301 / SS304	54	60,3	615	135	3000	3,9
DTV-RBC-M77x2-87-45	M77x2	1.4301 / SS304	54	60,3	865	135	4500	3,8
DTV-RBC-M77x2-107-60	M77x2	1.4301 / SS304	54	60,3	1065	135	6000	3,9

TBR-RBC

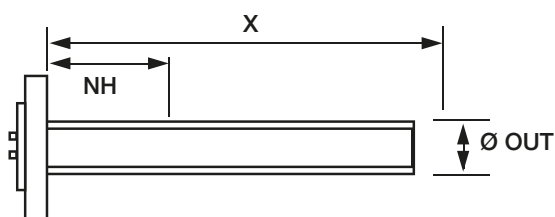
Flange Mounted Pocket
for RBC



Standard Flanged immersion heater with Single- or Multi-Pocket for fitting of Ceramic Core Elements (RBC).

This technology allows the RBC heater to be replaced without entirely dismantling the immersion heater and without draining the tank containing the fluid to be heated.

- Voltage: 230V / 400V
- Output: 1kW - 6kW
- 2,5 or 4 W/cm²
- For RBC HT elements: Ø54mm and NH 145
- Connection box on flange
- Available in Single-pocket or Multi-Pocket version
- Tig welded pocket in SS304
- Pickling & passivation



TBR-RBC SINGLE-POCKET DN80

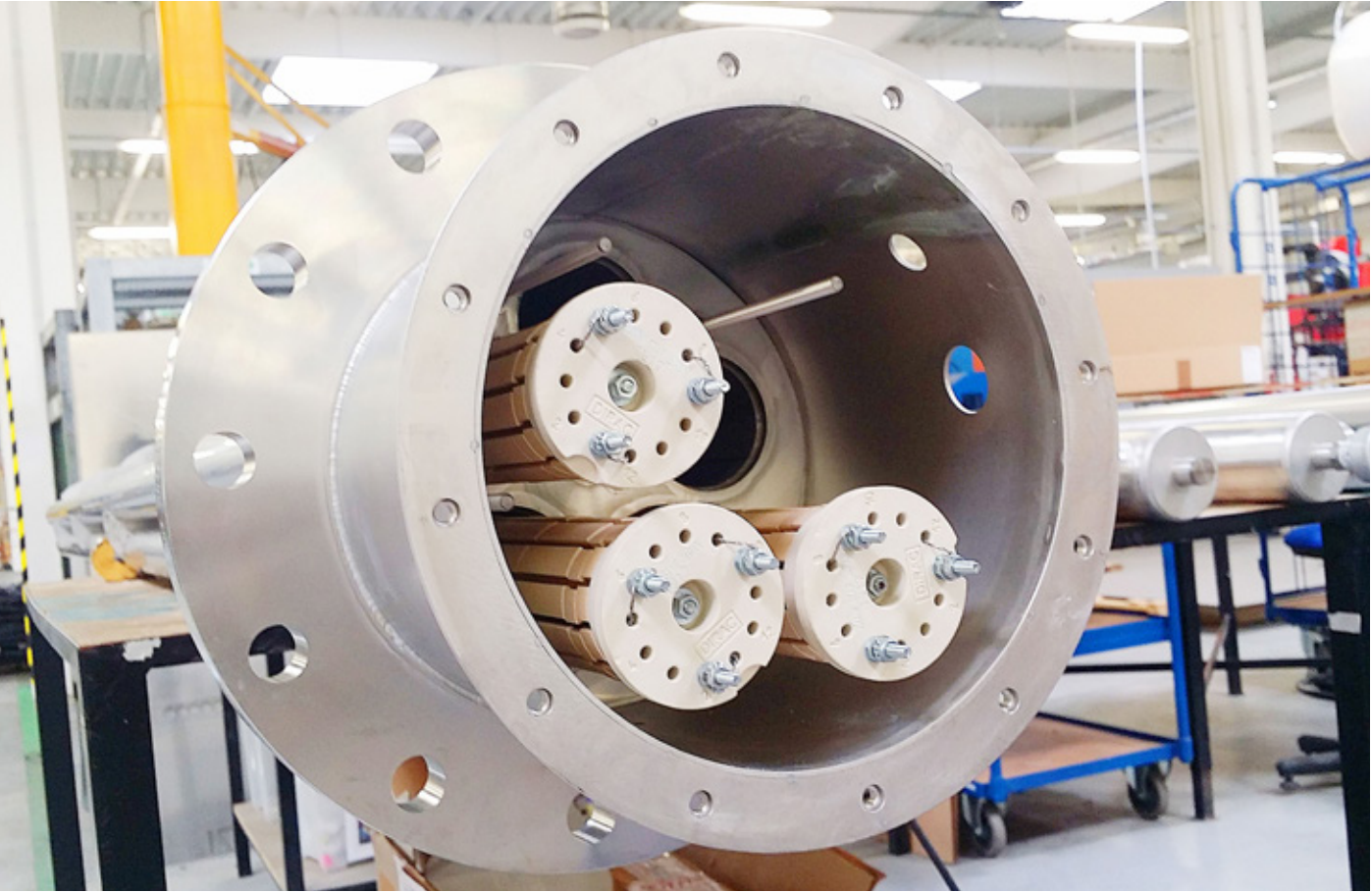
- Range from 1 to 6kW
- 230V 1ph / 3x400V 3ph (STAR)
- DN80 PN16 Flange in SS304/1.4301
- **1 pocket**

REFERENCE	RBC Ø [mm]	Ø OUT [mm]	LENGTH X [mm]	NH (*) [mm]	OUTPUT [W]	WATT DENSITY [W/cm ²]
TBR-RBC-DN80-41-10	54	60,3	405	125	1000	2,4
TBR-RBC-DN80-56-15	54	60,3	555	125	1500	2,2
TBR-RBC-DN80-66-20	54	60,3	655	125	2000	2,4
TBR-RBC-DN80-91-30	54	60,3	905	125	3000	2,4
TBR-RBC-DN80-126-45	54	60,3	1255	125	4500	2,4
TBR-RBC-DN80-31-10	54	60,3	305	125	1000	3,9
TBR-RBC-DN80-41-15	54	60,3	405	125	1500	3,5
TBR-RBC-DN80-46-20	54	60,3	455	125	2000	3,9
TBR-RBC-DN80-61-30	54	60,3	605	125	3000	3,9
TBR-RBC-DN80-86-45	54	60,3	855	125	4500	3,8
TBR-RBC-DN80-106-60	54	60,3	1055	125	6000	3,9

(*) Under Flange

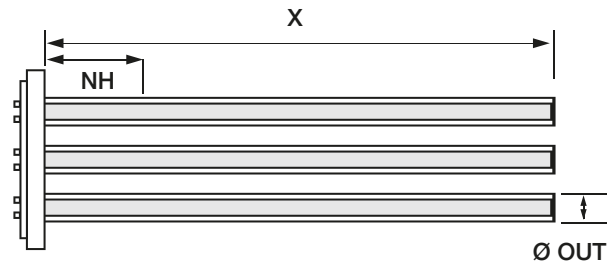
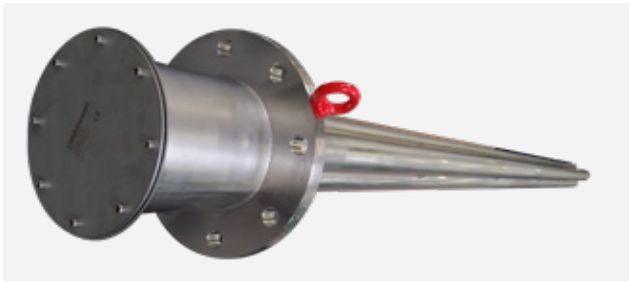
OTHER VARIANTS ON DEMAND





TBR-RBC

Flange Mounted Pocket for RBC



TBR-RBC
MULTI-POCKET DN150

- Range from 3 to 18kW
- 230V 1ph / 3x400V 3ph (STAR)
- Optional thermal pocket
- DN150 PN16 Flange in SS304/1.4301
- **3 pockets**

REFERENCE	RBC Ø [mm]	Ø OUT [mm]	LENGTH X [mm]	NH (*) [mm]	OUTPUT [w]	WATT DENSITY [W/cm ²]
TBR-RBC-DN150-41-30	54	60,3	405	125	3000	2,4
TBR-RBC-DN150-56-45	54	60,3	555	125	4500	2,2
TBR-RBC-DN150-66-60	54	60,3	655	125	6000	2,4
TBR-RBC-DN150-91-90	54	60,3	905	125	9000	2,4
TBR-RBC-DN150-126-135	54	60,3	1255	125	13500	2,4
TBR-RBC-DN150-31-30	54	60,3	305	125	3000	3,9
TBR-RBC-DN150-41-45	54	60,3	405	125	4500	3,5
TBR-RBC-DN150-46-60	54	60,3	455	125	6000	3,9
TBR-RBC-DN150-61-90	54	60,3	605	125	9000	3,9
TBR-RBC-DN150-86-135	54	60,3	855	125	13500	3,8
TBR-RBC-DN150-106-180	54	60,3	1055	125	18000	3,9

(*) Under Flange

TBR-RBC

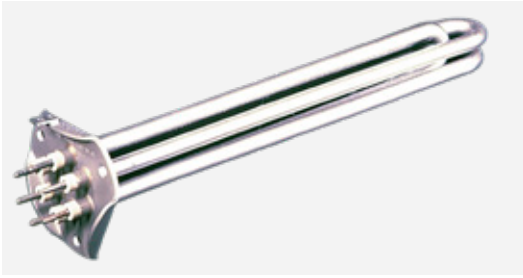
MULTI-POCKET DN250

- Range from 6 to 36kW
- 230V 1ph / 3x400V 3ph (STAR)
- Optional thermal pocket
- DN250 PN16 Flange in SS304/1.4301
- **6 pockets**

REFERENCE	RBC Ø [mm]	Ø OUT [mm]	LENGTH X [mm]	NH (*) [mm]	OUTPUT [w]	WATT DENSITY [W/cm ²]
TBR-RBC-DN250-41-60	54	60,3	405	125	6000	2,4
TBR-RBC-DN250-56-90	54	60,3	555	125	9000	2,2
TBR-RBC-DN250-66-120	54	60,3	655	125	12000	2,4
TBR-RBC-DN250-91-180	54	60,3	905	125	18000	2,4
TBR-RBC-DN250-126-270	54	60,3	1255	125	27000	2,4
TBR-RBC-DN250-31-60	54	60,3	305	125	6000	3,9
TBR-RBC-DN250-41-90	54	60,3	405	125	9000	3,5
TBR-RBC-DN250-46-120	54	60,3	455	125	12000	3,9
TBR-RBC-DN250-61-180	54	60,3	605	125	18000	3,9
TBR-RBC-DN250-86-270	54	60,3	855	125	27000	3,8
TBR-RBC-DN250-106-360	54	60,3	1055	125	36000	3,9

(*) Under Flange

TBL Light Flange Immersion Heater



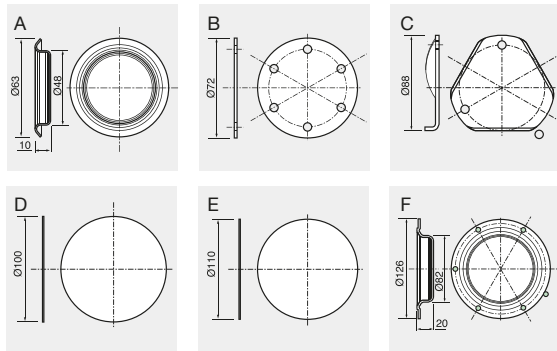
These heaters are specifically designed for heating up water in electrical waterboilers. They consist of a light flange, heating elements and optional a sensor tube for a thermostat or sensor.

- Flange in stainless steel 304, different sizes possible
- 1, 2 or 3 tubular heating elements, Ø 8.5mm or 14mm, in stainless steel or Incoloy 825
- Different bending shapes possible
- Optional sensor pocket in SS 304, for thermostat or sensor
- With slide-on faston connectors

- Standard voltage : **230V 1ph or 230/400V 3ph, other voltages on request.**
- Surface load up to 10W/cm²
- Different connections possible, on request
- Without connection box
- Pickling & passivation

REFERENCE	FLANGE TYPE	FLANGE MATERIAL	POWER [w]	IMMERSION L [mm]	THERMOSTAT POCKET	CONNECTION BOX
TBL-B-4500-UGE	B	SS304	4500	335	No	No
TBL-D-4500-UGE	D	SS304	4500	335	No	No
TBL-E-4500-UGE	E	SS304	4500	335	No	No

FLANGE N°	MAXIMUM NUMBER OF DIAMETER 8,5MM ELEMENTS	
	W/O POCKET	WITH POCKET
A	3	2
B	3	3
C	3	3
D	3	3
E	3	3
F	3	3



OTHER VARIANTS ON DEMAND

OPTIONS

Plugin immersion thermostats for TBL



REFERENCE	RANGE [°C]	T _s MIN [°C]	T _s MAX [°C]	T _B MIN [°C]	T _B MAX [°C]	T _M MAX [°C]	DIFFERENTIAL [°C]	WEIGHT [kg]	CONTACT	ROD [mm]	DESCRIPTION
TSD00706	5 to 80	-20	100	-20	100	100	8	0,1	20 A / 240 V AC NC	Ø 7,5 / L180	Single pole rod thermostat for integration
TUS 0177	13 to 65	-20	105	-20	120	120	9	0,1	20 A / 250 V AC NC - 15 A / 400 V AC NC	Ø 6 / L270	Single pole rod thermostat and cutout for integration

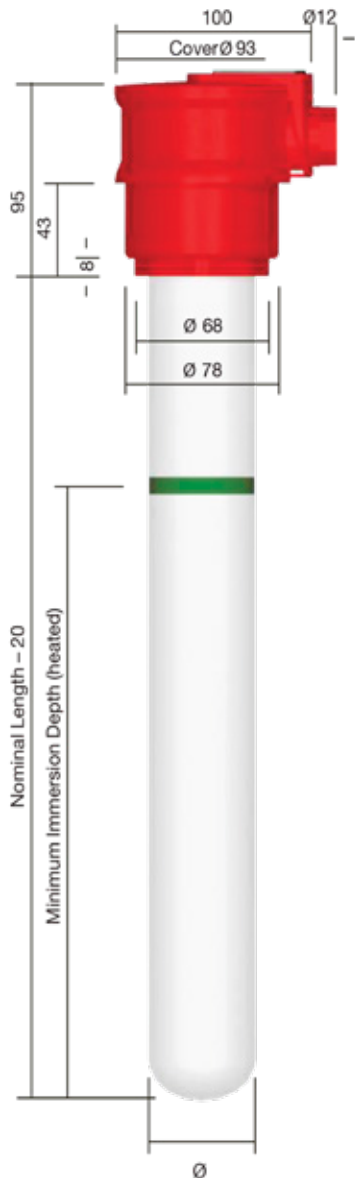
T_s = Min/Max Stocking temperature — T_B = Min/Max Connection Box temperature — T_M = Min/Max Measurement temperature (Sensor)



ROTKAPPE Immersion Heaters are most suitable for direct heating of nearly all process liquids and corresponding applications. Using the widest variety of immersion tube materials ensures excellent chemical resistance. The immersion heater is constructed on a modular basis and consists of a tube, a long-life heating cartridge, a terminal casing and the lead.

SAFETY

Please remember that electrical heating systems are supposed to be equipped with safety technology (temperature limiter and dry-out protection) on the part of the user. When choosing the materials, the physical processes (possible encrustment) and thermal limits (surface power density) have to be taken equally into consideration.



(See table)

- Offering optimal tube material for every application
- Variable fitting alternatives
- Heating cartridges made from ceramic groove bodies
- Up to 500V (max.) for one, two and three phase connections
- Standard voltage : 230/400V
- IP65 Terminal casing : high temperature stabilized PP (BC) or PVDF (BC/L) for T > 80°C or strongly oxidizing chemicals
- The PVC connecting lead has a standard length of 1,6m (on demand other lead lengths can be provided)
- Classified as Electrical "Safety class 1" and use of an earth leakage circuit breaker (ELCB)
- 0,4 – 7 kW
- Nominal length 315 – 3150mm
- Minimum immersion depth 225 – 2200 mm

MATERIAL CODIFICATION	Ø [mm]	SURFACE POWER DENSITY [W/cm²]
special hard porcelain [PS]	54	0,8 – 3,2
technical glass [TG]	50	0,8 – 3,9
quartz glass [QS]	52	0,8 – 3,4
fluoropolymer (PFA)-compound [FC]	46,5	0,9 – 2,3
stainless steel [KB]	45	0,9 – 4,3
titanium [TI]	45	0,9 – 4,3

ORDERING INFORMATION

B-XX YYY/Z,Z-VVV Qs

Material Codification _____

Length (mm) _____

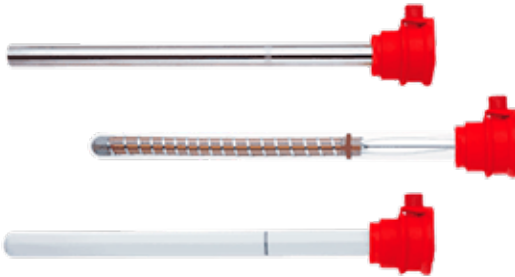
Power (kW) _____

Voltage (V) _____

Monophase (W) or Triphase (D) _____

ROTKAPPE®

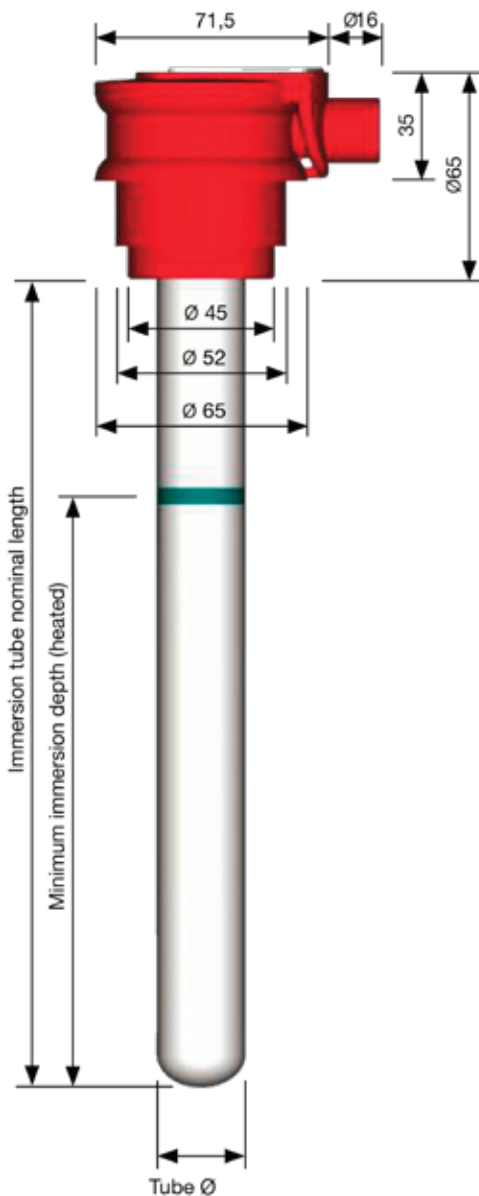
Small Immersion heaters



ROTKAPPE Small Immersion heaters are used primarily in smaller plants and tanks for surface treatment and in the laboratory sector. Using the widest variety of immersion tube materials ensures excellent chemical resistance. The small immersion heater is constructed on a modular basis and consists of a tube, a long-life heating cartridge, a terminal casing and the lead.

SAFETY

Please remember that electrical heating systems are supposed to be equipped with safety technology (temperature limiter and dry-out protection) on the part of the user. When choosing the materials, the physical processes (possible encrustment) and thermal limits (surface power density) have to be taken equally into consideration.



- Offering optimal tube material for every application
- Variable fitting alternatives
- Heating cartridges made from ceramic groove bodies
- Available in 230V for a single phase connection
- IP65 Terminal casing : high temperature stabilized PP (LC) or PVDF (LC/L) for T > 80°C or strongly oxidizing chemicals
- The PVC connecting lead has a standard length of 1,6m (on demand other lead lengths can be provided)
- Classified as Electrical "Safety class 1" and use of an earth leakage circuit breaker (ELCB)
- 0,315 – 1,6 kW
- Nominal length 200 – 1000mm
- Minimum immersion depth 130 – 725 mm

MATERIAL CODIFICATION	Ø [mm]	SURFACE POWER DENSITY [W/cm²]
special hard porcelain [PS]	28	1,9 – 3,9
technical glass [TG]	28	1,9 – 3,9
stainless steel [KB]	25	1,3 – 4,3
titanium [TI]	25,4	1,3 – 4,3

ORDERING INFORMATION **L-XX YYY/Z,Z-230 Ws**

Material Codification _____

Length (mm) _____

Power (kW) _____

Voltage (V) _____

Monophase (W) _____



ROTKAPPE® Angular Immersion heater

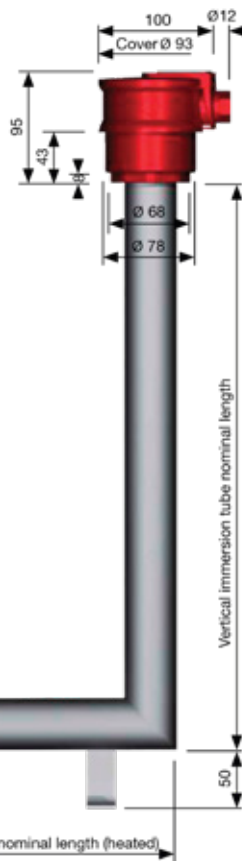


ROTKAPPE Angular Immersion heaters are the ideal method of direct heating for all containers with a low liquid level or high level fluctuation. The heating of the liquid from the container bottom is achieved by the horizontal heated immersion tube and this ensures optimum heat radiation as well as good heat distribution. The vertical, unheated immersion tube section can be adapted to the container depth. The angular immersion heater consists of an heated horizontal immersion tube, a long-life heating cartridge, an unheated vertical immersion tube, a terminal casing and the lead.

SAFETY

Please remember that electrical heating systems are supposed to be equipped with safety technology (temperature limiter and dry-out protection) on the part of the user. When choosing the materials; the physical processes (possible encrustment) and thermal limits (surface power density) have to be taken equally into consideration.

- Available in metallic materials
- Nearly every desired adaptation to the container size can be realized
- Heating cartridges made from ceramic groove bodies
- Up to 500V (max.) for one, two and three phase connections
- IP65 Terminal casing : high temperature stabilized PP (BC) or PVDF (BC/L) for T > 80°C or strongly oxidizing chemicals
- The PVC connecting lead has a standard length of 1,6m (other lead lengths can be provided, if desired)
- Rated power determined by length of horizontal tube
- 0,63 – 11 kW
- Horizontal immersion tube length 250 – 2750 mm



MATERIAL CODIFICATION	Ø [mm]	SURFACE POWER DENSITY [W/cm ²]
stainless steel [KB]	45	3,0 – 3,6
titanium [TI]	45	3,0 – 3,6

ORDERING INFORMATION **B-WXX YYY-ZZZ/Q,Q-VVV Ps**

Material Codification _____

Vertical Length (mm) _____

Horizontal Length heated (mm) _____

Power (kW) _____

Voltage (V) _____

Monophase (W) or Triphase (D) _____

OPTIONS Accessories



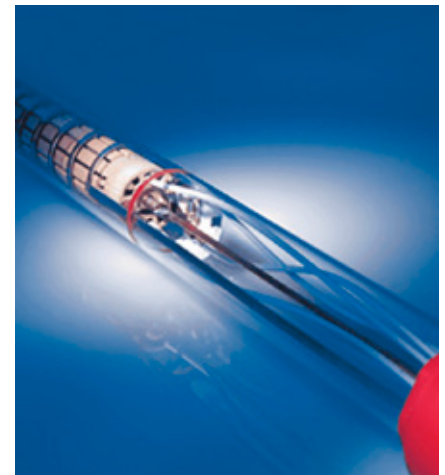
MOUNTING SLEEVE EM
for space-saving fitting in supports or in tank cross-beams.
Drill-hole Ø 87mm to Ø 90mm
Material : EPDM



SUPPORT HWB
for fixing long probes and angular immersion heaters.
Material : PP or PVDF (HWB/L)

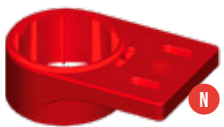


HOLDING SLEEVE HM
for fixing in tank cross-beams in cases of high liquid temperature (>60°C) and exposure of the bottom of the casing to highly concentrated steam.
Drill-hole Ø 70mm to Ø 76mm.
Material : EPDM



SAFETY IMMERSION HEATER WITH ANTI-BURN SYSTEM (ABS)

Safety Immersion heaters minimize possible thermal damage to plants and tanks in the event of partial or complete loss of the liquid being heated. The integrated Anti-Burn System reacts to dangerously high immersion tube temperatures and switches off the heater when using one- or two-phase connection. The heater then remains off until the safety circuit is reset manually. Please note that it is still necessary to install the normal overheating and dry-running protection devices.



SUPPORT HB
for simple fixing to the tank rim (e.g. for immersion heaters with a max. nominal tube length of 800mm)
Material : PP or PVDF (HB/L)



SUPPORT SHB
with integrated holding sleeve HM for fixing immersion heaters with nominal tube length > 800mm
Material of support : PP
Material of sleeve : EPDM



SUPPORT THB
with integrated holding sleeve HM for fixing immersion heaters with integrated Anti-Burn-System.
Material of support : PP
Material of sleeve : EPDM



TERMINAL CASING BC
Material : PP
TERMINAL CASING BC/L
Material : PVDF



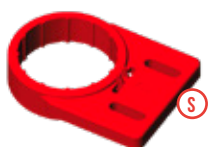
TERMINAL CASING LC
Material : PP
TERMINAL CASING LC/L
Material : PVDF



MOUNTING WRENCH SL
for opening and closing the terminal cap of small terminal casings LC and the lead screw fixing.
Material : Grivory GVN



MOUNTING WRENCH SB
for opening and closing the terminal cap of big terminal casings BC, as well as dismantling the screw thread and the lead screw fixing.
Material : Grivory GVN



SUPPORT HL
is screwed firmly onto the tank rim and the terminal casing LC is a simple push-fit.
Material : PP or PVDF (HL/L)



SUPPORT HWL
for fixing long probes and small angular immersion heaters.
Material : PP or PVDF (HWL/L)



MOUNTING SLEEVE ML
enables space-saving fitting in container lid or tank cross-beams.
Drill hole Ø 63mm
Material : EPDM

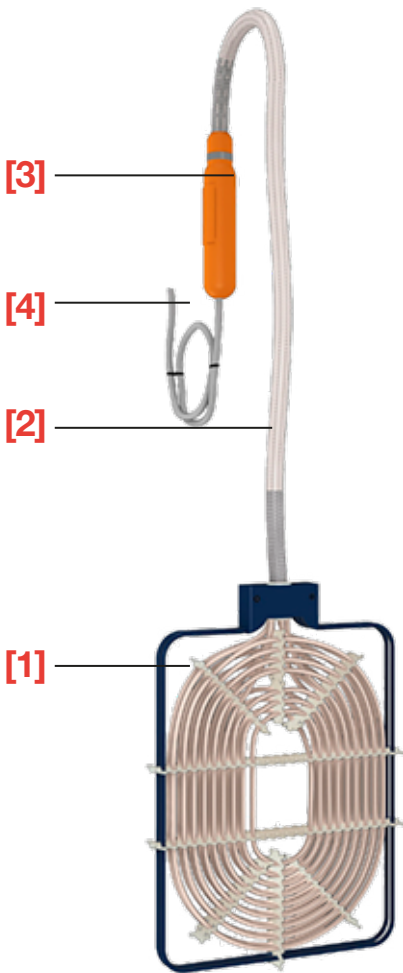
N NORMAL SIZE

S SMALL SIZE

GALVATHERM[®] Flat immersion heaters



The Galvatherm heaters are specially designed for heating corrosive baths using a cable that only heats the part that is to be continually immersed [1]. The cable is covered with a Teflon[®] coating. This plastic sheath enables the heaters to resist the flow of heat and the chemical attack of the bath.



- Corrosive baths up to 90°C (120°C on request)
- Minimal space required
- Assembly A / B / C / D / F
- P30 = 30mm / P40 = 40 / P90 = 90
- IP64 PVC injected connection pipe [3]
- 230V-1ph / 230V-3ph / 400V-3ph
- FEP single layer standard cable coating (other coatings available on request)
- Non heating cable N [2] and connection cable C [4] have a standard length of 1 m
- 0,5 W/cm² (very low) or 1 W/cm²
- 0,5 – 15 kW

ASSEMBLY	TYPE A	TYPE B	TYPE C	TYPE D	TYPE F
Description	base model	with fixing bracket for wall mounting	'all plastic' model	'all plastic' model	universal model
Place of installation	side or bottom	side	side or bottom	bottom	side or bottom
Frame material	metallic frame PP, PVDF, FEP or stainless steel frame	metallic frame PP, PVDF, FEP or stainless steel frame	plastic strip structure PVDF, PP or FEP	plastic strip structure PVDF, PP or FEP	rigid plastic rod frame Ø20 mm, PVDF or PP
Product availability	P30, P40 and P90				

DIFFERENT ASSEMBLIES

N = non heating cable
 C = electric cable
 X = height up to the support (max. 1800mm)
 K = large side
 J = small side

Please pay attention to the dimensions of the heater and the rod in assembly type F

Type A



For classical tank configurations, offering a large exchange surface in a minimum bulk

Type B



Type C

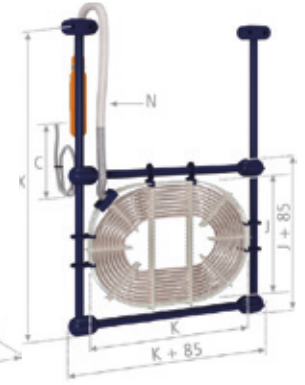


Designed for small tank configurations and low powers

Type D



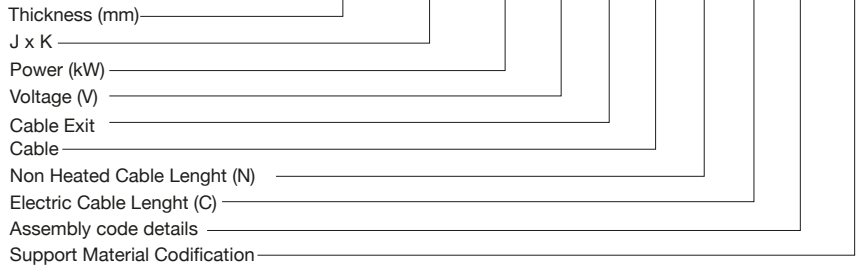
Type F



Rigid structure ideal for important powers (> 6kW) and large tanks

ORDERING INFORMATION

PXX YY ZZ V E D N C A M



CABLE CODE DETAILS

- F = FEP single layer 1 W/cm²
- G = FEP double layer 1 W/cm²
- P = PFA single layer 1 W/cm²
- D = PFA double layer 1 W/cm²
- E = PFA double layer 0,5 W/cm²
- H = PFA single layer 0,5 W/cm²

ASSEMBLY CODE DETAILS

- A = coated frame
- B = coated frame + bracket
- C = strip frame
- D = strip frame + perpendicular
- F = with a rod frame
- H = for rod frame

THICKNESS	J x K	POWER	VOLTAGE	CABLE EXIT	N LENGTH	C LENGTH
P30 = 30mm	See table	05 = 0.5 kW	1 = 110V M	J = small side	0 = 1m	0 = 1m
P40 = 40mm		10 = 01 kW	2 = 230V M	K = large side	1 = 1,5m	1 = 1,5m
P90 = 90mm		15 = 1.5 kW	3 = 460V M		2 = 2 m	2 = 2 m
		20 = 02 kW	4 = 230V T		3 = 2,5m	3 = 2,5m
		30 = 03 kW	5 = 400V T		4 = 3m	4 = 3m
		40 = 04 kW	6 = 460V T		5 = 3,5m	5 = 3,5m
		45 = 4.5 kW			6 = 4m	6 = 4m
		60 = 06 kW			7 = 4,5m	7 = 4,5m
		90 = 09 kW			8 = 5m	8 = 5m
		12 = 12 kW			9 = sup. 5m	9 = sup. 5m

SUPPORT MATERIALS CODIFICATION

code	frame	strips	other pieces	valid for assembly
1	PVDF	PVDF	PVDF	ABCDF
2	PP	PP	PP	ABCDF
3*	FEP	FEP	-	C
4	FEP	FEP	PVDF	ABCDF
5	FEP	FEP	PP	ABCDF
6	PVDF	FEP	PVDF	ABCDF
7	PP	FEP	PP	ABCDF
8	inox	FEP	-	AB

SINGLE - PHASE HEATERS

kW	J x K	230V MONO	kW	J x K	230V MONO	kW	J x K	230V MONO	kW	J x K	230V MONO	
0.5 kW	150 x 375	P30 03 05 2		220 x 475	P30 07 20 2	4 kW	340 x 340	P40 12 30 2		315 x 495	P40 10 50 2	
	170 x 265	P30 04 05 2		240 x 420	P30 08 20 2		225 x 880	P30 07 40 2		335 x 460	P40 11 50 2	
	185 x 210	P30 05 05 2		260 x 380	P30 09 20 2		260 x 700	P30 09 40 2		355 x 430	P40 12 50 2	
	165 x 230	P40 03 05 2		275 x 340	P30 10 20 2		315 x 545	P30 12 40 2		375 x 405	P40 13 50 2	
1 kW	150 x 605	P30 03 10 2		295 x 315	P30 11 20 2		330 x 515	P30 13 40 2	6 kW	395 x 390	P40 14 50 2	
	170 x 520	P30 04 10 2		185 x 515	P40 04 20 2		350 x 475	P30 14 40 2		275 x 990	P30 10 60 2	
	185 x 365	P30 05 10 2		210 x 420	P40 05 20 2		385 x 435	P30 16 40 2		295 x 855	P30 11 60 2	
	205 x 335	P30 06 10 2		225 x 350	P40 06 20 2		405 x 420	P30 17 40 2		310 x 825	P30 12 60 2	
	220 x 290	P30 07 10 2		245 x 305	P40 07 20 2		205 x 810	P40 05 40 2		350 x 720	P30 14 60 2	
	240 x 250	P30 08 10 2		265 x 275	P40 08 20 2		225 x 685	P40 06 40 2		365 x 645	P30 15 60 2	
	165 x 395	P40 03 10 2		3 kW	205 x 925		P30 06 30 2	245 x 595		P40 07 40 2	385 x 635	P30 16 60 2
	185 x 305	P40 04 10 2			225 x 790		P30 07 30 2	285 x 475		P40 09 40 2	405 x 625	P30 17 60 2
205 x 255	P40 05 10 2	240 x 690	P30 08 30 2		310 x 435	P40 10 40 2	420 x 570	P30 18 60 2				
225 x 230	P40 06 10 2	260 x 620	P30 09 30 2		325 x 400	P40 11 40 2	440 x 550	P30 19 60 2				
1.5 kW	165 x 680	P30 04 15 2		275 x 555	P30 10 30 2	5 kW	345 x 375	P40 12 40 2		455 x 545	P30 20 60 2	
	205 x 425	P30 06 15 2		295 x 510	P30 11 30 2		340 x 580	P30 13 50 2		475 x 540	P30 21 60 2	
	220 x 355	P30 07 15 2		315 x 460	P30 12 30 2		360 x 545	P30 14 50 2		265 x 785	P40 08 60 2	
	240 x 315	P30 08 15 2		330 x 440	P30 13 30 2		375 x 520	P30 15 50 2		305 x 635	P40 10 60 2	
	260 x 285	P30 10 15 2		345 x 410	P30 14 30 2		395 x 500	P30 16 50 2		325 x 585	P40 11 60 2	
	185 x 375	P40 04 15 2		365 x 390	P30 15 30 2		410 x 475	P30 17 50 2		350 x 550	P40 12 60 2	
	205 x 345	P40 05 15 2		370 x 385	P30 16 30 2		430 x 455	P30 18 50 2		365 x 505	P40 13 60 2	
	225 x 275	P40 06 15 2		205 x 685	P40 05 30 2		450 x 445	P30 19 50 2		390 x 470	P40 14 60 2	
2 kW	245 x 245	P40 07 15 2		225 x 575	P40 06 30 2	215 x 940	P40 05 50 2	405 x 455	P40 15 60 2			
	245 x 245	P40 08 15 2		245 x 500	P40 07 30 2	235 x 790	P40 06 50 2	425 x 425	P40 16 60 2			
	170 x 765	P30 04 20 2		265 x 445	P40 08 30 2	255 x 685	P40 07 50 2	300 x 300	P90 10 60 2			
	185 x 635	P30 05 20 2		285 x 400	P40 09 30 2	275 x 605	P40 08 50 2					
	205 x 565	P30 06 20 2		325 x 340	P40 11 30 2	295 x 545	P40 09 50 2					

Standard cable : FEP single layer. Other cable available, see top of page.
 For the construction of the reference, see top of page.
 All dimensions given with a tolerance of ± 10 mm.

List of other voltages available :
 • 110V single-phase :
 0.5 kW, 1 kW, 1.5 kW, 2 kW
 • 460V single-phase :
 1 kW, 1.5 kW, 2 kW, 3 kW, 4 kW,
 5 kW, 6 kW

ELECTRICAL HEATING

THREE - PHASE HEATERS

kW	J x K	230V TRI	400V TRI	kW	J x K	230V TRI	400V TRI	kW	J x K	230V TRI	400V TRI		
1.5 kW	170 x 680	P30 04 15 4	P30 04 15 5	6 kW	380 x 380	P40 14 45 4	P40 14 45 5	15 kW	425 x 800	P40 16 12 4	P40 16 12 5		
	205 x 475	P30 06 15 4	P30 06 15 5		265 x 265	P90 09 45 4	P90 09 45 5		465 x 740	P40 18 12 4	P40 18 12 5		
	225 x 440	P30 07 15 4	P30 07 15 5		275 x 990	P30 10 60 4	P30 10 60 5		485 x 705	P40 19 12 4	P40 19 12 5		
	240 x 360	P30 08 15 4	P30 08 15 5		295 x 855	P30 11 60 4	P30 11 60 5		505 x 680	P40 20 12 4	P40 20 12 5		
	280 x 340	P30 10 15 4	P30 10 15 5		310 x 825	P30 12 60 4	P30 12 60 5		545 x 625	P40 22 12 4	P40 22 12 5		
	185 x 380	P40 04 15 4	P40 04 15 5		350 x 720	P30 14 60 4	P30 14 60 5		585 x 595	P40 24 12 4	P40 24 12 5		
	205 x 375	P40 05 15 4	P40 05 15 5		365 x 645	P30 15 60 4	P30 15 60 5		410 x 410	P90 16 12 4	P90 16 12 5		
	225 x 325	P40 06 15 4	P40 06 15 5		385 x 635	P30 16 60 4	P30 16 60 5		15 kW	430 x 1245	P30 18 13 4	P30 18 13 5	
	245 x 275	P40 07 15 4	P40 07 15 5		405 x 625	P30 17 60 4	P30 17 60 5			445 x 1235	P30 19 13 4	P30 19 13 5	
	270 x 270	P40 08 15 4	P40 08 15 5		420 x 570	P30 18 60 4	P30 18 60 5			465 x 1140	P30 20 13 4	P30 20 13 5	
	195 x 195	P90 05 15 4	P90 05 15 5		440 x 550	P30 19 60 4	P30 19 60 5			485 x 1125	P30 21 13 4	P30 21 13 5	
	3 kW	205 x 905	P30 06 30 4		P30 06 30 5	455 x 545	P30 20 60 4			P30 20 60 5	500 x 1045	P30 22 13 4	P30 22 13 5
		225 x 910	P30 07 30 4		P30 07 30 5	475 x 540	P30 21 60 4			P30 21 60 5	520 x 1030	P30 23 13 4	P30 23 13 5
240 x 700		P30 08 30 4	P30 08 30 5	265 x 785	P40 08 60 4	P40 08 60 5	540 x 1035	P30 24 13 4		P30 24 13 5			
260 x 705		P30 09 30 4	P30 09 30 5	305 x 635	P40 10 60 4	P40 10 60 5	555 x 950	P30 25 13 4		P30 25 13 5			
275 x 580		P30 10 30 4	P30 10 30 5	325 x 585	P40 11 60 4	P40 11 60 5	575 x 940	P30 26 13 4		P30 26 13 5			
295 x 575		P30 11 30 4	P30 11 30 5	350 x 550	P40 12 60 4	P40 12 60 5	595 x 925	P30 27 13 4		P30 27 13 5			
315 x 490		P30 12 30 4	P30 12 30 5	365 x 505	P40 13 60 4	P40 13 60 5	375 x 1125	P40 13 13 4		P40 13 13 5			
330 x 465		P30 13 30 4	P30 13 30 5	390 x 470	P40 14 60 4	P40 14 60 5	395 x 1055	P40 14 13 4		P40 14 13 5			
350 x 450		P30 14 30 4	P30 14 30 5	405 x 455	P40 15 60 4	P40 15 60 5	415 x 1000	P40 15 13 4		P40 15 13 5			
370 x 410		P30 15 30 4	P30 15 30 5	425 x 425	P40 16 60 4	P40 16 60 5	435 x 940	P40 16 13 4	P40 16 13 5				
380 x 395		P30 16 30 4	P30 16 30 5	300 x 300	P90 10 60 4	P90 10 60 5	455 x 890	P40 17 13 4	P40 17 13 5				
205 x 735		P40 05 30 4	P40 05 30 5	9 kW	400 x 975	P30 17 90 4	P30 17 90 5	475 x 850	P40 18 13 4	P40 18 13 5			
230 x 615		P40 06 30 4	P40 06 30 5		435 x 870	P30 19 90 4	P30 19 90 5	495 x 810	P40 19 13 4	P40 19 13 5			
250 x 545	P40 07 30 4	P40 07 30 5	475 x 800		P30 21 90 4	P30 21 90 5	515 x 780	P40 20 13 4	P40 20 13 5				
265 x 470	P40 08 30 4	P40 08 30 5	490 x 790		P30 22 90 4	P30 22 90 5	535 x 750	P40 21 13 4	P40 21 13 5				
285 x 420	P40 09 30 4	P40 09 30 5	525 x 720		P30 24 90 4	P30 24 90 5	555 x 725	P40 22 13 4	P40 22 13 5				
325 x 360	P40 11 30 4	P40 11 30 5	545 x 705		P30 25 90 4	P30 25 90 5	575 x 700	P40 23 13 4	P40 23 13 5				
340 x 340	P40 12 30 4	P40 12 30 5	565 x 695		P30 26 90 4	P30 26 90 5	595 x 690	P40 24 13 4	P40 24 13 5				
250 x 250	P90 07 30 4	P90 07 30 5	600 x 675		P30 28 90 4	P30 28 90 5	615 x 660	P40 25 13 4	P40 25 13 5				
4.5 kW	240 x 905	P30 08 45 4	P30 08 45 5		345 x 890	P40 12 90 4	P40 12 90 5	635 x 640	P40 26 13 4	P40 26 13 5			
	275 x 750	P30 10 45 4	P30 10 45 5		385 x 775	P40 14 90 4	P40 14 90 5	450 x 450	P90 17 13 4	P90 17 13 5			
	295 x 730	P30 11 45 4	P30 11 45 5		405 x 730	P40 15 90 4	P40 15 90 5	Other voltage available 460V 3-ph : 3 kW, 4.5 kW, 6 kW, 9 kW, 12 kW, 15 kW					
	315 x 625	P30 12 45 4	P30 12 45 5		425 x 685	P40 16 90 4	P40 16 90 5						
	350 x 535	P30 14 45 4	P30 14 45 5		445 x 655	P40 17 90 4	P40 17 90 5						
	370 x 520	P30 15 45 4	P30 15 45 5	465 x 625	P40 18 90 4	P40 18 90 5							
	385 x 505	P30 16 45 4	P30 16 45 5	505 x 575	P40 20 90 4	P40 20 90 5							
	405 x 460	P30 17 45 4	P30 17 45 5	525 x 565	P40 21 90 4	P40 21 90 5							
	420 x 440	P30 18 45 4	P30 18 45 5	375 x 375	P90 15 90 4	P90 15 90 5							
	265 x 595	P40 08 45 4	P40 08 45 5	12 kW	430 x 1075	P30 18 12 4	P30 18 12 5						
	285 x 535	P40 09 45 4	P40 09 45 5		440 x 1070	P30 19 12 4	P30 19 12 5						
	305 x 480	P40 10 45 4	P40 10 45 5		510 x 885	P30 23 12 4	P30 23 12 5						
	325 x 445	P40 11 45 4	P40 11 45 5		585 x 785	P30 27 12 4	P30 27 12 5						
345 x 425	P40 12 45 4	P40 12 45 5	385 x 915		P40 14 12 4	P40 14 12 5							
365 x 395	P40 13 45 4	P40 13 45 5	405 x 860	P40 15 12 4	P40 15 12 5								

Standard cable : FEP single layer. Other cable available, see previous page.
For the construction of the reference, see previous page.
All dimensions given with a tolerance of ± 10 mm.

OPTIONS

Accessories



EXTRA LENGTH OF CABLES

Electrical connection cable C in H05 VV-F (PVC) or H07 RN-F (Neopren). Non heating cable N cable exiting the tank.



CABLE-GLAND Ø75 MM

Passthrough for power cable in PP - in PVDF



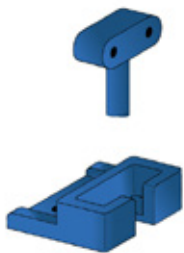
UNIVERSAL FEET (NOT APPLICABLE TO TYPE B)

Standard height 50 mm
Other heights possible
For installation at the bottom of the tank.
in PP - in PVDF - in PTFE
in inox (assembly A only)



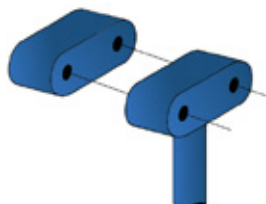
REMOVABLE GUARD

Perforated plastic guard
in PP - in PVDF



FRAME SUPPORTS (ASSEMBLY F ONLY)

Standard height 50 mm
For tank lip mounting
Frame supports to fix on the edge of the tank.
in PP - in PVDF

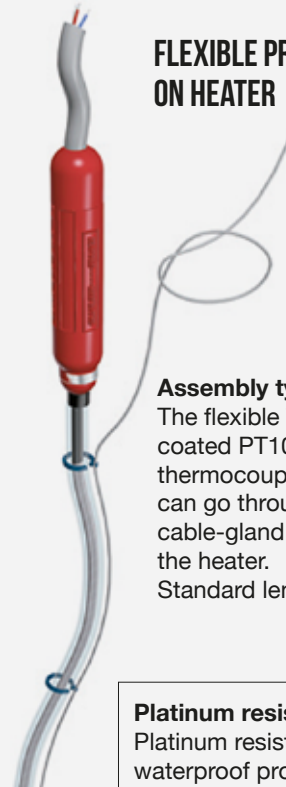


FOR WALL MOUNTING

Wedges for frame to fix on the edge of the tank.
in PP - in PVDF

Probes

FLEXIBLE PROBE MOUNTED ON HEATER



Assembly type T

The flexible Teflon[®] coated PT100 or thermocouple J probe can go through the same cable-gland as the one of the heater.
Standard length 1,5 m

Platinum resistance probe

Platinum resistant, waterproof probe with a PT100 sensor (100 Ω / 0°C class B). Connection to the sensor by 2 or 3 insulated wires in a special Teflon[®] insulated cable.

Thermocouple probe

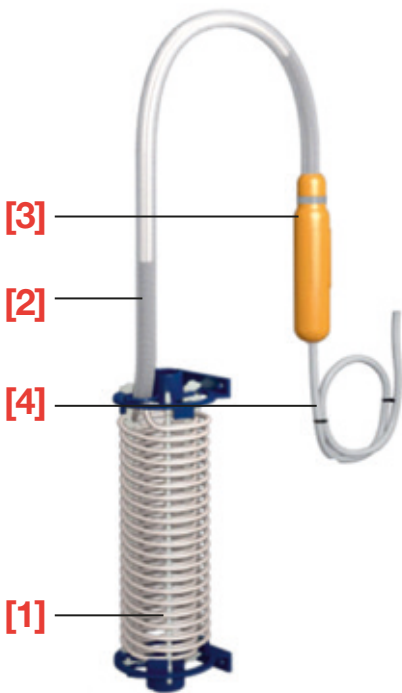
Type J thermocouple wire insulated with a Teflon[®] sleeving. The hot junction tip is protected by a Teflon[®] shrink tube.

GALVATHERM[®]

Cylindrical Immersion Heater



The Galvatherm heaters are specially designed for heating corrosive baths using a cable that only heats the part that is to be continually immersed [1]. The cable is covered with a Teflon coating. This coating enables the heaters to resist the heatflow and the chemical attack of the bath.



- corrosive baths upto 90°C (120°C on request)
- minimal space required
- assembly P / R / S
- C85 = dia. 85mm / C12 = Ø 125mm
- IP64 PVC injected connection sleeve [3]
- 230V-1ph / 230V-3ph / 400V-3ph
- FEP single layer standard cable coating (other coatings available on request)
- Non heating cable N [2] and connection cable C [4] have a standard length of 1m
- standard 1W/cm² (on request 0,5W/cm²)
- 0,5 - 15kW

ASSEMBLY	TYPE R	TYPE S	TYPE P
Description	side model	base model	bottom model
Place of installation	side	side or bottom	bottom
Frame material	rigid plastic rod structure dia. 20mm, PVDF or PP	no rigid structure, materials in PVDF or PP	rigid plastic rod structure dia. 20mm, PVDF or PP
Product availability	C85 and C12		

DIFFERENT ASSEMBLIES

- N = non heating cable
- C = electric cable
- X = height upto the fixing support (max. 1800mm)
- A = heater length

For classical tank configurations, offering a large exchange surface in a minimum bulk.

Type R



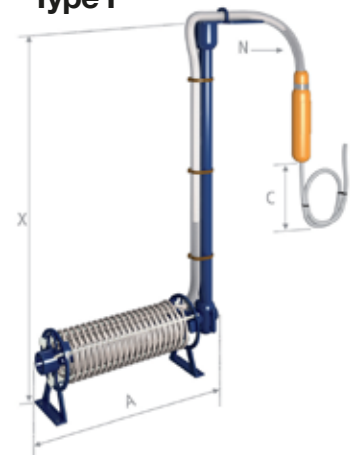
Installation on the side

Type S



Installation on the side or at the bottom

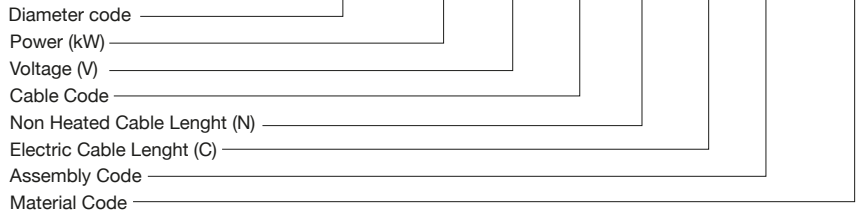
Type P



Installation at the bottom

ORDERING INFORMATION

CXX ZZ V D N C A M



DIAMETER CODE

C85 = Ø 85mm
C12 = Ø 125mm

POWER

05 = 0.5 kW
10 = 1 kW
15 = 1.5 kW
20 = 2 kW
30 = 3 kW
40 = 4 kW
45 = 4.5 kW
60 = 6 kW
90 = 9 kW
12 = 12 kW
13 = 15 kW

VOLTAGE

1 = 110V M
2 = 230V M
3 = 460V M
4 = 230V T
5 = 400V T
6 = 460V T

CABLE CODE

F = FEP single layer
G = FEP double layer
P = PFA single layer
D = PFA double layer

N LENGTH

0 = 1m
1 = 1.5m
2 = 2m
3 = 2.5m
4 = 3m
5 = 3.5m
6 = 4m
7 = 4.5m
8 = 5m
9 = sup. 5m

C LENGTH

0 = 1m
1 = 1.5m
2 = 2m
3 = 2.5m
4 = 3m
5 = 3.5m
6 = 4m
7 = 4.5m
8 = 5m
9 = sup. 5m

ASSEMBLY CODE DETAILS

R = rigid structure, vertical
P = rigid structure, horizontal
S = flexible, no rigid structure

SUPPORT MATERIALS CODIFICATION

code	strips	other pieces
1	PVDF	PVDF
2	PP	PP

MOUNTING R

kW	Ø [mm]	A [mm]	230V MONO
0.5 kW	85	165	C85052
1 kW	85	260	C85102
1.5 kW	85	310	C85152
2 kW	85	390	C85202
3 kW	85	620	C85302
4 kW	85	730	C85402
5 kW	85	840	C85502
6 kW	85	1140	C85602
6 kW	125	720	C12602

MOUNTING R

kW	Ø [mm]	A [mm]	230V TRI	400V TRI
1.5 kW	85	445	C85154	C85155
3 kW	85	755	C85304	C85305
4.5 kW	85	900	C85454	C85455
4.5 kW	125	570	C12454	C12455
6 kW	85	1140	C85604	C85605
6 kW	125	720	C12604	C12605
9 kW	125	1140	C12904	C12905
12 kW	125	1320	C12124	C12125
15 kW	125	1520	---	C12135

MOUNTING S

kW	Ø [mm]	A [mm]	230V MONO
0.5 kW	85	165	C85052
1 kW	85	260	C85102
1.5 kW	85	310	C85152
2 kW	85	390	C85202
3 kW	85	620	C85302
4 kW	85	730	C85402
6 kW	85	1140	C85602
6 kW	125	720	C12602

MOUNTING S

kW	Ø [mm]	A [mm]	230V TRI	400V TRI
1.5 kW	85	465	C85154	C85155
3 kW	85	775	C85304	C85305
4.5 kW	85	920	C85454	C85455
4.5 kW	125	590	C12454	C12455
6 kW	85	1160	C85604	C85605
6 kW	125	740	C12604	C12605
9 kW	125	1160	C12904	C12905
12 kW	125	1340	C12124	C12125
15 kW	125	1550	---	C12135

MOUNTING P

kW	Ø [mm]	A [mm]	230V MONO
0.5 kW	85	225	C85052
1 kW	85	320	C85102
1.5 kW	85	370	C85152
2 kW	85	450	C85202
3 kW	85	680	C85302
4 kW	85	790	C85402
6 kW	85	1200	C85602
6 kW	125	780	C12602

MOUNTING P

kW	Ø [mm]	A [mm]	230V TRI	400V TRI
1.5 kW	85	505	C85154	C85155
3 kW	85	815	C85304	C85305
4.5 kW	85	960	C85454	C85455
4.5 kW	125	630	C12454	C12455
6 kW	85	1200	C85604	C85605
6 kW	125	780	C12604	C12605
9 kW	125	1200	C12904	C12905
12 kW	125	1380	C12124	C12125
15 kW	125	1590	---	C12135

Standard cable : FEP single layer. Other coatings available.
All dimensions given with a tolerance of +/- 10 mm.

List of other voltages available :
• **110V single-phase** : from 0.5kW to 2kW
• **460V single-phase** : from 1kW to 6kW
• **460V three-phase** : from 3kW to 15kW

OPTIONS

Accessories



EXTRA LENGTH OF CABLES

Electrical connection cable C in H05 VV-F (PVC) or H07 RN-F (Neopren). Non heating cable N cable exiting the tank.



CABLE-GLAND Ø75 MM

Passthrough for power cable in PP - in PVDF



FEET FOR MOUNTING TYPE S

Standard height 35mm
For installation at the bottom of the tank.
For C85 and C12 models.

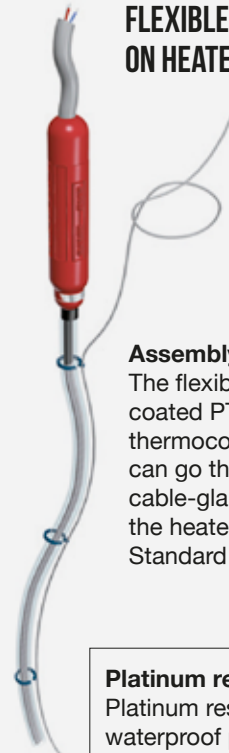


REMOVABLE GUARD perforated plastic guard in PP only

For C85 and C12 models

Probes

FLEXIBLE PROBE MOUNTED ON HEATER



Assembly type T

The flexible Teflon[®] coated PT100 or thermocouple J probe can go through the same cable-gland as the one of the heater.
Standard length 1,5 m

Platinum resistance probe

Platinum resistant, waterproof probe with a PT100 sensor (100 Ω / 0°C class B). Connection to the sensor by 2 or 3 insulated wires in a special Teflon[®] insulated cable.

Thermocouple probe

Type J thermocouple wire insulated with a Teflon[®] sleeving. The hot junction tip is protected by a Teflon[®] shrink tube.



IMMERSION HEATERS

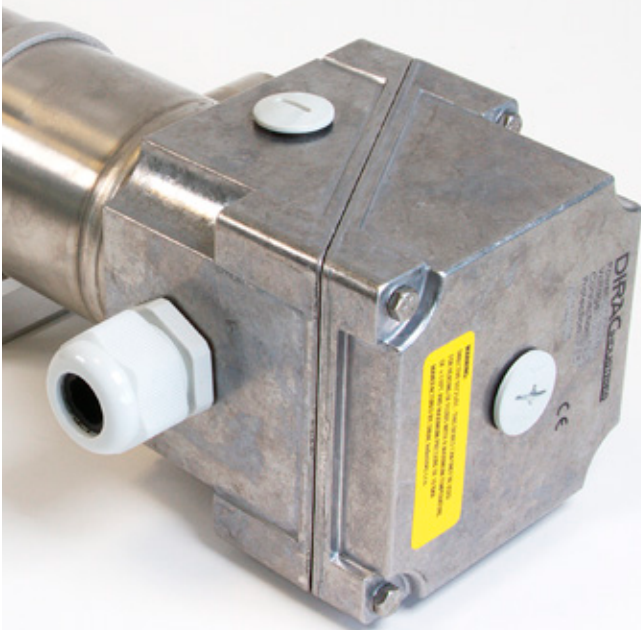
DRVI77E1

Circulation heater
for water



DRVI77E1

Circulation heater
for water



CIRCULATION HEATERS

OUR CIRCULATION HEATERS, PRE-INSULATED OR NOT

Our circulation heaters, pre-insulated or not, are fabricated with a robust stainless steel housing with mounted immersion heater and connection box. They can also be equipped with the necessary measuring devices and can be delivered pre-insulated.



WATER

Systems for the heating of water.



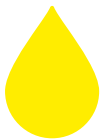
WATER+

Systems for heating of water with additives



GLYCOL

Systems for the heating of glycol water.



OIL

Systems for the heating of oil (up to 120°C).



HOT OIL

Systems for heating of oil at high temperature (up to 250°C).
On demand.



CHEMICAL

Systems for the heating of chemical solutions.
On demand.

DRVI47EI

Circulation heater for water



With the DRVI47EI we developed a standard set of circulation heaters for the heating of city water.

On demand, adjustments can be made if the requested quantity is justified. We can tailor make the desired solution.

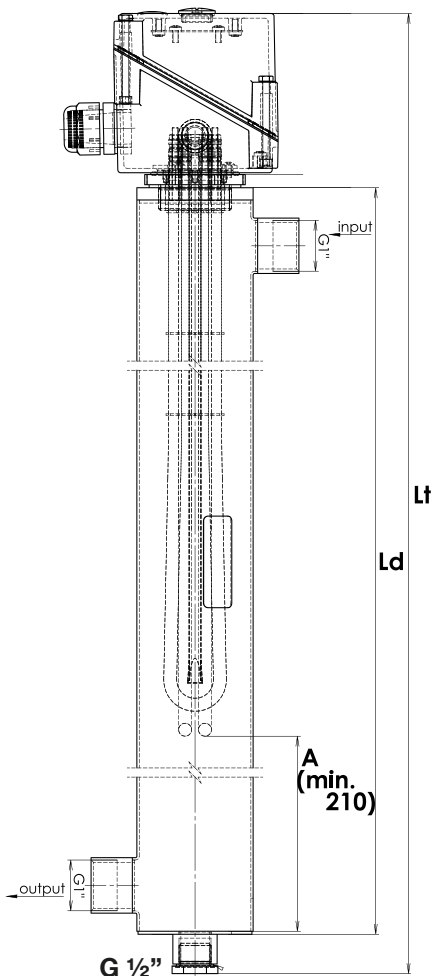


- Wide range of outputs and lengths available
- 1 – 12 kW
- 10 W/cm²
- Brass screw plug 1½"
- Pocket for thermostat Ø 8 x 0,5 mm
- Stainless steel 316L heating elements Ø 8,5 mm
- Brazing of element
- Stainless steel 316L housing
- IP55 aluminium connection box
- Fluid in-/outlet : G1"
- Fitting 6½" for output temperature measurement
- Supply : 230V/1ph, 230V/3ph, 400V/3ph (Other power supplies on demand)
- M4 electrical connections
- Pickling & passivation

DIRAC REFERENCE	DIRAC REFERENCE	OUTPUT	Lt	Ld	A
	Insulated	[W]	[mm]	[mm]	[mm]
DRVI47EI010	DRVSI47EI010	1000	630,5	490	383
DRVI47EI020	DRVSI47EI020	2000	630,5	490	318
DRVI47EI030	DRVSI47EI030	3000	630,5	490	253
DRVI47EI045	DRVSI47EI045	4500	852,5	712	375
DRVI47EI060	DRVSI47EI060	6000	852,5	712	275
DRVI47EI075	DRVSI47EI075	7500	1287,5	1147	610
DRVI47EI090	DRVSI47EI090	9000	1287,5	1147	510
DRVI47EI100	DRVSI47EI100	10000	1287,5	1147	445
DRVI47EI120	DRVSI47EI120	12000	1287,5	1147	346

Conformity with PED (Pressure Equipment Directive) EU/2014/68 has to be verified for each application.

OTHER VARIANTS ON DEMAND



OPTIONS

BRACKETS / SUPPORTS

Support foot for use with single vessel reference: **FCMM-DRVI47** (set of 2p)

INSULATION

Insulation on request: **DRVSI**

MULTIPLE VESSEL CONFIGURATION

Enables connection and coupling of multiple heaters

TEMPERATURE CONTROL/LIMITATION

Accurate heater regulation/protection

For more details, see the full DRVI options page

DRVI471

Circulation heater for water with additives



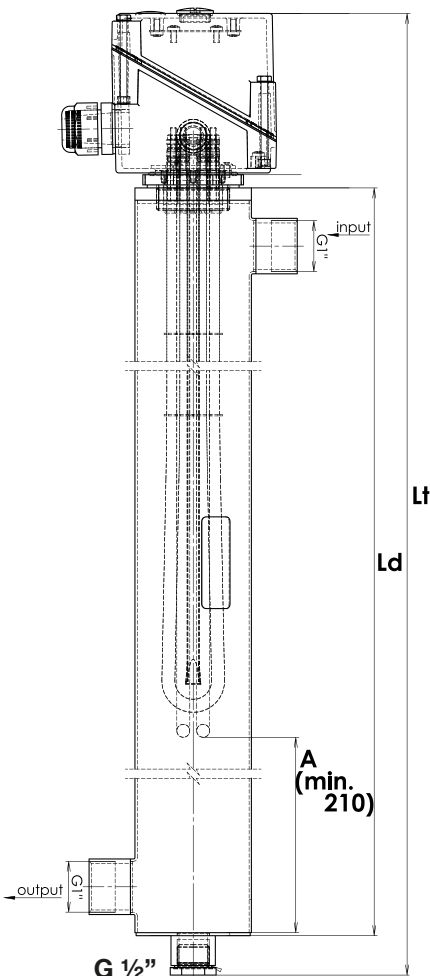
With the DRVI471 we developed a standard set of circulation heaters, completely in stainless steel, for the heating of water with additives.

On demand, adjustments can be made if the requested quantity is justified. We can tailor make the desired solution.



- Wide range of outputs and lengths available
- 3 – 15 kW
- 12,5 W/cm²
- SS304 screw plug 1½"
- Pocket for thermostat Ø 8 x 0,5 mm
- Incoloy 825 heating elements Ø 8,5 mm
- TIG welded element
- Stainless steel 316L housing
- IP 55 aluminium connection box
- Fluid in-/outlet : G1"
- Fitting 6½" for output temperature measurement
- Supply : 230V/1ph, 230V/3ph, 400V/3ph (Other power supplies on demand)
- M4 electrical connections
- Pickling & passivation

DIRAC REFERENCE	DIRAC REFERENCE	OUTPUT	Lt	Ld	A
	Insulated	[W]	[mm]	[mm]	[mm]
DRVI471030	DRVSI471030	3000	630,5	490	238
DRVI471045	DRVSI471045	4500	852,5	712	425
DRVI471060	DRVSI471060	6000	852,5	712	340
DRVI471075	DRVSI471075	7500	852,5	712	260
DRVI471090	DRVSI471090	9000	1287,5	1147	610
DRVI471120	DRVSI471120	12000	1287,5	1147	445
DRVI471150	DRVSI471150	15000	1287,5	1147	280



Conformity with PED (Pressure Equipment Directive) EU/2014/68 has to be verified for each application.

OTHER VARIANTS ON DEMAND

OPTIONS

BRACKETS / SUPPORTS

Support foot for use with single vessel reference: **FCMM-DRVI47** (set of 2p)

INSULATION

Insulation on request: **DRVSI**

MULTIPLE VESSEL CONFIGURATION

Enables connection and coupling of multiple heaters

TEMPERATURE CONTROL/LIMITATION

Accurate heater regulation/protection

For more details, see the full DRVI options page

DRVI47EG

Circulation heater for glycol



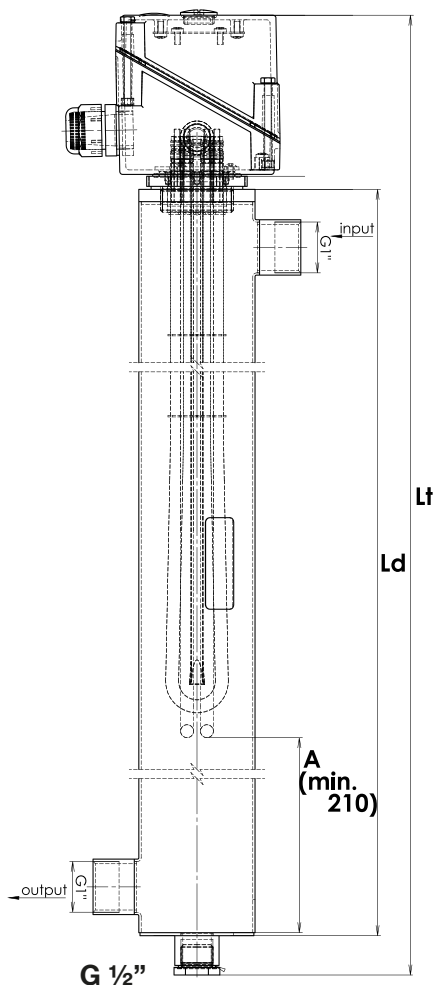
With the DRVI47EG we developed a standard set of circulation heaters for the heating of glycol-water (max. 50%).

On demand, adjustments can be made if the requested quantity is justified. We can tailor make the desired solution.



- Wide range of outputs and lengths available
- 1 – 6 kW
- 5 W/cm²
- Brass screw plug 1½”
- Pocket for thermostat Ø8 x 0,5 mm
- Stainless steel 321 heating elements Ø 8,5 mm
- Brazing of elements
- Stainless steel 316L housing
- IP55 aluminium connection box
- Fluid in-/outlet : G1”
- Fitting 6½” for output temperature measurement
- Supply : 230V/1ph, 230V/3ph, 400V/3ph (Other power supplies on demand)
- M4 electrical connections
- Pickling & passivation

DIRAC REFERENCE	DIRAC REFERENCE	OUTPUT	Lt	Ld	A
	Insulated	[W]	[mm]	[mm]	[mm]
DRVI47EG010	DRVSI47EG010	1000	630,5	490	318
DRVI47EG015	DRVSI47EG015	1500	630,5	490	253
DRVI47EG020	DRVSI47EG020	2000	852,5	712	410
DRVI47EG030	DRVSI47EG030	3000	852,5	712	275
DRVI47EG045	DRVSI47EG045	4500	1287,5	1147	510
DRVI47EG060	DRVSI47EG060	6000	1287,5	1147	310



Conformity with PED (Pressure Equipment Directive) EU/2014/68 has to be verified for each application.

OTHER VARIANTS ON DEMAND

OPTIONS

BRACKETS / SUPPORTS

Support foot for use with single vessel reference: **FCMM-DRVI47** (set of 2p)

INSULATION

Insulation on request: **DRVSI**

MULTIPLE VESSEL CONFIGURATION

Enables connection and coupling of multiple heaters

TEMPERATURE CONTROL/LIMITATION

Accurate heater regulation/protection

For more details, see the full DRVI options page

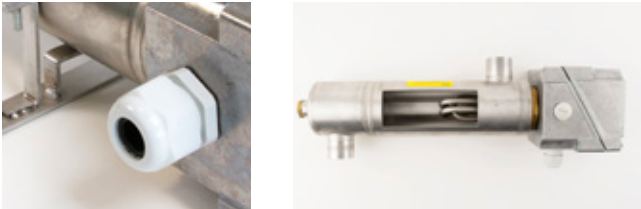
DRVI47HI

Circulation heater for oil



With the DRVI47HI we developed a standard set of circulation heaters for the heating of oil (up to 120°C).

On demand, adjustments can be made if the requested quantity is justified. We can tailor make the desired solution.



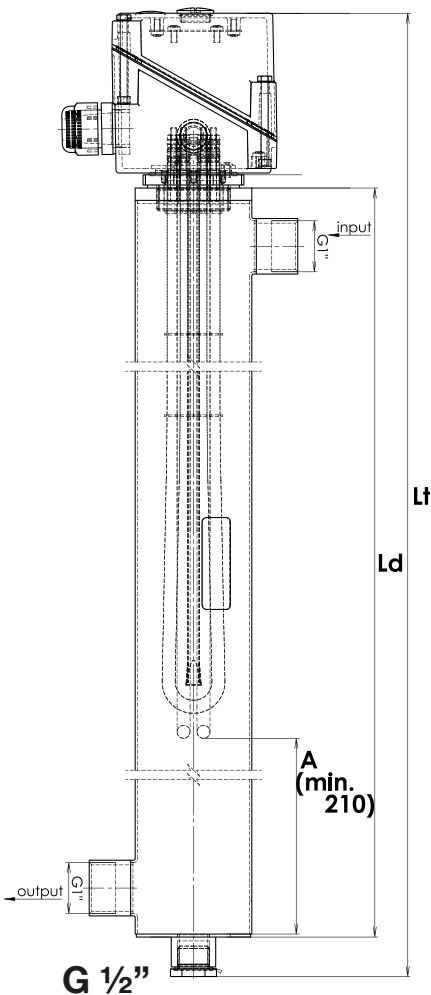
- Wide range of outputs and lengths available
- 0,5 – 3 kW
- 2,5 W/cm²
- Brass screw plug 1½"
- Pocket for thermostat Ø 8 x 0,5 mm
- Stainless steel 321 heating elements Ø 8,5 mm
- Brazing of elements
- Stainless steel 316L housing
- IP55 aluminium connection box
- Fluid in-/outlet : G1"
- Fitting 6½" for output temperature measurement
- Supply : 230V/1ph, 230V/3ph, 400V/3ph (Other power supplies on demand)
- M4 electrical connections
- Pickling & passivation

DIRAC REFERENCE	DIRAC REFERENCE	OUTPUT	Lt	Ld	A
	Insulated	[W]	[mm]	[mm]	[mm]
* DRVI47HI005	DRVSI47HI005	500	630,5	490	303
DRVI47HI007	DRVSI47HI007	750	630,5	490	238
DRVI47HI010	DRVSI47HI010	1000	852,5	712	395
DRVI47HI015	DRVSI47HI015	1500	852,5	712	260
DRVI47HI020	DRVSI47HI020	2000	1287,5	1147	560
DRVI47HI030	DRVSI47HI030	3000	1287,5	1147	295

(*) only 230V - 1ph

Conformity with PED (Pressure Equipment Directive) EU/2014/68 has to be verified for each application.

