



Heating technology for the specialist shop

PRODUCT CATALOGUE

Innovative products for an optimum temperature

BONUS FOR OWNER OCCUPANTS

Power consumption will be rewarded by the state! (valid for Germany)



**Solar energy to the grid yesterday,
direct feed into the building and consumption today.**

The possibility of the energy produced by a photovoltaic system, also partially for self-consumption, is a supply variant that pays off.

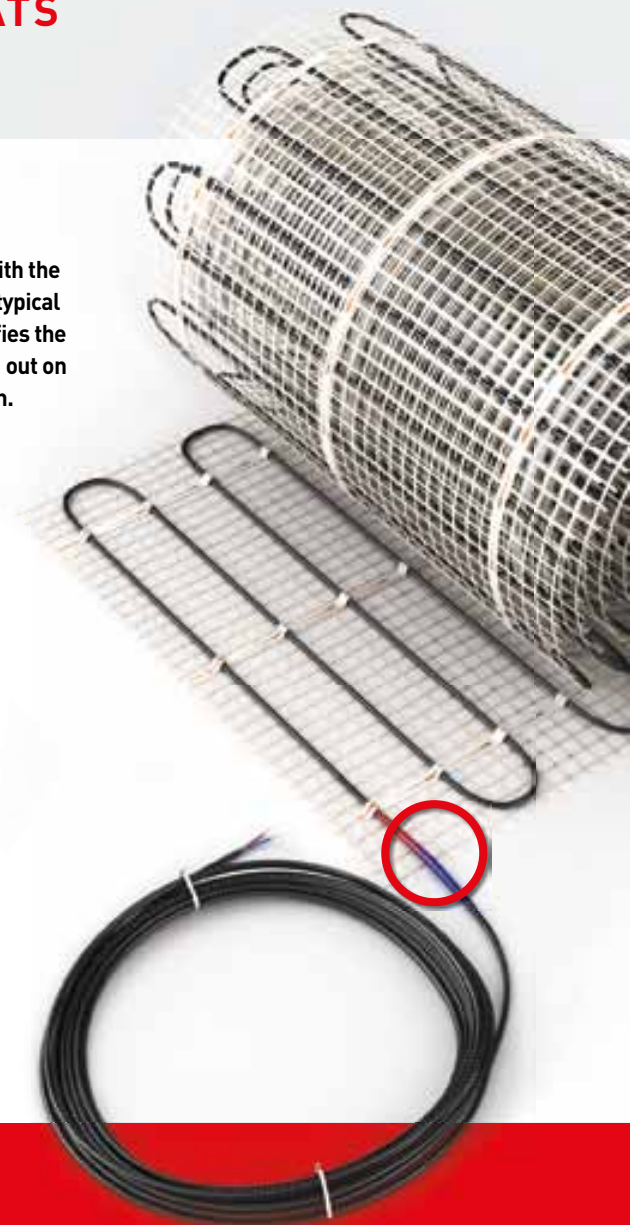
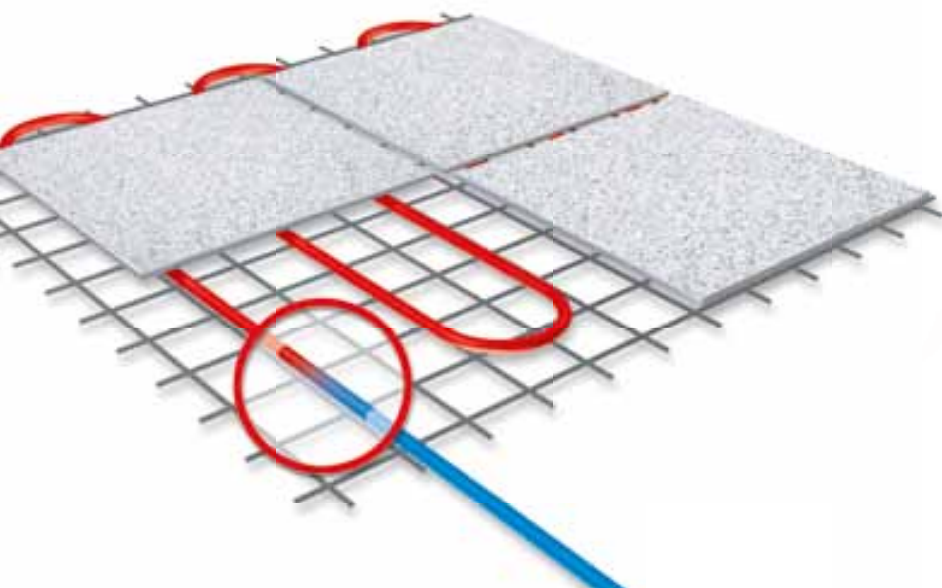
Reason: The supply price of your utility company (per kWh) is already higher than the statutory fee for the supply of solar power.

The energy self-consumption will be rewarded!

HEMSTEDT® HEM-SYSTEM® REDUCED-THICKNESS HEATING MATS

With sleeveless cold/warm splice

The Hemstedt® self-adhesive reduced-thickness heating mat has been fitted with the HEM-SYSTEM® since 2005: The cold/warm splice is now sleeveless so that the typical problems associated with bulky shrinkable sleeves are eliminated. This simplifies the work for the floor fitter and the electrician. All subsequent work can be carried out on a flat surface. The HEM-SYSTEM® has established itself as a successful solution.



PRODUCT INNOVATION FOR EVEN SIMPLER INSTALLATION

The sleeveless splice is absolutely waterproof, and therefore ideal for installations requiring moisture proofing. Another benefit: This insulating covering is completely resistant to chemicals and temperatures up to 200 °C. This is provided right up to the thermostat.



NEW



Before

Hemstedt
HEM-SYSTEM®
sleeveless

- Sleeveless
- Self-adhesive
- 100 % waterproof

- Direct from the manufacturer
- Insulating covering completely chemical and temperature resistant

ABOUT US



Hemstedt® has been one of the leading manufacturers of heating cables and products for cold store houses for over 40 years. Our high-quality products are produced in accordance with the latest technical standards.

As an expert in heating cables and cold store technology, Hemstedt® not only complies with the very individual requirements of its customers, but also stands out by frequently presenting trend-setting innovations.

Many of these developments are protected by international patents. Our customers all over the world not only appreciate the wide range of Hemstedt products, but also the short delivery times, the professional handling and our customized pricing. Our company is provided with an operating area of more than 17,500 m² and has worked for its leading position against keen competition within the sector. We aim to always

„Satisfied customers – the aim we share.“

See for yourself and benefit from the many possibilities our products offer – also for your product range!

HEMSTEDT® quality: Excellent!



DEKRA

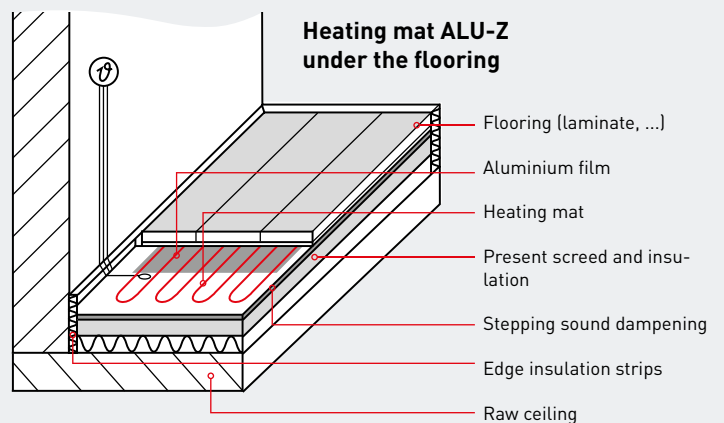
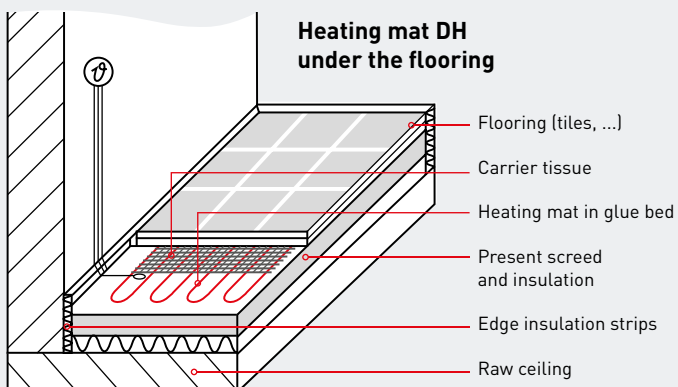


Hemstedt GmbH is one of the 100 most innovative medium-sized companies in Germany. It was outstanding in the renowned "top 100 Innovators" comparison of companies on account of its systematic, well-conceived and accordingly successful innovation management, and in 2008 was awarded the sought after "top 100" quality seal. In the area of "innovation-supporting top management", the company even succeeded in jumping up the rankings to 7th place. In this category, Hemstedt® is thus now one of the 7 most innovative medium-sized companies in Germany.

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HEM-SYSTEM® REDUCED-THICKNESS DIRECT HEATING MATS



MODERN UNDERFLOOR HEATING SYSTEMS WITH LOW INSTALLATION HEIGHT

Ideal for different building conditions

Modern underfloor heating systems from Hemstedt® generate heat source over a large-area to ensure a comfortable room temperature.

Reduced-thickness heating for tiles

Reduced-thickness heating mats and heating cables – specially designed for installation in bathrooms, showers, children's rooms, living rooms and bedrooms.

The **reduced-thickness heating mats and heating cables** are laid directly in the levelling compound. By cutting the heating mats they can be adapted easily to different building conditions. The maximum output of an underfloor direct heating system must not exceed 150 W/m².

Dry installation system for laminate and ready to lay parquet floor

The brand new HEM dry installation system sets new standards in warmth, installation height and mounting. With its unique heating mat concept using aluminium-coated textile fibre glass, Hemstedt® ensures even heat distribution and super fast heating within a few minutes. The heating cables are extremely thin at only 2.5 mm, fit easily in the sound insulation and fully secured against slipping. The specialist's view: Ideal for renovation, new builds and also subsequent removal. The HEM dry installation must only be laid in dry rooms. By cutting the heating mats they can be adapted easily to different building conditions. All components must be temperature resistant up to 80 °C. A sound/heat insulation with fire class B2 is required.



The sleeveless splice is absolutely waterproof, and therefore ideal for installations requiring moisture proofing.

Hemstedt
HEM-SYSTEM®
sleeveless

- Warmth made to measure
- Direct from the manufacturer
- Self-adhesive
- 100 % waterproof
- Insulating covering completely chemical and temperature resistant



DHSU
reduced-
thickness
heating mat

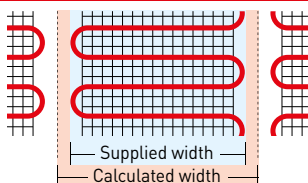
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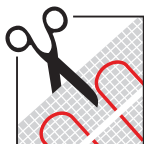
Sleeveless
splice

93089

Calculated width



Flexible installation



By cutting the heating mats they can be adapted easily to different building conditions.

Simply cut and adjust.

DHSU REDUCED-THICKNESS HEATING MAT SET

Sleeveless with timer thermostat,
flush installation, for installation



HEM SYSTEM® heating mats with single-end connection cable for mounting in tile adhesive / or levelling compound. Ideal for renovations, new buildings as well as for baths, showers, living rooms, offices etc.

The reduced-thickness heating mat set contains the following products:

- 1 HEM direct heating mat with single-end connection cable 150 W/m² and 4.00 m connection cable
- 1 temperature regulator with self-teaching timer thermostat and sensor, flush
- 1 end seal sensor for sensor tube
- 1 sensor tube for room thermostat
- 1 switch socket
- 1 installation instructions

Technical data

Nominal voltage	230 Volt
Output	150 W/m²
Cold connection cable	1 x 4.00 m
Minimum installation temperature	5 °C
Smallest bending radius	6 x dA
Resistance tolerance	-5 % / +10 %
Approvals	VDE
Cold / warm splice	sleeveless, without shrinkable sleeve
Insulation	Fluoroplastic
Supplied width	0.46 m
Calculated width	0.50 m

150 W/m² 230 V

DHSU reduced-thickness heating mats with single-end connection cable

Heating output W	Surface area m²	Calculated width m	Length m	Order no.
150	1.00	0.50	2.00	30751-150 U-SET
225	1.50	0.50	3.00	30751-225 U-SET
300	2.00	0.50	4.00	30751-300 U-SET
375	2.50	0.50	5.00	30751-375 U-SET
450	3.00	0.50	6.00	30751-450 U-SET
525	3.50	0.50	7.00	30751-525 U-SET
600	4.00	0.50	8.00	30751-600 U-SET
675	4.50	0.50	9.00	30751-675 U-SET
750	5.00	0.50	10.00	30751-750 U-SET
900	6.00	0.50	12.00	30751-900 U-SET
1050	7.00	0.50	14.00	30751-1050 U-SET
1200	8.00	0.50	16.00	30751-1200 U-SET
1350	9.00	0.50	18.00	30751-1350 U-SET
1500	10.00	0.50	20.00	30751-1500 U-SET
1800	12.00	0.50	24.00	30751-1800 U-SET
2250	15.00	0.50	30.00	30751-2250 U-SET

Cold connection cable 1.00 m² - 4.00 m² → 0.50 mm² | 4.50 m² - 9.00 m² → 0.75 mm² | 10.00 m² → 1.00 mm²
Heat insulation is required in flooring in all cases.

Accessories

Article designation	Order no.
Cold connection cable for extension 3 x 1.00 mm², 1.00 m, black	81302-1.00 BL/SW
Mounting sleeve (1, factory fitted), for extension	26121
Aluminium end seal sensor (OD 15.20 mm / ID 12.50 mm)	20079
Plastic switch socket for room thermostat	20702
Sensor tube for room thermostat, length: 2.50 m	20703
Spare temperature sensor timer thermostat	93089 sensor
Repair sleeves on request	

A residual current device (FI < 30 mA) must be provided as a protection measure.
Extended cold connection cables cannot be returned.

DHSPA REDUCED-THICKNESS HEATING MAT SET

Sleeveless with point scale regulator, flush for installation in tile glue



HEM SYSTEM® heating mats with single-end connection cable for mounting in tile adhesive / or levelling compound. Ideal for renovations, new buildings as well as for baths, showers, living rooms, offices etc.

The reduced-thickness heating mat set contains the following products:

- 1 HEM direct heating mat with single-end connection cable 150 W/m² and 4.00 m cold connection cable
- 1 analog regulator, flush and sensor
- 1 end seal sensor for sensor tube
- 1 sensor tube for room thermostat
- 1 switch socket
- 1 installation instructions

Technical data

Nominal voltage	230 Volt
Output	150 W/m²
Cold connection cable	1 x 4.00 m
Minimum installation temperature	5 °C
Smallest bending radius	6 x dA
Resistance tolerance	-5 % / +10 %
Approvals	VDE
Cold / warm splice	sleeveless, without shrinkable sleeve
Insulation	Fluoroplastic
Supplied width	0.46 m
Calculated width	0.50 m

150 W/m² 230 V

DHSPA reduced-thickness heating mats with single-end connection cable

Heating output W	Surface area m²	Calculated width m	Length m	Order no.
150	1.00	0.50	2.00	30751-150 PA-SET
225	1.50	0.50	3.00	30751-225 PA-SET
300	2.00	0.50	4.00	30751-300 PA-SET
375	2.50	0.50	5.00	30751-375 PA-SET
450	3.00	0.50	6.00	30751-450 PA-SET
525	3.50	0.50	7.00	30751-525 PA-SET
600	4.00	0.50	8.00	30751-600 PA-SET
675	4.50	0.50	9.00	30751-675 PA-SET
750	5.00	0.50	10.00	30751-750 PA-SET
900	6.00	0.50	12.00	30751-900 PA-SET

Cold connection cable 1.00 m² - 4.00 m² → 0.50 mm² | 4.50 m² - 6.00 m² → 0.75 mm²
Heat insulation is required in flooring in all cases.

Accessories

Article designation	Order no.
Cold connection cable for extension 3 x 1.00 mm², 1.00 m, black	81302-1.00 BL/SW
Mounting sleeve (1, factory fitted), for extension	26121
Aluminium end seal sensor (OD 15.20 mm / ID 12.50 mm)	20079
Plastic switch socket for room thermostat	20702
Sensor tube for room thermostat, length: 2.50 m	20703
Spare temperature sensor timer thermostat	93088 sensor
Repair sleeves on request	

A residual current device (FI < 30 mA) must be provided as a protection measure.
Extended cold connection cables cannot be returned.

HEM-SYSTEM®

EN/IEC 60335-2-96

DHSPA reduced-thickness heating mat



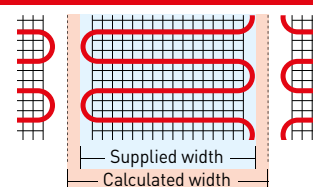
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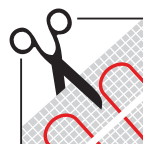
Sleeveless splice

93088

Calculated width



Flexible installation



By cutting the heating mats they can be adapted easily to different building conditions.

Simply cut and adjust.

DH reduced-thickness heating mat

Class: M1

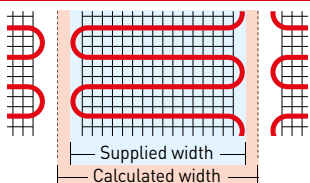
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Sleeveless splice

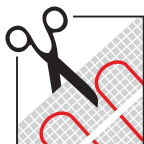
DR reduced-thickness heating cables

Distance bars for reduced-thickness heating cables

Calculated width



Flexible installation



By cutting the heating mats they can be adapted easily to different building conditions.

Simply cut and adjust.

DH REDUCED-THICKNESS HEATING MATS DR REDUCED-THICKNESS HEATING CABLES

Sleeveless heating mats, self-adhesive



HEM SYSTEM® Heating mats and reduced-thickness heating cables with single-end connection cable for installation in tile adhesive / or levelling compound. Ideal for renovations, new buildings as well as for baths, showers, living rooms, offices etc.

Technical data

Nominal voltage	230 Volt
Output	150 W/m ²
Cold connection cable	1 x 4.00 m
Minimum installation temperature	5 °C
Smallest bending radius	6 x dA
Resistance tolerance	-5 % / +10 %
Approval	VDE (1-10 m ²)
Cold / warm splice	sleeveless, without shrinkable sleeve
Insulation	Fluoroplastic
Supplied width	0.46 m
Calculated width	0.50 m

150 W/m² 230 V

	DH heating mats with single-end connection cable				DR heating cables	
Heat output W	Surface area m ²	Calculated width m	Mat length m	Order no.	Element length m	Order no.
150	1.00	0.50	2.00	30751-150	12.07	37702-12.07
225	1.50	0.50	3.00	30751-225	17.66	37702-17.66
300	2.00	0.50	4.00	30751-300	23.77	37702-23.77
375	2.50	0.50	5.00	30751-375	29.87	37702-29.87
450	3.00	0.50	6.00	30751-450	35.97	37702-35.97
525	3.50	0.50	7.00	30751-525	41.56	37702-41.56
600	4.00	0.50	8.00	30751-600	47.67	37702-47.67
675	4.50	0.50	9.00	30751-675	53.77	37702-53.77
750	5.00	0.50	10.00	30751-750	59.87	37702-59.87
900	6.00	0.50	12.00	30751-900	71.57	37702-71.57
1050	7.00	0.50	14.00	30751-1050	83.77	37702-83.77
1200	8.00	0.50	16.00	30751-1200	95.47	37702-95.47
1350	9.00	0.50	18.00	30751-1350	107.67	37702-107.67
1500	10.00	0.50	20.00	30751-1500	119.37	37702-119.37
1800	12.00	0.50	24.00	30751-1800	143.27	37702-143.27
2250	15.00	0.50	30.00	30751-2250	179.37	37702-179.37

Accessories

Article designation	Order no.
Cold connection cable for extension 3 x 1.00 mm ² , 1.00 m, black	81302-1.00 BL/SW
Mounting sleeve (1 piece, factory fitted), for extension	26121
Copper end seal sensor (OD 15.20 mm / ID 12.50 mm)	20079
Plastic switch socket for room thermostat	20702
Sensor tube for room thermostat, length: 2.50 m	20703
Analog point scale regulator with sensor, flush	93088
Intelligent temperature monitoring timer thermostat with self-teach function and sensor, flush	93089
Distance bars	20063
Spare temperature sensor for analogue controller	93088 sensor
Spare temperature sensor for clock thermostat	93089 sensor
Repair sleeves on request	

A residual current device (FI < 30 mA) must be provided as a protection measure. Extended cold connection cables cannot be returned.

