Self-limiting Heating Tape Type HKT-J

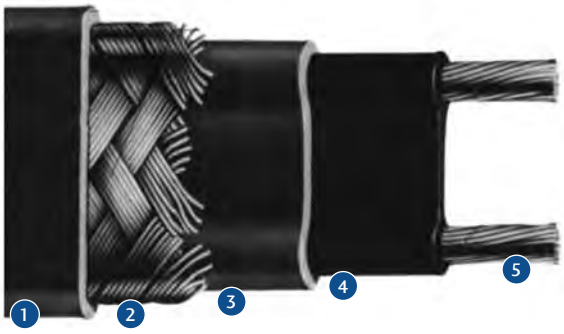
for Fost Protection and Process Temperatures up to max. 120°C, steam-cleaned resistant

Type	Power	Art.-No.
HKT25J	15 W/m at +10 °C	101237
HKT210J	31 W/m at +10 °C	101227
HKT215J	46 W/m at +10 °C	101240
HKT220J	63 W/m at +10 °C	101241

All heating tapes are tailored according to the specific requirements of our customers.

Description

The Klöpper-Therm heating tape type HKT-J is a parallel heating cable with self-limiting characteristic. An irradiation cross-linked semiconductive polymer core material is extruded over the multi-stranded, tinplated copper bus wires (1.22 mm²). The semiconductive core material increases or decreases its heat output in response to temperature changes. A fluoropolymer overjacket provides extra dielectric strength, moisture resistance and protection from impact and abrasion damage. A braid of tin-plated copper is installed over the fluoropolymer overjacket, providing a continuous ground path. The braid is covered by a fluoropolymer overjacket, featuring an excellent chemical resistance. Thus, the heating tape can be used in humid or corrosive environment.



1. fluoropolymer overjacket
2. metal braid
3. fluoropolymer jacket
4. self-limiting conductive core
5. stranded nickel-plated copper conductors

Principle of Operation

The parallel bus wires apply voltage along the entire length of heating tape. The semiconductive core provides a nearly infinite number of parallel conductive paths, permitting the heating tape to be cut to any length in the field with no dead or cold zones developing. The heating tape derives its self-limiting characteristic from the inherent properties of the semiconductive core material. As the core material temperature increases, the number of conductive paths in the core material decreases, automatically decreasing the heat output. As the temperature of core material decreases, the number of conductive paths increases, causing the heat output to increase. This occurs at every point along the length of the heating tape, thus adjusting the power output to the varying conditions along the pipe. The self-limiting effect allows the heating tape to be overlapped without creating hot spots or burnout. Since the heating tape regulates its heat output itself, it limits the maximum sheath temperature while providing useful power for process temperature maintenance.

Application

The Klöpper-Therm heating tape type HKT-J is highly suitable in maintaining the fluid flow of a medium over a wide range of operating temperatures. This product is used for frost protection systems of steam-cleaned pipes and temperature maintenance up to 120°C. Typical applications include hydrocarbon and chemical plant piping.

Rating Data of Heating Tapes

Type Designation	Watt/Meter at 10 °C	Service Voltage (V AC)	Max. Length of Heating Tape (per Branch) (m)	Max. Exposure Temperature Permanent (°C)	Max. Exposure Temperature Temporary (°C)	Temperature Class (Gas Ex-Area)	Max. Surface Temperature (Dust Ex-Area)*
HKT25J	15	230	155	120	190	T3	T200 °C
HKT210J	32	230	115	120	190	T3	T200 °C
HKT215J	46	230	95	120	190	T3	T200 °C
HKT220J	63	230	75	120	190	T3	T200 °C

*The temperature classification of electrical equipment is applied in hazardous areas and defines the surface temperature the electrical devices do not exceed during proper operation. Regarding the marking of electrical equipment you have to distinguish between gas explosion and dust explosion hazardous areas.

The heating tapes have been certified for use in hazardous areas, endangered by gases and dusts, of zones 1 and 2 or 21 and 22 according to EC Type Examination Certificate No. KEMA 04 ATEX 2146U. Klöpper-Therm delivers a complete range of connection boxes, connection and end seal kits, certified together with the heating tapes under EC-Type Examination Certificate No. KEMA 05 ATEX 2102X.