OTHER VARIANTS ON DEMAND



OPTIONS

BRACKETS / SUPPORTS

Support foot for use with single vessel reference: **FCMM-DRVI47** (set of 2p)

INSULATION

Insulation on request: **DRVSI**

MULTIPLE VESSEL CONFIGURATION

Enables connection and coupling of multiple heaters

TEMPERATURE CONTROL/LIMITATION

Accurate heater regulation/protection

For more details, see the full DRVI options page

ELECTRICAL HEATING OPTIONS

BRACKETS / SUPPORTS

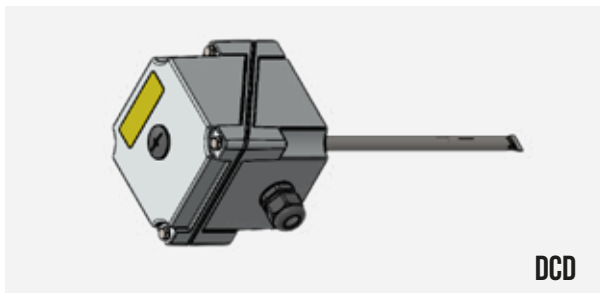


Support foot for use with a single vessel
reference: **FCMM-DRVI47** (set of 2p)

TEMPERATURE CONTROL

Heat regulation on output (using a 6½" fitting)

- **Thermostat** : DCD-Range



DCD

- **PT100-sonde** : SPT200I16T-100, 3-wires class A,
Ø6x100mm, screwplug 1/2" BSP, -50/+200°C



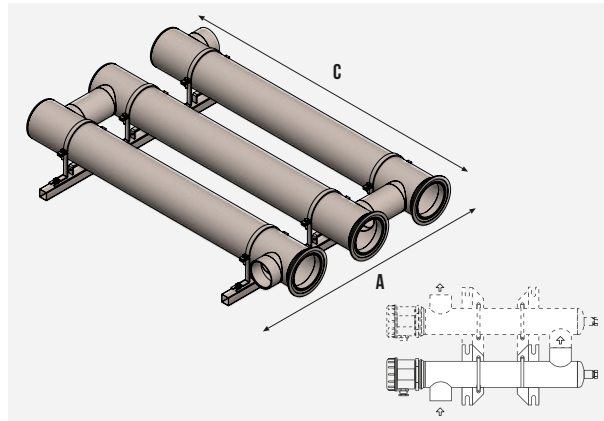
PT100

TEMPERATURE LIMITATION

Heat limitation in thermal pocket (Ø 8 x 0,5 mm)

- **Thermostat**: for products and compatibility list see
DTV47 range

MULTIPLE VESSEL CONFIGURATION



REFERENCE	NR OF BODIES	TOTAL HEIGHT 'A' [mm]
WLDC2-DRVI47-xxxx	2	384
WLDC3-DRVI47-xxxx	3	548
WLDC4-DRVI47-xxxx	4	712
REFERENCE	TOTAL LENGTH 'C' [mm]	
WLDCx-DRVI47-0490	490	
WLDCx-DRVI47-712	712	
WLDCx-DRVI47-1147	1147	

ORDERING INFORMATION

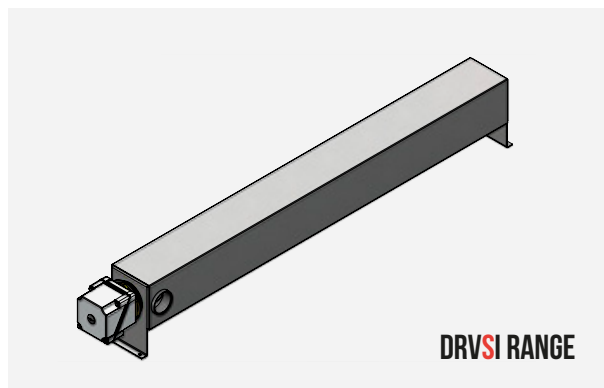
WLDC X - DRVI47 - YYYY

Number of bodies _____

Type of circulation heater _____

Total length of vessel config. _____

INSULATION



DRVSI RANGE

20 mm of insulation and stainless steel cover

 MORE INFO AND PRODUCTS AVAILABLE IN CONTROL



CIRCULATION HEATERS

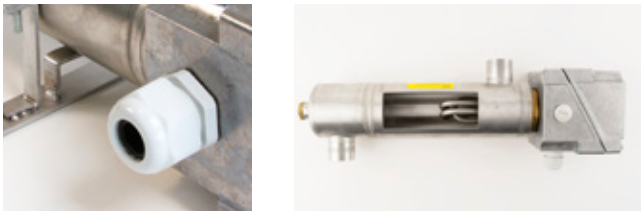
DRVI77EI

Circulation heater for water



With the DRVI77EI we developed a standard set of immersion heaters for the heating of city water.

On demand, adjustments can be made if the requested quantity is justified. We can tailor make the desired solution.

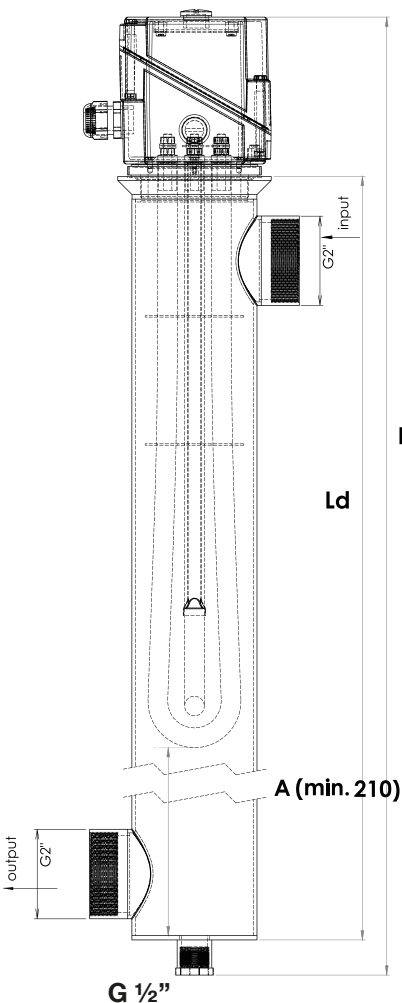


- Wide range of outputs and lengths available
- 3 – 32 kW
- 10 W/cm²
- Brass screw plug M77
- Pocket for thermostat Ø 10 x 0,5 mm
- Stainless steel 316L heating elements Ø 14 mm
- Brazing of elements
- Stainless steel 316L housing
- IP55 aluminium connection box
- Fluid in-/outlet : G2"
- Fitting 6½" for output temperature measurement
- Supply : 230V/1ph, 230V/3ph, 400V/3ph (Other power supplies on demand)
- M6 electrical connections
- Pickling & passivation

DIRAC REFERENCE	DIRAC REFERENCE	OUTPUT	Lt	Ld	A
	Insulated	[W]	[mm]	[mm]	[mm]
DRVI77EI030	DRVSI77EI030	3000	883	760	587
DRVI77EI060	DRVSI77EI060	6000	883	760	472
DRVI77EI090	DRVSI77EI090	9000	883	760	357
DRVI77EI120	DRVSI77EI120	12000	883	760	247
DRVI77EI150	DRVSI77EI150	15000	1363	1250	622
DRVI77EI180	DRVSI77EI180	18000	1363	1250	507
DRVI77EI240	DRVSI77EI240	24000	1363	1250	282
DRVI77EI320	DRVSI77EI320	32000	1928	1790	517

Conformity with PED (Pressure Equipment Directive) EU/2014/68 has to be verified for each application.

OTHER VARIANTS ON DEMAND



OPTIONS

BRACKETS / SUPPORTS

Support foot for use with single vessel reference: **FCMM-DRVI47** (set of 2p)

MULTIPLE VESSEL CONFIGURATION

Enables connection and coupling of multiple heaters

INSULATION

Insulation on request: **DRVSI**

TEMPERATURE CONTROL/LIMITATION

Accurate heater regulation/protection

For more details, see the full DRVI options page

DRVI771

Circulation heater for water with additives



With the DRVI771 we developed a standard set of immersion heaters, completely in stainless steel, for the heating of water with additives.

On demand, adjustments can be made if the requested quantity is justified. We can tailor make the desired solution.

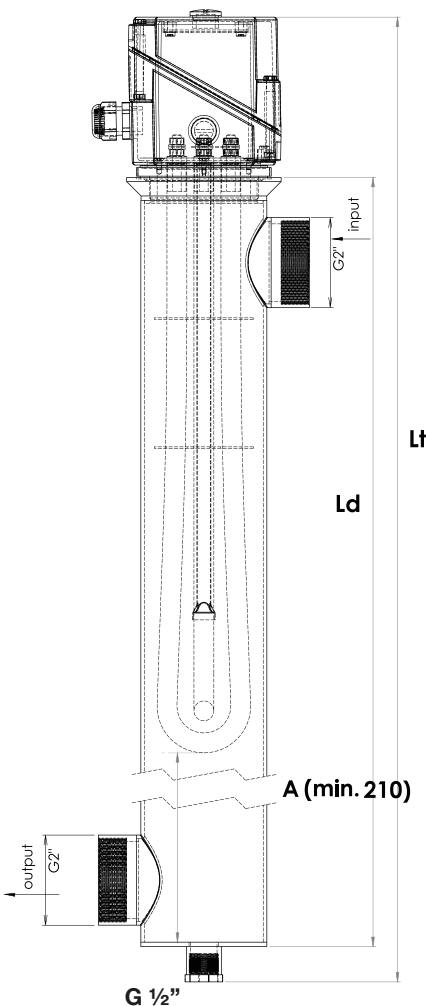
- Wide range of outputs and lengths available
- 3 – 32 kW
- 12,5 W/cm²
- SS304 screw plug M77
- Pocket for thermostat Ø 10 x 0,5 mm
- Incoloy 825 heating elements Ø 14 mm
- TIG welded elements
- Stainless steel 316L housing
- IP 55 aluminium connection box
- Fluid in-/outlet : G2"
- Fitting 6½" for output temperature measurement
- Supply: 230V/1ph, 230V/3ph, 400V/3ph (Other power supplies on demand)
- M6 electrical connections
- Pickling & passivation

DIRAC REFERENCE	DIRAC REFERENCE	OUTPUT	Lt	Ld	A
	Insulated	[W]	[mm]	[mm]	[mm]
DRVI771030	DRVSI771030	3000	883	760	602
DRVI771060	DRVSI771060	6000	883	760	507
DRVI771090	DRVSI771090	9000	883	760	417
DRVI771120	DRVSI771120	12000	883	760	327
DRVI771150	DRVSI771150	15000	883	760	237
DRVI771180	DRVSI771180	18000	1363	1250	637
DRVI771240	DRVSI771240	24000	1363	1250	452
* DRVI771320	DRVSI771320	32000	1363	1250	212

(*) only 230V - 1ph

Conformity with PED (Pressure Equipment Directive) EU/2014/68 has to be verified for each application.

OTHER VARIANTS ON DEMAND



OPTIONS

BRACKETS / SUPPORTS

Support foot for use with single vessel reference: **FCMM-DRVI47** (set of 2p)

INSULATION

Insulation on request: **DRVSI**

MULTIPLE VESSEL CONFIGURATION

Enables connection and coupling of multiple heaters

TEMPERATURE CONTROL/LIMITATION

Accurate heater regulation/protection

For more details, see the full DRVI options page

DRVI77EG

Circulation heater for glycol

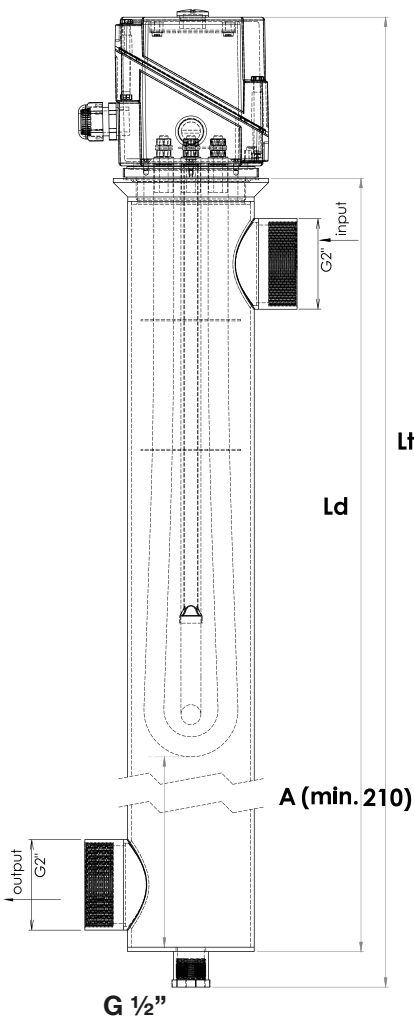


With the DRVI77EG we developed a standard set of circulation heaters for the heating of glycol-water (max. 50%).

On demand, adjustments can be made if the requested quantity is justified. We can tailor make the desired solution.



- Wide range of outputs and lengths available
- 3 – 20 kW
- 5 W/cm²
- Brass screw plug M77
- Pocket for thermostat Ø 10 x 0,5 mm
- Stainless steel 321 heating elements Ø 14 mm
- Brazing of elements
- Stainless steel 316L housing
- IP55 aluminium connection box
- Fluid in-/outlet : G2"
- Fitting 6½" for output temperature measurement
- Supply : 230V/1ph, 230V/3ph, 400V/3ph (Other power supplies on demand)
- M6 electrical connections
- Pickling & passivation



DIRAC REFERENCE	DIRAC REFERENCE	OUTPUT	Lt	Ld	A
	Insulated	[W]	[mm]	[mm]	[mm]
DRVI77EG030	DRVSI77EG030	3000	883	760	472
DRVI77EG045	DRVSI77EG045	4500	883	760	351
DRVI77EG060	DRVSI77EG060	6000	883	760	242
DRVI77EG090	DRVSI77EG090	9000	1363	1250	507
DRVI77EG120	DRVSI77EG120	12000	1363	1250	277
DRVI77EG160	DRVSI77EG160	16000	1928	1790	517
DRVI77EG200	DRVSI77EG200	20000	1928	1790	212

Conformity with PED (Pressure Equipment Directive) EU/2014/68 has to be verified for each application.

OTHER VARIANTS ON DEMAND

OPTIONS

BRACKETS / SUPPORTS

Support foot for use with single vessel reference: **FCMM-DRVI47** (set of 2p)

MULTIPLE VESSEL CONFIGURATION

Enables connection and coupling of multiple heaters

INSULATION

Insulation on request: **DRVSI**

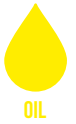
TEMPERATURE CONTROL/LIMITATION

Accurate heater regulation/protection

For more details, see the full DRVI options page

DRVI77HI

Circulation heater for oil



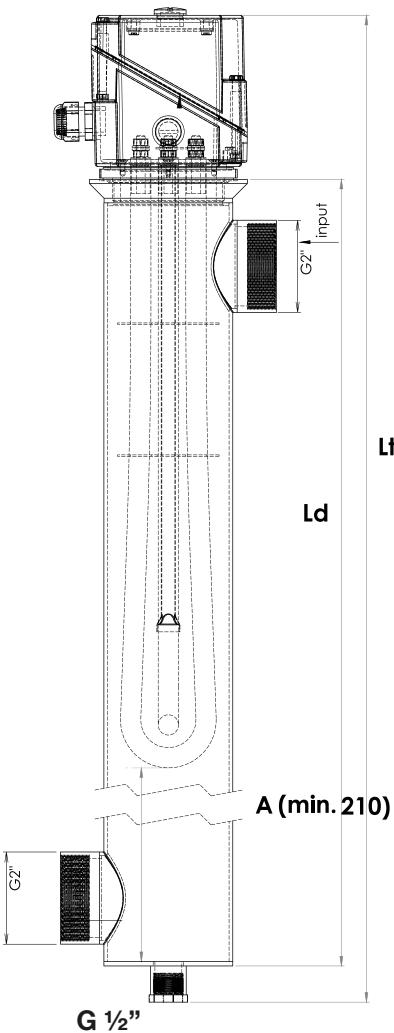
With the DRVI77HI we developed a standard set of immersion heaters for the heating of oil (up to 120°C).

On demand, adjustments can be made if the requested quantity is justified. We can tailor make the desired solution.



- Wide range of outputs and lengths available
- 1,5 – 10 kW
- 2,5 W/cm²
- Brass screw plug M77
- Pocket for thermostat Ø 10 x 0,5 mm
- Stainless steel 321 heating elements Ø 14 mm
- Brazing of elements
- Stainless steel 316L housing
- IP55 aluminium connection box
- Fluid in-/outlet : G2"
- Fitting 6½" for output temperature measurement
- Supply : 230V/1ph, 230V/3ph, 400V/3ph (Other power supplies on demand)
- M6 electrical connections
- Pickling & passivation

DIRAC REFERENCE	DIRAC REFERENCE	OUTPUT	Lt	Ld	A
	Insulated	[W]	[mm]	[mm]	[mm]
DRVI77HI015	DRVSI77HI015	1500	883	760	471
DRVI77HI030	DRVSI77HI030	3000	883	760	241
DRVI77HI045	DRVSI77HI045	4500	1363	1250	501
DRVI77HI060	DRVSI77HI060	6000	1363	1250	281
DRVI77HI080	DRVSI77HI080	8000	1928	1790	516
DRVI77HI100	DRVSI77HI100	10000	1928	1790	216



Conformity with PED (Pressure Equipment Directive) EU/2014/68 has to be verified for each application.

OTHER VARIANTS ON DEMAND

OPTIONS

BRACKETS / SUPPORTS

Support foot for use with single vessel reference: **FCMM-DRVI47** (set of 2p)

INSULATION

Insulation on request: **DRVSI**

MULTIPLE VESSEL CONFIGURATION

Enables connection and coupling of multiple heaters

TEMPERATURE CONTROL/LIMITATION

Accurate heater regulation/protection

For more details, see the full DRVI options page

ELECTRICAL HEATING OPTIONS

BRACKETS / SUPPORTS

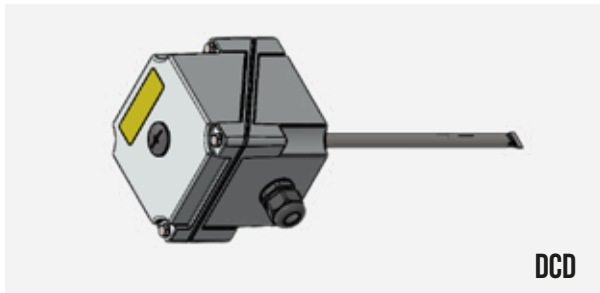


Support foot for use with a single vessel
reference: **FCMM-DRVI77** (set of 2p)

TEMPERATURE CONTROL

Heat regulation on output (using a 6½" fitting)

- **Thermostat** : DCD-Range



DCD

- **PT100-sonde** : SPT200I16T-100, 3-wires class A,
Ø6x100mm, screwplug 1/2" BSP, -50/+200°C



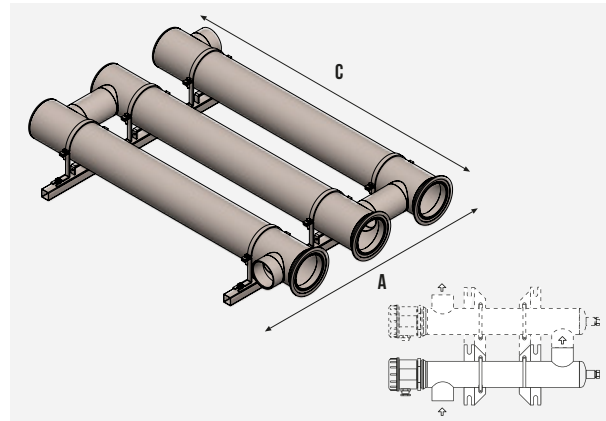
PT100

TEMPERATURE LIMITATION

Heat limitation in thermal pocket (Ø 10 x 0,5 mm)

- **Thermostat**: for products and compatibility list see
DTV77 range

MULTIPLE VESSEL CONFIGURATION



REFERENCE	NR OF BODIES	TOTAL HEIGHT 'A' [mm]
WLDC2-DRVI77-xxxx	2	386
WLDC3-DRVI77-xxxx	3	565
WLDC4-DRVI77-xxxx	4	748
WLDC5-DRVI77-xxxx	5	924
WLDC6-DRVI77-xxxx	6	1100
REFERENCE	TOTAL LENGTH 'C' [mm]	
WLDCx-DRVI77-0780	760	
WLDCx-DRVI77-1270	1250	
WLDCx-DRVI77-1810	1790	

ORDERING INFORMATION

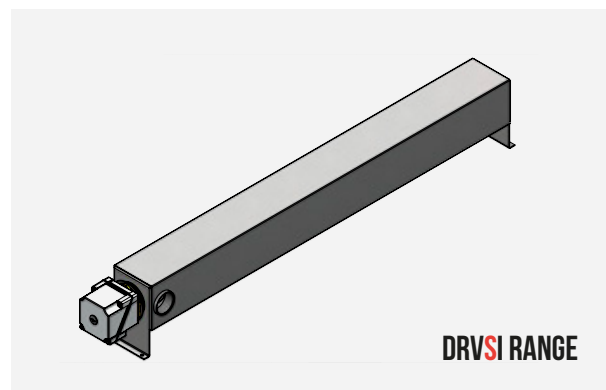
WLDC X - DRVI77 - YYYY

Number of bodies _____

Type of circulation heater _____

Total length of vessel config. _____

INSULATION



DRVSI RANGE

20 mm of insulation and stainless steel cover

MORE INFO AND PRODUCTS AVAILABLE IN CONTROL



BUH

Back-up
Heater



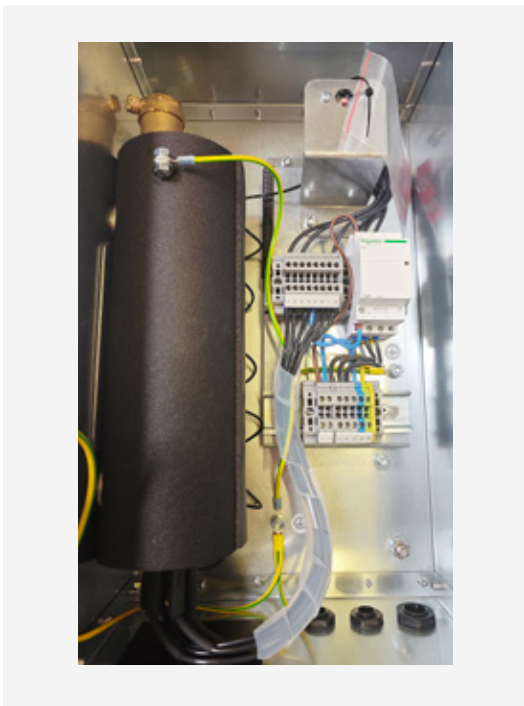
The auxiliary heater is commonly employed as a supplement to a heat pump but can also be utilized in conjunction with other heating devices in situations where circulating fluid requires heating. The heater comes into operation when the heat pump's capacity is insufficient, such as on extremely cold winter days. Additionally, a supplementary flow heater provides an extra layer of security in case of a malfunction in the heat pump.

- Voltage:
1 x 230V 1ph /
3 x 230V 3ph DELTA /
3 x 400V 3ph STAR
- Optional Armaflex insulation
- Mechanical limiter possible
- Thermostat: 30 - 90°C
- Different connections possible (G1", G2 1/2")
- Dimension according to customer request

 **CUSTOMIZABLE BASED ON SPECIFIC REQUIREMENTS AND TECHNICAL SPECIFICATIONS**

BUH + BOX

Backer Flow Heater In Box
with connection



The auxiliary heater, a standard feature in this version, is commonly used to complement a heat pump and can also be applied with other heating appliances requiring fluid heating. In instances of inadequate heat pump capacity, like during cold winter days, the heater activates to fulfill heating needs. This version includes the additional feature of the backup heater being mounted in a box with terminal connections, providing enhanced convenience and simplifying the installation process. This supplementary flow heater continues to offer an extra layer of security in the event of a heat pump malfunction.

- Optional Armaflex insulation available
- Mechanical limiter option
- Adjustable thermostat ranging from 30-90°C
- Various supply voltage options :
1 x 230V 1ph / 3 x 230V 3ph DELTA / 3 x 400V 3ph STAR
- Multiple connection possibilities (G1", G2 1/2")
- Customizable dimensions according to customer requirements
- Choice of Stainless Steel or galvanized box
- 3-pole power contactor with 230V control
- Pre-wired terminal block with push-in terminals

 **CUSTOMIZABLE BASED ON SPECIFIC REQUIREMENTS AND TECHNICAL SPECIFICATIONS**



CIRCULATION HEATERS



PROCESS HEATING

CUSTOM-MADE PROCESS TECHNOLOGIES

The process industry uses more and more electrical components for their heating processes. Practice shows that there is often more than one heating and control solution for the implementation of process heating. DIRAC Industries is the ideal partner in your search and offers a global solution for custom-made process heaters.

We serve customers in the many different industries : Petrochemical - Powergeneration - Chemicals - Pharmaceuticals - Water traitement - Air traitement - ...

The energy transition from gas/fuel to green energy (electricity and hydrogen) to decarbonize the world is also ongoing in the industry. Electric heaters can be used for a complete or hybrid transformation of the production processes.

CONTROL PANELS

Control panels for process heating following IEC 61439
(Low voltage switch gear and control gear assemblies)

PROCESS TECHNOLOGIES

DIRAC Industries provide you a complete solution in line with your process needs.
For pressurized equipments according PED-regulation (2014/68/EU).
For explosive atmospheres according ATEX-directive (2014/34/EU)

01/

Process air application



Process heater - replacement of gas burner by electrical heating.

An electric process heater is used to blow process air over the heating elements via integrated fan. These heaters can heat a variety of gasses. Each heater is carefully selected for each specific process.

Typical applications
- High Temperature Air
- Nitrogen Heating
- Process Gas Heating

- Fuel Gas Heating
- Natural Gas Heating
- Freeze Protection

02/

Process air pre-heat application



DIRAC Industries designs and manufactures equipment to be installed on ducts and to heat air before its introduction into processes. Standard design duct heaters can be supplied for baking ovens up to 200°C as well as drying ovens. DIRAC Industries can design and supply heaters and controls for special applications and customer requirements.

Special criteria may include any of the following - High temperatures (up to 700°C), corrosive fluids, slight overpressure and slight vacuum, vibration or seismic resistant, special voltage, high output capacity, etc.

Heating Elements
- With or without fins for heat dissipation.
- Materials : SS304 / 316L / 321/ Incoloy 800 / 825
Other metals according to the characteristics of the surroundings (temperature, corrosion risks...)

Casing
- With or without thermal insulation
- Reinforcement for pressure, seismic, shocks and vibration loadings
- Connection Box : Stood off for high temperature, with or without cooling fins
- Waterproof up to IP55
- For hazardous areas
- Materials : Galvanised steel / Painted steel / SS304 / 304L / 316L / Other metals according to the characteristics of the surroundings (temperature, corrosion risks.)...

03/ Control panel application



Performance and reliability of all heating processes are mainly linked to control and its regulation. Optimum working will be guaranteed by the supply of the control panel whose design will be closely linked to the design of the heat exchanger. DIRAC Industries offers a full design and manufacturing capability and has technology which will avoid harmonics, minimise shock on electrical supplies and ensure working safety.



Types of Regulation
- On/Off - regulation by means of contactors
- Multi-stage regulation in which the load is divided into smaller stages, each controlled by a contactor
- Solid State Relais regulation in which higher precision regulation for process is reached and lower impact of Mains power Supply as large power impacts are avoided. (Burst firing / Single Cycling /...)

ELECTRICAL HEATING

04/ Process circulation heater

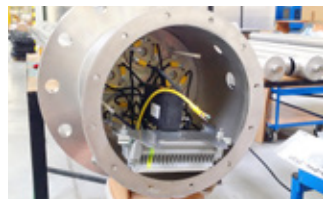
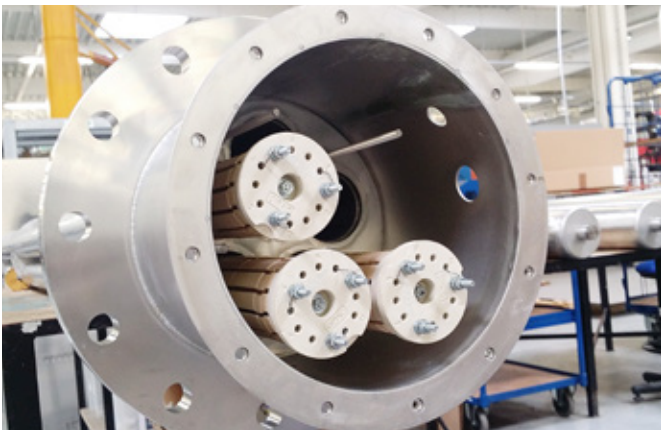


An electric process circulation heater is used as a conduit to facilitate the flow of process fluid directly over heating elements. Circulation heaters heat a variety of fluids from high-temperature gases to hard-to-heat liquids.

The heating elements, vessel, terminal connections, and mounting structures are packaged for quick installation. Heaters may be installed horizontally, vertically, or even sloped for vaporizing liquids.

Example on photo, building heating by means of circulation heater of 4 circulation heaters placed in series for a total of 400kW.

05/ Process immersion heater

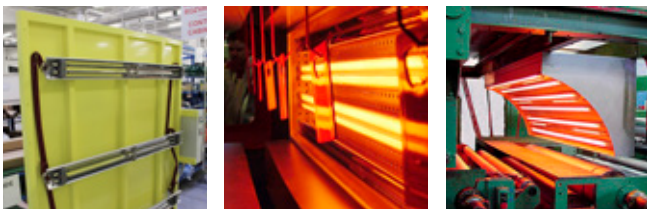
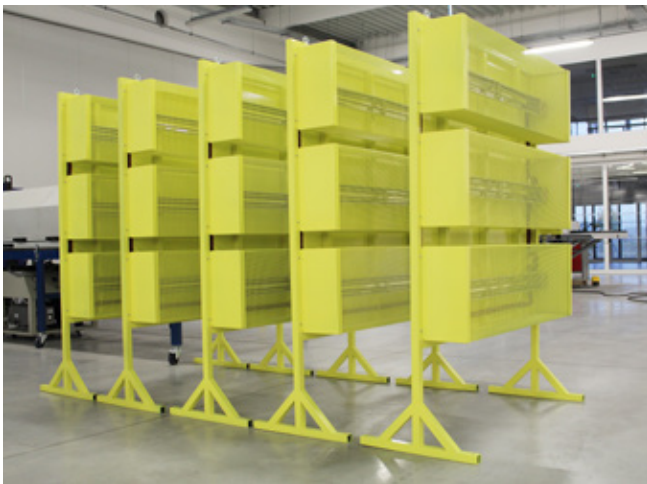


Immersion heaters are the most efficient method of heating an almost limitless range of liquids. They usually consist of sheathed heating elements bent into a hairpin shape and mounted onto a screw plug or onto a flange. Also available with ceramic inserts (RBC) in stainless steel tubes mounted on the flanges. They are fitted to a vessel or tank using a boss, back nut or mating flange.

When in operation, it is essential that the active section of the heating element is covered by the liquid. A level control device should be used to isolate the heater in the event of partial or complete exposure.

When immersion heaters are mounted vertically it is essential that the minimum liquid level is identified and that a suitable inactive length is selected. The inactive length must extend under the liquid at its lowest level.

06/ Infrared projects



Infrared - The Best Form of Energy

Infrared heat is intelligent heat, because it heats the material precisely and efficiently. As such, it offers the ideal solutions for industrial heating processes.

Infrared Heating Technology allows to transfer large amounts of energy in a short time. Emitters are available for large surfaces, for three-dimensional shapes and for small work pieces. By matching IR emitters to individual applications, heating and drying processes can be integrated seamlessly into proces operations.

In addition, infrared technology can be fitted with little expenditure into existing manufacturing lines.

Moreover, radiant infrared heaters can be designed to only heat specific areas, perfect for both indoor and outdoor (long range) applications. The infrared heater works very accurate and will only heat what is necessary.

- Heating: Welding, Soldering, Sintering, Tempering
- Drying : Evaporation, Dehydrating
- Bonding : Fixing, Activate, Curing
- Thermoforming: Blow molding, Foaming, Embossing, Shrinking
- Laminating
- Vulcanizing
- Workspace Area Heating
- Confort Heating

07/ Custom-made heating table projects



Electric Heating Table

With or without cover for heating of different types of products.

Example in photo, for a producer of insulating material, there was a need for heating in his production process to optimize the sticking process of a foil to the insulation. DIRAC developed an entire table that was heated from the bottom and covered from beneath with an insulation layer. The whole is controlled by a completely pre-programmed control unit that is integrated in the table.

Similar table has been constructed for heating of plastics to allow moulding or forming in specific shapes for all kinds of applications.

08 / Industrial heat treatment furnace



DIRAC Industries has extensive capabilities in manufacturing high-quality industrial heat treatment furnaces designed to meet various industrial needs.

These ovens have a spacious interior and powerful installed capacity, making them suitable for a variety of applications, including high temperature applications up to 350°C.

They are energy efficient, with low power options available and equipped with advanced automatic, programmable temperature control systems to ensure precise thermal conditions.

Forced air circulation ensures a consistent atmosphere, while advanced temperature monitoring systems, including thermocouple controllers, ensure optimal operation.

Additional features include visual status indicators, automated ventilation systems and USB connectivity for easy data transfer, improving both efficiency and precision in various industrial processes.

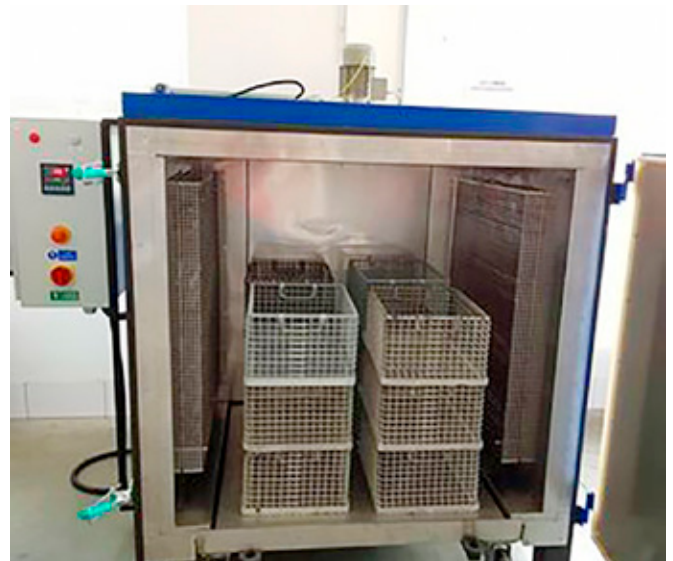
- Internal Dimensions : **Width 1500 mm x Height 1900 mm x Depth 3000 mm**
- Atmosphere : **Forced air circulation**
- Installed Heating Power : **26 kW**
- Status Indication : **Visual light signal**
- Temperature Control : **Automatic - maintains set temperature**
- Operating Temperature Range : **50 – 300 °C, maximum 350°C**

SHOWCASE OF SELECT INDUSTRIAL FURNACE PROJECTS FOR HEAT TREATMENT APPLICATIONS

Explore a selection of our cutting-edge industrial furnace projects, crafted for diverse heat treatment applications. From the automotive industry to aerospace, these sample projects highlight our commitment to precision, efficiency, and reliability. See how our advanced technology and customized solutions have revolutionized heat treatment processes, enhancing productivity and product quality in various sectors.



- Internal Dimensions : **Width 800 mm x Height 1850 mm x Depth 1250 mm**
- Electrical Power Consumption : **6 kW**
- Atmosphere : **Forced air circulation**
- Temperature Control : **Programmable - Automatic**
- Status Indication : **Visual light signal**
- Ventilation : **5Servo-operated vent**



- Internal Dimensions : **Width 1000 mm x Height 1000 mm x Depth 1000 mm**
- Installed Power : **18 kW**
- Temperature Control : **Programmable - Automatic**
- Temperature Monitoring : **Technological software**
- Operating Temperature Range : **20 - 200°C, maximum 300°C**



- Internal Dimensions : **Width 2000 mm x Height 2000 mm x Depth 3000 mm**
- Installed Power : **30 kW**
- Atmosphere : **Forced air circulation**
- Temperature Control : **Programmable - Automatic**
- Temperature Measurement : **Temperature regulator-thermocouple**
- Operating Temperature Range : **20 - 150°C**

- Internal Dimensions : **3500 x 2000 x 1000 mm**
- Power : **32 kW**
- Temperature Control : **Automatic, programmable up to 30 curves**
- Operating Temperature : **20 - 350°C**



- Internal Dimensions : **Width 1600 mm x Height 1900 mm x Depth 1400 mm**
- Cart Dimensions : **Width 1300 mm x Height 1800 mm x Depth 1100 mm**
- Installed Heating Power : **16 kW**
- Ventilation : **Chimney with automatic flap**
- Data Transfer to PC : **Via USB**
- Temperature Control : **Programmable - Automatic**
- Operating Temperature Range : **20 - 200°C**

- Internal Dimensions : **Width 2050 mm x Height 2000 mm x Depth 1850 mm**
- Cart Dimensions : **Width 980 mm x Height 1930 mm x Depth 880 mm**
- Installed Heating Power : **56 kW**
- Temperature Control : **Programmable - Automatic**
- Operating Temperature Range : **20 - 250°C**



INFRARED HEATING

FOR COMFORT HEATING AND INDUSTRIAL PROCESSES

Infrared heaters are often used for comfort heating of e.g. large workshops. But they are also utilized in industrial processes. They transfer heat to surfaces in an efficient way. This heating technology is used for paints, inks, wood and plastics, glass, metal, fabrics,...

You should choose your infrared heater carefully, based on the kind of surface you want to treat. We can advise properly, often using our testing units on your samples to define required Power and Wavelength. We can equip heaters with an engineered control panel and a pyrometer.

CERAMIC ELEMENTS

Flat or concave ceramic heaters.

SHEATED ELEMENTS

Double insulated IR emitters with robust housing.

HALOGEN-QUARTZ LAMPS

IR lamp with or without reflective coating, single or twin-tube.

COMFORT HEATING

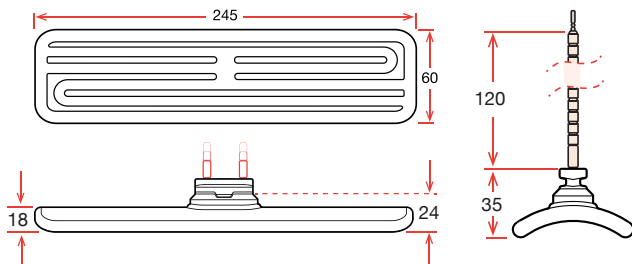
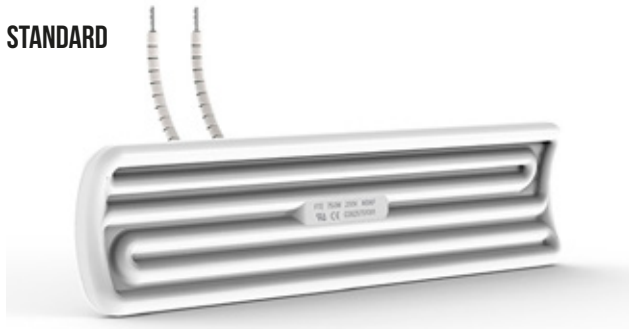
Infrared comfort heating for large draughty spaces.

ELECTRICAL HEATING

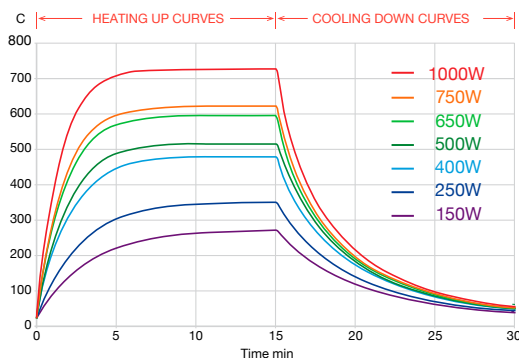
RICI

Concave ceramic infrared heater

STANDARD



5MM MINIMUM RECOMMENDED SPACING BETWEEN ELEMENTS



An industry-standard curved ceramic infrared heater, designed for long-lasting energy-efficiency in a wide range of industrial and commercial applications (thermoforming, packaging, paint curing, printing, drying, gluing, sterilisation, and roasting).

They are also highly effective in infrared outdoor heaters and saunas.

These solid cast elements consist of a high temperature FeCrAL resistance alloy embedded in a specially formulated ceramic body, allowing high surface temperatures and high power outputs.

The concave heating face ensures the correct focal point.

- Voltage: 230V - 1ph (others on request)
- Power: 150 to 1000 W
- Watt Density: 0,9 to 6 W/cm²
- Useful wavelength range of 2 – 10 μm
- Standard: 245 x 60 x 35 mm, half size on demand
- 750°C max permissible operating temperature
- Supplied with 120 mm ceramic beaded power leads
- Iron-chrome aluminum resistance wire
- Recommended radiation distance: 100 - 200 mm
- Average operating life up to 20.000 hrs
- Alternative available with thermocouple J/K

VARIATIONS	SIZE [mm]	POWER [W]	AVERAGE WEIGHT [g]
Standard	245 x 60 x 35	150 – 1000	192
Half	122 x 60 x 35	125 – 500	105

STANDARD

REFERENCE	POWER [W]	POWER MEAN SURFACE TEMP [°C]	LENGTH MAX POWER DENSITY [W/cm ²]
RIC11015	150	272	0,92
RIC11025	250	351	1,53
RIC11040	400	480	2,46
RIC11050	500	515	3,07
RIC11065	650	596	4,00
RIC11075	750	624	4,61
RIC11100	1000	726	6,15

OPTIONS

RAS-X / PAS-X

Reflectors and Projectors - maximize heat output and simplify installation, mounted individually or side-by-side.

CTB-2P

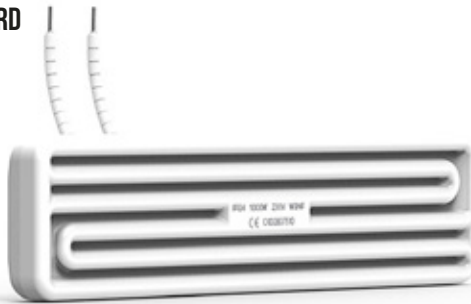
Ceramic terminal block

ALSO AVAILABLE
IN HALF SIZE



RICP Flat ceramic infrared heater

STANDARD



An industry-standard curved flat infrared heater, designed for long-lasting energy-efficiency in a wide range of industrial and commercial applications (thermoforming, packaging, paint curing, printing, drying, gluing, sterilisation, and roasting).

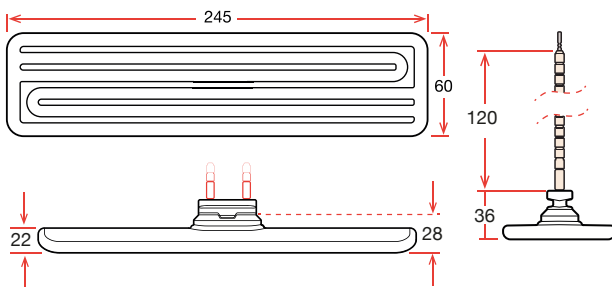
They are also highly effective in infrared outdoor heaters and saunas.

These solid cast elements consist of a high temperature FeCrAl resistance alloy embedded in a specially formulated ceramic body, allowing high surface temperatures and high power outputs.

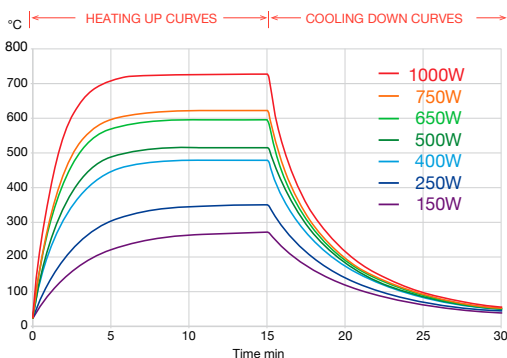
The flat ceramic heater ensures a wider and more efficient heat dispersion and has a shorter heat up time.



- Voltage: 230V / 1ph (others on request)
- Power: 400 to 1000 W
- Watt density: 2,5 to 6 W/cm²
- Useful wavelength range of 2 – 10 μm
- Standard: 245 x 60 x 36 mm, other sizes on demand
- 750°C max permissible operating temperature
- Supplied with 120 mm ceramic beaded power leads
- Iron-chrome aluminum resistance wire
- Recommended radiation distance : 100 - 200 mm
- Average operating life up to 20.000 hrs
- Alternative available with thermocouple J/K



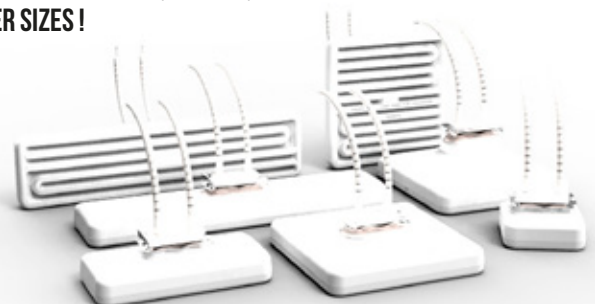
5MM MINIMUM RECOMMENDED SPACING BETWEEN ELEMENTS



STANDARD

REFERENCE	POWER [W]	POWER MEAN SURFACE TEMP [°C]	LENGTH
RIC3P040	400	495	2,46
RIC3P050	500	550	3,08
RIC3P060	600	607	3,69
RIC3P080	800	684	4,92
RIC3P100	1000	755	6,15

ALSO AVAILABLE IN HALF, SQUARE, AND QUARTER SIZES !



OPTIONS

RAS-X / PAS-X

Reflectors and Projectors - maximize heat output and simplify installation, mounted individually or side-by-side.

CTB-2P

Ceramic terminal block

ELECTRICAL HEATING OPTIONS

REFLECTORS AND PROJECTORS

A wide range of highly reflective stainless steel **reflectors** and **projectors** is available for your desired solution. Key elements to maximize the heat output and ensure ease of installation.

Our reflectors are designed to cater for a wide range of ceramic and quartz infrared emitters.

Units can be mounted individually or side-by-side forming infrared heat panels.

Our projectors are designed to cater to a wide range of ceramic elements and are the ideal solution where positional heat is required economically, efficiently and quickly.



Reflector material is 0.75 mm thick, mounting studs with M6 internal thread and 300 mm high temperature leads.

RAS-0.5	160 x 100 x 60 mm
RAS-1	254 x 100 x 60 mm
RAS-2	505 x 100 x 60 mm
RAS-3	754 x 100 x 60 mm
RAS-4	1004 x 100 x 60 mm
RAS-5	1254 x 100 x 60 mm

REFLECTOR Polished aluminised steel reflector



Reflector material is 0.75 mm thick, high temperature leads of 2 m and flexible conduit of 1,5 m.

PAS-1	258 x 96 x 76 mm
PAS-2	508 x 96 x 76 mm
PAS-3	758 x 96 x 76 mm
PAS-4	1008 x 96 x 76 mm
PAS-5	1258 x 96 x 76 mm

PROJECTOR Polished aluminised steel projector



TERMINAL BLOCK

A steatite C-221 body ensures best electrical insulation and high temperature resistivity. Comes with or without stainless steel fittings.

ORDERING INFORMATION

CTB-2P

2p Ceramic terminal block

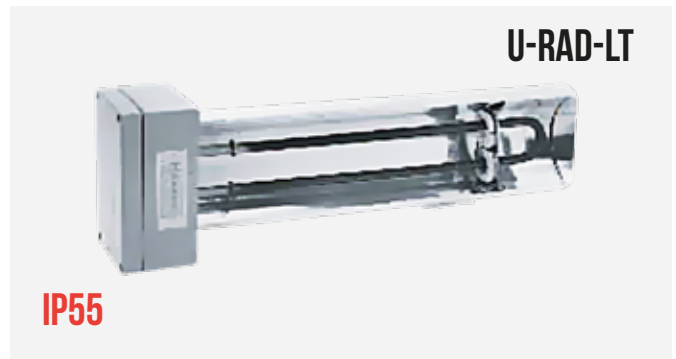
RAD / U-RAD-LT

Medium Wave Sheathed Infrared Heaters



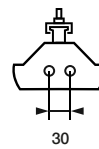
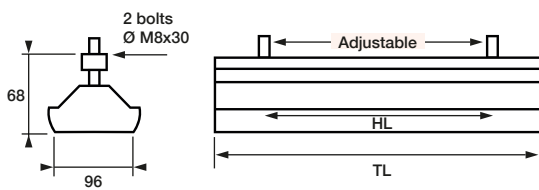
RAD

IP30



U-RAD-LT

IP55



TL = total length
HL = heated length

Straight and U-shaped medium-wavelength infrared heaters designed for industrial applications such as drying, cooking, and polymerisation. Built with a rugged construction, it can be installed vertically or horizontally in environments up to 200 °C.

Features double electrical insulation for safety, with an Incoloy 800 triangulated sheathed element mounted in a high-efficiency aluminium parabolic reflector.

The assembly is housed in a rigid light-alloy profile with adjustable mounting bolts.

- Voltage: 230V mono and 400V mono
- Power: 800 - 3600 W
- Medium wave: 2,6 µm
- Sheathed heating element resistant to mechanical impact and thermal shock
- Double insulated
- Available in IP30 and IP55
- Supplied with fixing bolts
- Robust aluminium support with highly polished, aluminium, parabolic reflector
- Supplied with terminal box (cable with flexible metallic conduit available as an option)

RAD — SINGLE STRAIGHT HEATER ELEMENT

REFERENCE	VOLTAGE	POWER [W]	TL [mm]	HL [mm]	WEIGHT [kg]
RAD-800-230	230V - 1ph	800	622	422	2,60
RAD-800-400	400V - 1ph				
RAD-1100-230	230V - 1ph	1100	777	577	3,00
RAD-1100-400	400V - 1ph				
RAD-1800-230	230V - 1ph	1800	1187	987	4,00
RAD-1800-400	400V - 1ph				
RAD-2500-230	230V - 1ph	2500	1557	1357	5,20
RAD-2500-400	400V - 1ph				
RAD-3000-230	230V - 1ph	3000	1872	1672	6,20
RAD-3000-400	400V - 1ph				
RAD-3600-230	230V - 1ph	3600	2177	1977	7,10
RAD-3600-400	400V - 1ph				

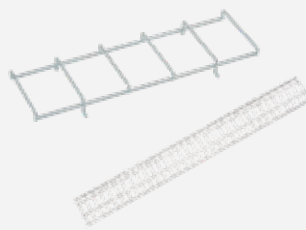
U-RAD-LT — U-SHAPED WATERPROOF VARIANT

REFERENCE	VOLTAGE	POWER [W]	TL [mm]	HL [mm]
U-RAD2-U2 LT	230V - 1ph	800	390	255
U-RAD2-U3 LT	400V - 1ph			
U-RAD3-U2 LT	230V - 1ph	1100	485	350
U-RAD3-U3 LT	400V - 1ph			
U-RAD4-U2 LT	230V - 1ph	1800	710	575
U-RAD4-U3 LT	400V - 1ph			
U-RAD5-U2 LT	230V - 1ph	2500	935	800
U-RAD5-U3 LT	400V - 1ph			
U-RAD6-U2 LT	230V - 1ph	3000	1095	960
U-RAD6-U3 LT	400V - 1ph			
U-RAD7-U2 LT	230V - 1ph	3600	1290	1155
U-RAD7-U3 LT	400V - 1ph			

OPTIONS

RAD-RADD-GRID-XXXX AND GR2-U-LT

Protection grid with optional snap-in sections. Designed to safeguard personnel and equipment from contact with hot elements.



SPARE PART HEATER TUBES ARE AVAILABLE FOR BOTH HEATERS IN ALL LISTED VOLTAGE AND POWER RATINGS !

IR Q Infrared Quartz Lamp



Infrared heating technology enables the transfer of large amounts of energy within a short time. Emitters are available for large surfaces, three-dimensional shapes, and small workpieces.

By matching IR emitters to specific applications, heating and drying processes can be seamlessly integrated into production operations. In addition, infrared systems can be incorporated into existing manufacturing lines with minimal effort.

- 2 unheated ends, where the clamps will be placed
- Power: supplied on one (A, B) or both sides (C, D, H)
- Reflector: gold- or alu-oxide (white) coating on the rear side, in order to double the effective radiation
- Emitters designed for horizontal use and vertical use

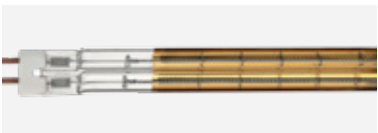
SINGLE TUBE



- Material: **quartz glass**
- Produced length: **up to 2500 mm**
- Tube size: **Ø 10 to Ø 20 mm**

WAVELENGTH	POWER DENSITY [W / cm]	RADIATION [kW/m ²]	WAVE LENGTH [µm]	BURNING TEMP [°C]	RESPONSE TIME
Short Wave	up to 70	up to 150	0,8 - 1,2	2200 - 2600	<2 sec
Fast Medium Wave	up to 40	up to 90	1,4 - 1,7	1500 - 2000	<4 sec
Medium Wave	up to 15	up to 60	2,4 - 2,7	800 - 950	up to 3 min

TWIN TUBE

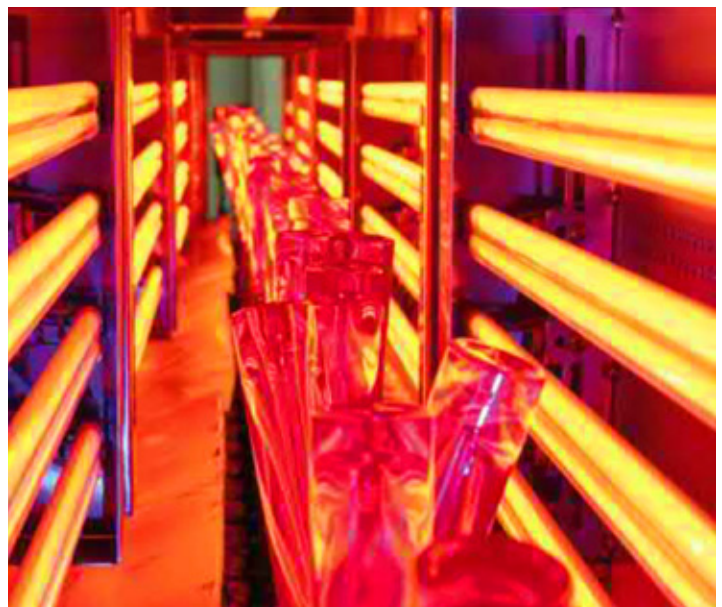
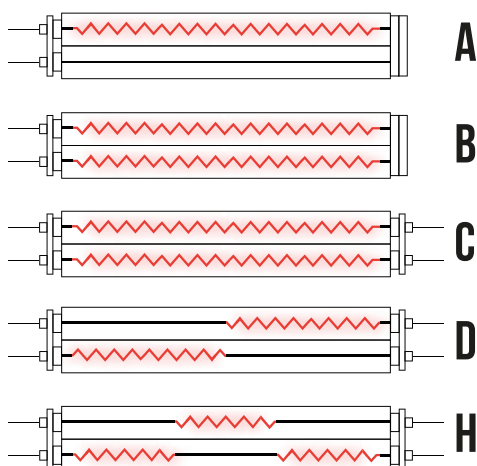


- Material: **quartz glass**
- Produced length: **up to 3000 mm**
- Tube size: **22 x 11 mm / 33 x 14 mm**

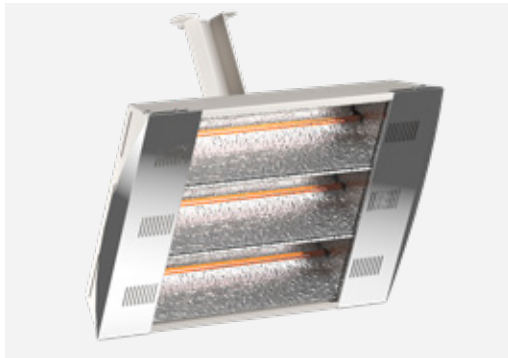
WAVELENGTH	POWER DENSITY [W / cm]	RADIATION [kW/m ²]	WAVE LENGTH [µm]	BURNING TEMP [°C]	RESPONSE TIME
Short Wave	up to 60	up to 150	0,8 - 1,2	2200 - 2600	<2 sec
Fast Medium Wave	up to 60	up to 90	1,4 - 1,7	1500 - 2000	<4 sec
Medium Wave	up to 30	up to 60	2,4 - 2,7	800 - 950	up to 3 min

STANDARD DESIGN FOR IR TWIN-TUBE EMITTERS

With one-side (A, B) or two-side connections (C, D, H)



IRC Long range infrared heaters



A complete range of radiant infrared heaters, designed to only heat specific areas, perfect for both indoor and outdoor (long range) applications. The infrared heater works very accurate and will only heat what is necessary with the help of its adjustable reflectors (orientated by a graduated handle).

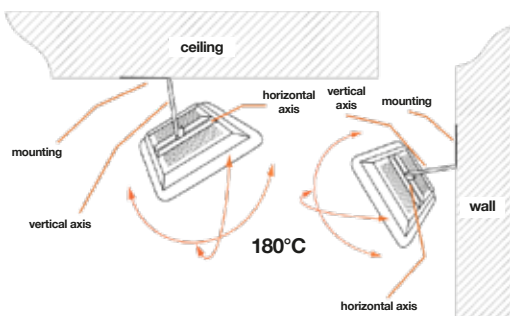
A special universal multi-position mounting set achieves maximum comfort, allows great flexibility of use and optimizes the radiation flow.

To determine the desired power and number of devices, the installation height and useful surface must be taken into account.

- 4 reflector positions
 - Hammered reflector
 - 230V-1ph / 230V-3ph / 400V-3ph
 - Heating element: HeLeN filtered radiant tube
 - Fast and easy installation
 - Electro-galvanized steel body coated with epoxy polyester
 - Stainless steel front and reflector
 - Mounting bracket for fixation to wall or ceiling
 - Protected electrical terminals
 - 1,5 – 4,5 kW
 - Class 1 : IP22 and IK08*
- (*) with protective grid

MULTI-POSITION MOUNTING BRACKET

Mountable on wall or ceiling, the unit can be oriented in any direction (horizontal or vertical) to optimize radiation flow – 180° rotation.



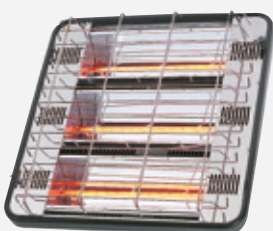
REFERENCE	VOLTAGE	L x H x D [cm]	POWER [w]	WEIGHT [kg]
IRC NOVUS 1500W	230V - 1ph	53,1 x 14,6 x 13,0	1500	2,2
IRC NOVUS 3000W	230V - 1ph	53,1 x 26,3 x 13,0	3000	3,6
IRC NOVUS 4500W	230V - 1ph/3ph or 400V - 3ph	53,1 x 38,9 x 13,0	4500	5,0

OPTION GR XXXX

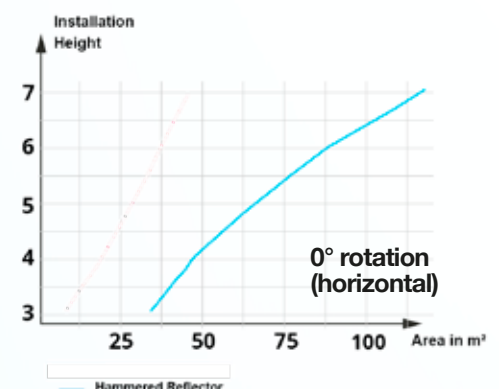
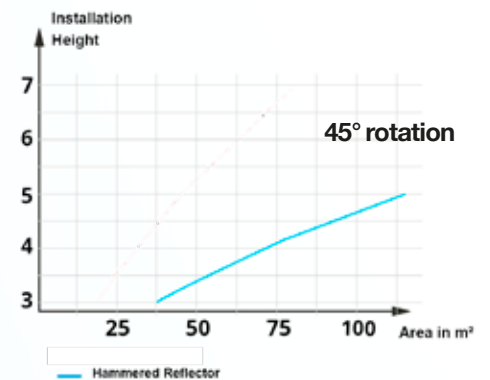
Protective grid

The grid protects both the infrared heaters and nearby people when they are installed in hazardous/risky environments (gym, workshop, warehouse) or in high traffic areas.

It also provides protection against unwanted physical contact and accidental burns.



GR 1500	Protection grid for 1500 W
GR 3000	Protection grid for 3000 W
GR 4500	Protection grid for 4500 W



TERM2000 COLOR IP67

Electric patio infrared heater



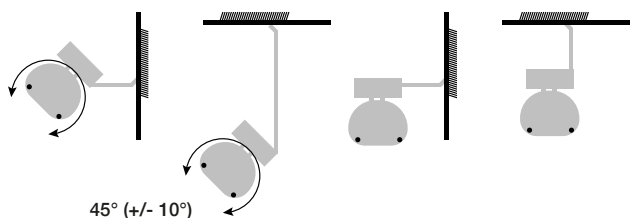
Powerful and completely waterproof infrared heater that provides instant warmth with highly effective short-wave technology in all outdoor areas.

The TERM2000 is equipped with a top-grade infrared gold tube that delivers maximum heat even in humid or snowy conditions. The Ultra Low glare tubes have red light content reduced and offer an eye-friendly ambience. With its open construction (without glass cover), the heater reaches a high service life.

Its elegant and slim housing design is suitable for wall and ceiling mounting, brackets included.

Available in polished aluminum, black, white and anthracite. (other RAL colors also available on request)

ALSO AVAILABLE IN IP20 AND IP44



- Quick heat-up
 - Odor-neutral and low-noise
 - Ultra Low glare heating tubes
 - Flexible use with various mounting options
 - 1 – 2 kW
 - Smart operation (Bluetooth) possible
 - Environment friendly (emission close to zero)
 - Infrared HeLeN gold-coated lamp
 - Fast and easy installation
 - Schuko plug*
- (*) also available with GB or CH plug

REFERENCE	POWER [w]	COLOR	L x H x D [cm]	WEIGHT [kg]	HEATABLE AREA [m²]	IP	CONNECTION
URCA 150V	1500	Polished ALU	61 x 9,5 x 12,5	2,3	12 – 13	67	1/N/PE ~ 230V 50Hz
URCA 165V	1650	Polished ALU	61 x 9,5 x 12,5	2,3	13 - 14	67	1/N/PE ~ 230V 50Hz
URCA 200V	2000	Polished ALU	61 x 9,5 x 12,5	2,3	14 - 16	67	1/N/PE ~ 230V 50Hz
URCA (C) 200 (Vxxx)*	2000	White / Black / Anthracite	61 x 9,5 x 12,5	2,0	14 – 16	67	1/N/PE ~ 230V 50Hz

(*) (C) = Colored - V9010: White / V9005: Black / V7016: Anthracite



INCLUDES MOUNTING BRACKETS, SIZED AND COLORED FOR EACH MODEL !

SPARE PART HEATER TUBES

Ultra Low Glare lamps (ULG) are available for all TERM2000 heaters.



REFERENCE	POWER [w]	COMPATIBILITY
ULG1500V	1500	Color / Bluetooth / Multi
ULG1650V	1650	Color / Bluetooth / Multi
ULG2001V	2000	Color / Bluetooth / Multi



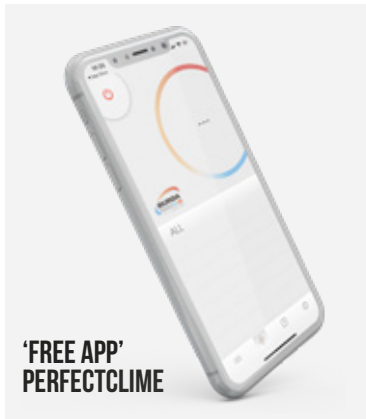
TERM2000 BLUETOOTH IP67 Smart patio infrared heater



Equipped with a Bluetooth interface, this TERM2000 can be controlled comfortably and wirelessly with your smartphone or tablet using the accompanying free BURDA application.

The Bluetooth heaters can also be operated with the infrared remote control (range ± 6m) or manually with an integrated switch on device itself (turn on/off and dim).

Available in black, white and anthracite. (other colors also available on request)

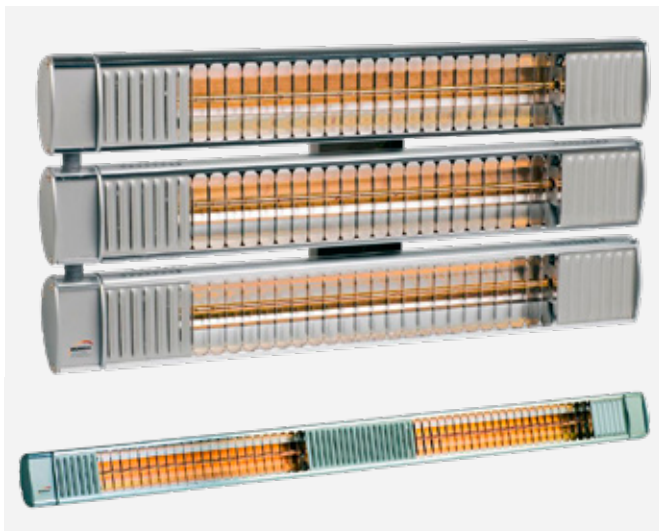


- Manage heaters through smartphone/tablet
- Range of 50m (no visual contact needed)
- Regulate up to 8 heaters independently
- Programmable tilt sensitivity safety switch
- BURDA Perfectclime app available for iOS and Android
- Individual and simultaneous control
- Variable heat output from 25% to 100%
- Timer function with automatic shut off

REFERENCE	POWER [w]	COLOR	L x H x D [cm]	WEIGHT [kg]	HEATABLE AREA [m²]	IP	CONNECTION
BTURCA (C) 200 Vxxx*	2000	White / Black / Anthracite	71 x 9,5 x 12,5	2,5	14 – 16	67	1/N/PE ~ 230V 50Hz

(*) (C) = Colored - V9010: White / V9005: Black / V7016: Anthracite

TERM2000 MULTI IP67 Electric multi patio infrared heater



The TERM2000 is also available as a powerful double and triple heater; a great solution for large and open areas.

The MULTIPOWER series delivers extra heating power and maximum comfort outdoors (even in dampness or snow), combining high quality with sleek design.

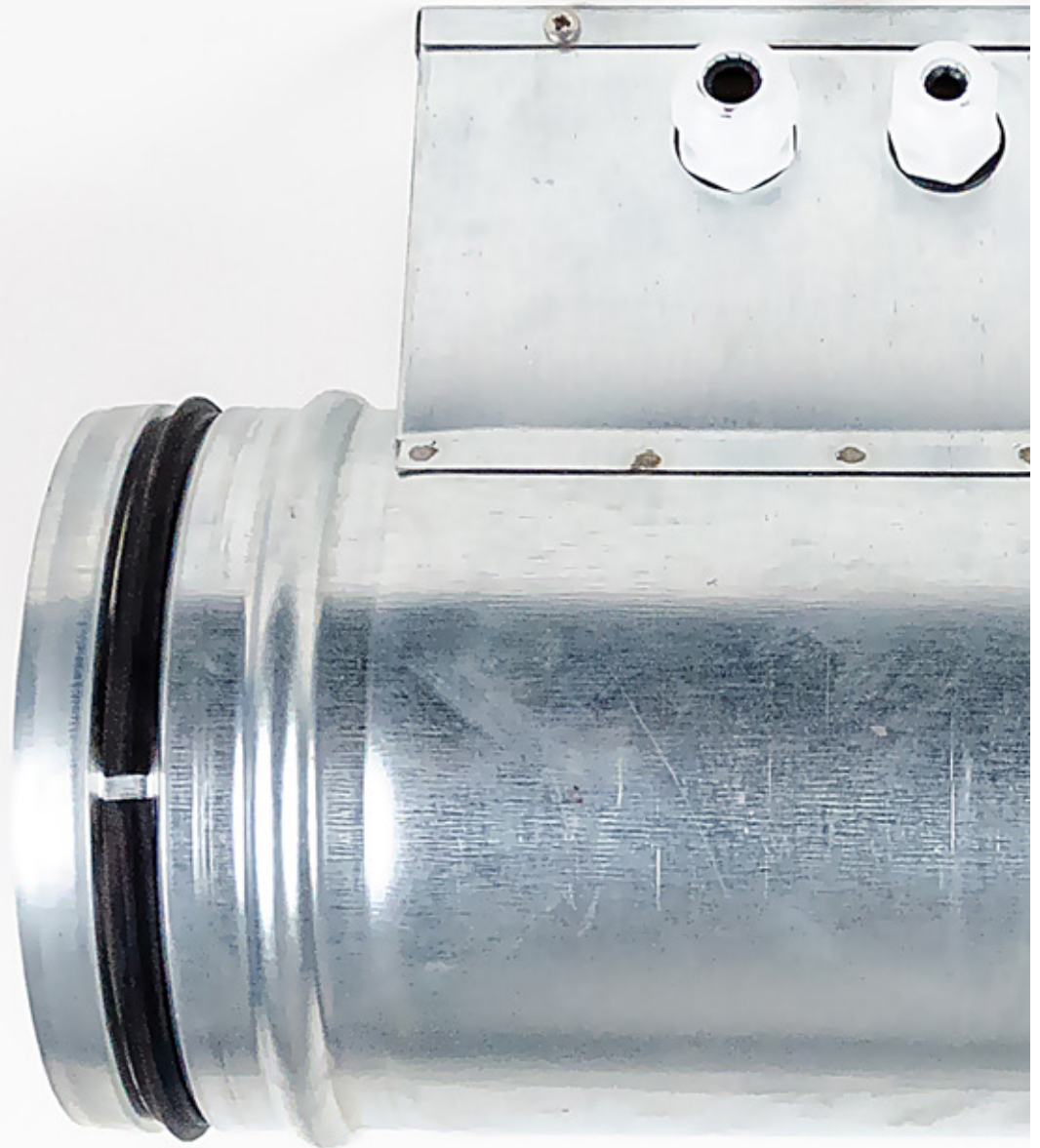
Equipped with top-grade Low glare or Ultra Low glare tubes. Only available in polished Aluminum.

Available power [1 tube]: 1650W / 2000W

- Power: 3,3 - 6,0 kW
- Double and tripple outdoor heating power
- For more details, see the provided information at **TERM2000 COLOR IP67**

REFERENCE	POWER [w]	COLOR	L x H x D [cm]	WEIGHT [kg]	HEATABLE AREA [m²]	IP	CONNECTION
URCJ 330 V	2 x 1650	Polished ALU	123,5 x 9,5 x 12,5	4,9	26 – 28	67	2/N/PE ~ 240V 50Hz
URCJ 400 V	2 x 2000	Polished ALU	123,5 x 9,5 x 12,5	4,9	28 – 30	67	2/N/PE ~ 400V (2N) 50Hz
URCC 600 V	3 x 2000	Polished ALU	60,0 x 29,0 x 12,5	6,8	42 – 44	67	3/N/PE ~ 400V (2N) 50Hz

DBTC
Circular Duct
Heaters



CONVECTORS & DUCT HEATERS

COMFORT HEATING AND INDUSTRIAL PROCESS AIR

A complete range of heating elements, both standard as custom made, to maximize the comfort of the user. Also included are products for the heating of industrial process air.

DUCT HEATERS

Duct heaters can both be rectangular as circular. Different dimensions and outputs can be supplied. They can be equipped with the necessary measuring and safety thermostats as well as power controllers. Also available in ATEX version.

ANTI-CONDENSATION HEATERS

Anti-condensation heaters are used to avoid condensation in control panels.

CONVECTORS

Industrial or domestic air heating devices.

INDUSTRIAL CONVECTORS

A distinction can be made according to the use of the convector. For industrial use (ATEX or non-ATEX) very robust convectors are made. For domestic use or at the office, aesthetics is more important. All can be equipped with thermostats.

FAN HEATERS

Fan heaters used for cost-effective heating and comfort in large spaces such as warehouses, industrial facilities, sports halls, exhibition halls, and hangars.

RADIANT PANELS

Radiant emitters for a quick and totally silent rise in temperature.

RADIATORS

This elegant, sober and timeless line hides an exceptional technology which combines a unique sense of comfort with an extremely economic consumption.

DBTC

Circular Duct Heaters



Circular duct heaters are generally used for A/C purposes in air ducts.

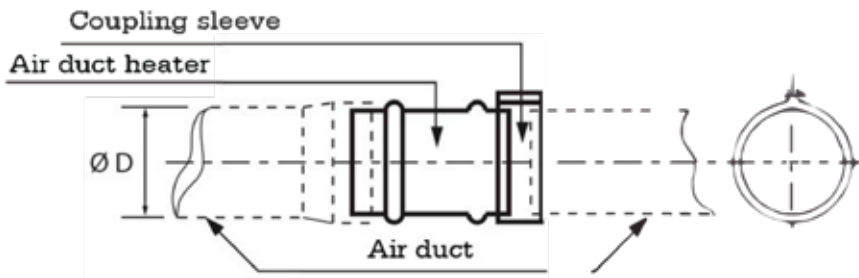
Various dimensions and outputs are available as standard. They can be equipped with the necessary measuring and safety thermostats as well as power controllers.

Also available in ATEX version.