DH-Z REDUCED-THICKNESS HEATING MATS DR-Z REDUCED-THICKNESS HEATING CABLES

Sleeveless heating mats, self-adhesive



HEM SYSTEM® heating mats and reduced-thickness heating cables with double-end connection cable for installation in tile adhesive / or levelling compound. Ideal for renovations, new buildings as well as for baths showers, living rooms, offices etc.

Technical data

Nominal voltage	230 Volt
Output	150 W/m ²
Cold connection cable	1 x 6.00 / 1 x 2.50 m
Minimum installation temperature	5 °C
Smallest bending radius	6 x dA
Resistance tolerance	-5 % / +10 %
Standard	60335-2-96
Cold / warm splice	sleeveless, without shrinkable sleeve
Insulation	Fluoroplastic
Supplied width	0.46 m
Calculated width	0.50 m

150 W/m² 230 V

Heat output W	DH-Z heating mats with double-end connection cable				DR-Z heating cables	
	Surface area m ²	Calculated width m	Calculated width m	Order no.	Element length m	Order no.
150	1.00	0.50	2.00	30800-150	12.07	37709-12.07
225	1.50	0.50	3.00	30800-225	17.66	37709-17.66
300	2.00	0.50	4.00	30800-300	23.77	37709-23.77
375	2.50	0.50	5.00	30800-375	29.87	37709-29.87
450	3.00	0.50	6.00	30800-450	35.97	37709-35.97
525	3.50	0.50	7.00	30800-525	41.56	37709-41.56
600	4.00	0.50	8.00	30800-600	47.67	37709-47.67
675	4.50	0.50	9.00	30800-675	53.77	37709-53.77
750	5.00	0.50	10.00	30800-750	59.87	37709-59.87
900	6.00	0.50	12.00	30800-900	71.57	37709-71.57
1050	7.00	0.50	14.00	30800-1050	83.77	37709-83.77
1200	8.00	0.50	16.00	30800-1200	95.47	37709-95.47
1350	9.00	0.50	18.00	30800-1350	107.67	37709-107.67
1500	10.00	0.50	20.00	30800-1500	119.37	37709-119.37

Heat insulation is required in flooring in all cases.

Accessories

Article designation	Order no.
Cold connection cable for extension 1.00 mm ² , 2 x 1.00 m, black	81101-1.00 SW
Mounting sleeve (2, factory fitted), for extension	26123
Copper end seal sensor (OD 15.20 mm / ID 12.50 mm)	20079
Plastic switch socket for room thermostat	20702
Sensor tube for room thermostat, length: 2.50 m	20703
Analog point scale regulator with sensor, flush	93088
Intelligent temperature monitoring timer thermostat with self-teach function and sensor, flush	93089
Distance bars	20063
Spare temperature sensor for analogue controller	93088 sensor
Spare temperature sensor for clock thermostat	93089 sensor
Repair sleeves on request	

A residual current device (FI < 30 mA) must be provided as a protection measure. Extended cold connection cables cannot be returned.

Further information in our installation instructions.

Subject to alterations.

www.hemstedt.de

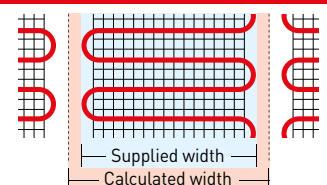
HEM-SYSTEM®

NEW!
super-thin, without
shrink technology!

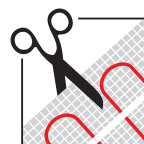


Distance bars for reduced-thickness heating cables

Calculated width



Flexible installation



By cutting the heating mats they can be adapted easily to different building conditions.

Simply cut and adjust.

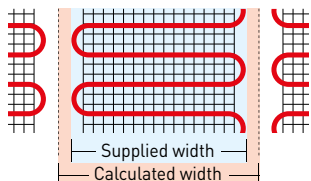
ALU-Z reduced-thickness heating mat

Sleeveless splice

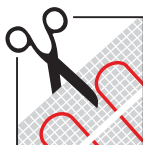
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Calculated width



Flexible installation



By cutting the heating mats they can be adapted easily to different building conditions.

Simply cut and adjust.

Further information in our installation instructions.

93088

93089

ALU-Z DRY INSTALLATION

Sleeveless, specially developed for laying under laminate and engineered parquet flooring.



Heating mat with double-end connection cable. The aluminium-coated textile glass fabric ensures even heat distribution underneath the flooring. The small installation height of only approx. 5 mm + floor makes this product ideal for renovations and for new buildings. Must only be installed in dry rooms.

The regulation system uses thermostats that are specially adapted to this product.

The HEM dry installation system is manufactured in accordance with VDE 60335-2-96.

Installation (brief description):

A vapour barrier must be installed and fitted if necessary. The room must be fitted with a temperature resistant sound and heat insulation (80 °C, B2). The heated area must be fitted with our HEM dry installation system. Fit floor covering.

Technical data

Nominal voltage	230 Volt
Output	100 W/m ²
Cold connection cable	1 x 2.50 m / 1 x 6.00 m
Minimum installation temperature	5 °C
Smallest bending radius	6 x dA
Resistance tolerance	-5 % / +10 %
Standard	60335-2-96
Cold / warm splice	sleeveless, without shrinkable sleeve
Heating cable diameter	approx. 2.80 mm
Insulation	Fluoroplastic
Supplied width	0.45 m
Calculated width	0.50 m

Example for price calculation:

- The room must be completely fitted with sound and heat insulation (Order no.: 20106)
- Calculate the surface area to be heated = Size of heating mat (Order no.: 30600...)
- Remaining surface area (unheated area) = compensation textile (Order no.: 20107)
- Selection and determination of temperature regulator (Order no.: 93088 or 93089)

100 W/m² 230 V

Dry installation system				
Heating output W	Surface area m ²	Calculated width m	Length m	Order no.
100	1.00	0.50	2.00	30600-100
200	2.00	0.50	4.00	30600-200
300	3.00	0.50	6.00	30600-300
400	4.00	0.50	8.00	30600-400
500	5.00	0.50	10.00	30600-500
600	6.00	0.50	12.00	30600-600
700	7.00	0.50	14.00	30600-700
800	8.00	0.50	16.00	30600-800

Sound / heat insulation

Article designation	Width m	Length m	Surface area m ²	Order no.
Fire class B2, thickness 5 mm	1.00	10.00	10.00	20106
Compensation textile	0.50	10.00	5.00	20107

Accessories

Article designation	Order no.
Cold connection cable for extension 1.00 mm ² , 2 x 1.00 m	81101-1.00 SW
Mounting sleeve (2, factory fitted), for extension	26123
Aluminium sensor sleeve (AD 15.20 mm / ID 12.50 mm)	20079
Plastic switch socket for room thermostat	20702
Sensor tube for room thermostat, length: 2.50 m	20703
Analog point scale regulator with sensor, up to 35 °C, flush	93088
Digital floor regulator, digital with sensor, up to 35 °C, flush	93089

A residual current device (FI < 30 mA) must be provided as a protection measure. Extended cold connection cables cannot be returned.

CEILING HEATING ACCORDING TO EN/IEC 60335-2-96

Sleeveless, specifically developed for placement at the ceiling



Heating mat with single-end connection cable. The aluminium coating, applied on a textile glass fabric, permits homogeneous heat distribution in the ceiling.

Technical data

Nominal voltage	230 Volt
Output	125-150 W/m ²
Cold connection cable	1 x 4,00
Minimum installation temperature	5 °C
Smallest bending radius	6 x dA
Resistance tolerance	-5 % / +10 %
Heating cable diameter	approx. 4.0 mm
Heating conductor distance	8.50 cm
Heating mat delivery width	0.50 m

125-150 W/m² 230 V

Ceiling heating

Heating output W	Surface area m ²	Calculated width m	Length m	Order no.
45*	0.3	0.60	0.5	30809-45
150	1.2	0.60	2.00	30809-150
225	1.8	0.60	3.00	30809-225
300	2.4	0.60	4.00	30809-300
375	3.00	0.60	5.00	30809-375
450	3.60	0.60	6.00	30809-450
525	4.20	0.60	7.00	30809-525

* Output 150 W/m²

Accessories

Article designation	Order no.
Cold connection cable for extension 1.00 mm ² , 2 x 1.00 m	81101-1.00 SW
Mounting sleeve (2, factory fitted), for extension	26123
Aluminium sensor sleeve (AD 15.20 mm / ID 12.50 mm)	20079
Plastic switch socket for room thermostat	20702
Sensor tube for room thermostat, length: 2.50 m	20703
Analog point scale regulator with sensor, up to 35 °C, flush	93088
Intelligent temperature monitoring timer thermostat with self-teach function and sensor, flush	93089

HEM-SYSTEM®

Ceiling heating according to EN/IEC 60335-2-96



93088



93089

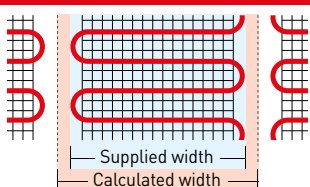
Reduced-thickness heating mat DHM MINI



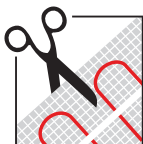
Sleeveless splice

Reduced-thickness heating cables DRM MINI

Calculated width



Flexible installation



By cutting the heating mats they can be adapted easily to different building conditions.

Simply cut and adjust.

DHM MINI REDUCED-THICKNESS HEATING MATS DRM MINI-HEATING CABLES

Sleeveless, heating mats self-adhesive



HEM-SYSTEM® MINI heating mats with single-end connection cable and MINI reduced-thickness cables for installation in tile glue/or compensation mass; Outstanding for old building renovation and for bathrooms, showers and similar. Also as installation set for self-assembly. Also for boats, yachts, etc.

Technical data

Rated voltage.....	230 Volt
Power.....	150 W/m ²
Low-voltage connection line	1 x 3.00 m (0.50 mm ²)
Minimum placement temperature	5 °C
Smallest bending radius.....	6 x dA
Resistance tolerance	-5 % / +10 %
Cold/hot transfer.....	sleeveless

150 W/m² 230 V

	DHM Mini reduced-thickness heating mats with unilateral connection				DRM Mini heating cables with unilateral connection	
Heating output W	Surface area m ²	Calculated width m	Length m	Order no.	Length m	Order no.
45.00	0.30	0.30	1.00	30900-45	4.57	37701-4.57
67.50	0.45	0.30	1.50	30900-67.5	6.76	37701-6.76
90.00	0.60	0.30	2.00	30900-90	8.96	37701-8.96
112.50	0.75	0.30	2.50	30900-112.5	11.42	37701-11.42

Accessories

Article designation	Order no.
Cold connection cable for extension 0.75 mm ² , black / 1.00 m	81302-1.00 BL/SW
Mounting sleeve (1, factory fitted), for extension	26121
Aluminium sensor sleeve (AD 15.20 mm / ID 12.50 mm)	20079
Plastic switch socket for room thermostat	20702
Sensor tube for room thermostat, length: 2.50 m	20703
Point scale controller, analogue, UP	93088
Smart temperature monitoring	93089
Clock thermostat with self-learning function, digital	
Spare temperature sensor for analogue controller	93088 sensor
Repair sleeves on request	

A residual current device (FI < 30 mA) must be provided as a protection measure. Extended cold connection cables cannot be returned.

Dry installation system

Heating output W	Surface area m ²	Calculated width m	Length m	Order no.
100	1.00	0.50	2.00	30600-100
200	2.00	0.50	4.00	30600-200
300	3.00	0.50	6.00	30600-300
400	4.00	0.50	8.00	30600-400
500	5.00	0.50	10.00	30600-500
600	6.00	0.50	12.00	30600-600
700	7.00	0.50	14.00	30600-700
800	8.00	0.50	16.00	30600-800

THERMOSTATS

For underfloor heating systems



U-UP timer thermostat

Technical data

Hemstedt HEM U smart temperature monitoring: Thermostat with self-learning function, programmable, time switching zones, with sensor (digital)

Nominal voltage 230 V/50 Hz
Switching capacity 16 (2) A
Setting range +10 °C to + 40 °C with mechanical range limitation via setting button
Switching difference approx. 1.5 K
Display Heating mode
Temperature reduction Optional within the control range (via external switch/pilot timer)
Temperature sensor NTC 4 m to DIN 44574. Heating is switched off in the event of sensor failure and short-circuit
Degree of protection IP 30 – degree of protection II after appropriate installation
Housing colour Similar to RAL 9010 pure white

Timer thermostat

Order no. 93089

The fault interrupter circuit is required as a protective measure (FI < 30 mA).
 Assembly in concealed socket by interim frame 50 x 50 (according to DIN 49075) in almost all wall sockets.
 Fits DIN wall sockets, compatible with Busch-Jaeger, Jung, etc.

Spare temperature sensor for clock thermostat

93089 sensor



93089

PA-UP temperature regulator with point scale

Technical data

Nominal voltage 230 V/50 Hz +-10 % / -15 %
Switching capacity 16 (2) A
Setting range +10 °C to + 40 °C with mechanical range limitation via setting button
LED indication Heating (red) and temperature reduction (green)
Temperature reduction 5K via external switch/pilot timer
Temperature sensor NTC 4 m to DIN 44574. Heating is switched off in the event of sensor failure and short-circuit
Degree of protection IP 30 – degree of protection II after appropriate installation
Housing colour Similar to RAL 9010 pure white

PA-UP temperature regulator with point scale and sensor (analog)

Order no. 93088

The fault interrupter circuit is required as a protective measure (FI < 30 mA).
 Assembly in concealed socket by interim frame 50 x 50 (according to DIN 49075) in almost all wall sockets.
 Fits DIN wall sockets, compatible with Busch-Jaeger, Jung, etc.

Spare temperature sensor for analogue controller

93088 sensor



93088

2-circuit controller

Technical data

Rated operating voltage AC 230 V ±10 %, 50 Hz
Rated load 13 A at AC 230 V; two-pin with separate relays, max. 10 A each
Switching hysteresis 1 ± 0,5 K, referring to the bottom temperature
Bottom temperature operation adjustable from 30 to 40 °C in 5 K steps
Maximum setting area of the target dial 10 .. 40 °C
Bottom sensor monitoring for short circuit and interruption
Installation in switch sockets according to DIN 49073, concealed
Protection class II, at corresponding installation
Protection type IP20, use at room temperature
Equipment safety and EMC according to EN 60730-1, EN 60730-2-9, EN 50559
Sensor 2 m

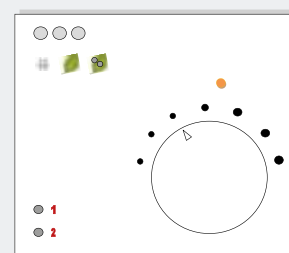
2-circuit controller

Order no. 93085

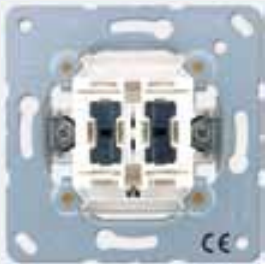
The fault interrupter circuit is required as a protective measure (FI < 30 mA).

Spare temperature sensor for two-circuit controller 93085 sensor

93085 sensor



93085



93130



93131



93132



93133

ACCESSORIES FOR TEMPERATURE CONTROLLER SWITCH



Switch programme JUNG for LS series



LS series for temperature controllers 93089, 93088, 93095

Article designation	Order no.
Serial rocker control switch Jung 505K0U5	93130
Double cover frame Jung LS982WW	93131
Rocker for serial control switch Jung LS995K05WW	93132

Only necessary for temperature controllers 93089 and 93088

Article designation	Order no.
Interim frame Jung LS961ZWW	93133

THE ENERGY STORAGE HEATING MAT

2-step heating capacity in one heating mat
for consumption usage with PV systems

All you can heat



Top-Innovator



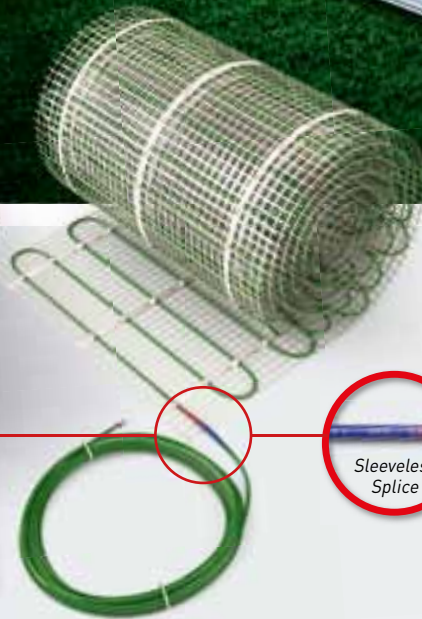
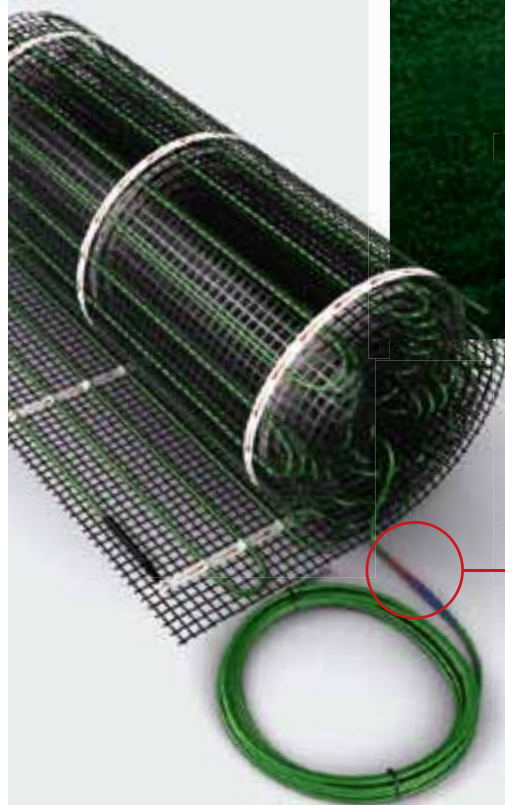
PATENT
pending

EN 50559

VDE
Certified
Management
System
9880/QM/03.00
DIN EN ISO 9001:2008

HEMSTEDT = Safety
two heating circuits
in one heating mat

GREEN ACCU MAT® PV –
for heating storage
with 40 W/m²



NEW! INNOVATION!
Exclusive from HEMSTEDT.



