HSB System

1. Conductors:
   stranded copper wire, 1.2 mm², nickel-plated
2. Self-regulating, irradiated
   polymer heating element
3. Fluoropolymer electrical insulation jacket
4. Nickel-plated grounding braiding
5. Fluoropolymer protective jacket

Features

- Steam purging possible
- Self-regulating
- Can be cut to length thanks to its parallel current supply
- Corrosion-proof and resistant to effects of chemicals thanks to its outer sheath
- Electrically and mechanically protected by a nickel-plated copper braiding
- Simple installation thanks to its high flexibility and favourable dimensions

Description

A temperature-dependant resistive element between two parallel copper conductors regulates and limits the power output of the heating tape according to the ambient temperature. If the ambient temperature rises, the power output of the heating tape is reduced. This self-regulating property prevents overheating even when the tapes are overlapped.

Thanks to the parallel design the heating tape can be cut to any required length. This feature considerably simplifies project planning and installation. The heating tape is cut and terminated directly on the construction site according to the circumstances.

The heating system must be designed to ensure that the maximum operating temperature of +120 °C (+250 °F) will not be exceeded when it is energized.

Selection chart HSB

Description	Catalog no.	Order no.
HSB parallel heating tape AC 240 V - self-regulating - steam purging possible - hazardous location - ordinary location	5HSB2-CT	**07-5803-215A**
	10HSB2-CT	**07-5803-230A**
	15HSB2-CT	**07-5803-245A**
	20HSB2-CT	**07-5803-260A**

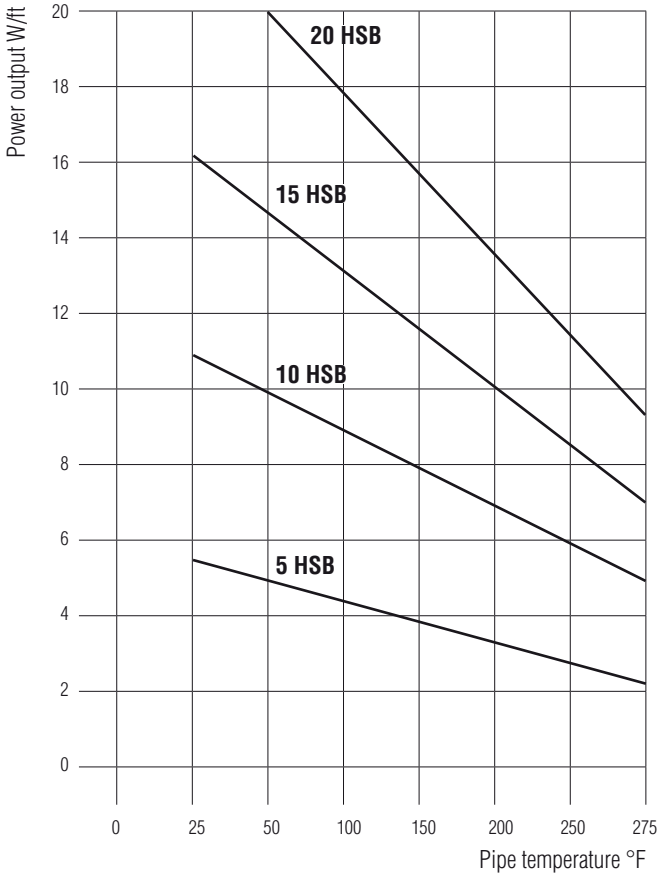
Selection chart HSB

Description	Catalog no.	Order no.
HSB parallel heating tape AC 120 V - self-regulating - steam purging possible - hazardous location - ordinary location	5HSB1-CT	**07-5803-115A**
	10HSB1-CT	**07-5803-130A**
	15HSB1-CT	**07-5803-145A**
	20HSB1-CT	**07-5803-160A**