- Voltage: 230V (1ph) or 230V/400V (3ph)
- Watt density: 2,5 W/cm²
- Diameters from 125 mm to 630 mm and outputs from 500W to 18kW (outlet temperatures up to 50°C)
- SS321 sheathed heating elements
- Duct section and terminal enclosure (IP30) in galvanised steel
- Built-in automatic and manual reset safety cutouts: preset at 70/80°C (auto) and 90/98°C (manual)



L = 312 mm for standard version



OPTION

Coupling sleeve for duct connection.
Reference: **MABT** (+ specify the Ø in mm)

ORDERING INFORMATION

MABT-XXX

Coupling Sleeve for Duct Connection _____
Ø in mm _____

REFERENCE	Ø [mm]	VOLTAGE	POWER [w]
DBTC-125-500-1F	125	230V (1Ph)	500
DBTC-125-666-1F	125	230V (1Ph)	666
DBTC-125-750-1F	125	230V (1Ph)	750
DBTC-125-1000-1F	125	230V (1Ph)	1000
DBTC-160-500-1F	160	230V (1Ph)	500
DBTC-160-666-1F	160	230V (1Ph)	666
DBTC-160-750-1F	160	230V (1Ph)	750
DBTC-160-1000-1F	160	230V (1Ph)	1000
DBTC-160-1250-1F	160	230V (1Ph)	1250
DBTC-160-1332-1F	160	230V (1Ph)	1332
DBTC-160-1500-1F3F	160	230V (1Ph) / 3x400V	1500
DBTC-200-500-1F	200	230V (1Ph)	500
DBTC-200-666-1F	200	230V (1Ph)	666
DBTC-200-750-1F	200	230V (1Ph)	750
DBTC-200-1000-1F	200	230V (1Ph)	1000
DBTC-200-1250-1F	200	230V (1Ph)	1250
DBTC-200-1332-1F	200	230V (1Ph)	1332
DBTC-200-1500-1F3F	200	230V (1Ph) / 3x400V	1500
DBTC-200-1750-1F3F	200	230V (1Ph) / 3x400V	1750
DBTC-200-2000-1F	200	230V (1Ph)	2000
DBTC-200-2000-1F3F	200	230V (1Ph) / 3x400V	2000
DBTC-200-2250-1F3F	200	230V (1Ph) / 3x400V	2250
DBTC-200-2500-1F3F	200	230V (1Ph) / 3x400V	2500
DBTC-200-3000-1F3F	200	230V (1Ph) / 3x400V	3000
DBTC-200-3500-1F3F	200	230V (1Ph) / 3x400V	3500
DBTC-200-4000-1F3F	200	230V (1Ph-20A) / 3x400V	4000
DBTC-200-4500-3F	200	3x400V	4500
DBTC-250-500-1F	250	230V (1Ph)	500
DBTC-250-666-1F	250	230V (1Ph)	666
DBTC-250-750-1F	250	230V (1Ph)	750
DBTC-250-1000-1F	250	230V (1Ph)	1000
DBTC-250-1250-1F	250	230V (1Ph)	1250
DBTC-250-1332-1F	250	230V (1Ph)	1332
DBTC-250-1500-1F3F	250	230V (1Ph) / 3x400V	1500
DBTC-250-1750-1F3F	250	230V (1Ph) / 3x400V	1750
DBTC-250-2000-1F3F	250	230V (1Ph) / 3x400V	2000
DBTC-250-2250-1F3F	250	230V (1Ph) / 3x400V	2250
DBTC-250-2500-1F3F	250	230V (1Ph) / 3x400V	2500
DBTC-250-3000-1F3F	250	230V (1Ph) / 3x400V	3000
DBTC-250-3500-1F3F	250	230V (1Ph) / 3x400V	3500
DBTC-250-4000-1F3F	250	230V (1Ph-20A) / 3x400V	4000
DBTC-250-4500-3F	250	3x400V	4500
DBTC-250-6000-3F	250	3x400V	6000
DBTC-315-500-1F	315	230V (1Ph)	500

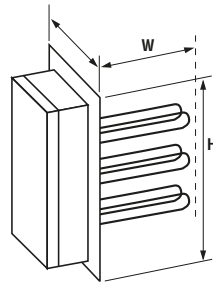
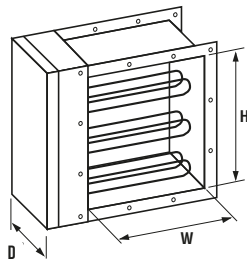
REFERENCE	Ø [mm]	VOLTAGE	POWER [w]
DBTC-315-666-1F	315	230V (1Ph)	666
DBTC-315-1000-1F	315	230V (1Ph)	1000
DBTC-315-1332-1F	315	230V (1Ph)	1332
DBTC-315-1500-1F3F	315	230V (1Ph) / 3x400V	1500
DBTC-315-2000-1F3F	315	230V (1Ph) / 3x400V	2000
DBTC-315-2500-1F3F	315	230V (1Ph) / 3x400V	2500
DBTC-315-3000-1F3F	315	230V (1Ph) / 3x400V	3000
DBTC-315-3500-1F3F	315	230V (1Ph) / 3x400V	3500
DBTC-315-4000-1F3F	315	230V (1Ph-20A) / 3x400V	4000
DBTC-315-4500-3F	315	3x400V	4500
DBTC-315-6000-3F	315	3x400V	6000
DBTC-355-500-1F	355	230V (1Ph)	500
DBTC-355-666-1F	355	230V (1Ph)	666
DBTC-355-1000-1F	355	230V (1Ph)	1000
DBTC-355-1332-1F	355	230V (1Ph)	1332
DBTC-355-1500-1F	355	230V (1Ph)	1500
DBTC-355-1500-1F3F	355	230V (1Ph) / 3x400V	1500
DBTC-355-2000-1F	355	230V (1Ph)	2000
DBTC-355-2000-1F3F	355	230V (1Ph) / 3x400V	2000
DBTC-355-3000-1F3F	355	230V (1Ph) / 3x400V	3000
DBTC-355-3500-1F3F	355	230V (1Ph) / 3x400V	3500
DBTC-355-4000-1F3F	355	230V (1Ph-20A) / 3x400V	4000
DBTC-355-4500-3F	355	3x400V	4500
DBTC-355-6000-3F	355	3x400V	6000
DBTC-355-7500-3F	355	3x400V	7500
DBTC-355-9000-3F	355	3x400V	9000
DBTC-400-500-1F	400	230V (1Ph)	500
DBTC-400-666-1F	400	230V (1Ph)	666
DBTC-400-1000-1F	400	230V (1Ph)	1000
DBTC-400-1332-1F	400	230V (1Ph)	1332
DBTC-400-1500-1F	400	230V (1Ph)	1500
DBTC-400-1500-1F3F	400	230V (1Ph) / 3x400V	1500
DBTC-400-2000-1F	400	230V (1Ph)	2000
DBTC-400-2000-1F3F	400	230V (1Ph) / 3x400V	2000
DBTC-400-3000-1F3F	400	230V (1Ph) / 3x400V	3000
DBTC-400-3500-1F3F	400	230V (1Ph) / 3x400V	3500
DBTC-400-4000-1F3F	400	230V (1Ph-20A) / 3x400V	4000
DBTC-400-4500-3F	400	3x400V	4500
DBTC-400-6000-3F	400	3x400V	6000
DBTC-400-7500-3F	400	3x400V	7500
DBTC-400-9000-3F	400	3x400V	9000
DBTC-450-666-1F	450	230V (1Ph)	666
DBTC-450-1000-1F	450	230V (1Ph)	1000
DBTC-450-1332-1F	450	230V (1Ph)	1332

ELECTRICAL HEATING

REFERENCE	Ø [mm]	VOLTAGE	POWER [w]
DBTC-450-1500-1F	450	230V (1Ph)	1500
DBTC-450-2000-1F	450	230V (1Ph)	2000
DBTC-450-2000-1F3F	450	230V (1Ph) / 3x400V	2000
DBTC-450-3000-1F3F	450	230V (1Ph) / 3x400V	3000
DBTC-450-4000-1F3F	450	230V (1Ph-20A) / 3x400V	4000
DBTC-450-4500-3F	450	3x400V	4500
DBTC-450-6000-3F	450	3x400V	6000
DBTC-450-7500-3F	450	3x400V	7500
DBTC-450-9000-3F	450	3x400V	9000
DBTC-450-12000-3F	450	3x400V	12000
DBTC-450-13500-3F	450	3x400V	13500
DBTC-500-666-1F	500	230V (1Ph)	666
DBTC-500-1000-1F	500	230V (1Ph)	1000
DBTC-500-1332-1F	500	230V (1Ph)	1332
DBTC-500-1500-1F	500	230V (1Ph)	1500
DBTC-500-2000-1F	500	230V (1Ph)	2000
DBTC-500-2000-1F3F	500	230V (1Ph) / 3x400V	2000
DBTC-500-3000-1F3F	500	230V (1Ph) / 3x400V	3000
DBTC-500-4000-1F3F	500	230V (1Ph-20A) / 3x400V	4000
DBTC-500-4500-3F	500	3x400V	4500
DBTC-500-6000-3F	500	3x400V	6000
DBTC-500-7500-3F	500	3x400V	7500
DBTC-500-9000-3F	500	3x400V	9000
DBTC-500-10500-3F	500	3x400V	10500
DBTC-500-12000-3F	500	3x400V	12000
DBTC-500-13500-3F	500	3x400V	13500
DBTC-500-15000-3F	500	3x400V	15000
DBTC-500-18000-3F	500	3x400V	18000
DBTC-560-666-1F	560	230V (1Ph)	666
DBTC-560-1000-1F	560	230V (1Ph)	1000
DBTC-560-1332-1F	560	230V (1Ph)	1332
DBTC-560-1500-1F	560	230V (1Ph)	1500
DBTC-560-2000-1F	560	230V (1Ph)	2000
DBTC-560-2000-1F3F	560	230V (1Ph) / 3x400V	2000
DBTC-560-3000-1F3F	560	230V (1Ph) / 3x400V	3000
DBTC-560-4000-1F3F	560	230V (1Ph-20A) / 3x400V	4000
DBTC-560-4500-3F	560	3x400V	4500
DBTC-560-6000-3F	560	3x400V	6000
DBTC-560-7500-3F	560	3x400V	7500
DBTC-560-9000-3F	560	3x400V	9000
DBTC-560-10500-3F	560	3x400V	10500
DBTC-560-12000-3F	560	3x400V	12000
DBTC-560-13500-3F	560	3x400V	13500

REFERENCE	Ø [mm]	VOLTAGE	POWER [w]
DBTC-560-15000-3F	560	3x400V	15000
DBTC-560-18000-3F	560	3x400V	18000
DBTC-630-666-1F	630	230V (1Ph)	666
DBTC-630-1000-1F	630	230V (1Ph)	1000
DBTC-630-1332-1F	630	230V (1Ph)	1332
DBTC-630-1500-1F	630	230V (1Ph)	1500
DBTC-630-2000-1F	630	230V (1Ph)	2000
DBTC-630-2000-1F3F	630	230V (1Ph) / 3x400V	2000
DBTC-630-3000-1F3F	630	230V (1Ph) / 3x400V	3000
DBTC-630-4000-1F3F	630	230V (1Ph-20A) / 3x400V	4000
DBTC-630-4500-3F	630	3x400V	4500
DBTC-630-6000-3F	630	3x400V	6000
DBTC-630-7500-3F	630	3x400V	7500
DBTC-630-9000-3F	630	3x400V	9000
DBTC-630-10500-3F	630	3x400V	10500
DBTC-630-12000-3F	630	3x400V	12000
DBTC-630-13500-3F	630	3x400V	13500
DBTC-630-15000-3F	630	3x400V	15000
DBTC-630-18000-3F	630	3x400V	18000

DBTR Rectangular Duct Heaters



Rectangular duct heaters are generally used for A/C purpose in air ducts or for process air heating.

Various dimensions and outputs are available as standard. They can be equipped with the necessary measuring and safety thermostats as well as power controllers.

Also available in ATEX version.

- 100 standard models with duct size from 150 x 150mm to 2000 x 2000mm and outputs from 500W to +100kW
- SS321 heating elements which can be removed without disconnecting case from ducting
- Alloy-coated steel terminal enclosure (IP42), minimum thickness 1 mm (Stainless Steel on demand)
- Element supports are fitted as standard when duct widths exceed 600 mm
- Built-in automatic and manual reset safety cutouts: preset at 70/80°C (auto) and 90/98°C (manual)

STANDARD PRODUCTS

- available from 0,5 to 9 kW
- depth 200 to 600mm
- height 100 to 600mm
- width 200 to 1000mm
- voltage : 230V (1ph) or 3 x 400V (3ph)

OTHER VARIANTS ON DEMAND



POWER OUTPUT [W] PER STANDARD AVAILABLE SIZE

REFERENCE	D [mm]	W [mm]	H [mm]	VOLTAGE	POWER [W]
BTR-500-100x200	200	100	200	230V (1Ph)	500
BTR-500-100x250	200	100	250	230V (1Ph)	500
BTR-500-150x200	200	150	200	230V (1Ph)	500
BTR-500-150x250	200	150	250	230V (1Ph)	500
BTR-500-200x200	200	200	200	230V (1Ph)	500
BTR-500-200x250	200	200	250	230V (1Ph)	500
BTR-500-250x250	200	250	250	230V (1Ph)	500
BTR-750-100x200	200	100	200	230V (1Ph)	750
BTR-750-100x250	200	100	250	230V (1Ph)	750
BTR-750-100x300	200	100	300	230V (1Ph)	750
BTR-750-150x200	200	150	200	230V (1Ph)	750
BTR-750-150x250	200	150	250	230V (1Ph)	750
BTR-750-150x300	200	150	300	230V (1Ph)	750
BTR-750-200x200	200	200	200	230V (1Ph)	750
BTR-750-200x250	200	200	250	230V (1Ph)	750
BTR-750-200x300	200	200	300	230V (1Ph)	750
BTR-750-250x250	200	250	250	230V (1Ph)	750
BTR-750-250x300	200	250	300	230V (1Ph)	750
BTR-750-300x300	200	300	300	230V (1Ph)	750
BTR-1000-100x200	200	100	200	230V (1Ph)	1000
BTR-1000-100x250	200	100	250	230V (1Ph)	1000
BTR-1000-100x300	200	100	300	230V (1Ph)	1000
BTR-1000-100x400	200	100	400	230V (1Ph)	1000
BTR-1000-150x200	200	150	200	230V (1Ph)	1000
BTR-1000-150x250	200	150	250	230V (1Ph)	1000
BTR-1000-150x300	200	150	300	230V (1Ph)	1000
BTR-1000-150x400	200	150	400	230V (1Ph)	1000
BTR-1000-200x200	200	200	200	230V (1Ph)	1000
BTR-1000-200x250	200	200	250	230V (1Ph)	1000
BTR-1000-200x300	200	200	300	230V (1Ph)	1000
BTR-1000-200x400	200	200	400	230V (1Ph)	1000
BTR-1000-250x250	200	250	250	230V (1Ph)	1000
BTR-1000-250x300	200	250	300	230V (1Ph)	1000
BTR-1000-250x400	200	250	400	230V (1Ph)	1000
BTR-1000-300x300	200	300	300	230V (1Ph)	1000
BTR-1000-300x400	200	300	400	230V (1Ph)	1000
BTR-1000-400x400	200	400	400	230V (1Ph)	1000
BTR-1250-100x200	400	100	200	230V (1Ph) / 3x400V	1250
BTR-1250-100x250	400	100	250	230V (1Ph) / 3x400V	1250
BTR-1250-100x300	400	100	300	230V (1Ph) / 3x400V	1250
BTR-1250-150x200	400	150	200	230V (1Ph) / 3x400V	1250
BTR-1250-150x250	400	150	250	230V (1Ph) / 3x400V	1250
BTR-1250-150x300	400	150	300	230V (1Ph) / 3x400V	1250
BTR-1250-200x200	400	200	200	230V (1Ph) / 3x400V	1250
BTR-1250-200x250	400	200	250	230V (1Ph) / 3x400V	1250
BTR-1250-200x300	200	200	300	230V (1Ph) / 3x400V	1250
BTR-1250-250x250	400	250	250	230V (1Ph) / 3x400V	1250
BTR-1250-250x300	200	250	300	230V (1Ph) / 3x400V	1250

REFERENCE	D [mm]	W [mm]	H [mm]	VOLTAGE	POWER [W]
BTR-1250-300x300	200	300	300	230V (1Ph) / 3x400V	1250
BTR-1500-100x250	200	100	250	230V (1Ph) / 3x400V	1500
BTR-1500-100x300	200	100	300	230V (1Ph) / 3x400V	1500
BTR-1500-100x400	200	100	400	230V (1Ph) / 3x400V	1500
BTR-1500-150x200	200	150	200	230V (1Ph) / 3x400V	1500
BTR-1500-150x250	200	150	250	230V (1Ph) / 3x400V	1500
BTR-1500-150x300	200	150	300	230V (1Ph) / 3x400V	1500
BTR-1500-150x400	200	150	400	230V (1Ph) / 3x400V	1500
BTR-1500-150x500	200	150	500	230V (1Ph) / 3x400V	1500
BTR-1500-150x600	200	150	600	230V (1Ph) / 3x400V	1500
BTR-1500-200x200	200	200	200	230V (1Ph) / 3x400V	1500
BTR-1500-200x250	200	200	250	230V (1Ph) / 3x400V	1500
BTR-1500-200x300	200	200	300	230V (1Ph) / 3x400V	1500
BTR-1500-200x400	200	200	400	230V (1Ph) / 3x400V	1500
BTR-1500-200x500	200	200	500	230V (1Ph) / 3x400V	1500
BTR-1500-200x600	200	200	600	230V (1Ph) / 3x400V	1500
BTR-1500-250x250	200	250	250	230V (1Ph) / 3x400V	1500
BTR-1500-250x300	200	250	300	230V (1Ph) / 3x400V	1500
BTR-1500-250x400	200	250	400	230V (1Ph) / 3x400V	1500
BTR-1500-250x500	200	250	500	230V (1Ph) / 3x400V	1500
BTR-1500-250x600	200	250	600	230V (1Ph) / 3x400V	1500
BTR-1500-300x300	200	300	300	230V (1Ph) / 3x400V	1500
BTR-1500-300x400	200	300	400	230V (1Ph) / 3x400V	1500
BTR-1500-300x500	200	300	500	230V (1Ph) / 3x400V	1500
BTR-1500-300x600	200	300	600	230V (1Ph) / 3x400V	1500
BTR-1500-400x400	200	400	400	230V (1Ph) / 3x400V	1500
BTR-1500-400x500	200	400	500	230V (1Ph) / 3x400V	1500
BTR-1500-400x600	200	400	600	230V (1Ph) / 3x400V	1500
BTR-1500-500x500	200	500	500	230V (1Ph) / 3x400V	1500
BTR-1500-500x600	200	500	600	230V (1Ph) / 3x400V	1500
BTR-1500-600x600	200	600	600	230V (1Ph) / 3x400V	1500
BTR-1750-100x200	400	100	200	230V (1Ph) / 3x400V	1750
BTR-1750-100x250	400	100	250	230V (1Ph) / 3x400V	1750
BTR-1750-100x300	400	100	300	230V (1Ph) / 3x400V	1750
BTR-1750-150x200	400	150	200	230V (1Ph) / 3x400V	1750
BTR-1750-150x250	400	150	250	230V (1Ph) / 3x400V	1750
BTR-1750-150x300	400	150	300	230V (1Ph) / 3x400V	1750
BTR-1750-200x200	400	200	200	230V (1Ph) / 3x400V	1750
BTR-1750-200x250	400	200	250	230V (1Ph) / 3x400V	1750
BTR-1750-200x300	200	200	300	230V (1Ph) / 3x400V	1750
BTR-1750-250x250	400	250	250	230V (1Ph) / 3x400V	1750
BTR-1750-250x300	200	250	300	230V (1Ph) / 3x400V	1750
BTR-1750-300x300	200	300	300	230V (1Ph) / 3x400V	1750
BTR-2000-100x200	400	100	200	230V (1Ph) / 3x400V	2000
BTR-2000-100x300	200	100	300	230V (1Ph) / 3x400V	2000
BTR-2000-100x400	200	100	400	230V (1Ph) / 3x400V	2000
BTR-2000-150x200	200	150	200	230V (1Ph) / 3x400V	2000
BTR-2000-150x250	200	150	250	230V (1Ph) / 3x400V	2000

REFERENCE	D [mm]	W [mm]	H [mm]	VOLTAGE	POWER [w]
BTR-2000-150x300	200	150	300	230V (1Ph) / 3x400V	2000
BTR-2000-150x400	200	150	400	230V (1Ph) / 3x400V	2000
BTR-2000-150x500	200	150	500	230V (1Ph) / 3x400V	2000
BTR-2000-150x600	200	150	600	230V (1Ph) / 3x400V	2000
BTR-2000-200x200	200	200	200	230V (1Ph) / 3x400V	2000
BTR-2000-200x250	200	200	250	230V (1Ph) / 3x400V	2000
BTR-2000-200x300	200	200	300	230V (1Ph) / 3x400V	2000
BTR-2000-200x400	200	200	400	230V (1Ph) / 3x400V	2000
BTR-2000-200x500	200	200	500	230V (1Ph) / 3x400V	2000
BTR-2000-200x600	200	200	600	230V (1Ph) / 3x400V	2000
BTR-2000-200x800	200	200	800	230V (1Ph) / 3x400V	2000
BTR-2000-250x250	200	250	250	230V (1Ph) / 3x400V	2000
BTR-2000-250x300	200	250	300	230V (1Ph) / 3x400V	2000
BTR-2000-250x400	200	250	400	230V (1Ph) / 3x400V	2000
BTR-2000-250x500	200	250	500	230V (1Ph) / 3x400V	2000
BTR-2000-250x600	200	250	600	230V (1Ph) / 3x400V	2000
BTR-2000-250x800	200	250	800	230V (1Ph) / 3x400V	2000
BTR-2000-300x300	200	300	300	230V (1Ph) / 3x400V	2000
BTR-2000-300x400	200	300	400	230V (1Ph) / 3x400V	2000
BTR-2000-300x500	200	300	500	230V (1Ph) / 3x400V	2000
BTR-2000-300x600	200	300	600	230V (1Ph) / 3x400V	2000
BTR-2000-300x800	200	300	800	230V (1Ph) / 3x400V	2000
BTR-2000-400x400	200	400	400	230V (1Ph) / 3x400V	2000
BTR-2000-400x500	200	400	500	230V (1Ph) / 3x400V	2000
BTR-2000-400x600	200	400	600	230V (1Ph) / 3x400V	2000
BTR-2000-400x800	200	400	800	230V (1Ph) / 3x400V	2000
BTR-2000-500x500	200	500	500	230V (1Ph) / 3x400V	2000
BTR-2000-500x600	200	500	600	230V (1Ph) / 3x400V	2000
BTR-2000-500x800	200	500	800	230V (1Ph) / 3x400V	2000
BTR-2000-600x600	200	600	600	230V (1Ph) / 3x400V	2000
BTR-2000-600x800	200	600	800	230V (1Ph) / 3x400V	2000
BTR-2250-100x250	400	100	250	230V (1Ph) / 3x400V	2250
BTR-2250-100x300	400	100	300	230V (1Ph) / 3x400V	2250
BTR-2250-150x200	600	150	200	230V (1Ph) / 3x400V	2250
BTR-2250-150x250	400	150	250	230V (1Ph) / 3x400V	2250
BTR-2250-150x300	400	150	300	230V (1Ph) / 3x400V	2250
BTR-2250-200x200	600	200	200	230V (1Ph) / 3x400V	2250
BTR-2250-200x250	200	200	250	230V (1Ph) / 3x400V	2250
BTR-2250-200x300	200	200	300	230V (1Ph) / 3x400V	2250
BTR-2250-250x250	200	250	250	230V (1Ph) / 3x400V	2250
BTR-2250-250x300	200	250	300	230V (1Ph) / 3x400V	2250
BTR-2250-300x300	200	300	300	230V (1Ph) / 3x400V	2250
BTR-2500-100x250	600	100	250	230V (1Ph) / 3x400V	2500
BTR-2500-100x300	400	100	300	230V (1Ph) / 3x400V	2500
BTR-2500-100x400	400	100	400	230V (1Ph) / 3x400V	2500
BTR-2500-150x200	600	150	200	230V (1Ph) / 3x400V	2500
BTR-2500-150x250	600	150	250	230V (1Ph) / 3x400V	2500
BTR-2500-150x300	400	150	300	230V (1Ph) / 3x400V	2500

REFERENCE	D [mm]	W [mm]	H [mm]	VOLTAGE	POWER [w]
BTR-2500-150x400	400	150	400	230V (1Ph) / 3x400V	2500
BTR-2500-200x200	600	200	200	230V (1Ph) / 3x400V	2500
BTR-2500-200x250	400	200	250	230V (1Ph) / 3x400V	2500
BTR-2500-200x300	200	200	300	230V (1Ph) / 3x400V	2500
BTR-2500-200x400	200	200	400	230V (1Ph) / 3x400V	2500
BTR-2500-250x250	400	250	250	230V (1Ph) / 3x400V	2500
BTR-2500-250x300	200	250	300	230V (1Ph) / 3x400V	2500
BTR-2500-250x400	200	250	400	230V (1Ph) / 3x400V	2500
BTR-2500-300x300	200	300	300	230V (1Ph) / 3x400V	2500
BTR-2500-300x400	200	300	400	230V (1Ph) / 3x400V	2500
BTR-2500-400x400	200	400	400	230V (1Ph) / 3x400V	2500
BTR-3000-100x250	380	100	250	230V (1Ph) / 3x400V	3000
BTR-3000-100x300	380	100	300	230V (1Ph) / 3x400V	3000
BTR-3000-150x200	380	150	200	230V (1Ph) / 3x400V	3000
BTR-3000-150x250	380	150	250	230V (1Ph) / 3x400V	3000
BTR-3000-150x300	380	150	300	230V (1Ph) / 3x400V	3000
BTR-3000-150x400	200	150	400	230V (1Ph) / 3x400V	3000
BTR-3000-150x500	200	150	500	230V (1Ph) / 3x400V	3000
BTR-3000-150x600	200	150	600	230V (1Ph) / 3x400V	3000
BTR-3000-200x200	380	200	200	230V (1Ph) / 3x400V	3000
BTR-3000-200x250	200	200	250	230V (1Ph) / 3x400V	3000
BTR-3000-200x300	200	200	300	230V (1Ph) / 3x400V	3000
BTR-3000-200x400	200	200	400	230V (1Ph) / 3x400V	3000
BTR-3000-200x500	200	200	500	230V (1Ph) / 3x400V	3000
BTR-3000-200x600	200	200	600	230V (1Ph) / 3x400V	3000
BTR-3000-200x800	200	200	800	230V (1Ph) / 3x400V	3000
BTR-3000-250x250	200	250	250	230V (1Ph) / 3x400V	3000
BTR-3000-250x300	200	250	300	230V (1Ph) / 3x400V	3000
BTR-3000-250x400	200	250	400	230V (1Ph) / 3x400V	3000
BTR-3000-250x500	200	250	500	230V (1Ph) / 3x400V	3000
BTR-3000-250x600	200	250	600	230V (1Ph) / 3x400V	3000
BTR-3000-250x800	200	250	800	230V (1Ph) / 3x400V	3000
BTR-3000-250x1000	200	250	1000	230V (1Ph) / 3x400V	3000
BTR-3000-300x300	200	300	300	230V (1Ph) / 3x400V	3000
BTR-3000-300x400	200	300	400	230V (1Ph) / 3x400V	3000
BTR-3000-300x500	200	300	500	230V (1Ph) / 3x400V	3000
BTR-3000-300x600	200	300	600	230V (1Ph) / 3x400V	3000
BTR-3000-300x800	200	300	800	230V (1Ph) / 3x400V	3000
BTR-3000-300x1000	200	300	1000	230V (1Ph) / 3x400V	3000
BTR-3000-400x400	200	400	400	230V (1Ph) / 3x400V	3000
BTR-3000-400x500	200	400	500	230V (1Ph) / 3x400V	3000
BTR-3000-400x600	200	400	600	230V (1Ph) / 3x400V	3000
BTR-3000-400x800	200	400	800	230V (1Ph) / 3x400V	3000
BTR-3000-400x1000	200	400	1000	230V (1Ph) / 3x400V	3000
BTR-3000-500x500	200	500	500	230V (1Ph) / 3x400V	3000
BTR-3000-500x600	200	500	600	230V (1Ph) / 3x400V	3000
BTR-3000-500x800	200	500	800	230V (1Ph) / 3x400V	3000
BTR-3000-500x1000	200	500	1000	230V (1Ph) / 3x400V	3000

ELECTRICAL HEATING

REFERENCE	D [mm]	W [mm]	H [mm]	VOLTAGE	POWER [w]
BTR-3000-600x600	200	600	600	230V (1Ph) / 3x400V	3000
BTR-3000-600x800	200	600	800	230V (1Ph) / 3x400V	3000
BTR-3000-600x1000	200	600	1000	230V (1Ph) / 3x400V	3000
BTR-3500-100x300	400	100	300	230V (1Ph) / 3x400V	3500
BTR-3500-100x400	400	100	400	230V (1Ph) / 3x400V	3500
BTR-3500-150x250	400	150	250	230V (1Ph) / 3x400V	3500
BTR-3500-150x300	400	150	300	230V (1Ph) / 3x400V	3500
BTR-3500-150x400	400	150	400	230V (1Ph) / 3x400V	3500
BTR-3500-150x500	200	150	500	230V (1Ph) / 3x400V	3500
BTR-3500-150x600	200	150	600	230V (1Ph) / 3x400V	3500
BTR-3500-200x250	400	200	250	230V (1Ph) / 3x400V	3500
BTR-3500-200x300	200	200	300	230V (1Ph) / 3x400V	3500
BTR-3500-200x400	200	200	400	230V (1Ph) / 3x400V	3500
BTR-3500-200x500	200	200	500	230V (1Ph) / 3x400V	3500
BTR-3500-200x600	200	200	600	230V (1Ph) / 3x400V	3500
BTR-3500-250x250	400	250	250	230V (1Ph) / 3x400V	3500
BTR-3500-250x300	200	250	300	230V (1Ph) / 3x400V	3500
BTR-3500-250x400	200	250	400	230V (1Ph) / 3x400V	3500
BTR-3500-250x500	200	250	500	230V (1Ph) / 3x400V	3500
BTR-3500-250x600	200	250	600	230V (1Ph) / 3x400V	3500
BTR-3500-300x300	200	300	300	230V (1Ph) / 3x400V	3500
BTR-3500-300x400	200	300	400	230V (1Ph) / 3x400V	3500
BTR-3500-300x500	200	300	500	230V (1Ph) / 3x400V	3500
BTR-3500-300x600	200	300	600	230V (1Ph) / 3x400V	3500
BTR-3500-400x400	200	400	400	230V (1Ph) / 3x400V	3500
BTR-3500-400x500	200	400	500	230V (1Ph) / 3x400V	3500
BTR-3500-400x600	200	400	600	230V (1Ph) / 3x400V	3500
BTR-3500-500x500	200	500	500	230V (1Ph) / 3x400V	3500
BTR-3500-500x600	200	500	600	230V (1Ph) / 3x400V	3500
BTR-3500-600x600	200	600	600	230V (1Ph) / 3x400V	3500
BTR-4000-100x300	380	100	300	230V (1Ph) / 3x400V	4000
BTR-4000-100x400	380	100	400	230V (1Ph) / 3x400V	4000
BTR-4000-150x250	380	150	250	230V (1Ph) / 3x400V	4000
BTR-4000-150x300	380	150	300	230V (1Ph) / 3x400V	4000
BTR-4000-150x400	380	150	400	230V (1Ph) / 3x400V	4000
BTR-4000-150x500	200	150	500	230V (1Ph) / 3x400V	4000
BTR-4000-150x600	200	150	600	230V (1Ph) / 3x400V	4000
BTR-4000-200x250	380	200	250	230V (1Ph) / 3x400V	4000
BTR-4000-200x300	200	200	300	230V (1Ph) / 3x400V	4000
BTR-4000-200x400	200	200	400	230V (1Ph) / 3x400V	4000
BTR-4000-200x500	200	200	500	230V (1Ph) / 3x400V	4000
BTR-4000-200x600	200	200	600	230V (1Ph) / 3x400V	4000
BTR-4000-250x250	380	250	250	230V (1Ph) / 3x400V	4000
BTR-4000-250x300	200	250	300	230V (1Ph) / 3x400V	4000
BTR-4000-250x400	200	250	400	230V (1Ph) / 3x400V	4000
BTR-4000-250x500	200	250	500	230V (1Ph) / 3x400V	4000
BTR-4000-250x600	200	250	600	230V (1Ph) / 3x400V	4000
BTR-4000-250x800	200	250	800	230V (1Ph) / 3x400V	4000
BTR-4000-300x300	200	300	300	230V (1Ph) / 3x400V	4000

REFERENCE	D [mm]	W [mm]	H [mm]	VOLTAGE	POWER [w]
BTR-4000-300x400	200	300	400	230V (1Ph) / 3x400V	4000
BTR-4000-300x500	200	300	500	230V (1Ph) / 3x400V	4000
BTR-4000-300x600	200	300	600	230V (1Ph) / 3x400V	4000
BTR-4000-300x800	200	300	800	230V (1Ph) / 3x400V	4000
BTR-4000-400x400	200	400	400	230V (1Ph) / 3x400V	4000
BTR-4000-400x500	200	400	500	230V (1Ph) / 3x400V	4000
BTR-4000-400x600	200	400	600	230V (1Ph) / 3x400V	4000
BTR-4000-400x800	200	400	800	230V (1Ph) / 3x400V	4000
BTR-4000-500x500	200	500	500	230V (1Ph) / 3x400V	4000
BTR-4000-500x600	200	500	600	230V (1Ph) / 3x400V	4000
BTR-4000-500x800	200	500	800	230V (1Ph) / 3x400V	4000
BTR-4000-600x600	200	600	600	230V (1Ph) / 3x400V	4000
BTR-4000-600x800	200	600	800	230V (1Ph) / 3x400V	4000
BTR-4500-150x400	380	150	400	3x400V	4500
BTR-4500-150x500	290	150	500	3x400V	4500
BTR-4500-150x600	290	150	600	3x400V	4500
BTR-4500-200x250	290	200	250	3x400V	4500
BTR-4500-200x300	290	200	300	3x400V	4500
BTR-4500-200x400	290	200	400	3x400V	4500
BTR-4500-200x500	200	200	500	3x400V	4500
BTR-4500-200x600	200	200	600	3x400V	4500
BTR-4500-200x800	200	200	800	3x400V	4500
BTR-4500-250x250	290	250	250	3x400V	4500
BTR-4500-250x300	290	250	300	3x400V	4500
BTR-4500-250x400	200	250	400	3x400V	4500
BTR-4500-250x500	200	250	500	3x400V	4500
BTR-4500-250x600	200	250	600	3x400V	4500
BTR-4500-250x800	200	250	800	3x400V	4500
BTR-4500-250x1000	200	250	1000	3x400V	4500
BTR-4500-300x300	290	300	300	3x400V	4500
BTR-4500-300x400	200	300	400	3x400V	4500
BTR-4500-300x500	200	300	500	3x400V	4500
BTR-4500-300x600	200	300	600	3x400V	4500
BTR-4500-300x800	200	300	800	3x400V	4500
BTR-4500-300x1000	200	300	1000	3x400V	4500
BTR-4500-400x400	200	400	400	3x400V	4500
BTR-4500-400x500	200	400	500	3x400V	4500
BTR-4500-400x600	200	400	600	3x400V	4500
BTR-4500-400x800	200	400	800	3x400V	4500
BTR-4500-400x1000	200	400	1000	3x400V	4500
BTR-4500-500x500	200	500	500	3x400V	4500
BTR-4500-500x600	200	500	600	3x400V	4500
BTR-4500-500x800	200	500	800	3x400V	4500
BTR-4500-500x1000	200	500	1000	3x400V	4500
BTR-4500-600x600	200	600	600	3x400V	4500
BTR-4500-600x800	200	600	800	3x400V	4500
BTR-4500-600x1000	200	600	1000	3x400V	4500
BTR-6000-150x400	380	150	400	3x400V	6000
BTR-6000-150x500	380	150	500	3x400V	6000
BTR-6000-150x600	380	150	600	3x400V	6000

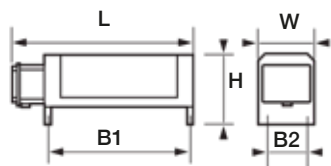
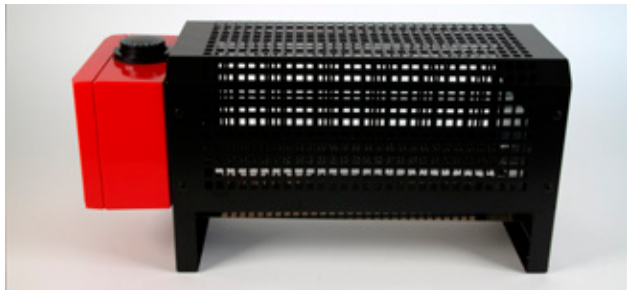
REFERENCE	D [mm]	W [mm]	H [mm]	VOLTAGE	POWER [w]
BTR-6000-200x400	380	200	400	3x400V	6000
BTR-6000-200x500	200	200	500	3x400V	6000
BTR-6000-200x600	200	200	600	3x400V	6000
BTR-6000-200x800	200	200	800	3x400V	6000
BTR-6000-250x300	290	250	300	3x400V	6000
BTR-6000-250x400	200	250	400	3x400V	6000
BTR-6000-250x500	200	250	500	3x400V	6000
BTR-6000-250x600	200	250	600	3x400V	6000
BTR-6000-250x800	200	250	800	3x400V	6000
BTR-6000-250x1000	200	250	1000	3x400V	6000
BTR-6000-300x300	290	300	300	3x400V	6000
BTR-6000-300x400	200	300	400	3x400V	6000
BTR-6000-300x500	200	300	500	3x400V	6000
BTR-6000-300x600	200	300	600	3x400V	6000
BTR-6000-300x800	200	300	800	3x400V	6000
BTR-6000-300x1000	200	300	1000	3x400V	6000
BTR-6000-400x400	200	400	400	3x400V	6000
BTR-6000-400x500	200	400	500	3x400V	6000
BTR-6000-400x600	200	400	600	3x400V	6000
BTR-6000-400x800	200	400	800	3x400V	6000
BTR-6000-400x1000	200	400	1000	3x400V	6000
BTR-6000-500x500	200	500	500	3x400V	6000
BTR-6000-500x600	200	500	600	3x400V	6000
BTR-6000-500x800	200	500	800	3x400V	6000
BTR-6000-500x1000	200	500	1000	3x400V	6000
BTR-6000-600x600	200	600	600	3x400V	6000
BTR-6000-600x800	200	600	800	3x400V	6000
BTR-6000-600x1000	200	600	1000	3x400V	6000
BTR-7500-200x500	200	200	500	3x400V	7500
BTR-7500-200x600	200	200	600	3x400V	7500
BTR-7500-200x800	200	200	800	3x400V	7500
BTR-7500-250x400	200	250	400	3x400V	7500
BTR-7500-250x500	200	250	500	3x400V	7500
BTR-7500-250x600	200	250	600	3x400V	7500
BTR-7500-250x800	200	250	800	3x400V	7500
BTR-7500-250x1000	200	250	1000	3x400V	7500
BTR-7500-300x400	200	300	400	3x400V	7500
BTR-7500-300x500	200	300	500	3x400V	7500
BTR-7500-300x600	200	300	600	3x400V	7500
BTR-7500-300x800	200	300	800	3x400V	7500
BTR-7500-300x1000	200	300	1000	3x400V	7500
BTR-7500-400x400	200	400	400	3x400V	7500
BTR-7500-400x500	200	400	500	3x400V	7500
BTR-7500-400x600	200	400	600	3x400V	7500
BTR-7500-400x800	200	400	800	3x400V	7500
BTR-7500-400x1000	200	400	1000	3x400V	7500
BTR-7500-500x500	200	500	500	3x400V	7500
BTR-7500-500x600	200	500	600	3x400V	7500
BTR-7500-500x800	200	500	800	3x400V	7500
BTR-7500-500x1000	200	500	1000	3x400V	7500

REFERENCE	D [mm]	W [mm]	H [mm]	VOLTAGE	POWER [w]
BTR-7500-600x600	200	600	600	3x400V	7500
BTR-7500-600x800	200	600	800	3x400V	7500
BTR-7500-600x1000	200	600	1000	3x400V	7500
BTR-9000-200x500	200	200	500	3x400V	9000
BTR-9000-200x600	200	200	600	3x400V	9000
BTR-9000-200x800	200	200	800	3x400V	9000
BTR-9000-250x400	200	250	400	3x400V	9000
BTR-9000-250x500	200	250	500	3x400V	9000
BTR-9000-250x600	200	250	600	3x400V	9000
BTR-9000-250x800	200	250	800	3x400V	9000
BTR-9000-250x1000	200	250	1000	3x400V	9000
BTR-9000-300x400	200	300	400	3x400V	9000
BTR-9000-300x500	200	300	500	3x400V	9000
BTR-9000-300x600	200	300	600	3x400V	9000
BTR-9000-300x800	200	300	800	3x400V	9000
BTR-9000-300x1000	200	300	1000	3x400V	9000
BTR-9000-400x400	200	400	400	3x400V	9000
BTR-9000-400x500	200	400	500	3x400V	9000
BTR-9000-400x600	200	400	600	3x400V	9000
BTR-9000-400x800	200	400	800	3x400V	9000
BTR-9000-400x1000	200	400	1000	3x400V	9000
BTR-9000-500x500	200	500	500	3x400V	9000
BTR-9000-500x600	200	500	600	3x400V	9000
BTR-9000-500x800	200	500	800	3x400V	9000
BTR-9000-500x1000	200	500	1000	3x400V	9000
BTR-9000-600x600	200	600	600	3x400V	9000
BTR-9000-600x800	200	600	800	3x400V	9000
BTR-9000-600x1000	200	600	1000	3x400V	9000

ELECTRICAL HEATING

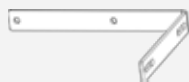
DRID

Industrial convection heaters with casing



OPTION

DRI-PMR
Mounting kit for wall fixing
(brackets, screws, plugs)



With the DRID we offer a wide range of industrial space heaters which can operate in more arduous conditions than their domestic equivalent.

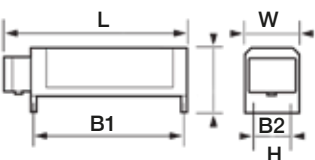
Depending on their specific application they may need resistance to mechanical impact, high humidity, water splashes or corrosive atmospheres.

- Robust, industrial heaters with painted steel casing
- Watt density: 3 W/cm²
- Elements Ø 8,5 mm in SS 321 with fins
- Terminal enclosure: aluminium box IP55
- Built-in adjustable thermostat: 4°C to 40°C
- Suitable for floor or wall mounting with brackets (optional mounting kit)

NO THERMOSTAT	INTERNAL THERMOSTAT	EXTERNAL THERMOSTAT	POWER [W]	VOLTAGE [V]	L [mm]	B1 [mm]	B2 [mm]	W [mm]	H [mm]
DRID005S	DRIDI005S	DRIDT005S	500	230V-1ph	428	325	100	164	202
DRID010S	DRIDI010S	DRIDT010S	1000	230V-1ph	428	325	100	164	202
DRID015S	DRIDI015S	DRIDT015S	1500	3x400V S	428	325	100	164	202
DRID010L	DRIDI010L	DRIDT010L	1000	230V-1ph	733	630	100	164	202
DRID020L	DRIDI020L	DRIDT020L	2000	230V-1ph	733	630	100	164	202
DRID030L	DRIDI030L	DRIDT030L	3000	3x400V S	733	630	100	164	202

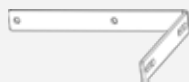
DRIID

Industrial convection heaters for corrosive environments



OPTION

DRII-PMR
Mounting kit for wall fixing
(brackets, screws, plugs)



With the DRIID we offer a range of industrial convection heaters specifically designed for use in corrosive environments, such as the food industry or areas with aggressive atmospheres.

They provide reliable heating performance while ensuring resistance to moisture, chemical exposure, and long-term wear.

- For use in the food industry or corrosive environments
- Watt density: 3 W/cm²
- Elements Ø 8,5 mm in SS 321 with fins
- Casing in stainless steel 304L
- Terminal enclosure: SS 304L box IP55
- Built-in adjustable thermostat: 4°C to 40°C
- Suitable for floor or wall mounting with brackets (optional mounting kit)

NO THERMOSTAT	INTERNAL THERMOSTAT	EXTERNAL THERMOSTAT	POWER [W]	VOLTAGE [V]	L [mm]	B1 [mm]	B2 [mm]	W [mm]	H [mm]
DRIID005S	DRIIDI005S	DRIIDT005S	500	230V-1ph	428	325	100	164	202
DRIID010S	DRIIDI010S	DRIIDT010S	1000	230V-1ph	428	325	100	164	202
DRIID015S	DRIIDI015S	DRIIDT015S	1500	3x400V S	428	325	100	164	202
DRIID010L	DRIIDI010L	DRIIDT010L	1000	230V-1ph	733	630	100	164	202
DRIID020L	DRIIDI020L	DRIIDT020L	2000	230V-1ph	733	630	100	164	202
DRIID030L	DRIIDI030L	DRIIDT030L	3000	3x400V S	733	630	100	164	202

AIRPULS Fan Heater



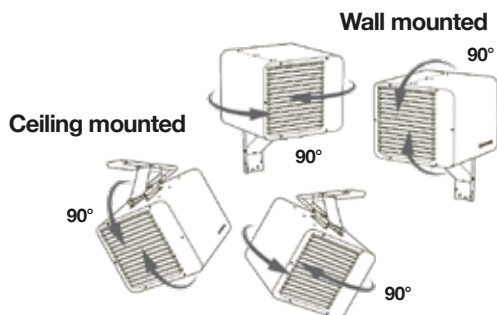
A complete, intelligent range of next-generation fan heaters, ideal for cost-effective heating and comfort in large spaces such as warehouses, industrial facilities, sports halls, exhibition halls, and hangars. With its exceptional long-range airflow, the Airpuls delivers even, homogeneous temperatures across any industrial or commercial environment.

Adaptable to user needs, it offers multiple operating modes and a multi-directional mounting system for precise orientation and optimal performance. A very practical and simple device, designed for intensive use.

The Airpuls supports both fixed and mobile configurations and is available with either integrated controls or the optional Aircom digital control box.

- Voltage: 230V-1ph / 400V-3ph
- Power: 4,5 - 24 kW
- 6 operating functions and 2 power options
- Automatic reset for thermal safety
- Heating element: shielded resistors with fins
- Timed ventilation
- Fast and easy installation
- Homogeneous airflow up to 15-20m/s
- Adjustable thermostat
- Integrated power relays
- Electro-galvanized steel body coated with epoxy polyester
- Protective grill at air inlet and honeycomb grill at air outlet
- Simplified connection without polarity
- Mounting bracket for fixation to wall or ceiling
- 90° horizontal and vertical rotation
- Class 1: IP44 and IK08

MULTI-POSITION MOUNTING BRACKET



REFERENCE	POWER [W]	L x H x D [cm]	MAX FLOW RATE [m³/h]	WEIGHT [kg]
Airpuls 404	3000 / 4500	42,0 x 33,0 x 51,1	430 / 490	20,5
Airpuls 406	4000 / 6000	42,0 x 33,0 x 51,1	620 / 700	20,5
Airpuls 409	6000 / 9000	47,0 x 38,0 x 53,6	920 / 1100	24,9
Airpuls 412	8000 / 12000	47,0 x 38,0 x 53,6	1100 / 1200	24,9
Airpuls 415	10000 / 15000	52,0 x 43,0 x 61,5	1250 / 1350	33,6
Airpuls 418	8000 / 18000	52,0 x 43,0 x 61,5	1600 / 1800	33,6
Airpuls 424	12000 / 24000	52,0 x 43,0 x 61,5	1700 / 2200	33,6

OPTION

THERMOSTAT

Digital control panel / thermostat with single wire connection (combine up to 20 heaters).

- to be ordered separately



AIRCOM4

Remote Control thermostat



DYBOX BT

Low temperature radiant heater



A range of 3 radiant heaters with modular dimensions, designed to fit standard suspended ceilings. The emitting surface is coated with a cleanable, ultra-emissive epoxy-polyester finish.

The Dybox BT has 3 mounting options: suspended installation (chains), ceiling-mounted or built-in.

A discreet solution for commercial premises with intermittent use (meeting rooms, schools, offices, retail spaces).

MOUNTING OPTIONS

SUSPENDED (CHAINS)

CEILING MOUNTED

BUILT-IN

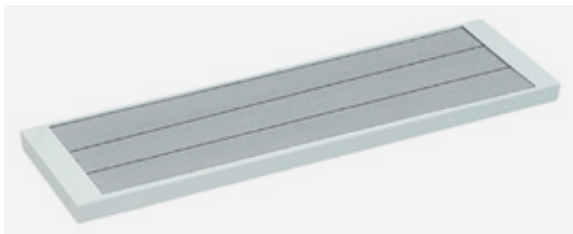


- Voltage: 230V - 1ph
- Output: 0,2 – 0,6 kW
- Electro-galvanized steel body coated with epoxy polyester
- Average emission temperature: 80°C
- Recommended operating height : 3 – 4 m
- Fast and easy installation
- Protected electrical terminals
- Class 1: IP44 and IK08

REFERENCE	TYPE	POWER [w]	L x H x D [cm]	WEIGHT [kg]
DYBOXA02	Built-in	200	59,0 x 59,0 x 6,0	7,2
DYBOXA03	Suspended	300	59,0 x 59,0 x 6,0	7,2
DYBOXA06	Suspended	600	119,0 x 59,0 x 6,0	14,0

DYBOX MT

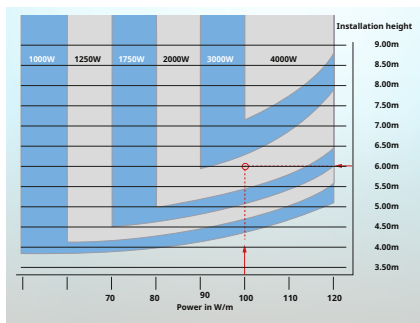
Medium temperature radiant heater



A wide range of robust radiant heaters, ideal for the overall heating of isolated high ceiling premises. The Dybox MT heats large volumes of air without displacement, while its monobloc aluminum emitter ensures excellent heat distribution.

The resistor core is designed to prevent overheating and extend lifespan, complemented by an ultra-emissive surface coating for maximum performance.

A very user-friendly device that is very effective in both summer and winter for total and auxiliary heating.



- Resistor & diffusor combined
- Voltage: 230V-1ph / 230V-3ph / 400V-3ph
- Output: 1 – 4 kW
- Electro-galvanized steel body coated with epoxy polyester
- Ceiling-mounted or suspended installation (chains)
- Heating element: monobloc ALU with high-emissivity Airlu Mat® treatment
- Homogeneous heat distribution
- Fast and easy installation
- Protected electrical terminals
- Class 1: IP44 and IK08

REFERENCE	VOLTAGE [V]	POWER [w]	L x H x D [cm]	WEIGHT [kg]
DYBOX2A10	230V - 1ph	1000	85,0 x 27,8 x 9,0	7,4
DYBOX2A12	230V - 1ph	1250	100,5 x 27,8 x 9,0	8,8
DYBOX2A15	230V - 1ph	1500	120,0 x 27,8 x 9,0	10,4
DYBOX2A17	230V - 1ph	1750	136,0 x 27,8 x 9,0	11,8
DYBOX2A20	230V - 1ph	2000	155,0 x 27,8 x 9,0	13,2
DYBOX2A30	230V or 400V - 3ph	3000	155,0 x 40,0 x 9,0	18,4
DYBOX2A40*	230V or 400V - 3ph	4000	155,0 x 40,0 x 9,0	18,3

OPTION

Available for DYBOX BT and MT

THERMOSTAT

Digital control panel / thermostat with single wire connection (combine up to 20 heaters)

- to be ordered separately



AIRCOM4



GIALIX

Wall-mounted
Electrical Boiler



The Gialix boiler comes fully equipped and prepared for connection to the heating network. An ergonomic control panel provides all the essential settings for optimal boiler operation.

With a diverse range of power options and varying levels, it is the ideal choice for replacing oil or gas boilers.

- Voltage: 230V-1ph / 400V-3ph
- Safety aquastat at 65°C (floor heating) and 110°C (radiators)
- Displays water temperature and pressure, with adjustable heating or hot water settings (manual or programmed)
- Modulating regulation for optimal power control
- Incoloy 800 immersion heater
- Robust and anti-corrosion cast body (100% recyclability)
- Optional ambient thermostat with or without a clock
- Protection class: IP21
- Weight: 25,0 kg

GIALIX DOMESTIC

REFERENCE	SIZE [cm]	POWER [kW]	VOLTAGE [V]
GIALIX BC 6 MT - P1	50 x 34 x 28	0 - 6	230V 1-phase
GIALIX BC 12 MT - P1	50 x 34 x 28	0 - 12	230V 1-phase
* GIALIX BC 12 MT 2C - P1	62 x 40 x 28	0 - 12	230V 1-phase
GIALIX BC 12 MT - P3	50 x 34 x 28	0 - 12	400V 3-phase
GIALIX BC 16 MT - P3	50 x 34 x 28	0 - 16	400V 3-phase
GIALIX BC 24 MT - P3	62 x 40 x 28	0 - 24	400V 3-phase

GIALIX TERTIARY

REFERENCE	SIZE [cm]	POWER [kW]	VOLTAGE [V]
GIALIX BC 36 MA - P3	74 x 46 x 28	0 - 36	400V 3-phase
GIALIX BC 48 MA - P3	74 x 46 x 28	0 - 48	400V 3-phase
GIALIX BC 72 MA - P3	74 x 46 x 28	0 - 72	400V 3-phase
GIALIX BC 120 MA - P3	74 x 57 x 35	0 - 120	400V 3-phase
GIALIX BC 196 MA - P3	74 x 63 x 40	0 - 196	400V 3-phase

(*) GIALIX BC 12 MT 2C - P3: Hydraulically equipped for two underfloor heating circuits and/or radiators.



TRACING

ELECTRICAL TRACING IS TRADE APART

The installation of tracing is done with the utmost care. From the plan to the first use, we offer our specialized products and services. Depending on the application we divide tracing into two techniques : Building technique and industrial applications.

INDUSTRIAL HEATING CABLES

In wintertime heat loss of liquids must be compensated in order to guarantee the continuity of your installations.

Also used for temperature maintenance in processes.

DRUM HEATERS

Insulated heating jackets for drums and containers.

HEATED HOSES

Special applications for heating of flexible hoses.

BUILDING TECHNIQUE

Frost projection of piping and tanks

FLOOR HEATING

Range of cables to be integrated in concrete, asphalt or chape for industrial and commercial outdoor floor heating as well as frost heave protection in cold rooms.

FINISHED RIBBONS

Quick and easy to install heating cables for frost protection of piping.

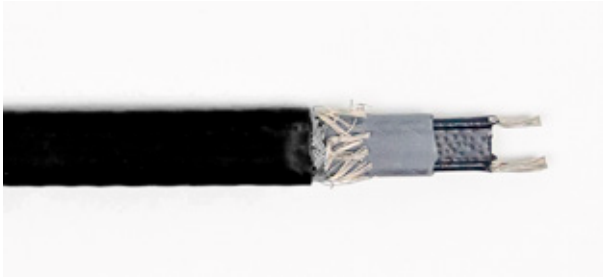
HEATING MATS

Standard and fully customized silicone or alu heating mats for various applications.

SPECIAL HEATING CABLES

DLR

Electrical heating cable for freeze protection or temperature maintenance



- maximum continuous exposure temperature (power on): 65°C / 149°F
- maximum permissible exposure temperature (power off): 85°C / 185°F
- minimum operating temperature: -65°C / -85°F
- minimum installation temperature: -40°C / -40°F
- standard power supply: 230 V AC (other on demand)
- maximum resistance of protective braiding: 18,2 Ohm/km
- ingress protection: IP67



ORDERING INFORMATION

DLR 5 - 2CR

- DIRAC Low Temperature
- Output 17W/m at 10°C
- Supply Voltage 220 - 277VAC
- Metal Braid
- Thermoplastic Rubber Outerjacket

DLR is an industrial grade, self-limiting heating cable which can be used for freeze protection or temperature maintenance to 65°C.

It can be cut-to-length on site and exact piping lengths can be matched without any complicated design considerations.

DLR is approved for use in non-hazardous environments.

Its self-limiting characteristics improve safety and reliability.

DLR will not overheat or burnout, even when overlapped upon itself. Its power output is self-regulated in response to the pipe temperature.

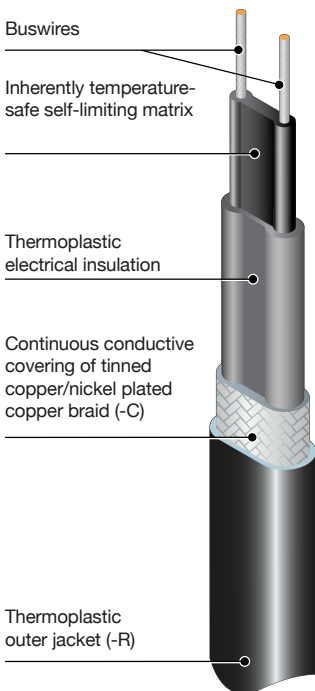
The installation of DLR is quick and simple and requires no special skills or tools.

Termination, splicing and power connection components are all provided in convenient kits.

- Automatically adjusts heat output in response to increasing or decreasing pipe temperature
- Can be cut-to-length
- Suitable for use in safe areas
- Different supply voltages on demand
- Inherently temperature safe
- Full range of controls and accessories available

	DLR3	DLR5	DLR8	DLR10
Nominal output W/m at 10°C	10	17	24	31
DIRAC REFERENCE	DIMENSIONS: [mm] +/- 0,5	WEIGHT [kg/100m]	MIN BEND RADIUS	GLAND SIZE
DLRx-2CR	10,9 x 6	12	30 mm	M20

STRUCTURE



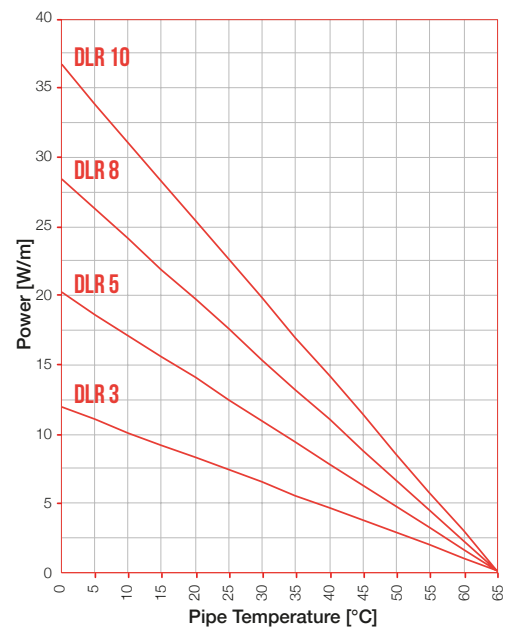
MAXIMUM LENGTH [m] VS. CIRCUIT BREAKER SIZE

The following circuit details relate specifically for the trace heating of pipework and equipment. For any other application consult DIRAC Industries.

REF	START-UP T [°C]	230V				
		16A	20A	25A	32A	40A
DLR3	10°C	187	187	187	187	187
	0°C	185	187	187	187	187
	-10°C	174	187	187	187	187
	-20°C	168	182	187	187	187
DLR5	-40°C	157	177	187	187	187
	10°C	161	161	161	161	161
	0°C	160	161	161	161	161
	-10°C	138	161	161	161	161
DLR8	-20°C	112	137	161	161	161
	-40°C	94	118	147	161	161
	10°C	155	155	155	155	155
	0°C	153	155	155	155	155
DLR10	-10°C	132	155	155	155	155
	-20°C	108	131	155	155	155
	-40°C	90	113	141	155	155
	10°C	106	121	121	121	121
DLR10	0°C	97	115	121	121	121
	-10°C	84	106	121	121	121
	-20°C	77	97	121	121	121
	-40°C	67	84	106	121	121

THERMAL RATINGS

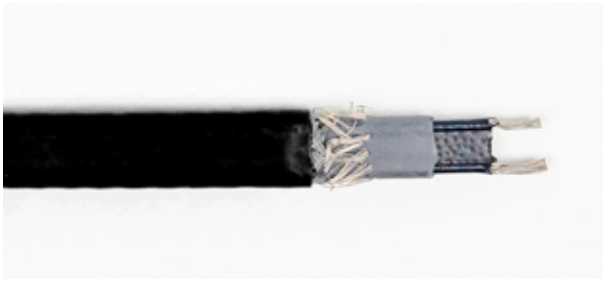
Nominal output at 230V when DLR is installed on thermally insulated steel pipes.



Thermal-magnetic circuit breaker (curve D) and a 30mA differential protection must be used.

DLR-24CR

Electrical heating cable for freeze protection or temperature maintenance



- maximum continuous exposure temperature (power on) : 65°C / 150°F
- maximum permissible exposure temperature (power off) : 85°C / 185°F
- minimum operating temperature : -65°C / -85°F
- minimum installation temperature : -60°C / -76°F
- maximum resistance of protective braiding: 18,2 Ohm/km
- ingress protection : IP66/67



DLR-24CR low temperature self-regulating heating cable can be used for pipe antifreeze (including plastic and metal pipes), roof and gutter in residential and commercial applications.

No matter whether the pipeline is overhead or buried installation, DLR-24CR heating cable can maintain the temperature and phase structure of the medium in the pipeline or vessel, and can also be used for the snow melting and de-icing on the roof of residential buildings & buildings and in the gutter area of large buildings as well as to prevent potential safety risk caused by snow.

- Automatically adjusts heat output in response to increasing or decreasing pipe temperature
- Can be cut-to-length
- Suitable for use in safe areas
- Supply voltages : 24VAC
- UV-tested
- Full range of controls and accessories available

ORDERING INFORMATION

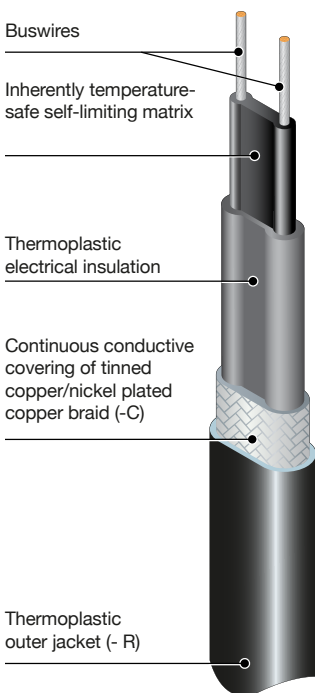
DLR 5 - 24CR

DIRAC Low Temperature
Output 17W/m at 10°C
Supply Voltage 24VAC
Metal Braid
Thermoplastic Rubber Outerjacket

	DLR3	DLR5	DLR6	DLR8	DLR10
Nominal output W/m at 10°C	10	17	20	26	33

DIRAC REFERENCE	DIMENSIONS [mm] +/- 0,5	WEIGHT [kg/100m]	MIN BEND RADIUS	GLAND SIZE
DLRx-24CR	10,86 x 5,96	12	30 mm	M20

STRUCTURE



MAXIMUM LENGTH [m] VS. CIRCUIT BREAKER SIZE

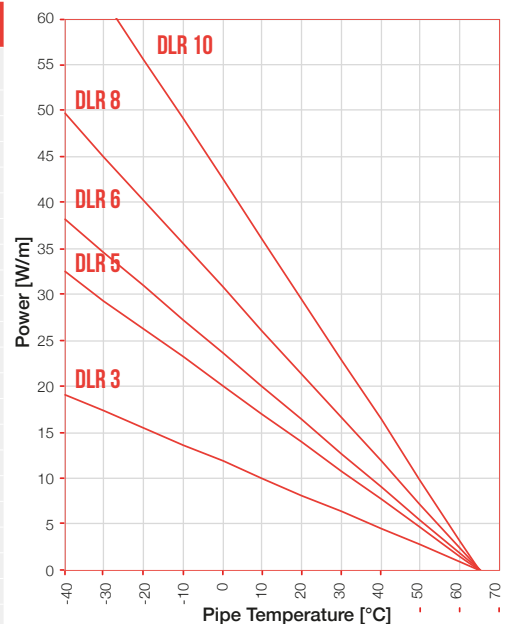
The following circuit details relate specifically for the trace heating of pipework and equipment. For any other application consult DIRAC Industries.

REF	START-UP T [°C]	24V				
		2A	5A	10A	20A	40A
DLR3-24CR	10°C	4,15	8,00	8,00	8,00	8,00
	0°C	3,78	8,00	8,00	8,00	8,00
	-10°C	3,40	8,00	8,00	8,00	8,00
	-20°C	3,09	7,73	8,00	8,00	8,00
DLR5-24CR	-40°C	2,79	6,97	8,00	8,00	8,00
	10°C	2,43	6,07	8,00	8,00	8,00
	0°C	2,21	5,52	8,00	8,00	8,00
	-10°C	2,00	5,00	8,00	8,00	8,00
DLR6-24CR	-20°C	1,81	4,52	8,00	8,00	8,00
	-40°C	1,65	4,13	8,00	8,00	8,00
	10°C	1,57	3,94	7,87	8,00	8,00
	0°C	1,43	3,57	7,14	8,00	8,00
DLR8-24CR	-10°C	1,30	3,24	6,49	8,00	8,00
	-20°C	1,18	2,95	5,90	8,00	8,00
	-40°C	1,08	2,69	5,38	8,00	8,00
	10°C	1,28	3,20	6,40	8,00	8,00
DLR10-24CR	0°C	1,16	2,91	5,82	8,00	8,00
	-10°C	1,07	2,67	5,33	8,00	8,00
	-20°C	0,98	2,46	4,92	8,00	8,00
	-40°C	0,85	2,13	4,27	8,00	8,00
DLR10-24CR	10°C	1,24	3,10	6,20	8,00	8,00
	0°C	1,13	2,81	5,63	8,00	8,00
	-10°C	1,02	2,56	5,12	8,00	8,00
	-20°C	0,93	2,32	4,64	8,00	8,00
	-40°C	0,85	2,11	4,23	8,00	8,00

Thermal-magnetic circuit breaker (curve D) and a 30mA differential protection must be used.

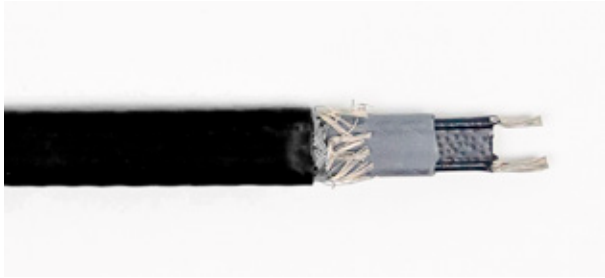
THERMAL RATINGS

Nominal output at 24VAC when DLR is installed on thermally insulated steel pipes.



DKT

Electrical heating cable for freeze protection or temperature maintenance



- maximum continuous exposure temperature (power on) : 65°C / 150°F
- maximum permissible exposure temperature (power off) : 85°C / 185°F
- minimum operating temperature : -40°C / -40°F
- minimum installation temperature : -40°C / -40°F
- standard power supply : 220 - 240VAC (other on demand)
- maximum resistance of protective braiding: 18,2 Ohm/km
- temperature classification : T5/T6
- ingress protection : IP67



ORDERING INFORMATION

DKT 5 - 2CT

- DIRAC Low Temperature
- Output 17W/m at 10°C
- Supply Voltage 220 - 277VAC
- Metal braid
- Fluoropolymer Outerjacket

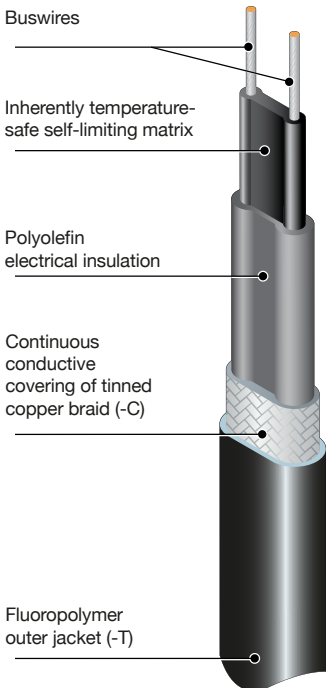
DKT is a self-limiting, industrial-grade heating cable for freeze protection and temperature maintenance up to 65°C. Cut-to-length on-site, it ensures easy installation without complex design. Approved for hazardous and corrosive environments, DKT prevents overheating, self-regulates power, and installs quickly without special tools. Kits include all necessary components for termination, splicing, and power connection.

- Automatically adjusts heat output in response to increasing or decreasing pipe temperature
- Can be cut-to-length
- Suitable for use in safe, hazardous and corrosive areas
- Different supply voltages on demand
- Inherently temperature safe.
- Full range of controls and accessories available

	DKT3	DKT5	DKT8	DKT10	DKT12	DKT15
Nominal output W/m at 10°C	10	17	22	33	40	49
Nominal output W/ft at 10°C	3	5	8	10	12	15

DIRAC REFERENCE	DIMENSIONS [mm] +/- 0,5	WEIGHT [kg/100m]	MIN BEND RADIUS	GLAND SIZE
DKT-CT	11,96 x 5,36	14,8	35 mm	M20
DKT15-2CT	14,8 x 6,4	14,8	30 mm	M25

STRUCTURE



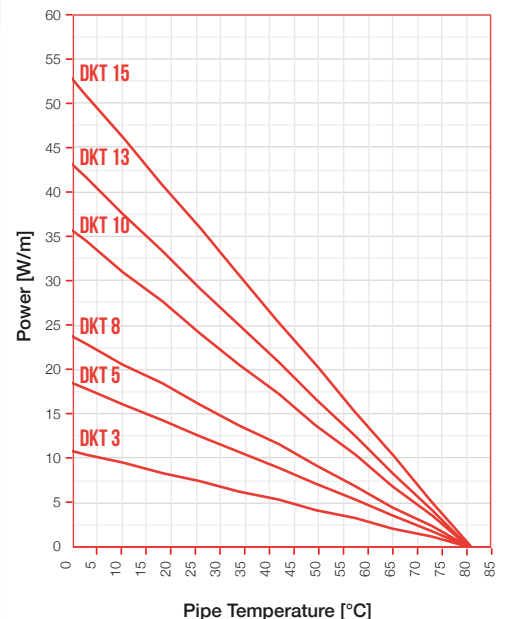
MAXIMUM LENGTH [m] VS. CIRCUIT BREAKER SIZE

The following circuit details relate specifically for the trace heating of pipework and equipment. For any other application consult DIRAC Industries.

REF	START-UP T [°C]	230V				
		16	20	25	32	40
DKT3	10°C	200	200	200	200	200
	0°C	200	200	200	200	200
	-10°C	165	200	200	200	200
	-20°C	155	185	200	200	200
DKT5	10°C	162	162	162	162	162
	0°C	148	162	162	162	162
	-10°C	133	152	162	162	162
	-20°C	112	141	162	162	162
DKT8	10°C	108	118	120	120	120
	0°C	95	108	120	120	120
	-10°C	85	95	120	120	120
	-20°C	68	87	120	120	120
DKT10	10°C	85	106	115	115	115
	0°C	77	96	115	115	115
	-10°C	71	88	110	115	115
	-20°C	65	81	102	115	115
DKT13	10°C	85	106	115	115	115
	0°C	77	96	115	115	115
	-10°C	71	88	110	115	115
	-20°C	65	81	102	115	115
DKT15*	10°C	60	75	93	102	102
	0°C	54	68	85	102	102
	-10°C	50	62	78	100	102
	-20°C	46	58	72	92	102
DKT15*	10°C	49	61	76	98	100
	0°C	44	56	69	89	100
	-10°C	41	51	64	81	100
	-20°C	38	47	59	75	94
DKT15*	-40°C	33	41	51	65	81

THERMAL RATINGS

Nominal output at 230V when DKT is installed on thermally insulated carbon steel pipes.

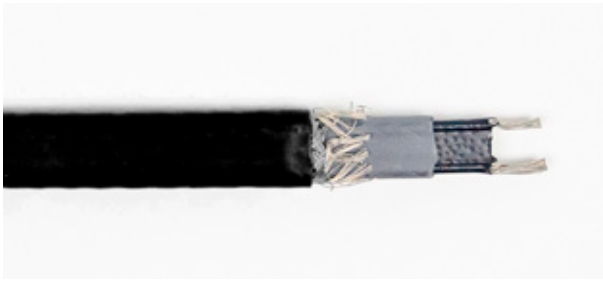


* only available for North America/Canada with UL certificate

Thermal-magnetic circuit breaker (curve D) and a 30mA differential protection must be used.

DMT

Electrical heating cable for freeze protection or temperature maintenance



DMT is an industrial-grade, self-limiting heating cable for freeze protection and temperature maintenance up to 150°C. It can be cut to length on-site, ensuring easy installation without complex design. Approved for non-hazardous, hazardous, and corrosive environments, DMT regulates its power output for safety and reliability, preventing overheating even when overlapped. Installation is simple, requiring no special tools, with all necessary components available in convenient kits.

- maximum continuous exposure temperature (power on) : **150°C / 302°F**
- maximum permissible exposure temperature (power off) : **200°C / 392°F**
- minimum operating temperature : **-65°C / -85°F**
- minimum installation temperature : **-40°C / -40°F**
- standard power supply : **220-240VAC (other on demand)**
- temperature classification : **T3**
- maximum resistance of protective braiding : **18,2 Ohm/km**
- ingress protection : **IP67**



- Automatically adjusts heat output in response to increasing or decreasing pipe temperature
- Can be cut-to-length
- Inherently temperature safe
- Suitable for use in safe, hazardous and corrosive areas
- Different supply voltages on demand
- Full range of controls and accessories available

ORDERING INFORMATION

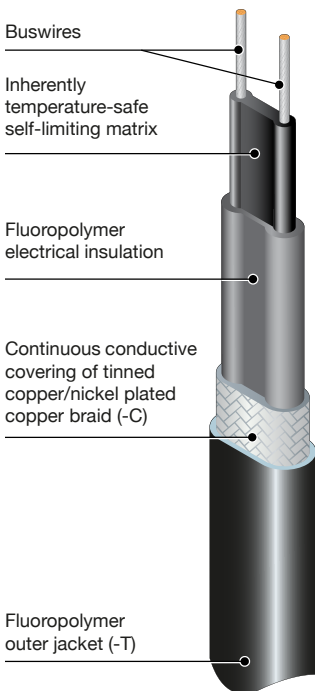
DMT 10 - 2CT

DIRAC Medium Temperature
Output 33W/m at 10°C
Supply Voltage 220 - 277V AC
Metal Braid
Fluoropolymer Outerjacket

	DMT5	DMT10	DMT15	DMT20
Nominal output W/m at 10°C	17	33	49	66
Nominal output W/ft at 10°C	5	10	15	20

DIRAC REFERENCE	DIMENSIONS [mm] +/- 0,5	WEIGHT [kg/100m]	MIN BEND RADIUS	GLAND SIZE
DMT..CT	12,4 x 4,8	14,2	30 mm	M20

STRUCTURE



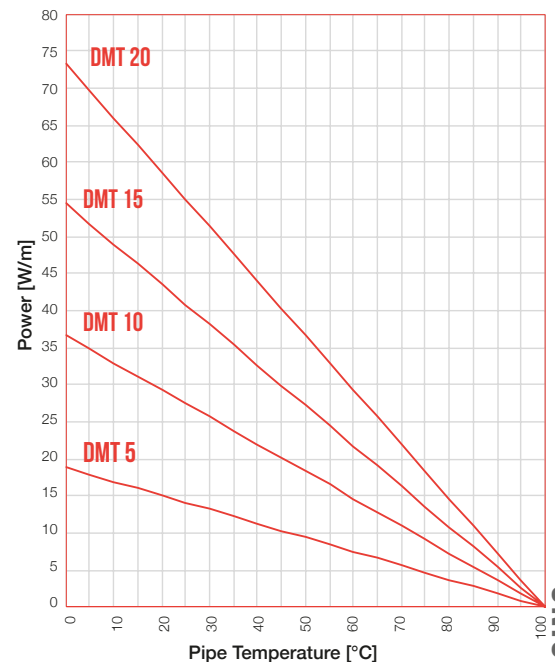
MAXIMUM LENGTH [m] VS. CIRCUIT BREAKER SIZE

The following circuit details relate specifically for the trace heating of pipework and equipment. For any other application consult DIRAC Industries.