GREEN ELECTRIC MAT® PV –
for floor tile heating with 70 W/m²

Sleeveless
Splice



HEMSTEDT has won the



ENERGY STORAGE OPERATION + SELF-CONSUMPTION

Electrical heating has future.

Electrical heating is a fundamental element of the future energy mix. It ensures sufficient heating in a future energy economy likely to be dominated by solar and other electrical renewables. Regenerative natural resources like wood, biogas, ground level geothermal energy (heating pumps) and geothermal energy district heating grid (deep drilling) cannot cover all the growing total heating energy requirement.

Primary energy factor, CO² and resource availability by green electricity.

The primary energy factor indicates the amount of primary energy required to produce for one kilowatt-hour end energy. It is an especially important indicator by fossil fuel energy carriers for economical and environmental friendly extraction of electrical and heating warmth.

Primary factor comparison

Solar energy	Value 0
Earth gas	Value 1.1
Mains energy	Value 2.0

Profit from Factor 3.

The heating load of new low energy housing is **below 40 W/m²** and therefore the operation efficiency of **electrical heating** increases in comparison to **oil heating**.

The heating load of old housing accounts for approx. 120 W/m². This causes the calculation outcome result of factor 3.

The **GREEN ELECTRIC MAT® PV** and **GREEN ACCU MAT® PV** energy storage heatings conforms to the requisition of low energy requirement for low energy housing.

A higher economical operation coverage of Factor 3 is achieved using the **GREEN ELECTRIC MAT® PV** and **GREEN ACCU MAT® PV**.



DOUBLE SAFETY:

Heating cable + Reserve heating cable

GREEN ELECTRIC MAT® PV and **GREEN ACCU MAT® PV** are energy storage heating mats from HEMSTEDT with built-in safety and both systems have been filed at the European Patent Office. Both heating mats have a reserve heating cable that ensures comfort heating operation can be maintained even by failure of one heating circuit.

Your advantages:

- You receive a heating mat set with two **identical** heating circuits.
- You avoid a cold room in case of a possible heating circuit failure.
- You save extensive costs for time costing troubleshooting and repair.



heating operation

Case 1: Comfort heating circuit active
70 W/m² **GREEN ELECTRIC MAT® PV**
40 W/m² **GREEN ACCU MAT® PV**

heating operation

Case 2: Reserve heating circuit active
70 W/m² **GREEN ELECTRIC MAT® PV**
40 W/m² **GREEN ACCU MAT® PV**

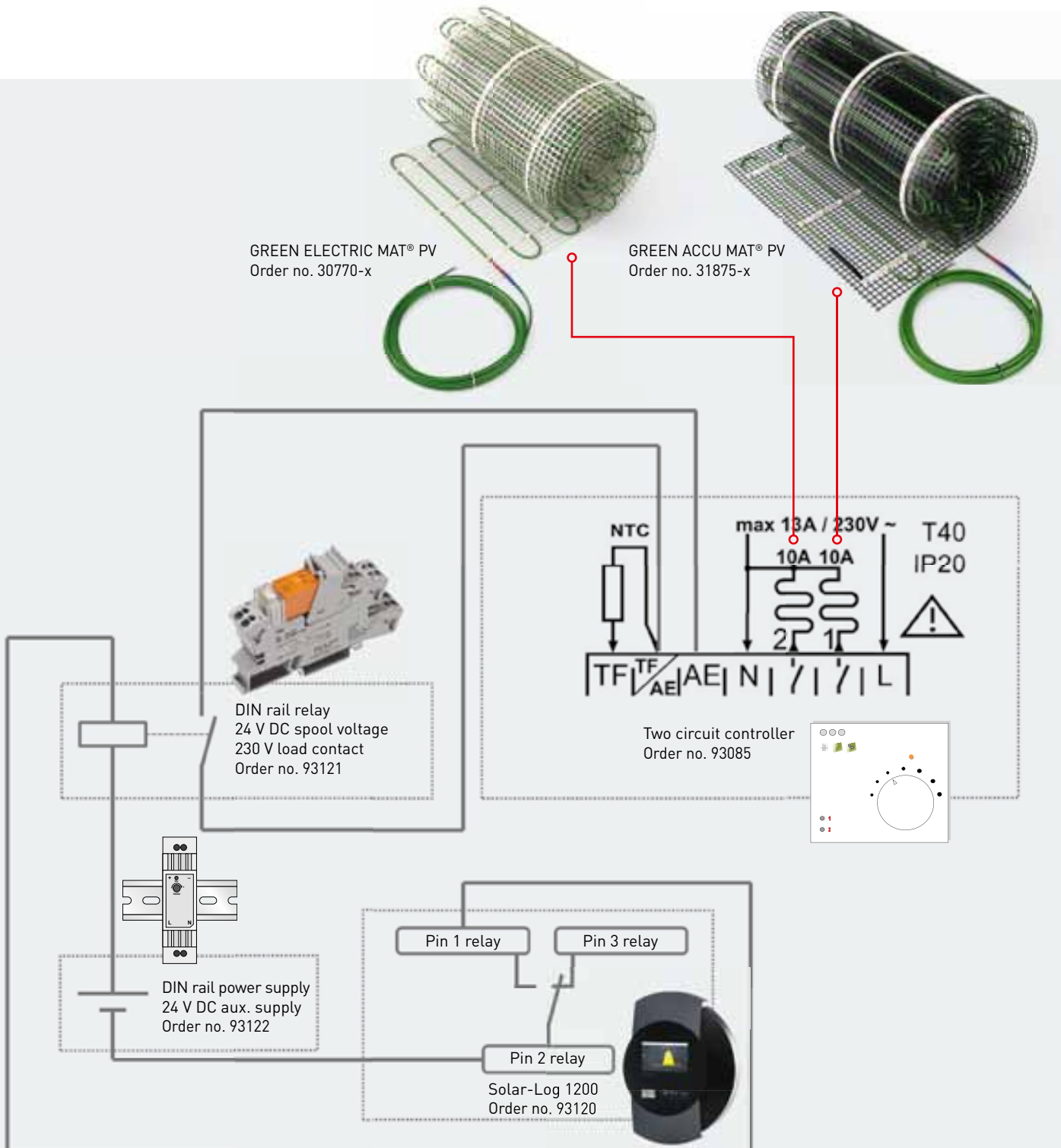
Case 3: Quick heating operation
140 W/m² **GREEN ELECTRIC MAT® PV**
80 W/m² **GREEN ACCU MAT® PV**

both heating circuits
in heating operation

Also applies to **GREEN ELECTRIC MAT®**
and **GREEN ACCU MAT®** without PV-plant.

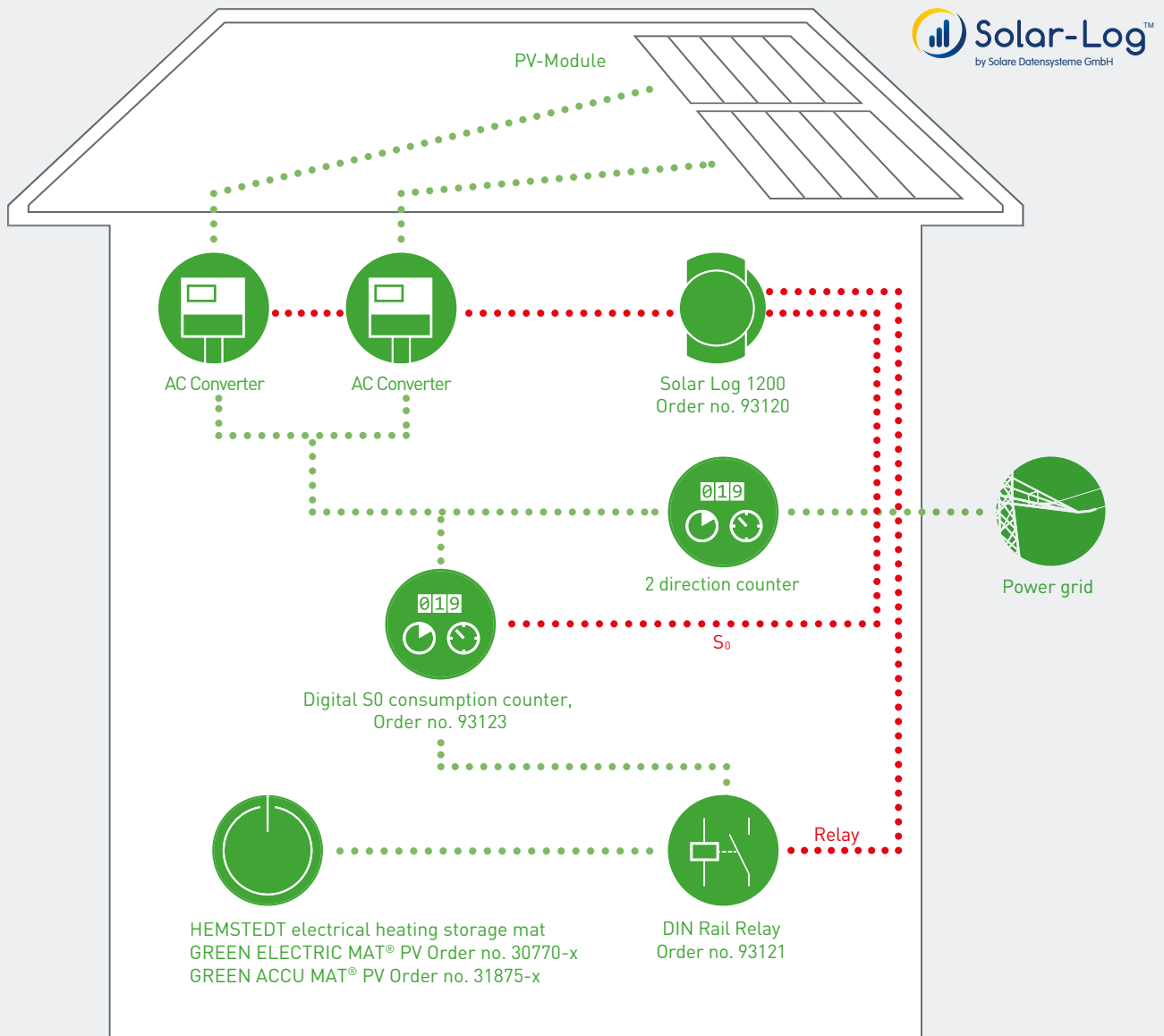
FUNCTIONS

Wiring diagram for the **GREEN ELECTRIC MAT® PV** and **GREEN ACCU MAT® PV**



SELF-CONSUMPTION OPTIMIZATION

Solar Log and HEMSTEDT energy storage heating mat



Use Solar-Log™ to control the **GREEN ELECTRIC MAT® PV** or **GREEN ACCU MAT® PV**. The Solar-Log™ continually checks the available solar energy and heating.

Example:

At a system with 7 kWp and an assumed heating share of 5 kW, a large share of the required energy can be covered by PV (solar energy) cost-efficiently. The PV system is monitored via Solar-Log™, which also controls other consumers in the building. For this, the potential-free relay contact installed in the Solar-Log 1200 is used.

For this optimisation, in addition to the Solar-Log 1200 (Order no. 93120), a top-hat rail mains unit (Order no. 93122) and a relay (Order no. 93121) and a consumption counter (Order no. 93123) are needed.

NEW!

GREEN ACCU MAT® PV

GREEN ACCU MAT® PV, the energy storage heating mat

The storage heating

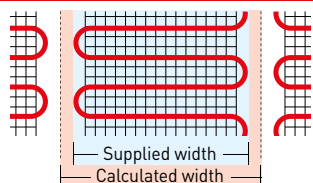


The **GREEN ACCU MAT® PV** with one side termination and sleeveless splice is the storage and direct heating for more efficiency and comfort. The heating mat is installed under the screed in approx. 8 to 10 cm depth. The **GREEN ACCU MAT® PV** uses the screed and cement as storage material. Especially designed for low energy housing.

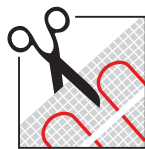
Technical data

Operation voltage	230 Volt
Power output	approx. 40 / 40 / 80 W/m ²
Cold lead	1 x 4.00 m
Min. installation temperature	5 °C
Max. temperature cable sheath	65 °C
Min. bending radius	5 x O.D.
Resistance tolerance	-5 % / +10 %
VDE Regulation	acc. to IEC60800 Ed.3
Cold/Warm connection	sleeveless splice, without shrink sleeve
Insulation	XLPE
Delivery width	0.85 m / 0.50 m
Calculation width	1.02 m / 0.67 m

Calculated width



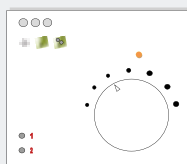
Flexible installation



By cutting the heating mats they can be adapted easily to different building conditions.

Simply cut and adjust.

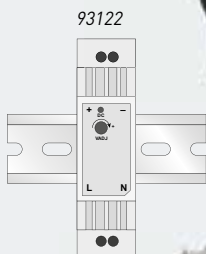
Class: M2



93085



Solar-Log 1200
93120



93122



93121



93123

40/40/80 W/m² 230 V

GREEN ACCU MAT® PV

Heating output W 2 x 40 W/m ²	Installation area m ²	Calculation width m	Heating mat length m	Order no.
2 x 64	1.61	0.67	2.40	31875-64/64
2 x 102	2.55	0.67	3.80	31875-102/102
2 x 137	3.42	0.67	5.10	31875-137/137
2 x 180	4.49	0.67	6.70	31875-180/180
2 x 225	5.63	0.67	8.40	31875-225/225
2 x 255	6.37	0.67	9.50	31875-255/255
2 x 275	7.04	1.02	6.90	31875-275/275
2 x 329	8.57	1.02	8.40	31875-329/329
2 x 407	10.10	1.02	9.90	31875-407/407
2 x 474	11.73	1.02	11.50	31875-474/474
2 x 541	13.26	1.02	13.00	31875-541/541
2 x 619	15.20	1.02	14.90	31875-619/619
2 x 670	17.34	1.02	17.00	31875-670/670
2 x 779	19.28	1.02	18.90	31875-779/779
2 x 860	21.22	1.02	20.80	31875-860/860
2 x 925	23.26	1.02	22.80	31875-925/925
2 x 1019	26.32	1.02	25.80	31875-1019/1019

Accessories

Description	Order no.
Cold lead extension 4 x 1.50 mm ² , 1.00 m	81303-1.50
Installation sleeve (1 pc. factory terminated) for extension	26170
Plastic nail for securing (Pkg. = 100 pc.)	20304
Sensor lead extension 1.00 m	20090
Two heating circuit controller	93085
Solar-Log 1200	93120
24 V DIN rail relay with operation lamp	93121
DR-15-24, 24 V DIN rail power supply	93122
Digital S ₀ consumption counter	93123
Spare temperature sensor for two-circuit controller	93085
Repair sleeves on request	

Regulations require installation of an earth leakage circuit breaker (ELCB) for protection.

GREEN ELECTRIC MAT® PV energy storage heating mat

Floor tile heating



Die **GREEN ELECTRIC MAT® PV** with one side termination and sleeveless splice is the floor tile heating mat for more efficient heating. The heating mat is installed in the tile glue. The especially thin mat with thinner, sleeveless splice technology is designed for usage in old and low energy housing.

Technical data

Operation voltage	230 Volt
Power output	approx. 70 / 70 / 140 W/m²
Cold lead	1 x 4.00 m
Min. installation temperature	5 °C
Min. bending radius	6 x O.D.
Resistance tolerance	-5 % / +10 %
VDE Regulation	acc. to IEC60800 Ed.3
Cold/Warm connection	sleeveless splice, without shrink sleeve
Insulation	Fluoroplastic
Delivery width	0.46 m
Calculation width	0.50 m

70/70/140 W/m² 230 V

GREEN ELECTRIC MAT® PV

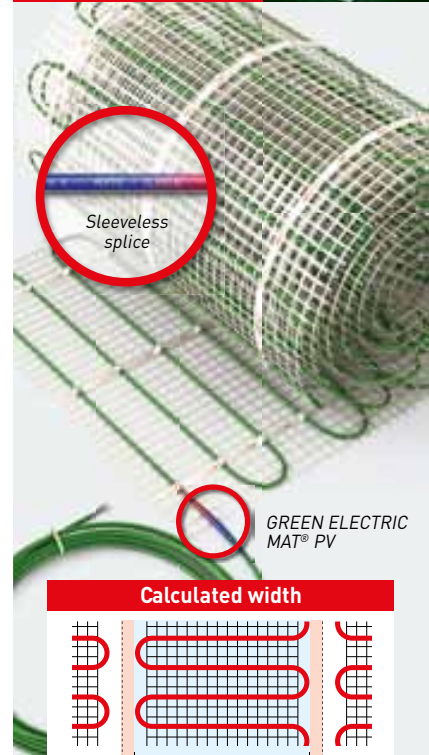
Heating output W 2 x 40 W/m²	Installation area m²	Calculation width m	Heating mat length m	Order no.
2 x 70	1.00	0.50	2.00	30770-70/70
2 x 105	1.50	0.50	3.00	30770-105/105
2 x 140	2.00	0.50	4.00	30770-140/140
2 x 175	2.50	0.50	5.00	30770-175/175
2 x 198	3.00	0.50	6.00	30770-198/198
2 x 238	3.50	0.50	7.00	30770-238/238
2 x 275	4.00	0.50	8.00	30770-275/275
2 x 300	4.50	0.50	9.00	30770-300/300
2 x 343	5.00	0.50	10.00	30770-343/343
2 x 423	6.00	0.50	12.00	30770-423/423
2 x 488	7.00	0.50	14.00	30770-488/488
2 x 562	8.00	0.50	16.00	30770-562/562
2 x 611	9.00	0.50	18.00	30770-611/611
2 x 715	10.00	0.50	20.00	30770-715/715

Accessories

Description	Order no.
Cold lead extension 4 x 1.50 mm², 1.00 m	81303-1.50
Installation sleeve (1 pc. factory terminated) for extension	26173
Plastic nail for securing (Pkg. = 100 pc.)	20304
Sensor lead extension 1.00 m	20090
Two heating circuit controller	93085
Solar-Log 1200	93120
24 V DIN rail relay with operation lamp	93121
DR-15-24, 24 V DIN rail power supply	93122
Digital S ₀ consumption counter	93123
Spare temperature sensor for two-circuit controller	93085
Repair sleeves on request	

Regulations require installation of an earth leakage circuit breaker (ELCB) for protection.

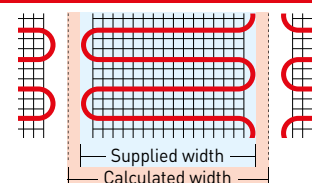
NEW!



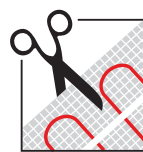
Sleeveless
splice

GREEN ELECTRIC
MAT® PV

Calculated width



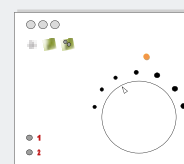
Flexible installation



By cutting the heating mats they can be adapted easily to different building conditions.

Simply cut and adjust.