Dimensions (nominal):	width 10.5 mm, thickness 5.1 mm
Weight:	112 g/m
Minimum assembly temperature:	-40 °C
Minimum bending radius:	25 mm at -40 °C

Circuit Breaker Selection (C-Characteristic):

Type Designation	Start-up Temperature (°C)	Max. Recommended Heating Tape Length (in Meters) vs. Circuit / Breaker Size			
		16 A	20 A	25 A	32 A
HKT25J	+10 -5 -20 -30	174** 161** 149 143	218** 201** 187** 178**	272** 251** 234** 223**	348** 322** 299** 286**
HKT210J	+10 -5 -20 -30	99 93 87 83	124** 116** 108 104	155** 145** 135** 130**	199** 185** 173** 166**
HKT215J	+10 -5 -20 -30	70 65 61 59	87 81 77 74	109** 102** 96** 92**	139** 130** 123** 118**
HKT220J	+10 -5 -20 -30	53 51 48 47	66 63 60 58	83** 79** 75 73	106** 101** 96** 93**

Remarks:

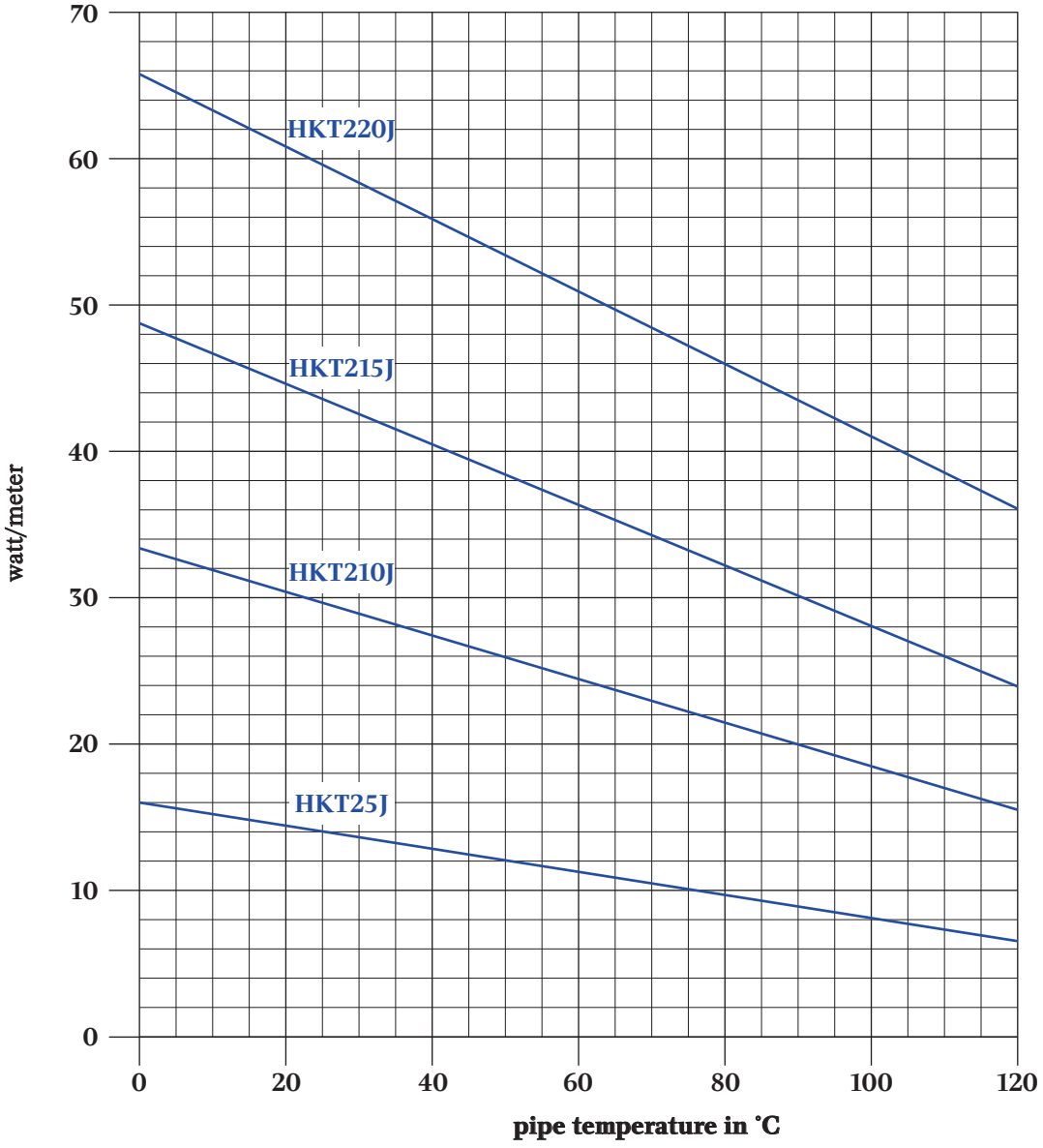
1. The circuit breaker size must be based on minimum start-up temperature, since the inrush current of the heating tapes increases with decreasing ambient temperature.