REF	START-UP T [°C]	230V				
		16	20	25	32	40
DMT5	10°C	128	154	172	178	178
	0°C	122	151	168	178	178
	-10°C	112	139	156	178	178
	-20°C	103	129	149	178	178
	-40°C	90	112	138	178	178
DMT10	10°C	86	107	123	123	123
	0°C	77	99	119	123	123
	-10°C	70	90	111	123	123
	-20°C	61	82	95	117	123
	-40°C	52	67	83	108	123
DMT15	10°C	62	77	101	101	101
	0°C	61	76	95	101	101
	-10°C	56	70	87	101	101
	-20°C	51	64	80	95	101
	-40°C	45	56	70	89	101
DMT20	10°C	46	57	71	90	90
	0°C	45	56	70	89	90
	-10°C	42	52	65	83	90
	-20°C	39	49	61	78	90
	-40°C	34	43	54	69	86

THERMAL RATINGS

Nominal output at 230V when DMT is installed on thermally insulated carbon steel pipes.



Thermal-magnetic circuit breaker (curve D) and a 30mA differential protection must be used.

DHT

Electrical heating cable for freeze protection or temperature maintenance



- maximum continuous exposure temperature (power on) : 225°C / 437°F
- maximum permissible exposure temperature (power off) : 225°C / 437°F
- minimum operating temperature : -40°C / -40°F
- minimum installation temperature : -40°C / -40°F
- standard power supply : 230VAC (other on demand)
- maximum resistance of protective braiding: 18,2 Ohm/km
- temperature classification :
 - DHT5, DHT10, DHT15 & DHT20 @ nom 230V - T3 (200°C)
 - DHT25 @ nom 230V - T2 (300°C)
- ingress protection : IP67



ORDERING INFORMATION **DHT 10 - 2CT**

DIRAC High Temperature Output 30W/m at 10°C

Supply Voltage 220 - 277V AC

Metal Braid

Fluoropolymer Outerjacket

DHT is a very high temperature self-limiting heating cable, having an exposure limit of 225°C, energised or not.

DHT is provided with a metal braid for flexibility and a fluoropolymer outer jacket.

Easy terminations, cut-to-length.

Safest ever self-limiting product range for very high temperature exposure; will not overheat even when exposed to 225°C when energised or switched off as it is inherently temperature-safe.

DHT is approved for use in non-hazardous, hazardous and corrosive environments to Ex standards.

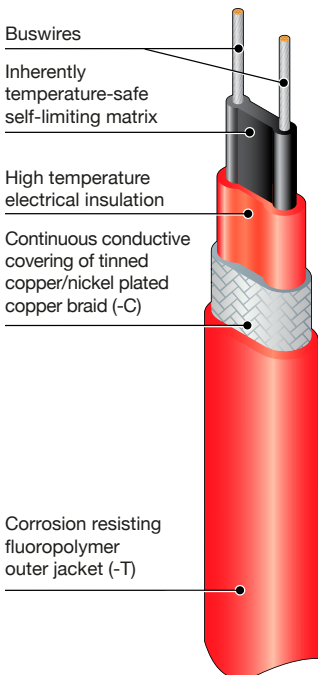
ATEX approved.

- Automatically adjusts heat output in response to increasing or decreasing pipe temperature
- Can be cut-to-length
- Inherently temperature safe
- Suitable for use in safe, hazardous and corrosive areas
- High power outputs to 75W/m at 10°C
- Full range of controls and accessories available

	DHT5	DHT10	DHT15	DHT20	DHT25
Nominal output W/m at 10°C	15	30	45	60	75

DIRAC REFERENCE	DIMENSIONS [mm] +/- 0,5	WEIGHT [kg/100m]	MIN BEND RADIUS	GLAND SIZE
DHT..CT	12,35 x 6,15	13,4	35 mm	M20

STRUCTURE



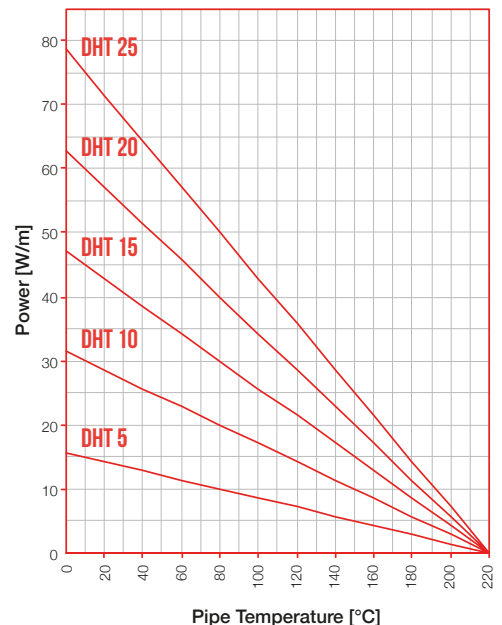
MAXIMUM LENGTH [m] VS. CIRCUIT BREAKER SIZE

The following circuit details relate specifically for the trace heating of pipework and equipment. For any other application consult DIRAC Industries.

REF	START-UP T [°C]	230V				
		10A	16A	20A	32A	50A
DHT5	10°C	76	122	154	172	172
	0°C	70	112	140	172	172
	-20°C	62	98	122	172	172
	-40°C	52	82	102	164	172
DHT10	10°C	52	82	102	122	122
	0°C	46	74	92	122	122
	-20°C	40	66	82	122	122
	-40°C	34	54	68	110	122
DHT15	10°C	38	62	76	100	100
	0°C	34	56	70	100	100
	-20°C	30	50	62	98	100
	-40°C	22	34	44	70	100
DHT20	10°C	30	50	62	86	86
	0°C	28	44	56	86	86
	-20°C	20	32	40	62	86
	-40°C	12	18	24	38	60
DHT25	10°C	24	40	50	76	76
	0°C	18	30	38	60	76
	-20°C	14	22	26	42	66
	-40°C	8	12	16	26	40

THERMAL RATINGS

Nominal output at 230V when DHT is installed on thermally insulated carbon steel pipes. For 75W/m and above, the use of aluminium overfoiling is strongly recommended to optimise the thermal transmission to the pipe and achieve the stated thermal ratings.



Thermal-magnetic circuit breaker (curve D) and a 30mA differential protection must be used.

DUT

Electrical heating cable for freeze protection or temperature maintenance



- maximum continuous exposure temperature (power on) : 250°C/482°F
- maximum permissible exposure temperature (power off) : 250°C/482°F
- minimum operating temperature : -40°C / -40°F
- minimum installation temperature : -40°C / -40°F
- standard power supply : 230VAC (other on demand)
- temperature classification : DUT5, DUT10, DUT15 & DUT20 @ 230V - T3 (200°C) DUT25 & DUTw33 @230V - T2 (300°C)
- maximum resistance of protective braiding : 18,2 Ohm/km
- ingress protection : IP67



DUT is an ultra high temperature self-limiting heating cable, having an exposure limit of 250°C, energized or not. It can be cut-to-length on site and exact piping lengths can be matched without any complicated design considerations.

DUT is approved for use in non-hazardous, hazardous and corrosive environments to Ex standards. Its self-regulating characteristics improve safety and reliability.

DUT will not overheat or burnout, even when overlapped upon itself. Its power output is self-limited in response to the pipe temperature.

The installation is quick, simple and requires no special skills/tools.

Termination, splicing and power connection components are all provided in convenient kits.

- Automatically adjusts heat output in response to increasing or decreasing pipe temperature
- Can be cut-to-length
- Inherently temperature safe
- Suitable for use in safe, hazardous and corrosive areas
- High power outputs to 100W/m at 10°C
- Full range of controls and accessories available

ORDERING INFORMATION

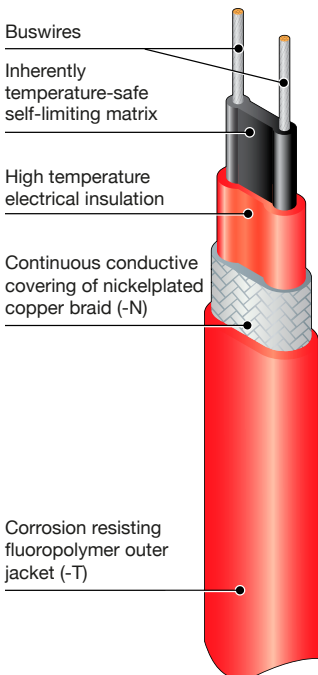
DUT 5 - 2NT

DIRAC Medium Temperature
Output 15W/m at 10°C
Supply Voltage 220 - 277VAC
Nickelplated Braid
Fluoropolymer Outerjacket

	DUT5	DUT10	DUT15	DUT20	DUT25	DUTw33
Nominal output W/m at 10°C	15	30	45	60	75	100

DIRAC REFERENCE	DIMENSIONS [mm] +/- 0,5	WEIGHT [kg/100m]	MIN BEND RADIUS	GLAND SIZE
DUT..NT	12,5 x 5,8	14,6	35 mm	M20
DUTw33-NT	14.8 x 6.0	19.5	35 mm	M25

STRUCTURE



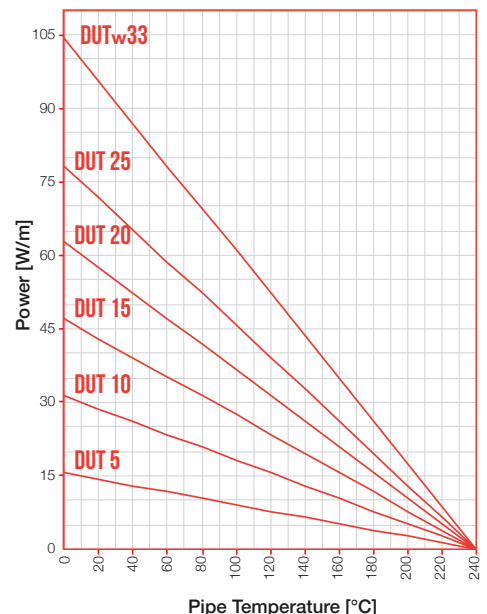
MAXIMUM LENGTH [m] VS. CIRCUIT BREAKER SIZE

The following circuit details relate specifically for the trace heating of pipework and equipment. For any other application consult DIRAC Industries.

REF	START-UP T [°C]	230V				
		10A	16A	20A	32A	50A
DUT5	10°C	76	122	154	172	172
	0°C	70	112	140	172	172
	-20°C	62	98	122	172	172
	-40°C	52	82	102	164	172
DUT10	10°C	52	82	102	122	122
	0°C	46	74	92	122	122
	-20°C	40	66	82	122	122
	-40°C	34	54	68	110	122
DUT15	10°C	38	62	76	100	100
	0°C	34	56	70	100	100
	-20°C	30	50	62	98	100
	-40°C	22	34	44	70	100
DUT20	10°C	30	50	62	86	86
	0°C	28	44	56	86	86
	-20°C	20	32	40	62	86
	-40°C	12	18	24	38	60
DUT25	10°C	22	34	44	70	76
	0°C	16	26	34	54	76
	-20°C	12	18	24	38	60
	-40°C	8	12	14	22	36
DUTw33	10°C	18	30	36	58	84
	0°C	18	28	34	56	84
	-20°C	16	24	30	50	76
	-40°C	14	22	28	46	70

THERMAL RATINGS

Nominal output at 230V when DUT is installed on thermally insulated carbon steel pipes.



SFM Series PFA insulated heating cables



- Rated Voltage : **from 12 to 600V**
- Temperature maintenance : **up to 180°C**
- Exposure temperature : **up to 260°C (power off)**
- Minimum installation temperature : **-40°C**
- Minimum bending radius : **6 x Ø cable**

SFM is a serial silicon insulated constant wattage heating cable that is extremely suitable for frost protection or temperature maintenance of pipes, tanks, hoppers etc. up to 180°C.

Each length of Heating cables requires termination kits with cold lead for power connection.

- | | |
|--|---|
| - Frost protection & temperature maintenance | - 2,6 to 4,9mm dia PFA insulated jacket |
| - Long lengths up to 1,5 km | - Tinned copper braid (option C) |
| - Suitable for use in corrosive environments | - Braid and PFA overjacket (option CT) |
| - Ni-Cr or Cu-Ni resistance wire | |

ORDERING INFORMATION

SFM *

Serial Heating Cable _____
OHMIC Values _____

*AVAILABLE OHMIC VALUES (OHM/M):

0,0008 / 0,0011 / 0,0018 / 0,0029 / 0,0044 / 0,007 / 0,01 / 0,0116 / 0,015 / 0,0178 / 0,025 / 0,0315 / 0,05 / 0,068 / 0,1 / 0,15 / 0,17 / 0,2 / 0,24 / 0,33 / 0,37 / 0,5 / 0,73 / 1 / 1,44 / 1,73 / 2,16 / 2,4 / 3 / 4 / 5,6 / 8

SFM-Ex Series PFA insulated heating cables



- Rated Voltage : **from 12 to 600V**
- Temperature maintenance : **up to 180°C**
- Exposure temperature : **up to 260°C (power off)**
- Minimum installation temperature : **-65°C**
- Minimum bending radius : **6 x Ø cable**
- Mechanical strength : **Low Risk Mechanical damage 4J**
High Risk Mechanical damage 7J
- Max power output : **30W/m**

SFM-Ex is a serial silicon insulated constant wattage heating cable that is extremely suitable for frost protection or temperature maintenance of pipes, tanks, hoppers etc. up to 180°C.

Each length of Heating cables requires termination kits with cold lead for power connection.

- | | |
|--|---|
| - Frost protection & temperature maintenance | - 2,6 to 4,9mm dia PFA insulated jacket |
| - Long lengths up to 1,5 km | - Tinned copper braid (option C) |
| - Suitable for use in corrosive environments | - Braid and PFA overjacket (option CT) |
| - Ni-Cr or Cu-Ni resistance wire | |

ORDERING INFORMATION

SFM-Ex *

Serial Heating Cable _____
ATEX _____
OHMIC Values _____

*AVAILABLE OHMIC VALUES (OHM/M):

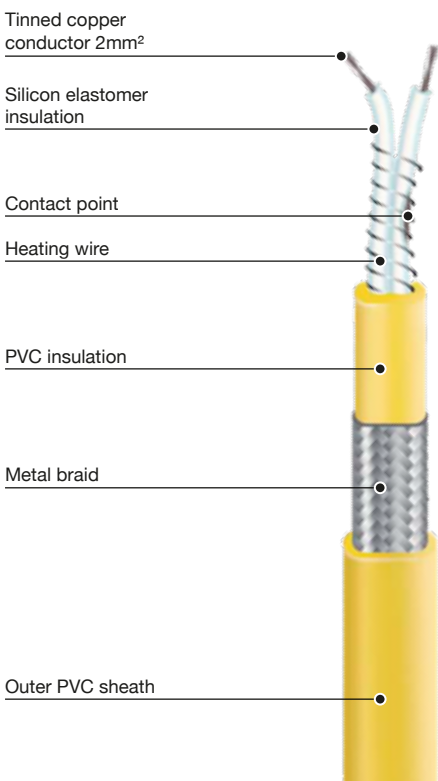
0,0008 / 0,0011 / 0,0018 / 0,0029 / 0,0044 / 0,007 / 0,01 / 0,0116 / 0,015 / 0,0178 / 0,025 / 0,0315 / 0,05 / 0,068 / 0,1 / 0,15 / 0,17 / 0,2 / 0,24 / 0,33 / 0,37 / 0,5 / 0,73 / 1 / 1,44 / 1,73 / 2,16 / 2,4 / 3 / 4 / 5,6 / 8

CWLT

Constant Wattage Low Temperature parallel heating cable



- Power supply : **230V as standard** (115V and 400V on request)
- Temperature maintenance : **up to 60°C**
- Permissible surface temperature : **from -30°C to +90°C**
- Heating wire insulation : **PVC 105°C**
- Outer sheath : **PVC 105°C**
- Conductor insulation : **Silicon elastomer**
- Dimensions : **CWLT : 5 x 8 mm - CWLT/C : 5,5 x 8,5mm**
- **CWLT/CR : 7 x 10mm**



CWLT Constant wattage heating tape for freeze protection or for maintenance temperature on pipes, valves, and tanks, without exposure temperature higher than 90°C.

CWLT constant wattage heating cables are particularly suitable for frost protection and low temperature maintenance. Among the constant wattage heating cables for industrial use, this version with PVC insulation is the most economical. To guarantee the durability of these heating elements, we recommend the use of a control device.

Parallel construction allows the cable to be cut to length and terminated on site by the fitter

- Frost protection & temperature maintenance up to 60°C
- Max. Temperature surface up to 90°C
- Cold lead included (no extra connection necessary)

POWER [W/m]	DISTANCE BETWEEN 2 CONSECUTIVE CONTACT POINTS [m]	MAX. CIRCUIT LENGTH [m]	MAX. MAINTENANCE TEMPERATURE [°C]
10	1	170	60
15	0,8	150	50
20	0,7	140	40

ORDERING INFORMATION

CWLT ... R ...

Constant Wattage Low Temperature Standard (/) _____

Tinned copper braid (C) _____

Stainless Steel (S) _____

PVC outer sheath (R) _____

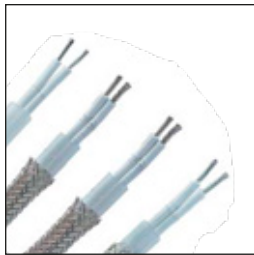
Power : 10, 15 or 20 W/m _____

CWMT

Constant Wattage Medium Temperature parallel heating cable



- Power supply : **230V as standard (115V and 400V on request)**
- Temperature maintenance : **up to 150°C**
- Permissible surface temperature : **from -70°C to +200°C**
- Heating wire insulation : **Silicon elastomer**
- Outer sheath : **Fluoropolymer**
- Conductor insulation : **Silicon elastomer**
- Dimensions : **CWMT : 6 x 10 mm - CWMT/C : 6,5 x 10mm - CWMT/CT : 7 x 10,5mm**



Tinned copper conductor 2mm²

Silicon elastomer insulation

Contact point

Heating wire

PVC insulation

Metal braid

Outer sheath



CWMT constant power heating cables are very flexible tape particularly suitable for freeze protection or temperature maintenance, of pipes, valves, tanks etc. maintaining temperatures up to +150°C. To guarantee the durability of these constant power heating cables, we recommend the use of a control device.

- Frost protection & temperature maintenance up to 150°C
- Max. Temperature surface up to 200°C
- Cold lead included (no extra connection necessary)

POWER [W/m]	DISTANCE BETWEEN 2 CONSECUTIVE CONTACT POINTS [m]	MAX. CIRCUIT LENGTH [m]	MAX. MAINTENANCE TEMPERATURE [°C]
20	0,7	140	150
30	0,7	120	140
40	0,8	100	120
50	0,6	80	90

ORDERING INFORMATION

CWMT ... T/R ...

Constant Wattage Medium Temperature

Standard (/)

Tinned copper braid (C)

Stainless Steel (S)

Fluoropolymer (T) or PVC outer sheath (R)

Power : 20, 30, 40 or 50 W/m

FTH Flexible tube heater / Freeze Protection Heater



WITHOUT THERMOSTAT



WITH THERMOSTAT

- Supply voltage: from 1.5V to 400V
- Power options: 40 W/m or 50 W/m
- Operating temperature: from -60°C to + 200°C

FTH heating tapes are mainly designed and used to protect piping from freezing and for industrial refrigeration.

Insulation is provided by an extremely flexible, high temperature silicone which makes the tapes easy to use. To ensure that these heating elements enjoy a long service life, we recommend using a control device.

Build-in thermostat version is available.

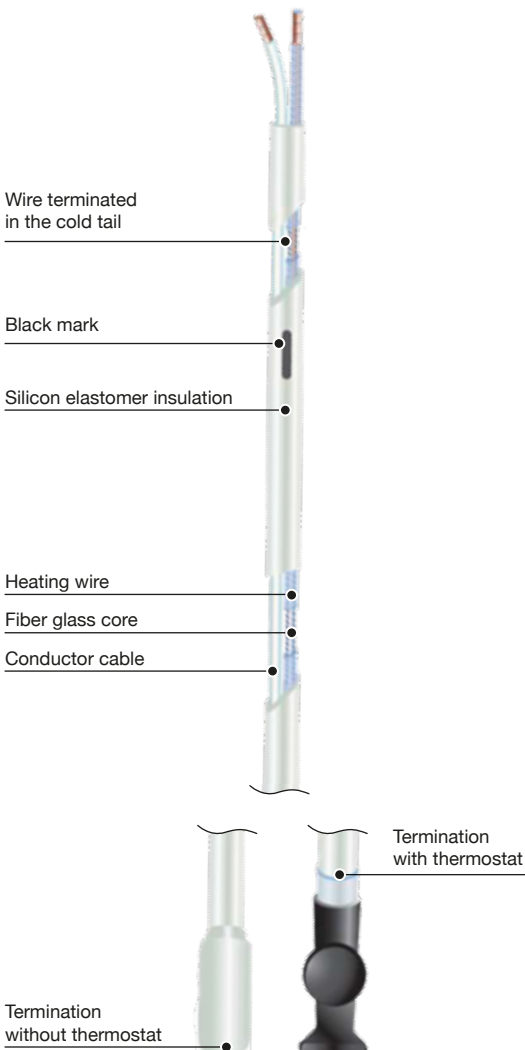
The vulcanized joint and the built in cold part provide the cable with a waterproof structure, so as to allow its installation directly inside the pipelines.

It is supplied already cut to measure and ready to use : its length cannot be shortened by the end user.

- External Ø 5,5mm ± 0,2mm (excluding the vulcanized joint)
- Insulation : silicone (standard models available according to table)
- Minimum bending radius: 15mm
- Length of heating and cold parts customizable on request
- Metal braiding and grounding wire available on request
- Available certifications : EC
- Produced and tested according to the EN60335 standard
- Compliance with the 2014/35/ EU directive
- Available with or without thermostat

STANDARD MODELS AVAILABLE

REFERENCE	LENGTH [m]	POWER [W]	REFERENCE	LENGTH [m]	POWER [W]
FTH-1-40	1	40	FTH-1-50	1	50
FTH-1-40-T			FTH-1-50-T		
FTH-1,3-52	1,3	52	FTH-1,3-65	1,3	65
FTH-1,3-52-T			FTH-1,3-65-T		
FTH-1,5-60	1,5	60	FTH-1,5-75	1,5	75
FTH-1,5-60-T			FTH-1,5-75-T		
FTH-2-80	2	80	FTH-2-100	2	100
FTH-2-80-T			FTH-2-100-T		
FTH-3-120	3	120	FTH-3-150	3	150
FTH-3-120-T			FTH-3-150-T		
FTH-4-160	4	160	FTH-4-200	4	200
FTH-4-160-T			FTH-4-200-T		
FTH-5-200	5	200	FTH-5-250	5	250
FTH-5-200-T			FTH-5-250-T		
FTH-6-240	6	240	FTH-6-300	6	300
FTH-6-240-T			FTH-6-300-T		



ORDERING INFORMATION

FTH-XXX_YY

Customer Name Reference _____

Model/Revision _____

OTHER VARIANTS ON DEMAND

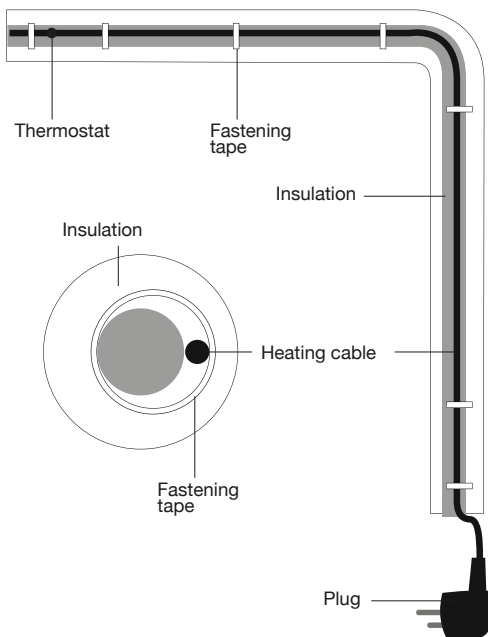
STOPICE

Frost protection heating cable with thermostat



- Nominal voltage: **230 volt**
- Output: approx.: **10 W/m**
- Cold connection: **1 x 2m**
- Min Installation Temp.: **5°C**
- Nominal temperature: **65°C**
- Temperature control 16 A: **+5°C ON / +15°C OFF**
- Lowest bend radius: **5 x Ad**
- Resistance tolerance: **-5% / +10%**

- Approval (heating cable): **VDE**
- Cold/warm transition: **seamless**
- Outer diameter: **approximately 9,00 mm**
- Protection type: **IPX7**
- Protection class: **I**



Thermostat-regulated constant wattage heating cable designed for pipe freeze protection and temperature maintenance.

Suitable for cold water pipes up to 40 mm in diameter..

It offers efficient pipe freezing prevention during cold weather conditions and is designed for easy installation with minimal maintenance costs.

Resistant to temperature and moisture for long-lasting use.

- Prevents pipe freezing in cold and harsh weather conditions
- Suitable for cold water pipes up to 40 mm
- One-sided connection
- Complies with VDE 0100 safety standards
- Uses a thermostat for primary temperature control
- Easy to install with low maintenance costs
- Resistant to temperature and moisture for long-term use
- Helps reduce energy consumption and operational costs
- Ready to use with integrated CE Plug

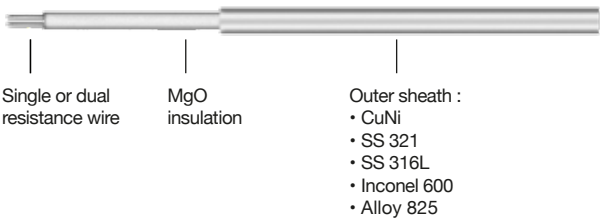
REFERENCE	POWER [W]	LENGTH [m]	WEIGHT [kg]
STOPICE-10W-H	10	1	0,26
STOPICE-20W-H	20	2	0,31
STOPICE-30W-H	30	3	0,4
STOPICE-40W-H	40	4	0,47
STOPICE-50W-H	50	5	0,53
STOPICE-60W-H	60	6	0,60
STOPICE-70W-H	70	7	0,69
STOPICE-80W-H	80	8	0,75
STOPICE-90W-H	90	9	0,82
STOPICE-100W-H	100	10	0,89
STOPICE-120W-H	120	12	1,06
STOPICE-160W-H	160	16	1,31
STOPICE-180W-H	180	18	1,47
STOPICE-220W-H	220	22	1,77
STOPICE-240W-H	240	24	1,88

MI Mineral Insulated Heat Trace Cables



Mineral Insulated Cable is known as the most durable electric heat trace cable in the world. It is the ideal choice when an application's temperature and power output requirements exceed the capabilities of self-regulating and constant wattage cables and need precise temperature control.

For temperature maintenance of pipes, tanks, hoppers, etc. Very good resistance to vibration and for applications requiring gradual temperature increase.



- Single and dual core series heating resistance cable, magnesium oxide mineral insulated, metal sheath
- High strength
- Heating resistance cable resistance (ohms/m) determines the power output per unit length
- Output power constant, independent of temperature variations
- Maximum working voltage up to 750V
- Output power up to 300W/m (typical max)
- Highest maintain temperature up to 800°C
- Maximum exposure temperature up to 1000°C
- Cable supplied completed. Hot and cold end fittings prefabricated in the factory
- ATEX II 2 G - Ex e II T1 to T5 certified for hazardous areas (temperature classes T1 to T5 according to the output W/m and to conditions of use)

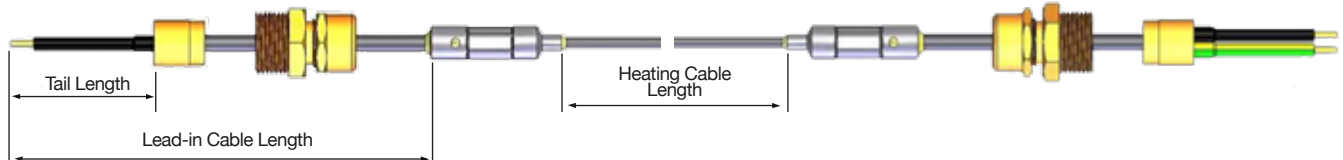
SERIES MI	OUTER SHEATS	MAX. OPERATING TEMP.	MAX. EXPOSURE TEMP.	SULPHURIC	HYDROCHLORIC ACID	HYDROFLUORIC ACID	PHOSPHORIC ACID	NITRIC ACID	ORGANIC ACID	ALKALIS	SEA WATER	CHLORIDE
H400	CuNi	400°C	400°C	-	✓	✓	✓	✓	✓	✓	✓	✓
H321	SS321	600°C	800°C	-	-	-	-	✓	✓	✓	-	-
H316L	SS316L	600°C	800°C	-	-	-	-	✓	✓	✓	-	-
H600	Inconel 600	600°C	1000°C	✓	✓	✓	✓	✓	✓	✓	✓	✓
H825	Alloy 825	600°C	670°C	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ Excellent ✓ Acceptable ✓ Check for data

SINGLE CORE HEATING CABLE WITH STAINLESS STEEL, CUPRONICKEL OR NICKEL ALLOY SHEATH

WITHOUT EARTH TAIL

WITH EARTH TAIL



TERMINATION TYPES



TYPE 1

ATEX approved seal for use in hazardous area terminations
 Flexible Conductor / Flexible Earth Tag with locknut
 Crimp on pot
 Gland thread M20x1.5 Other sizes on request
 Sealant Epoxy resin



TYPE 2

ATEX approved seal for use in hazardous area terminations
 Solid Conductor / Solid Earth Tail
 Braze on pot
 Gland thread M20x1.5 Other sizes on request
 Sealant TRMX compound

ELECTRICAL HEATING

SINGLE CORE HEATING CABLES WITH STAINLESS STEEL, INCONEL 600 AND ALLOY 825 SHEATH EUROPEAN 500 V RATED RANGE

ATEX & EAC CERTIFIED

HEATING CABLE REFERENCE			EXTERNAL SHEATH Ø [mm]	CONDUCTOR RESISTANCE AT 20 °C [Ohm/m]	LEAD-IN CABLE CONDUCTOR AREA [mm²]	LEAD-IN CABLE Ø [mm]	SEAL REFERENCE (T1)	SEAL REFERENCE (T2 OR T3)
SS 321 SHEATH	INCONEL 600 SHEATH	ALLOY 825 SHEATH						
H321-A10K	H600-A10K	H825-A10K	3.20	10 000	2.50	5.3	1H2.5-20	1H2.5-20
H321-A6300	H600-A6300	H825-A6300	3.20	6 300	2.50	5.3	1H2.5-20	1H2.5-20
H321-A4000	H600-A4000	H825-A4000	3.20	4 000	2.50	5.3	1H2.5-20	1H2.5-20
H321-A2500	H600-A2500	H825-A2500	3.40	2 500	2.50	5.3	1H2.5-20	1H2.5-20
H321-A1600	H600-A1600	H825-A1600	3.60	1 600	2.50	5.3	1H2.5-20	1H2.5-20
H321-A1000	H600-A1000	H825-A1000	3.90	1 000	2.50	5.3	1H2.5-20	1H2.5-20
H321-A630	H600-A630	H825-A630	4.30	0.630	2.50	5.3	1H2.5-20	1H2.5-20
H321-A400	H600-A400	H825-A400	4.70	0.400	2.50	5.3	1H2.5-20	1H2.5-20
H321-A250	H600-A250	H825-A250	5.30	0.250	6.00	6.4	1H6.020	1H6.020
H321-A160	H600-A160	H825-A160	6.50	0.160	6.00	6.4	1H6.020	1H6.020

SINGLE CORE HEATING CABLES WITH CUPRONICKEL AND STAINLESS STEEL SHEATH EUROPEAN 500 V RANGE

ATEX & EAC CERTIFIED

HEATING CABLE REFERENCE			EXTERNAL SHEATH Ø [mm]	CONDUCTOR RESISTANCE AT 20 °C [Ohm/m]	LEAD-IN CABLE CONDUCTOR AREA [mm²]	LEAD-IN CABLE Ø [mm]	SEAL REFERENCE (T1)	SEAL REFERENCE (T2 OR T3)
SS 321 SHEATH	SS 316L SHEATH	CUPRONICKEL SHEATH						
H321-B1600	H316L-B1600	H400-B1600	3.20	1 600	2.50	5.3	1H2.5-20	1H2.5-21
H321-B1000	H316L-B1000	H400-B1000	3.40	1 000	2.50	5.3	1H2.5-20	1H2.5-21
H321-B630	H316L-B630	H400-B630	3.70	0.630	2.50	5.3	1H2.5-21	1H2.5-22
H321-B400	H316L-B400	H400-B400	4.00	0.400	2.50	5.3	1H2.5-22	1H2.5-23
H321-B250	H316L-B250	H400-B250	4.40	0.250	2.50	5.3	1H2.5-23	1H2.5-24
H321-B160	H316L-B160	H400-B160	4.90	0.160	6.00	6.4	1H6.0-20	1H6.0-21
H321-C63	H316L-C63	H400-C63	3.20	0.063	2.50	5.3	1H2.5-20	1H2.5-21
H321-C40	H316L-C40	H400-C40	3.40	0.040	2.50	5.3	1H2.5-20	1H2.5-21
H321-C25	H316L-C25	H400-C25	3.70	0.025	6.00	6.4	1H6.0-20	1H6.0-25
H321-C17	H316L-C17	H400-C17	4.60	0.017	6.00	6.4	1H6.0-20	1H6.0-25
H321-C11	H316L-C11	H400-C11	4.90	0.011	6.00	6.4	1H6.0-20	1H6.0-25
H321-C7	H316L-C7	H400-C7	5.30	0.007	10.00	7.3	1H10-20	1H10-25
H321-C4	H316L-C4	H400-C4	5.90	0.004	16.00	8.3	1H16-20	1H16-25

CODE CLARIFICATION

H XXX - Y ZZZZ - QQQQ

Sheat Material _____
 Conductor Material _____
 Ohmic Values _____
 Suffix _____

SHEAT MATERIAL

See tables : SS321, SS316L, Inconel 600, Alloy 825, Copper (122), Cupronickel (400)

CONDUCTOR MATERIAL

A : Nichrome
B : Constantan
C : Copper
D : Copper-Nickel alloys

OHMIC VALUES

See tables

SUFFIX

Additional information, such as “-300V” – Voltage rating if not 500V
 “-HDPE” or “-H” – for HDPE served cables

COLD LEAD-IN / WIRING CABLE EUROPEAN 750 V RATED RANGE

ATEX & EAC CERTIFIED

HEATING CABLE REFERENCE				EXTERNAL SHEATH Ø [mm]	CONDUCTOR CROSS AREA [mm²]	CONDUCTOR RESISTANCE AT 20 °C [Ohm/m]
AISI 321 SHEATH	CUPRONICKEL SHEATH	INCONEL 600 SHEATH	ALLOY 825 SHEATH			
W321-C2.5	W400-C2.5	W600-C2.5	W825-C2.5	5.30	2.50	0.00690
W321-C6	W400-C6	W600-C6	W825-C6	6.40	6.00	0.00287
W321-C10	W400-C10	W600-C10	W825-C10	7.30	10.00	0.00183
W321-C16	W400-C16	W600-C16	W825-C16	8.30	16.00	0.00108

SINGLE CORE HEATING CABLE WITH STAINLESS STEEL AND ALLOY 825 SHEATH NORTH AMERICAN 600V RANGE

CSA & EAC CERTIFIED

HEATING CABLE REFERENCE		EXTERNAL SHEATH Ø [mm]	CONDUCTOR RESISTANCE AT 20 °C [Ohm/m]	LEAD-IN CABLE CONDUCTOR AREA [mm²]	LEAD-IN CABLE Ø [mm]	SEAL REFERENCE (T1)	SEAL REFERENCE (T2)
AISI 321 SHEATH	ALLOY 825 SHEATH						
H1S200-2	H1H200-2	3.7	6.56	2.50	5.3	1H2.5-20	1H2.5-20
H1S160-2	H1H160-2	4.1	5.25	2.50	5.3	1H2.5-20	1H2.5-20
H1S130-2	H1H130-2	4.1	4.27	2.50	5.3	1H2.5-20	1H2.5-20
H1S100-2	H1H100-2	4.1	3.28	2.50	5.3	1H2.5-20	1H2.5-20
H1S850-3	H1H850-3	4.3	2.79	2.50	5.3	1H2.5-20	1H2.5-20
H1S700-3	H1H700-3	4.1	2.30	2.50	5.3	1H2.5-20	1H2.5-20
H1S500-3	H1H500-3	4.6	1.64	2.50	5.3	1H2.5-20	1H2.5-20
H1S280-3	H1H280-3	4.6	0.92	2.50	5.3	1H2.5-20	1H2.5-20
H1S200-3	H1H200-3	4.6	0.656	6.0	6.4	1H6.0-20	1H6.0-20
H1S150-3	H1H150-3	4.6	0.492	6.0	6.4	1H6.0-20	1H6.0-20
H1S118-3	H1H118-3	4.6	0.387	6.0	6.4	1H6.0-20	1H6.0-20
H1S732-4	H1H732-4	4.7	0.240	10	7.3	1H10-20	1H10-20
H1S581-4	H1H581-4	4.7	0.191	10	7.3	1H10-20	1H10-20
H1S467-4	H1H467-4	4.6	0.153	10	7.3	1H10-20	1H10-20
H1S366-4	H1H366-4	4.7	0.120	10	7.3	1H10-20	1H10-20
H1S290-4	H1H290-4	4.7	0.0951	16	8.3	1H16-20	1H16-25
H1S231-4	H1H231-4	4.7	0.0758	16	8.3	1H16-20	1H16-25
H1S183-4	H1H183-4	4.7	0.0600	16	8.3	1H16-20	1H16-25
H1S145-4	H1H145-4	4.7	0.0476	25	9.6	1H25-20	1H25-32
H1S113-4	H1H113-4	4.7	0.0371	25	9.6	1H25-20	1H25-32
H1S651-5	H1H651-5	4.7	0.0214	25	9.6	1H25-20	1H25-32
H1S409-5	H1H409-5	4.9	0.0134	25	9.6	1H25-20	1H25-32
H1S258-5	H1H258-5	5.5	0.00846	35	10.70	1H35-20	1H35-32
H1S162-5	H1H162-5	6.9	0.00531	-	-	1H4.0-20	1H4.0-25
H1S102-5	H1H102-5	7.3	0.00335	-	-	1H6.0-20	1H6.0-25
H1S640-6	H1H640-6	8.1	0.00210	-	-	1H10-20	1H10-25

CODE CLARIFICATION

H 1 X Y Y Y - Z

Sheat Material _____
 Ohmic Values _____
 Exponent Ohmic Value _____

SHEAT MATERIAL

H : Alloy 825
S : SS 321

OHMIC VALUES

See tables

EXPONENT OHMIC VALUE

For example :

H2H100-2 has resistance : $100 \times 10^{-2} = 1$ Ohm/ft (3.28 Ohm/m)

H2H775-4 has resistance : $775 \times 10^{-4} = 0.0775$ Ohm/ft (0.254 Ohm/m)

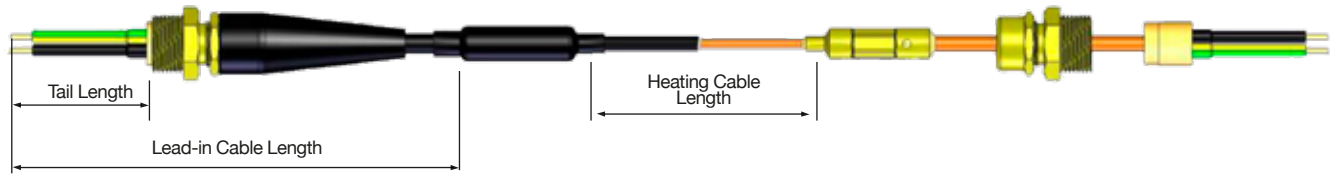
COLD LEAD-IN / WIRING CABLE NORTH AMERICAN 600 V RATED RANGE

CSA & EAC CERTIFIED

HEATING CABLE REFERENCE		EXTERNAL SHEATH Ø [mm]	CONDUCTOR CROSS AREA [mm²]	CONDUCTOR RESISTANCE AT 20 °C [Ohm/m]
AISI 321 SHEATH	ALLOY 825 SHEATH			
W321-C2.5	W825-C2.5	5.30	2.50	0.00690
W321-C6	W825-C6	6.40	6.00	0.00287
W321-C10	W825-C10	7.30	10.00	0.00183
W321-C16	W825-C16	8.30	16.00	0.00108

ELECTRICAL HEATING

SINGLE CORE HEATING CABLE WITH COPPER SHEATH BARE AND HDPE INSULATION WITH EARTH TAIL



SINGLE CORE HEATING CABLES WITH COPPER SHEATH BARE AND HDPE** INSULATION EUROPEAN 500 V RATED RANGE ATEX & EAC CERTIFIED

HEATING CABLE REFERENCE		EXTERNAL SHEATH Ø [mm]	EXTERNAL SHEATH HDPE Ø [mm]	CONDUCTOR RESISTANCE AT 20 °C [Ohm/m]	LEAD-IN CABLE CONDUCTOR AREA [mm²]	LEAD-IN CABLE Ø [mm]	SEAL REFERENCE (T1)	SEAL REFERENCE (T2 OR T3)
BARE	HDPE SERVED							
* H122-D2000-300V	H122-D2000-300V-HDPE	2.80	4.60	2 000	2.50	5.3	1H2.5-20	1H2.5-20
* H122-D1250-300V	H122-D1250-300V-HDPE	2.80	4.60	1 250	2.50	5.3	1H2.5-20	1H2.5-20
H122-D800	H122-D800-HDPE	3.50	5.30	0.800	2.50	5.3	1H2.5-20	1H2.5-20
H122-D630	H122-D630-HDPE	4.00	5.80	0.630	2.50	5.3	1H2.5-20	1H2.5-20
H122-D450	H122-D450-HDPE	4.00	5.80	0.450	2.50	5.3	1H2.5-20	1H2.5-20
H122-D315	H122-D315-HDPE	4.30	6.10	0.315	2.50	5.3	1H2.5-20	1H2.5-20
H122-D220	H122-D220-HDPE	4.50	6.30	0.220	2.50	5.3	1H2.5-20	1H2.5-20
H122-D140	H122-D140-HDPE	4.90	6.70	0.140	2.50	5.3	1H2.5-20	1H2.5-20
H122-D100	H122-D100-HDPE	5.20	7.00	0.100	2.50	5.3	1H2.5-20	1H2.5-20
H122-C63	H122-C63-HDPE	3.20	5.00	0.063	2.50	5.3	1H2.5-20	1H2.5-20
H122-C40	H122-C40-HDPE	3.40	5.20	0.040	2.50	5.3	1H2.5-20	1H2.5-20
H122-C25	H122-C25-HDPE	3.70	5.50	0.250	6.00	6.4	1H6.0-20	1H6.0-25
H122-C17	H122-C17-HDPE	4.60	6.40	0.017	6.00	6.4	1H6.0-20	1H6.0-25
H122-C11	H122-C11-HDPE	4.90	6.70	0.011	6.00	6.4	1H6.0-20	1H6.0-25
H122-C7	H122-C7-HDPE	5.30	7.10	0.007	10.00	7.3	1H10-20	1H10-25
H122-C4	H122-C4-HDPE	5.90	7.70	0.004	16.00	8.3	1H16-20	1H16-25

SINGLE CORE HEATING CABLES WITH COPPER SHEATH BARE AND HDPE INSULATION NORTH AMERICAN 600 V RATED RANGE ATEX CERTIFIED

HEATING CABLE REFERENCE		EXTERNAL SHEATH Ø [mm]	EXTERNAL SHEATH HDPE Ø [mm]	CONDUCTOR RESISTANCE AT 20 °C [Ohm/m]	LEAD-IN CABLE CONDUCTOR AREA [mm²]	LEAD-IN CABLE Ø [mm]	SEAL REFERENCE (T1)	SEAL REFERENCE (T2 OR T3)
BARE	HDPE SERVED							
* H122-D2000-CD	H122-D2000-H-CD	2.80	5.80	2 000	2.50	5.3	1H2.5-20	1H2.5-20
H122-D1280-CD	H122-D1280-H-CD	3.70	6.70	1 280	2.50	5.3	1H2.5-20	1H2.5-20
H122-D984-CD	H122-D984-H-CD	4.00	7.00	0.984	2.50	5.3	1H2.5-20	1H2.5-20
H122-D656-CD	H122-D656-H-CD	4.00	7.00	0.656	2.50	5.3	1H2.5-20	1H2.5-20
H122-D492-CD	H122-D492-H-CD	4.00	7.00	0.492	2.50	5.3	1H2.5-20	1H2.5-20
H122-D345-CD	H122-D345-H-CD	4.20	7.20	0.345	2.50	5.3	1H2.5-20	1H2.5-20
H122-D262-CD	H122-D262-H-CD	4.30	7.30	0.262	2.50	5.3	1H2.5-20	1H2.5-20
H122-D197-CD	H122-D197-H-CD	4.45	7.45	0.197	2.50	5.3	1H2.5-20	1H2.5-20
H122-D131-CD	H122-D131-H-CD	4.90	7.90	0.131	2.50	5.3	1H2.5-20	1H2.5-20
H122-D98-CD	H122-D98-H-CD	5.20	8.20	0.098	2.50	5.3	1H2.5-20	1H2.5-20
H122-D66-CD	H122-D66-H-CD	5.20	8.20	0.066	2.50	5.3	1H2.5-20	1H2.5-20
H122-C33-CD	H122-C33-H-CD	4.60	7.60	0.033	2.50	5.3	1H2.5-20	1H2.5-20
H122-C21-CD	H122-C21-H-CD	4.60	7.60	0.021	2.50	5.3	1H2.5-20	1H2.5-20
H122-C13-CD	H122-C13-H-CD	4.60	7.60	0.013	2.50	5.3	1H2.5-20	1H2.5-20

COLD LEAD-IN / WIRING CABLE NORTH AMERICAN 600 V RATED RANGE AND EUROPEAN 500 V RATED RANGE ATEX, CSA & EAC CERTIFIED

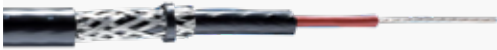
HEATING CABLE REFERENCE	EXTERNAL SHEATH Ø [mm]	CONDUCTOR CROSS AREA [mm²]	CONDUCTOR RESISTANCE AT 20 °C [Ohm/m]
COPPER SHEATH			
W122-C2.5	5.30	2.50	0.00690
W122-C6	6.40	6.00	0.00287
W122-C10	7.30	10.00	0.00183
W122-C16	8.30	16.00	0.00108

(*) 300V rated cable (**) HDPE insulated version used in ramp heating applications

SIPCP

Constant wattage
single core cable

CONCRETE



ALSO AVAILABLE PRE-ASSEMBLED ON MESH

The SIPCP constant wattage heating cable consists of a single wire Ni-Cr or Cu-Ni conductor which acts as a resistance. As protection, a silicon and additional fire-retardant PVC inner jacket, is reinforced with a copper braiding and an additional protective outer sheath.

- Frost protection & temperature maintenance up to 80°C
- Lengths up to +/- 400 m
- Ideal for ramp heating
- Voltage: 230V / 400V
- Output: 30 W/m - 300 W/m²
- Cable spacing: 10 m per m²
- Total power: 450 - 12.000 W

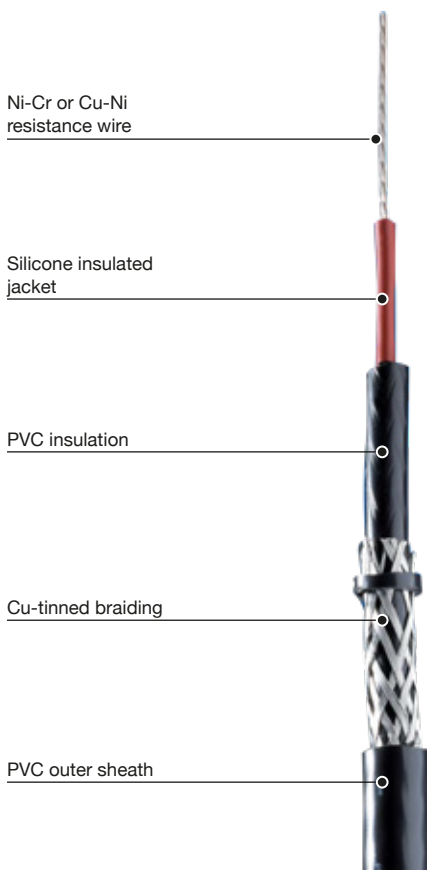
- Rated Voltage: **up to 500V**
- Outer diameter: **approx. 7,4 mm**
- Maximum allowed temperature: **80°C**
- Minimum bending radius: **6 x diameter cable**



STANDARD CABLE FOR APPLICATION APPLICATION IN CONCRETE

30 W/m with 300 W/m² (10 m/m²)

REFERENCE	POWER [W]	VOLTAGE [V]	LENGTH [m]	WATT DENSITY [W/m]	R/L [Ohm/m]	I [A]	COLD LEADS [2x10m]
SIPCP-445-15-30-2	445	230	15	30,0	8	1,9	2,5 mm ²
SIPCP-558-19-30-2	558	230	19	30,0	5,1	2,4	2,5 mm ²
SIPCP-800-27-30-2	800	230	27	30,0	2,48	3,5	2,5 mm ²
SIPCP-1050-35-30-2	1050	230	35	30,0	1,44	4,6	2,5 mm ²
SIPCP-1260-42-30-2	1260	230	42	30,0	1	5,5	2,5 mm ²
SIPCP-1563-52-30-2	1563	230	52	30,0	0,65	6,8	2,5 mm ²
SIPCP-1878-63-30-2	1878	230	63	30,0	0,45	8,2	2,5 mm ²
SIPCP-2100-70-30-2	2100	230	70	30,0	0,36	9,1	2,5 mm ²
SIPCP-2520-84-30-2	2520	230	84	30,0	0,25	11,0	2,5 mm ²
SIPCP-2969-99-30-2	2969	230	99	30,0	0,18	12,9	2,5 mm ²
SIPCP-3253-108-30-2	3253	230	108	30,0	0,15	14,1	2,5 mm ²
SIPCP-3984-133-30-2	3984	230	133	30,0	0,1	17,3	2,5 mm ²
SIPCP-4941-165-30-2	4941	230	165	30,0	0,065	21,5	4,0 mm ²
SIPCP-5634-188-30-2	5634	230	188	30,0	0,05	24,5	4,0 mm ²
SIPCP-7098-237-30-2	7098	230	237	30,0	0,0315	30,9	6,0 mm ²
SIPCP-775-26-30-4	775	400	26	30,0	8	1,9	2,5 mm ²
SIPCP-970-32-30-4	970	400	32	30,0	5,1	2,4	2,5 mm ²
SIPCP-1391-46-30-4	1391	400	46	30,0	2,48	3,5	2,5 mm ²
SIPCP-1826-61-30-4	1826	400	61	30,0	1,44	4,6	2,5 mm ²
SIPCP-2191-73-30-4	2191	400	73	30,0	1	5,5	2,5 mm ²
SIPCP-2717-91-30-4	2717	400	91	30,0	0,65	6,8	2,5 mm ²
SIPCP-3266-109-30-4	3266	400	109	30,0	0,45	8,2	2,5 mm ²
SIPCP-3651-122-30-4	3651	400	122	30,0	0,36	9,1	2,5 mm ²
SIPCP-4382-146-30-4	4382	400	146	30,0	0,25	11,0	2,5 mm ²
SIPCP-5164-172-30-4	5164	400	172	30,0	0,18	12,9	2,5 mm ²
SIPCP-5657-189-30-4	5657	400	189	30,0	0,15	14,1	2,5 mm ²
SIPCP-6928-231-30-4	6928	400	231	30,0	0,1	17,3	2,5 mm ²
SIPCP-8593-286-30-4	8593	400	286	30,0	0,065	21,5	4,0 mm ²
SIPCP-9798-327-30-4	9798	400	327	30,0	0,05	24,5	4,0 mm ²
SIPCP-12344-411-30-4	12344	400	411	30,0	0,0315	30,9	6,0 mm ²



CONCRETE



ALSO AVAILABLE PRE-ASSEMBLED ON MESH

When embedded directly in **concrete** ramps or driveways, the cable becomes an integral part of the slab, ensuring uniform heat distribution and reliable ice- and snow-melting performance.

Concrete embedding provides maximum mechanical protection and long-term durability, making it the preferred solution for heavy traffic areas and surfaces subject to vehicle loads.

- Frost protection & temperature maintenance up to 80°C
- Lengths up to +/- 450 m
- Ideal for ramp heating
- Voltage: 230V / 400V
- Output: 25 W/m - 250 W/m²
- Cable spacing: 10 m per m²
- Total power: 400 - 11.000 W

STANDARD CABLE FOR APPLICATION IN CONCRETE = DURABILITY + HEAVY LOAD CAPACITY + LONG HEAT RETENTION

25 W/m with 250 W/m² (10 m/m²)



Ni-Cr or Cu-Ni resistance wire

Silicone insulated jacket

PVC insulation

Cu-tinned braiding

PVC outer sheath



REFERENCE	POWER [W]	VOLTAGE [V]	LENGTH [m]	WATT DENSITY [W/m]	R/L [Ohm/m]	I [A]	COLD LEADS [2x10m]
SIPCP-407-16-25-2	407	230	16	25,0	8	1,8	2,5 mm ²
SIPCP-509-20-25-2	509	230	20	25,0	5,1	2,2	2,5 mm ²
SIPCP-730-29-25-2	730	230	29	25,0	2,48	3,2	2,5 mm ²
SIPCP-958-38-25-2	958	230	38	25,0	1,44	4,2	2,5 mm ²
SIPCP-1150-46-25-2	1150	230	46	25,0	1	5,0	2,5 mm ²
SIPCP-1426-57-25-2	1426	230	57	25,0	0,65	6,2	2,5 mm ²
SIPCP-1714-69-25-2	1714	230	69	25,0	0,45	7,5	2,5 mm ²
SIPCP-1917-77-25-2	1917	230	77	25,0	0,36	8,3	2,5 mm ²
SIPCP-2300-92-25-2	2300	230	92	25,0	0,25	10,0	2,5 mm ²
SIPCP-2711-108-25-2	2711	230	108	25,0	0,18	11,8	2,5 mm ²
SIPCP-2969-119-25-2	2969	230	119	25,0	0,15	12,9	2,5 mm ²
SIPCP-3637-145-25-2	3637	230	145	25,0	0,1	15,8	2,5 mm ²
SIPCP-4511-180-25-2	4511	230	180	25,0	0,065	19,6	4,0 mm ²
SIPCP-5143-206-25-2	5143	230	206	25,0	0,05	22,4	4,0 mm ²
SIPCP-6480-259-25-2	6480	230	259	25,0	0,0315	28,2	6,0 mm ²
SIPCP-707-28-25-4	707	400	28	25,0	8	1,8	2,5 mm ²
SIPCP-886-35-25-4	886	400	35	25,0	5,1	2,2	2,5 mm ²
SIPCP-1270-51-25-4	1270	400	51	25,0	2,48	3,2	2,5 mm ²
SIPCP-1667-67-25-4	1667	400	67	25,0	1,44	4,2	2,5 mm ²
SIPCP-2000-80-25-4	2000	400	80	25,0	1	5,0	2,5 mm ²
SIPCP-2481-99-25-4	2481	400	99	25,0	0,65	6,2	2,5 mm ²
SIPCP-2981-119-25-4	2981	400	119	25,0	0,45	7,5	2,5 mm ²
SIPCP-3333-133-25-4	3333	400	133	25,0	0,36	8,3	2,5 mm ²
SIPCP-4000-160-25-4	4000	400	160	25,0	0,25	10,0	2,5 mm ²
SIPCP-4714-189-25-4	4714	400	189	25,0	0,18	11,8	2,5 mm ²
SIPCP-5164-207-25-4	5164	400	207	25,0	0,15	12,9	2,5 mm ²
SIPCP-6325-253-25-4	6325	400	253	25,0	0,1	15,8	2,5 mm ²
SIPCP-7845-314-25-4	7845	400	314	25,0	0,065	19,6	4,0 mm ²
SIPCP-8944-358-25-4	8944	400	358	25,0	0,05	22,4	4,0 mm ²
SIPCP-11269-451-25-4	11269	400	451	25,0	0,0315	28,2	6,0 mm ²

STABILIZED SANDBEDS



ALSO AVAILABLE PRE-ASSEMBLED ON MESH

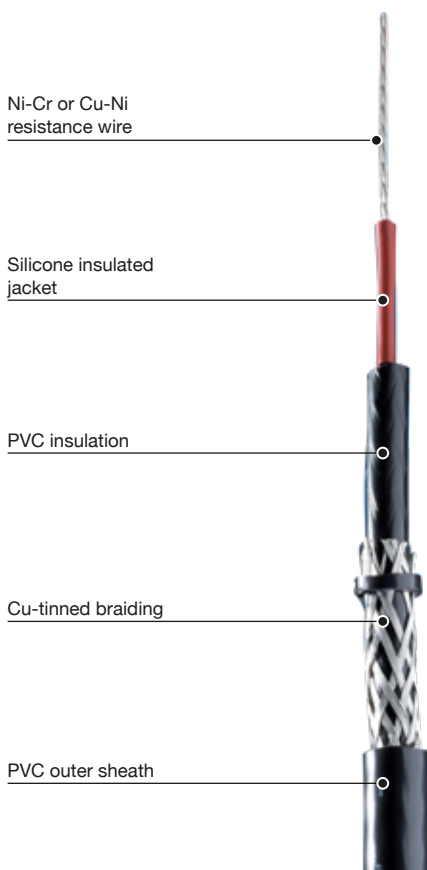
Installed within **stabilized sandbeds** beneath pavers or stone slabs, it ensures reliable frost and ice protection with quick thermal response.

Unlike concrete embedding, sandbed installation allows greater flexibility of the surface construction and simplifies future access, making it ideal for walkways, patios, and paved ramps where modular construction is required.

- Frost protection & temperature maintenance up to 80°C
- Lengths up to +/- 600 m
- Ideal for ramp heating
- Voltage: 230V / 400V
- Output: 15 W/m - 300 W/m²
- Cable spacing: 20 m per m²
- Total power: 300 - 8500 W

STANDARD CABLE FOR APPLICATION IN STABILIZED SANDBEDS = FLEXIBILITY + QUICK RESPONSE + PAVED SURFACES

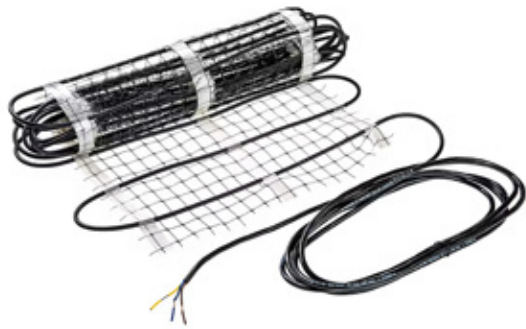
15 W/m with 300 W/m² (20 m/m²)



REFERENCE	POWER [W]	VOLTAGE [V]	LENGTH [m]	WATT DENSITY [W/m]	R/L [Ohm/m]	I [A]	COLD LEADS [2x10mm]
SIPCP-315-21-15-2	315	230	21	15,0	8	1,4	2,5 mm ²
SIPCP-394-26-15-2	394	230	26	15,0	5,1	1,7	2,5 mm ²
SIPCP-566-38-15-2	566	230	38	15,0	2,48	2,5	2,5 mm ²
SIPCP-742-49-15-2	742	230	49	15,0	1,44	3,2	2,5 mm ²
SIPCP-891-59-15-2	891	230	59	15,0	1	3,9	2,5 mm ²
SIPCP-1105-74-15-2	1105	230	74	15,0	0,65	4,8	2,5 mm ²
SIPCP-1328-89-15-2	1328	230	89	15,0	0,45	5,8	2,5 mm ²
SIPCP-1485-99-15-2	1485	230	99	15,0	0,36	6,5	2,5 mm ²
SIPCP-1782-119-15-2	1782	230	119	15,0	0,25	7,7	2,5 mm ²
SIPCP-2100-140-15-2	2100	230	140	15,0	0,18	9,1	2,5 mm ²
SIPCP-2300-153-15-2	2300	230	153	15,0	0,15	10,0	2,5 mm ²
SIPCP-2817-188-15-2	2817	230	188	15,0	0,1	12,2	2,5 mm ²
SIPCP-3494-233-15-2	3494	230	233	15,0	0,065	15,2	2,5 mm ²
SIPCP-3984-266-15-2	3984	230	266	15,0	0,05	17,3	4,0 mm ²
SIPCP-5019-335-15-2	5019	230	335	15,0	0,0315	21,8	4,0 mm ²
SIPCP-548-37-15-4	548	400	37	15,0	8	1,4	2,5 mm ²
SIPCP-686-46-15-4	686	400	46	15,0	5,1	1,7	2,5 mm ²
SIPCP-984-66-15-4	984	400	66	15,0	2,48	2,5	2,5 mm ²
SIPCP-1291-86-15-4	1291	400	86	15,0	1,44	3,2	2,5 mm ²
SIPCP-1549-103-15-4	1549	400	103	15,0	1	3,9	2,5 mm ²
SIPCP-1922-128-15-4	1922	400	128	15,0	0,65	4,8	2,5 mm ²
SIPCP-2309-154-15-4	2309	400	154	15,0	0,45	5,8	2,5 mm ²
SIPCP-2582-172-15-4	2582	400	172	15,0	0,36	6,5	2,5 mm ²
SIPCP-3098-207-15-4	3098	400	207	15,0	0,25	7,7	2,5 mm ²
SIPCP-3651-243-15-4	3651	400	243	15,0	0,18	9,1	2,5 mm ²
SIPCP-4000-267-15-4	4000	400	267	15,0	0,15	10,0	2,5 mm ²
SIPCP-4899-327-15-4	4899	400	327	15,0	0,1	12,2	2,5 mm ²
SIPCP-6076-405-15-4	6076	400	405	15,0	0,065	15,2	2,5 mm ²
SIPCP-6928-462-15-4	6928	400	462	15,0	0,05	17,3	4,0 mm ²
SIPCP-8729-582-15-4	8729	400	582	15,0	0,0315	21,8	4,0 mm ²

SIPCP-M

Constant wattage single core cable pre-assembled on mesh



These single-core constant wattage cables come pre-assembled on a fiberglass mat for precise spacing and easy installation. The mesh ensures uniform heat output, reliable snow- and ice-melting, and stable positioning during embedding in concrete or stabilized sandbeds.

Designed for long-term mechanical and thermal durability, this range is ideal for ramps, driveways, walkways, patios, and outdoor staircases.

- Voltage: 400V
- Output: 30 W/m - 300 W/m²
- Frost protection & temperature maintenance up to 60°C
- Efficient ramp heating
- Pre-assembled on mesh
- Cable spacing: 10 m per m²
- Weight: 13,3 kg
- Cold leads (2x10m): 2,5 mm²

REFERENCE	CABLE TYPE	LENGTH [m]	HEAT ZONE	R _{TOT} [ohm/m]	POWER [W]
FHM-SIPCP-M50	SIPCP 0,18 ohm/m	172	50 cm x 34 m	31	5168
FHM-SIPCP-M80	SIPCP 0,18 ohm/m	172	80 cm x 21,4 m	31	5168



RAMP HEATING

Constant wattage cable



To keep your entrance and exit slopes free of snow and ice, we offer a global solution based on constant wattage heating cables, poured in the concrete or asphalt layer. Based on your plans, we work out the most optimal solution, comprising heating cables, control panel with regulation, mounting, commissioning and documentation. As regulation, we foresee a snow- and ice sensor which reacts when it's both cold and moist. An additional limiter in the concrete or asphalt prevents your system from staying unnecessarily activated.

Our experienced technicians secure the heating cables on a galvanized netting that's to be placed on the reinforcement steel. They connect the cold leads into the control panel.

Everything is being programmed, measured and commissioned.



- Since 1963 experience with the installation of this system
- Extremely reliable solution with long durability
- The wattage remains constant in time, compared to self-regulating cables which lose power by aging
- Maintenance contract possible for yearly inspection
- Fully autonomous system
- Energy saving thanks to limiter
- Fault localization and local repair possible in case of damage
- Continuous display "READY" in control panel
- Possible communication with building management system
- Customization possible



QUICK REPAIRS WITH IN-HOUSE FAULT DETECTION AND FLEXIBLE MAINTENANCE CONTRACTS FOR LONG-TERM RELIABILITY AND SUPPORT

TECHNICAL SPECIFICATIONS IN CONCRETE

- Load 30 W/m cable
- Construction cable (**SiPCP**) constant wattage single core see datasheet SiPCP (Resistance wire / Silicone jacket / PVC inner sheath / Copper braid / PVC outer jacket)
- Circuit length to maximum 230 m
- Ohmic values : **0,1 to 8 Ohm/m**
- Nominal tension max 500V
- Embedment depth : **50 to 100 mm under upper surface**
- 2 versions of prefabricated mats are used for ease of installation : **0,5 x 34 m / 0,8 x 21,4 m**



TECHNICAL SPECIFICATIONS IN ASPHALT

- Load 60 W/m cable
- Surface load 300W /m²
- Construction cable (**MI**) constant wattage single core see datasheet MI (Resistance wire / Magnesium Oxide insulation / Copper inner jacket / HDPE outer jacket)
- Circuit length to maximum 138 m
- Ohmic values : **0,14 to 2 Ohm/m**
- Nominal tension max 600V
- Embedment depth : **30 to 80 mm under upper surface**



TECHNICAL SPECIFICATIONS IN SANDBED

- Load 15 W/m cable
- Construction cable (**SiPCP**) constant wattage single core see datasheet SiPCP (Resistance wire / Silicone jacket / PVC inner sheath / Copper braid / PVC outer jacket)
- Circuit length to maximum 230 m
- Ohmic values : **0,1 to 8 Ohm/m**
- Nominal tension max 500V
- Embedment depth : **50 to 100 mm under upper surface**



ELECTRICAL HEATING

RAMP HEATING CONTROL PANEL

RAMP HEATING CONTROL PANEL



TECHNICAL SPECIFICATIONS CONTROL PANEL

The IP54 control panel is completely pre-assembled with the necessary protections and switches per circuit. Each panel is made following the requirements of the end customer. The standard panels work fully automatic. Upon request, communication with the building management system is possible. Electrical wiring diagram will be presented for approval.

A standard panel consists of the following materials

- 1 differential switch
- 1 main switch
- 1 circuit breaker per heating circuit
- 1 contactor per heating circuit
- 1 ITR3 temperature limiter and 1 ITR3 PT100 sensor for measurement of surface temperature (check detailed datasheet ITR3)
- 1 snow- and ice controller and 1 snow- and ice sensor for measurement of environmental temperature and moist (check detailed datasheet MODS)

REFERENCE	NUMBER OF HEATING CIRCUITS	POWER PER CIRCUIT [w]		TOTAL POWER [w]		MAX PRE-PROTECTION	CABINET SIZE [mm]
		230V	400V	230V	400V		
Ramp-Heating_3	3	3000	5200	9000	15600	63A	500 x 500 x 210
Ramp-Heating_6	6	3000	5200	18000	31200	80A	600 x 800 x 250
Ramp-Heating_9	9	3000	5200	27000	46800	100A	800 x 1000 x 300



ITR3

Ramp heating sensor & controller

1 ITR3 temperature limiter and 1 ITR3 PT100 sensor for measurement of surface temperature (check detailed datasheet ITR3)



MODS

Ramp heating sensor & controller

1 snow- and ice controller and 1 snow- and ice sensor for measurement of environmental temperature and moist (check detailed datasheet MODS)

REPAIR AND FAULT DETECTION CAPABILITIES

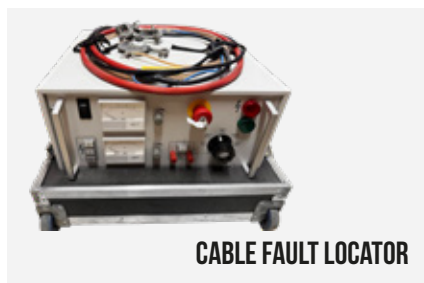
Rampheating cables and SiPCP(-M)

In case of damage to your rampheating system — whether through drilling, cutting, insulation failure or other issues — we offer full in-house repair and fault-detection services. Using specialized equipment, we can precisely locate the problem area hidden beneath the embedded material, without unnecessary demolition.

By combining advanced electrical testing with infrared imaging, we quickly trace where current is flowing abnormally (or not at all) and pinpoint the fault's exact location. This targeted approach allows us to expose only the affected section, carry out a clean repair, and restore the system to full efficiency.

The result:

MINIMAL DISRUPTION, REDUCED COSTS, AND A RAMPHEATING SYSTEM THAT'S BACK TO DELIVERING SAFE, RELIABLE PERFORMANCE.



ITR3 Ramp heating sensor & controller



- Temperature range : -40° ...+20°C
- Contact : 1 changeover contact, potential free
- Operating voltage : 230V
- Contact current : 10A
- Temperature adjustment : in steps of 5°C
- Indication led ON
- Ingress Protection class : IP40
- Ambient temperature : -10 ...+50°C

The desired temperature is adjusted by means of rotary knob on the front side of the regulator. This setting can be locked by the key below the adjustment knob. A range can be limited in the same way. This is done in 5 °C sections by the pins on the temperature scale. With indicator lamp «on Relay».

- | | |
|-----------------------------------|---------------------------------|
| - Universal temperature regulator | - 4 different sensors available |
| - Adjustment knob | - Range from -40°C to +20°C |

TECHNICAL SPECIFICATIONS IN CONCRETE



Air monitoring sensor



Pipe contact sensor



Standard sensor (used for rampheating projects)



Sensor for outdoor mounting

MODS Ramp heating sensor & controller



- Enclosure material : **Polycarbonate**
- Ambient temperature : **Indoor use only 0 to 50 °C (32 to 120 °F)**
- Humidity : **0 to 95% non-condensing**
- Installation : **on DIN rail in distribution cabinet**
- Dimensions : **108 mm (4 1/4") wide (6 pitch), 88 mm (3 15/32") high, 61 mm (2 13/32") deep**
- Power requirements : **AC 230 V 50 Hz**
- Power consumption (including sensor power). **10 VA**
- Dry contact output relay voltage : **AC 230 V**
- Dry contact output relay load rating : **6(2) A**
- Alarm output voltage and max. load : **DC 24 V / 15 mA**

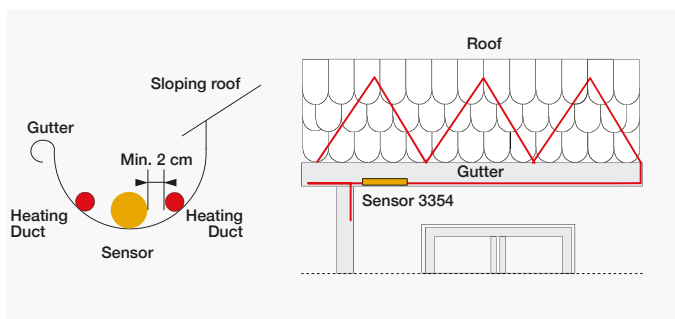
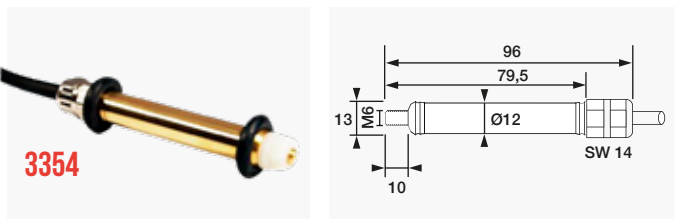
The digital snow- and ice detector type 1773, has, in combination with the temperature and humidity sensors 3354 or 3356, the task of recognizing ice and snow early and by switching on a defroster monitor the outdoor surfaces such as ramps, loading bays, sidewalks, helicopter platforms terraces, gutters, parabolic antennas, etc. in order to keep them free from snow and ice.