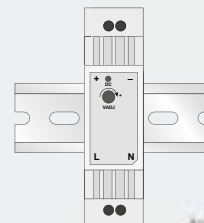
Class: M1



93085



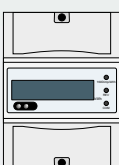
93122



Solar-Log 1200
93120



93121



93123

NOTES

THE POWER SAVING HEATING WITH RESERVE CIRCUIT

2-step heating capacity in one heating mat

All you can heat



Top-Innovator



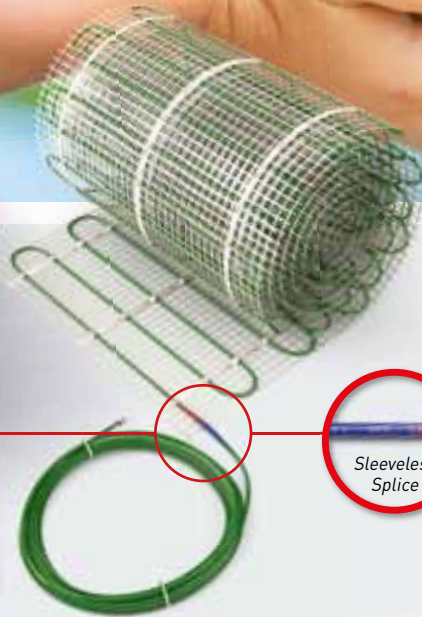
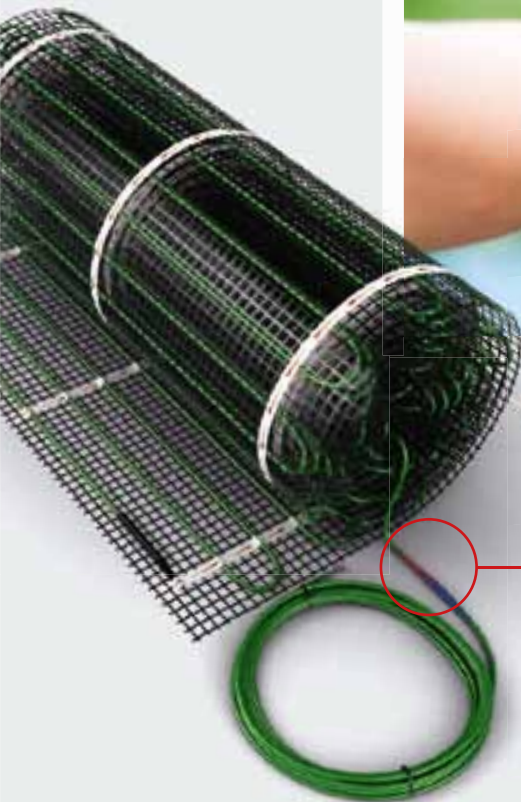
PATENT
pending

EN 50559

VDE
Certified
Management
System
9880/QM/03.00
DIN EN ISO 9001:2008

HEMSTEDT = Safety
two heating circuits
in one heating mat

GREEN ACCU MAT®
for heating storage
with 40 W/m²



NEW! INNOVATION!
Exclusive from HEMSTEDT.



GREEN ELECTRIC MAT®
for floor tile heating with 70 W/m²

Sleeveless
Splice



HEMSTEDT has won the



NEW!

GREEN ACCU MAT®

GREEN ACCU MAT® The power saving heating – for installation in concrete/screed



The **GREEN ACCU MAT®** with unilateral connection and I-sleeve is the storage and direct heating for better economic efficiency and comfort. The mat is placed under screed at a depth of approx. 8 – 10 cm. The **GREEN ACCU MAT®** uses screed and concrete as a storage medium. Specifically designed for low-energy buildings; The desired heating stages are selected via the serial switches on site (see switch range of the companies Jung, Gira, Merten, Busch-Jaeger).

Technical data

Operation voltage	230 Volt
Power output	approx. 40 / 40 / 80 W/m ²
Cold lead	1 x 4.00 m
Min. installation temperature	5 °C
Max. temperature cable sheath	65 °C
Min. bending radius	5 x O.D.
Resistance tolerance	-5 % / +10 %
VDE Regulation	acc. to IEC60800 Ed.3
Cold/Warm connection	sleeveless splice, without shrink sleeve
Insulation	XLPE
Delivery width	0.85 m / 0.50 m
Calculation width	1.02 m / 0.67 m

40/40/80 W/m² 230 V

GREEN ACCU MAT® PV

Heating output W 2 x 40 W/m ²	Installation area m ²	Calculation width m	Heating mat length m	Order no.
2 x 64	1.61	0.67	2.40	31875-64/64
2 x 102	2.55	0.67	3.80	31875-102/102
2 x 137	3.42	0.67	5.10	31875-137/137
2 x 180	4.49	0.67	6.70	31875-180/180
2 x 225	5.63	0.67	8.40	31875-225/225
2 x 255	6.37	0.67	9.50	31875-255/255
2 x 275	7.04	1.02	6.90	31875-275/275
2 x 329	8.57	1.02	8.40	31875-329/329
2 x 407	10.10	1.02	9.90	31875-407/407
2 x 474	11.73	1.02	11.50	31875-474/474
2 x 541	13.26	1.02	13.00	31875-541/541
2 x 619	15.20	1.02	14.90	31875-619/619
2 x 670	17.34	1.02	17.00	31875-670/670
2 x 779	19.28	1.02	18.90	31875-779/779
2 x 860	21.22	1.02	20.80	31875-860/860
2 x 925	23.26	1.02	22.80	31875-925/925
2 x 1019	26.32	1.02	25.80	31875-1019/1019

Accessories

Description	Order no.
Cold lead extension 4 x 1.50 mm ² , 1.00 m	81303-1.50
Installation sleeve (1 pc. factory terminated) for extension	26170
Plastic nail for securing (Pkg. = 100 pc.)	20304
Sensor lead extension 1.00 m	20090
Smart temperature monitoring Clock thermostat with self-learning function and sensor, U-UP	93089
Analog point scale regulator with sensor, up to 35 °C, flush	93088
Spare temperature sensor for analogue controller	93088 sensor
Spare temperature sensor for clock thermostat	93089 sensor
Repair sleeves on request	

Regulations require installation of an earth leakage circuit breaker (ELCB) for protection.

Serial switch in connection with the temperature controllers 93088 or 93089 permits independent switching of the individual heating circuits of the GREEN ACCU MAT and GREEN ELECTRIC MAT. Compatible with the switching program due to interim frame 50 x 50 mm. Only for serial switches with the standard indication 10 A cosφ0,6 at 250 V.

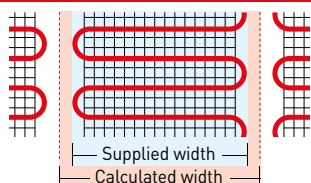
Subject to alterations.

www.hemstedt.de

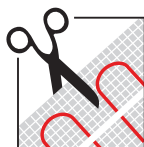
Class: M2



Calculated width



Flexible installation



By cutting the heating mats they can be adapted easily to different building conditions.

Simply cut and adjust.

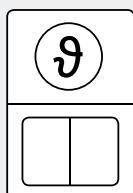
93088



93089



Principle of a series switch



See page 16

GREEN ELECTRIC MAT®

The power saving heating –

for installation in tile glue



The **GREEN ELECTRIC MAT®** with unilateral connection and I-sleeve is the floor heating for more economically efficient heating. The mat is placed in tile glue. The particularly thin mat with slim, sleeve-less connection technology can be used in new and old buildings alike. The desired heating stages are selected on site with serial switches (see switch range of companies Jung, Gira, Merten, Busch-Jaeger).

Technical data

Operation voltage	230 Volt
Power output	approx. 70 / 70 / 140 W/m²
Cold lead	1 x 4.00 m
Min. installation temperature	5 °C
Min. bending radius	6 x O.D.
Resistance tolerance	-5 % / +10 %
VDE Regulation	acc. to IEC60800 Ed.3
Cold/Warm connection	sleeveless splice, without shrink sleeve
Insulation	Fluor plastic
Delivery width	0.46 m
Calculation width	0.50 m

70/70/140 W/m² 230 V

GREEN ELECTRIC MAT®

Heating output W 2 x 40 W/m²	Installation area m²	Calculation width m	Heating mat length m	Order no.
2 x 70	1,00	0,50	2,00	30770-70/70
2 x 105	1,50	0,50	3,00	30770-105/105
2 x 140	2,00	0,50	4,00	30770-140/140
2 x 175	2,50	0,50	5,00	30770-175/175
2 x 198	3,00	0,50	6,00	30770-198/198
2 x 238	3,50	0,50	7,00	30770-238/238
2 x 275	4,00	0,50	8,00	30770-275/275
2 x 300	4,50	0,50	9,00	30770-300/300
2 x 343	5,00	0,50	10,00	30770-343/343
2 x 423	6,00	0,50	12,00	30770-423/423
2 x 488	7,00	0,50	14,00	30770-488/488
2 x 562	8,00	0,50	16,00	30770-562/562
2 x 611	9,00	0,50	18,00	30770-611/611
2 x 715	10,00	0,50	20,00	30770-715/715

Accessories

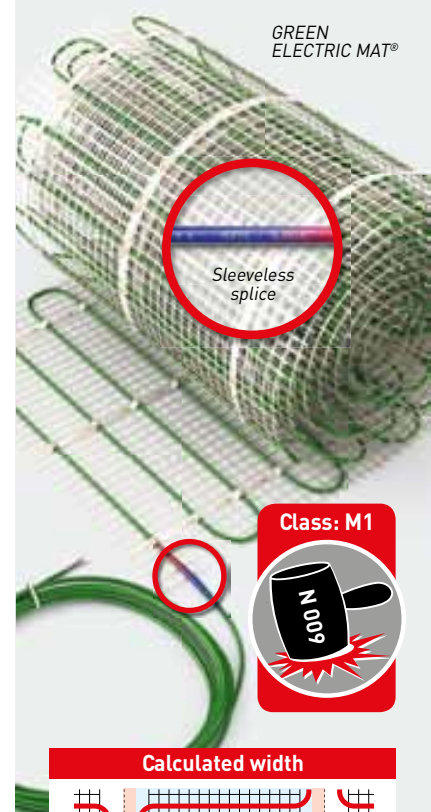
Description	Order no.
Cold lead extension 4 x 1.50 mm², 1.00 m	81303-1.50
Installation sleeve (1 pc. factory terminated) for extension	26173
Plastic nail for securing (Pkg. = 100 pc.)	20304
Sensor lead extension 1.00 m	20090
Smart temperature monitoring Clock thermostat with self-learning function and sensor, U-UP	93089
Analog point scale regulator with sensor, up to 35 °C, flush	93088
Spare temperature sensor for analogue controller	93088 sensor
Spare temperature sensor for clock thermostat	93089 sensor
Repair sleeves on request	

Regulations require installation of an earth leakage circuit breaker (ELCB) for protection.

The temperature controllers with the order numbers 93088 and 93089 are only designed for a heating circuit with up to 16 A / 230 V. Compatible with the switching program due to interim frame 50 x 50 mm.

NEW!

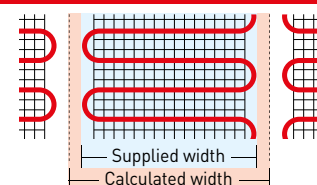
GREEN
ELECTRIC MAT®



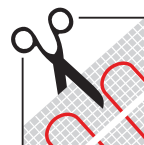
Class: M1



Calculated width



Flexible installation



By cutting the heating mats they can be adapted easily to different building conditions.

Simply cut and adjust.

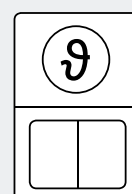
93088



93089



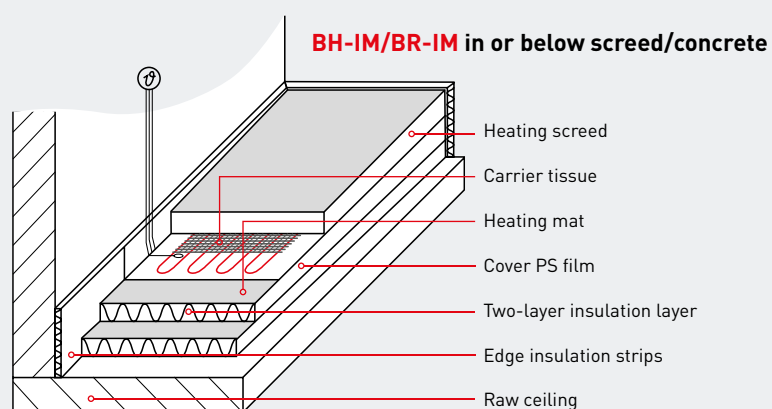
Principle of a series switch



See page 16

NOTES

HEM-SYSTEM® CONCRETE HEATING MATS AND CONCRETE HEATING CABLES





Concrete heating mat BH-IM



Sleeveless splice



Class: M2

BH-IM CONCRETE HEATING MATS

Sleeveless, for installation in / under heating screed
Not in Bitumen.



HEM SYSTEM® Heating mats with single-end connection cable and sleeveless splice.
For underfloor storage / direct heating install only in dry, humid and wet rooms as well as in flush installations and in screed.

Technical data

Nominal voltage	230 Volt
Output	100 / 120 / 140 / 160 / 180 / 240 W/m ²
Cold connection cable	1 x 4.00 (1.00 mm ²)
Minimum installation temperature	5 °C
Max. temperature outer sheath	65 °C
Smallest bending radius	5 x dA
Resistance tolerance	-5 % / +10 %
Cold / warm splice	sleeveless, without shrinkable sleeve
Diameter	approx. 7.50 mm
Insulation	XLPE / PTFE*
Supplied width	0.80 m
Calculated width	0.90 m

100 W/m² 230 V

BH-IM concrete heating mats

Heating output W	Surface area m ²	Calculated width m	Length m	Order no.
220	2.20	0.90	2.44	31801-220*
300	3.00	0.90	3.33	31801-300*
500	5.00	0.90	5.55	31801-500
700	6.66	0.90	7.40	31801-700
1000	9.52	0.90	10.58	31801-1000

120 W/m² 230 V

BH-IM concrete heating mats

Heating output W	Surface area m ²	Calculated width m	Length m	Order no.
300	2.49	0.90	2.77	31802-300*
400	3.33	0.90	3.70	31802-400
700	5.47	0.90	6.08	31802-700
1250	9.77	0.90	10.85	31802-1250
2100	16.38	0.90	18.20	31802-2100

140 W/m² 230 V

BH-IM concrete heating mats

Heating output W	Surface area m ²	Calculated width m	Length m	Order no.
300	2.14	0.90	2.38	31804-300*
400	2.85	0.90	3.17	31804-400
700	4.70	0.90	5.22	31804-700
1500	10.08	0.90	11.20	31804-1500
2300	15.48	0.90	17.20	31804-2300

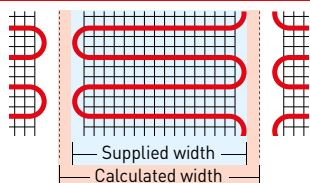
160 W/m² 230 V

BH-IM concrete heating mats

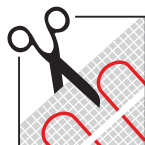
Heating output W	Surface area m ²	Calculated width m	Length m	Order no.
300	1.94	0.90	2.15	31806-300*
500	3.12	0.90	3.47	31806-500
850	5.22	0.90	5.80	31806-850
1500	9.18	0.90	10.20	31806-1500
2300	14.13	0.90	15.70	31806-2300

* Insulation PTFE

Calculated width



Flexible installation



By cutting the heating mats they can be adapted easily to different building conditions.

Simply cut and adjust.

BH-IM CONCRETE HEATING MATS

Sleeveless, for installation in / under heating screed – not in Bitumen.



Accessories

Article designation	Order no.
Cold connection cable for extension 3 x 1.50 mm², 1.00 m, black	81302-1.50 BL/SW
Mounting sleeve (1, factory fitted), for extension	26182
Plastic fixing nails (standard pack = 100 pcs.)	20304
Sensor extension 1.00 m	20090
Spare temperature sensor for analogue controller	93088 sensor
Spare temperature sensor for clock thermostat	93089 sensor
Repair sleeves on request	

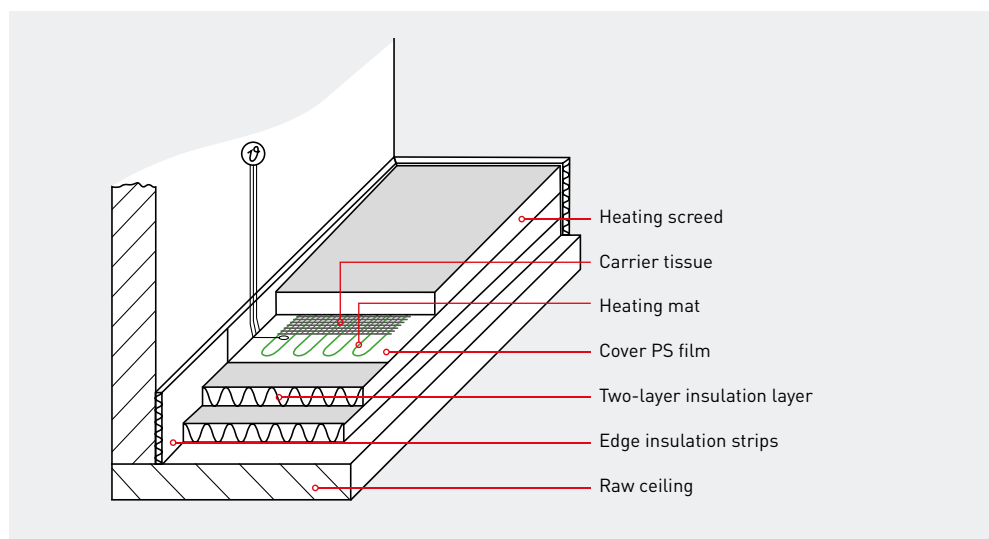
A residual current device (FI < 30 mA) must be provided as a protection measure.

Further information in our installation instructions.

Thermostats see page 15.



BH-IM in or below screed / concrete



HEM-SYSTEM®



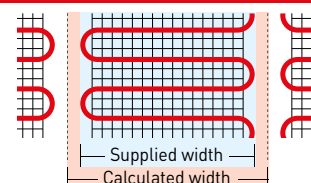
Concrete heating mat BH-IM



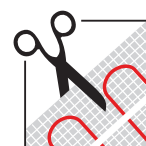
Sleeveless splice



Calculated width



Flexible installation



By cutting the heating mats they can be adapted easily to different building conditions.

Simply cut and adjust.

Concrete heating cables BR-IM



Distance bars for concrete heating cables



BR-IM CONCRETE HEATING CABLES

Sleeveless

NEW: Suitability for concrete and screed tested by VDE



With single-end connection cable and sleeveless splice. Ideal for melting ice and snow in outdoor areas as well as for installation in concrete and sand for melting snow and ice. Likewise suitable for outdoor areas, e.g. stairways. Not in Bitumen.