2. Do not exceed maximum recommended heating tape length per branch, indicated for each type of heating tape. The longer heating tape lengths marked with two stars (**) are only possible by parallel connection of two or several branches (each of these branches must not exceed the recommended heating tape length per branch!) on the breaker. Do not exceed max. recommended length of heating tape indicated in the table.

3. When connecting two or more different wattage heating tapes in parallel on the same breaker, please use the 16 amps column (16A) and divide 16 amps by the maximum heating tape length indicated with reference to the desired minimum start-up temperature. Thus, you get an amps/meter value for each type of heating tape. Multiply the length of each heating tape with the derived amps/meter value. The single amp values calculated have to be added up. The added value must not exceed the amperage rating of the breaker.

4. For electrical heating systems, Klöpper-Therm stipulates the use of a residual current device with a residual current rating not exceeding 300 mA. Residual current devices with a residual current rating of 30 mA should be used preferably.

Power Output Rating at 230 V AC



Remark: The power rating is valid for applications on insulated steel pipes.

PSO-CS-1

Connection and End Seal Kit

for inserting **one** self-limiting heating tape by a stand-off in an EEX e junction box consisting of:
stand-off and adapter M25 made of plastic, gasket and lock-nut M25, sealing grommet for 1 heating tape, 1 connection and 1 end seal, 1 tube of silicone green/yellow insulation hose for metal braid wire end sleeves marking label for connection box

article no.: 101245

PSO-CS-2

Connection and End Seal Kit

for inserting two self-limiting heating tapes by a stand-off in an EEx e junction box consisting of:
stand-off and adapter M25 made of plastic, gasket and locknut M25, sealing grommet for 2 heating tape, 2 connections and 2 end seals, 1 tube of silicone, green/yellow insulation hose for metal braid, wire end sleeves, marking label for junction box

article no.: 101246

ASO-CS-1

Connection and End Seal Kit

for inserting **one** self-limiting heating tape by a stand-off in an EEx e junction box consisting of:
stand-off and adapter M25 made of aluminium, gasket and locknut M25, sealing grommet for 1 heating tape,
1 connection and 1 end seal, 1 tube of silicone, green/yellow insulation hose for metal braid, wire end sleeves, marking label for junction box

article no.: 101247

ASO-CS-2

Connection and End Seal Kit

for inserting **two** self-limiting heating tapes by a stand-off in an EEx e junction box consisting of:
stand-off and adapter M25 made of aluminium, gasket and locknut M25, sealing grommet for 2 heating tapes, 2 connections and 2 end seals, 1 tube of silicone, green/yellow insulation hose for metal braid, wire end sleeves, marking label for junction box

article no.: 101248

CS-1G-KT

Connection and End Seal Kit

for direct entry of **one** self-limiting heating tape type KT in an EExe junction box consisting of:
EExe gland M25 with sealing grommet for KT-heating tape, gasket and locknut, 1 connection and 1 end seal, 1 tube of silicone, green/yellow insulation hose for metal braid, wire end sleeve, marking label for junction box

article no.: 101250

CS-1G-HKT

Connection and End Seal Kit

for direct entry of one self-limiting heating tape type HKT in an EExe junction box consisting of:
EExe gland M25 with sealing grommet for HKT-heating tape, gasket and locknut, 1 connection and 1 end seal, 1 tube of silicone, green/yellow insulation hose for metal braid, wire end sleeves, marking label for junction box

article no.: 101251