- Universal regulator & sensor
- DIN-rail mounting
- 2 different sensors available
- Combination temperature and moist

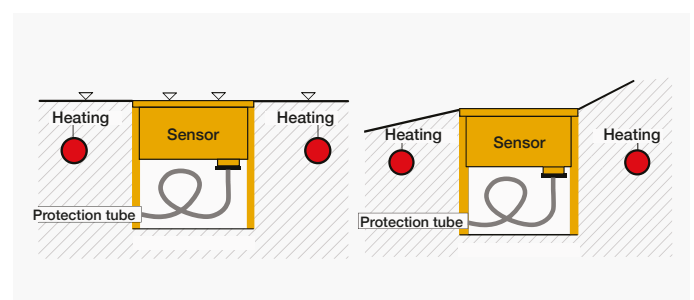
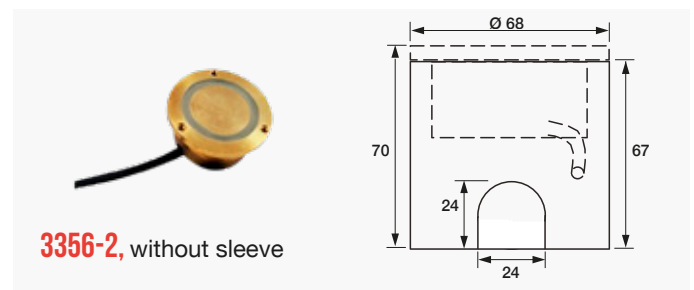
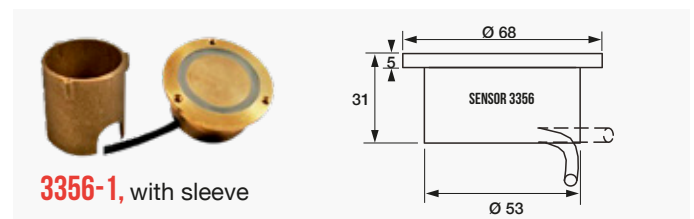
- Class of protection : **Class II (if installed appropriately)**
- Degree of protection IP 20
- Minimum heating time adjustment : **30 to 600 minutes**
- Detecting temperature range – Active mode : **-25 to 5 °C (-15 to 40 °F)**
- High temperature – warm weather shut down (WWSD) adjustment : **0 to 5 °C (32 to 40 °F)**
- Low temperature – cold weather cut out (CWCO) adjustment : **-25 to -5 °C (-15 to 25 °F)**
- Idling temperature adjustment : **-15 to 5 °C (5 to 40 °F)**
- Moisture sensitivity adjustment : **5 to 95**

AVAILABLE COMPATIBLE SENSORS & DIMENSIONS

Sensor 3354: For defrosting gutters, cornices, parabolic antennas, etc.



Sensor 3356: Application for entrance lanes, loading docks, sidewalks, terraces, etc.





ETK3-LT

Non-Ex termination set in shrinking technology for direct connection to power cable



- Cross Section : **up to 2.5mm²**
- Length Connection Side : **120mm**
- Length End Seal : **58mm**

ALTERNATIVE PRODUCTS

ETK3-../JB : Non-Ex Termination set for direct connection in Junction Box

ETK5 : Non-Ex Termination set in screw technology

The ETK3 is a termination set which is easy and fast to assemble. The heating tape will be connected with the feeding cable by using a ceramic terminal block and afterwards overshrunk with a special shrink tubing. Because of the illustrated instruction manual the installation is very easy and requires no special tools.

- Compact design
- Temperature resistant up to 110°C
- Quick and easy to assemble
- Applicable for different heating tapes
DLR-CR, DKT-CT, DLT-CT, DMT-CT, DHT-CT (up to 110°C)

ORDERING INFORMATION

ETK3-LT

Power connection and end termination set

ETK3P-LT

Power connection only

ETK3R-LT

End termination only

ETK3-HT

Non-Ex termination set in shrinking technology for direct connection to power cable



Set contains 5 termination assemblies (1 tube for all)

- Cross Section : **up to 2.5mm²**
- Length Connection Side : **120mm**
- Length End Seal : **58mm**

ALTERNATIVE PRODUCTS

ETK3-../JB : Non-Ex Termination set for direct connection in Junction Box

ETK5 : Non-Ex Termination set in screw technology

The ETK3 is a termination set which is easy and fast to assemble. The heating tape will be connected with the feeding cable by using a ceramic terminal block and afterwards overshrunk with a special shrink tubing. Because of the illustrated instruction manual the installation is very easy and requires no special tools.

- Compact design
- Temperature resistant up to 250°C
- Quick and easy to assemble
- Applicable for different heating tapes
DLR-CR, DKT-CT, DLT-CT, DMT-CT, DHT-CT (up to 250°C)

ORDERING INFORMATION

ETK3-HT

Power connection and end termination set

ETK3P-HT

Power connection only

ETK3R-HT

End termination only

ETK3-LT/JB

Non-Ex termination set in shrinking technology for direct connection in Junction Box



- Cable Gland : 1x M20
- Length End Seal : 45 mm

The ETK3../JB is a termination set which is easy and fast to assemble. The bus wires of the heating cable will be inserted over an M20 cable gland directly into an enclosure. Because of the illustrated instruction manual the installation is very easy and requires no special tools.

- Compact design
- Direct entry in enclosure by using an M20 cable gland
- Quick and easy to assemble
- Applicable for different heating tapes DLR-CR, DKT-CT, DLT-CT, DMT-CT & DHT-CT (up to 110°C)

ORDERING INFORMATION

ETK3-LT/JB

Power connection and end termination set

ETK3P-LT/JB

Power connection only

ETK3R-LT/JB

End termination only

ETK3G-LT/JB

Gland only

ALTERNATIVE PRODUCTS

ETK5 : Non-Ex Termination set in screw technology

ETK3-HT/JB

Non-Ex termination set in shrinking technology for direct connection in Junction Box



Set contains 5 termination assemblies (1 tube for all)

- Cable Gland : 1x M20
- Length End Seal : 100 mm

The ETK3../JB is a termination set which is easy and fast to assemble. The bus wires of the heating cable will be inserted over an M20 cable gland directly into an enclosure. Because of the illustrated instruction manual the installation is very easy and requires no special tools.

- Compact design
- Direct entry in enclosure by using an M20 cable gland
- Quick and easy to assemble
- Applicable for different heating tapes DLR-CR, DKT-CT, DLT-CT, DMT-CT & DHT-CT (up to 250°C)

ORDERING INFORMATION

ETK3-HT/JB

Power connection and end termination set (1 set = 5 connections)

ETK3P-HT/JB

Power connection only (1 set = 5 connections)

ETK3R-HT/JB

End termination only (1 set = 5 connections)

ETK3G-HT/JB

Gland only (1 set = 5 connections)

ALTERNATIVE PRODUCTS

ETK5 : Non-Ex Termination set in screw technology

ETK5

Non-Ex termination set in screw technology



- Temperature Resistant: **-40°C...+130°C**
- For Heating Tapes: **DLR, DLT, DMT, DHT & DUT**
- Cross Section: **up to 2.5mm²**
- Length Power Connection: **125mm**
- Length End Seal: **58mm**

The ETK5 system contains a termination set which is easy and fast to assemble, based on approved screw technology.

The compact dimensions make it possible, that this system can be installed even underneath the thermal insulation of the pipe.

The ETK5 product range contains several components such as power supply, end termination, branches and connections.

The installation is very easy to handle and requires no special tools.

- Compact design
- Temperature resistant up to 130°C
- Quick and easy to assemble
- Suitable for different types of heating tapes DLR, DLT, DMT, DHT & DUT (up to 130°C)
- Power supply and end termination separately available

ALTERNATIVE PRODUCTS

ETK3 : Non-Ex termination set in shrinking technology

ORDERING INFORMATION				
ETK5	ETK5P	ETK5R	ETK5T	ETK5I
Power connection and end termination set	Power connection only	End termination only	T-Branch (supply cable + 2 heating cables or 3 heating cables)	Connection heating cable – heating cable

ETK5TT

Non-Ex termination kit with integrated bimetal-temperature switch for frost protection



- Max. Operating Temp. : **125°C**
- Suitable Heating Cables : **DLR, DLT & DMT (depending on operating temperature also DHT & DUT)**
- Terminal Capacity : **up to 2.5mm²**
- Max. Current Rating : **16A at 230V AC**
- Dimensions (LxWxH in mm) : **140 x 60 x 30**
- Protection Class : **IP68**
- Switching Points : **4°C On, 11°C Off**

The ETK5 system contains a termination kit, based on approved screw technology, which is quick and easy to assemble. The integrated bimetal-temperature-switch eliminates the use of an additional thermostat. This compact design saves both space and time because no additional enclosure is required.

When the temperature is measured under the thermal insulation, it ensures a more economical solution with reduced operation, unlike conventional systems measuring the ambient temperature outside the thermal insulation.

- Compact design
- Operating temperature up to 125°C
- Quick and easy to assemble
- Suitable for wide range of heating cables
- End termination kit separately available

ALTERNATIVE PRODUCTS

ETK8TT : Power termination with in-line bimetal temperature switch for hazardous area.

ORDERING INFORMATION
ETK5TT
Power termination with in-line bimetal temperature switch

EC-14-5_01

Polyolefin shrink sleeve termination set for use in non-hazardous areas



With this end-cap, DIRAC offers an economical means of sealing the ends of heating cables to ensure a watertight seal. The internal surface of the end cap has a layer of spiral coated hot melt adhesive, which retains its flexible properties of recovery.

- Operating temperature: -55°C...+110°C
- Material: Polyolefin + hot melt adhesive
- Length End Seal: 45 mm
- Ø 14/5 mm

KCA001

Termination set in shrinking technology for use in non-hazardous areas



The KCA001 termination kit insulates the bus wires and earth braid of the trace heating cable for connection in the junction box or thermostat.

Because of the illustrated instruction manual the installation is very easy and requires no special tools.

- Max. Ambient Temperature : +130°C
- Each kit consists of :
 - Shrink sleeve 16/4 black for insulation of polymer
 - Shrink sleeve 4/1 black for insulation of bus wires
 - Shrink sleeve 4,8/2,4 green/yellow for insulation of braid

- Compact design
- For connection inside a junction box or thermostat
- Quick and easy to assemble
- Applicable for different heating tapes : DLR-CR, DLT-CT, DMT-CT & DHT-CT

KIE002C

Silicone termination set for use in non-hazardous areas



The termination kits are silicon-made termination parts which contain 5 silicon caps and 1 tube of silicon sealant.

- Compact design
- Temperature resistant up to 250°C
- Quick and easy to assemble
- Applicable with different types of heating tapes

- Temperature Resistant : -60°C...250°C
- Material : **Silicone**
- Length End Seal : 10cm
- Diameter : 10mm

ETK3-MBEx

Ex termination set in shrinking technology for direct crimping connection to power cable



- Ambient Tem.: min. **-20/-25°C**
max. **+65°C/+85°C**
- For Heating Tapes: **DLT & DMT**
- Cross Section: **up to 1.5mm²**
- Length Connection Side: **140mm**
- Length End Seal: **ca. 60mm**

The ETK3-MBEx contains a very flexible and space saving termination set and can be used in hazardous area.

The heating cable is connected to a special feeding cable by using insulated butt connectors and afterwards overshrunk with a special shrink tubing. The compact design enables use even under cramped space conditions.

The illustrated manual helps for an error-free installation. This set contains power connection and end seal.

- For supply cables up to 1.5mm²
- Compact design
- Quick and easy to assemble
- Suitable for following heating tapes DLT & DMT
- Different versions available upon request



MARKING

- Ⓧ II 2G Ex mb IIC T6/T5/T4/T3
- Ⓧ II 2D Ex mb IIIC T85°C/T100°C/T135°C/T200°C

ORDERING INFORMATION

(for heating tapes with fluoropolymer outer jacket)

ETK3-MBEx
Power connection and end seal

ETK3P-MBEx
Power connection only

ETK3R-MBEx
End seal only

ETK3I-MBEx
In-Line Connection heating tape – heating tape

ETK3-MCEx

Ex termination set in shrinking technology for direct screw connection to power cable



- Ambient Temperatures: min. **-20/-40°C**
max. **+65°C/+85°C**
- For Heating Tapes: **DLT & DMT**
- Cross Section: **up to 2.5mm²**
- Length Connection Side: **140mm**
- Length End Seal: **ca. 60mm**

The ETK3-MCEx contains a very flexible and space saving termination set and is used in hazardous area.

The heating cable is connected to a special feeding cable by using a ceramic terminal block and afterwards overshrunk with a special shrink tubing. The compact design enables to use this set in cramped space conditions.

The illustrated manual helps for an error-free installation.

- For supply cables up to 2,5mm²
- Compact design
- Quick and easy to assemble
- Different versions available
- Applicable with the following heating tapes DLT & DMT



MARKING

- Ⓧ II 2G Ex mb IIC T6/T5/T4/T3
- Ⓧ II 2D Ex mb IIIC T85°C/T100°C/T135°C/T200°C

ORDERING INFORMATION

(for heating tapes with fluoropolymer outer jacket)

ETK3-MCEx
Power connection and end seal

ETK3P-MCEx
Power connection only

ETK3R-MCEx
End seal only

ETK3I-MCEx
In-Line Connection heating tape – heating tape

ETK3-HSE_x

Ex termination set in shrinking technology for direct crimping connection to power cable - high temp



The ETK3-HSE_x contains a very flexible and space saving termination set and is used in hazardous areas.

The usage of a special temperature resistant FEP-Connection cable grants different application possibilities at very high temperatures.

This set is composed of connection and end seal parts. These are also separately available.

- Temperature Resistant : up to 180°C
- For Heating Tapes : DLT-CT, DMT-CT, DHT-CT & DUT-NT
- Length Connection Side : 140mm
- Length End Seal : ca. 55mm



MARKING

- ⊕ II 2G Ex mb IIC T3
- ⊕ II 2D Ex mb IIIC T200°C

ALTERNATIVE PRODUCTS

ETK4-Ex : Ex-termination set for direct entry

- Compact design
- Temperature resistant up to 180°C
- Flexible usage
- Different sets separately available
- Applicable for: DLT-CT, DMT-CT, DHT-CT & DUT-NT

ORDERING INFORMATION

(for heating tapes with fluoropolymer outer jacket)

ETK3-HSE_x
Power connection and end seal

ETK3P-HSE_x
Power connection only

ETK3R-HSE_x
End seal only

ETK3I-HSE_x
In-Line Connection heating tape – heating tape

ETK4-Ex

Silicon termination set for use in hazardous areas



The termination kits of the ETK4-Ex-series are silicon-made termination parts which contain power supply, end seal, a special cable gland and various accessories. These termination kits can be used to connect the heating circuit directly in an Exe approved junction box e.g. JBP...Ex or thermostat enclosure MTC...Ex.

There is no separate supply cable needed. Because of the high temperature resistance up to 200 °C, heating cable types DLT are suitable as well as mid- & high temperature heating cable types DMT, DHT & DUT.

- Temperature Resistant: -60°C to +200°C
- Material: Silicone
- Cable Gland: 1x M20
- Length Connection Sleeve: 125 mm
- Length End Seal: 66 mm

- Compact design
- Temperature resistant up to 200°C
- Quick and easy to assemble
- Applicable with different types of heating tapes



MARKING

- ⊕ II 2G Ex 60079-30-1 eb IIC T6...T2 Gb
- ⊕ II 2D Ex 60079-30-1 tb IIIC T85°C...T300°C Db

ORDERING INFORMATION

(for heating tapes with fluoropolymer outer jacket)

ETK4-Ex
Termination set for DKT-CT, DMT-CT, DHT-CT & DUT-NT

ETK4P-Ex
Power connection only

ETK4R-Ex
End seal only

ETK4-Exw
Termination set for DUTw33-NT (wide variant of DUT-NT)

ETK4P-Exw
Power connection only

ETK4R-Exw
End seal only

ETK8-Ex

Compact termination kit for self-limiting heating cables with terminal block for use in hazardous areas



The ETK8...-Ex system is a very easy and quick to install connection kit for connecting power supply cable as well as heating cable, end termination, based on an approved screw connection.

Due to the very compact design, it is possible to mount the parts directly on the surface of the pipe, tank, or enclosure underneath the insulation.

There is no blow-heater or special skills required for assembling. Further on branches can easily be realized with the T-branch.

- Temp. Range: **-60 to +190°C**
- Heating Cables:
DLT, DMT, DHT & DUT
- Clamping Range Supply:
7,0 – 10,5 mm
- Clamping Range Heating Cable:
4,7 x 10 – 6,5 x 13 mm
- Terminal Cross Section: **2,5 mm²**
- Length Supply/End:
110 mm / 70 mm
- T-Branch (L/W): **125 mm / 60 mm**
- Diameter: **25 mm (SW24)**
- Weight Supply/ End/ T:
168 g / 116 g / 290 g

- Voltage: 12 to 400 V AC
- Current rating: 20A
- Temperature resistant up to 190°C
- Compact design

- Suitable for use with many types of heating cables
- Version brass nickel plated (stainless steel upon request)
- Protection class: IP65

MARKING II 2G Ex eb IIC T6/T5/T4/T3/T2 Gb
 II 2D Ex tb IIIC T135°C Db IP65

ORDERING INFORMATION

(for heating tapes with fluoropolymer outer jacket)

ETK8-Ex

Power connection and end termination

ETK8P-Ex

Power connection only

ETK8R-Ex

End termination only

ETK8T-Ex

T-Branch (supply cable + 2 heating cables or 3 heating cables)

ETK8I-Ex

Connection heating cable – heating cable

ETK8TT-Ex

Termination kit for self-limiting heating cables with integrated frost protection (MATC41 1Ex) for use in non-hazardous and hazardous areas



The ETK8...-Ex system is a very easy and fast to install connection kit, based on an approved screw technology.

Our version with integrated ambient thermostat makes it possible to realize power supply, branch of heating cable and thermostat – all in one device!

Direct switching capacity is up to 16A.

Typical applications are simple frost protection applications on pipes, tanks, and heat jackets.

- Temperature Range:
-55 to +110°C
- Cable Clamping Range:
7,0 – 10,5 mm
- Cable cap. Heating cable:
Type S : 6 x 12 mm
Type B : 7 x 14 mm
- Switching Points:
4 °C On / 11 °C Off
- Terminal Cross Section: **2,5 mm²**
- Total Length/ Width:
125 mm / 60 mm
- Diameter: **25 mm (SW24)**
- Weight: **ca. 350 g**

- Voltage: 250V AC
- Current rating: 16A
- High temperature resistance
- Switching capacity up to 16A
- Compact design

- Suitable for use with many types of heating cables
- Version brass nickel plated
- Thermostat already integrated
- Protection class: IP65

MARKING

II 2G Ex e IIC T6/T5/T4/T3 Gb
 II 2D Ex tb IIIC T195°C Db IP65
 II 2G Ex mb IIC T6/T5/T4/T3

ORDERING INFORMATION

ETK8TT-Ex

Termination with integrated thermostat

RT-RST

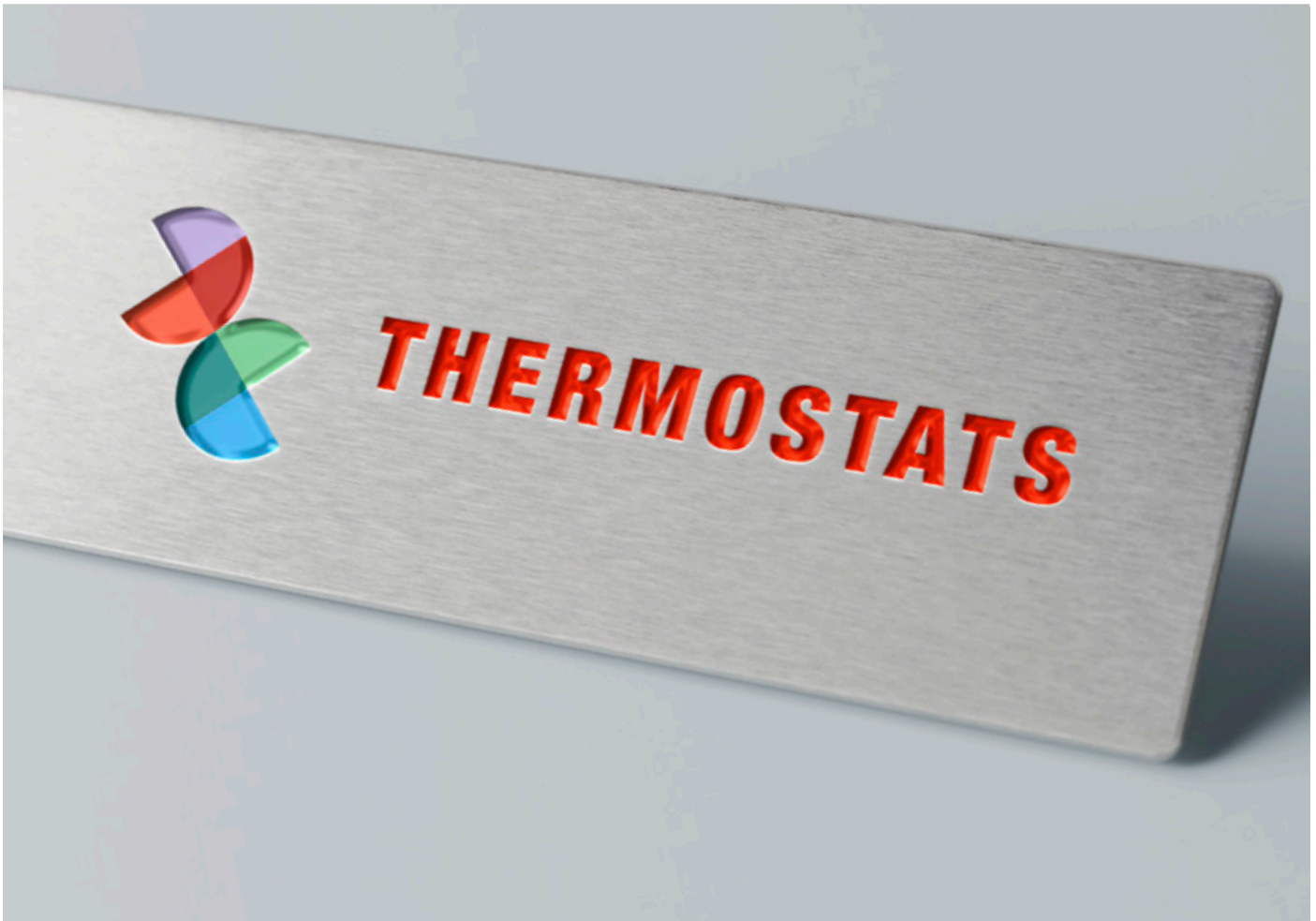
Shrink Sleeve termination set (x5)
for use in non-hazardous areas



The RT-RST kit is used for straight or T-splice connections on braided or over jacket self-regulating heating cables. The kit enables 5 connections and can be used for Hot-Cold and Hot-Hot connections.

- 5 heat shrink tubes, Ø 20mm, 200mm long
- 5 heat shrink tubes, Ø 16mm, 60mm long
- 10 insulated barrel connectors
- 5 un-insulated barrel connectors, Ø 4mm
- Min. installation temperature : -18°C
- Max. exposure temperature : 110°C





DTAM-HGE

Mechanical bimetal thermostat for frost protection applications in non-hazardous areas



The DTAM-HGE is usually used for ambient temperature controlling.

It switches heating circuits directly up to 16A or alternatively with load contactors.

The thermostat is installed in a polycarbonate enclosure with 1 M20 cable gland.

- Compact design
- High switching capacity
- Protection class IP55
- Polycarbonate enclosure

- Rated Voltage: **230 V**
- Switching Pin: **1 NC**
16 A / 230 V
- Switching Points: **4°C On / 13°C Off**
- Switching Tolerance: **± 3 K**
- Cable Gland: **1 x M20**
- Protection Class: **IP55**
- Dimensions (LxWxH in mm): **125 x 125 x 75**
- Material Enclosure: **Polycarbonate**
- Pre-Pressed Holes: **4 x M16/ M25 + 6 x M12/M20**

TABI040

Mechanical ambient thermostat for frost protection applications in non-hazardous areas



The thermostat TABI040 is usually used for ambient temperature controlling.

It switches heating circuits directly up to 16A or alternatively with load contactors.

The thermostat is installed in a polycarbonate enclosure with 1 M20 cable gland.

- Compact design
- High switching capacity
- Protection class IP65
- Polycarbonate enclosure
- External sensor protected in Stainless Steel tube

- Rated Voltage: **230 V / 16 A**
- Temperature regulation range: **0°C On / 40°C Off**
- Cable Gland: **1 x M20**
- Dimensions (LxWxH in mm): **125 x 125 x 75**

- Material Enclosure: **Polycarbonate**
- Protection Class: **IP65**
- Pre-Pressed Holes: **4 x M16/M25 + 6 x M12/M20**

TADIO40

Mechanical ambient thermostat for frost protection applications in non-hazardous areas



The thermostat TADIO40 is usually used for ambient temperature controlling.

It switches heating circuits directly up to 16A or alternatively with load contactors.

The thermostat is installed in a rugged glass fiber reinforced polyester enclosure with 1 M20 cable gland.

- Compact design
- High switching capacity
- Protection class IP65
- Rugged polyester enclosure
- External sensor protected in Stainless Steel tube

- Rated Voltage: **230 V / 16 A**
- Temperature regulation range: **0°C On / 40°C Off**
- Cable Gland: **1 x M20**
- Dimensions (LxWxH in mm): **120 x 122 x 91**

- Material Enclosure: **Glass fiber Reinforced Polyester**
- Protection Class: **IP65**
- Pre-Pressed Hole: **1 x M25 tapped hole with blinder**
- Reduction: **M25 > M20**

MATC

Mechanical bimetal mini-thermostat for frost protection or temperature maintenance applications in non-hazardous areas



This Mini-Thermostat is used to monitor the ambient temperature of heating systems as well as for the control of internal temperatures inside protective transmitter boxes or control and switchgear cabinets.

The switching contact is moulded in a M20x1,5 cable gland. Due to the compact design it is suitable for many applications. It is complete with a nylon locknut for securing in clearance hole.

The MATC thermostat is available with different lead lengths.

- Rated Voltage: **max. 250 V AC**
- Rated Current: **max. 16 A AC**
- Switching Contacts: **1 x NC**
- Switching Points: **4 °C on / 11 °C Off**
- Switching Tolerance: **+/- 3K**
- Cable Gland: **M20 x 1,5**
- Material: **PVDF**
- Dimensions: **L30 mm x Ø22 mm**
- Connection Leads: **2 x 1,5 mm²**
- Material: **Radox 125**
- Length: **400 mm / 1000 mm**
- Protection Class: **IP66/68**
- Ambient Temperature: **-50 to +125 °C**
- Weight: **50 g**

- Robust and compact design
- 16 A / 230 V AC switching capacity
- Protection class IP66/68
- Narrow switching hysteresis
- Various temperature ranges available
- Customized lead length available

ALTERNATIVE PRODUCTS

- MATC411JBP** ... with 80x80 52mm enclosure
- MATC411-400.Ex** ... Ex Mini-Thermostat
- MTC...** control thermostat (adjustable)
- MTC...Ex** Ex control thermostat (adjustable)
- ETC-200800** Electronic temperature controller (see datasheet)

ORDERING INFORMATION

MATC411-400

Mini-Thermostat 4/11°C On/Off with 400mm connection leads

Further temperature ranges and lead lengths available upon request.

MATC411-1000

Mini-Thermostat 4/11°C On/Off with 1000mm connection leads

MATC411JBP

Mechanical Controller non-Ex bimetal mini-thermostat frost protection



Mechanical mini-thermostat in enclosure for frost protection applications for use in non-hazardous area.

The Mini-Thermostat MATC411JBP will usually be used for ambient temperature controlling.

The MATC411 switches heating circuits directly up to 16A or alternatively with load contactors.

The thermostat is installed in a stable polycarbonate enclosure. The enclosure is fitted with two M20 cable glands for supply and heating cable.

Other temperature ranges are available on request.

- Supply Voltage: **250 V AC**
- Switching Contact: **1 NC 16 A / 250 V AC**
- Switching Points: **4°C On / 11°C Off**
- Hysteresis: **+/- 3K**
- Cable Glands: **2 x M20**
- Dimensions (LxWxH in mm): **80 x 80 x 52**
- Material Enclosure: **Polycarbonate**
- Protection Class: **IP65**
- Ambient Temperature: **-35 to +70°C**

- Compact design
- High switching capacity
- Protection class IP65
- Stable polycarbonate enclosure
- Different temperature ranges available

ORDERING INFORMATION

MATC411JBP

Mini-Thermostat for frost protection, installed in enclosure.

ALTERNATIVE PRODUCTS

MATC411-400 : MATC411 mini-thermostat in M20 cable gland with 400mm connection wires.

MATC411JBP/L

Mechanical Controller non-Ex bimetal mini-thermostat frost protection
- Large enclosure



Mechanical mini-thermostat in glass fiber reinforced polyester enclosure for frost protection applications in non-hazardous area.

The Mini-Thermostat MATC411JBP/L is usually used for ambient temperature controlling. It switches heating circuits directly up to 16A or alternatively with load contactors.

The thermostat is installed in a rugged glass fiber reinforced polyester enclosure with two M20 cable glands for supply and heating cable.

Other temperature ranges are available on request.

- Rated Voltage: **250 V AC**
- Switching Pin: **1 NC**
- **16 A / 250 V AC**
- Switching Points: **4°C On / 11°C Off**
- Switching Tolerance: **+/- 3K**
- Cable Gland: **M20 x 2**
- Protection Class: **IP66**
- Dimensions (LxWxH in mm): **110 x 75 x 55**
- Material Enclosure: **Glass fiber reinforced polyester**

- Robust and compact design
- High switching capacity
- Protection class IP66
- Various temperature ranges available

ORDERING INFORMATION

MATC411JBP/L

Mini-Thermostat for frost protection application, installed in polyester enclosure.

ALTERNATIVE PRODUCTS

MATC411-400 : mini-thermostat without enclosure, molded in M20 cable glands with 400mm connection wires.

FURTHER INFORMATION

Please consult the installation instructions !

MATC411-400.Ex

Mechanical bimetal mini-thermostat for frost protection use in hazardous areas (ATEX)



The MATC411-400.Ex is a mechanical bimetal thermostat. Because of the compact design and the high switching capacity it is well suited for frost protection and temperature maintenance applications with heating tapes as well as heating plates.

The thermostat is molded in a M20x1,5 cable gland and can be fitted in a junction box with ignition protection class Ex e.

Other temperature ranges are available on request.

- Rated Voltage: **250 V AC**
- Switching Contact: **1 NC 16 A / 250 V AC**
- Switching Points: **4°C On / 11°C Off**
- Switching Tolerance: **+/- 3 K**
- Protection Class: **IP68**
- Supply Cable: **400mm 3G1.5mm²**
- Cable Glands : **1 x M20**
- Temperature Class : **-60°C to +40°C T6**
-60°C to +55°C T5
-60°C to +90°C T4
-60°C to +110°C T4

- Compact design
- High switching capacity
- Protection class IP68
- Narrow switching hysteresis
- Different temperature ranges available

ORDERING INFORMATION

MATC411-400_pEx

Plastic Ex-mini-thermostat for frost protection applications.

MATC411-400_mEx

Metal Ex-mini-thermostat for frost protection applications.

Please consult the installation instructions.



MARKING

- Ⓜ II 2G Ex eb IIC T4 Gb
- Ⓜ II 2D Ex tb IIIC T100°C Db IP68

MATC411JBP/...Ex

Mechanical bimetal thermostat for frost protection use in hazardous areas (ATEX)



The MATC411JBP/Ex features a bimetallic, compact design, combined with a high switching capacity, appropriate for frost protection applications with heating tape or heating plates.

The thermostat is molded in an M20 thread and housed in a glass fiber reinforced polyester enclosure. This prewired case allows connection of up to two heating circuits.

To connect heating cables directly to the thermostat you need the gland from the corresponding heating cable connection kit.

- Compact design
- For up to 2 heating circuits
- 16 A switching capacity
- Narrow switching hysteresis
- Protection class: IP68

- Rated Voltage: **250 V AC**
- Switching Capacity: **16 A / 230 V**
- Switching Points: **4 °C On / 11 °C Off**
- Switching Hysteresis: **+/- 3 K**
- Min. Ambient temperature: **-55 °C**
- Max. Ambient Temperature: **+40 °C (T6) / +50 °C (T5)**
- Protection class: **IP68**
- Dimensions L x W x H (in mm): **122 x 122 x 90**
- Cable Glands : **2 x M20, 1 x M25**

MARKING
 II 2G Ex mb IIC T4 Gb
 II 2D Ex tb IIIC T100°C Db IP68

ORDERING INFORMATION

MATC411JBP/pEx

Ex-mini-thermostat molded in plastic gland - housed in GPR enclosure, for frost protection applications.

MATC411JBP/mEx

Ex-mini-thermostat molded in metal gland - housed in GPR enclosure, for frost protection applications.

Please consult the installation instructions.

TAM050EXJ

Mechanical Ambient Termostat Ex



The black glass fiber enhanced polyester enclosure is very rugged and is used as a connector for single core heating cables as well as self-limiting heating cables.

This controller can handle a switching capacity of 16A directly. When exceeding the adjusted temperature, the controller switches off.

- Ambient Ex thermostat
- 16 A / 230 V switching capacity
- Temperature range : 0 to +50°C
- Protection class: IP65

- Min. Ambient Temp.: **-40 to +40 °C T6 (+70 °C T4) (+50 °C T4 at 25 A)**
- Switching Capacity: **16 A / 230 V**
- Material: **Glass Fiber Reinforced Polyester**
- Switching Difference (%) of Full Scale Value approx.: **2,5%**
- Capillary Diameter: **56 mm**

MARKING
 II 2G, IIC T6

CABI... Mechanical capillary temperature controller for use in non-hazardous areas



The Temperature Controller devices of the CABI-Series are mechanical 2-point capillary temperature controllers.

The grey polycarbonate enclosure is very rugged and is used as a connector for single core heating cables as well as self-limiting heating cables for building application.

This controller can handle a switching capacity of 16A directly.

When exceeding the adjusted temperature, the controller switches off.

- Compact design
- 16 A / 230 V switching capacity
- Protection class: IP55
- Cross section: 4/6 mm²

- Min. Ambient Temp.: -55 °C
- Switching Capacity: 16 A / 230 V
- Material: Polycarbonate
- Protection Class: IP55
- Capillary Tube Length: 1000mm
- Dimensions (LxWxH in mm): 125 x 125 x 75
- Cable Glands M20/PG9: 1/1
- Clamping Zone M20 (mm): 7-13
- Pre-Pressed Holes: 4 x M16/M25 + 6 x M12/M20

ORDERING INFORMATION

CABI040

Temperature range : 0°C...+ 40°C
 Max. Sensor Temp. (°C) : 45
 Capillary Ø (mm) : 8
 Switching Difference : 3%

CABI090

Temperature range : 0°C...+ 90°C
 Max. Sensor Temp. (°C) : 145
 Capillary Ø (mm) : 6
 Switching Difference : 5%

CABI300

Temperature range : 0°C...+ 300°C
 Max. Sensor Temp. (°C) : 350
 Capillary Ø (mm) : 3
 Switching Difference : 7%

CADI... Mechanical capillary temperature controller for use in non hazardous areas



The Temperature Controller devices of the CADI-Series are mechanical 2-point capillary temperature controllers.

The black glass fiber enhanced polyester enclosure is very rugged and is used as a connector for single core heating cables as well as self-limiting heating cables for industrial application.

This controller can handle a switching capacity of 16A directly. When exceeding the adjusted temperature, the controller switches off.

- Compact design
- 16A/230V switching capacity
- Protection class IP65
- Cross section 4/6mm²

- Min. Ambient Temp.: -55 °C
- Switching Capacity: 16 A / 230 V
- Material: Glass fiber enhanced polyester
- Protection Class: IP65
- Capillary Tube Length: 1000 mm
- Dimensions (LxWxH in mm): 120 x 122 x 91
- Cable Glands M20/PG9/M25blind: 1/1/1
- Clamping Zone M20 (mm): 7-13
- Reduction: M25 > M20

ORDERING INFORMATION

CADI040

Temperature range : 0°C...+ 40°C
 Max. Sensor Temp. (°C) : 45
 Capillary Ø (mm) : 8
 Switching Difference : 3%

CADI090

Temperature range : 0°C...+ 90°C
 Max. Sensor Temp. (°C) : 145
 Capillary Ø (mm) : 6
 Switching Difference : 5%

CADI300

Temperature range : 50°C...+ 300°C
 Max. Sensor Temp. (°C) : 350
 Capillary Ø (mm) : 3
 Switching Difference : 7%

MTC...Ex

Mechanical capillary temperature controller for use in hazardous areas



The Ex-Temperature Controller devices of the MTC-Series are mechanical 2-point capillary temperature controllers.

The black glass fiber enhanced polyester enclosure is very rugged and is used as a connector for single core heating cables as well as self-limiting heating cables.

This controller can handle a switching capacity of 16A directly.

When exceeding the adjusted temperature, the controller switches off.

- Min. Ambient Temp. : -55°C
- Switching Capacity : 16A/230V (16A/400V and 25A/230V upon request)
- Material : Glass Fiber Reinforced Polyester
- Protection Class : IP66
- Temperature Class : T6 at +50°C
- Dimensions : 122 x 120 x 90
- Capillary Tube Length : 1000mm
- Cable glands : 1 x M20, 1 x M25
- Clamping zone M20/M25 : 6-13/7-17 mm

- Compact design
- 16A/230V switching capacity
- Cross section 4/6mm²
- Resistant against chemical influences

MARKING
 II 2G Ex ed IIC T6
 II 2D Ex tb IIIC T80°C IP66

ORDERING INFORMATION

MTC-2050Ex

Temperature range : -20°C...+50°C
 Max. Sensor Temp. (°C): 80
 Capillary Ø (mm) : 6

MTC0120Ex

Temperature range : 0°C...+120°C
 Max. Sensor Temp. (°C): 145
 Capillary Ø (mm) : 4

MTC0190Ex

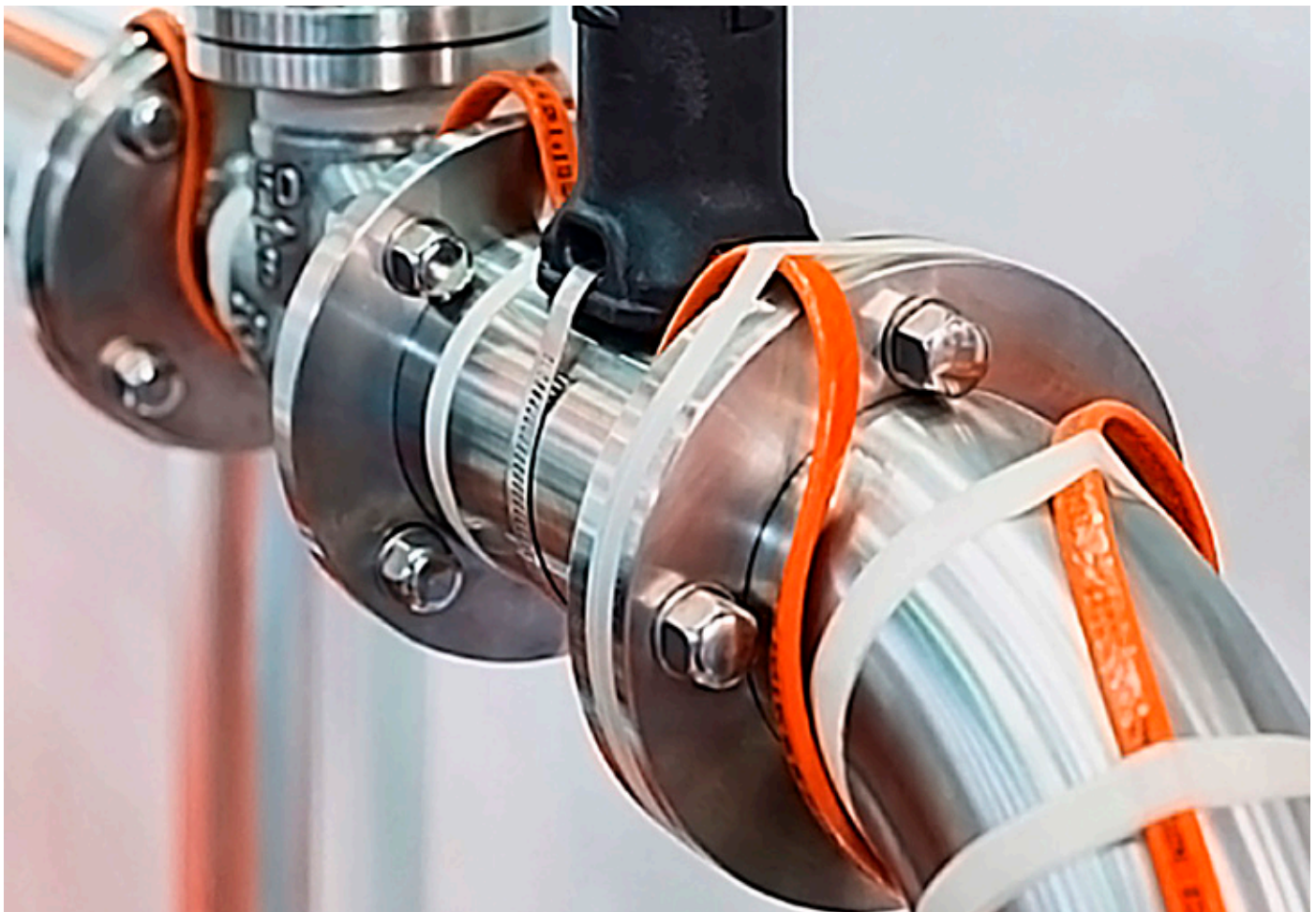
Temperature range : 0°C...+190°C
 Max. Sensor Temp. (°C): 220
 Capillary Ø (mm) : 4

MTC60300Ex

Temperature range : +60°C...+300°C
 Max. Sensor Temp. (°C): 345
 Capillary Ø (mm) : 6

MTC140500Ex

Temperature range : +140°C...+500°C
 Max. Sensor Temp. (°C): 530
 Capillary Ø (mm) : 6



MTL...Ex

Mechanical fail-save temperature protection limiter for use in hazardous areas



- Min. Ambient Temperature : **-55°C**
- Switching Capacity : **16A** (16A/400V and 25A/230V upon request)
- Material : **Glass Fiber Reinforced Polyester**
- Temperature Class : **T6 at +50°C**
- Dimensions : **122 x 120 x 90**
- Capillary Tube Length : **1000mm**
- Capillary Ø : **4mm**
- Cable glands : **1 x M20, 1 x M25**
- Clamping zone M20/M25 : **6-13/7-17 mm**
- Protection Class : **IP66**

Ex MARKING
 II 2G Ex ed IIC T6
 II 2D Ex tb IIIC T80°C IP66

The Ex fail-save temperature protection limiter devices of the MTL-series are mechanical 2-point capillary temperature protection limiters.

The black glass fiber reinforced polyester enclosure is very rugged and serves as a connector for single core heating cables as well as self-limiting heating cables. The limiter can handle a switching capacity of 16A directly.

When exceeding the set temperature, the limiter switches off. The restart lockout gives additional safety, a manual reset is needed.

- Compact design
- Resistant to chemicals
- 16A/230V switching capacity
- Sensor Ø 4/6mm
- cross section 4/6mm²

ORDERING INFORMATION

MTL70190Ex	MTL130190Ex	MTL140500Ex
Temperature range : +70°C...+190°C	Temperature range : +130°C...+190°C	Temperature range : +140°C...+500°C
Max. Sensor Temp. (°C): 225	Max. Sensor Temp. (°C): 215	Max. Sensor Temp. (°C): 525

MTCL...Ex

Combination of capillary temperature controller and limiter for use in hazardous areas



- Min. Ambient Temp.: **-55°C**
- Switching Capacity: **16 A / 230 V** (16 A / 400 V and 25 A / 230 V upon request)
- Material: **Glass Fiber Reinforced Polyester**
- Protection Class: **IP66**
- Temperature Class: **T6 at +50°C**
- Dimensions: **220 x 120 x 90 mm**
- Cable glands: **2 x M20, 1 x M25**
- Clamping zone M20/M25: **6-13 / 7-17**
- Cross section: **4/6 mm²**
- Capillary Tube Length: **1000 mm**

The Ex-Controller/Limiter devices of the MTCL are a combination of mechanical 2-point capillary temperature controller /limiter.

The black glass fiber enhanced polyester enclosure is very rugged and is used as a connector for single core heating cables as well as self-limiting heating cables.

The combination of controller and limiter allows an easy and space-saving application for electrical trace heating in hazardous areas. The sensors with 4mm outer diameter are particularly suitable for mounting on pipelines or containers.

- Compact design
- 16A/230V switching capacity
- Cross section 4/6mm²
- Sensor Ø 4/6mm
- Resistant against chemical influences

Ex MARKING
 II 2G Ex ed IIC T6
 II 2D Ex tb IIIC T80°C IP66

ORDERING INFORMATION

MTCL-2050/70190Ex

Controller : -20..50°C
 Limiter : 70..190°C
 Max. Sensor Temperature (°C) : 80/220
 Capillary Diameter (mm) : 6/4

MTCL0120/130190Ex

Controller : 0..120°C
 Limiter : 130..190°C
 Max. Sensor Temperature (°C) : 145/220
 Capillary Diameter (mm) : 4/4

MTCL0190/130190Ex

Controller : 0..190°C
 Limiter : 130..190°C
 Max. Sensor Temperature (°C) : 220/220
 Capillary Diameter (mm) : 4/4

MTCL0120/70190Ex

Controller : 0..120°C
 Limiter : 70..190°C
 Max. Sensor Temperature (°C) : 145/220
 Capillary Diameter (mm) : 4/4

MTCL0190/70190Ex

Controller : 0..190°C
 Limiter : 70..190°C
 Max. Sensor Temperature (°C) : 220/220
 Capillary Diameter (mm) : 4/4

MTCL60300/150300Ex

Controller : 60..300°C
 Limiter : 150..300°C
 Max. Sensor Temperature (°C) : 345/345
 Capillary Diameter (mm) : 6/6

MTC...Ex/L

Mechanical capillary temperature controller for use in hazardous areas - Large enclosure



- Min. Ambient Temp.: -55 °C
- Switching Capacity: **25 A/ 230 V**
- Material: **Glass Fiber Reinforced Polyester**
- Temperature Class: **T6 at +50 °C**
- Dimensions: **160 x 160 x 90 mm**
- Cable glands: **1 x M20, 1 x M25**
- Clamping zone M20/M25: **6-13 / 7-17**
- Cross section: **10 mm²**
- Capillary Tube Length: **1000 mm**
- Protection Class: **IP66**

MARKING
 II 2G Ex ed IIC T6
 II 2D Ex tb IIIC T80°C IP66

The Ex-Temperature Controller devices of the MTC...Ex Series are mechanical 2-point capillary temperature controllers.

The black glass fiber enhanced polyester enclosure is very rugged and is used as a connector for single core heating cables as well as self-limiting heating cables.

This controller can handle a switching capacity of 25A directly.

When exceeding the adjusted temperature, the controller switches off.

- Compact design
- 25A/230V switching capacity
- Cross section 10mm²
- Sensor Ø 4/6mm
- Resistant against chemical influences

ORDERING INFORMATION

MTC-2050Ex/L

Temp. range -20°C...+50°C
 Max. Sensor Temp. (°C) : 80
 Capillary Ø (mm) : 6

MTC0120Ex/L

Temp. range 0°C...+120°C
 Max. Sensor Temp. (°C) : 145
 Capillary Ø (mm) : 4

MTC0190Ex/L

Temp. range 0°C...+190°C
 Max. Sensor Temp. (°C) : 220
 Capillary Ø (mm) : 4

MTC60300Ex/L

Temp. range +60°C...+300°
 Max. Sensor Temp. (°C) : 345
 Capillary Ø (mm) : 6

MTC140500Ex/L

Temp. range +140°C...+500°
 Max. Sensor Temp. (°C) : 530
 Capillary Ø (mm) : 6

MTL...Ex/L

Mechanical fail-save protection temperature limiter for use in hazardous areas - Large enclosure



- Min. Ambient Temp. : -55°C
- Switching Capacity : **25A/230V**
- Material : **Glass Fiber Reinforced Polyester**
- Temperature Class : **T6 at +50°C**
- Dimensions : **160 x 160 x 90**
- Cable glands : **1 x M20, 1 x M25**
- Clamping zone M20/M25 : **6-13/7-17**
- Cross section : **10 mm²**
- Capillary Tube Length : **1000mm**
- Protection Class : **IP66**

MARKING
 II 2G Ex ed IIC T6
 II 2D Ex tb IIIC T80°C IP66

The Ex-fail-save protection temperature limiter devices of the MTL-series are mechanical 2-point capillary temperature protection limiters.

The black glass fiber reinforced polyester enclosure is very rugged and serves as a connector for single core heating cables. The limiter can handle a switching capacity of 25A directly.

When exceeding the set temperature, the limiter switches off. The restart lockout gives additional safety, a manual reset is needed.

- Compact design
- 25A/230V switching capacity
- Cross section 10mm²
- Sensor Ø 4/6mm
- Resistant to chemicals

ORDERING INFORMATION

MTL70190Ex/L

Temp. range : +70°C..+190°C
 Max. Sensor Temp. (°C) : 220
 Capillary Ø (mm) : 4

MTL130190Ex/L

Temp. range : +130°C..+190°C
 Max. Sensor Temp. (°C) : 220
 Capillary Ø (mm) : 4

MTL60300Ex/L

Temp. range : +60°C..+300°C
 Max. Sensor Temp. (°C) : 345
 Capillary Ø (mm) : 6

MTL140500Ex/L

Temp. range : +140°C..+500°C
 Max. Sensor Temp. (°C) : 530
 Capillary Ø (mm) : 6

MTCL...Ex/L

Combination of capillary temperature controller and limiter for use in hazardous areas
- Large enclosure



- Min. Ambient Temp.: -55 °C
- Switching Capacity: **25 A / 230 V**
- Material : **GFRP**
- Temperature Class: **T6 at +50 °C**
- Dimensions: **260 x 160 x 90 mm**
- Cable glands: **2 x M20, 1 x M32**
- Clamping zone M20/M32: **7-12 / 16-21**
- Capillary Tube Length: **1000 / 1000 mm**

Ex MARKING II 2G Ex ed IIC T6
 II 2D Ex tb IIIC T80°C IP66

The Ex-Controller/Limiter devices of the MTCL-Series are a combination of mechanical 2-point capillary temperature controller/limiter.

The black glass fiber enhanced polyester enclosure is very rugged and is used as a connector for single core heating cables as well as self-limiting heating cables.

The combination of controller and limiter allows an easy and space-saving application for electrical trace heating in hazardous areas.

The sensors with 4mm outer diameter are particularly suitable for mounting on pipelines or containers.

- Compact design
- 25 A / 230V switching capacity
- Cross section: 10 mm²
- Sensor: Ø 4/6 mm
- Resistant against chemical influences
- Protection class: IP66

ORDERING INFORMATION

MTCL-2050/70190Ex/L

Controller: -20 to 50 °C / Limiter: 70 to 190 °C
Max. Sensor Temp. (°C): 80 / 220
Capillary Ø (mm): 6 / 4

MTCL0120/70190Ex/L

Controller: 0 to 120°C / Limiter: 70 to 190°C
Max. Sensor Temp. (°C): 145 / 220
Capillary Ø (mm): 4 / 4

MTCL0120/130190Ex/L

Controller: 0 to 120°C / Limiter: 130 to 190°C
Max. Sensor Temp. (°C): 145 / 220
Capillary Ø (mm): 4 / 4

MTCL0190/70190Ex/L

Controller: 0 to 120°C / Limiter: 70 to 190°C
Max. Sensor Temp. (°C): 220 / 220
Capillary Ø (mm) : 4 / 4

MTCL0190/130190Ex/L

Controller: 0 to 190 °C / Limiter: 130 to 190 °C
Max. Sensor Temp. (°C) : 220/220
Capillary Ø (mm) : 4 / 4

MTCL60300/150300Ex/L

Controller : 60to 300°C / Limiter: 150 to 300°C
Max. Sensor Temp. (°C): 345 / 345
Capillary Ø (mm): 6 / 6

MTCSS...Ex

Fail-safe capillary temperature controller in SS316L enclosure for use in hazardous areas



- Permitted Ambient Temp.: -55 °C to +50 °C in T6
- Material: **Stainless steel 316L**
- Protection Class: **IP66**
- Dimensions (LxWxH in mm): **200 x 200 x 120**
- Rated Voltage: **230V AC (400V upon request)**
- Rated Current (cos φ = 1): **25 A**
- Max. Permitted Sensor Temp : **+15% of full scale or +25 K max**
- Capillary Length: **1000 mm (3000mm upon request)**
- Cable Glands : **1x M25 Ni-plated brass / 1x M20 blind plug**
- Terminal Cross Section: **0.5 - 6 mm² (single or fine wired)**
- Weight : **ca. 3.5 kg**

Ex MARKING II 2G Ex ed IIC T6
 II 2D Ex tb IIIC T80°C IP65

The MTCSS...Ex-Series of fail-safe capillary temperature devices consist of capillary type temperature thermostats with mechanical change-over contacts in a robust and rugged stainless steel enclosure.

This robust enclosure is used in applications for controlling and connecting self-limiting heating tapes and heating cables in hazardous areas.

These stainless steel enclosures are approved to ATEX/IECEx and NEMA 4X and have proven themselves extremely well under harsh conditions and for food & hygienic areas.

Aggressive chemicals or severe mechanical impacts cannot harm or even damage these rugged & robust enclosures.

- Compact design
- 25 A / 230 V AC switching capacity
- Robust and rugged design
- Sensor: Ø 4 / 6 mm
- Highly resistant to aggressive chemicals
- Huge temperature range of -20 to +500 °C

ORDERING INFORMATION

MTCSS-2050Ex

Temp. range : -20...50°C
Sensor Ø (mm) : 6

MTCSS0120Ex

Temp. range : 0...120°C
Sensor Ø (mm) : 4

MTCSS0190Ex

Temp. range : 0...190°C
Sensor Ø (mm) : 4

MTCSS60300Ex

Temp. range : 60...300°C
Sensor Ø (mm) : 6

MTCSS140500Ex

Temp. range : 140...500°C
Sensor Ø (mm) : 6

MTLSS...Ex

Fail-safe capillary temperature limiter in SS316L enclosure for use in hazardous areas



- Permitted Ambient Temp. : -55°C ... +50°C in T6
- Material : **Stainless steel 316L**
- Protection Class : **IP66**
- Dimensions (LxWxH in mm) : **200 x 200 x 120**
- Rated Voltage : **230V AC (400V upon request)**
- Rated Current (cos φ = 1) : **25A**
- Max. Permitted Sensor Temp. : **+15% of full scale or +25K max**
- Capillary Length : **1000mm (3000mm upon request)**
- Cable Glands : **1x M25 Ni-plated brass / 2x M20 blind plug**
- Terminal Cross Section : **0.5 - 6mm² (solid or stranded cable)**
- Switching Point Deviation : **+0/-7**

The MTLSS...Ex series of fail-safe capillary thermostat consist of capillary type temperature limiter with mechanical change-over contacts in a robust and rugged stainless steel enclosure.

This robust enclosure is used in applications for controlling and connecting constant wattage heating tapes and self-limiting heating cables in hazardous areas.

These stainless steel enclosures are approved according to ATEX, IECEx and NEMA4X and have proven themselves extremely well under harsh conditions and for food & hygienic areas.

Aggressive chemicals or severe mechanical impacts cannot harm or even damage these rugged & robust enclosures.

EX MARKING II 2G Ex ed IIC T6
II 2D Ex tb IIIC T80°C IP65

- Compact design
- 25A/230V AC switching capacity
- Robust & rugged design
- Sensor Ø 4/6mm
- Highly resistant to aggressive chemicals
- Wide temperature range : 0...+500°C

ORDERING INFORMATION

MTLSS130190Ex
Temp. range : 130...190°C
Sensor Ø (mm) : 4

MTLSS70190Ex
Temp. range : 70...190°C
Sensor Ø (mm) : 4

MTLSS60300Ex
Temp. range : 60...300°C
Sensor Ø (mm) : 6

MTLSS140500Ex
Temp. range : 140...500°C
Sensor Ø (mm) : 6

MTCLSS...Ex

Fail-safe capillary temperature controller-limiter combination in SS 316L for use in hazardous areas



- Permitted Ambient Temp. : -55°C to +50°C in T6
- Material: **Stainless steel 316L**
- Dimensions (LxWxH in mm): **300 x 200 x 120**
- Rated Voltage: **230 V AC (400 V upon request)**
- Rated Current (cos φ = 1): **25 A**
- Sensor: **Ø 4 mm / 6 mm**
- Capillary Length: **1000 mm (3000 mm upon request)**
- Cable Glands : **1x M25 Ni-plated brass / 2x M20 blind plug**
- Terminal Cross Section: **0.5 - 6 mm² (single or fine wired)**
- Weight : **ca. 6.0 kg**
- Controller deviation : **+7/-0%**
- Limiter deviation : **+0/-7%**

The MTCLSS...Ex series of fail-safe temperature devices consist of capillary type thermostats with mechanical change-over contacts in stainless steel enclosures.

The combination of limiter & thermostat allows simple and space-saving connections for electrical trace heating circuits. These stainless steel enclosures are approved to ATEX/ IECEx and NEMA 4X and have proven themselves extremely well under harsh environmental conditions and for food & hygiene areas.

These rugged & robust enclosures stand up well to aggressive chemicals and severe mechanical impacts.

- Compact design
- 25A/230V AC switching capacity
- Robust and rugged design
- Sensor Ø 4/6mm
- Highly resistant to aggressive chemicals
- Huge temperature range of 20...+500°C
- Protection class: IP66

ORDERING INFORMATION

MTCL SS ... / .. Ex

Fail-safe controller - limiter combination _____

Stainless Steel _____

Temp. Range controller (see code) _____

Temp. Range limiter (see code) _____

Ex version _____

EX MARKING II 2G Ex ed IIC T6
II 2D Ex tb IIIC T80°C IP65

AVAILABLE TEMPERATURE RANGES Controller and limiter :

- Code : -2050 = -20...+50°C (controller only)
- Code : 0120 = 0...+120°C (controller only)
- Code : 130190 = +130...+190°C (limiter only)
- Code : 0190 = 0...+190°C (controller only)
- Code : 70190 = +70...+190°C (limiter only)
- Code : 60300 = +60...+300°C (controller & limiter)
- Code : 140500 = +140...+500°C

IRM...Exd

Ex d mechanical temperature controller for use in hazardous areas



The IRM...Exd-Series temperature controllers are mechanical 2-point capillary tube line-sensing thermostats.

The epoxy painted die-cast aluminum enclosure is very robust for harsh environments and can be used for connection of heating circuits via power cable and with approved cable glands.

This temperature controller can be used for direct switching by the n/c contact up to 25A. The temperature set point is fully adjustable; the n/c contact opening on temperature rise.

Standard color is cream-white RAL 9010 but other color finishes are available upon request.

- Minimum Ambient Temp.: **-40°C**
- Material: **Stainless steel 316L**
- Protection Class: **IP66**
- Voltage Rating: **250 V AC**
- Switching cap.: (cos φ = 1) **25A**
- Capillary Tube Length: **1600mm**
- Enclosure Dimensions: **Overall Ø 110 / Ø 145 x 126 x 108 mm**
- Fixing crs : **Ø 7,0 x 126 mm**
- Blind Plugs: **2 x M20**
- Spring Clamp Terminal : **4 mm²**

- Robust design, IP66
- 25 A / 250 V switching capacity
- 4 mm² spring clamp terminals
- Stainless steel sensor bulb
- 1,6 m long capillary tube

Ex MARKING II 2G Ex db IIB T6
II 2D Ex db IIIB

ORDERING INFORMATION

IRM040Exd

Temp. range: 0 to +40 °C
Max. Sensor Temp : 45 °C
Sensor Bulb Dimensions: Ø 5,8 x 126 mm
Switching Difference: Ca. 3 K

IRM0200Exd

Temp. range: 0 to +200 °C
Max. Sensor Temp.: 230 °C
Sensor Bulb Dimensions: Ø 3,0 x 179 mm
Switching Difference : Ca. 5 K

IRM50320Exd

Temp. range: +50 to +320 °C
Max. Sensor Temp.: 350 °C
Sensor Bulb Dimensions: Ø 3,0 x 179 mm
Switching Difference: Ca. 7 K



ETC20+8A JBP

Electronic temperature controller for use in non-hazardous areas, pre-assembled in enclosure



The Controller is installed in a glass fiber enhanced polyester enclosure, completely wired to clamps. Through the window you can see Set- and Process-Value anytime.

The Controller is available as 2 point- or PID-Controller. Different sensor types can be used. The Controller supports all adjustment features that are required for electrical heat-tracing with easy operation.

Furthermore the two-line display allows to see the set- and actual value simultaneously.

- | | |
|---|--|
| - Multi-Voltage Input | - Compact design |
| - Output: 4-20mA (Process-Value) | - Supports various temperature ranges for 3-wire PT100 sensors |
| - Installed in robust enclosure with window | - 2-line display (Set- and Actual-Value) |

- Rating : **100-240V~ 10%**
- Switching-Capacity : **1 Change-Over; 20A/230V**
- **1 On-Contact: 8A/230V**
- Switching-Accuracy : **0.5% of scale range + 1 Digit at 25°C**
- Cable Glands : **3xM20, 1xM12**
- Operating-/StorageTemperature : **-5...+55°C**
- **-20...+85°C**
- Temperature Range : **-200...+800°C**
- Dimensions (LxWxH in mm) : **220 x 120 x 90**
- Wattage : **max. 4W**

ORDERING INFORMATION
ETC20+8A JBP
 Electronic controller 20+8A in Enclosure

FURTHER INFORMATION
 Please consult the operation instructions!





BJP003N

Polyester enclosure for use in non-hazardous areas



Polyester Junction Boxes to connect self-limiting-, single core- as well as mineral insulated heating cables.

These enclosures are available in several versions and useful for almost all kind of trace heating application.

This box can be used in extreme environmental conditions and resists exposure to mechanical stress.

- | | |
|--|---|
| <ul style="list-style-type: none"> • Temperature resistant • Antistatic • Corrosion- and UV-resistant | <ul style="list-style-type: none"> • Protection class: IP67 • Dimensions (L x W x H): 125 x 125 x 75 mm |
|--|---|

- The junction box is supplied with:
- 1 gland for power supply cable
- 10 inlets (4 x M25 + 6 x M20)
- 1 terminal set (6 x 4 mm² / 16 A)

JBP...

Glass fiber reinforced polyester enclosure for use in non-hazardous areas



Junction Boxes made of glass fiber reinforced polyester to connect self-limiting-, single core- and mineral insulated heating-cables or sensors.

These enclosures are available in several versions and useful for almost all kind of trace heating application.

This box can be used in extremely environmental conditions and also chemically aggressive environments and resists exposure to mechanical stress.

- | | |
|------------------------------------|-------------------------------|
| - Temperature resistant | - Antistatic |
| - Resistant to chemical influences | - Corrosion- and UV-resistant |
| | - Protection class: IP66 |

REFERENCE	DIMENSIONS [mm]	CROSS-SECTION	CABLE GLANDS	DESCRIPTION
JBP101	110 x 75 x 55	2,5 mm ²	2 x M20	Junction box mono phase 1 heating circuit
JBP102 PT100	110 x 75 x 55	2,5 mm ²	1 x M20 2 x M12	Junction box for up to 2 sensors
JBP103 (3)	122 x 120 x 90	6 mm ²	1 x M25 3 x M20	Junction box mono / tri phase (Y / Δ) 3 heating circuits
JBP106 (3)	260 x 160 x 90	6 mm ²	1 x M32 6 x M20	Junction box mono / tri phase (Y / Δ) 6 heating circuits

Customized versions available upon request

ADDITIONAL INFO

- JBP103 and JBP106 have 3 connection types available:
 1. mono phase
 2. tri phase (Y)
 3. tri phase (Δ)

JBP...Ex

Glass fiber reinforced polyester enclosure for use in hazardous areas



Ex-Junction Boxes made of glass fiber reinforced polyester to connect self-limiting-, serial resistance- and mineral insulated heating-cables.

This enclosure series is available in different versions and can be used for almost all trace heating application.

This box can be used in extremely environmental conditions, chemically aggressive environments and it resists exposure to mechanical stress.

- | | |
|------------------------------------|-------------------------------|
| - Temperature resistant | - Antistatic |
| - Resistant to chemical influences | - Corrosion- and UV-resistant |
| | - Protection class: IP65 |

REFERENCE	DIMENSIONS [mm]	CROSS-SECTION	CABLE GLANDS	DESCRIPTION
JBP101 Ex	110 x 75 x 55	2,5 mm ²	2 x M20	Junction box mono phase 1 heating circuit
JBP102 PT100 Ex	110 x 75 x 55	2,5 mm ²	1 x M20 2 x M12	Junction box for up to 2 sensors
JBP103 Ex (3)	122 x 120 x 90	6 mm ²	1 x M25 3 x M20	Junction box mono / tri phase (Y / Δ) 3 heating circuits
JBP106 Ex (3)	260 x 160 x 90	6 mm ²	1 x M32 6 x M20	Junction box mono / tri phase (Y / Δ) 6 heating circuits

Customized versions available upon request

ADDITIONAL INFO

- Min. ambient temperature : -55°C (-60°C upon request)
- Temperature class : T6 at +50°C / T5 at +55°C / T4 at +60°C
- JBP103 Ex and JBP106 Ex have 3 connection types available:
 1. mono phase
 2. tri phase (Y)
 3. tri phase (Δ)



MARKING

- Ⓜ I 2G Ex e IIC T6
- Ⓜ II 2D Ex tD A21 IP65 T80°C

JBP CON_... Ex

Termination and connection set for use in hazardous areas



The JBP CON_... Ex Connection and Termination set consists of a direct entry sealed termination unit, a Junction Box and all necessary accessories.

With this assembly no mounting plate or mounting angle is needed.

- For heating cables up to 150 / 200 °C
- For 1 or 2 heating circuits
- No damage by sheat metal insulation
- No mounting plate necessary with mounting foot
- No mounting angle necessary

- Dimensions: (L x H x W)
Enclosure: 122 x 120 x 90 mm
Foot mount: 115 x 110 x 42 mm
- Protection Class: IP66
- Max. Temperature:

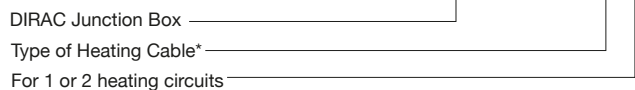
Enclosure: **Non-Ex:** -55 °C to +80 °C, T6: -55 °C to +50 °C, T5: -55°C to +55°C, T4: -55 °C to +60 °C
Foot mount: **Non-Ex:** 180°C

MARKING
Ex II 2 GD T6

ADDITIONAL INFO
Mounting foot also separately available : JBP FOOT_01

ORDERING INFORMATION

JBP CON _ XY Ex



DIRAC Junction Box _____

Type of Heating Cable* _____

For 1 or 2 heating circuits _____

* TYPE OF HEATING CABLE

- S** : Small heating cables - DLR, DLT, DMT, DHT, DUT
- W** : Wide heating cables - DMT15

JBP 10 1LED...Ex

End of circuit LED lamps in polyester enclosure for use in hazardous areas



Ex-End of circuit lamp made of glass fiber reinforced polyester to connect self-limiting heating-cables.

The EOL lamps are used for visual operation indicators for electrical heat-tracing systems.

This box can be used in extreme environmental conditions, chemically aggressive environments and it resists exposure to mechanical stress.

- Temperature resistant
- Direct heating tape connection
- Corrosion- and UV-resistant
- Installation on pipe with mounting foot

- Dimensions: (L x H x W)
Enclosure: 122 x 120 x 90 mm
Foot mount: 115 x 110 x 42 mm
• Length End Seal: ca. 60 mm
- Ambient Temp.: min. -40 °C
- Tem. Class: T6 at +50°C
- Protection Class: IP66

MARKING
Ex II 2G Ex ed IIC T6 Gb
Ex II 2D Ex tb IIIC T80°C IP66

ALTERNATIVE PRODUCTS

ETK4P-E : Silicon termination set

ORDERING INFORMATION

JBP101LED G Ex

EOL-Lamp with green LED,
1 x M20

JBP101LED R Ex

EOL-Lamp with red LED,
1 x M20

JBP101LED/F G Ex

EOL-Lamp with green LED,
1 x M20, with JBP FOOT_01
mounting unit

JBP101LED/F R Ex

EOL-Lamp with red LED,
1 x M20, with JBP FOOT_01
mounting unit

EOLT LED G

End Of Line Tower - End seal kit with voltage indicator



The EOLT LED is an end seal kit with an integrated light that indicates voltage at the end of the circuit. Designed specifically for use with DIRAC Industries heating cable, the kit allows easy re-entry for maintenance, providing access to the heating cable without needing to remove the end seal itself.

Built to withstand harsh conditions, the kit can be installed in temperatures as low as -40°F (-40°C). For optimal handling, store above freezing until just before installation.

The high-visibility green LED provides clear and reliable status indication. Rated for 85 to 265 V, the kit requires that the LED voltage rating matches the heat-tracing circuit for proper operation.

- Voltage: 85 - 265 V
- Built-in voltage indicator light (green LED)
- Easy installation on pipe
- Smooth re-entry of heating cable for maintenance
- Installation temperatures: as low as -40°F (-40°C)
- Protection class: IP65

APPROVALS

- Class I - Div. 2 - Groups A/B/C/D
- Class II - Div. 2 - Groups E/F/G
- Class III
- Type 4X - IP65

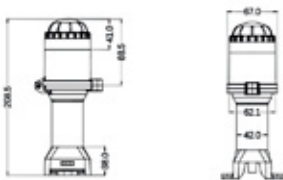


Figure 1: Dimensional drawing

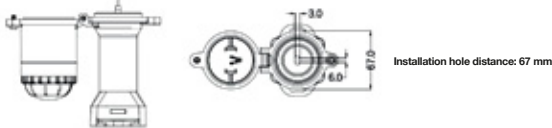


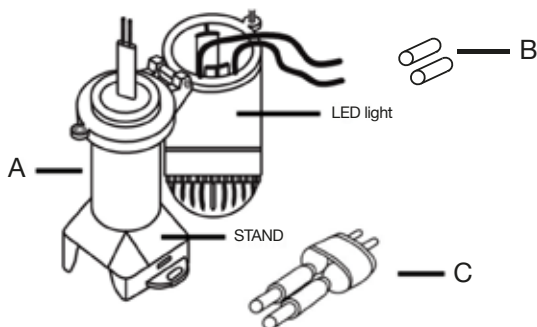
Figure 2: Installation diagram

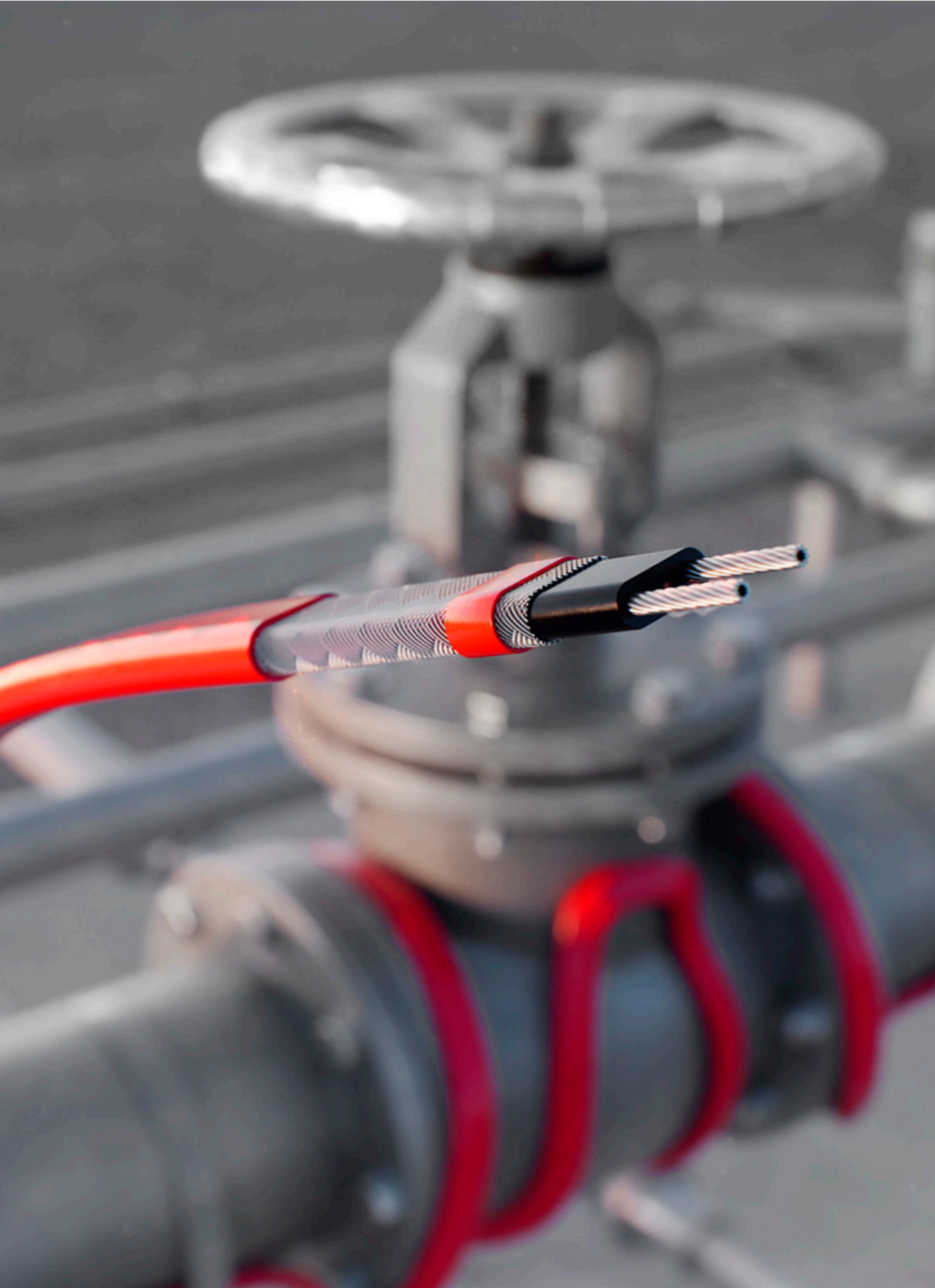
Units: [mm]

ADDITIONAL MATERIALS REQUIRED

- Pipe strap
- Electrical tracing warning sticker

ITEM	QUANTITY	DESCRIPTION
A	1 piece	End seal stand and light assembly
B	2 pieces	Insulated parallel crimps
C	1 piece	Core sealer



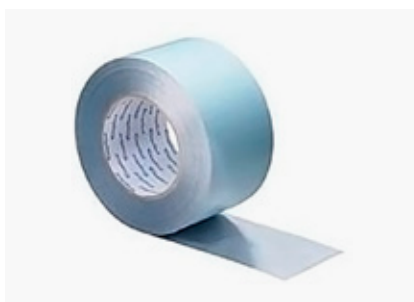




ADHESIVE TAPES

Adhesive tapes for fixing heating cables and for a better heat transfer.