Technical data

Nominal voltage	230 Volt
Output	17 W/m
Cold connection cable	1 x 4.00 (1.00 mm ²)
Minimum installation temperature	5 °C
Max. temperature outer sheath	65 °C
Smallest bending radius	5 x dA
Resistance tolerance	-5 % / +10 %
Cold / warm splice	sleeveless, without shrinkable sleeve
Outer diameter	approx. 7.50 mm
Insulation	310 W, XLPE from 410 W

17 W/m

BR-IM concrete heating cables

Heating output W	Element length m	Order no.
150	8.86	37710-8.86
220	13.75	37710-13.75
300	18.50	37710-18.50
400	24.77	37710-24.77
500	31.04	37710-31.04
600	34.74	37710-34.74
700	40.59	37710-40.59
850	49.35	37710-49.35
1000	58.11	37710-58.11
1250	72.71	37710-72.71
1500	87.32	37710-87.32
1700	99.00	37710-99.00
1900	110.69	37710-110.69
2100	122.37	37710-122.37
2300	134.05	37710-134.05
2600	151.58	37710-151.58
3356	197.00	37710-197.00

Accessories

Article designation	Order no.
Cold connection cable for extension 3 x 2.50 mm ² , 1.00 m, black	81302-2.50 BL/SW
Mounting sleeve (1, factory fitted), for extension	26182
Plastic fixing nails (standard pack = 100 pcs.)	20304
Distance bars (mounting bars)	20063
Spare temperature sensor for analogue controller	93088 sensor
Spare temperature sensor for clock thermostat	93089 sensor
Repair sleeves on request	

A residual current device (FI < 30 mA) must be provided as a protection measure.

BR-IM-Z CONCRETE HEATING CABLES

Sleeveless



With double-end connection cable and sleeveless splice. Ideal for melting ice and snow in outdoor areas as well as for installation in concrete and sand for melting snow and ice. Likewise suitable for outdoor areas, e.g. stairways. Not in Bitumen.

Technical data

Nominal voltage	230 Volt
Output	17 W/m
Cold connection cable	2 x 2.50 (1.00 mm ²)
Minimum installation temperature	5 °C
Max. temperature outer sheath	65 °C
Smallest bending radius	5 x dA
Resistance tolerance	-5 % / +10 %
Cold / warm splice	sleeveless, without shrink technology
Outer diameter	approx. 7.00 mm
Insulation	PTFE up to 300 W, XLPE from 410 W

17 W/m

BR-IM-Z concrete heating cables

Heating output W	Element length m	Order no.
310	18.07	37720-18.07*
410	24.24	37720-24.24
510	30.42	37720-30.42
600	34.55	37720-34.55
700	41.09	37720-41.09
850	49.61	37720-49.61
1000	59.15	37720-59.15
1260	74.28	37720-74.28
1530	89.34	37720-89.34
1750	101.88	37720-101.88
1980	111.79	37720-111.79
2200	124.59	37720-124.59
2430	136.06	37720-136.06
2780	163.34	37720-163.34

* Insulation PTFE

Accessories

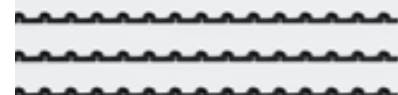
Article designation	Order no.
Cold connection cable for extension 1 x 1.50 mm ² , 1.00 m, black	81101-1.50 SW
Cold connection cable for extension 1 x 2.50 mm ² , 1.00 m, black	81101-2.50 SW
Mounting sleeve (1, factory fitted), for extension	26184
Plastic fixing nails (standard pack = 100 pcs.)	20304
Distance bars (mounting bars)	20063
Spare temperature sensor for analogue controller	93088 sensor
Spare temperature sensor for clock thermostat	93089 sensor
Repair sleeves on request	

A residual current device (FI < 30 mA) must be provided as a protection measure.

Further information in our installation instructions.
Thermostats see page 15.

HEM-SYSTEM®

Concrete heating cables BR-IM-Z



Distance bars for concrete heating cables



D DISTANCE BARS

For fixing heating cables



D distance bars



Heating mats can be created with distance bars.

A variable Watt/m² heating mat production is possible depending on the grid dimensions of the distance bars.

Examples: Heating mats, heating cables, heating loops. Not in Bitumen.

Distance bars

Article designation	Length m	Grid mm	Cable diameter mm	Bar width mm	Order no.
MS-1 distance bars	~ 1.00	20	3.5 – 4.5	8	20060
MS-2 distance bars	~ 1.00	25	4.5 – 5.5	8	20061
MS-3 distance bars	~ 1.00	25	5.6 – 6.5	8	20062
MS-4 distance bars	~ 1.00	25	6.6 – 8.0	8	20063



Examples:

- Heating mats
- Heating cables
- Heating loops

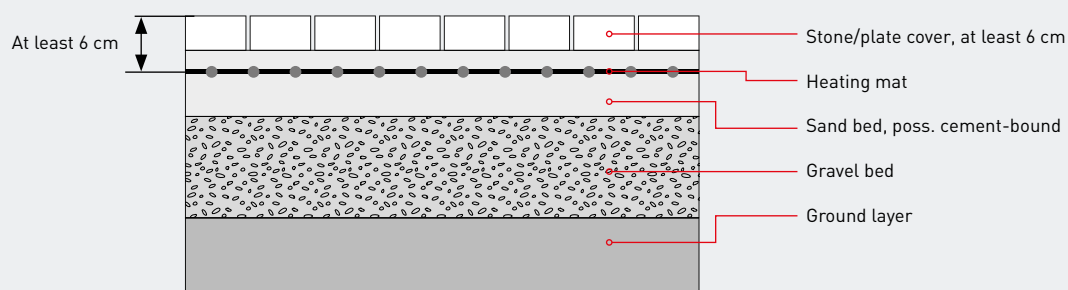


NOTES

HEM SYSTEM® HEATING MATS AND CABLES FOR OUTDOOR AREAS

for concrete, screed and sand

Practical!
Economical!



SAFE SURFACES FOR VEHICLES AND PATHS, SNOW AND ICE FREE

Trouble-free installation, easy handling

Paths, bridges, garage entrances, outdoor stairways, ramps, hospital entrances, heliports - many areas have to be kept free of snow and ice in winter for the safe movement of vehicles and people.

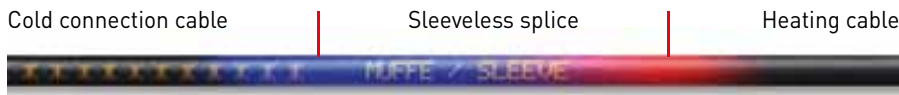
Hemstedt® offers reliable electrical outdoor area heating systems, concrete, screed and sand. They guarantee the reliable melting of snow and ice and prevent the formation of snow covered and icy surfaces.

The 80 cm wide mats have an effective width of 90 cm and are operated at 230 or 400 V. The connection load at 7 cm installation depth is 300 W/m², 400 W/m² at a greater depth or in other climatic zones.

Application area: Concrete, screed and sand

The outdoor area heating mats are rugged and designed for installation in concrete and sand surfaces.

The heating cables are also available as fully pre-assembled reels.



The sleeveless splice is absolutely waterproof, and therefore ideal for installations requiring moisture proofing.

Hemstedt
HEM-SYSTEM®
sleeveless

- Direct from the manufacturer
- Factory tested
- 100 % waterproof
- Sleeveless
- 100 % electrical safety
- With single and double end connection cable



Heating mat
BHF-IM

Sleeveless
splice

Concrete heating
cables BRF-IM

Class: M2

1500 N



BHF-IM HEATING MATS BRF-IM CONCRETE HEATING CABLES

Outdoor area heating, sleeveless



OBSERVE: Only suitable for winter operation outdoors!

HEM SYSTEM® Heating mats and concrete heating cables with single-end connection cable and sleeveless splice. Only for outdoor areas!!! Ideal for melting ice and snow in outdoor areas as well as for installation in concrete and sand for melting snow and ice. Not for hot asphalt.

Technical data

Nominal voltage	230 Volt
Output	approx. 27 W/m
Cold connection cable	1 x 7.00 (1.00 mm²)
Minimum installation temperature.....	5 °C
Max. temperature outer sheath (colour red)	65 °C
Smallest bending radius.....	5 x dA
Resistance tolerance	-5 % / +10 %
Cold / warm splice	sleeveless, without shrink technology
Diameter	approx. 7.50 mm
Insulation.....	XLPE
Supplied width.....	approx. 0.80 m
Calculated width.....	approx. 0.90 m

300 W/m² 230 V · supplied width approx. 0.80 m

BHF-IM heating mats					BRF-IM concrete heating cables	
Heat output W	Surface area m²	Calculated width m	Mat length m	Order no.	Element length m	Order no.
891	2.97	0.90	3.30	31800-891	32.15	37731-32.15
1068	3.56	0.90	3.95	31800-1068	38.10	37731-38.10
1350	4.50	0.90	5.00	31800-1350	48.29	37731-48.29
1593	5.31	0.90	5.90	31800-1593	57.64	37731-57.64
1905	6.35	0.90	7.05	31800-1905	68.69	37731-68.69
2430	8.10	0.90	9.00	31800-2430	87.38	37731-87.38

**UV resistant.
Suitable for
gutter heating**

Accessories

Article designation	Order no.
Cold connection cable for extension 3 x 2.50 mm², 1.00 m, black	81302-2.50 BL/SW
Mounting sleeve (1, factory fitted), for extension	26182
Plastic fixing nails (standard pack = 100 pcs.)	20304
Distance bars (mounting bars)	20063
Digital ice and snow alarm (for roof gutters and outdoor areas)	93159
Ice sensor with 6.00 m supply cable, cable entry from bottom, with protective housing (for outdoor area)	93164
Ice sensor with 6.00 m supply cable, cable entry from side (for outdoor area)	93162
Repair sleeves on request	

A residual current device (FI < 30 mA) must be provided as a protection measure.

BHF-IM-S HEATING MATS

Outdoor area heating system, sleeveless



HEM-SYSTEM®

DIN EN/IEC 60800



OBSERVE: Only suitable for winter operation outdoors!

HEM SYSTEM® Heating mats with single-end connection cable and sleeveless splice.
Only for outdoor areas!!! Ideal for melting ice and snow in outdoor areas as well as for installation in concrete and sand for melting snow and ice. Not in Bitumen.

Technical data

Nominal voltage	230 Volt
Output	300 400 W/m ²
Cold connection cable	1 x 7.00 (1.00 mm ²)
Minimum installation temperature	5 °C
Max. temperature outer sheath (colour red)	65 °C
Smallest bending radius	5 x dA
Resistance tolerance	-5 % / +10 %
Cold / warm splice	sleeveless, without shrink technology
Diameter	approx. 7.00 mm
Insulation	XLPE
Supplied width	0.50 m
Calculated width	0.60 m

300 W/m² 230 V · supplied width approx. 0.50 m

BHF-IM-S heating mats

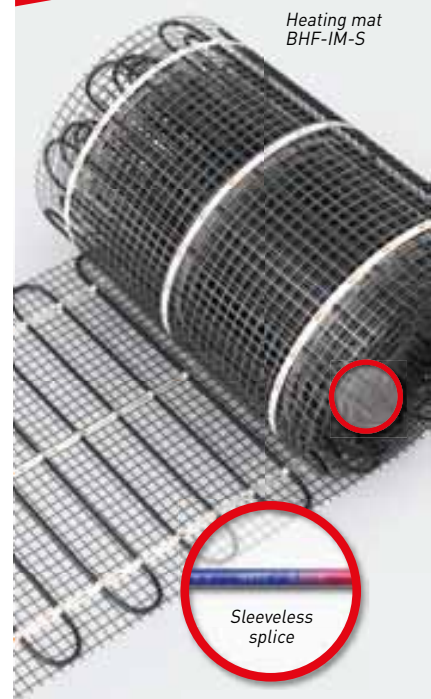
Heat output W	Surface area m ²	Calculated width m	Mat Length m	Order no.
891	3.00	0.60	5.00	31851-891
1068	3.57	0.60	5.95	31851-1068
1350	4.50	0.60	7.50	31851-1350
1593	5.40	0.60	9.00	31851-1593
1905	6.36	0.60	10.60	31851-1905
2430	8.10	0.60	13.50	31851-2430

Accessories

Article designation	Order no.
Cold connection cable for extension 3 x 2.50 mm ² , 1.00 m, black	81302-2.50 BL/SW
Mounting sleeve (1, factory fitted), for extension	26182
Plastic fixing nails (standard pack = 100 pcs.)	20304
Distance bars (mounting bars)	20063
Digital ice and snow alarm (for roof gutters and outdoor areas)	93159
Ice sensor with 6.00 m supply cable, cable entry from bottom, with protective housing (for outdoor area)	93164
Ice sensor with 6.00 m supply cable, cable entry from side (for outdoor area)	93162
Repair sleeves on request	

A residual current device (FI < 30 mA) must be provided as a protection measure.

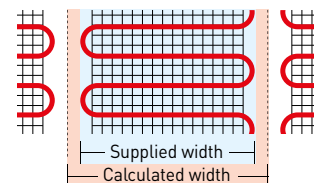
Further information in our installation instructions.
Thermostats see page 15.



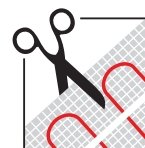
Heating mat
BHF-IM-S

Sleeveless
splice

Calculated width



Flexible installation



By cutting the heating mats they can be adapted easily to different building conditions.

Simply cut and adjust.

Class: M2



BR-IM concrete heating cables



Distance bars for concrete heating cables



BR-IM CONCRETE HEATING CABLES

Sleeveless

NEW: Suitability for concrete and screed tested by VDE



With single-end connection cable and sleeveless splice. Ideal for melting ice and snow in outdoor areas as well as for installation in concrete and sand for melting snow and ice. Likewise suitable for outdoor areas, e.g. stairways. Not in bitumen.

Technical data

Nominal voltage	230 Volt
Output	17 W/m
Cold connection cable	1 x 4.00 (1.00 mm ²)
Minimum installation temperature	5 °C
Max. temperature outer sheath	65 °C
Smallest bending radius	5 x dA
Resistance tolerance	-5 % / +10 %
Cold / warm splice	sleeveless, without shrinkable sleeve
Outer diameter	approx. 7.50 mm
Insulation	PTFE to 395 W, XLPE from 400 W

17 W/m

BR-IM concrete heating cables

Heating output W	Element length m	Order no.
150	8.86	37710-8.86
220	13.75	37710-13.75
300	18.50	37710-18.50
400	24.77	37710-24.77
500	31.04	37710-31.04
600	34.74	37710-34.74
700	40.59	37710-40.59
850	49.35	37710-49.35
1000	58.11	37710-58.11
1250	72.71	37710-72.71
1500	87.32	37710-87.32
1700	99.00	37710-99.00
1900	110.69	37710-110.69
2100	122.37	37710-122.37
2300	134.05	37710-134.05
2600	151.58	37710-151.58
3356	197.00	37710-197.00

Accessories

Article designation	Order no.
Cold connection cable for extension 3 x 2.50 mm ² , 1.00 m, black	81302-2.50 BL/SW
Mounting sleeve (1, factory fitted), for extension	26182
Plastic fixing nails (standard pack = 100 pcs.)	20304
Distance bars (mounting bars)	20063
Repair sleeves on request	

A residual current device (FI < 30 mA) must be provided as a protection measure.

Further information in our installation instructions.
Thermostats see page 15.

BR-IM-Z CONCRETE HEATING CABLES

Sleeveless splice



With double-end connection cable and sleeveless splice. Ideal for melting ice and snow in outdoor areas as well as for installation in concrete and sand for melting snow and ice. Likewise suitable for outdoor areas, e.g. stairways. Not in bitumen.

Technical data

Nominal voltage	230 Volt
Output	17 W/m
Cold connection cable	2 x 2.50 (1.00 mm ²)
Minimum installation temperature	5 °C
Max. temperature outer sheath	65 °C
Smallest bending radius	5 x dA
Resistance tolerance	-5 % / +10 %
Cold / warm splice	sleeveless splice, without shrink technology
Outer diameter	approx. 7.00 mm
Insulation	PTFE up to 310 W, XLPE from 410 W

17 W/m

BR-IM-Z concrete heating cables

Heating output W	Element length m	Order no.
310	18.07	37720-18.07*
410	24.24	37720-24.24
510	30.42	37720-30.42
600	34.55	37720-34.55
700	41.09	37720-41.09
850	49.61	37720-49.61
1000	59.15	37720-59.15
1260	74.28	37720-74.28
1530	89.34	37720-89.34
1750	101.88	37720-101.88
1980	111.79	37720-111.79
2200	124.59	37720-124.59
2430	136.06	37720-136.06
2780	163.34	37720-163.34

* Insulation PTFE

Accessories

Article designation	Order no.
Cold connection cable for extension 1 x 1.50 mm ² , 1.00 m, black	81101-1.50 SW
Cold connection cable for extension 1 x 2.50 mm ² , 1.00 m, black	81101-2.50 SW
Mounting sleeve (1, factory fitted), for extension	26184
Plastic fixing nails (standard pack = 100 pcs.)	20304
Distance bars (mounting bars)	20063

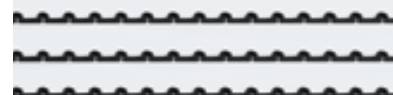
A residual current device (FI < 30 mA) must be provided as a protection measure.

Further information in our installation instructions.
Thermostats see page 15.

HEM-SYSTEM®

DIN EN/IEC 60800

BR-IM-Z concrete heating cables



Distance bars for concrete heating cables



HEM SYSTEM®

SELF-MONITORING HEATING CABLE FOR PIPING

Frost protection heating cable with plug

at + 5 °C ON
at +15 °C OFF



A MINIMUM OF ENERGY FOR THE MAXIMUM IN FROST PROTECTION

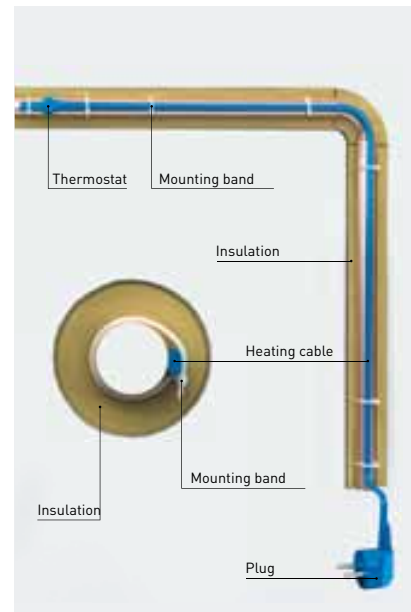
Plug and heat – reliable frost protection

The HEM heating cable is designed for heating metal or plastic water pipes that are subject to freezing down to -20°C . It is self-monitoring, prevents impermissible cooling and general frost damage, and ensures a minimum temperature, e.g. for the supply of drinking water to animals outdoors and in stables. A thermostat monitors the point on the pipe suspected of having the lowest temperature. For frost protection the heating cable is activated at $+5^{\circ}\text{C}$ and is deactivated when the temperature exceeds $+15^{\circ}\text{C}$. Benefit: The required electrical energy is automatically kept to a minimum.

All in one: Fitted quickly and effortlessly

The HEM SYSTEM® heating cable is fixed loosely with slight bends, preferably along the bottom of the pipe. At locations requiring additional energy such as valves, some loosely placed windings of the heating cable for the required energy supply. The cable is fixed with adhesive aluminium tape or loosely fitted with temperature resistant plastic cable binders. Plastic pipes must be wrapped beforehand in aluminium foil.

An industry standard heat insulation layer at least 20 mm thick not only guarantees the functioning of the heating cable but also reduces the heat requirement. Simply plug in and frost protection is guaranteed.



The sleeveless splice is absolutely waterproof and therefore ideal for installations requiring moisture proofing.

Hemstedt
HEM-SYSTEM®
sleeveless

- Direct from the manufacturer
- Factory tested
- 100 % waterproof
- Sleeveless
- Ready to plug
- 100 % electrical safety
- VDE approval
- With single-end connection cable



Self-Regulating
New! VDE-tested!

Frost protection
pipe heating element FS



Low-current!

FS FROST PROTECTION PIPE HEATING ELEMENT

With temperature regulator and earthed plug



Heating cable with single-end cold connection cable, earthed plug and temperature regulator, +5 °C On / +15 °C Off; 10 W/m HEM SYSTEM® heating cables installed along water pipes prevent impermissible cooling and also protect the supply of drinking water to animals outdoors and in stables.

Technical data

Nominal voltage	230 Volt
Output	approx. 10 W/m
Cold connection cable	1 x 2.00 m
Minimum installation temperature	5 °C
Nominal temperature	65 °C
Temperature regulator 16 A	+5 °C On / +15 °C OFF
Smallest bending radius	5 x dA
Resistance tolerance	-5 % / +10 %
Approval (heating cable)	VDE
Cold/warm splice	sleeveless
Outer diameter	approx. 9.00 mm

approx. 10 W/m

FS frost protection heating element, ready to connect

Voltage V	Output W	Length m	kg/reel	Order no.
230	10	1	0.26	35602-01
230	20	2	0.32	35602-02
230	30	3	0.40	35602-03
230	40	4	0.48	35602-04
230	50	5	0.55	35602-05
230	60	6	0.60	35602-06
230	70	7	0.68	35602-07
230	80	8	0.75	35602-08
230	90	9	0.80	35602-09
230	100	10	0.90	35602-10
230	120	12	1.07	35602-12
230	140	14	1.20	35602-14
230	180	18	1.47	35602-18
230	220	22	1.77	35602-22
230	240	24	1.86	35602-24
230	280	28	2.24	35602-28
230	320	32	2.24	35602-32
230	360	36	2.70	35602-36
230	480	48	3.50	35602-48
230	500	50	3.66	35602-50
230	600	60	4.02	35602-60

NOTES

HEM SYSTEM® DAS ROOF GUTTER HEATING

Heating cable with thermostat for protection from snow and ice



HEM SYSTEM® HEATING CABLE WITH THERMOSTAT

Safety for persons and building

Ice on buildings, roof gutters and roof surfaces forms up in winter due to heat losses on buildings and poor exposure to sunlight. The resulting condensation water cannot flow away and freezes. HEM SYSTEM® DAS roof gutter heating systems keep the areas at risk reliably free from snow and ice thus preventing:

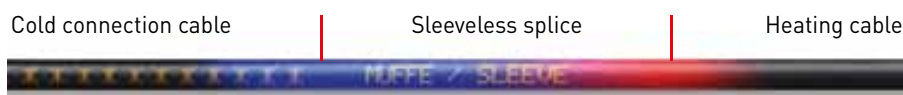
- Formation of icicles (danger to persons and property)
- Bursting downpipes
- Freezing of downpipes in frost area (ground)
- Water penetration into buildings
- Damage to external facades

All in one: Fitted quickly and effortlessly

Plug, ready-to-use. With sleeveless splice and PE insulating covering. HEM SYSTEM® DAS roof gutter heating systems have multiple uses for pitched roof areas, semi-circular and box gutters and downpipes. Installation is simple, the electrical connection can also be carried out by unqualified persons. The plug is already made up.

For normal semi-circular gutters, the expected energy consumption is approx. 50 to 60 W/m per meter of guttering. This also applies to downpipes that have to be heated up to the frost limit (approx. 1 m in ground area).

Important: When calculating the requirement and length, remember that the heating cable may have to be applied several times.



The sleeveless splice is absolutely waterproof, and therefore ideal for installations requiring moisture proofing.

Hemstedt
HEM-SYSTEM®
sleeveless

- Direct from the manufacturer
- Factory tested
- 100 % waterproof
- Sleeveless
- Ready to plug
- 100 % electrical safety



DAS roof gutter heating



Distance bars for roof gutter heatings



DAS ROOF GUTTER HEATING

With temperature regulator and earthed plug



HEM-SYSTEM® DAS gutter heating with single-end connection cable, PE-insulated, seamless sleeve transfer, XLPE insulation sleeve and UV-resistant PVC jacket (black).

Technical data

Nominal voltage	230 Volt
Output	approx. 30 W/m
Cold connection cable	1 x 4.00 (0.5-1 mm ²)
Minimum installation temperature	5 °C
Nominal temperature acc. VDE 0253	90 °C
Smallest bending radius	5 x dA
Resistance tolerance	-5 % / +10 %
Cold / warm splice	sleeveless, without shrinkable sleeve
Outer diameter	approx. 7.90 mm
Insulation	XLPE/PVC

approx. 30 W/m · with plug

DAS roof gutter heating

Voltage V	Output W	Length m	Order no.
230	120	4	36613-04
230	150	5	36613-05
230	200	6	36613-06
230	290	10	36613-10
230	370	12	36613-12
230	419	14	36613-14
230	471	16	36613-16
230	627	20	36613-20
230	700	23	36613-23
230	919	30	36613-30
230	1103	35	36613-35
230	1265	41	36613-41
230	1440	49	36613-49
230	1719	55	36613-55
230	2062	70	36613-70

approx. 30 W/m · without plug

BRF-IM concrete heating cables

Voltage V	Output W	Element length m	Order no.
230	891	32.15	37731-32.15
230	1068	38.10	37731-38.10
230	1350	48.29	37731-48.29
230	1593	57.64	37731-57.64
230	1905	68.69	37731-68.69
230	2430	87.38	37731-87.38

UV-resilient. Suitable for gutter heating.

Other lengths on request.

Accessories

Article designation	Order no.
Cross-beam, stainless steel (only roof gutter heating)	20075
Cord grip, stainless steel (only roof gutter heating)	20076
Support cable (only roof gutter heating)	20074
Distance bars (mounting bars) see page 28	20063
Edge guard	20103
Repair sleeves on request	

A residual current device (FI < 30 mA) must be provided as a protection measure.

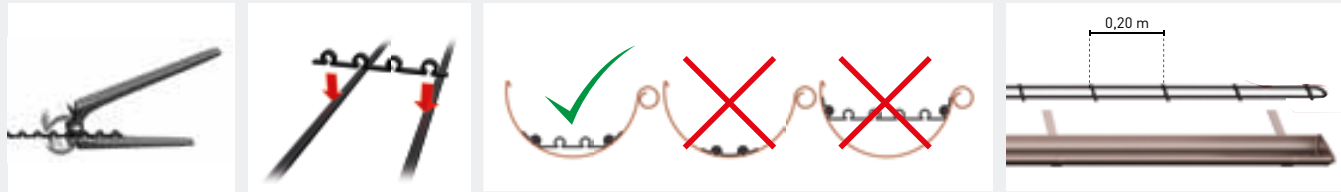
Further information in our installation instructions.
Thermostats see page 15.

Placement in the gutter

1.1 Place heating line in loop



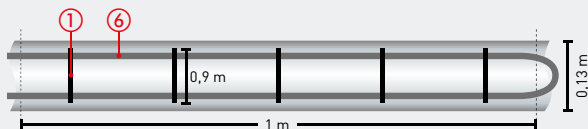
1.2 Cut distance bars to size and attach them every 20 cm



What must be ordered?

Calculation model 1

Gutter: Width 0.13 m / length 8 m



What must be ordered?

⑥ Heating line

1 m gutter = 2 m heating line (double placement)

8 m gutter x 2 = 16 m heating line

➔ Order no. 38613-16

① Distance bars

1 m gutter = 5 x 0.09 m distance bars = 0.45 m

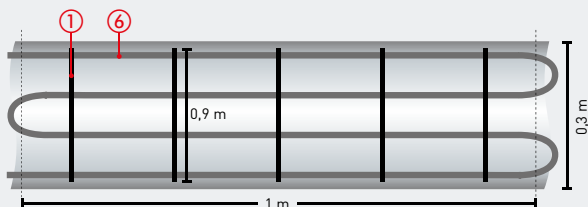
8 m gutter = 8 x 0.45 m distance bars = 3.60 m

rounded up 4 m, since yard goods

➔ 4 x order no. 20063

Calculation model 2

Box gutter: Width 0.30 m / length 15 m



What must be ordered?

⑥ Heating line

1 m gutter = 4 m heating line (fourfold placement)

15 m gutter x 4 = 60 m heating line

➔ 2 x Order no. 38613-30

① Distance bars

1 m gutter = 5 x 0.30 m distance bars = 1.50 m

15 m gutter = 15 x 1.50 m distance bars = 22.50 m

rounded up 23 m, since yard goods

➔ 23 x order no. 20063

Calculation model 3

Drop pipe: Length 10 m
(incl. 1 m frost limit)

What must be ordered?

⑥ Heating line

1 m drop pipe

= 2 m heating line

(double placement)

10 m drop pipe x 2

= 20 m heating line

➔ Order no. 38613-20

④ Tension relieve clamp

1 m drop pipe

= 4 x tension relieve clamp

(4 per metre)

10 m drop pipe x 4

= 40 x tension relieve clamp

➔ 40 x order no. 20070

③ 3 Suspension, stainless steel

1 x per drop pipe

➔ Order no. 20075

⑤ Suspension rope

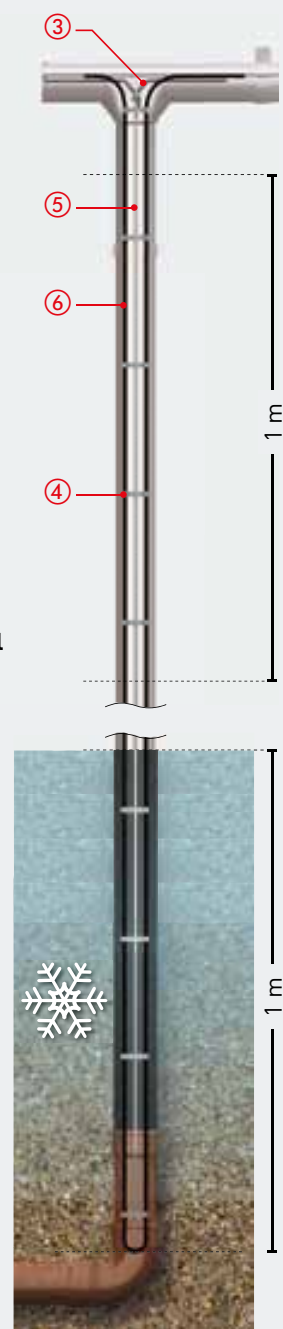
1 m drop pipe

= 1 m suspension rope

10 m drop pipe

= 10 m suspension rope

➔ Order no. 20074



DES ICE AND SNOW ALARM

Digital



Used in conjunction with one or two combined moisture and temperature sensors, the digital ice and snow alarm has the task of detecting ice and snow early on and keeping the monitored areas clear by switching on a melting device.



Technical data

Nominal voltage	1/N/AC, 50 Hz, 230 V, to DIN EN 60730
Voltage range	230 V +6/-6 %
Rated output	approx. 10 VA
Output contact	Load max. 250 V~, 6 (2) A
Ambient temperature	0 to 50 °C, condensation not permissible
Degree of protection	II nach DIN 57700, when mounted in distribution panel
Weight	approx. 0.4 kg

DES ice and snow alarm

Article designation	Order no.
Digital ice and snow alarm (for roof gutters and outdoor areas)	93159
Moisture and temperature sensor (for roof gutters)	93156
Ice sensor with 6.00 m supply cable, cable entry from bottom, with protective housing (for outdoor area)	93164
Ice sensor with 6.00 m supply cable, cable entry from side (for outdoor area)	93162

A residual current device (FI < 30 mA) must be provided as a protection measure.

FR FROST ALARM AND REGULATOR

For roof gutter heating



This device is a practical / cost-effective alternative to the digital ice and snow alarm and is used for the economical control of roof gutter heating. The critical temperature range is monitored by two regulators so that the heating is only in operation when there is actually a risk of freezing. Heating is only activated in the critical range from -5 °C to +5 °C.



Technical data

Rated voltage	230 V AC
Switch current	16 (4) A
Ambient temperature	-30 to +50 °C
Temperature range	-20 to -35 °C
Degree of protection	IP 65
Dimensions	122 x 120 x 55 mm
Contact	1 NC / 1 NO

FR frost alarm and regulator

Article designation	Order no.
Frost alarms and regulators for roof gutter heating	93160

A residual current device (FI < 30 mA) must be provided as a protection measure.

NOTES

HEM-SYSTEM® HEATING SOLUTIONS FOR SPORTS AREAS



HEATING CABLE FOR GRASS AREAS IN STADIUMS AND SPORTS GROUNDS

For all-year use

Soil heating with Hemstedt cables

The management and people responsible for sports grounds such as football stadiums or golf courses are increasingly using soil heating systems.

The hard frozen ground is thawed, melting any snow covering and lengthening grass growth. Sporting activities can thus take place all year round, the season lengthened, as well as ensuring that the ground is dried out faster after heavy precipitation. The risk of injury to players is also considerably reduced.

Compared to warm water heating systems, electrical soil heating systems offer considerable benefits such as lower investment and running costs, faster operation and greater efficiency. Hemstedt® heating cables are optimally designed for these demanding requirements. They can be used for heating any grass area.

Depending on the heating requirement, cables with a 15 – 20 Watt/m output for 230 V or 400 V are available that are designed for the toughest weather conditions.

Technical data

Rated voltage.....	400 V
Cold connection cable	z.B. 2 x 30 m (2.50 mm²)
Minimum installation temperature.....	5 °C
Smallest bending radius.....	6 x dA

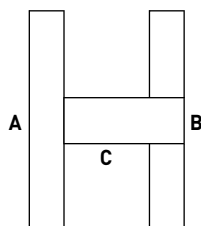
Element length of e.g. approx. 200 m is also available with cold connection cable and splice.

Heating cables for lawns in stadiums and sports facilities

On request

The following items can be ordered as well:

Order no.	Description	Quantity/dimensions
20021	Wood coil	500 x 200 x 280
00002	Sleeve	2 per coil
88002-2.5	Low-voltage connection	2.5 mm²
00002	Pallet	1P./ 2 coils



A	B	C	Order no.
500 mm	200 mm	280 mm	20021

All prices on request.



HEATING CABLE DRUM FOR SELF ASSEMBLY



HEATING CABLE DRUM FOR SELF ASSEMBLY

DIN EN/IEC 60800

Simple heating cable (double-end connection cable) as drumware



Application

Ideal for melting ice and snow in outdoor areas as well as for installation in concrete, for installation along water pipes and as gutter heating.

Aufbau

- Heating cable, braid
- XLPE insulation
- Tinned protection line
- Aluminium protection
- PVC cover
- Outer diameter approx. 6.5 mm



Technical data

Nominal temperature	65 °C
Fixed resistance heating cable	
Smallest bending radius	5 x dA
Resistance tolerance	-5 / +10 %
Max. rated voltage	300 / 500 V

Standardtypes approx. 10 W/m – 230 V

Order no.	Length m	Watt/m	Heating output/ W	Voltage/ V	RE Ohm/m	Braid
65406-12.700	20.40	10.01	204.18	230	12.700	coiled
65406-8.000	25.70	10.01	257.30	230	8.000	8.000
65406-5.480	31.00	10.05	311.40	230	5.480	5.480
65406-3.590	38.40	9.99	383.73	230	3.590	3.590
65406-2.480	46.20	9.99	461.70	230	2.480	2.480
65406-1.390	61.70	10.00	616.82	230	1.390	1.390
65406-1.000	72.70	10.01	727.65	230	1.000	1.000
65406-0.700	86.90	10.01	869.64	230	0.700	0.700
65406-0.480	105.00	10.00	1049.60	230	0.480	0.480
65406-0.400	115.00	10.00	1150.00	230	0.400	0.400
65406-0.300	132.80	10.00	1327.81	230	0.300	0.300
65406-0.250	145.50	10.00	1454.30	230	0.250	0.250
65406-0.200	162.50	10.02	1627.69	230	0.200	0.200
65406-0.140	194.50	9.99	1942.71	230	0.140	0.140

Standardtypes approx. 17 W/m – 230 V

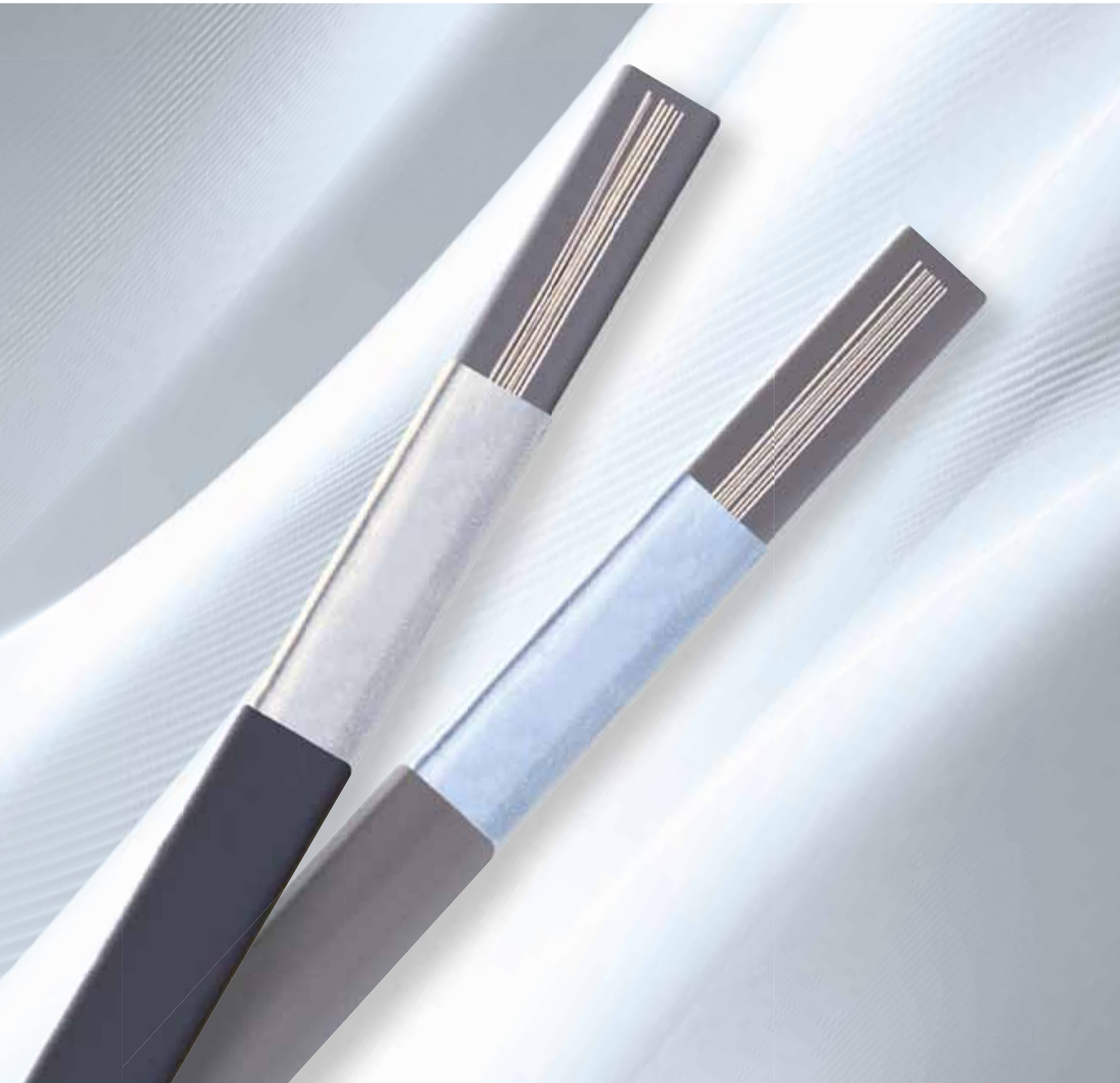
Order no.	Length m	Watt/m	Heating output/ W	Voltage/ V	RE Ohm/m	Braid
65406-12.700	15.60	17.12	267.01	230	12.700	coiled
65406-8.000	19.70	17.04	335.66	230	8.000	8.000
65406-5.480	23.80	17.04	405.60	230	5.480	5.480
65406-3.590	29.40	17.05	501.20	230	3.590	3.590
65406-2.480	35.40	17.02	602.56	230	2.480	2.480
65406-1.390	47.30	17.01	804.60	230	1.390	1.390
65406-1.000	55.80	16.99	948.03	230	1.000	1.000
65406-0.700	66.70	16.99	1133.00	230	0.700	0.700
65406-0.480	80.50	17.01	1369.05	230	0.480	0.480
65406-0.400	88.20	17.00	1499.43	230	0.400	0.400
65406-0.300	101.80	17.02	1732.15	230	0.300	0.300
65406-0.250	111.50	17.02	1897.76	230	0.250	0.250
65406-0.200	124.70	17.01	2121.09	230	0.200	0.200
65406-0.140	149.00	17.02	2535.95	230	0.140	0.140
65406-0.080	197.00	17.04	3356.60	230	0.080	0.080
65406-0.065	218.80	17.00	3719.59	230	0.065	0.065
65406-0.050	249.00	17.06	4249.00	230	0.050	0.050
65406-0.025	352.00	17.08	6011.36	230	0.025	0.025

Accessories

Article designation	Order no.
Wood coil (flange 800 mm / 320 mm core / length 600 mm)	20031
Pallet	00002



HEM SELF-MONITORING HEATING TAPES



FROST PROTECTION AGAINST ICE AND LOW TEMPERATURE MAINTENANCE

For pipes, tanks, containers, valves, gutters

Reliable for frost protection and temperature maintenance

Self-monitoring and requirement-based

Self-monitoring heating tapes from Hemstedt® are the ideal solution for frost protection and temperature control for pipes, valves, containers and gutters. Different tapes are available, depending on the use.