Aluminium tape



AT03

- Length: 50 m
- Width: 50 mm
- Temp. resistant: up to 120 °C
- Thickness: 50 µm

AT03C

- Length: 50 m
- Width: 50 mm
- Temp. resistant: up to 160 °C
- Thickness: 30 µm

AT03D

- Length: 50 m
- Width: 50 mm
- Temp. resistant: up to 300 °C
- Thickness: 50 µm

Polyester tape



FT05

- Length: 50 m
- Width: 25 mm
- Temp. resistant: up to 60 °C
- Thickness: 110 µm

Glass fiber tape

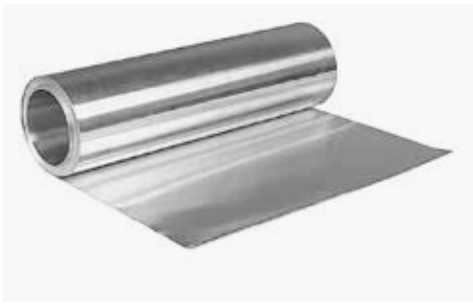


FT03B

- Length: 50 m
- Width: 12 mm
- Temp. resistant: up to 155 °C
- Thickness: 180 µm

ALU FOIL

Adhesive and non-adhesive foils to cover installed heating cable for a better heat transfer.



REFERENCE	LENGTH	WIDTH	TEMP. RESISTANT	THICKNESS	ROLL	ADHESIVE
ALUFOIL	50 m	0,5 m	up to 140 °C	50 µm	25 m ²	Self adhesive
ALU TAPE 50 x 0,5 HT	50 m	0,5 m	up to 300 °C	50 µm	25 m ²	Self adhesive
ALU TAPE 50 x 0,5 HT_2	50 m	0,5 m	up to 300 °C	60 µm	25 m ²	Self adhesive
ALU TAPE 70 x 0,68 HT	70 m	0,68 m	up to 300 °C	60 µm	47,6 m ²	Self adhesive
ALUFOIL NA	50 m	0,5 m	up to 300 °C	40 µm	25 m ²	Non adhesive

IEK1

Insulation Entry Kit



Insulation Entry Kit for supply cable, heating cable or sensor cable protection.

- For higher temperatures, cable gland from the connection kit has to be taken

- Mounting plate
- M20 x 1,5 cable gland incl. counter nut, round gasket
- Reduction inlet (**clamping zone : 4-12 mm**)
- Flat inlet for DLT, DMT, DHT & DUT (up to 100 °C)

IEK2

Insulation Entry Kit



Insulation Entry Kit for Pt100 sensor, SFM heating cable and capillary. Up to Ø 6 mm.

- Mounting plate
- M20 gasket + counter nut & reduction M20 > M12
- Gland M12 x 1,5
- Up to 100°C

CLO2...

Label.



Electrical tracing warning sticker.

- 200 x 70 mm.

ORDERING INFORMATION

CLO2

English, German,
French & Dutch
on one sticker

CLO2-CZ

Czech language

CLO2-DE

German language

CLO2-HU

Hungarian language

MOUNTING BRACKETS

For fixing on pipework and vessels.



Mounting bracket for mounting enclosures and thermostats to pipework and vessels in stainless steel for the following enclosure/ thermostat sizes.

MB1

- for the following enclosure/ thermostat sizes :
- 122 X 120 X 90MM
- 160 X 160 X 90MM
- 110 X 75 X 55MM

MB 1K*

Kit including mounting accessories



MB 2

- for the following enclosure/ thermostat sizes :
- 220 X 120 X 90MM

MB 2K*

Kit including mounting accessories



MB 4

- for the following enclosure/ thermostat sizes :
- 110 X 75 X 55MM
- 122 X 120 X 90MM

MB 4K*

Kit including mounting accessories



MB 5

- for the following enclosure/ thermostat sizes :
- 160 X 160 X 90MM

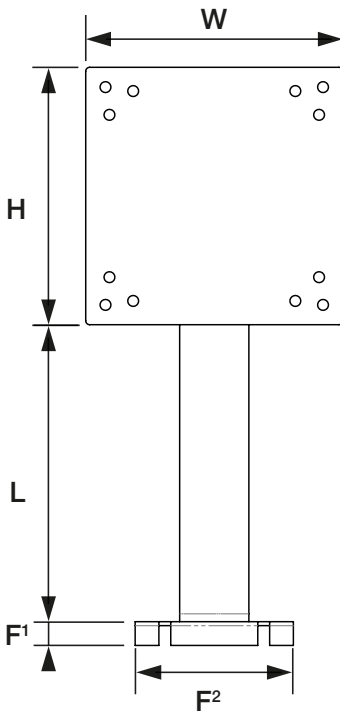
MB 5K*

Kit including mounting accessories




KSB-DIBE-04 KSB-DIBE-07

Mounting bracket in stainless steel including following mounting accessories
Screws, nuts and washers to assemble the enclosure



REFERENCE	H [mm]	W [mm]	L [mm]	F1 [mm]	F2 [mm]
MB 1	200	150	150	30	250
MB 2	120	220	230	30	250
MB 4	125	125	150	42	200
MB 5	200	160	150	43	200
KSB-DIBE	130	130	150	10	80



*Kit including mounting accessories :

- 2x1m stainless steel fixing strap FS 3 (14 mm wide)
- 2 pcs. tie-warps FB 3
- Screws, nuts and washers to assemble the enclosure

INSTALLATION ACCESSORIES	CABLE TYPE					REMARK	
	DLR-CR	DLT-CT	DMT-CT	DHT-CT	DUT-NT		
Non-Ex Termination Kits							
	ETK3-LT	✓	-	-	-	-	
	ETK3-HT	-	✓	✓	✓	-	up to 120°C
	ETK3-LT/JB	✓	-	-	-	-	
	ETK3-HT/JB	-	✓	✓	✓	-	up to 120°C
	ETK5	✓	✓	✓	✓	✓	up to 130°C
	ETK5P	✓	✓	✓	✓	✓	up to 130°C
	ETK5R	✓	✓	✓	✓	✓	up to 130°C
	ETK5T	✓	✓	✓	✓	✓	up to 130°C
	ETK5I	✓	✓	✓	✓	✓	up to 130°C
	ETK5TT	✓	✓	✓	✓	✓	up to 125°C
	EC-14-5_01	✓	✓	✓	✓	✓	up to 110°C
	KCA001	✓	✓	✓	✓	✓	up to 130°C
	KIE002C	✓	✓	✓	✓	✓	
Ex Termination Kits							
	ETK3-MCEx	-	✓	✓	-	-	
	ETK3-MBEx	-	✓	✓	-	-	
	ETK3-HSEx	-	-	-	✓	✓	up to 180°C
	ETK4-Ex	-	✓	✓	✓	✓	up to 200°C
	ETK4P-Ex	-	✓	✓	✓	✓	up to 200°C
	ETK4R-Ex	-	✓	✓	✓	✓	up to 200°C
	ETK8..-Ex	-	✓	✓	✓	✓	up to 190°C
	ETK8P-Ex	-	✓	✓	✓	✓	up to 190°C
	ETK8R-Ex	-	✓	✓	✓	✓	up to 190°C
	ETK8T-Ex	-	✓	✓	✓	✓	up to 190°C
	ETK8I-Ex	-	✓	✓	✓	✓	up to 190°C
	ETK8TT-Ex	-	✓	✓	✓	✓	up to 110°C
	RT-RST	✓	✓	-	-	-	
	Mechanical Ambient Temperature Controllers						
	DTAM-HGE	✓	✓	✓	✓	✓	non-Ex
	TABIO40	✓	✓	✓	✓	✓	non-Ex
	TADIO40	✓	✓	✓	✓	✓	non-Ex
	MATC411-400	✓	✓	✓	✓	✓	non-Ex
	MATC411-1000	✓	✓	✓	✓	✓	non-Ex
	MATC411JBP	✓	✓	✓	✓	✓	non-Ex
	MATC411JBP/L	✓	✓	✓	✓	✓	non-Ex
	Ex Mechanical Ambient Temperature Controllers						
	MATC411-400pEx	-	✓	✓	✓	✓	
	MATC411-400mEx	-	✓	✓	✓	✓	
	MATC411JBP/pEx	-	✓	✓	✓	✓	
	MATC411JBP/mEx	-	✓	✓	✓	✓	
	TAM050EXJ	-	✓	✓	✓	✓	
Mechanical Temperature Controllers in GRP box							
	CABIO40	✓	✓	✓	✓	✓	non-Ex
	CABIO90	✓	✓	✓	✓	✓	non-Ex
	CABI300	✓	✓	✓	✓	✓	non-Ex
	CADIO40	✓	✓	✓	✓	✓	non-Ex
	CADIO90	✓	✓	✓	✓	✓	non-Ex
	CADI300	✓	✓	✓	✓	✓	non-Ex
Ex Mechanical Temperature Controllers & Limiters in GRP box 16A							
	MTC-2050Ex	-	✓	✓	✓	✓	check clamping zone gland & combine with gland from corresponding termination kit of the used cable
	MTC0120Ex	-	✓	✓	✓	✓	
	MTC0190Ex	-	✓	✓	✓	✓	
	MTC60300Ex	-	✓	✓	✓	✓	
	MTC140500Ex	-	✓	✓	✓	✓	
	MTL70190Ex	-	✓	✓	✓	✓	
	MTL130190Ex	-	✓	✓	✓	✓	
	MTL140500Ex	-	✓	✓	✓	✓	
	MTCL-2050/70190Ex	-	✓	✓	✓	✓	
	MTCL0120/130190Ex	-	✓	✓	✓	✓	

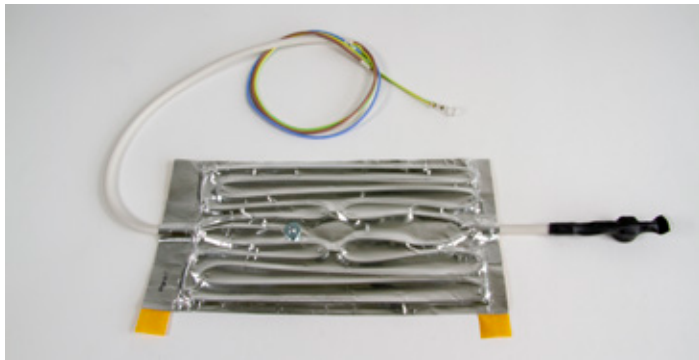
INSTALLATION ACCESSORIES	CABLE TYPE					REMARK
	DLR-CR	DLT-CT	DMT-CT	DHT-CT	DUT-NT	
MTCL0190/130190Ex	-	✓	✓	✓	✓	
MTCL0120/70190Ex	-	✓	✓	✓	✓	
MTCL0190/70190Ex	-	✓	✓	✓	✓	
MTCL60300/60300Ex	-	✓	✓	✓	✓	
Ex Mechanical Temperature Controllers & Limiters in GRP box 25A						check clamping zone gland & combine with gland from corresponding termination kit of the used cable
MTC-2050Ex/L	-	✓	✓	✓	✓	
MTC0120Ex/L	-	✓	✓	✓	✓	
MTC0190Ex/L	-	✓	✓	✓	✓	
MTC60300Ex/L	-	✓	✓	✓	✓	
MTC140500Ex/L	-	✓	✓	✓	✓	
MTL70190Ex/L	-	✓	✓	✓	✓	
MTL130190Ex/L	-	✓	✓	✓	✓	
MTL60300Ex/L	-	✓	✓	✓	✓	
MTL140500Ex/L	-	✓	✓	✓	✓	
MTCL-2050/70190Ex/L	-	✓	✓	✓	✓	
MTCL0120/70190Ex/L	-	✓	✓	✓	✓	
MTCL0120/130190Ex/L	-	✓	✓	✓	✓	
MTCL0120/70190Ex/L	-	✓	✓	✓	✓	
MTCL0190/130190Ex/L	-	✓	✓	✓	✓	
MTCL60300/60300Ex/L	-	✓	✓	✓	✓	
Ex Mechanical Temperature Controllers & Limiters in SS316L box 16A						check clamping zone gland & combine with gland from corresponding termination kit of the used cable
MTCSS-2050Ex	-	✓	✓	✓	✓	
MTCSS0120Ex	-	✓	✓	✓	✓	
MTCSS0190Ex	-	✓	✓	✓	✓	
MTCSS60300Ex	-	✓	✓	✓	✓	
MTCSS140500Ex	-	✓	✓	✓	✓	
MTLSS70190Ex	-	✓	✓	✓	✓	
MTLSS130190Ex	-	✓	✓	✓	✓	
MTLSS60300Ex	-	✓	✓	✓	✓	
MTLSS140500Ex	-	✓	✓	✓	✓	
MTCLSS0120/70190Ex	-	✓	✓	✓	✓	
MTCLSS0120/130190Ex	-	✓	✓	✓	✓	
MTCLSS0190/70190Ex	-	✓	✓	✓	✓	
MTCLSS0190/60300Ex	-	✓	✓	✓	✓	
MTCLSS0190/130190Ex	-	✓	✓	✓	✓	
MTCLSS140500/140500Ex	-	✓	✓	✓	✓	
Exd Mechanical Temperature Controller						never direct access with heating cable, always via power cable
IRM040Exd	-	✓	✓	✓	✓	
IRM0200Exd	-	✓	✓	✓	✓	
IRM50320Exd	-	✓	✓	✓	✓	
Electronic Temperature Controllers						
ETC16+8A	✓	✓	✓	✓	✓	DIN-rail controller
ETC16+8A JBP	✓	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
Junction Boxes & Terminal GRP Boxes (Glass Fibre Re-inforced Polyester)						
BJP003N	✓	✓	✓	✓	✓	
JBP101	✓	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP102 PT100	✓	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP103	✓	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP103 S	✓	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP103 3P	✓	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP104	✓	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP104 S	✓	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP104 3P	✓	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP106	✓	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP106 S	✓	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP106 D	✓	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP106 3P	✓	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
Ex Junction Boxes & Terminal GRP Boxes (Glass Fibre Re-inforced Polyester)						
JBP101 Ex	-	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP102 PT100 Ex	-	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable



INSTALLATION ACCESSORIES	CABLE TYPE					REMARK
	DLR-CR	DLT-CT	DMT-CT	DHT-CT	DUT-NT	
JBP103 Ex	-	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP103 S Ex	-	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP103 3P Ex	-	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP104 Ex	-	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP104 S Ex	-	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP104 3P Ex	-	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP106 Ex	-	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP106 D Ex	-	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP106 S Ex	-	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP106 3P Ex	-	✓	✓	✓	✓	combine with gland from corresponding termination kit of the used cable
JBP CON_S1 Ex	-	✓	✓	✓	-	
JBP CON_S2 Ex	-	✓	✓	✓	-	
JBP CON_W1 Ex	-	-	-	-	✓	
JBP CON_W2 Ex	-	-	-	-	✓	
JBP FOOT_01	✓	✓	✓	✓	✓	
Ex Terminal GRP Boxes with LED (Glass Fibre Re-inforced Polyester)						
JBP101LED R Ex	✓	✓	✓	✓	✓	
JBP101LED G Ex	✓	✓	✓	✓	✓	
JBP101LED/F R Ex	✓	✓	✓	✓	✓	
JBP101LED/F G Ex	✓	✓	✓	✓	✓	
Mounting accessories						
FT05	✓	✓	✓	✓	✓	
FT03b	✓	✓	✓	✓	✓	
AT03	✓	✓	✓	✓	✓	
AT03c (30 µm)	✓	✓	✓	✓	✓	
AT03d	✓	✓	✓	✓	✓	
ALUFOIL	✓	✓	✓	✓	✓	
ALU TAPE 50x0,5 HT	✓	✓	✓	✓	✓	
ALU TAPE 50x0,5 HT_2	✓	✓	✓	✓	✓	
ALU TAPE 70x0,68 HT	✓	✓	✓	✓	✓	
ALUFOIL NA	✓	✓	✓	✓	✓	
IEK 1	✓	✓	✓	✓	✓	up to 100°C, if higher use gland from termination kit
IEK 2	-	-	-	-	-	
CL02	✓	✓	✓	✓	✓	
CL02-CZ	✓	✓	✓	✓	✓	
CL02-DE	✓	✓	✓	✓	✓	
CL02-HU	✓	✓	✓	✓	✓	
CL02-RU	✓	✓	✓	✓	✓	
MB 1	✓	✓	✓	✓	✓	
MB 1 K	✓	✓	✓	✓	✓	
MB 2	✓	✓	✓	✓	✓	
MB 2 K	✓	✓	✓	✓	✓	
MB 4	✓	✓	✓	✓	✓	
MB 4 K	✓	✓	✓	✓	✓	
MB 5	✓	✓	✓	✓	✓	
MB 5 K	✓	✓	✓	✓	✓	
KSB-DIBE_04	✓	✓	✓	✓	✓	
KSB-DIBE_07	✓	✓	✓	✓	✓	



PCA Aluminium Heating Mat

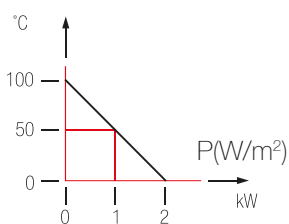


Alufoil heating mats are produced according to the customer's requirements. All parameters can be optimized per specific application. Production takes place in our own facilities. Alufoil heating mats are the ideal solution for heating and temperature maintenance up to 100°C and can be mounted in a wide range of applications.

- Wide range of sizes, shapes and designs for special applications
- Various applications
- Heat decomposed on full surface
- Stable temperature up to 100°C
- Integrated bimetal thermostats optional
- Protection degree : IP65 surface

ORDERING INFORMATION PCA-XXX _YY

Customer Name Reference _____
Revision _____



PCA IBC Intermediate Bulk Container (IBC) Heater



To heat up products in IBC (Bottle in Cage) containers we developed a water-resistant reinforced aluminium heating mat PCA for single use. Our IBC bottle in cage solution will ensure your cargo is always at the desired temperature. We can supply our heating mats in thousands of pieces with short delivery time.

- Reinforced construction in Aluminium foil
- Power: 1400W at 230V
- Thermostat: 60°C
- Limiter: 70°C
- Dimensions: 1120 x 930 mm
- Finished with aluminium from all sides
- Protection degree : IP54
- Standard power cables with Euro-plug (CEE) or IEC connector
- Warning + tracking label

ORDERING INFORMATION PCA-XXX _YY

Customer Name Reference _____
Revision _____

ALSO AVAILABLE WITH ETL CERTIFICATION

- Power: 1400W at 120V (60Hz)
- Dimensions: 1120 x 930 mm
- Thermostat/Limiter: 70°C (158°F)
- Thermal fuse: 121°C (250°F)
- Certification: ETL 5024997
- Aluminium foil on both sides

PCA BIB

Bag in Box (BIB)
Heater



To heat up products in Bag in Box we developed an aluminium heating mat PCA for single use with easy installation, water resistance, and low cost. Our bag in box heating solution will help you maintain the temperature you desire.

- Dimensions : 1000 x 1000 mm
- Power : 1025W at 230V
- Thermostat : 50°C
- Limiter : 60°C
- Protection degree : IP30
- Finished with aluminium (top & sides)
- Standard Power cables with Euro-plug (CEE) or IEC connector
- Warning label and tracking label

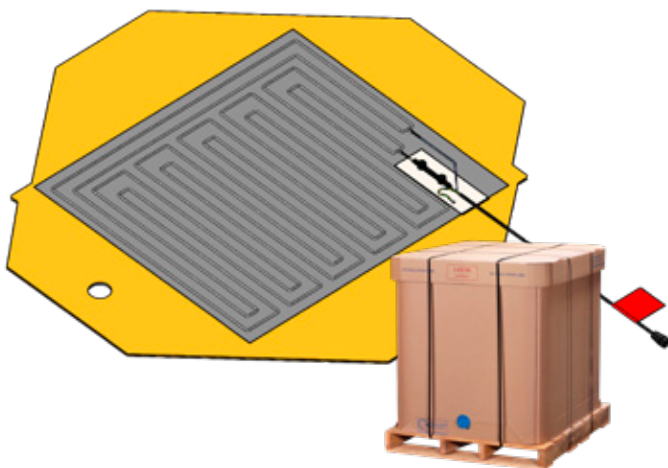
ORDERING INFORMATION **PCA-XXX_YY**

Customer Name Reference _____
Revision _____

OTHER VARIANTS ON DEMAND

PCA BIB UL

Bag in Box (BIB)
Heater UL certified



To heat up products in Bag in Box we developed an aluminium heating mat PCA for single use with easy installation, water resistance, and low cost. Our bag in box heating solution will help you maintain the temperature you desire.

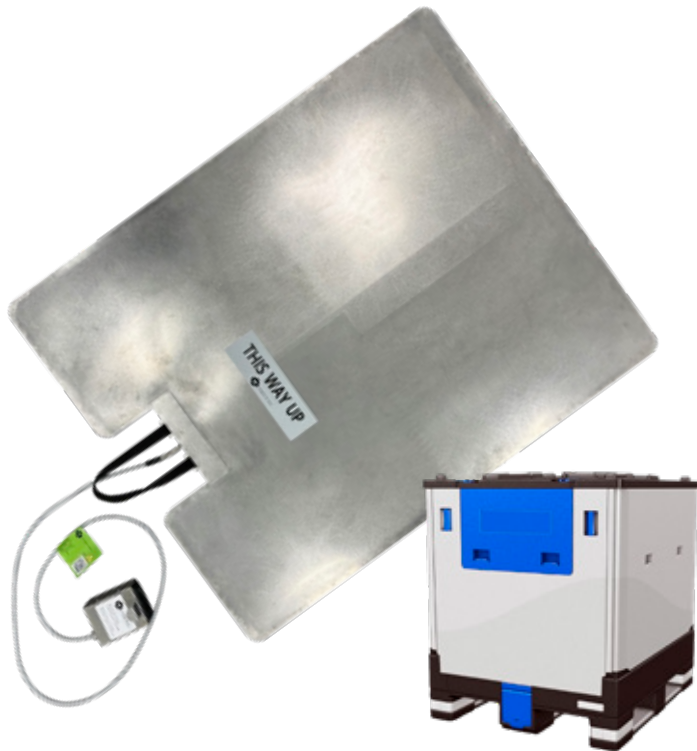
- Reinforced construction in Aluminium plate
- Total thickness of 7 mm (excluding connection box)
- Specific power: 0,11 W/cm² (0,71 W/inch²)
- Protection degree: IP54
- Standard power cable with connector
- Warning label and tracking label
- UL certified for US and Canada Market - **ETL 5024997**

REFERENCE	VOLTAGE	POWER [w]	DIMENSIONS [mm]	THERMOSTAT / LIMITER	THERMAL FUSE	CONNECTION
PCA-BIB_01	120V (60Hz)	920	960 x 870	62°C (144°F) / 70°C (158°F)	121°C (250°F)	power cable 1,94 m - NEMA plug
PCA-BIB_02	230V (60Hz)	920	960 x 870	62°C (144°F) / 70°C (158°F)	121°C (250°F)	power cable 1,91 m - IEC plug
PCA-BIB_03	120V (60Hz)	1100	960 x 870	52°C (126°F) / 60°C (140°F)	121°C (250°F)	power cable 1,94 m - NEMA plug
PCA-BIB_04	230V (60Hz)	1100	960 x 870	52°C (126°F) / 60°C (140°F)	121°C (250°F)	power cable 1,91 m - IEC plug
PCA-BIB_06	230V (60Hz)	920	960 x 870	62°C (144°F) / 70°C (158°F)	121°C (250°F)	power cable 1,57 m - Wieland plug
PCA-BIB_07	120V (60Hz)	980	1150 x 950	52°C (126°F) / 62°C (144°F)	121°C (250°F)	power cable 1,94 m - NEMA plug

OTHER VARIANTS ON DEMAND

BBH

Base Board Heater



While the single-use solutions such as Bottle-in-Cage and Bag-in-Box are popular because of their price, easy manipulation and the quantities we can supply (hundreds of thousands per year), sometimes our customers need a more durable solution. For this reason, we developed a multiple use Industrial Heating Pad that functions the same way but also provides the extra durability.

- Reinforced construction in Aluminium plate
- Total thickness of 7mm (excluding connection box)
- Dimensions : 1100 x 900mm
- Power : 2000W at 230V
- Thermostat : 70°C
- Limiter : 70°C
- Protection degree : IP65
- Weight : 12kg
- Standard power cable with connector
- Warning label and tracking label
- Optional electronic control

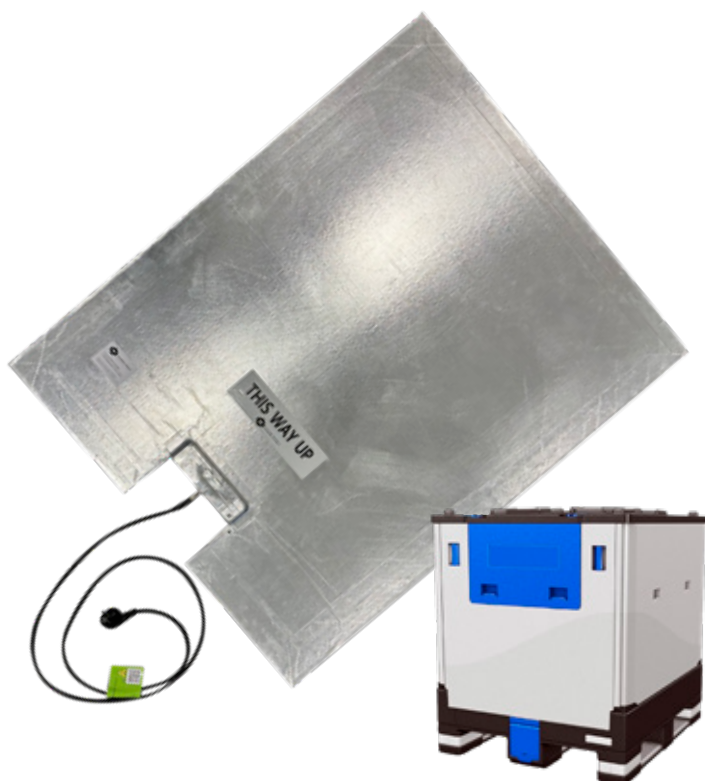
ORDERING INFORMATION **BBH-XXX _YY**

Customer Name Reference _____
Revision _____

 **OTHER VARIANTS ON DEMAND**

BBH L

Base Board Heater
Single Plate Version



The BBH Single Plate is a light version of BBH for weight and cost reduction where the application allows his.

- Reinforced construction in Aluminium plate
- Total thickness of 7mm (excluding connection box)
- Dimensions : 1100 x 900mm
- Power : 2000W at 230V
- Thermostat : 70°C
- Limiter : 70°C
- Protection degree : IP65
- Weight : 12kg
- Standard power cable with connector
- Warning label and tracking label

ORDERING INFORMATION **BBHL-XXX _YY**

Customer Name Reference _____
Revision _____

 **OTHER VARIANTS ON DEMAND**

HIBCB Insulated Heating Jackets (IBC) Heater



IBC Insulated Heating Jackets are designed to provide electric surface heating to products stored in Intermediate Bulk Containers (IBCs). These jackets are ideal for reducing heat loss and for providing effective frost protection or heat-up. Comes standard without lid.

- For standard 1000L IBC container
- 2 integrated adjustable thermostats: 0 to 90 °C
- Adjustable release buckles for easy installation
- Protection degree: IP51

REFERENCE	DESCRIPTION	POWER	VOLTAGE	TEMP. RANGE
HIBCB-DICZ_01	Heated insulated jacket 1000L (non ATEX)	2x 1000W	230 V	0-90 °C
LID-DICZ_01	Cover of heated insulated jacket 1000L	-	-	-

HIB-EX050-LM Insulated Heating Jackets (IBC) Heater ATEX Version



Heating jacket for temperature maintenance up to 55 °C of fluids stored in 1000 litres containers in hazardous areas.

Patented technology using self-regulating membranes under high density fiberglass insulation and outer faces protected by silicone coated glass cloth material.

ATEX certified insulated heating jacket for IBC containers without thermostat and without lid.

- For standard 1000L IBC container
- Protection degree: IP54
- **ATEX II 2 G - EEx e II T4**
- Adjustable release buckles for easy installation

REFERENCE	DESCRIPTION	POWER	VOLTAGE	ATEX CLASS
HIB-EX050-LM	Heated insulated jacket 1000L	960 W	230 V	ATEX II 2 G - EEx e II T4
LID-DICZ_01	Cover of heated insulated jacket 1000L	-	-	-

DKRLA Flexible Silicone Heating Mats



For temperature maintenance or heating of tanks, oil sumps, metal plates etc. installed under insulation.

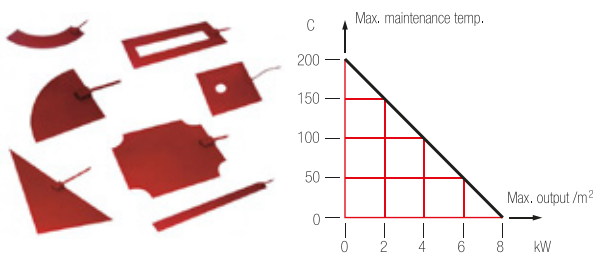
Held in place using eyelets (DKRL) or self adhesive (DKRLA). Note : the adhesive will only become active when the heater is energised for the first time.

Heat source is sandwiched between 2 layers of splashproof silicone coated fibre glass.

This type of heater can be heavily customised to suit a wide variety of applications.



- | | |
|---|---|
| <ul style="list-style-type: none"> - Temperature maintenance up to 180°C - Maximum size 0,9 x 3 m. (Weight 2kg/m²) - Optional integral preset thermostat - Supply voltage 12 to 240 / 400V - Minimum installation temperature -30°C - Max exposure temp. (power off) 250°C - Maximum output 8kW/m² | <ul style="list-style-type: none"> - Fitted with silicone insulated cable (length to suit requirements) - Moisture and chemical resistant - Flexible and lightweight - UL, VDE and LSLT options available - Manufactured to suit specific applications. Multiple heat zones can be supplied, there is no shape limitation and holes can be supplied to suit. |
|---|---|



WIRE WOUND HEATERS

Ideal for lower volumes. This particular construction is optimal for heaters that will be handled frequently, as opposed to being fixed or static. Water tight version available on demand.



ETCHED FOIL HEATERS

Ideal for higher volumes. The heat distribution in etched foil elements is significantly better than wire elements due to the additional coverage they provide.



PREFORMED HEATERS

Silicone heaters can be pre-formed to suit a wide variety of pipework and vessels.



FOAM INSULATION

Optional insulation foam available for inbuilt, highly efficient thermal insulation to reduce heat loss. Separate shaped insulation foam to suit 'T' sections, flanges, valves and pipes on demand available.

	WIRE WOUND	ETCHED FOIL
Temp. Range - Non-Adhesive	-60°C to 250°C	-60°C to 200°C
Temp. Range - Self-Adhesive	-30°C to 180°C	-30°C to 180°C
Thickness Range	1,1 to 3 mm	0,8 to 1,5 mm
Max. possible Size	940 x 3000 mm	595 x 2500 mm
Power Rating	Variable acc. Application	
UL & VDE Approval available	✓	✓
Suitable for High Quantity		✓
Low smoke Low Toxicity available	✓	✓

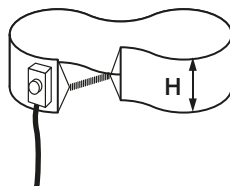


CFR Flexible drum heaters

Drum heaters are used to maintain or to heat up or melt the contents of recipients like containers and vessels.



- For standard 200 litre (45 gallon) drums
- PTFE insulated resistance wire sandwiched between layers of silicone covered glass fabric to obtain a double insulated construction
- Quick and simple stainless steel clips and spring arrangement
- Minimum storage space
- Fitted with a 20 -120 °C thermostat with neon indicators
- 2 m neoprene sheathed power cable
- IP51 protection



REFERENCE	POWER [w]	VOLTAGE [V]	HEIGHT [mm]	WATT DENSITY [W/m]	WEIGHT [kg]
CFR1000	1000	230	180	0,3	1
CFR1500	1500	230	180	0,5	1

OTHER VARIANTS ON DEMAND

OPTION

Digital thermostat for accurate process control and real time temperature feedback. Surface mounted or built inline.

- Large LCD display and membrane keypad
- Thick wall ABS enclosure (IP62)
- Temperature range: 0 - 300°C
- Fail safe on sensor open circuit
- User adjustable hysteresis and temperature offset
- Cycle timer with defined delayed start



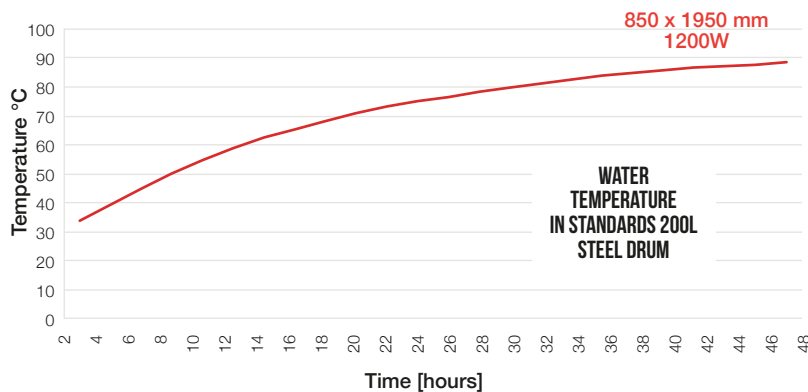
MORE INFO ON PRODUCT PAGES: HSHP AND HTSD

HSHP Insulated Circular Drum Heater



HSHP drum heaters are insulated heating jackets constructed with an outer layer of PTFE coated glass fibre cloth making them ideally suited for handling products such as waxes, soaps and materials with high water content. It has excellent thermal transfer properties and presents a great solution for maintaining consistent product temperatures.

- Standard size: 200L - 210 L
- Chemical and acid resistant
- Easy, hygienic heater solution
- Thermal insulation (double)
- Adjustable quick release buckles
- Lightest drum heater jacket on the market
- High operating temperature of up to 220°C
- Protection class: IP40



- Dimension : 850 x 1950mm
- Rating : 230V 1200W or 1800W
- Material : PTFE Coated Glass Fibre Cloth
- Control : Capillary Thermostat
(Digital Bespoke Range Thermostat - optional)
- Range : Thermostat 20 - 220°C
- Power Cable : 4m HO7RN-F
- Fixing : High Temperature Polyester Webbing with Quick Release Adjustable Buckles
- Insulation : E-glass Fibre Blanket
- Element : Silicone Insulated Spiral Wound Resistance Element

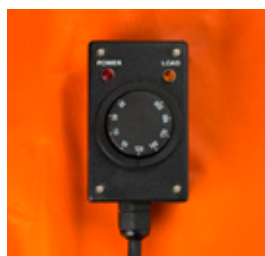
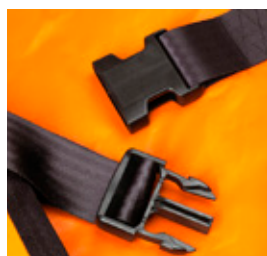
ORDERING INFORMATION

HSHP-1200W/230V

Power: 1200W

HSHP-1800W/230V

Power: 1800W

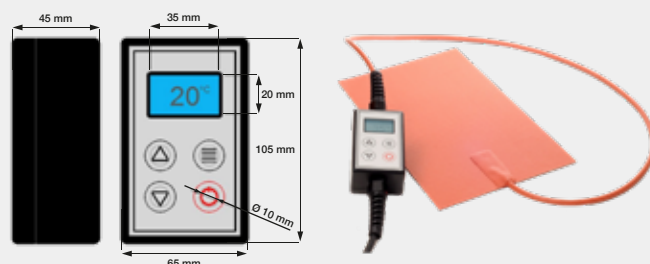


PROPERTIES	CAPILLARY THERMOSTAT	DIGITAL THERMOSTAT
Input voltage	110V - 230V AC	90V - 230V AC
Temperature range	Fixed: 0 - 220°C	Programmable: 0 - 300°C
Hysteresis	Fixed: 4°C +/- 2°C	Programmable: 1 to 10°C
Cycle life time	100.000 at 16 A	>1.000.000 at 16 A
Sensor types	Capillary bulb	PT100

OPTION

Digital thermostat for accurate process control and real time temperature feedback. Surface mounted or built inline.

- Large LCD display and membrane keypad
- Thick wall ABS enclosure (IP62 rated)
- Temperature range: 0 - 300°C
- Fail safe on sensor open circuit
- User adjustable hysteresis and temperature offset
- Cycle timer with user defined delayed start



HBD Robust Base Drum Heater



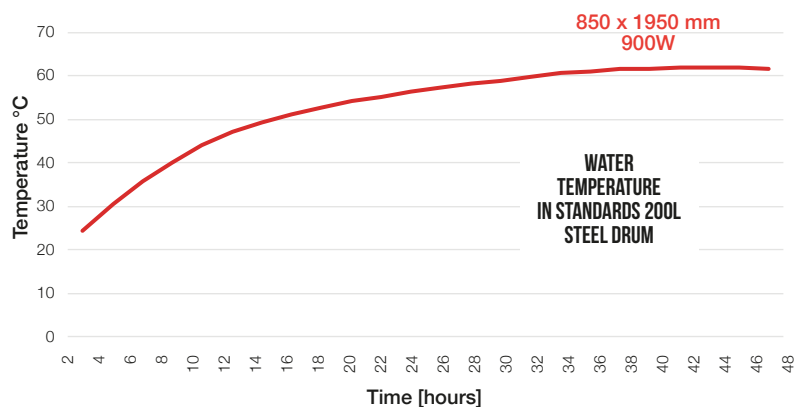
The HBD is a durable drum heater designed for demanding industrial settings. With its sturdy steel construction, it is ideal for warehouses, chemical transfer facilities, and building sites.

This versatile heater is specifically shaped to melt or reduce the viscosity of various substances such as soaps, fats, waxes, varnishes, and oil-based solutions. It provides a stable base for industry-standard 200L drums, ensuring efficient and even heating.

The HBD can be combined with other heating jacket to optimize heating performance in specific applications.

- Robust steel construction
- Suitable for 200L drums
- Heat over platen area
- IP40 protection
- 0-150°C thermostat
- 2m armoured power cable

- Dimensions : Platen height 70mm / Top 550mm, Base 600mm
- Rating : 110V or 230V / 900W
- Control unit : Height 105mm, Protrusion 280mm
- Insulation : 50mm Rockwool
- Element : Silicone insulated etch foil heater mat
- Control : 0 to 150°C Adjustable thermostat
- Power Cable : 2 Metre SY type armoured



ORDERING INFORMATION

HBD-900W/230V

Voltage : 230V

HBD-900W/110V

Voltage : 110V

HISD Insulated Circular Drum Heater Low Temperature

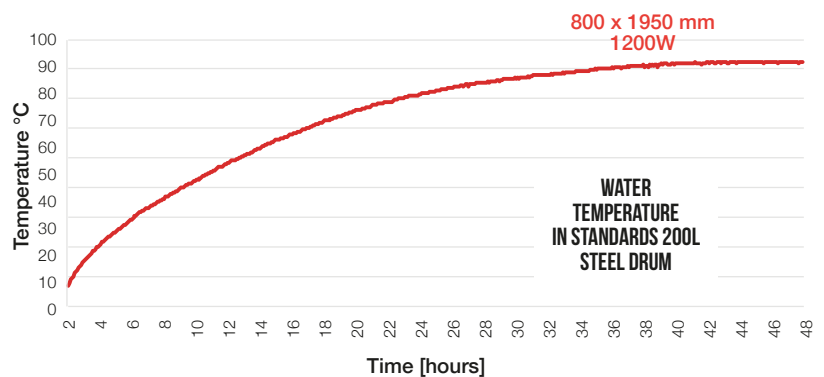


The HISD Side Drum Heater is an easy-to-fit, efficient and effective insulated heating jacket solution for all types of plastic and steel drums. Used globally within a multitude of industries, drum heating jackets can heat materials stored in any type of drum or container.

- Class II double insulated
- IP40 protection
- Bespoke sizes made to order
- Adjustable quick release buckles
- Standard drum heater jacket sizes available in stock
- Consistent temperatures of up to 90°C

REFERENCE	SIZE [mm]	VOLUME [L]	RATING
HISD/A-110V-0/40°C	400 x 1020	25	200 W - 110 V
HISD/B-110V-0/40°C	460 x 1250	50	250 W - 110 V
HISD/C-110V-0/40°C	370 x 1650	105	400 W - 110 V
HISD/D-110V-0/40°C	450 x 1950	200	450 W - 110 V
HISD/E-110V-0/40°C	800 x 1950	200	1200 W - 110 V
HISD/A-230V-0/40°C	400 x 1020	25	200 W - 230 V
HISD/B-230V-0/40°C	460 x 1250	50	250 W - 230 V
HISD/C-230V-0/40°C	370 x 1650	105	400 W - 230 V
HISD/D-230V-0/40°C	450 x 1950	200	450 W - 230 V
HISD/E-230V-0/40°C	800 x 1950	200	1200 W - 230 V
HISD/A-110V-0/90°C	400 x 1020	25	200 W - 110 V
HISD/B-110V-0/90°C	460 x 1250	50	250 W - 110 V
HISD/C-110V-0/90°C	370 x 1650	105	400 W - 110 V
HISD/D-110V-0/90°C	450 x 1950	200	450 W - 110 V
HISD/E-110V-0/90°C	800 x 1950	200	1200 W - 110 V
HISD/A-230V-0/90°C	400 x 1020	25	200 W - 230 V
HISD/B-230V-0/90°C	460 x 1250	50	250 W - 230 V
HISD/C-230V-0/90°C	370 x 1650	105	400 W - 230 V
HISD/D-230V-0/90°C	450 x 1950	200	450 W - 230 V
HISD/E-230V-0/90°C	800 x 1950	200	1200 W - 230 V

- Material : Polyester with Flame Retardant Polyurethane Coating
- Control : Capillary Thermostat (Digital Bespoke Range Thermostat - optional)
- Range : Thermostat 0 - 40°C or 0 - 90°C
- Power Cable : 4m HO7RN-F
- Fixing : Polypropylene Webbing with Quick Release Adjustable Buckles
- Insulation : E-glass Fibre Blanket
- Element : Silicone Insulated Spiral Wound Resistance Element



OPTION

Digital thermostat for accurate process control and real time temperature feedback. Surface mounted or built inline.

- Large LCD display and membrane keypad
- Thick wall ABS enclosure (IP62)
- Temperature range: 0 - 300°C
- Fail safe on sensor open circuit
- User adjustable hysteresis and temperature offset
- Cycle timer with defined delayed start



MORE INFO ON PRODUCT PAGES: HSHP AND HTSD

HTSD Insulated Circular Drum Heater High Temperature

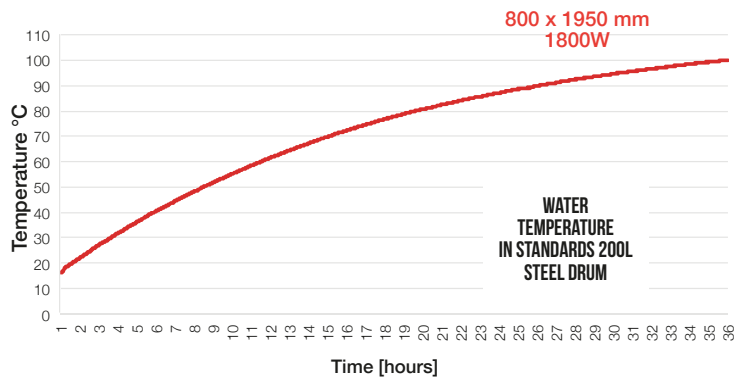


Designed to be powerful, robust and thermally efficient. The HTSD Industrial Drum Heater provides a higher power alternative to the HISD Drum Heating Jacket for metal drums and containers.

- Standard sizes: 25L - 50L - 105L - 200L
- Thermal insulation (double)
- Adjustable quick release buckles
- High operating temperature of up to 220°C
- Protection class: IP40

REFERENCE	SIZE [mm]	VOLUME [L]	RATING
HTSD/A-110V	400 x 1020	25	300 W - 110 V
HTSD/B-110V	460 x 1250	50	450 W - 110 V
HTSD/C-110V	370 x 1650	105	700 W - 110 V
HTSD/E-110V	800 x 1950	200	1200 W - 110 V
HTSD/A-230V	400 x 1020	25	300 W - 230 V
HTSD/B-230V	460 x 1250	50	450 W - 230 V
HTSD/C-230V	370 x 1650	105	700 W - 230 V
HTSD/E-230V-1200W	800 x 1950	200	1200 W - 230 V
HTSD/E-230V-1800W	800 x 1950	200	1800 W - 230 V

- Material: **Silicone Fibreglass Cloth**
- Rating: **110 V or 230 V**
- Control: **Capillary Thermostat (Digital Bespoke Range Thermostat - optional)**
- Range: **Thermostat 0 - 220 °C**
- Power Cable: **4 m HO7RN-F**
- Fixing: **Nylon Webbing with Quick Release Adjustable Buckles**
- Insulation: **E-glass Fibre Blanket**
- Element: **Silicone Insulated Spiral Wound Resistance Element**

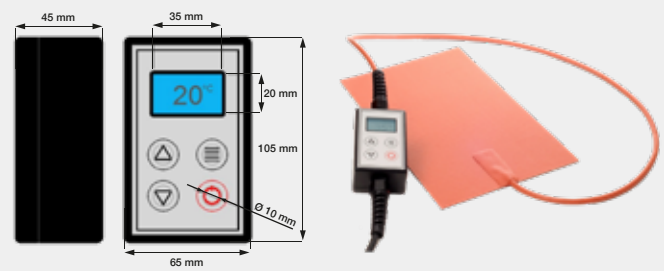


PROPERTIES	CAPILLARY THERMOSTAT	DIGITAL THERMOSTAT
Input voltage	110V - 230V AC	90V - 230V AC
Temperature range	Fixed: 0 - 220°C	Programmable: 0 - 300°C
Hysteresis	Fixed: 4°C +/- 2°C	Programmable: 1 to 10°C
Cycle life time	100.000 at 16 A	>1.000.000 at 16 A
Sensor types	Capillary bulb	PT100

OPTION

Digital thermostat for accurate process control and real time temperature feedback. Surface mounted or built inline.

- Large LCD display and membrane keypad
- Thick wall ABS enclosure (IP62 rated)
- Temperature range: 0 - 300°C
- Fail safe on sensor open circuit
- User adjustable hysteresis and temperature offset
- Cycle timer with user defined delayed start



ELECTRICAL HEATING

IJ Insulated Jacket

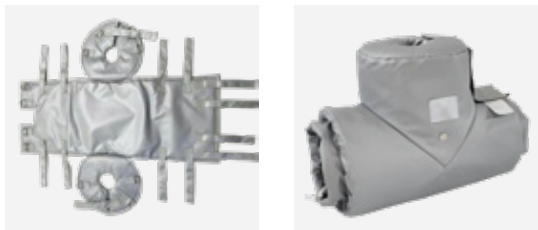


Insulated jackets provide passive thermal insulation for equipment used across a wide range of industries, indoors and outdoors, including process, automotive, UHV, semiconductor sectors.

Each jacket is **custom-made** for its application and designed for easy removal, reducing downtime during maintenance. By retaining process heat, they help minimize heat loss, stabilize operating conditions, and protect operators from hot surfaces. Contact temperature up to 700 °C. Effective. Simple. Energy-free.

- 100% polyester tent fabric with polyurethane coating (225 g/m²)
- Waterproof and non-flammable
- UV stabilized
- Heavy duty hooks
- Belt buckles

ALSO AVAILABLE WITH ACTIVE HEATING – SEE IHJ RANGE BELOW



CUSTOMIZABLE BASED ON SPECIFIC REQUIREMENTS AND TECHNICAL SPECIFICATIONS

IHJ Insulated Heating Jacket

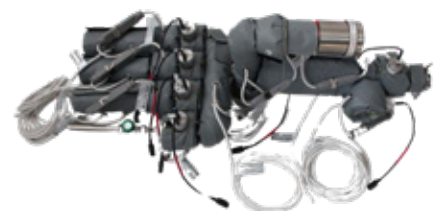


Heating jackets provide uniform process heating for equipment across a wide range of industries, indoors and outdoors, including process, automotive, UHV, and semiconductor sectors. They are typically used on flanges, gas cylinders, skids, instrumentation, pumps, and filters.

Each jacket is **custom-made** for its application and designed for easy removal, reducing downtime during maintenance. They deliver localized, uniform heating with simple installation and high-temperature capability up to 550 °C. Contact temperature up to 700 °C.

Our heating jackets can also be supplied as complete systems with temperature control, typically using PID regulation with PLC. Multiple jackets can be managed through a plug-and-play interface on a single control screen for precise setting, safety, and monitoring.

- 100% polyester tent fabric with polyurethane coating (225 g/m²)
- Waterproof and non-flammable
- UV stabilized
- Heavy duty hooks
- Belt buckles



CUSTOMIZABLE BASED ON SPECIFIC REQUIREMENTS AND TECHNICAL SPECIFICATIONS

CCH Crankcase Heaters



Crankcase heaters are used in a compressor in an air-conditioning system, heat pump system, or chiller system.

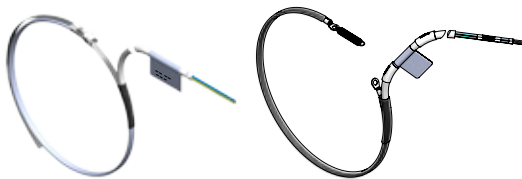
The crankcase heater's purpose is to prevent refrigerant migration and mixing with crankcase oil when the unit is off, and to prevent condensation of refrigerant in the crankcase of a compressor. The crankcase heater keeps refrigerant at a temperature higher than the coldest part of the system.

Each heater is composed of a long thin electrical heater with a built-in adjustable strap or spring that easily fits around the cylindrical housing of the crankcase.

- Flexible, safe and easy to install
- Metal braid for earthing and for firm surface adhesion to avoid slipping
- Rapid Heat-Up
- Sealed silicone-insulated heating element
- Protection degree : IP65
- Supply Voltage, diameter/length and Power completely custom made on demand
- UL certified version on demand available (CCH-range)
- Alternative cartridge HLP also available

ADJUSTABLE STRAP VERSION

SPRING VERSION



ORDERING INFORMATION

CCH-XXX_YY

Customer Name Reference _____
 Model/Revision _____

REFERENCE	POWER [w]	VOLTAGE [v]	MIN CLAMPING [mm]	MAX CLAMPING [mm]	SPEC. POWER WIRE [W/m]	SPEC. POWER BELT [W/m]	LENGTH POWER CABLE [m]
CCH10-2	35	230	120	175	56	112	1
CCH20-2	40	230	140	175	54	108	1
CCH30-2	45	230	150	280	57	114	1
CCH40-2	55	230	180	280	60	120	1
CCH45-2	60	230	180	280	55	110	1
CCH50-2	65	230	220	320	54	108	1
CCH60-2	75	230	245	370	54	108	1
CCH70-2	85	230	245	370	55	110	1
CCH80-2	95	230	245	370	55	110	1
CCH85-2	100	230	245	370	55	110	1

OTHER VARIANTS ON DEMAND

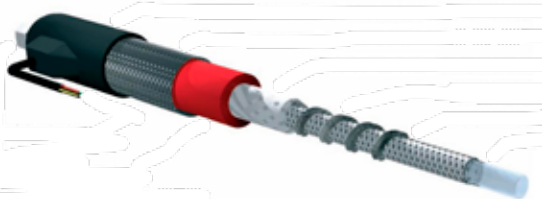
FCWS Heated Hose System



Flexible heated hoses are used in various industrial applications where high flexibility is mandatory. They are mainly used to maintain the temperature of a fluid or gas that is transported from one point to another. The PTFE inner tube has an excellent corrosion resistance and is able to support high pressures (due to outer stainless steel braid).

The heated hoses have a very robust construction and are made of high-quality durable materials. They can be used indoors and outdoors. Always to be used in combination with a controller.

Atex heated hose (T3) also available. Consult us for further details.



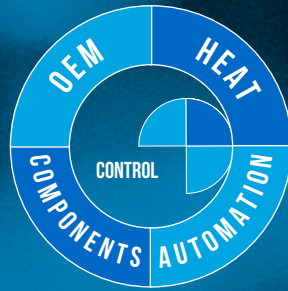
- Large variety of nominal diameters and inner tubes available, depending on the application, max. fluid/gas temperature and pressure
- Length from 0,3m to max. 82m
- Heating with a PTFE insulated heating cable with protective conductor braiding
- Built-in Pt100 sensor, TC J or TC K
- Insulation with multi-layer thermal fleece, glass-silk braiding and/or silicone foam
- Large variety of outer jackets available
- Large variety of fittings available
- End caps made of silicone
- Standard voltage 230V 1ph, other voltages on request.
- Standard 1 heatingcircuit. More heating circuits or 3-phase version on request.
- Standard power cable 1,5m and round plug (5-pin or 7-pin). Other lengths or other plug type on request.
- Silicone-free version possible.
- Option with control lead and hose end mounted socket for activating a glueing head/gun.

ORDERING INFORMATION

To provide you with an accurate and tailored quotation, we require detailed information about your specific needs. Please contact our technical service department to request our comprehensive specification form. Once you've filled in the form with your project details, our expert team will review it and prepare a precise quotation based on your requirements. This process ensures we can offer you the most suitable solution at the best possible price. If you need any assistance or have questions about the form, our customer support team is ready to help.







CONTROL



TO GUARANTEE AN EFFICIENT AND RELIABLE PERFORMANCE, IT IS ESSENTIAL TO SELECT THE APPROPRIATE CONTROL- AND SECURITY DEVICES. DIRAC INDUSTRIES OFFERS A WIDE RANGE OF MATERIALS FOR INTEGRATION OR AS SUPPLEMENT TO THE HEATING ELEMENTS IN ORDER TO BRING FORWARD THE QUALITY AND PERFORMANCE OF THE COMPLETE SOLUTION.

THERMOSTATS & LIMITERS FOR INTEGRATION

PT 100 OR THERMOCOUPLES (SENSORS)

INFRARED SENSORS & TRANSMITTER

TEMPERATURE TRANSMITTERS

TEMPERATURE CONTROLLERS

SOLID STATE RELAYS

POWER REGULATORS

CABINET HEATER

STANDARD CONTROL PANEL

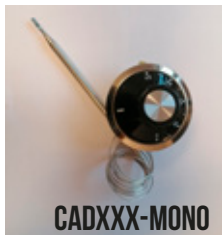
CONTROL

CAD

Single Pole
Thermostat



CADXXX-MONO-I



CADXXX-MONO

(*)Available for internal and external regulation:
- Internal: with adjustment screw and scale (-I in code)
- External: with Knob and scale (no -I in code)

- For simple control or overtemperature protection
- Approval: VDE
- Switching capacity: 1 x 400 V / 16 A

ORDERING INFORMATION

CAD040-MONO-I*

Thermostat :
0 to 40 °C

CAD090-MONO-I*

Thermostat :
0 to 90 °C

CAD110-MONO-I*

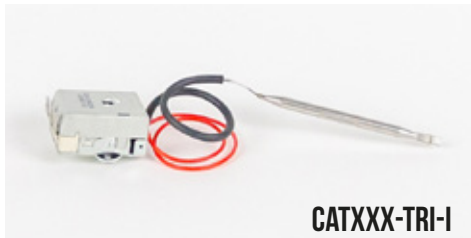
Thermostat :
30 to 110 °C

CAD300-MONO-I*

Thermostat :
50 to 300 °C

CAT

Three Poles
thermostat



CATXXX-TRI-I



CATXXX-TRI

*Available for internal and external regulation :
- Internal : with adjustment screw and scale (-I in code)
- External : with Knob and scale (no -I in code)

- Thermostat for direct switching of three phase heaters
- Switching capacity 3 x 400V / 16A

ORDERING INFORMATION

CAT040-TRI-I*

Thermostat :
0 to 40 °C

CAT090-TRI-I*

Thermostat :
0 to 90 °C

CAT110-TRI-I*

Thermostat :
30 to 110 °C

CAT300-TRI-I*

Thermostat :
50 to 300 °C

CABS

Dual-action bi-pole
Thermostat and cutout



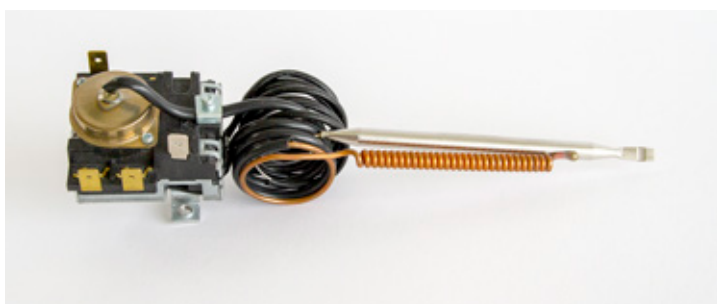
- Storage tanks and industrial immersion heaters (water)
- Max. 4,6 kw (230V-1ph) / 20 A
- Simultaneous adjustable temperature control with setpoint and manual reset cutout
- Regulation Range: 40 - 80 °C - adjustment via screw
- Cutout temperature: fixed at 98 °C
- Capillaries protected in plastic jackets
- Independent bulbs for both functions
- 2 sets of 2 contacts (one set per function)

ORDERING INFORMATION

CABS4080/98-I_02

CATS

Dual-action tri-pole
thermostat and cutout



- Storage tanks and industrial immersion heaters (water)
- Max. 7,9 kw (230V-3ph) / 20A or 11 kw (400V-3ph) / 16A
- Simultaneous adjustable temperature control with setpoint and manual reset cutout
- Regulation Range: 40 - 80 °C - adjustment via screw
- Cutout temperature: fixed at 98 °C
- Capillaries protected in plastic jackets
- Independent bulbs for both functions
- 2 sets of 3 contacts (one set per function)

ORDERING INFORMATION

CATS4080/98-I

CLB-HGE

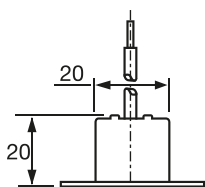
Bimetal fixed temperature thermostat



Our surface-mounted thermostat is the ideal solution for small single-phase heaters. Engineered with a fixed setpoint, this compact device offers precise control in a sleek form, ensuring seamless operation and enhanced efficiency for your heating systems.

- Surface-mounted thermostat for small single-phase heaters
- Fixed setpoint
- Compact design

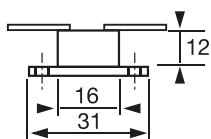
REFERENCE	SETPOINT	HYSTERESIS
CLB-HGE	9 °C ± 3	5 °C



- Ambient & Stocking Temp.: min. -30 °C / max. +100 °C
- Switching Contact : (NC) 10 A / 250 V AC
- Weight (kg) : 0,05
- Connection terminals: 2 leads

CLB

Bimetal fixed temperature thermostat



Our surface-mounted thermostat is the ideal solution for small single-phase heaters. Engineered with a fixed setpoint, this compact device offers precise control in a sleek form, ensuring seamless operation and enhanced efficiency for your heating systems.

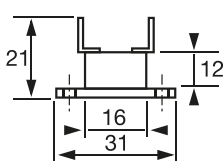
- Surface-mounted thermostat for small single-phase heaters
- Fixed setpoint
- Compact design

REFERENCE	SETPOINT	HYSTERESIS
CLB040	40 °C ± 5	10 °C
CLB050	50 °C ± 3	10 °C
CLB060	60 °C ± 5	10 °C
CLB080	80 °C ± 3	10 °C
CLB090	90 °C ± 5	10 °C
CLB092	92 °C ± 5	10 °C

- Ambient & Stocking Temp. : min. -20 °C / max. +150 °C
- Switching Contact : (NC) 16 A / 250 V AC
- Weight (kg) : 0,05
- Connection terminals : faston 90°

LMB

Bimetal fixed temperature limiter



Our surface-mounted limiter is the ideal solution for small single-phase heaters. Engineered with a fixed setpoint, this compact device offers precise control in a sleek form, ensuring seamless operation and enhanced efficiency for your heating systems.

- Surface mounted monitor for small single phase heaters
- Fixed setpoint
- Compact design
- Manual reset

REFERENCE	SETPOINT	HYSTERESIS
LMB090	90 °C ± 5	10 °C
LMB100	100 °C ± 5	10 °C
LMB110	110 °C ± 5	10 °C

- Ambient & Stocking Temp.: min. -20 °C / max. +150 °C
- Switching Contact: (NC) 16 A / 250 V AC
- Weight (kg) : 0,02
- Connection terminals: faston 90°

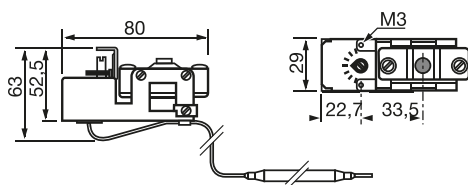
LMJ

Fail-safe cutout with temperature adjustment



Ideal solution for fail-safe temperature cutout for use in air or mounted in a pocket, with adjustable cutout temperature. Engineered with an adjustable setpoint, this compact device offers precise control in a sleek form, ensuring seamless operation and enhanced efficiency for your heating systems.

- Fail safe temperature safety on Industrial heaters
- Adjustable setpoint
- Compact design
- Manual reset



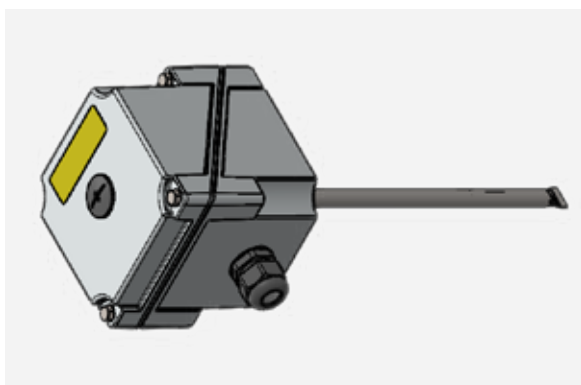
REFERENCE	RANGE	HYSTERESIS	AMBIENT TEMP.	BULB TEMP.	CAPILLARY	BULB
LMJ150	20 - 150 °C	9 °C	min. -40 °C / max. 80 °C	min. -40 °C / max. 175 °C	Copper Ø1,5 mm L2 m	Copper Ø6 L80 mm
LMJ300	50 - 300 °C	18 °C	min. -20 °C / max. 80 °C	min. -20 °C / max. 345 °C	SS316L Ø1,5 mm L2 m	SS316L Ø6 L58 mm
LMJ500	20 - 500 °C	34 °C	min. -40 °C / max. 80 °C	min. -40 °C / max. 550 °C	SS316L Ø1,5 mm L2 m	SS316L Ø6 L127 mm

- Stocking Temp.: min. -50 °C / max. +50 °C
- Ambient Temp.: min. -40 / max. +80 °C
- Switching Contact: NC 10 A / 230 V AC
- Weight (kg): 0,04
- Connection terminals: faston 90°
- Differential: 12 °C



DCD

Single pole thermostat with connection box



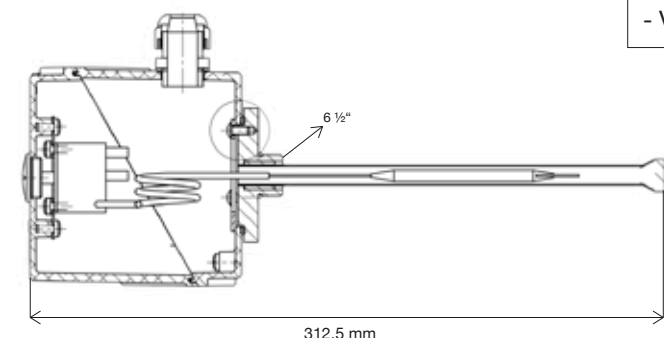
With the DCD range, we developed a standard set of pre-assembled units equipped with our internally controlled CADxxx thermostat and the aluminium DKBA connection box. The result is a complete, ready-to-use solution for all your temperature control needs.

The thermostat is equipped with bulb-and-capillary sensing and single-pole control, while the connection box provides three pre-drilled entries for power, control, and regulation.

Both components are also available separately — see the related product pages.



- Compact design
- Simple control or overtemperature protection
- Internal regulation: adjustment screw and scale
- Switching capacity: 1 x 400V / 16A
- VDE approval
- Screw fitting: 6 ½"
- Thermostat pocket: SS 316L
- DKBA: 105 x108 x 104 mm with 3 pre-drilled holes (IP55)
 - * PG16 gland: power cable
 - * PG11 gland: control cable
 - * PG11 plug: regulation thermostat



REFERENCE	TEMPERATURE RANGE	THERMOSTAT
DCD040-MONO-I	0°C - 40°C	CAD040-MONO-I
DCD090-MONO-I	0°C - 90°C	CAD090-MONO-I
DCD110-MONO-I	30°C - 110°C	CAD110-MONO-I

ALSO AVAILABLE IN THREE-PHASE VERSION

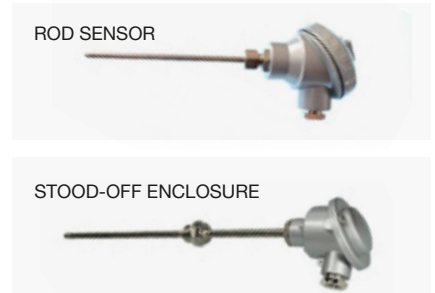
PT 100 SENSOR

For stand-off temperature measurement



An RTD Pt100 Sensor is a type of resistive temperature sensor used for a wide variety of temperature measurement applications. There are many types of RTD sensors, but most commonly a Pt100 is used. Platinum resistance thermometers (PRTs) offer excellent accuracy over a wide temperature range (-50 to +450 °C). Available in different versions and can be used almost everywhere for accurate temperature measurements in industry, science and beyond.

OTHER VARIANTS ON DEMAND



PT100 SENSOR WITH CABLE

- Pt100 standard element class A/B
- SS 316L Ø 6mm / 50mm long pocket
- IP54 connection on 3 wires PVC, PTFE, or fiberglass (+ stainless steel braid) insulated cable 2m long

FLEXIBLE SHEATHED PT100 SENSOR

- Pt100 standard element class B
- SS316L flexible sheath (except end) Ø 4,5 / Length 500mm
- 1/2" BSP fixing under IP54 type TS terminal enclosure
- Option: 4-20mA Built-in transmitter

PT100 ROD SENSORS

- Pt100 standard element class B
- SS 316L rod Ø6 with 1/2" BSP fixing
- IP54 terminal enclosure for three wire connection
- Also available with stand-off DIN TB enclosure
- Option: 4-20mA Built-in transmitter

VERSION	REFERENCE	CLASS	T. MIN [°C]	T. MAX [°C]	Ø ROD [mm]	L ROD [mm]	L CABLE [mm]	DIST. ENCL. [mm]	DETAILS
Sonde and Cable	SPT5P-L50B2000	B	-50	105	6	50	2000	-	SS316L pocket with PVC insulated cable
	SPT5T-L50B2000	B	-50	200	6	50	2000	-	SS316L pocket with PTFE insulated cable
	SPT5SV-L100B2000	B	-50	400	6	100	2000	-	SS316L pocket with fiberglass (+SS braid) insulated cable
Flexible sheathed with enclosure	SPT5445L500	B	-50	450	4,5	500	-	-	SS316L flexible sheath and 1/2" BSP fixing under IP54 terminal enclosure
Rod sensor	SPT 1960-L100	B	-50	200	6	100	-	-	SS316L rigid rod with 1/2" BSP fixing under IP54 terminal enclosure
	SPT200I16T-100	A	-50	260	6	100	-	-	SS316L rigid rod with 1/2" BSP fixing under IP54 terminal enclosure
Rod sensor with Stand-off enclosure	SPT 3660-L300A200	B	-50	450	6	300	-	100	SS316L rigid rod with 1/2" BSP fixing under stand-off IP54 terminal enclosure

ATEX VERSION	REFERENCE	CLASS	T. MIN [°C]	T. MAX [°C]	Ø ROD [mm]	L ROD [mm]	DETAILS
Without fitting	on request	B	-50*	250*	6 or 8**	custom	SS316L rigid rod without fitting - Optional sliding fitting 1/2"G, 1/4"G
In-head fitting	on request	B	-50*	250*	6 or 8**	custom	SS316L rigid rod with fixed 1/2"G fitting under the head - Optional fixed fitting 1/4"G, 3/4"G
Remote fitting	on request	B	-50*	250*	6 or 8**	custom	SS316L rigid rod with fixed 1/2"G fitting welded and offset from head - Optional fixed fitting 1/4"G, 3/4"G



ATEX PT100 SENSOR

- With or without interchangeable element
- Type DA head with screw closure
- Protection class: IP68
- Option: 4-20mA Built-in transmitter

THERMOCOUPLE

For stood-off temperature measurement



A thermocouple is a type of temperature sensor used for a wide variety of temperature measurement applications. Different types of thermocouples are available in different designs and can be used almost everywhere for almost all temperature measurement applications and temperature ranges (-50 to +800°C) in industry, science and beyond.

OTHER VARIANTS ON DEMAND



THERMOCOUPLE WITH CABLE

- J thermocouple standard element class 2
- SS 314L Ø 6mm / 50mm long pocket
- Fiberglass (+ stainless steel braid) insulated cable 2m long

FLEXIBLE SHEATHED THERMOCOUPLE

- J thermocouple standard element class 2
- SS 304L flexible sheathed Ø 4,5 / Length 500mm
- 1/2" BSP fixing under IP54 type TS terminal enclosure
- Option : 4-20mA Built-in transmitter

THERMOCOUPLE ROD SENSOR

- J thermocouple element class 2
- SS 304L rod Ø6 Length 200mm under 1/2" BSP fixing and 100mm stood-off DIN TB IP54 enclosure
- Option : 4-20mA Built-in transmitter

VERSION	REFERENCE	CLASS	T. MIN [°C]	T. MAX [°C]	Ø ROD [mm]	L ROD [mm]	L CABLE [mm]	DIST. ENCL. [mm]	DETAILS
Sonde and Cable	TJ3060JI-L50B2000	2	-50	400	6	50	2000	-	SS314L pocket with fiberglass (+SS braid) insulated cable
Flexible sheathed with enclosure	STJ1045JIL500	2	-50	750	4,5	500	-	-	SS304L flexible sheath and 1/2" BSP fixing under IP54 terminal enclosure
Rod sensor with Stood-off enclosure	STJ 366J-L300A200	2	-50	800	6	300	-	100	SS304L rigid rod with 1/2" BSP fixing under stood-off IP54 terminal enclosure

ATEX VERSION	REFERENCE	CLASS	T. MIN [°C]	T. MAX [°C]	Ø ROD [mm]	L ROD [mm]	DETAILS
Without fitting	on request	B	-50*	250*	6 or 8**	custom	SS304L rigid rod without fitting - Optional sliding fitting 1/2"G, 3/4"G
In-head fitting	on request	B	-50*	250*	6 or 8**	custom	SS304L rigid rod with fixed 1/2"G fitting under the head - Optional fixed fitting 1/4"G, 3/4"G
Remote fitting	on request	B	-50*	250*	6 or 8**	custom	SS304L rigid rod with fixed 1/2"G fitting welded and offset from head - Optional fixed fitting 1/4"G, 3/4"G

(*) optional: -50/+450°C and -200/+250°C
(**) other rod diameters on request



ATEX THERMOCOUPLE SENSOR

- With or without interchangeable element
- Type DA head with screw closure
- Protection class: IP68
- Option: 4-20mA Built-in transmitter

MARKING II 2GD Ex ia IIC T4...T6 Gb/Dc

TF Temperature sensor TF

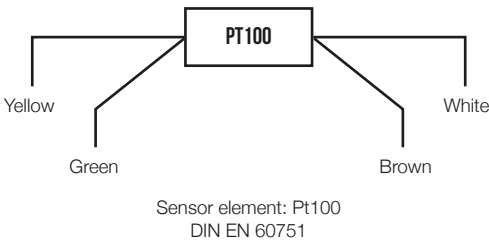


The temperature sensors TF are mainly used to monitor the temperature of liquids in tanks to prevent freezing, crystallisation or excessive viscosity. Also in surface treatment, a temperature control is very important to guarantee the quality of the treated items.