The heating tapes comprise two parallel copper wires, with a net-like plastic heating element between them, fitted with carbon particles.

The heating element changes its output depending on the ambient temperature. If the temperature increases, the plastic stretches as a result of molecular expansion, the connections between the carbon particles are broken, the resistance increases the output falls. During cooling, the process is reversed and the output increases. Consequently, the heating tape equalises the requirement for heating everywhere.

Advantages at a glance:

- Storage on coils
- Any filling measuring as required on site
- No overheating, also installation over cross joints
- Variable output
- No temperature limiter required

Fitted quickly and effortlessly

HEM-SYSTEM® heating tapes can be cut on site to match the length required. The manufacture of the connection technology is easy. The heating tape is fixed to the bottom of pipes with temperature-resistant cable ties.

It only has to be taped over its entire surface on plastic, cast and glass pipes and containers. For larger pipe diameters, several tapes are used as required.



HEM-SYSTEM® SELF-REGULATING HEATING CABLES 10/20/30/40 W

Frost protection against ice and low temperature maintenance for pipes, tanks, containers, valves, gutters



Self-regulating heating cables consist of two parallel copper supply lines, embedded in a linked plastic heating element doped with carbon particles with a positive temperature coefficient, i.e. the heating element changes its output depending on the ambient temperature. If the temperature rises, the plastic will expand by molecular expansion. The connection between the carbon particles breaks open, the resistance increases and thus power reduces. When cooling, the process reverses and the power increases. Thus, the heating cable will adjust to the heat demand from any location. The reliable solution to your problems with frost protection and temperature maintenance.

Technical data

Rated voltage	230 V
Tolerance	-0/+5 W
Output at 10 °C	10, 20, 30, 40 W/m
Min. installation temperature	-35 °C
Max. adm. workpiece temperature	65 °C switched on 80 °C switched off
Temperature class	T6
Max. protective mesh resistance	< 18.2 Ohm
Smallest bending radius	25 mm
Jacket of polyolefin/fluoropolymer	black
Weight (from/to)	90-105 kg/km

HEM System – self-regulating heating cables with protection mesh

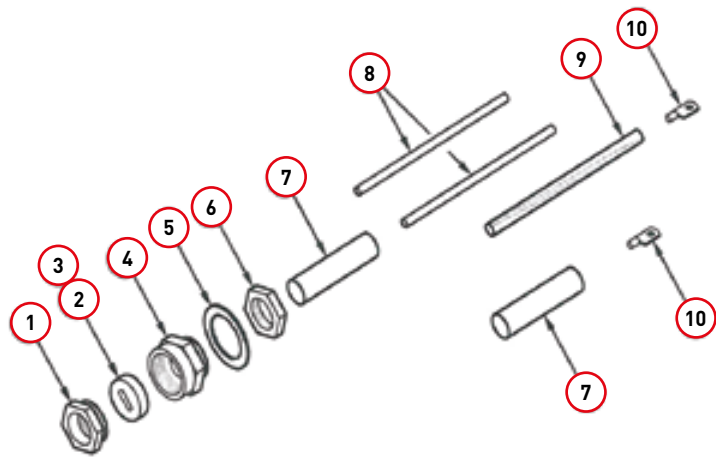
Order no.	C-Characteristics m		Thickness x width mm	Rated output W/m* at +5 °C	Delivery form
69500-10	16 A	188	4.9 x 13.0	11.5	Yard goods
	20 A				100 m Drum**
	25 A				200 m Drum** 500 m Drum***
69500-20	16 A	93	4.9 x 13.0	23	Yard goods
	20 A	116			100 m Drum**
	25 A	142			200 m Drum** 500 m Drum***
69500-30	16 A	63	5.3 x 15.6	33.5	Yard goods
	20 A	87			70 m Drum**
	25 A	102			140 m Drum** 500 m Drum***
69500-40	16 A	160	5.3 x 15.6	40	Yard goods
	20 A	76			70 m Drum**
	25 A	96			140 m Drum** 500 m Drum***
39500-10 39500-20 39500-30 39500-40	Desired length factory customised with 1.80 m cold end (H05RN F 3 x 2.5 mm ² , black) and with end connection set				

* Rated output on insulated metal tubes at +5 °C (W/m).

** We will charge 3.25 € per coil + 11 € packaging costs.

*** We will charge 5.50 € per coil + 8 € EWP or 5 €/HP.

ACCESSORIES FOR HEM SELF-REGULATING HEATING CABLES



- 1. Cover
- 2. Seal
- 3. Seal
- 4. Screw connection
- 5. Seal
- 6. Counter nut
- 7. Shrink hose Ø 12:4 length 5 cm (number: 2)
- 8. Shrink hose Ø 3:1 length 10 cm (number: 2)
- 9. Shrink hose Ø 6:2 length 10 cm
- 10. Connection ground cable (number: 2)

Accessory connection and end resistor set	
	Order no.
Connection and end resistor set	26142



Connection and end resistor set





HEM silicone heating cables are available as single and double conductors.



SH Silicon heating cable



98406

Technical data

Output	depending on heat discharge
Max. temperature	150 °C
Voltage	on request
Diameter	approx. 3.5 mm without Cu-mesh
Connection	two-sided PVC connection line 1.00 m (1 x 0.75 mm ²)

5 W/m 12 V

Length m	Voltage V	Output Watt	Order no.
2.08	12	10.50	42505
3.90	12	19.50	42505
6.66	12	33.30	42505
8.95	12	44.75	42505
10.70	12	53.50	42505
12.65	12	63.25	42505

10 W/m 12 V

Length m	Voltage V	Output Watt	Order no.
1.90	12	19.00	42506
3.80	12	38.00	42506
6.32	12	63.20	42506
7.59	12	75.90	42506
8.94	12	89.40	42506
12.65	12	63.25	42505

5 W/m 24 V

Length m	Voltage V	Output Watt	Order no.
3.09	24	15.45	42507
5.45	24	26.85	42507
7.80	24	39.00	42507
10.70	24	53.50	42507
12.56	24	63.25	42507
16.08	24	80.00	42507
17.88	24	89.40	42507
21.47	24	107.30	42507
25.30	24	126.50	42507

10 W/m 24 V

Length m	Voltage V	Output Watt	Order no.
2.95	24	29.70	42508
5.50	24	55.00	42508
9.40	24	94.00	42508
11.31	24	113.10	42508
12.65	24	126.50	42508
15.18	24	150.80	42508
17.90	24	179.00	42508

Accessories

Article designation	Order no.
Low-voltage cold cable for extension of the wire colour (blue/blue) 1.00 m (1 x 0.75 mm ²)	81201-0,75BL
Distance bars (assembly bridges)	20060
Control box 0 °C to +80 °C 2000 W / 230 V with analogue controller incl. 10.00 m sensor	98406
Spare sensor 10.00 m	94010
Components for a sleeve	26000
On-site assembly sleeve (1 pc.)	20304

For other versions, see brochure customised heating cables.

GSISI SILICONE HEATING CABLES

HEM silicone heating cables for installation in natural stone heatings



Technical data	
Voltage	230 Volt
Power	approx. 40 to 67 W/m
Minimum placement temperature	5 °C
Smallest bending radius	5 x od
Resistance tolerance	-5 % / +10 %
VDE	approval
Rated temperature	140 °C
Outer diameter	4.80 mm
Cold/hot transfer	with shrink sleeve and temperature monitor 105 °C or 120 °C

Price- and length-project-related, on request

Order no.	472...
Connection output	2 x 0.75 mm² blue/brown; jacket white
	2 x 1.00 mm² blue/brown; jacket white



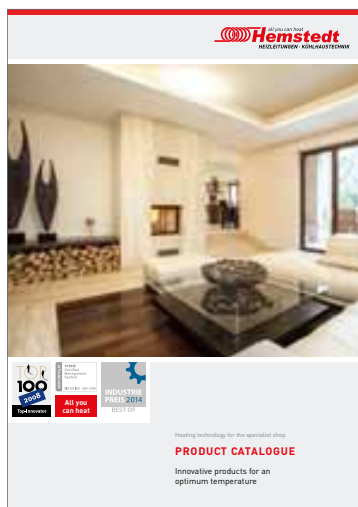
HEMSTEDT® – ALL IN ONE PARTNER

Our range



Hemstedt® is the successful specialist and reliable OEM partner for innovative electrical floor heating systems. Cold storage technology and special solutions complete the portfolio together with consulting, project planning and development.

Profit from the comprehensive range from a single source:





■ Prices

All prices are quoted excluding VAT and other charges.

■ Delivery

Goods shall be delivered at the purchasers risk.

■ Terms of payment

Unless other terms of payment have been agreed, the invoice sum is payable without deduction, see Standard Terms & Conditions.

The latest version of our general terms and conditions apply in addition to this extract.
See: www.hemstedt.de



HEMSTEDT® – EVERYTHING FROM A SINGLE SOURCE

Standard Terms & Conditions

As at 1st of January, 2014

I. Area of Application

1. The following terms and conditions shall only be valid for business transactions with companies within the meaning of section § 14 of the German Civil Code (BGB – Bürgerliches Gesetzbuch). These terms and conditions shall form the exclusive basis for our offers and quotations and all agreements and undertakings with us. They shall be reckoned as acknowledged / accepted by dint of award of contract, placement of order, or at latest by virtue of the acceptance of delivery.
2. Contrary terms and conditions of the purchaser, which we hereby explicitly and definitively reject, shall not form part of a contract, insofar as they shall not be explicitly accepted by us in writing.
3. Our terms and conditions shall be valid for all future business dealings and commercial transactions.

II. Offers, Contract Conclusion, VDI1-Guidelines, Cost Estimates, Documents, Samples

1. Our price lists, offers and quotations are subject to change, unless otherwise explicitly agreed.
2. The conclusion of contract shall be effected by means of written order acknowledgement or order confirmation, or by means of the actual carrying out of delivery. Amendments and supplementary agreements must be made in writing.
3. Supplementary to these terms and conditions, the guidelines of the [German] Association for Electrical, Electronic & Information Technologies (VDE), shall be valid for all deliveries and services (performance), insofar as these may come into consideration for the safety of such deliveries or services. Deviations from these guidelines are permissible, as far as the same level of safety shall be guaranteed by some other way or using some other method.
4. Cost estimates shall be non-binding without explicit declaration to the contrary. Deviations in costs of up to 20%, both above and below the cost estimate are permissible without requiring notification.
5. Cost estimates and offer documents, as well as design documents (in the form of technical drawings / diagrams and samples) are our property and are protected by copyright. They may not be passed on to third parties without our authorisation and shall, upon request and at any time, be returned to us.

III. Shipping Terms, Delivery, Transport, Transfer of Risk(s)

1. Shall no other shipping term be agreed, delivery shall be understood as being on ex Works terms from postcode 74336 Brackenheim-Botenheim, Germany [EXW INCOTERMS® 2010]. In case of delivery by a third party company authorised with the manufacturing of the product(s) by us, delivery shall be effected on the same shipping terms from the respective place of operation mentioned in our order acknowledgement, or in case of conclusion of contract, from the place of dispatch stipulated in the contract and agreed upon by both parties to the contract.
2. Should the purchaser request despatch be carried out by us, packaging, packing, loading and shipping shall be carried out at our discretion and always for the account of and at the risk of the purchaser. Shall no explicit agreement concerning packaging, despatch route or means of transportation have been made, we shall make such a selection for the purchaser, in accordance with our obligations of due diligence. Insofar as our employees or duly authorised agents shall assist in the packaging, packing, loading and unloading or in the transport of the goods, they shall be acting at the risk of the purchaser as his or her vicarious agents.
3. Carriage paid / delivery free domicile (deliveries for which we absorb the carriage costs and possible auxiliary expenses) shall not affect the shipping term EXW INCOTERMS® 2010 and the terms and conditions of this section based upon it.
4. At delivery, the purchaser shall ensure that the delivery may be unloaded without delay. We reserve the right to charge for hours spent waiting and for return freight shipments.
5. The conclusion of a transport insurance policy or similar insurance policy is the responsibility of the purchaser. Without contrary instruction or direction, we shall despatch shipments – including international shipments – uninsured.
6. Shipment shall be effected in all cases at the risk of the purchaser, including for commercial transactions on the basis of FOB and CIF terms.
7. Claims for damages on account of the non-observance of (a) shipping instructions(s) or on account of inadequate or deficient packaging or packing of the delivery item are excluded, unless we, our legal representatives or our vicarious agents shall be culpable of wilful intent or gross negligence. In case of the taking of delivery of the shipment by the forwarding agent without complaint or objection being raised, liability on our part for packaging, packing or loading shall be excluded.
8. In case of damage to or loss of the delivery item en route, the purchaser shall immediately arrange with the forwarding agent or carrier for an assessment of the facts to be carried out.

IV. Prices, Price Alterations, Foreign Currencies, Sample Costs

1. In case prices shall not have been bindingly agreed upon in writing, the prices as listed in our order acknowledgement shall be valid, or else otherwise our current daily prices.
2. Unless otherwise agreed, our prices are calculated – even for international deliveries – in euro, excluding packing, value-added tax, shipping and insurance costs, and they are calculated on ex Works terms [EXW INCOTERMS® 2010] and solely for the respective individual order. Our prices shall only be valid for the services listed; special or additional services shall be charged for separately.
3. Banking charges and fees for international payment transactions shall be borne by the purchaser and by vendor to 50/50.
4. Insofar as nothing contrary has been agreed (e.g. fixed prices), the right to an alteration in prices shall be reserved to both parties to the contract, shall a period of longer than four months elapse between the time at which prices were agreed upon and the delivery of the goods; and shall prices for raw materials, prices from suppliers, wages, transport costs, rates of taxation, or other sundry cost factors have changed by more than 5%; and shall this actual change not have been foreseeable at the time of conclusion of contract.
5. Shall the purchaser not accept a quantity of goods bindingly ordered by placement of order, we shall be authorised, subject to our other rights and claims, to levy charges for quantities below the minimum order quantity for the accepted part of the delivery.
6. Provided that a foreign currency or foreign currencies shall be defined in our offers, these offers shall only be valid for the time at which they are created. Should the exchange rate between the euro and the foreign currency change, we shall reserve the right to adjust the value of our offer or quotation accordingly.
7. We produce initial samples only as an exception and only when costs for such samples shall be shared with the purchaser. Shall the purchaser request amendments on the basis of an initial sample or samples, we shall be authorised to demand the purchaser accept parts already made (to the same specifications as the samples), as well as reimbursement for the costs incurred by us as a result of machine downtime.

V. Delivery (Lead Time (commencement and hindrances), Partial Deliveries, Order Contracts, Default of Acceptance

1. Specifications of delivery or lead times in brochures, cost estimates and offers are made with the reservation that our suppliers and sub-suppliers shall be able to fulfil the obligations they have made to us, as in all cases our ability to deliver is subject to the availability of goods.
2. Periods of delivery or dates of delivery provided upon placement of order or order acknowledgement shall only then be binding contract dates if they shall have been expressly agreed as binding.
3. The sole determining factor for the adherence to the period of delivery shall be notification of readiness for shipment.
4. Reasonable partial shipments shall be permitted.
5. Every period of delivery shall commence only after the receipt of all documents required for the execution of the order, and after receipt of payment, insofar as the due date of payment was agreed as immediate upon placement of order. Shall the purchaser be required to provide material(s) or auxiliary supplies, the delivery period shall not commence before the full receipt of such material or supplies.
6. Shall the manufacture or delivery of goods be temporarily prevented or delayed on account of reasons for which the purchaser shall be responsible, the delivery period shall be extended correspondingly, in accordance with the verifiable duration of the hindrance. In the calculation of the extension of the delivery period, allowance shall be made for a reasonable lead time for the resumption of operations / services. Entitlements of the purchaser to services, or claims instead of services during the period of hindrance are excluded. Subsequent requests on the part of the purchaser for amendments or extensions shall cause the delivery time to be extended correspondingly, as appropriate.
7. Shall the manufacture or delivery be delayed on account of these circumstances, or at the request of the purchaser, additional expenses arising as a result shall be immediately charged to the account of the purchaser,

and shall be reimbursed by the purchaser.

8. Shall we, by order of the purchaser, have undertaken the provision of additional parts to be supplied, the delivery period shall be extended by the period of time necessary for such provision of parts, unless we shall be responsible for the delay in the delivery or provision of such additional parts.
9. In case of a significant deterioration in the financial circumstances of the purchaser, in particular in case of default of payment or the placement of an application for insolvency, our obligation to carry out delivery shall no longer be applicable.
10. Order contracts shall be, insofar as nothing contrary has been agreed in writing, scheduled at least fourteen days before the desired delivery date. Shall the purchaser only partially accept the order quantity, we shall be authorised, irrespective of our other rights and claims, to charge a surcharge for a quantity below the minimum order quantity. We shall be authorised to carry out delivery of and charge for the full order quantity six months after the date of the order acknowledgement, shall no call or demand for the goods have been effected by that time, or shall no other agreement have been made.
11. We shall be authorised to set a reasonable period of time for acceptance of the goods, and, after the expiry of this period of time with the acceptance of goods remaining outstanding, we shall be authorised to exercise disposal over the delivery item and to deliver to the purchaser in accordance with an appropriately and reasonably extended delivery period.