- Available with rigid immersion tube (stainless steel, PP, PVDF or PTFE) or as a flexible tube made of PFA.
- Pt100 sensor 4-wire
- Available with one or two Pt100 elements per device (on request)
- Available with a transmitter in the terminal box (on request)

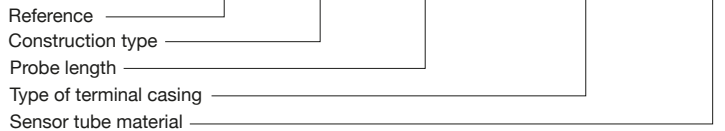
- SOG version : flexible sensor with the conductors led out openly at the end of the tube.
- SMG 00 version : flexible sensor with a terminal casing MG 00. It permits easy connection of a cable.
- sensor with rigid tube version :
 - standard lengths: 300, 500 and 800mm. Other lengths on request.
 - PG version has no terminal casing, only a connection cable 1.6m and bracket SH10 for fixation.
 - LC version has a small terminal box (PP or PVDF), IP65
 - BC version has a big terminal box (PP or PVDF), IP65

IMMERSION TUBE MATERIAL	CODE LETTER	DIAMETRE [mm]	MAX. OPERATING TEMP. [°C]
Stainless steel (316 T i)	B	11	100
Polypropylene (PP)	F	16	90
Polytetrafluorethylene (PTFE)	G	12	100
Polyvinylidene fluoride (PVDF)	L	16	100
Perfluoralkoxy (PFA)	M	6 (flexible tube)	200



ORDERING INFORMATION BASE VERSION

TF - XX - YYY / ZZZZZZ - A



CONSTRUCTION TYPE

- 73 = 01 version with 4-20mA transmitter
- 25 = Quarz filled tube
- 02 = 1 Pt100 sensor
- 29 = 02 version with 4-20mA Transmitter
- 57 = 1Pt100 Sensor (PG terminal)
- 06 = 2 Pt100 sensors

PROBE LENGTH

- 30 = 300mm
- 50 = 500mm
- 80 = 800mm
- 160 = 1600mm (*)

TYPE OF TERMINAL CASING

- SOG = flexible sensor, no terminals
- SMG 00 = flexible sensor with a terminal casing MG 00
- LC = small terminal box (PP or PVDF), IP65
- BC = large terminal box (PP or PVDF), IP65
- PG = no terminal; only connection cable 1.6m

SENSOR TUBE MATERIAL

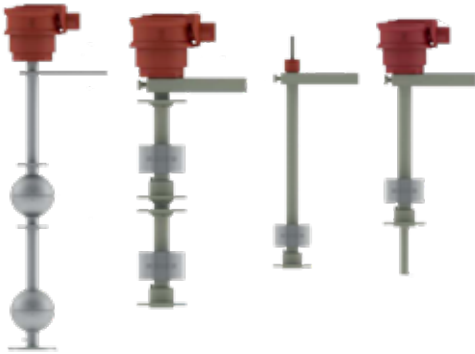
- M = Perfluoralkoxy (PFA)
- B = stainless steel (316 Ti)
- L = Polyvinylidene fluoride (PVDF)
- F = Polypropylene (PP)
- G = Polytetrafluorethylene (PTFE)

(*) Length for flexible tubes, no rigid immersion tube



MTSU/MTST

Level switch
MTSu/MTSt...



The main purposes of a level switch are to monitor the liquid level in a tank to prevent damage to devices or heaters installed inside, to prevent overflow, and to ensure that processes such as liquid dosing can run automatically.

- Functionality is based on a moving float. It can only be used in liquid which do not form encrustation.
- Available in PP, PVDF or stainless steel 316Ti
- Available with 1, 2, 3 or 4 change-over contacts. (switching points)
- Switching points are set in the factory and cannot be changed
- Mounting options : threaded nipples or flanges (on request)
- max. nominal length is 3000mm

- PG version : has no terminal casing, only a connection cable 1.6m and bracket SH10 for fixation, IP64
- LC version : has a small terminal box (PP or PVDF), IP65
- Option with integrated Pt100 sensor (3-wire) in levelswitch (PP or PVDF) with LC terminal casing

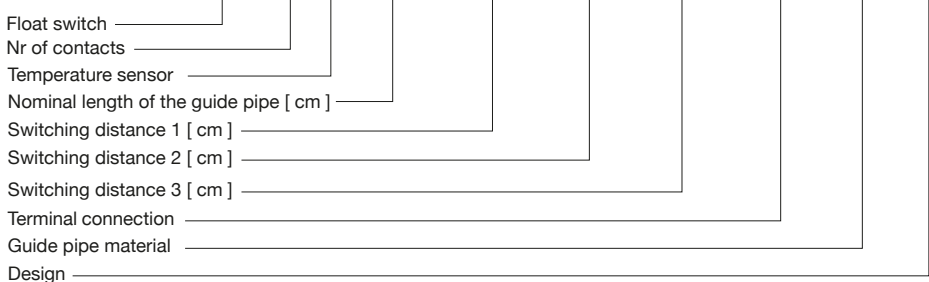
LEVEL SWITCH MATERIAL	CODE LETTER	MAX. OPERATING TEMP. [°C]
Stainless steel (316 Ti)	B	100
Polypropylene (PP)	F	90
Polyvinylidene fluoride (PVDF)	L	100

	MTSU/MTST	MTS2U/MTS2T	MTS3U/MTS3T	MTS4U	MTSU	MTS2U	MTS3U	MTS4U
Material	PP/PVDF	PP/PVDF	PP/PVDF	PP/PVDF	SS316	SS316	SS316	SS316
Number of switch over contacts	1	2	3	4	1	2	3	4
Integrated temp.sensor	opt. Pt100*	opt. Pt100*	opt. Pt100*	N/A	N/A	N/A	N/A	N/A
Switching current [A]	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25
Switching voltage [V] (AC/DC)	25	25	25	25	25	25	25	25
Switching power [W]	5	5	5	5	5	5	5	5
Switching delay	none	none	none	none	none	none	none	none
Switching hysteresis [mm]	5	5	5	5	5	5	5	5
Min. Distance contact 1 - 2 [mm]	-	20	20	20	-	20	20	20
Min. Distance contact 1 - 3 [mm]	-	-	95	95	-	-	100	100
Min. Distance contact 1 - 4 [mm]	-	-	-	120	-	-	-	120
Min. Nom. length LC, LC/L [mm]	100	125	200	230	125	160	220	260
Min. Nom. length PG [mm]	120	145	220	250	145	180	240	280
Versions	PG, LC, LC/L	PG, LC, LC/L	PG, LC, LC/L	PG, LC, LC/L	PG, LC, LC/L	PG, LC, LC/L	PG, LC, LC/L	PG, LC, LC/L
Max. Nom. length [mm]	3000	3000	3000	3000	3000	3000	3000	3000
Levelmonitor	ETS 100***	ETS 200***	ETS 410***	ETS 410	ETS 100	ETS 200	ETS 410	ETS 410
Temperature limiter	ETB 200**	ETB 200**	ETB 200**	-	ETB 200**	ETB 200**	ETB 200**	-
Level controller	-	ENR300***	ENR300	ENR300	-	ENR300	ENR300	ENR300
Temperature controller	MTR1000**	MTR1000**	MTR1000**	-	MTR1000**	MTR1000**	MTR1000**	-

* only in combination with LC or LC/L version ** only in combination with integrated temperature probe *** details on controllers on next page.

ORDERING INFORMATION

MTS A B CC / DD / EE / FF / GG - H / I



TEMPERATURE SENSOR

U = without temperature sensor
T = with temperature sensor

TERMINAL CONNECTION

LC = version with terminal casing LC
PG = version with sealed screw connection PG

GUIDE PIPE MATERIAL

F = PP
L = PVDF
B = stainless steel

DESIGN

9 = Special
L = PVDF

ETS-ENR

Level Electronics for Liquid Monitoring and Control ETS/ENR Series



Level electronics in combination with float switches or level rod probes permit the control and monitoring of the liquid level. The ETS/ENR level electronics are based on the principle of conductive level measurement.

Monitoring Devices :

- ETS 100 : Single-level monitoring (MIN or MAX)
- ETS 200 : Dual-level monitoring in one tank

Control Devices :

- ENR 300 : MIN/MAX control with additional monitoring
- ETS 410 : Four-level detection and evaluation

- Casing : **Polyamid PA 6,6**
- Flammability Class housing: **V0 (UL94)**
- Mounting : **35mm DIN Rail**
- Dimensions : **22,5 x 111 x 115 mm**
- Protection degree : **IP 20**
- Ambient temperature **-20 ... 60°C**
- Transport and storage temperature : **-40...70°C**
- Max. Humidity : **<75% (no dew)**

	ETS 100	ETS 200	ETS 410	ENR 300
N° of Level Switching Points	1	2	4	3
Contacts	1	2	4	2
Switching Status LEDs	1	2	4	2
Voltage [V] (AC/DC)	20-230	20-230	20-230	20-230
Switching Voltage	< 250 V AC	< 250 V AC	< 60V DC	< 250 V DC
Switching Current	≤ 5A	≤ 5A	≤ 2 A	≤ 5A
Test Function	yes	yes	yes	yes

MPD

Differential pressure controllers



Flow rate controllers designed for precise regulation in air duct heaters, combining reliability with durable construction, made to endure demanding conditions.

They allow easy integration with plastic piping and are supplied with a mounting plate for straightforward installation.

Conforming to stringent safety and quality standards, the MPD delivers dependable performance you can trust.

- Voltage: 30V DC or 250V AC
- Pressure: 0,3 - 50 mbar
- Fibre glass reinforced polycarbonate box
- Protection class: IP54
- Ø 6,2 mm port for connection plastic piping (not included)
- Supplied with mounting plate

REFERENCE	RANGE [mbar]	TS MIN. [°C]	TS MAX. [°C]	TB MIN. [°C]	TB MAX. [°C]	CONTACT	WEIGHT [kg]
MPD003	0,3 - 3	-40	85	-30	75	NC - 2A/30VDC or 5A/250VAC	0,15
MPD005	0,5 - 5	-40	85	-30	75	NC - 2A/30VDC or 5A/250VAC	0,15
MPD010	1 - 10	-40	85	-30	75	NC - 2A/30VDC or 5A/250VAC	0,15
MPD020	5 - 20	-40	85	-30	75	NC - 2A/30VDC or 5A/250VAC	0,15
MPD050	10 - 50	-40	85	-30	75	NC - 2A/30VDC or 5A/250VAC	0,15



CONFORMS TO EN6 1058 / DE0630 / DVGW ACCORDING TO DIN3398 PART 2 / DIN-DVGW94.01 AND 5 13

IR SENSOR

Non Contact IR Measurement



Infrared thermometers measure the energy radiated from an object, without touching it. This measurement technique is important in applications where contact would damage or alter the surface, such as a sheet of plastic film; or contaminate the product, such as food processing.

Unlike contact sensors, there is no delay while the infrared thermometer reaches the correct temperature. This makes it ideal for measuring moving or discrete processes. The result is fast, accurate noncontact temperature measurement and tighter control of your process.

The Raytek MI3 is a rugged IP65 Stainless Steel miniature pyrometer. Units available for harsh environments, options available for cable lengths, spot size and different temperature ranges.

- Extended temperature range up to 1650°C (3002°F)
- Optical resolution up to 22:1
- Dedicated close focus lens: spot sizes down to 0,5 mm (0,02 in)
- Short response time: 20 ms
- Industrial rugged cable: Silicone and Halogen free, resistant against oil, bases, and acids
- Protection class: IP65
- USB 2.0 interface as standard and selectable field busses
- Ambient temperatures up to 180°C (356°F) without need for costly cooling
- Standard cable: 3m (others on demand)

REFERENCE	AMBIENT TEMPERATURE	TEMPERATURE RANGE	OPTICAL RESOLUTION (D:S)	SPECTRAL RANGE	RESPONSE TIME
RAYMI310LTHCB3	sensor, -10°C to +180°C	-40°C to +600°C	10:1	8-14 µm	130 ms
RAYMI310LTSCB3	sensor, -10°C to +120°C	-40°C to +600°C	10:1	8-14 µm	130 ms

DIFFERENT TEMPERATURE RANGES AVAILABLE ON DEMANDE

IR SENSOR COMM BOX

Non contact IR Measurement Communication Box



The multi-channel MI3MCoMM communication box for multiple sensing head applications with USB interface as standard, and a wide range of network communication interfaces, is available in a convenient DIN-rail mountable package.

4 sensing heads can be directly connected to the MI3MCOMM box.

- Standard Interface : USB 2.0
- Optional Interfaces : RS485, Profibus, Profinet, Ethernet, Modbus
- Outputs : Analog 4-20mA, 0-20mA, 0-5V, or 0-10V, thermocouple J, K, R, S, Alarm
- Display, Button

ORDERING INFORMATION
RAYMI3COMMI

TMT

Temperature Transmitter



This temperature transmitter features a linear 4–20 mA output and is designed for RTD (PT100), Thermocouple (TC), Ohm, or mV sensor inputs.

It is a reliable instrument for accurately measuring and transmitting temperature data in industrial and process control applications.

- Maximum input span: -200 °C to 650 °C
- ABS body: resistant to moisture, vibration, and extreme temperatures
- Power supply: 24 V CC across the measurement loop
- Protection class: IP40
- Working temperature range configured at our facility. Can be adjusted via PC using FLEX software (Windows compatible)
- Can be optionally added to the connexion boxes of our sensors

- Ambient & Stocking Temp.: min. -40 °C / max. +85 °C
- Dimensions: Ø 44 x 25 mm

ORDERING INFORMATION

TMT190-A **TMT190-B**

Temperature transmitter for RTD (PT100)

Temperature transmitter for TC J/K

OTHER VARIANTS ON DEMAND

TMT-DIN

Temperature Transmitter



This temperature transmitter for DIN-rail mounting features a linear 4–20 mA output and is designed for RTD (PT100), Thermocouple (TC), Ohm, or mV sensor inputs.

It is a reliable instrument for accurately measuring and transmitting temperature data in industrial and process control applications.

- DIN-rail mounting
- Maximum input span: -200°C to 2300°C
- Power supply: 7,5 to 48 V DC
- Protection class: IP20
- 2,5 kV AC galvanic isolation
- Single or true dual inputs with sensor redundancy and drift detection
- Total accuracy from 0,014%
- Full assessment to IEC61508: 2010 for use in SIL 2/3 applications

- Ambient & Stocking Temp. : min. -50°C / max.85°C
- Dimensions : 109 x 23,5 x 104 mm

ORDERING INFORMATION

TMT-DIN

Temperature transmitter for RTD (PT100) and TC

OTHER VARIANTS ON DEMAND

SCD21

Flow temperature controller



New digital flow temperature controller with control of a 3-way actuator, perfectly suitable for underfloor heating and cooling systems. It can control a 2-position valve (ON/OFF action) or a 3-position mixing valve (proportional action).

This controller is easily mounted on any DIN-rail.

- 2 operating functions
- ON/OFF control with adjusted differential
- Accuracy class: 0,5
- 2 relay outputs 8A for valve controls
- Built-in safety switch for faulty sensors
- 3-digit digital display
- Temporary alarm with built-in buzzer
- Suitable for rail mounting
- 2 PTC/NTC sensor configurable inputs
- Power supply : 12 – 24V AC/DC or 230V AC

G650

PID temperature controller, 1/16 DIN



• Dimensions (L x H x W): 48 x 48 x 80 mm

The G650 has a large LCD display and is characterised by the high customisation of colors associated with the PV and SV displays. Advanced tuning algorithms ensure stable and accurate control even with critical or very rapid thermal systems, engaging automatically when necessary. Thanks to language selection and clear scrolling messages for diagnostics, alarms, and process state, the controller speaks the user's language. Also has the ability to clone configuration among controllers.

- 16 function block applications
- Three types of timers
- Timer, setpoint and algorithm programmer to control motorized valves
- Easy, guided configuration with GF_eXpress and Zapper
- Preventive maintenance
- Complete diagnostics
- Easy replacement
- Relay, logic, isolated analog outputs
- Advanced tuning of control parameters
- 60ms sampling time
- Thermocouples, resistance thermometers, linear inputs (universal main input)
- Extensively remotely (software) configurable
- Energy monitoring
- Different password levels
- IP65 on front panel
- Power supply : 100...240V AC/DC $\pm 10\%$

2850T Multifunction Controller

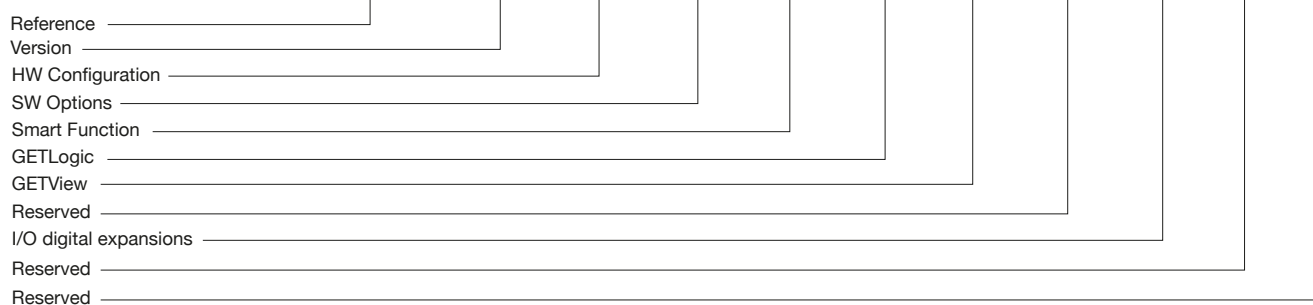


The 2850T multifunction controller is designed for managing temperature in industrial processes such as heat treatment, kiln, and autoclave management in sectors like automotive, food, and metalworks. It features a 3.5" color touch screen with six customizable function keys for intuitive control, allowing users to configure custom pages directly on the display. Supporting up to 8 configurable PID loops with advanced tuning algorithms, the controller offers precise temperature management. Its profile programmer handles up to 200 programs with 50 segments each and supports synchronous and asynchronous modes. The Data Logger records process data for export via USB or Ethernet, and the controller includes diagnostics, energy consumption tracking, SNTP support, and recipe management for quick setups and transitions, ensuring efficient and reliable operation in diverse industrial environments.

- Operator interface with color touch screen display, 3.5 "
- Up to 8 PID control loops
- Cascade, ratio and valve PID controls
- Profile programmer with ramps and retention; synchronous and asynchronous
- Up to 200 Programs with 50 segments
- 3 password protected user levels
- Energy meter (kWh)
- Configurable logic operations
- Configurable math functions
- Data Log with Real Time Clock
- Batch Report management
- Open format files (CSV) or encrypted for DataLog and production batches
- Setting up custom pages
- Management of active and historic alarms
- Active and historical alarm management
- USB for data export and parameter cloning
- Control parameter advanced tuning
- Configurable analogue and digital I/O signals
- HMI/SCADA/PLC data exchange via Ethernet
- Modbus TCP
- Message language selection
- Compliance with CFR-21 regulation through Audit Trail (SW option in the order code)"

ORDERING INFORMATION HEATSINK VERSION

2850T - AA - BB - CC - DD - EE - FF - GG - HH - II - LL



VERSION

0C = PID multiloop controller
 0S = Recorder
 CS = PID multiloop controller + Recorder
 PS = PID multiloop controller + Programmer + Recorder

HW CONFIGURATION

04 = 4 analog inputs + 2 analog outputs + 8 digital inputs + 8 digital outputs
 08 = 8 analog inputs + 4 analog outputs + 16 digital inputs + 16 digital outputs

SW OPTIONS

00 = None
 01 = CFR21

SMART FUNCTION

00 = No
 01 = SD Data Storage + SD Card 1 GB (*)

GETLOGIC

00 = No
 GL = Yes

GETVIEW

00 = No
 GV = Yes

RESERVED

0 = None

I/O DIGITAL EXPANSIONS

00 = None
 08 = 8 digital inputs + 8 digital outputs
 16 = 16 digital inputs + 16 digital outputs

RESERVED

0 = None

RESERVED

0 = None

(*) SD option includes a 1 GB SD Card - The SD option is not available for the Multiloop model (0C)

3850T

Multifunction Controller

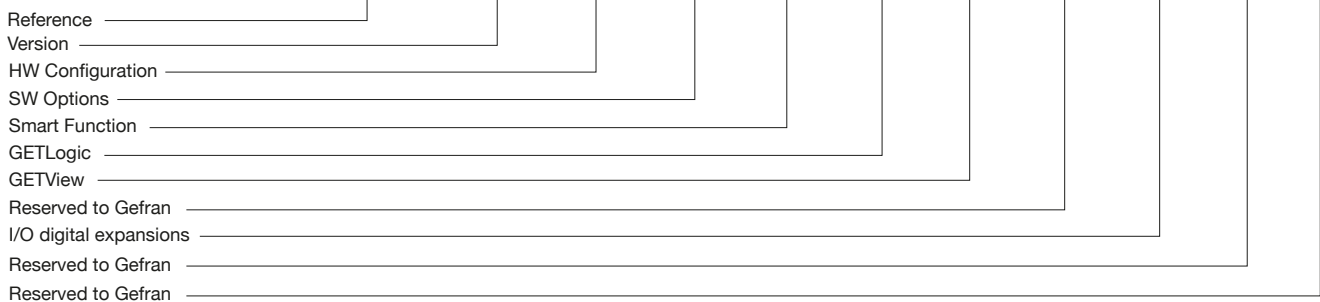


The 3850T multifunction controller provides precise temperature control for industrial processes like heat treatment, kiln, and autoclave management in sectors such as automotive, food, and metalworks. It features a 7" color touch screen with 10 customizable function keys, allowing users to create custom pages on the display using a graphic symbol library and machinery images. The controller manages up to 16 configurable PID loops with advanced tuning algorithms and supports up to 250 programs with 50 segments each, running up to 8 programs simultaneously. It includes logical operators and mathematical functions for complex sequences, a Data Logger with a Real-Time Clock for recording and exporting data via USB or Ethernet, and a batch report option. The 3850T supports recipe management, diagnostics, energy consumption tracking, and secure access with password levels, and integrates with factory HMI/SCADA networks via Modbus TCP. Configuration is simplified with the GF_express PC tool.

- Operator interface with color touch screen display, 7"
- Up to 16 PID control loops
- Cascade, ratio and valve PID controls
- Profile programmer with ramps and retention; synchronous and asynchronous
- Up to 250 Programs with 50 segments
- 3 password protected user levels
- Energy meter (kWh)
- Configurable logic operations
- Configurable math functions
- Data Log with Real Time Clock
- Batch Report management
- Open format files (CSV) or encrypted for DataLog and production batches
- Setting up custom pages
- Active and historical alarm management
- USB for data export and parameter cloning
- Control parameter advanced tuning
- Configurable analogue and digital I/O signals
- HMI/SCADA/PLC data exchange via Ethernet Modbus TCP
- Message language selection
- Compliance with CFR-21 regulation through - Audit Trail (SW option in the order code)"

ORDERING INFORMATION HEATSINK VERSION

3850T - AA - BB - CC - DD - EE - FF - GG - HH - II - LL



VERSION

- 0C = PID multiloop controller
- 0S = Recorder
- CS = PID multiloop controller + Recorder
- PS = PID multiloop controller + Programmer + Recorder

HW CONFIGURATION

- 04 = 4 analog inputs + 2 analog outputs + 8 digital inputs + 8 digital outputs
- 08 = 8 analog inputs + 4 analog outputs + 16 digital inputs + 16 digital outputs
- 12 = 12 analog inputs + 4 analog outputs + 16 digital inputs + 16 digital outputs
- 16 = 16 analog inputs + 4 analog outputs + 16 digital inputs + 16 digital outputs

SW OPTIONS

- 00 = None
- 01 = CFR21

SMART FUNCTION

- 00 = No
- 01 = SD Data Storage + SD Card 1 GB (*)

GETLOGIC

- 00 = No
- GL = Yes

GETVIEW

- 00 = No
- GV = Yes

RESERVED TO GEFRAN

- 0 = None

I/O DIGITAL EXPANSIONS

- 00 = None
- 08 = 8 digital inputs + 8 digital outputs
- 16 = 16 digital inputs + 16 digital outputs

RESERVED GEFRAN

- 0 = None

RESERVED GEFRAN

- 0 = None

(*) SD option includes a 1 GB SD Card - The SD option is not available for the Multiloop model (0C)

G-MATION 45

Widescreen multitouch panel PC (HMI) with integrated PLC controller



The Gefran G-Mation V45 series is an advanced multitouch panel PC designed for high-performance industrial automation, offering display sizes from 7" to 21.5" and resolutions up to full HD (1920x1080). Powered by a robust 64-bit quad-core CPU at 1,6 GHz, the V45 runs on a stable Linux operating system with 4 GB flash and 2 GB RAM, ensuring responsive control and reliable operation.

Integrated PLC functionality and rich connectivity - three Ethernet ports (including Gigabit and PoE), dual USB host ports, and a configurable serial interface – support complex automation and seamless integration into Industry 4.0 environments. The G-Mation V45 embraces modern automation requirements with features such as HTML5 web server operator interfaces, cloud connectivity, and event management for streamlined monitoring and diagnostics.

Its true glass projected capacitive multitouch technology delivers intuitive usability, while its scalable architecture, integrated cybersecurity firewall, and fieldbus protocol support make it ideal for demanding applications across plastics, metalworking, heat treatment, and more.

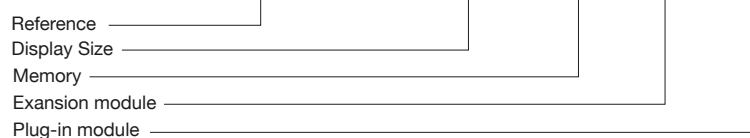
This panel PC is engineered for reliability and flexibility, offering advanced control, connectivity, and secure operation in industrial environments.

REFERENCE	V45-070	V45-101	V45-156	V45-215
DISPLAY	7"	10,1"	15,6"	21,5"
RESOLUTION	800 x 480	1280 x 800	1366 x 768	1920 x 1080
PROCESSOR	Quad core RISC at 64 bit - 1,6 GHz			
MEMORY	Flash 4GB - RAM 2GB - SD card slot			
CONNECTIONS	Ethernet (3) - USB (2) - Serial (1) - Buzzer			
CONSUMPTION	0,7 A at 24 V	1,0 A at 24 V	1,2 A at 24 V	1,7 A at 24 V

- Multitouch panel control (PLC + HMI)
- Voltage: 24 V DC (10 - 32 V)
- OS: Linux RT (Real-Time)
- Software: GF Designer HD / GF Project VX
- Display: 7 - 21,5", up to full HD (1920x1080)
- Advanced graphics with capacitive touch
- LED backlight
- Memory: 4GB flash and 2GB RAM (+ SD card slot)
- Protection class: IP66 front panel / IP20 back panel
- Integrated buzzer system
- 3 x Ethernet, 2 x USB - Host V2.0, max. 500 mA
- Integrated PLC RunTime
- No keyboard availability
- Expansion and Plug-in modules optionally available

ORDERING INFORMATION GMATION V45 SERIES

GMATION V45- XXX - 54 - 00 - 00



DISPLAY SIZE

070 = 7" multitouch panel
 101 = 10,1" multitouch panel
 156 = 15,6" multitouch panel
 215 = 21,5" multitouch panel

MEMORY

54 = Processor Quad core RISC at 64 bit - 1,6 GHz

EXPANSION MODULE

00* = absent
 *to be ordered separately - see options

PLUG-IN MODULE

00* = absent
 *to be ordered separately - see options

OPTIONS

- Expansion module:
 - *LTE: **F093066**
 - *LTE/4G+WIFI+GNSS: **F089429**
- Antenna (for plug-in mod.):
 - *WIFI: **F089430**
 - *Data (4G/LTE): **F089431**
- Plug-in module:
 - *CAN: **F086949**
 - *RS-232: **F086951**
 - *RS-485: **F086953**
- Extension cable for 3G Antenna 1,5m (for plug-in mod.): **F081120**

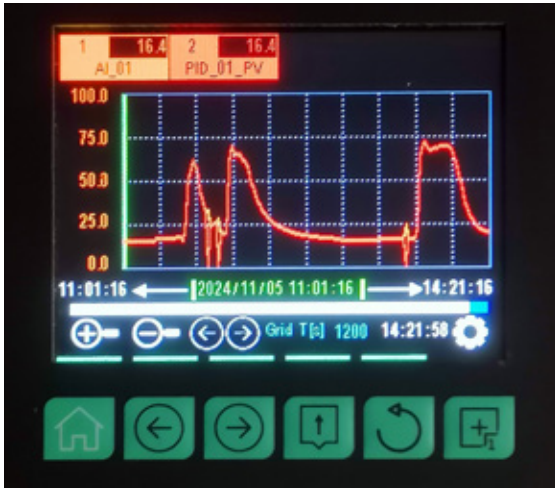


ALL THE SOLUTIONS, GUIDANCE YOU NEED

DIRAC Industries offers a complete range of process control solutions, including flow temperature controllers, PID controllers, multifunction controllers, single-phase solid-state relays, and power controllers.

These solutions are ideally suited for a wide variety of industrial and commercial applications — from underfloor heating and cooling systems to industrial electric heating processes — and serve sectors such as automotive, food, and metalworks, providing full automation data management and diagnostics.

Beyond providing the right hardware, we combine our expertise with tailored advice to help you select the ideal controller or relay for your process. From ensuring reliable operation to optimizing efficiency, DIRAC Industries is your partner in achieving precise and consistent temperature management.



ALL FUNCTIONS CAN BE COMBINED IN ONE INTELLIGENT SYSTEM — ADVANCED AND MODULAR POWER CONTROLLERS

Designed to meet even the most diverse requirements, they provide full control, simplified management, and the confidence of best-in-class performance, while ensuring precise, efficient, and reliable operation across all industrial processes.



GRS

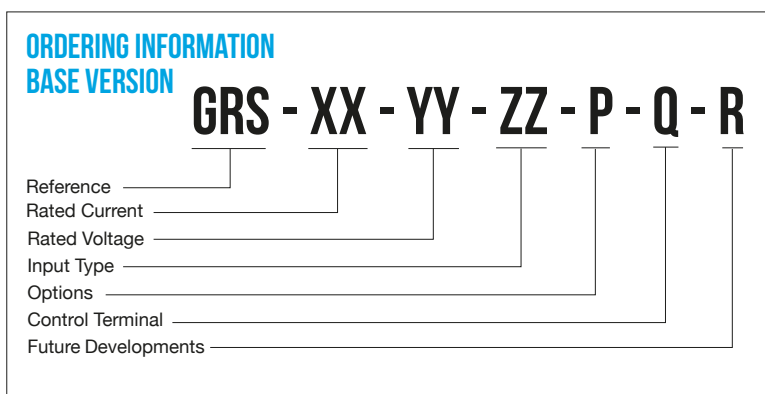
Single-phase solid state relay



Continuous and precise control of electrical resistors for industrial heating applications requires reliable, compact, fast with integrated diagnostic Solid State relays. The GRS series of Solid State Relay with current ratings from 15 to 120 Amperes, voltages up to 660Vac, zero crossing switching (ZC) and ultra compact sizes is the ideal device for this type of application.

Accessories such as heat sinks, fuses, and fans are available for its installation.

- Current range from 15A up to 120A
- Mono phase
- Ultra slim dimension
- DIN rail and panel mounting installation
- Zero crossing (ZC) firing mode
- Vdc / Vac command signal
- Command wiring push-in terminal
- Power cable box clamp terminal
- Load voltage 480Vac, 600Vac
- Thermal alarm option with led and digital output status
- Load break alarm option with led and digital output status
- Overvoltage protection
- GRS-H with heat sink integrated available
- Smart Cooling Fan available



RATED CURRENT

- 15 = 15Aac
- 25 = 25Aac
- 25I = 25Aac I2t++
- 30 = 30Aac
- 30I = 30Aac I2t++
- 40 = 40Aac
- 50 = 50Aac
- 60 = 60Aac
- 75 = 75Aac
- 90 = 90Aac
- 120 = 120Aac

RATED VOLTAGE

- 48 = 480Vac
- 60 = 600Vac

INPUT TYPE

- D = 6-32Vdc
- DD = 6-32Vdc Double Input
- A = 20-260Vac/Vdc

CONTROL TERMINAL

- 0 = Push In

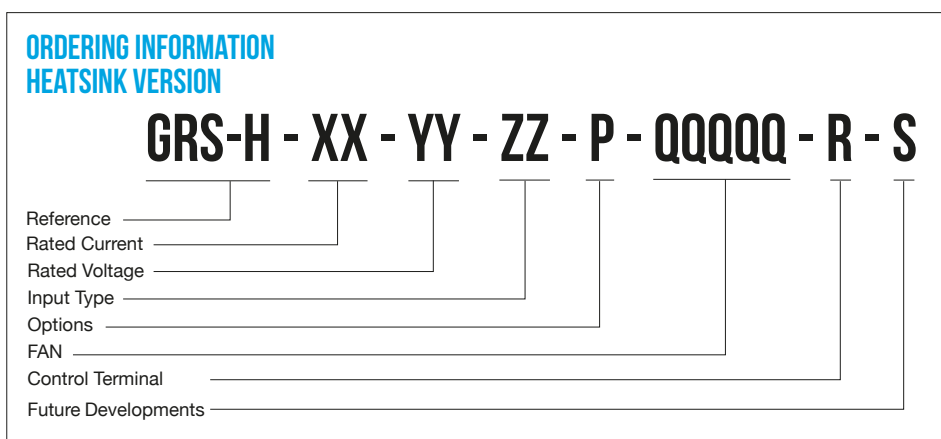
FUTURE DEVELOPMENTS

- 0 = None

OPTIONS

- 0 = None
- 1 = Thermal Alarm and Load Interrupted - Insulated Contact (NO) (*)
- 2 = Thermal Alarm and Load Interrupted - Insulated Contact (NC) (*)
- 3 = Thermal Alarm and Load Interrupted - Digital Output PNP (NO) (*)
- 5 = Thermal Alarm - 1x Insulated Contact (NC)

(*) Available only for version with Input Type D



RATED CURRENT

- 15 = 15Aac
- 25 = 25Aac
- 25I = 25Aac I2t++
- 30 = 30Aac
- 30I = 30Aac I2t++
- 40 = 40Aac
- 50 = 50Aac
- 60 = 60Aac
- 75 = 75Aac
- 90 = 90Aac
- 120 = 120Aac

INPUT TYPE

- D = 6-32Vdc
- DD = 6-32Vdc Double Input
- A = 20-260Vac/Vdc

CONTROL TERMINAL

- 0 = None

FUTURE DEVELOPMENTS

- 0 = None

RATED VOLTAGE

- 48 = 480Vac
- 60 = 600Vac

OPTIONS

- 0 = None
- 1 = Thermal Alarm and Load Interrupted - Insulated Contact (NO) (*)
- 2 = Thermal Alarm and Load Interrupted - Insulated Contact (NC) (*)
- 3 = Thermal Alarm and Load Interrupted - Digital Output PNP (NO) (*)
- 5 = Thermal Alarm - 1x Insulated Contact (NC)

FAN

- Current Rated Version 15-75A**
- 0 = Not Required (15-75A)
- Current Rated Version 90-120A**
- 0 = Without Fan with bigger heatsink (90A only)
- FAN60 = 230Vac (90A: 60x60x30mm - 120A: 80x80x38mm)
- FAN61 = 115Vac (90A: 60x60x30mm - 120A: 80x80x38mm)
- FAN62 = 24Vdc (90-120A: 60x60x25mm)
- FAN63 = 24Vdc smart powered by module (90-120A: 60x60x25mm) (**)

(*) Available only for version with Input Type D

(**) Available only for version with Input Type D and Options D-1, D-2, D-3, D-5; This option allows to turn off fan when necessary for lifetime improvement.

GRP

Single-phase solid state relay

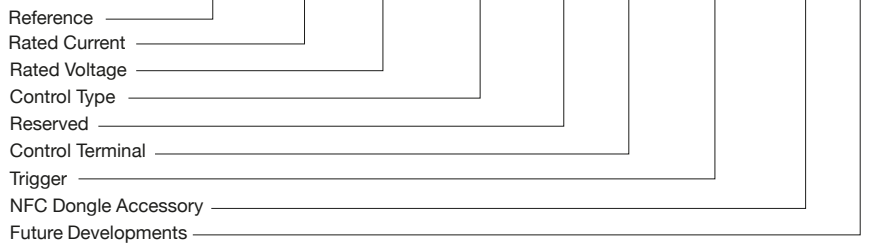


The ability to propose customized control solutions allows to rapidly satisfy the most different automation needs. For this purpose, the GRP series provides a wide range of extremely compact SSRs, with a solid basic structure but scalable as current sizes (from 15A to 120A), control type and configuration features.

- Current range from 15A up to 120A
- Mono phase
- Ultra slim dimension
- Din rail mounting
- IO-Link communication
- Digital and proportional (V/mA) command
- Multi firing mode (ZC/BF/HSC/PA)
- Linear resistance and Infrared lamps (LWIR/MWIR) heaters control
- Load voltage 480Vac, 600Vac
- Opt. Partial heater break alarm (1/8)
- NFC configuration
- GRP-H with heat sink integrated available
- Smart Cooling Fan available

ORDERING INFORMATION BASE VERSION

GRP - XX - YY - ZZZZ - P - Q - RRRR - S - T



RATED CURRENT

- 15 = 15Aac
- 25 = 25Aac
- 25I = 25Aac I2t++
- 30 = 30Aac
- 30I = 30Aac I2t++
- 40 = 40Aac
- 50 = 50Aac
- 60 = 60Aac
- 75 = 75Aac
- 90 = 90Aac
- 120 = 120Aac

RATED VOLTAGE

- 48 = 480Vac
- 60 = 600Vac

RESERVED

- 0 = None

CONTROL TERMINAL

- 0 = Push In

NFC DONGLE ACCESSORY

- 0 = Absent
- 1 = NFC Dongle Included

FUTURE DEVELOP.

- 0 = None

CONTROL TYPE

- D-1 = Digital with Advanced Diagnostics (**)
- AN-0 = Analogue with Basic Diagnostics (*)
- AN-1 = Analogue with Advanced Diagnostics (**)
- I-1 = IO-Link with Advanced Diagnostics (**)

TRIGGER

D-1 Type Control

- 0 = OnOff (Zero Crossing)

AN-0 Type Control

- 1 = Burst Firing (ZC Optimised or Fixed Cycle Time)

AN-1 and I-1 Type Control

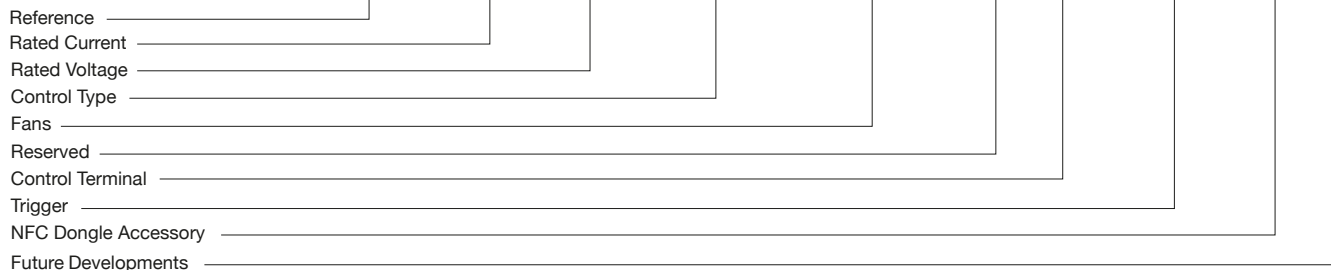
- 1 = Burst Firing (ZC Optimised or Fixed Cycle Time)
- 2 = Half Single Cycle (default); also configurable as Phase Angle or Burst Firing
- 3 = Phase Angle (default); also configurable as Half Single Cycle or Burst Firing

(*) Basic Diagnostics: Include Thermal Safety, Thermal Alarm, Total Load Break, No Voltage Line

(**) Advanced Diagnostis: Basic Diagnostics, Curent Reading, Partial Load Break

ORDERING INFORMATION HEATSINK VERSION

GRP-H - XX - YY - ZZZZ - PPPPP - Q - R - SSSS - T - U



RATED CURRENT

- 15 = 15Aac
- 25 = 25Aac
- 25I = 25Aac I2t++
- 30 = 30Aac
- 30I = 30Aac I2t++
- 40 = 40Aac
- 50 = 50Aac
- 60 = 60Aac
- 75 = 75Aac
- 90 = 90Aac
- 120 = 120Aac

RATED VOLTAGE

- 48 = 480Vac
- 60 = 600Vac

CONTROL TYPE

- D-1 = Digital with Advanced Diagnostics (**)
- AN-0 = Analogue with Basic Diagnostics (*)
- AN-1 = Analogue with Advanced Diagnostics (**)
- I-1 = IO-Link with Advanced Diagnostics (**)

FANS

Current Rated Version 15-75A

0 = Not Required (15-75A)

Current Rated Version 90-120A

FAN60 = 230Vac (90A: 60x60x30mm - 120A: 80x80x38mm)

FAN61 = 115Vac (90A: 60x60x30mm - 120A: 80x80x38mm)

FAN62 = 24Vdc (90-120A: 60x60x25mm)

FAN63 = 24Vdc smart powered by module (90-120A: 60x60x25mm)

RESERVED

0 = None

NFC DONGLE ACCESSORY

0 = Absent
1 = NFC Dongle Included

FUTURE DEVELOP.

0 = None

TRIGGER

D-1 Type Control

0 = OnOff (Zero Crossing)

AN-0 Type Control

1 = Burst Firing (ZC Optimised or Fixed Cycle Time)

AN-1 and I-1 Type Control

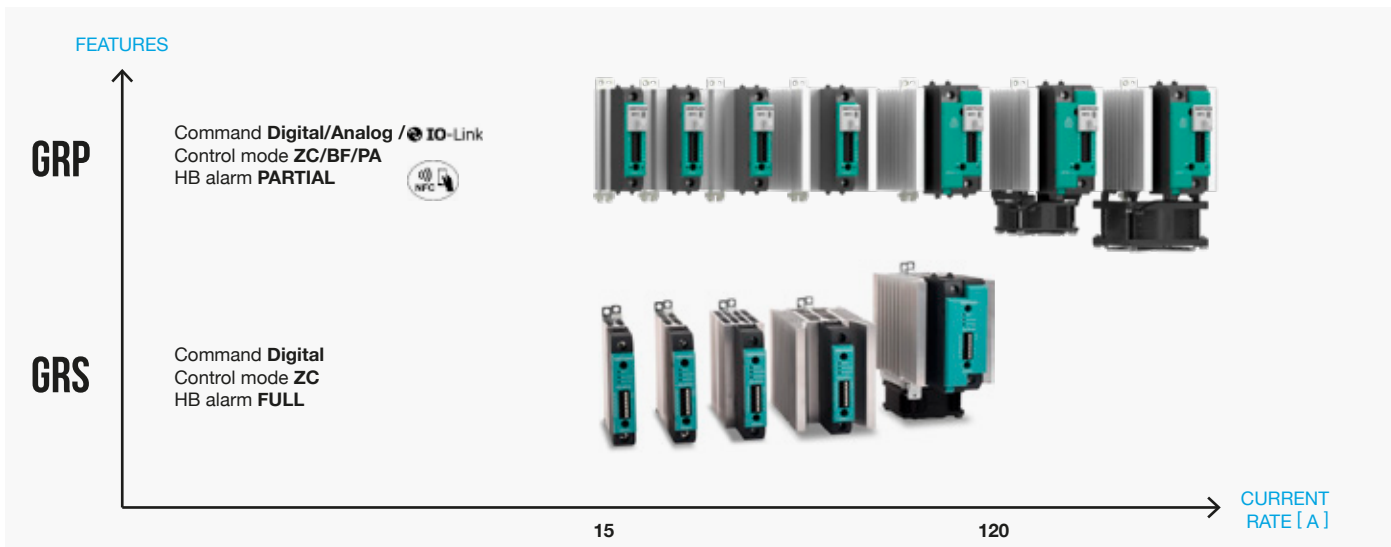
1 = Burst Firing (ZC Optimised or Fixed Cycle Time)

2 = Half Single Cycle (default); also configurable as Phase Angle or Burst Firing

3 = Phase Angle (default); also configurable as Half Single Cycle or Burst Firing

(*) Basic Diagnostics: Include Thermal Safety, Thermal Alarm, Total Load Break, No Voltage Line

(**) Advanced Diagnostis: Basic Diagnostics, Curent Reading, Partial Load Break





GRM-H

Single-phase
Power Controller



Controlling complex loads like infrared lamps or SiC heating elements requires special care, since startup currents can reach up to 15 times the rated value.

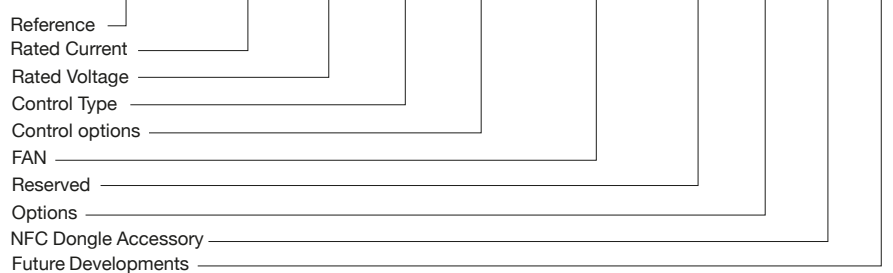
The GRM-H continuously monitors absorption current and, through advanced algorithms, limits inrush currents while ensuring stable energy supply. It compensates for grid fluctuations, load temperature changes, and element aging, always delivering consistent power thanks to feedback control (V^2 , I^2 , P).

The GRM-H series solid-state contactors with heatsink cover 10–120 A and up to 600V AC, in extremely compact sizes. Their optimized thermal design guarantees full rated current at 40 °C; higher currents can be achieved at lower temperatures. Fans support the 90 & 120 A models, and all versions allow DIN-rail stacking without performance loss.

- Ultra-compact: 10A - 120A
- Load voltage 480V, 600V AC
- DIN rail and panel mounting
- IO-Link + Modbus RTU digital com.
- Current limiting
- Signal LED
- Feedback V,I,V², I², P, Z
- Control output for Slave (2PH, 3PH)
- Zero voltage crossing (ZeroCrossing) or Phase angle control
- On/Off control, optimized/fixed cycle time, HalfSingleCycle, PhaseAngle, softstart ramps
- Input command, Analog signal (0-5V, 0-10V, 0-20mA, 4-20mA, potentiometer), PWM or IO-Link logic
- Configuration and diagnostics via smartphone app with NFC technology
- Calibration and alarm reset via DI
- 2 outputs: PNP and dry contact, completely configurable
- Cage clamps for power cables
- Advanced load diagnostics
- Internal over voltage protection
- Integrated cooling fan power option
- Master/Slave configuration possible

ORDERING INFORMATION HEATSINK VERSION

GRM-H - XX - YY - ZZ - PP - QQQQQ - R - SS - T - U



RATED CURRENT

- 10 = 10Aac
- 15 = 15Aac
- 25 = 25Aac
- 25I = 25Aac I2t++
- 30 = 30Aac
- 30I = 30Aac I2t++
- 40 = 40Aac
- 50 = 50Aac
- 60 = 60Aac
- 75 = 75Aac
- 90 = 90Aac
- 120 = 120Aac

OPTIONS

- 0 = None
- MR = Modbus RTU RS485 (**)

RATED VOLTAGE

- 48 = 480Vac
- 60 = 600Vac

RESERVED

- 0 = None

NFC DONGLE ACCESSORY

- 0 = Absent
- 1 = NFC Dongle Included (*)

FUTURE DEVELOP.

- 0 = None

CONTROL TYPE

AN = Analog (0..10V,4..20mA, PWM, Logic OnOff)
I = IO-Link (*)

CONTROL OPTIONS

OL = Open loop
AC = Advanced Control (Current limit/ DryOut)
FB = AC + Feedback (V,I,V²,I²,P,Z)

FAN

Current Rated Version 15-75A
0 = Not Required (15-75A)

Current Rated Version 90-120A

FAN60 = 230V AC (90A: 60x60x30mm - 120A: 80x80x38mm)
FAN61 = 115V AC (90A: 60x60x30mm - 120A: 80x80x38mm)
FAN62 = 24V DC (90-120A: 60x60x25mm)
FAN63 = 24V DC smart powered by module (90-120A: 60x60x25mm)

(*) NFC function not available with Control type 'I' (IO-Link communication)

(**) Not available with IO-link control type option

GPC

Advanced power controllers



A robust, compact and fast SCR for accurate and stable temperature control in industrial electric heating systems. The GPC-series is compatible with all types of loads and allows great application flexibility for all current sizes. The controllers have integrated diagnostic features to provide the main control system with useful information to anticipate probable failures.

An advanced solution to handle even the most critical thermal process applications.

- Current capacities : 40A – 600A
- Latest communication protocols
- Simple and immediate diagnostics
- Ease of cabling
- Fieldbus communication
- Current limit
- Widely configurable
- Built-in fuses
- Voltage rating : 480V/600V/690V AC
- Mono, two and three phase
- Linear and non-linear resistors and transformers
- Total and partial load failure alarm
- Preventive maintenance
- Universal commands
- Energy monitoring
- Power supply : 24V DC ±10%

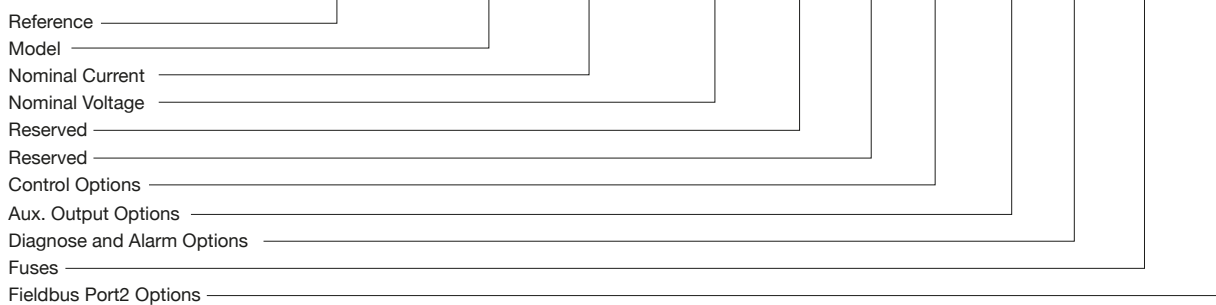


OPTION

The human/machine interface (HMI) lets you read/write all of the parameters of a single GPC-M module. Connected with a 9-pin D-SUB connector and has magnetic housing integrated in the front panel of the GPC-M.

ORDERING INFORMATION HEATSINK VERSION

GPC - XXX - YYY - ZZZ - O - O - P - Q - R - S - TT



MODEL

- 1PH = Module Mono-Phase (Master)
- 2PH = Module Dual-Phase (Master+ 1 exp)
- 3PH = Module Three-Phase (Master + 2 exp)

NOMINAL CURRENT

- 40 = 40A 250 = 250A
- 60 = 60A 300 = 300A
- 100 = 100A 400 = 400A
- 150 = 150A 500 = 500A
- 200 = 200A 600 = 600A

NOMINAL VOLTAGE

- 480 = 480 Vac (*)
- 600 = 600 Vac (*)
- 690 = 690 Vac

RESERVED

- 0 = None

RESERVED

- 0 = None

CONTROL TYPE

- 0 = Absent
- 1 = Current Limit
- 2 = Current Limit & Feedback V, I, P
- 3 = Current Limit & Feedback V, I, P + Vload input
- 4 = Current Limit & Feedback V, I, P + Vload input + 3 TA external input (**)

AUX. OUTPUT OPTIONS

- 0 = Absent
- R = 4 Relays
- D = 4 Digital Outputs
- R = 4 Relays
- W = 3 analogue outputs: 12 bit, 0-10V, 4-20mA retransmission

DIAGNOSE AND ALARM OPTIONS

- 0 = Absent
- 1 = Partial and total load break alarm (HB) + Diagnostic alarms

FUSES

- 0 = Absent
- 1 = Self-Contained

FIELDBUS PORT2 OPTIONS

- 0 = Absent
- M = Modbus RTU
- P = Profibus DP
- C = CANopen
- E = Ethernet Modbus TCP
- E6 = Profinet
- E7 = EtherCAT
- E8 = Ethernet IP

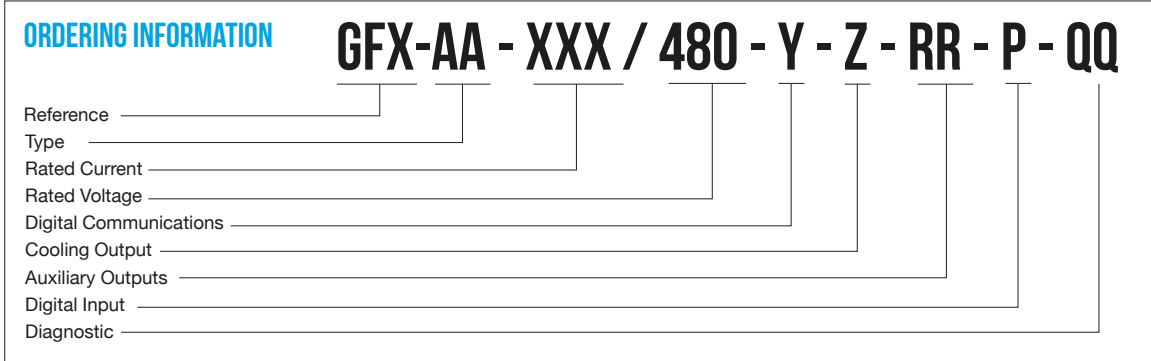
(*) Option not available fr models with Nominal Current >=400A
 (**) Option not available for 690Vac models with Nominal Current <= 300A

GFX Modular Power Controller



A state-of-the-art integrated system has been developed to manage power and temperature in industrial electric heating processes. The system architecture is specifically designed for efficient temperature control in multizone plants. Comprising a control unit, encompassing the PID microprocessor controller along with the load control devices (AT and VT), and a power module (SSR) with an aluminum heat sink, this system is characterized by its compactness and user-friendly nature, ensuring straightforward installation and operation.

- Three versions :
 - MASTER - independent temperature control and communication unit
 - SLAVE - independent temperature control unit
 - EXPANSION - for three-phase loads
- SSR (Solid State Relay) zero crossing
- Rated voltage: 480Vac rms, 50-50Hz
- Rated current (AC1): 25A, 40A, 60A, 75A, 90A, 120A
- Protection : IP20
- Installation : DIN bar and panel
- Universal temperature input, accuracy 0.2%
- Configurable digital input
- Logic output or "cooling" relay
- Load current detection with integrated CT
- Heat/cool PID, selection of cooling fluid, self-tuning, auto-tuning, soft-start
- 4 generic alarms, LBA and HB alarms
- 2 configurable relay outputs
- Field bus for Master :
 - std : "Modbus RTU" with Serial RS485 optically
 - opt : "PROFIBUS DP", "CANopen", "DeviceNet"



TYPE

M1= Master
S1 = Slave
E1 = Expansion

RATED CURRENT

B40 = Base Master 25-40A without solid state power unit
B120 = Base Master 60-120A without solid state power unit
25 = Solid state relay 25A
40 = Solid state relay 40A
60 = Solid state relay 60A
75 = Solid state relay 75A
90 = Solid state relay 90A
120 = Solid state relay 120A

RATED VOLTAGE

480 = 480Vac 480

DIAGNOSTIC

00 = None
CO = Current Transformer
CT = Current Transformer + Voltmeter Transformer

DIGITAL COMMUNICATIONS*

M = MODBUS RTU
P = PROFIBUS DP
C = CANopen
D = DeviceNet
E = Ethernet Modbus TCP
(* Only Master

COOLING OUTPUT

0 = None
D = Logic
R = Relay
C = Continuous output 0...10V (0/4...20mA)
(* Only Master & Slave, not expansion

DIGITAL INPUT

P = PNP Digital Input
(* Only Master & Slave, not expansion

AUXILIARY OUTPUTS

00 = Absent**
RR = 2 Relays
(**) Only Slave Type below 75A current rating

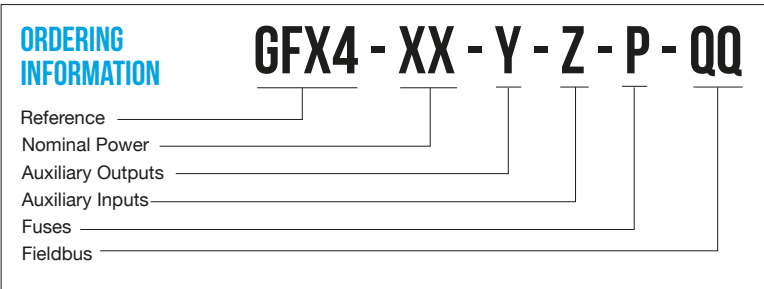
GFX4

Modular Power Controller



GFX4 is a compact four-independent-loop controller designed for efficient power management, combining elements like a controller, solid-state relay, current transformers, and optional fuses-holders. This integration saves space and reduces cabling costs. The unit includes a power management module, analog/digital inputs and outputs, integrated solid-state relays, and optional fuses-holders. Geflex, the autonomous controller, provides detailed diagnostics and features a user-friendly software tool for easy configuration. It communicates through popular protocols such as Modbus, Profibus DP, CANopen, DeviceNet, Modbus RTU, and Ethernet Modbus TCP. The product's standard configuration is easily modifiable for different functions.

- | | |
|--|--|
| - Controller | - 2 digital inputs |
| - 30, 60, 80kW solid state relay | - Standard digital communication : Modbus RTU |
| - Current transformers (one or four) | - Optional Fieldbus communication : Profibus, DP, CANopen, DeviceNet, Modbus RTU, Ethernet Modbus TCP, Ethernet IP, EtherCAT, ProfiNET |
| - Fuses-holder | - DIN rail or panel mounting |
| - 4 universal main inputs | - Conformities CE, UL, CSA and SCCR UL 508 100 KA conformant |
| - 4 heat/cool independent PID | |
| - 4 main output internally wired to the SS | |
| - 4 auxiliary analog inputs | |
| - 4 configurable output (option): relay / logic / TRIAC / continuous | |
| - 2 configurable relay alarm output | |



NOMINAL POWER

- 30 = 30KW
- 60 = 60KW
- 80 = 80KW

AUXILIARY OUTPUTS

- O = Absents
- R = Relay
- D = Logic
- C = Continuous
- T = Triac

AUXILIARY INPUTS

- 1 = 1 Current Transformer
- 2 = 4 Current Transformers
- 3 = 1 Current Transformer + 4 Linear inputs (**)
- 4 = 4 Current Transformers + 4 Linearinputs (**)

FUSES

- O = Absent
- F = Fuses-holder + fuses extrarapid (*)

FIELDBUS

- O = Assente
- M = Modbus RTU
- P = Profibus DP
- C = CANopen
- C1 = Euromap 66
- D = Device Net
- E = Ethernet Modbus TCP
- E1 = Ethernet IP
- E2 = EtherCAT
- E4 = ProfiNET
- E5 = Real Time Ethernet
- E8 = Ethernet IP (ODVA Certification - C.T. 15)

(*) Available only for 30, 60kW power

(**) Option NOT available with Fieldbus E1 or E2 or E4 or E5 or E8

GFX4-IR

Modular Power Controller for Infrared Application



The GFX4-IR series, designed for Infrared heating, featuring four-channel power and temperature controllers, embodies advanced control technology and functionality compacted into a remarkably small space. This all-in-one solution significantly reduces space requirements in electrical panels or machinery, streamlining wiring and minimizing engineering and start-up times for electric heating systems. The 110x110mm unit consolidates four universal electric power controllers, PID temperature controllers, SCRs with heat sinks (up to 40 A per channel), a processor-controlled cooling fan, current transformers (TA), extra-rapid fuses with front-facing disconnectors, a Modbus RTU communication port, and a fieldbus-compatible communication port. This integrated design optimizes efficiency and practicality in power and temperature control applications.

- Current sizes 16, 32, 40 Amps per channel
- Integrated current transformers
- Fuses with fuse-holder disconnectors on the front
- 4 universal process inputs (TC, RTD, mA, V)
- 4 independent hot/cold PIDs
- 4 main outputs (directly connected to the static unit)
- 4 auxiliary analogue inputs
- 4 settable outputs : relay/logic/TRIAC/analogue
- 2 settable relay outputs
- 2 settable digital inputs
- Modbus RTU communication port
- Communication port for Fieldbus (option): Profinet, Profibus DP, Ethernet IP, EtherCAT, Modbus TCP/RTU, CANopen, DeviceNET
- ODVA (Ethernet/IP) and PI (ProfiNET) certification
- DIN rail or panel mounting
- CE, UL, CSA certifications and SCCR UL 508 100KA approval

ORDERING INFORMATION

GFX4-IR - XX - Y - Z - P - QQ

Reference _____

Nominal Power _____

Auxiliary Outputs _____

Auxiliary Inputs _____

Fuses _____

Fieldbus _____

NOMINAL POWER

- 30 = 30KW
- 60 = 60KW
- 80 = 80KW 80

AUXILIARY OUTPUTS

- 0 = Absent
- R = Relay
- D = Logic
- C = Analog continuous
- T = Triac
- W = Analog 12bit
- 0/2-10V
- 0/4-20mA

AUXILIARY INPUTS

- 2 = Absent
- 4 = 4 Linear inputs (**)

FUSES

- 0 = Absent
- F = Fuses-holder + fuses extrarapid (*)

FIELDBUS

- 0 = Absent
- M = Modbus RTU
- P = Profibus DP
- C = CANopen
- C1 = Euromap 66
- D = DeviceNet
- E = Ethernet Modbus TCP
- E1 = Ethernet IP
- E2 = EtherCAT
- E4 = ProfiNET
- E5 = Ethernet IP (ODVA Certification - C.T. 9)
- E8 = Ethernet IP (ODVA Certification - C.T. 15)

(*) Available only for 30, 60kW power.

(**) Option NOT available with fieldbus E1, E2, E4, E5, E8.

GFXTERMO4

Modular Power Controller



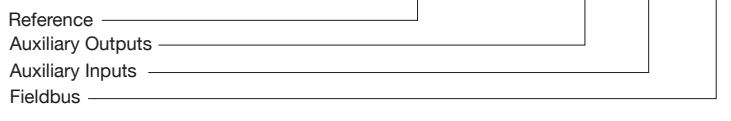
GFXTERMO4 stands as a multi-loop control system designed to oversee four distinct process loops with complete autonomy. The system boasts a swift and flexible I/O resource configuration process, facilitated by an intuitive programming tool that assists users in parameter selection. Each control loop is equipped with essential elements, including process input, external CTs or CT/linear input, control output, and cooling output. Additional auxiliary I/Os comprise two digital inputs and two relay outputs, ensuring a comprehensive range of functionalities.

Efficient communication is facilitated through two independent serial ports, each serving a specific purpose. The "local bus" is designated for establishing a GFXTERMO4 network, connecting it to an operator panel or industrial PC using the Modbus RTU protocol at a speed of 57.6 Kbps. On the other hand, the "field bus" is employed to seamlessly integrate with existing industrial field bus architectures like Profibus DP, CANopen, DeviceNet, Modbus RTU, Ethernet Modbus TCP, Ethernet IP, EtherCAT, and ProfiNET. The device's built-in intelligence empowers users to create fully independent and reliable controls. Installation options include mounting on a DIN rod or securing with two M4 screws.

- 4 universal process inputs
- 4 independent hot/cold PIDs
- 4 main outputs
- 4 auxiliary analog inputs
- 4 configurable outputs : relay / logic / TRIAC / continuous
- 2 configurable relay
- 2 digital inputs
- Standard communication port : Modbus RTU
- Optional port for Fieldbus : Profibus DP, CANopen, DeviceNet, Modbus RTU, Ethernet Modbus TCP, Ethernet IP, EtherCAT, ProfiNET
- Installs on DIN rod and panel

ORDERING INFORMATION

GFXTERMO4 - X - Y - Z



AUXILIARY OUTPUTS

- O = Absents
- R = Relay
- D = Logic
- C = Continuous
- T = Triac

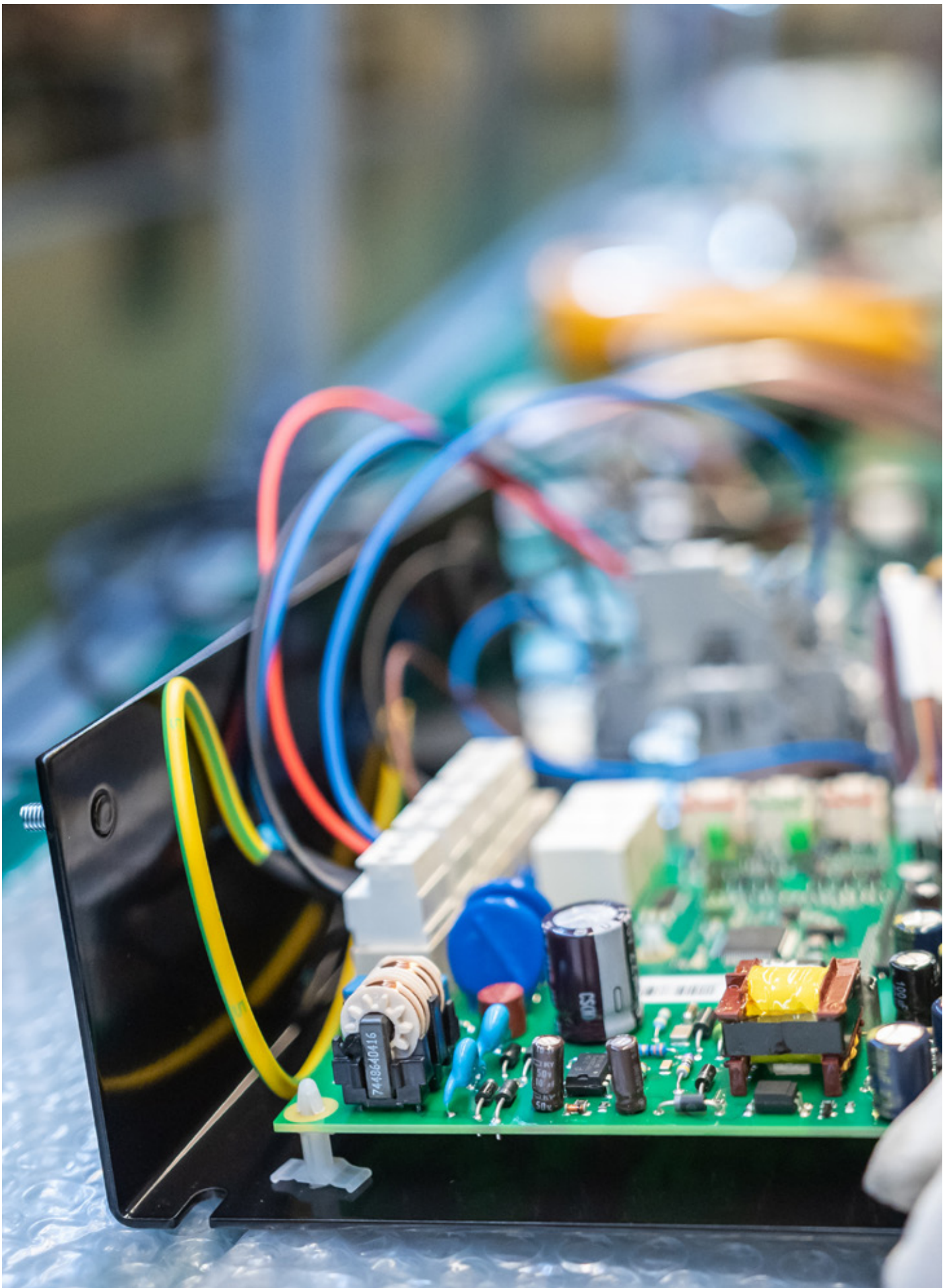
AUXILIARY INPUTS

- 0 = Absent
- 1 = 4 Current transformers
- 2 = 4 Linear inputs (**)

FIELDBUS

- O = Assente
- M = Modbus RTU
- P = Profibus DP
- C = CANopen
- C1 = Euromap 66
- D = Device Net
- E = Ethernet Modbus TCP
- E1 = Ethernet IP
- E2 = EtherCAT
- E4 = ProfiNET
- E5 = Real Time Ethernet
- E8 = Ethernet IP

(**) Option NOT available with Fieldbus E1 or E2 or E4 or E5 or E8



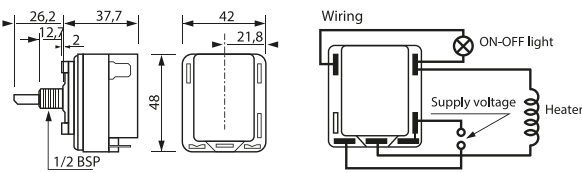
DEI

Bimetallic Power Regulators



The power regulator is a versatile component that allows simple manual control of heating elements. It offers energy-efficient operation, versatility across various applications, and enhances safety by preventing overheating. With its robust construction, it ensures long-term reliability and is easy to install, making it an essential tool for efficient heating control.

- For simple regulation of hot plates, small industrial heaters, long or medium infra red heaters for work stations and other applications
- Auxilliary contact for pilot light
- Complete electrical insulation of load in OFF position
- For mounting behind a front panel



- Stacking Temp. : min. -20°C / max. 40°C
- Ambient Temp. : min. -20°C / max. 40°C
- Switching Capacity Contact : 5 A (100 000 cycles)
- Terminals : Faston Terminals 6.35 x 0.8 mm

REFERENCE	VOLTAGE
DEI024	24 VAC
DEI230	230 VAC
DEI400	400 VAC

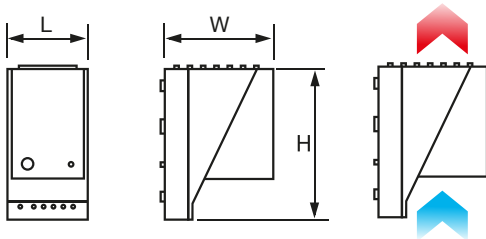
SCV

Enclosure heater with fan



Semiconductor fan heater to prevent condensation and frost in enclosures with electric/electronic components. It provides an evenly distributed interior air temperature in the enclosure. The integrated thermostat is used to set the desired temperature.

- Compact heater dimensions 100(A)x128(B)x165(H)mm
- Integrated thermostat, range 0-60°C
- Temperature safety cut-out to protect against overheating
- Vertical airflow
- Clip fixing for 35mm DIN rail, EN60715
- Optical indication light
- Protection class IP20 / II (double insulated)
- Approvals VDE, UL File No. E204590, EA



- Operating Voltage: 110 V or 220 V, 50/60 Hz
- Ambient Temp.: 20 °C
- Switching Temperature Difference: 7 K (±4 K tolerance)
- Recommended prefuse T: 10,0 A

REFERENCE	VOLTAGE [V]	POWER 50Hz [W]	POWER 60Hz [W]	INRUSH CURRENT	AIRFLOW FREE FLOW	SETTING RANGE THERMOSTAT	WEIGHT
CSV475-EB	220	475	550	11,0 A	35 m³/h	0 to + 60°C	0,9 kg
CSV550-EB	220	550	650	13,0 A	45 m³/h	0 to + 60°C	1,1 kg
CSV400-EB	110	400	550	14,0 A	35 m³/h	32 to + 140°F	0,9 kg
CSV510-EB	110	510	650	15,0 A	45 m³/h	32 to + 140°F	1,1 kg

CONTROL+ Custom-built electronic cabinets and control panels



DIRAC Industries has extensive expertise in designing and manufacturing custom-made electronic cabinets and control panels to meet a wide range of industrial requirements.

Each cabinet is engineered for durability and reliability, with optimized layouts to house complex electrical and automation components safely and efficiently. They can be fully customized to accommodate specific power ratings, control systems, and communication interfaces.

Advanced programmable controllers and monitoring systems ensure precise operation, while integrated visual indicators, modular wiring, and easy-access terminals simplify installation, operation, and maintenance.

Optional features such as USB connectivity and network interfaces allow seamless data transfer and integration into broader automation systems, enhancing both performance and operational efficiency across diverse industrial applications.

COMPLEMENTING OUR HEATING SOLUTIONS, WE ALSO PROVIDE TAILORED CONTROL AND MONITORING CAPABILITIES

CUSTOM-BUILT CONTROL CABINETS AND PANELS, ENGINEERED TO YOUR SPECIFICATIONS AND DEMANDS

Discover our advanced control panel and electronic cabinet projects, designed for diverse industrial applications. Each project showcases our commitment to precision, efficiency, and reliability, and is engineered to integrate seamlessly with your systems, delivering optimal performance across all applications. See how our innovative designs and tailored cabinets have streamlined industrial processes, enhanced productivity, and ensured consistent, high-quality operation.



CUSTOMIZE EVERY ASPECT OF YOUR CONTROL CABINET OR PANEL: FROM DESIGN, MATERIALS, AND MOUNTING, TO POWER COMPONENTS, CONTROL SYSTEMS, USER INTERFACES, SAFETY FEATURES, CONNECTIVITY AND OPTIONAL ADD-ONS

- YOUR PROCESS, YOUR CONTROL

REGMONO

Control panel 5kW single-phase on/off contactor regulation



The **REGMONO** range offers a set of standard control panels with on/off contactor regulation, rated for a maximum of 230V tri-phase, 50/60 Hz.

A simple solution for on/off regulation up to 5 kW.

Housed in a compact IP65 plastic enclosure with pre-installed cable glands, the panels are ready-to-use and plug-and-play.

They feature a digital display for set point and temperature reading for efficient control.

- | | |
|--|-----------------------------------|
| - On-off switch with indicator light on the front | - Contactor |
| - Cable-glands for : power supply, load, PT100 probe | - Plastic enclosure |
| | - Integrated SCD21 for regulation |

REGTRI

Control panel 15kW tri-phase on/off contactor regulation



The **REGTRI** range offers a set of standard control panels with on/off contactor regulation, rated for a maximum of 400V tri-phase, 50/60 Hz.

A simple solution for on/off regulation up to 15 kW.

Housed in a compact IP65 plastic enclosure with pre-installed cable glands, the panels are ready-to-use and plug-and-play.