VI. Non-acceptance of Goods

1. In case of default of acceptance by the purchaser, which has led to the cancellation of the contract in accordance with the respective statutory provisions, we shall be able to charge for compensation for damages amounting to thirty per cent of the gross order amount instead of the service or consideration in return, unless the purchaser can demonstrate that no damage at all or only a lesser damage has occurred. We reserve the right to demonstrate greater damage as having occurred, in particular in case of custom-made products.

VII. Force majeure, impediments to service and performance where neither party to the contract shall be held responsible

1. Shall we be prevented from carrying out delivery on account of force majeure, the delivery period shall be extended automatically by the duration of the circumstances constituting force majeure in addition to an appropriate lead time. Force majeure shall be deemed as those circumstances at the agreement of the delivery period or date as being unforeseen and for which we shall not be responsible, and which shall hinder or impede delivery to an unacceptable degree or which shall make delivery temporarily impossible. Examples of such circumstances include industrial disputes, official or governmental measures, unpreventable shortages of raw materials or energy supply, significant disruptions to operations caused by the destruction of an entire operating facility or important departments thereof, or by the failure of essential manufacturing facilities or the loss or hindrance of significant parts of the workforce by means of pandemics; furthermore, serious disruptions to transportation routes, such as road blockages, industrial action in the transport industry, general transport and flight bans. Force majeure shall also apply should such circumstances affect sub-suppliers. The designated circumstances shall also relieve us (of our obligation for performance), shall these circumstances commence or arise during a period of delay which has already commenced. We shall notify the purchaser of such circumstances as soon as shall be possible. Notification may be dispensed with, shall the purchaser already be aware of the circumstances. Shall such circumstances continue for more than three months, we shall have the right to withdraw from the contract. Upon the request of the purchaser, we shall declare whether we shall withdraw, or whether we shall deliver within an appropriate period of time to be determined by us. Claims for damages on the part of the purchaser are excluded in these cases. Both parties to the contract may withdraw from the contract without being liable to pay compensation or damages when it shall be certain that the fulfilment of the contract has become impossible on account of these circumstances.
2. Shall the manufacture or delivery of goods be temporarily prevented or delayed on account of reasons for which we shall not be responsible, the delivery time (or period of service provision, as the case may be), shall be extended by the verifiable duration of the hindrance. In the calculation of the extension of the delivery period, allowance shall be made for a reasonable lead time for the resumption of operations / services. Entitlements of the purchaser to services, or claims instead of services during the period of hindrance are excluded.

VIII. Default, Limitation of Liability

1. Shall an explicit fixed date not have been agreed upon, default in delivery or provision of services shall only commence after a reminder or warning has been issued. The purchaser shall only be able to withdraw from the contract after the expiry of a reasonable deadline. Even after the expiry of such a deadline, the purchaser shall be obligated to accept the goods, unless the declaration of withdrawal from or cancellation of contract shall have been received by us before the shipment of the delivery item or the notification of the readiness for shipment.
2. Shall we, our legal representatives our vicarious agents, with regard to the occurrence or commencement of default, be responsible for wilful intent or gross negligence, or shall we, our legal representatives our vicarious agents have guaranteed a fixed date, or shall the interest of the purchaser in the services or performance have demonstrably ceased on account of the occurrence or commencement of default of delivery or provision of services, we shall be liable in accordance with statutory provisions. Insofar as the default in delivery is based upon the culpable violation of an essential contractual obligation, of which the non-compliance with this obligation shall endanger the purpose of the contract, our liability shall be limited to foreseeable, typically occurring damage. Any further liability is excluded.
3. Liability for property and financial losses or damages is limited to five per cent of the net value of the goods forming the delayed part of the delivery.
4. Damages arising as a result of loss of production, downtime costs, loss of profit or on account of third parties against guaranteed contractual penalties, which arise or are forfeited on account of the delayed delivery to the purchaser or the purchaser's client shall only be compensated for in the case where a binding delivery date had been agreed and the purchaser, at the time of the date being agreed, had advised in writing of the concrete damages and costs that threatened in case of the binding delivery date being missed.

IX. Conditions of Payment, Discounts, Charging, Authority to Collect, Deterioration of Assets, Default of Payment, Offsetting

1. Insofar as nothing contrary has been agreed in writing, we shall accord terms of payment of thirty days after the date of invoice in case of strictly net payments without deductions for claims for remuneration which are immediately due for payment.
2. In case of cash payments or equivalent payments within a period of eight days after the issue of the invoice, we guarantee a two per cent discount. Invoice amounts under EUR € 100.00 are not eligible for a discount. The same is valid for invoices for tools, devices and pure contract work or wage labour. Newer (more recent) invoices shall not be eligible for a discount, if older invoice amounts are still open. Incoming payments shall be applied against any eventual interest receivables and then against the oldest open accounts receivables.
3. Shall an order be executed in several sections, we shall be authorised to invoice the individual sections separately. In case of default of payment, we shall be authorised to postpone further deliveries until payment has been effected.
4. Payments shall be made directly to us. Our sales personnel, field staff, stock controllers, and similar staff are only authorised to receive payments if they have been authorised by us in writing to do so. Payments made to such persons in spite of this provision shall only be recognised as having been made once they have been received on our account.
5. Shall the commercial circumstances of the purchaser deteriorate significantly, or shall it become known to us that our payment claims shall already have been endangered at the time of conclusion of contract, we shall be authorised, revoking all agreed payment terms, to demand the immediate payment of the entire invoiced amount. This provision shall also be valid in the case where the purchaser has been reminded to make payment three times without payment being effected. Shall the purchaser cease his or her payments or shall the purchaser apply for insolvency proceedings, then all discounts, deductions, allowances and other sundry benefits applied to the remaining open accounts receivables shall be considered as no longer guaranteed.
6. In case of default of payment, we shall be authorised, irrespective of our other statutory claims, to charge default interest amounting to eight per cent above the base lending rate. Shall the purchaser not be a commercially run company, the provision of proof of lesser or lower damages is permissible.

HEMSTEDT® – EVERYTHING FROM A SINGLE SOURCE

Standard Terms & Conditions

As at 1st of January, 2014

- The purchaser shall only be entitled to set off on the basis of counter claims when these counter claims are undisputed and have been legally established, or if pending legal proceedings shall not be delayed by such offsetting. The same shall be valid for the exercising of rights of retention of the client, provided that they do not directly concern the same contractual relationship.

X. Retention of Title, [extended, augmented], Storage Obligations, Factoring, Exploitation

- Until the complete and full payment of all of our accounts receivables for deliveries made and services rendered, to which we shall be entitled to by the purchaser currently or in future, we shall be granted the following securities, which we shall release at our discretion upon demand, insofar as their value shall lastingly exceed by more than ten per cent the value of our total receivables:
- The goods shall remain our property.
- Retention of title shall persist, even if individual receivables are included in a current invoice and the balance has been struck or acknowledged (current account reservation). In case of several business transactions, the retention of title shall also persist when a delivery has been paid for, yet an amount remains open for other deliveries (augmented retention of title).
- The processing or alteration or reforming of delivery items shall always be effected for us such that we shall continue to be considered as manufacturers, yet without entailing any obligations for us arising from such processing or alteration. Shall the delivery items be processed together with objects or materials of other sundry foreign substances, and shall such processing be carried out for a third party such that they are considered as manufacturers, we shall acquire joint ownership of the new object or product in proportion to the value of our delivered item to the foreign substances at the time of processing.
- Shall our [joint] right of ownership disappear as a result of mixing / blending, combination or processing, then it shall be agreed now, that the [joint] right of ownership of the purchaser to the object or substance shall be transferred to us in proportion to its value (invoice value). The purchaser shall store the [joint] property free of charge. The purchaser, as custodian of the property shall be especially obligated to duly secure, insure and take care of the delivery items, and in doing so to ensure that no danger from or to persons or property is possible. Any possible risks shall be duly covered by insurance policies.
- Goods to which we are entitled to [joint] right of property shall be designated retained goods as follows.
- The purchaser shall be authorised to process and sell the retained goods in due course of business so long as the purchaser shall not be in default of payment. The pledging or assigning as security of the retained goods is not permissible.
- Accounts receivables in the favour of the purchaser resulting from the re-sale of or from any other legal grounds [balance from a current account, installation, insurance or from an unlawful act] concerning the retained goods from deliveries, rendering of performance or services, contracts of insurance or compensation for damages shall, as a precaution, be now assigned by the purchaser to us. Without influencing this assignment, the circumstances remain unchanged, whether installation was performed by us, the purchaser or by the vicarious agents of one or another contractual partner.
- The purchaser shall be authorised, subject to revocation and a condition subsequent, to collect the assigned receivables in his or her own name. This collection authorisation shall be able to be revoked by us, should the purchaser not duly discharge his or her payment obligations. The authorisation ceases, without there being need for a declaration of revocation, should the purchaser enter into default of payment concerning an invoice, or upon the submission of an application for insolvency proceedings on the part of the purchaser (Own application 'Eigenantrag') or upon the placement of an application for insolvency proceedings against the purchaser by a third party (Outside application 'Fremdantrag').
- Only after our approval shall the purchaser be authorised to sell to a factor the receivables resulting from the due course of business against his or her client by way of genuine factoring. The resulting receivables arising out of the sale of receivables against the factor shall now be assigned to us. With the payment of the purchase price for the receivables by the factor, our receivables open against the purchaser, and which result from the contractual relationship in question, are immediately due for payment.
- In case third parties shall seize the retained goods or otherwise have access to them, the purchaser shall advise of our right of property and shall immediately notify us. Any costs or damages caused by such seizure or access by third parties shall be borne by the purchaser.
- In case of conduct of the purchaser contrary to the contract – in particular in case of default of payment – we shall be authorised to redeem the retained goods. Shall the retained goods be located with a third party, the purchaser shall now assign to us his or her claims for the return and surrender of the property against the third party. Insofar as the third party is entitled to legitimate claims to the retained goods, these shall be taken into account. As the indirect owner of the retained goods, we have the right to enter onto the premises of the purchaser.
- By our effecting redemption of the retained goods, as well as by our effecting seizure of retained goods, no withdrawal from the contract is constituted, just as is also the case by our disclosing of the assignment by way of security. Upon request from us, the purchaser shall be obligated to provide information on all assigned receivables, in particular, a list of debtors, together with their names, addresses, the amount of receivables and the date and number of the invoices shall be provided, and upon request, the purchaser shall provide us with all information and documentation required for asserting claims.
- We shall be authorised to make a claim upon the retained goods, as well as further assets of the purchaser which are subject to our actual influence, as security, and after offering to return them to the purchaser against payment of a reasonable sum, and such offer not being successful, to sell them directly at our discretion.
- The value of all collateral or securities is determined by their realisable value [security value]. If this value cannot be ascertained in a reasonable way and within a reasonable period of time, we shall be able to determine for the valuation of goods securities their delivery price, without taking into account any additional services, sales tax, discounts, reductions or shipping and other sundry costs. The nominal value of receivables determines their valuation.

XI. Agreed Tolerances, Permissible Changes to Services

- Bulk consignments (from 100 pieces / units of identical articles with a piece or unit price of up to EUR € 10.00) may manifest variances in quantity of +/- 5 % of the total number of pieces / units.
- Bulk consignments may only contain a scrap rate of a maximum of 5 %. In case this agreed tolerance level is exceeded, section XII shall be valid with the stipulation that random inspections of an appropriate number must be carried out. Section XIV shall also be valid.
- We reserve the right to allow for variations with respect to materials, colour, weight, dimensions, technical design or other similar properties, insofar as the delivery item taken as a whole remains acceptable for the purposes of purchase to the purchaser.
- We shall be entitled to carry out technical changes which serve to make improvements to the goods without the prior approval of the purchaser.

XII. Obligation to Inspect Goods and Report Complaints

Products delivered by us shall immediately be inspected for defects or faults, even in the case where samples had been sent previously. The delivery and or rendering of service shall be considered as accepted where complaint on account of manifest defects, discrepancies in quantities or incorrect deliveries or such thereof as may be discovered or discoverable as a result of due inspection of the goods, shall not be made in writing with us within a cut-off period of fourteen days after the arrival of the goods at the place of destination and in any case before the connection, mixing or processing of the goods takes place. The purchaser shall lodge complaint for hidden defects in writing with us within a cut-off period of eight days after their discovery.

XIII. Guarantees

- Written guarantees must be explicitly designated as such and be contained in the order acknowledgement or else be subsequently agreed on in writing.
- Information or details on the properties of our products, their processing and application, on special dimension accuracy as well as on the adherence to DIN2 guidelines only then constitutes a legal guarantee when it is explicitly agreed so in each individual case. As a general principal, we shall not assume a guarantee for the appropriateness or suitability of our goods for a particular designated end use, unless we had warranted this explicitly.
- In case of suggestions for materials on our part, we shall not under any circumstances make a guarantee that the material is suitable for the designated end use of the purchaser when we are not aware of that designated end use.

XIV. Warranty Claims, Objective and Temporal Limits on Warranty

- Warranty claims (claims for defects) are excluded for differences in quality, dimensions, density, weight etc. when such differences do not exceed divergences that are customary for the industry or the material, in particular when they are within the extent of tolerance of quality guidelines or standards. Specific requirements for exact dimensional accuracy must be mentioned explicitly with the placement of an order and must be confirmed by us in order to be binding.
- In case of production in accordance with technical drawings / diagrams or other specifications of the purchaser, we shall only be liable – irrespective of sundry limitations of liability and warranty provisions – for the production and execution in accordance with such specifications and/or technical drawings / diagrams.
- We shall accept no responsibility for defects or damages resulting from the causes listed as follows:
 - Neglected or deficient co-operation of the purchaser
 - Improper or negligent application and usage
 - Non-observance of the operating instructions
 - Non-observance of the safety instructions / precautions provided
 - Improper storage
 - Incorrect assembly or incorrect putting into service by the purchaser or a third party
 - Failure to carry out a service trial or test run
 - Natural / normal wear and tear
 - Natural / normal deterioration
 - Absent or incorrect service and maintenance
 - Use of unsuitable media or operating materials
 - Unsuitable surrounding conditions
 - Use of unsuitable construction materials, unsuitably influenced materials to be processed, chemical, electronic or electric influences
 - Neglected or deficient checking of the suitability for the actual intended application.
 - Properties of the material to be processed by the purchaser with the delivery object which were not known at time of conclusion of contract
- provided that fault or blame for these causes cannot be attributed to us.
- In case of legitimate complaints made in a timely manner, we shall guarantee, at our discretion, either a rectification of the defects or else a replacement delivery.
- In cases of replacement deliveries, we shall have at our disposal a reasonable period of time, in particular, a period of time sufficient for the manufacture of the replacement goods.
- In case of rectification of a defect or defects, we shall bear the requisite expenses, insofar as these are not increased by the fact that the delivery item is at a location other than the place of delivery.
- Additional costs which arise as a result of the fact that at time of the conclusion of contract it is not made known to us that claims for defects shall be met outside of the Federal Republic of Germany shall be for the account of the purchaser. We are authorised to request a suitable advance payment against the estimated additional costs. Insofar as payment for expenditure of work / labour is effected, only the standard times required for our internal labour shall be accepted at prevailing costs of labour in each respective country.
- Shall the defect not affect the suitability for use and shall no significant defect be present, we shall be authorised to grant a reduction in price instead of effecting either a rectification of the default or a replacement shipment.
- Further claims of the purchaser presuppose that we are delayed in providing rectification for significant defects and that a reasonable additional period of time allowed to us for such rectification has elapsed or that two attempts at rectification have failed, insofar as further attempts at rectification are not appropriate either on account of the delivery object or because they are not reasonable for the purchaser.
- We shall be authorised to provide supplementary performance of services in the form of rectification even after the expiry of such an additional period of time allowed to us, until such time as we shall receive an unambiguous statement from the purchaser to the effect that further services are explicitly refused.
- Instead of withdrawing and demanding compensation for damages instead of the rendering or performance of services, the purchaser can demand the costs of execution of the performance by substitution, insofar as this does not exceed the net order value of the defect part of the delivery.
- The warranty period for all deliveries is one year from the delivery of the goods to the purchaser.
- This period of limitation is neither interrupted nor arrested by the notification of defects, the following correspondence, measures to check for and determine or discover defects as well as the actions to rectify such defects as are determined. These actions are to be explicitly agreed upon individually. In case of a replacement shipment, the warranty period begins anew with its delivery, unless the replacement shipment is not carried out in response to a defect, but rather exclusively as a result of our goodwill.
- Shall the outcome of an inspection in the context of a return shipment of goods for which complaint was lodged reveal that the complaint lodged was incorrect, then we shall be authorised to charge an industry-standard amount for the inspection of the goods as well as for the expenses accrued for shipment.
- Shall legitimate complaints not be identifiable in spite of proper inspection of the goods during the goods reception inspection of the purchaser, the purchaser is entitled to the warranty claims as regulated above, even when the goods have already been worked or processed. In such cases the right of recourse in accordance with section § 478 of the (German) Civil Code (BGB – Bürgerliches Gesetzbuch) continues to exist even after the expiry of the period of time for the obligatory reporting of complaints upon the delivery of the goods. At the same time, the purchaser shall bear such expenses as would not have arisen in case sufficient precautions had been made for the rendering of supplementary performance over against the end user.

XV. Liability

- Mandatory provisions of product liability remain unaffected.
- On the basis of the statutory provisions, we shall be liable in cases of breaches of warranty, personal injury, and insofar as we, our legal representatives or our vicarious agents shall be culpable of wilful intent or gross negligence.
- In case we should negligently be in breach of any obligation material to the contract, for which such a breach should endanger the purpose of the contract, our liability to compensate for material damages shall be limited to typically occurring, foreseeable damages.
- Further claims are excluded.
- Purely financial losses, in particular loss of profit, losses from interruptions to business operation and losses from operation downtimes shall not be compensated for, should such losses not constitute a case as described in the second clause of section XV.
- The above limitations on liability are valid likewise and to the same extent for our representatives, employees, vicarious agents and other assistants.

XVI. Data Processing

We advise that data on business transactions is processed within our company and we reserve the right to transmit all necessary data to insurers in order to obtain credit insurance.

XVII. International Jurisdiction

For these terms and conditions and for all legal or contractual relationships between us and the purchaser, the law of the Federal Republic of Germany shall apply, to the exclusion of the UN Convention on Contracts for the International Sale of Goods.

XVIII. Place of Performance, Place of Jurisdiction

- Shall the purchaser be a merchant, a legal or corporate entity under public law or a special agency or fund incorporated under German public law, the place of performance for the delivery obligations incumbent upon us for deliveries ex works is the respective manufacturing facility, in case of deliveries ex stock, the respective warehouse. The place of performance for the obligations incumbent upon the purchaser is postcode 74336 Brackenheim, Germany.
- Shall the purchaser be a merchant, a legal or corporate entity under public law or a special agency or fund incorporated under German public law, or should the purchaser not maintain a registered office in the Federal Republic of Germany, then postcode 74072 Heilbronn, Germany is the exclusive place of jurisdiction for all disputes arising directly or indirectly from or in connection with the contractual relationship. This shall also be valid for proceedings based on cheques and bills of exchange. In all cases, we shall be authorised at our discretion to institute legal proceedings against the purchaser, even at the purchaser's place of business.

Notes:

¹VDI: Verein Deutscher Ingenieure – The Association of German Engineers

²DIN: Deutsches Institut für Normung – The German Institute for Standardisation

NOTES

NOTES



Worldwide: Direct

As a global player, Hemstedt GmbH supplies and looks after customers and projects together with overseas agents on all continents, directly from the headquarters in Brackenheim.



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