They feature a digital display for set point and temperature reading for efficient control.

- | | |
|--|-----------------------------------|
| - On-off switch with indicator light on the front | - Contactor |
| - Cable-glands for : power supply, load, PT100 probe | - Plastic enclosure |
| | - Integrated SCD21 for regulation |

PIDMONO

Control panel 5kW single-phase thyristor PID regulation



The **PIDMONO** range offers a set of standard control panels with thyristor PID regulation, rated for a maximum of 230V tri-phase, 50/60 Hz.

A simple solution for on/off regulation up to 5 kW.

Housed in a compact IP65 metal enclosure with pre-installed cable glands, the panels are ready-to-use and plug-and-play.

They feature a digital display for set point and temperature reading for efficient control.

- | | |
|--|----------------------------------|
| - On-off switch with indicator light on the front | - Thyristor |
| - Cable-glands for : power supply, load, PT100 probe | - Metal enclosure |
| | - Integrated G650 for regulation |

PIDTRI

Control panel 15 - 60 kW
tri-phase thyristor PID regulation



The PIDTRI range offers a set of standard control panels with thyristor PID regulation, rated for a maximum of 400 V tri-phase, 50/60 Hz. A simple solution for on/off regulation up to 60 kW (15 kW for smaller models).

Housed in a compact IP66 metal enclosure with pre-installed cable glands, the panels are ready-to-use and plug-and-play.

A digital display provides set point and temperature readings. Inputs are provided for a PT100 sensor and an optional thermostat, enabling efficient control.

- Load coupling options (activated via solid-state relay - thyristor):
 - 1 x 3-phase (Y/Δ)
 - 3 x 1-phase (balanced/unbalanced, Y/Δ)
- Cable-glands (pre-installed):
 - Power supply
 - Loads
 - PT100 sensor
 - Optional thermostat

3 INDICATOR LIGHTS:

- POWER 'ON'
- HEATING 'ON'
- ALARM

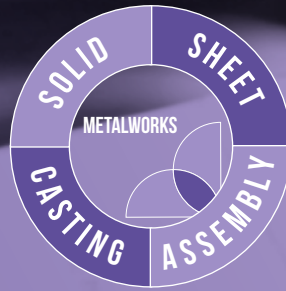
- Voltage: 3x400V (TT-TN-IT*)
- Enclosure: painted steel IP66
- Load activation: thyristor
- Switch-disconnector, front mounted
- 300mA residual current circuit breaker**
- PID G650 controller with temperature display
- Overall protection: IP54

(*) For IT earthing, ensure the main protection on a single pole meets the required breaking capacity
 (**) 300 mA fixed for the two lower power ratings; adjustable for the two higher power ratings

REFERENCE	VOLTAGE	POWER [kW]	DIMENSIONS L x H x D [mm]	WEIGHT [kg]
PIDTRI15	400V - tri	15	600 x 600 x 250	43
PIDTRI30	400V - tri	30	760 x 760 x 300	65
PIDTRI45	400V - tri	45	800 x 1000 x 300	88
PIDTRI60	400V - tri	60	800 x 1000 x 300	93







METALWORKS

WE DESIGN AND MANUFACTURE LIMITED SERIES OF FINISHED PRODUCTS WITH PRECISION AND QUALITY, IN ADDITION TO STEEL STRUCTURES FOR CONSTRUCTION, INDUSTRIAL, AND ARCHITECTURAL USE.

WITH CUTTING-EDGE INFRASTRUCTURE, ADVANCED MACHINERY, AND SKILLED PROFESSIONALS, WE DELIVER PRECISION, RELIABILITY, AND INDEPENDENT PRODUCTION CAPABILITIES AT ANY GIVEN SCALE. FROM CONSTRUCTION FIRMS AND INDUSTRIAL MANUFACTURERS TO SPECIALIZED PROJECTS AND PROTOTYPES, OUR METAL FABRICATION SOLUTIONS ARE BUILT TO MEET YOUR EXACT REQUIREMENTS.

TURNING & MILLING

CUTTING, BENDING & FORMING

ASSEMBLY

CASTING

DIRAC INDUSTRIES' METALWORKS DIVISION DESIGNS AND MANUFACTURES HIGH-QUALITY STEEL STRUCTURES FOR BOTH CONSTRUCTION AND INDUSTRIAL APPLICATIONS, ALONGSIDE LIMITED SERIES OF FINISHED PRODUCTS SUITED FOR ON-DEMAND MAINTENANCE SUPPORT AND PROTOTYPING — SUPPORTED BY ADVANCED PRODUCTION CAPABILITIES AND EXPERTISE ACROSS ITS FOUR SPECIALIZED BUSINESS UNITS: SOLID, SHEET, ASSEMBLY, AND CASTING.

FULL-SERVICE METAL STRUCTURE DIVISION

With cutting-edge infrastructure, advanced machinery, and a skilled team, DIRAC Industries ensures precision, reliability, and independent production capabilities throughout every project phase. Metal fabrication solutions are offered for construction firms, industrial manufacturers, and specialized projects or prototypes at any scale, precisely matching client requirements in strength, finish, and functionality.

FOUR BUSINESS UNITS

SOLID

Specializing in solid machining, we offer high-precision **CNC turning and milling** for both plastic and metals (steel and stainless steel) in teach-in formats (prototyping, single pieces and small series) and conventional formats (single pieces, repair or adjustment work). Metalworks produces robust components vital for industrial and construction applications.



SHEET

Delivers comprehensive sheet metal processing - **laser cutting** (tight contours, fine details and consistent quality), **bending and forming** (CNC folding machines producing complex constructions with high dimensional accuracy) for prototyping, single pieces and series work — customized to meet diverse structural and mechanical needs.

ASSEMBLY

Manages the integration of fabricated steel parts, providing **welding** (TIG and MIG/MAG), **fastening**, along with **finishing** for prototypes, modules, and complete assemblies. In our workshop, we handle everything from simple assemblies to complex structures requiring extreme precision, delivering fully assembled and installation-ready products.



OUR PROFESSIONALS ARE AVAILABLE FOR ON-SITE IMPLEMENTATION, IDEAL FOR LARGE-SCALE PROJECTS AND COMPLEX INSTALLATIONS



CASTING

Offers custom-cast metal components via **advanced foundry processes**, meeting complex design requirements (beyond traditional machining) for unique client projects. Creative and technical freedom, ideal for parts where strength, precision, and design are critical. Cast-in elements — parts or components molded directly into the product — create durable, multifunctional structures without additional welding or assembly.

CAST-IN RESISTANCE ELEMENTS ALSO ENSURE A SMOOTH, EVEN HEAT DISTRIBUTION ACROSS THE SURFACE, ELIMINATING HOT SPOTS.

WHO CAN WE SUPPORT

BUILDERS

Strong foundations demand precise parts.

From automotive and food processing to robotics, production line manufacturers, and OEMs, DIRAC Industries supports builders who need precision-engineered parts and durable steel solutions. Whether for large-scale structures or specialized components, our expertise ensures strength, accuracy, and seamless integration into complex systems.

MAINTENANCE

Downtime is costly.

That's why we provide reliable supply and reproduction of mechanical parts that naturally wear over time. With consistent quality and fast turnaround, our clients keep operations running smoothly, minimizing disruptions and extending equipment life.

PROTOTYPING

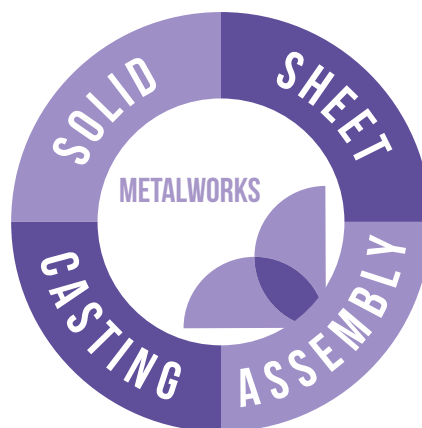
Innovation often starts with a single idea.

Our engineers collaborate closely with clients from the initial concept through to the creation of a physical model. DIRAC Industries transforms engineering ideas into tangible prototypes, enabling testing, refinement, and a faster route to market-ready solutions.



FROM CONCEPT TO CONSTRUCTION —

PRECISION METALWORKS AT ANY SCALE, KEEPING YOUR WORLD MOVING.



WHERE METAL MEETS INDUSTRY

Precision metalworks designed to strengthen and support key industries worldwide.

MECHANICAL ENGINEERING

Steel structures, precision components, and assemblies designed for high-load, high-accuracy machinery. Tailored solutions for complex mechanical systems with tight tolerances and reliable performance.



FOOD INDUSTRY

Hygienic, corrosion-resistant components for processing, handling, and packaging equipment. Designed to meet industry regulations and withstand continuous operation.

AUTOMOTIVE

Precision-engineered parts and assemblies for vehicle manufacturing and supply chains. Controlled tolerances, high repeatability, and surface treatments to ensure durability and performance.



ENERGY & HEATING

Metal structures and components for power generation, industrial heating, and energy infrastructure. Engineered for efficiency, thermal resistance, and long-term operational reliability.

PROFESSIONAL CAPABILITIES

MATERIAL RANGE

Processes plastics, carbon steel, stainless steel, and specialty alloys.

COMPLETE SERVICES

From design, CNC machining, welding, sheet forming, assembly, casting, and certified finishing.

QUALITY STANDARDS

Facilities operate under ISO 9001, backed by LEAN production and comprehensive traceability.



SPECIALIZED MANUFACTURING SITES

HSM EXTENSION PLANT (EDE, NL)

Our newly acquired HSM plant, located in Ede, the Netherlands, specializes in turning and milling operations, including high-precision stainless steel components. It is ideally equipped to handle both small production series and complex assemblies, delivering exceptional accuracy and quality in every machined part.



CORE PRODUCTION PLANT (KOLÍN, CZ)

Our long-standing and trusted Core Production Plant, located in Kolín, the Czech Republic, serves as a central hub for our operations and also specializes in sheet metal fabrication and assemblies. The plant offers expert MIG/MAG and TIG welding of both steel and stainless steel, with flexible production capabilities to handle assembly projects and precision metal enclosures.

MACHINE PARK

PROCESS	MACHINE / TYPE	WORKPIECE / CAPACITY	PROCESS	MACHINE / TYPE	WORKPIECE / CAPACITY
Sawing	Horizontal band saw	Ø 280 mm	Turning	Conventional turning lathe	Ø 200 x 600 mm (3000 rpm)
	Horizontal band saw	Ø 320 mm		Teach-in turning lathe	Ø 380 x 850 mm (3500 rpm)
	Vertical band saw	150 mm		Teach-in turning lathe	Ø 510 x 2000 mm (1600 rpm)
	Circular saw	Ø 120 mm	Milling	Conventional milling mach.	425 x 300 x 300 mm (2500 rpm)
	Flatbed Aluminum	6 mm x 800 x 2000		CNC 3-axis milling mach.	750 x 500 x 500 mm 1(3000 rpm)
		CNC 3-axis milling mach.		1270 x 610 x 720 mm (18000 rpm)	
Welding	TIG - pulse	max. 250 A	CNC 4-axis milling mach.	1000 x 610 x 720 mm (10000 rpm)	
	TIG - Orbital (auto)	info on demand	Milling / Drilling	Vertical machining center	1626 x 813 x 762 mm (8000 rpm)
	MIG - pulse	max. 450 A		Grinding	Flatbed grinder
Cutting	Plasma	3 mm	Broaching	Hydraulic broacher	max. 32 mm
	Autogenous	30 mm	Tumbling	Linear	900 mm
Sheet cutting	Compact laser	various material & thickness *		Rotating	800 mm
Engraving	Laser	120 x 400 mm	Centrifugation	Centrifuge	300 mm
Lasercutting	UV and fiber laser	info on demand	Hardening	Furnace	300 x 200 x 150 mm (1200°C)
Dotmarking	Dot Peen Marker	max. thickness 180 mm	Pressing	Hydraulic (vertical)	60 tons
3D Printing	3D printer	120 x 120 x 120 mm			

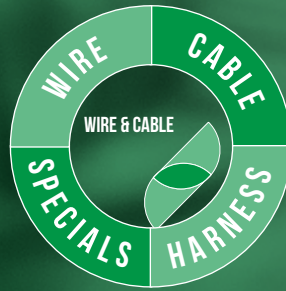
Additional capabilities: pickling & passivation line (stainless steel finish), bending of heating elements and metal sheets, hand welding (TIG, MIG, MAG), spot welding, soldering, grinding, drilling and thread cutting.

* Stainless steel: 4 mm - Galvanised steel: 3 mm - Steel: 3 mm - Brass: 2 mm - Copper: 2 mm - Aluminium: 3 mm - Bronze: 2 mm

DIRAC INDUSTRIES' DIVISION COMBINES ENGINEERING MASTERY, MODERN TECHNOLOGY, AND THE STRENGTH OF ITS BUSINESS UNIT STRUCTURE TO DELIVER FULLY CUSTOMIZED, HIGH-PERFORMANCE STEEL SOLUTIONS FOR ANY CHALLENGE.

- NOW AND INTO THE FUTURE





WIRE & CABLE

OUR EXPERTISE IN WIRE EXTRUSION AND CABLE ASSEMBLY ENSURES HIGH-PERFORMANCE SOLUTIONS FOR DIVERSE INDUSTRIES.

WE PRODUCE RESISTIVE WIRES, POWER CONNECTION CABLES, AND CUSTOM WIRE HARNESES, OFFERING OPTIONS LIKE SILICONE AND TEFLON-COATED RESISTIVE WIRES AND PRECISION ASSEMBLED HARNESES. WITH ADVANCED MANUFACTURING CAPABILITIES, WE DELIVER DURABLE, HIGH-QUALITY WIRING SOLUTIONS TAILORED TO YOUR NEEDS.

WIRE

CABLE

HARNESSES

SPECIALS

DIRAC INDUSTRIES' WIRE & CABLE DIVISION DELIVERS HIGH-PERFORMANCE SOLUTIONS IN WIRE PRODUCTION, CABLE EXTRUSION AND CABLE ASSEMBLY, PRODUCING RESISTIVE WIRES, POWER CONNECTION CABLES, AND CUSTOM WIRE HARNESSES - ALL TAILORED FOR THE MOST DEMANDING INDUSTRIAL NEEDS.

ADVANCED WIRE & CABLE DIVISION

With advanced manufacturing capabilities and dedicated business units soon to be fully operational, DIRAC Industries delivers tailored wire and cable solutions with exceptional flexibility and quality. Serving diverse sectors — from industrial applications to specialized projects — our production always ensures performance, durability, and seamless integration with client requirements.

FOUR BUSINESS UNITS

As this division completes its ramp-up, distinct units will serve specialized markets:

WIRE

Focused on the production, extrusion and treatment of base resistive and conductive wires, including various alloys and coatings for custom electrical properties.



CABLE

Dedicated to the design and production of multi-strand power and signal cables, with expertise in insulation, shielding, and jacketing for optimal durability and performance.



HARNESS

Provides advanced assembly of wire harnesses and looms, integrating connectors, protective sleeves, and identification systems for efficient installation and maintenance.



SPECIALS

Handles non-standard and highly engineered solutions, such as hybrid cables, co-extruded designs, and industry-specific wiring systems not covered by standard catalogs.

MORE INFO COMING SOON !

COMPREHENSIVE WIRING SOLUTIONS

Leveraging expertise in both advanced extrusion and precise assembly techniques, DIRAC Industries provides:

RESISTIVE WIRES

Custom-drawn conductors available with specialized insulation coatings like silicone and Teflon for enhanced performance and durability.

POWER CONNECTION CABLES

Engineered for safety, flexibility, and electrical consistency, utilizing insulation and sheathing methods that ensure long-term reliability in harsh environments.

WIRE HARNESSSES

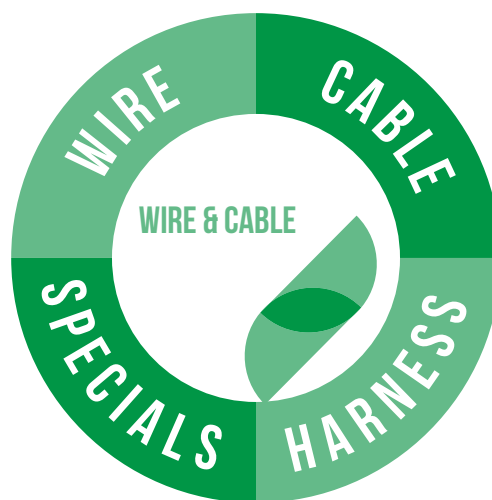
Designed and assembled to customer specification, our harnesses optimize integration for machinery, control panels, and complex assemblies, including precision-assembled multi-conductor bundles.

ALL PRODUCTS ARE MANUFACTURED WITH RIGOROUS QUALITY CONTROL AND CAN BE CUSTOMIZED FOR PROPERTIES SUCH AS RESISTANCE, FLAME-RETARDANCY, AND MECHANICAL STRENGTH.

DIRAC INDUSTRIES' DIVISION IS NEARING COMPLETION, WITH FULL OPERATIONAL STATUS EXPECTED SOON. UPDATES ON NEW CAPABILITIES, EXPANDED PRODUCT LINES, AND ADDITIONAL CERTIFICATIONS WILL SOON BE ANNOUNCED.

BY COMBINING SPECIALTY BUSINESS UNITS WITH ADVANCED, ADAPTABLE PRODUCTION METHODS, WE ENSURE EACH CABLE, WIRE, OR HARNESS SOLUTION MATCHES THE UNIQUE REQUIREMENTS OF EVERY APPLICATION.

- NOW AND INTO THE FUTURE





TECHNICAL DATA

ADDITIONAL INFORMATION

HEAT LOSSES ON **PIPES**

HEAT LOSSES ON **WALLS**

SKIN TEMPERATURE OF HEATING ELEMENT IN AIR

CALCULATIONS FOR HEATING REQUIREMENTS

INGRESS PROTECTION (**IP**) RATING GUIDE

CORRELATION BETWEEN **IP (IEC)** AND **NEMA (US)**

PT100 SENSORS AND TERMOCOUPLES

ATEX

WIRING DIAGRAMS

SELECTION OF HEATING CABLE TYPE

SELF-LIMITING **VS.** CONSTANT WATTAGE CABLES

HEAT LOSSES ON PIPES

HEAT LOSSES FROM PIPES (W/M)

INSULATION THICKNESS	T [°C]	PIPE DIMENSIONS - NOMINAL DIA. INCHES. EXT DIA. MM															
		1/4 14mm	1/2 21mm	3/4 21mm	1 34mm	1 1/4 21mm	1 1/2 21mm	2 60mm	2 1/2 21mm	3 89mm	4 114mm	6 168mm	8 219mm	10 273mm	12 324mm	14 356mm	16 406mm
9	10	3.2	3.7	4.6	5.4	6.4	8.0	9.1	11.1	-	-	-	-	-	-	-	-
	20	6.5	7.6	9.3	10.9	13.1	16.3	18.5	22.7	-	-	-	-	-	-	-	-
	30	9.9	11.6	14.2	16.7	20.0	24.9	28.2	34.6	-	-	-	-	-	-	-	-
	40	13.4	15.8	19.2	22.6	27.1	33.8	38.2	47.0	-	-	-	-	-	-	-	-
	50	17.1	20.1	24.4	28.8	34.5	43.0	43.0	59.7	-	-	-	-	-	-	-	-
13	10	2.5	2.9	3.5	4.0	4.8	5.9	6.6	8.1	-	-	-	-	-	-	-	-
	20	5.1	5.9	7.0	8.2	9.7	12.0	13.5	16.5	-	-	-	-	-	-	-	-
	30	7.7	9.0	10.8	12.5	14.9	18.3	20.6	25.1	-	-	-	-	-	-	-	-
	40	10.5	12.2	14.6	17.0	20.2	24.9	27.9	34.1	-	-	-	-	-	-	-	-
	50	13.4	16.0	18.6	21.6	25.5	31.6	35.5	43.3	-	-	-	-	-	-	-	-
20	10	1.8	2.3	2.7	3.1	3.6	3.9	4.7	5.7	-	-	-	-	-	-	-	-
	20	3.6	4.6	5.4	6.3	7.3	8.0	9.5	11.5	13.1	16.1	22.4	28.5	34.7	40.5	44.1	49.7
	30	5.5	7.0	8.2	9.6	11.1	13.3	14.6	17.5	20.0	24.5	34.3	43.5	53.0	61.9	67.4	75.8
	40	7.5	9.5	11.1	13.0	15.1	16.7	19.7	23.8	27.1	33.3	46.5	59.0	71.9	83.9	91.3	102.8
	50	9.6	12.1	14.2	16.5	19.2	21.2	25.1	30.3	34.4	42.3	59.1	75.0	91.4	106.6	116.0	130.6
25	20	3.2	4.0	4.7	5.4	76.2	6.8	8.0	9.6	10.9	13.3	18.5	23.4	28.4	33.1	36.0	40.6
	30	4.9	6.1	7.1	8.3	9.5	10.4	12.3	14.7	16.6	20.3	28.3	35.7	43.4	50.6	55.0	61.9
	40	6.7	8.3	9.7	11.2	12.9	14.2	16.7	19.9	22.6	27.6	38.4	48.4	58.8	68.5	74.6	82.9
	50	8.5	10.6	11.4	14.2	16.4	18.0	21.2	25.4	28.7	35.1	48.8	61.5	74.8	87.1	94.8	106.7
	60	10.4	12.9	15.0	17.4	20.0	22.0	25.9	30.9	35.0	42.8	59.5	75.0	91.2	106.3	115.6	130.1
30	20	2.9	3.6	4.2	4.8	5.5	6.0	7.0	8.4	9.4	11.5	15.8	19.9	24.1	28.1	30.6	34.4
	30	4.5	5.5	6.4	7.3	8.4	9.2	10.7	12.8	14.4	17.5	21.2	30.4	36.9	42.9	46.7	52.5
	40	6.1	7.5	8.7	10.0	11.4	12.5	14.6	17.3	19.6	23.8	32.8	41.2	50.0	58.2	63.3	71.2
	50	7.7	9.6	11.0	12.7	14.5	15.9	18.5	22.0	24.9	30.2	41.7	52.4	63.6	74.0	80.4	90.5
	60	9.5	11.7	13.4	15.5	17.7	19.4	22.6	26.9	30.3	36.9	50.9	63.9	77.5	90.2	98.1	110.4
40	20	2.6	3.1	3.6	4.0	4.6	5.0	5.8	6.8	7.6	9.1	12.5	15.5	18.8	21.8	23.7	26.6
	30	3.9	4.8	5.4	6.2	7.0	7.6	8.8	10.4	11.6	14.0	19.0	23.7	28.6	33.2	36.1	40.5
	40	5.3	6.5	7.4	8.4	9.5	10.3	11.9	14.0	15.7	18.9	25.8	32.2	38.8	45.1	49.0	55.0
	50	6.3	8.2	9.4	10.7	12.1	13.1	15.2	17.9	20.0	24.1	32.8	40.9	49.4	57.3	62.2	69.9
	60	8.3	10.0	11.4	13.0	14.7	16.0	18.5	21.8	24.4	29.4	40.1	49.9	60.3	69.9	75.9	85.3
50	20	2.3	2.8	3.2	3.6	4.0	4.3	5.0	5.8	6.5	7.7	10.4	12.9	15.5	17.9	19.4	21.8
	30	3.6	4.3	4.8	5.6	6.1	6.6	7.6	8.9	9.9	11.8	15.9	19.4	23.7	27.4	29.7	33.3
	40	4.8	5.8	6.5	7.4	8.3	9.0	10.3	12.0	13.4	16.0	21.6	26.7	32.1	37.1	40.3	54.1
	50	6.2	7.4	8.3	9.4	10.6	11.4	13.1	15.3	17.1	20.4	27.4	32.0	40.8	47.2	51.2	57.4
	60	7.5	9.0	10.2	11.5	12.9	14.0	16.0	18.7	20.8	24.8	33.5	41.4	49.8	57.6	62.5	70.0
60	20	2.2	2.6	2.9	3.2	3.6	3.9	4.4	5.2	5.7	6.8	9.0	11.1	13.3	15.3	16.6	18.6
	30	3.3	3.9	4.4	4.9	5.5	6.0	6.8	7.9	8.7	10.4	13.8	17.0	20.3	23.4	25.6	28.4
	40	4.5	5.3	6.0	6.7	7.5	8.1	9.2	10.7	11.8	14.1	18.7	23.0	27.5	31.8	34.4	38.5
	50	5.7	6.8	7.6	8.5	9.5	10.3	11.7	13.6	15.1	17.9	23.8	29.3	35.0	40.4	43.7	49.0
	60	7.0	8.3	9.3	10.4	11.6	12.5	14.3	16.6	18.4	21.8	29.0	35.7	42.7	49.3	53.4	59.7
60	80	9.6	11.4	12.8	14.4	16.1	17.3	19.7	22.8	25.3	30.1	40.0	49.2	58.9	67.9	73.5	82.3
	100	12.4	14.7	16.5	18.5	20.7	22.3	25.4	29.5	32.7	38.8	51.6	63.5	75.9	87.6	94.8	106.1
	120	15.3	18.2	20.4	22.9	25.6	27.6	31.5	36.5	40.4	48.0	63.9	78.6	94.0	108.3	117.3	131.2
	140	18.5	21.9	24.6	27.6	30.8	33.2	37.8	43.8	48.6	57.7	76.7	94.4	112.9	130.2	141.0	157.7
	160	21.7	25.7	28.9	32.4	36.3	39.1	44.5	51.6	57.2	67.9	90.3	111.1	132.8	153.1	165.8	185.4
180	25.1	29.8	33.5	37.5	42.0	45.2	51.5	59.7	66.1	78.5	104.5	128.5	153.6	172.1	191.7	214.5	

INSULATION THICKNESS	T [°C]	PIPE DIMENSIONS - NOMINAL DIA: INCHES. EXT DIA: MM															
		1/4 14mm	1/2 21mm	3/4 21mm	1 34mm	1 1/4 21mm	1 1/2 21mm	2 60mm	2 1/2 21mm	3 89mm	4 114mm	6 168mm	8 219mm	10 273mm	12 324mm	14 356mm	16 406mm
80	20	1.9	2.3	2.5	2.8	3.1	3.3	3.8	4.3	4.8	5.6	7.3	8.9	10.5	12.1	13.0	14.6
	30	3.0	3.5	3.9	4.3	4.8	5.1	5.7	6.6	7.3	8.5	11.1	13.5	16.1	18.4	19.9	22.2
	40	4.0	4.7	5.2	5.8	6.5	6.9	7.8	8.9	9.8	11.5	15.1	18.4	21.8	25.0	27.0	30.1
	60	6.3	7.3	8.1	9.0	10.0	10.7	12.1	13.9	15.3	17.9	23.4	28.5	33.8	38.8	41.9	46.8
	80	8.6	10.1	11.2	12.5	13.8	14.8	16.7	19.1	21.0	24.7	32.3	39.3	46.6	53.5	57.8	64.4
	100	11.1	13.0	14.5	16.1	17.8	19.1	21.5	24.7	27.2	31.8	41.6	50.7	60.2	69.0	74.5	93.1
	120	13.8	16.1	17.9	19.9	22.0	23.6	26.6	30.5	33.6	39.4	51.5	62.7	74.4	85.4	92.2	102.8
	140	16.5	19.3	21.5	23.9	26.5	28.4	32.0	36.7	40.4	47.4	61.9	75.4	89.5	102.6	110.8	123.5
	160	19.5	22.8	25.3	28.1	31.2	33.4	37.2	43.2	47.5	55.7	72.9	88.7	105.2	120.7	130.3	145.2
180	22.5	26.3	29.3	32.6	36.1	38.6	43.6	50.0	55.0	64.5	84.3	102.6	121.7	139.6	150.7	160.0	
100	20	1.9	2.2	2.4	2.7	3.0	3.2	3.5	4.0	4.4	5.1	6.6	7.9	9.4	10.7	11.5	12.8
	30	2.9	3.4	3.7	4.1	4.5	4.8	5.4	6.1	6.7	7.8	10.0	12.1	14.3	16.3	17.6	19.5
	40	3.9	4.6	5.0	5.6	6.1	6.5	7.3	8.3	9.1	10.6	13.6	16.5	19.4	22.1	23.8	26.5
	60	6.1	7.1	7.8	8.6	9.5	10.1	11.3	12.9	14.1	16.4	21.2	25.5	30.1	34.3	37.0	41.1
	80	8.4	9.8	10.8	11.9	13.1	14.0	15.6	17.8	19.5	22.6	29.1	35.2	41.5	47.3	51.0	56.6
	100	10.9	12.6	13.9	15.4	16.9	18.0	20.2	22.9	25.1	29.2	37.6	45.4	53.5	61.0	65.8	73.1
	120	13.4	15.6	17.2	19.0	20.9	22.3	25.0	28.4	31.1	36.1	46.5	56.2	66.2	75.5	81.4	90.4
	140	16.2	18.7	20.7	22.2	25.2	26.8	30.0	34.1	37.3	43.4	55.9	67.5	79.5	90.8	97.8	108.6
	160	19.0	22.0	24.4	26.9	29.6	31.6	35.3	40.1	43.9	51.0	65.8	79.4	93.6	106.8	115.0	127.8
180	22.0	25.5	28.2	31.1	34.3	36.5	40.9	46.5	50.8	59.1	70.2	91.9	108.3	123.5	133.1	147.8	
150	20	1.7	1.9	2.1	2.3	2.5	2.6	2.9	3.2	3.5	4.0	5.0	6.0	7.0	7.9	8.4	9.3
	30	2.5	2.9	3.2	3.5	3.8	4.0	4.4	4.9	5.4	6.1	7.7	9.1	10.6	12.0	12.9	14.2
	40	3.5	3.9	4.3	4.7	5.1	5.4	6.0	6.7	7.3	8.3	10.4	12.4	14.4	16.3	17.4	19.3
	60	5.4	6.1	6.7	7.3	7.9	8.4	9.3	10.4	11.3	12.9	16.2	19.2	22.4	25.3	27.1	29.9
	80	7.4	8.4	9.2	10.0	10.9	11.6	12.8	14.3	15.5	17.8	22.3	26.5	30.8	34.8	37.3	41.2
	100	9.5	10.9	11.9	13.0	14.1	14.9	16.5	18.5	20.1	22.9	28.8	34.2	39.7	44.9	48.1	53.1
	120	11.8	13.5	14.7	16.0	17.5	18.5	20.4	22.9	24.8	28.4	35.7	42.3	49.2	55.6	59.5	65.7
	140	14.2	16.2	17.7	19.3	21.0	22.2	24.6	27.5	29.8	34.1	42.9	50.9	59.1	66.8	71.6	79.0
	160	16.7	19.0	20.8	22.7	24.7	26.2	28.9	32.4	35.1	40.1	50.5	59.8	69.5	78.8	84.2	92.9
180	19.3	22.0	24.1	26.3	28.6	30.3	33.5	37.5	40.6	46.4	58.4	69.2	80.5	90.9	97.4	107.5	

Use the multiplication factor to calculate losses for the applied insulation type

1 W/m °C = 0,86 Kcal / m.hr.°C

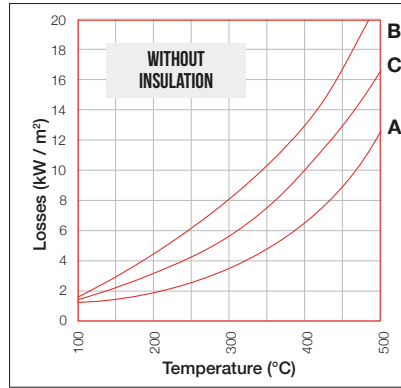
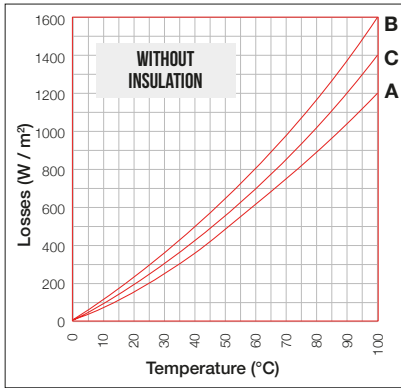
TYPE	THERMAL CONDUCTIVITY AT 10°C [W/m°C]	CORRECTION FACTOR
Fibreglass	0,036	1,0
Rock wool	0,038	1,06
Foam rubber	0,042	1,17
Polyurethane foam	0,024	0,67

EQUIVALENT TEMPERATURES (°F AND °C)

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
-50	-58	95	203	240	464	385	725	530	986	675	1247	820	1508	965	1769
-45	-49	100	212	245	473	390	734	535	995	680	1256	825	1517	970	1778
-40	-40	105	221	250	482	395	743	540	1004	685	1265	830	1526	975	1787
-35	-31	110	230	255	491	400	752	545	1013	690	1274	835	1535	980	1796
(-22	115	239	260	500	405	761	550	1022	695	1283	840	1544	985	1805
-25	-13	120	248	265	509	410	770	555	1031	700	1292	845	1553	990	1814
-20	-4	125	257	270	518	415	779	560	1040	705	1301	850	1562	995	1823
-15	5	130	266	275	527	420	788	565	1049	710	1310	855	1571	1000	1832
-10	14	135	275	280	536	425	797	570	1058	715	1319	860	1580	1005	1841
-5	23	140	284	285	545	430	806	575	1067	720	1328	865	1589	1010	1850
0	32	145	293	290	554	435	815	580	1076	725	1337	870	1598	1015	1859
5	41	150	302	295	563	440	824	585	1085	730	1346	875	1607	1020	1868
10	50	155	311	300	572	445	833	590	1094	735	1355	880	1616	1025	1877
15	59	160	320	305	581	450	842	595	1103	740	1364	885	1625	1030	1886
20	68	165	329	310	590	455	851	600	1112	745	1373	890	1634	1035	1895
25	77	170	338	315	599	460	860	605	1121	750	1382	895	1643	1040	1904
30	86	175	347	320	608	465	869	610	1130	755	1391	900	1652	1045	1913
35	95	180	356	325	617	470	878	615	1139	760	1400	905	1661	1050	1922
40	104	185	365	330	626	475	887	620	1148	765	1409	910	1670	1055	1931
45	113	190	374	335	635	480	896	625	1157	770	1418	915	1679	1060	1940
50	122	195	383	340	644	485	905	630	1166	775	1427	920	1688	1065	1949
55	131	200	392	345	653	490	914	635	1175	780	1436	925	1697	1070	1958
60	140	205	401	350	662	495	923	640	1184	785	1445	930	1706	1075	1967
65	149	210	410	355	671	500	932	645	1193	790	1454	935	1715	1080	1976
70	158	215	419	360	680	505	941	650	1202	795	1463	940	1724	1085	1985
75	167	220	428	365	689	510	950	655	1211	800	1472	945	1733	1090	1994
80	176	225	437	370	698	515	959	660	1220	805	1481	950	1742	1095	2003
85	185	230	446	375	707	520	968	665	1229	810	1490	955	1751	1100	2012
90	194	235	455	380	716	525	977	670	1238	815	1499	960	1760	1105	2021

HEAT LOSSES ON WALLS

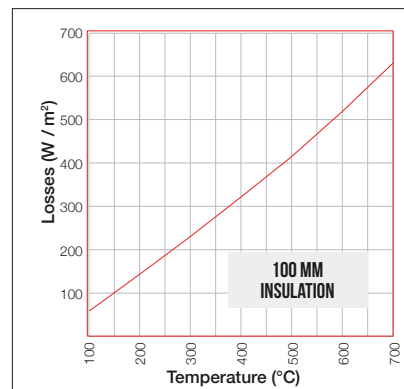
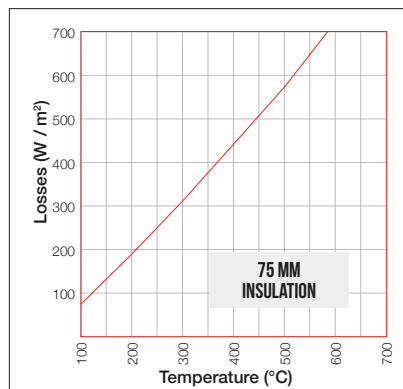
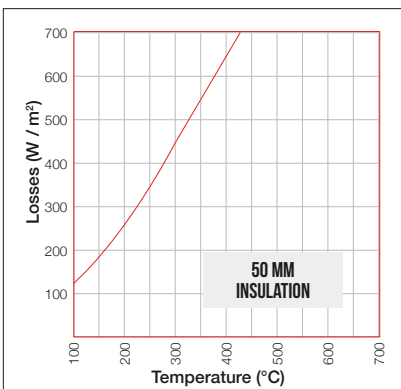
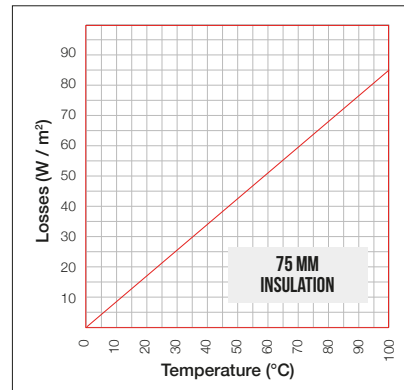
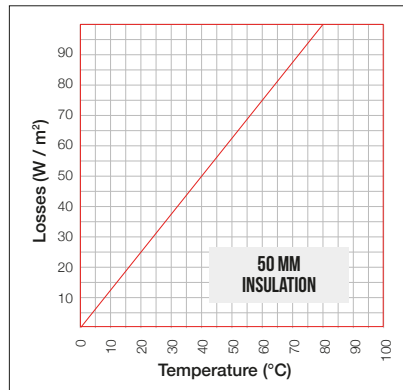
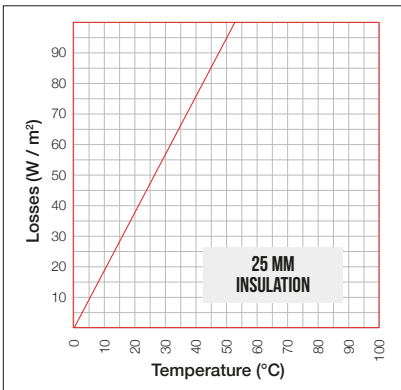
HEAT LOSSES FROM UNINSULATED TANK WALLS IN STILL AIR



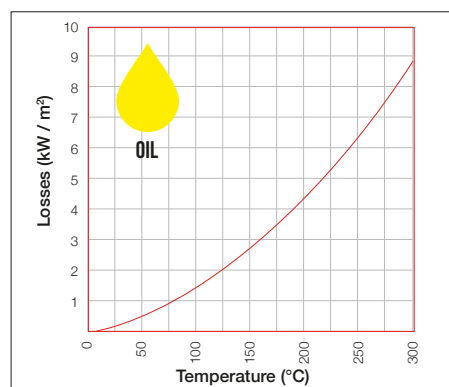
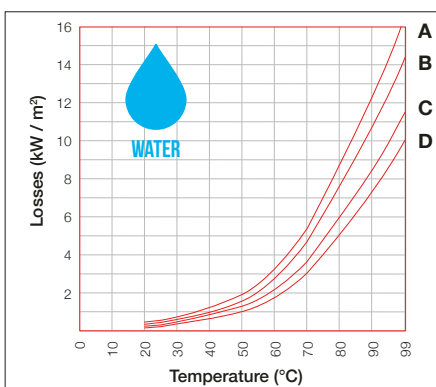
- A :** Horizontal base of tank
- B :** Horizontal top of tank
- C :** Vertical surface (h > 0.5m)

Note : Curves based on oxidized steel surface (e = 0,8)

HEAT LOSSES FROM INSULATED TANK WALLS



LIQUID SURFACE HEAT LOSSES

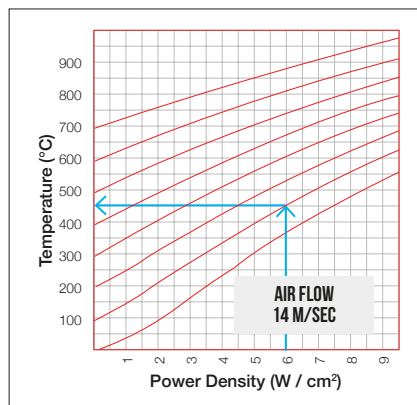
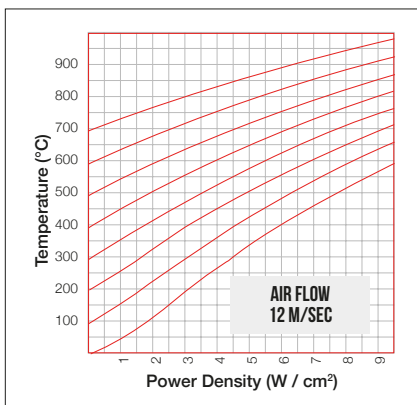
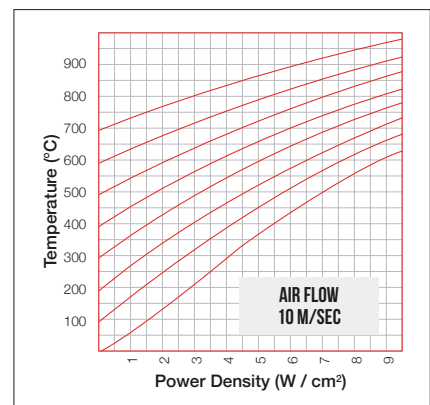
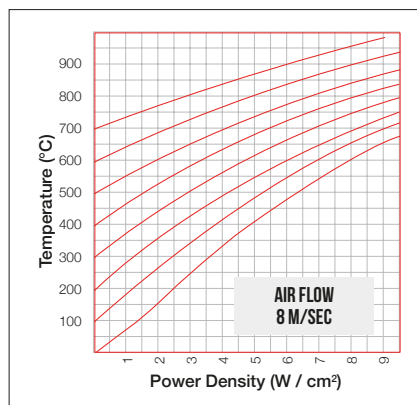
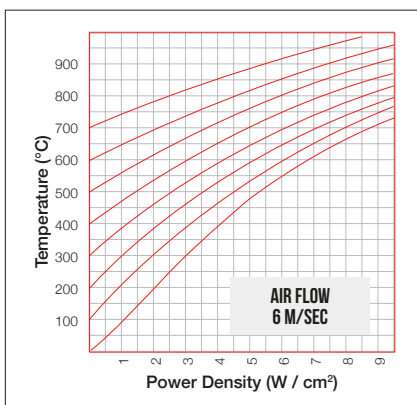
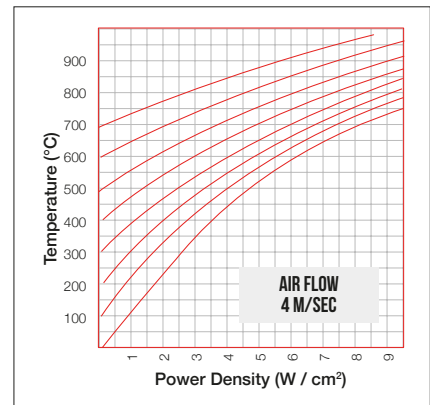
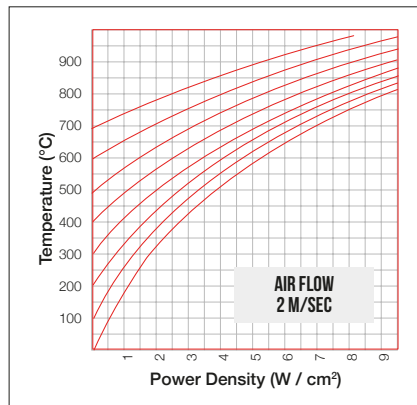
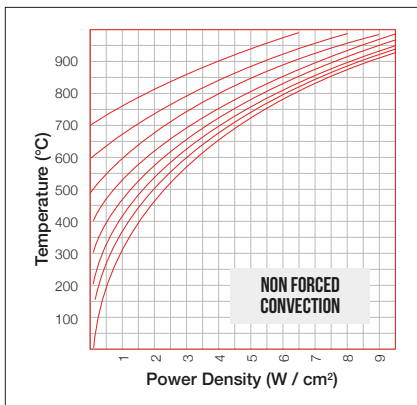


- A :** 40% relative humidity and wind 0,6 m/sec
- B :** 40% relative humidity and still air
- C :** 60% relative humidity and wind 0,6 m/sec
- D :** 60% relative humidity and still air

Note : Curves based on 20°C ambient temperature

SKIN TEMPERATURE OF HEATING ELEMENT IN AIR

Preliminary estimation for assessing the skin temperature of elements without fins, which are employed for air heating based on their watt density and ambient exchange conditions (temperature/airflow velocity).



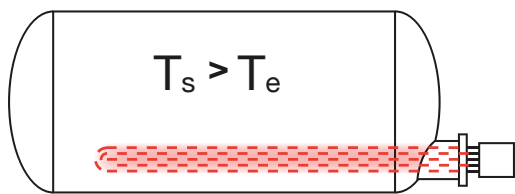
ILLUSTRATED CASE →

Speed of air flow : 14 m/s
 Element Watt density : 6 W/cm²
 Ambient temperature : 100°C

Skin temperature = 450°C

CALCULATIONS FOR HEATING REQUIREMENTS

USING IMMERSION HEATERS TO RAISE THE TEMPERATURE OF LIQUID IN TANKS

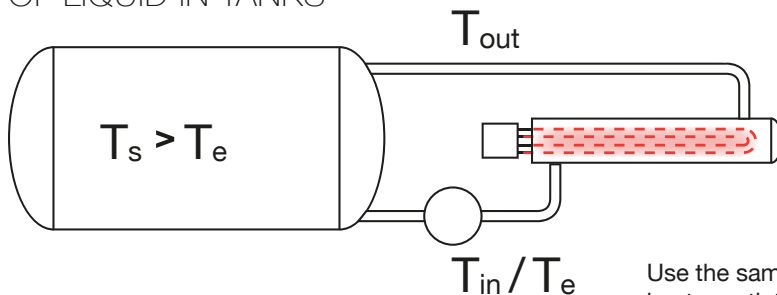


$$P \text{ [kW]} = \frac{V \cdot \rho \cdot c_p \cdot \Delta T}{3600 \cdot t} = \frac{V \text{ [m}^3\text{]} \cdot \rho \text{ [kg/m}^3\text{]} \cdot c_p \text{ [kJ/kg}\cdot\text{°C]} \cdot (T_e \text{ [°C]} - T_s \text{ [°C]})}{3600 \text{ [s/h]} \cdot t \text{ [h]}}$$

Note : The power to be installed will be determined by adding 50% of the power "P" that corresponding to the losses through the walls + safety coefficient.

$$P_{\text{total}} = P_{\text{calculated}} + 1/2 \times P_{\text{Heatloss_walls}} + f_{\text{safety}}$$

USING A CIRCULATION HEATER TO RAISE THE TEMPERATURE OF LIQUID IN TANKS



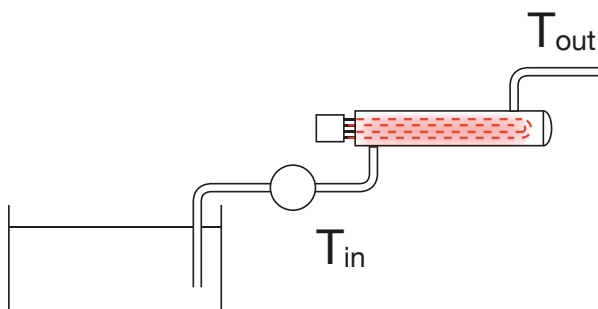
$$\Delta T \text{ [°C]} = \frac{P \cdot 3600}{Q \cdot \rho \cdot c_p} = \frac{P \text{ [kW]} \cdot 3600 \text{ [s/h]}}{Q \text{ [m}^3\text{/h]} \cdot \rho \text{ [kg/m}^3\text{]} \cdot c_p \text{ [kJ/kg}\cdot\text{°C]}}$$

Use the same formula as above but check the compatibility of the heater outlet temperature following the pump flow rate at the end of the temperature rise.

Note : The power to be installed will be determined by adding 50% of the power "P" that corresponding to the losses through the walls + losses through the walls of the loop pipes + safety coefficient.

$$P_{\text{total}} = P_{\text{calculated}} + 1/2 \times P_{\text{Heatloss_walls}} + 1/2 \times P_{\text{Heatloss_pipes}} + f_{\text{safety}}$$

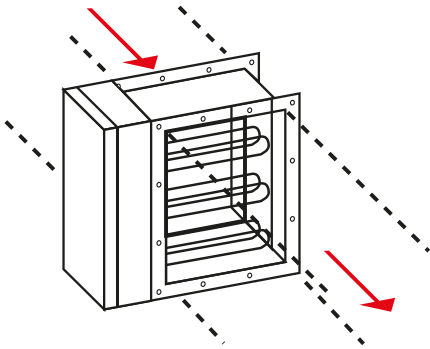
USING A CIRCULATION HEATER TO RAISE THE TEMPERATURE OF A FLOW OF LIQUID IN A SINGLE PASS



$$P \text{ [kW]} = \frac{Q \cdot \rho \cdot c_p \cdot \Delta T}{3600} = \frac{Q \text{ [m}^3\text{/h]} \cdot \rho \text{ [kg/m}^3\text{]} \cdot c_p \text{ [kJ/kg}\cdot\text{°C]} \cdot (T_{\text{out}} \text{ [°C]} - T_{\text{in}} \text{ [°C]})}{3600 \text{ [s/h]}}$$

Note : The power to be installed must be increased by a safety coefficient corresponding to at least the manufacturing tolerances on the nominal power and the tolerances on the supply voltage.

HEATING MOVING AIR (HVAC APPLICATIONS ONLY)

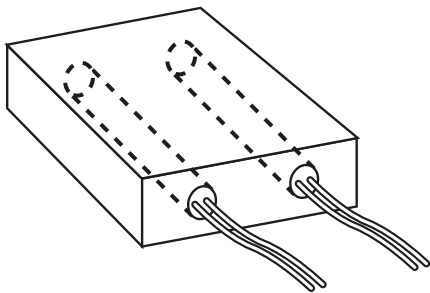


$$P [kW] = \frac{Q \cdot 1,3 \cdot \Delta T}{3600} = \frac{Q [m^3/h] \cdot 1,3 \cdot (T_{out} [^{\circ}C] - T_{in} [^{\circ}C])}{3600 [s/h]}$$

With : with Q @ p_{abs} = 1013mbar = 101,325kPa & T_{in} = 0°C

Note : Calculation only applicable to HVAC applications (Air); Contact us for air heating in industrial processes.

DIRECT HEATING OF SOLIDS

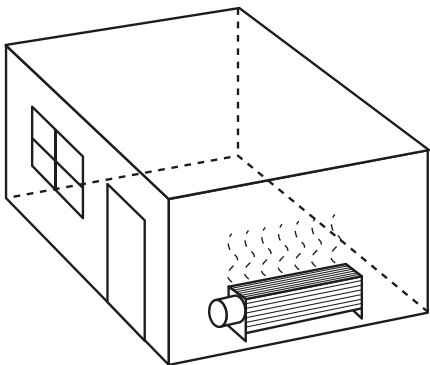


$$P [kW] = \frac{M \cdot C_p \cdot \Delta T}{3600 \cdot t} = \frac{M [kg] \cdot C_p [kJ/kg.^{\circ}C] \cdot (T_e [^{\circ}C] - T_s [^{\circ}C])}{3600 [s/h] \cdot t [h]}$$

Note : Add to the calculated power 50% of the losses from faces of the object as well as the often significant losses caused by the thermal bridges of its support.

$$P_{total} = P_{calculated} + 1/2 \times P_{Heatloss_object_faces} + 1/2 \times P_{Heatloss_supports} + f_{safety}$$

INDUSTRIAL SPACE HEATING



$$P [W] = V \cdot G \cdot \Delta T = V [m^3] \cdot G \cdot (T_e [^{\circ}C] - T_s [^{\circ}C])$$

Note : For approximate calculation in the absence of detailed and accurate information. Formula applicable for premises with a maximum height of 4.5m and a maximum surface area of 500m². For heating by air heater, the total number and type must be chosen so that the total flow of air circulated per hour is at least equal to 4 times the volume of the room.

P [kW] = Power in kW	G = Coefficient*	*G = 1.2 for well insulated walls
V [m ³] = Volume in m ³		*G = 1.6 for moderately insulated walls
M [kg] = Mass in kg		*G = 2.0 for poorly insulated walls
Q [m ³ /h] = Flow in m ³ /h		*G = 2.6 for non – insulated walls
ρ [kg/m ³] = Density in kg/m ³ or g/l or g/dm ³	ΔT [°C] = T _e [°C] - T _s [°C]	
C_p [kJ/kg.°C] = Specific Heat in kJ/kg.K or kJ/kg.°C	T _s [°C] = Start Temperature in °C	
	T _e [°C] = End Temperature in °C	
	T _{in} [°C] = Inlet Temperature in °C	
	T _{out} [°C] = Outlet Temperature in °C	
	t [h] = Required heating time in h	

INGRESS PROTECTION (IP) RATING GUIDE

The IP Code (or International Protection Rating, sometimes also interpreted as Ingress Protection Rating) consists of the letters IP followed by two digits and an optional letter. As defined in international standard IEC 60529, it classifies the degrees of protection provided against the intrusion of solid objects (including body parts like hands and fingers), dust, accidental contact, and water in electrical enclosures. The standard aims to provide users more detailed information than vague marketing terms such as waterproof.

0	No Protection		0	No Protection	
1	Protected against solid foreign objects of 50mm Ø or more Ex : touch by a hand		1	Protected against vertically falling water drops (from condensation)	
2	Protected against solid foreign objects of 12,5mm Ø or more Ex : touch by a finger		2	Protected against vertically falling water drops when enclosure is tilted up to 15°	
3	Protected against solid foreign objects of 2,5mm Ø or more (tools, screws, ...)		3	Protected against spraying water up to 60° on either side of vertical	
4	Protected against solid foreign objects of 1mm Ø or more (needle, wire, ...)		4	Protected against splashing water from any direction	
5	Dust-protected (no damage by deposit)		5	Protected against jets of water from any direction	
6	Dust-tight		6	Protected against powerful jets of water from any direction	
<p>IP65 Dust-tight Protected against water jets</p>			7	Protected against temporary immersion in water (under standardized conditions of pressure and time)	
			8	Protected against continuous immersion in water (specified conditions defined by manufacturer - more severe than 7)	
			9	Protected against high pressure and high temperature water jets from any direction	

CORRELATION BETWEEN IP (IEC) AND NEMA (US)

The National Electrical Manufacturers Association (NEMA) is a US Manufacturers Organization which actively promotes standardized product specifications for electrical apparatus. While NEMA does not actually test products, it establishes the performance criteria for enclosures intended for specific environments.

NEMA RATINGS - US	DESCRIPTION	IP RATINGS - IEC
NEMA1	Protects equipment for general indoor use	IP10
NEMA2	Provides drip-proofing for indoor use	IP11
NEMA3	Protects against sleet, rain and dust for outdoor use	IP54
NEMA3R	Offers protection for outdoor use when sleet resistance and a rain-tight seal are essential	IP14
NEMA3S	Offers dust-, rain- and sleet-tight protection for outdoors	IP54
NEMA4	Best for indoor and outdoor use and offers dust-tight, watertight and sleet-resistant protection	IP56
NEMA4X	Provides all the protection of the NEMA 4 rating, with additional corrosion resistance for indoor and outdoor use	IP56
NEMA5	Offers indoor-only protection against dust and dripping	IP52
NEMA6	Provides protection inside and out and allows occasional water submersion - also sleet-resistant and completely watertight	IP67
NEMA6P	Provides all the protection of the NEMA 6 rating but can stay submerged longer	IP67
NEMA12	Protects against dripping or dust for indoor use only	IP52
NEMA12K	Suitable for indoor use only with knockouts and protects against dust and drips	IP52
NEMA13	Is dust-tight and oil tight for indoor use only	IP54

PT100 SENSORS AND THERMOCOUPLES

HOW TO CHOOSE ?

CRITERIA	RTD SENSOR (PT 100)	THERMOCOUPLE
Range (max)	-200 to +850°C	-200 to +2600°C
Range (Typical)	-50 to 300°C (PT100 B)	0 to 900°C (type K)
Long Term Stability	+	-
Accuracy	+	-
Repeatability	+	-
Interchangeability	++	+
Tip Sensitivity	-	+
Signal Strength	Higher - more resistant to EMI	Low - Susceptible to EMI
Cost	More expensive	Less expensive
Noise problems	NO	Some
Best for	Consistent readings	High Temperatures
Worst for	Surface readings	Long term stability
Hysteresis	+	++

PT100 PRINCIPLE AND OHMIC VALUES

TEMP [°C]	RESISTANCE [OHM]	TEMP [°C]	RESISTANCE [OHM]	TEMP [°C]	RESISTANCE [OHM]
-50	80,31	110	142,29	270	201,31
-40	84,27	120	146,07	280	204,90
-30	88,22	130	149,83	290	208,48
-20	92,16	140	153,58	300	212,05
-10	96,09	150	157,33	310	215,61
0	100,00	160	161,05	320	219,15
10	103,90	170	164,77	330	222,68
20	107,79	180	168,48	340	226,21
30	111,67	190	172,17	350	229,72
40	115,54	200	175,86	360	233,21
50	119,40	210	179,53	370	236,70
60	123,24	220	183,19	380	240,18
70	127,08	230	186,84	390	243,64
80	130,90	240	190,47	400	247,09
90	134,71	250	194,10	410	250,53
100	138,51	260	197,71	420	253,96

The principle of operation is to measure the resistance of a platinum element. The most common type (PT100) has a resistance of 100 ohms at 0°C and 138.4 ohms at 100°C. There are also PT1000 sensors that have a resistance of 1000 ohms at 0°C.

The relationship between temperature and resistance is approximately linear over a small temperature range: for example, if you assume that it is linear over the 0 to 100°C range, the error at 50°C is 0.4°C. For precision measurement, it is necessary to linearise the resistance to give an accurate temperature. The most recent definition of the relationship between resistance and temperature is International Temperature Standard 90 (ITS-90).

The linearization equation is :



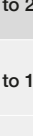
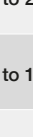
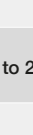


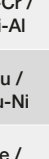
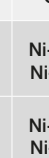
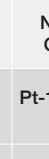
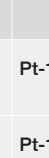


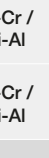




























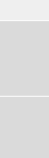
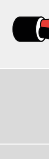

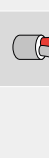
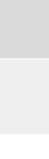




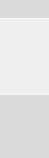


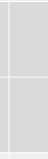




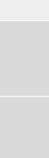
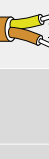


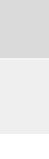

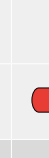



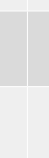






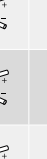


$$R_t = R_0 \times (1 + A \times t + B \times t^2 + C \times (t-100) \times t^3)$$

R_t is the resistance at temperature t,
 R₀ is the resistance at 0 °C, and
 A = 3.9083 x 10⁻³
 B = -5.775 x 10⁻⁷
 C (< 0°C) = -4.183 x 10⁻¹²
 C (> 0°C) = 0

Thermocouples are the most popular temperature sensors. They are cheap, interchangeable, have standard connectors and can measure a wide range of temperatures. The main limitation is accuracy : system errors of less than 1 °C can be difficult to achieve.

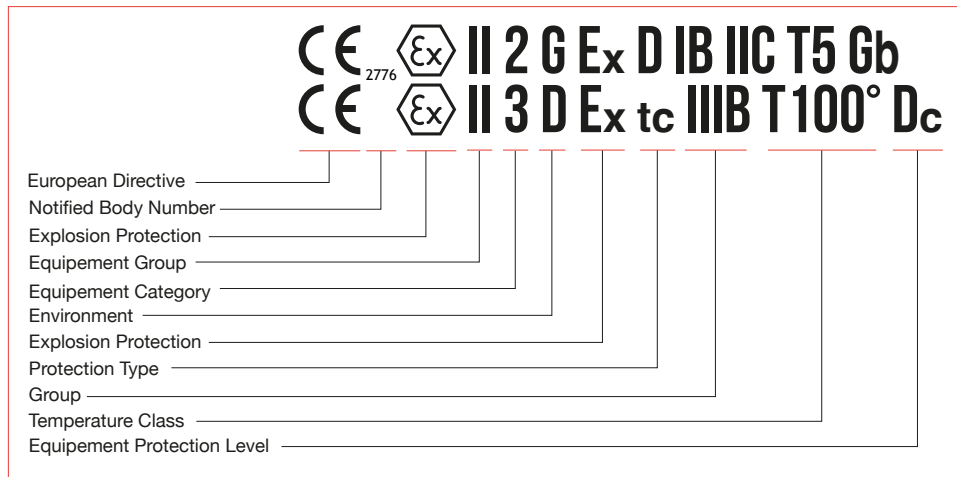
In 1822, an Estonian physicist named Thomas Seebeck discovered that the junction between two metals generates a voltage that is a function of temperature. Thermocouples rely on this Seebeck effect. Although almost any two types of metal can be used to make a thermocouple, a number of standard types are used because they possess predictable output voltages and large voltage/temperature gradients.

THERMOCOUPLE COLOUR CODES

TC	EXT. CABLE	COMP. CABLE	TC. TEMP. [°C]	CABLES TEMP. [°C]	TYPE (+/-)	 IEC 60584-3	Intrinsically Safe IEC 60584-3	 DIN 43713: 1991	 NFC 42324	 BS 1843	 ANSI/MC96.1	 JIS C 1610-1981
K	KX		900	-25 to 200	Ni-Cr / Ni-Al							
	KCA		900	-0 to 200	Ni-Cr / Ni-Al							
	KCB		900	-0 to 100	Ni-Cr / Ni-Al							
T	TX		300	-25 to 100	Cu / Cu-Ni							
J	JX		500	-25 to 200	Fe / Cu-Ni							
N	NX		900	-25 to 200	Ni-Cr-Si / Ni-Si-Mg							
	NC		900	-0 to 200	Ni-Cr-Si / Ni-Si-Mg							
E	EX		500	-25 to 200	Ni-Cr / Cu-Ni							
R	RCA		1000	-0 to 100	Pt-13%Rh / Pt							
	RCB		1000	-0 to 200	Pt-13%Rh / Pt							
S	SCA		1000	-0 to 100	Pt-10%Rh / Pt							
	SCB		1000	-0 to 200	Pt-10%Rh / Pt							
B	BC		1400	-0 to 100	Pt-30%Rh / Pt-6%Rh							
G _(W)	GC		-	-	W / W-26%Re							
G _(W5)	CC		1800	-0 to 200	W-5%Re / W-26%Re							
D _(W3)	DC		-	-	W-3%Re / W-25%Re							

ATEX

Special marking on equipment for hazardous areas.



EQUIPEMENT GROUP

Group I : for equipment used in mines
Group II : for equipment used in all other areas

EQUIPEMENT CATEGORY

Categories M1 and M2 : for equipment used in mines
Category 1 : for equipment intended for use in Zones 0 (gas) or 20 (dust)
Category 2 : for equipment intended for use in Zones 1 (gas) or 21 (dust)
Category 3 : for equipment intended for use in Zones 2 (gas) or 22 (dust)

ENVIRONMENT

G : gases, vapors, or mist
D : dust or flyings
G + D : Combination

PROTECTION TYPE

o : Oil immersion - following standard : EN 60079 - 6
p : Pressurized apparatus - following standard : EN 60079 - 2
q : Powder filling - following standard : EN 60079 - 5
d : Flameproof enclosure - following standard : EN 60079 - 1
e : Increased safety - following standard : EN 60079 - 7
i : Intrinsic safety - following standard : EN 60079 - 11
m : Encapsulation - following standard : EN 60079 - 18
sys : Intrinsically safe systems - following standard : EN 60079 - 25

GROUP

Group I : for mining (methane gas and coal dust)
Group II : for gases, vapors, or mist in above-ground industries and includes three sub-groups :
 - Group IIA : for gases such as propane
 - Group IIB : for gases such as ethylene
 - Group IIC : for gases such as hydrogen/ acetylene
Group III : for dust or flyings in above-ground industries and includes three sub-groups:
 - Group IIIA : for flyings
 - Group IIIB : for non-conductive dust
 - Group IIIC : for conductive dust

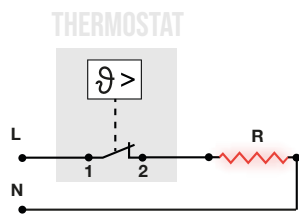
TEMPERATURE CLASS

T1 : max. serves temp. : 450°C
T2 : max. serves temp. : 300°C
T3 : max. serves temp. : 200°C
T4 : max. serves temp. : 135°C
T5 : max. serves temp. : 100°C
T6 : max. serves temp. : 85°C

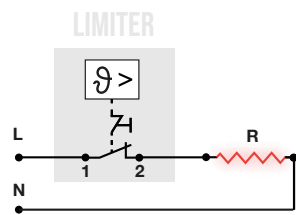
WIRING DIAGRAMS

Depending on the power of the load and the switching capacity of the used thermostat/limiter a contactor may be necessary.

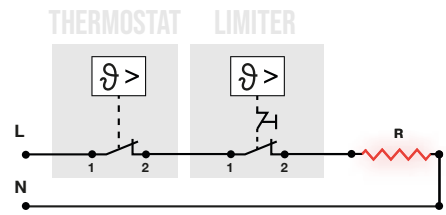
Below you can find different connection diagrams to assure correct control.



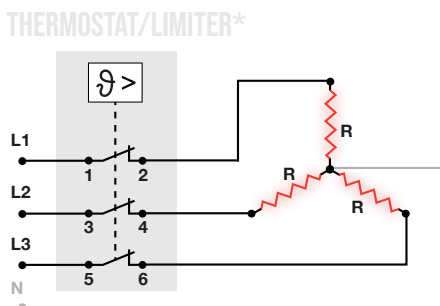
Single phase load switched directly by a single pole thermostat



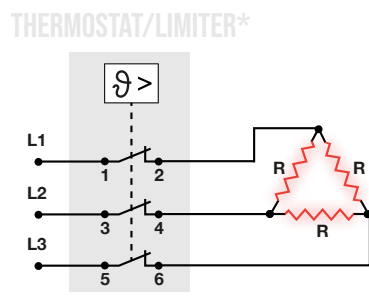
Single phase load switched directly by a single pole limiter



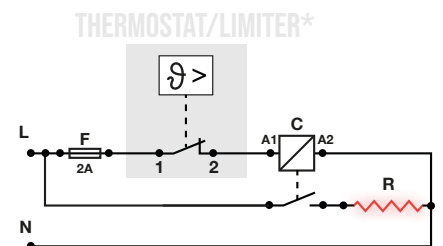
Single phase load switched directly by a single pole thermostat and a single pole limiter in series



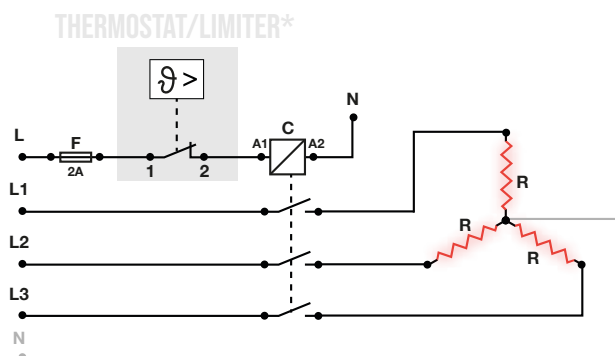
Three phase load (star) switched directly by a three pole thermostat



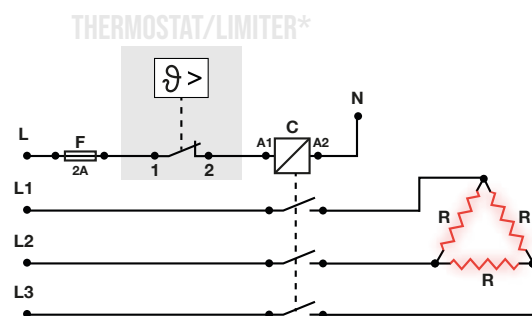
Three phase load (delta) switched directly by a three pole thermostat



Single phase load switched by a single pole thermostat via a contactor



Three phase load (star) switched directly by a three phase thermostat.



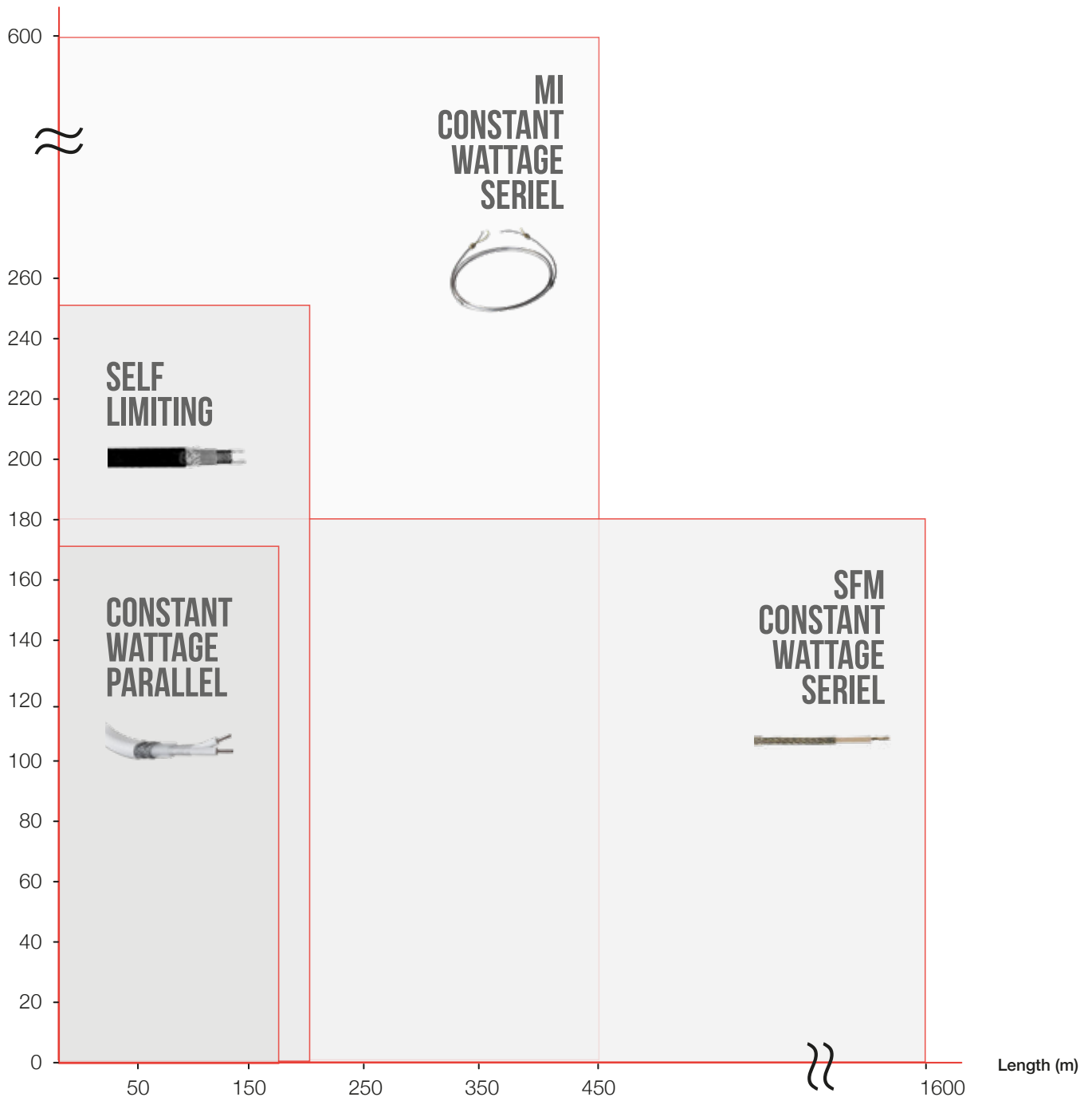
Three phase load (delta) switched by a single pole thermostat via a contactor

*Device can be thermostat, limiter or combination of both in series

SELECTION OF HEATING CABLE TYPE

The overview provides an approximation.
The correct application must always be examined in detail.

Temperature (°C)



SELF-LIMITING VS. CONSTANT WATTAGE CABLES

Comparison of self-limiting heating cables and constant wattage cables in terms of power tolerance and deterioration over time.

POWER TOLERANCE

Self-Limiting Cables

Self-limiting cables have a variable power output that adjusts based on temperature. Their power output decreases as the ambient temperature increases. This provides automatic temperature limitation, but also means the actual power output can vary significantly depending on conditions.

Constant Wattage Cables

Constant wattage cables deliver a fixed power output regardless of temperature. This provides more precise and consistent heating, with tighter tolerances on the actual power delivered. The power output remains constant even as ambient temperatures change.

DETERIORATION OVER TIME

Self-Limiting Cables

The semiconductor material in self-limiting cables can degrade over time, especially when exposed to high temperatures. This can lead to a gradual decrease in heating performance and power output as the cable ages. The self-regulating capability may become less effective.

Constant Wattage Cables

Constant wattage cables do not rely on semiconductor materials. Their heating elements are typically made of metal alloys that are more stable over time. This results in less deterioration and more consistent performance throughout the cable's lifespan.

KEY DIFFERENCES

- Self-limiting cables offer automatic temperature regulation but with wider power tolerances. Constant wattage cables provide more precise, stable power output.
- The semiconductor in self-limiting cables is prone to degradation, while constant wattage cables use more durable metal heating elements.
- Self-limiting cables may lose effectiveness over time, while constant wattage cables maintain more consistent performance long-term.
- Constant wattage cables often have higher temperature ratings and can withstand more extreme conditions.

In summary, constant wattage cables generally offer tighter power tolerances and better long-term stability, while self-limiting cables provide automatic adjustment but may deteriorate more over time. The choice depends on the specific application requirements.

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