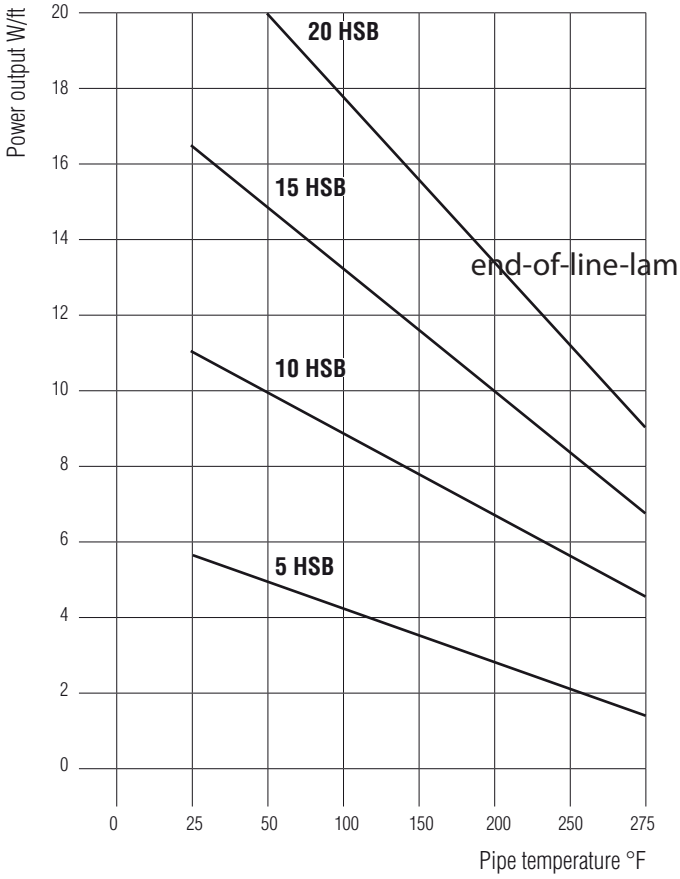
HSB characteristics

Power output on insulated steel pipes under nominal conditions

at 120 V



at 240 V



Explosion protection

Type

CSA Class I, Div. 2, Groups A, B, C, D
CSA Class II, Div. 2, Groups E, F, G
CSA Class III

Ex II 2G Ex e IIC 200 °C (T2), T3, T4 Gb
Ex II 2D Ex tb IIIC T200 °C, T195 °C,T130 °C Db

Certification

CSA 1862457

KEMA 02 ATEX 2327 U
IECEx KEM 07.0048 U

Technical data

Supply voltage

AC 120 V
AC 240 V

Max. exposure temperature

energized	+120 °C (+250 °F)
de-energized	+190 °C (+374 °F)

Min. installation temperature

-76 °F (-60 °C)

Min. start-up temperature

-76 °F (-60 °C)

Max. braid resistance

< 18.2 Ohm/km

Dimensions

with braiding and fluoropolymer jacket
0.40 in x 0.19 in (10.2 mm x 4.8 mm)

Min. bending radius

0.98 in (25 mm)

	Adjustment factors
Voltage	**Power output**
AC 208 V	0.90

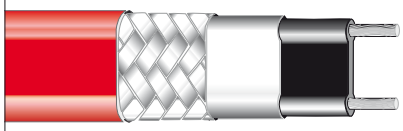
Max. length of heating circuit at AC 120 V						
Circuit Breaker size[1)]			**5 HSB**	**10 HSB**	**15 HSB**	**20 HSB**
20 A, start-up temperature	+10 °C	(+50 °F)	312 ft	184 ft	131 ft	98 ft
20 A, start-up temperature	-29 °C	(-20 °F)	246 ft	148 ft	108 ft	82 ft
20 A, start-up temperature	-60 °C	(-76 °F)	246 ft	135 ft	85 ft	69 ft
30 A, start-up temperature	+10 °C	(+50 °F)	312 ft	190 ft	135 ft	105 ft
30 A, start-up temperature	-29 °C	(-20 °F)	312 ft	190 ft	135 ft	105 ft
30 A, start-up temperature	-60 °C	(-76 °F)	312 ft	190 ft	135 ft	105 ft
40 A, start-up temperature	+10 °C	(+50 °F)	312 ft	190 ft	135 ft	105 ft
40 A, start-up temperature	-29 °C	(-20 °F)	312 ft	190 ft	135 ft	105 ft
40 A, start-up temperature	-60 °C	(-76 °F)	312 ft	190 ft	135 ft	105 ft

Max. length of heating circuit at AC 208 V						
Circuit Breaker size[1)]			**5 HSB**	**10 HSB**	**15 HSB**	**20 HSB**
20 A, start-up temperature	+10 °C	(+50 °F)	541 ft	315 ft	230 ft	177 ft
20 A, start-up temperature	-29 °C	(-20 °F)	443 ft	262 ft	190 ft	148 ft
20 A, start-up temperature	-60 °C	(-76 °F)	410 ft	243 ft	177 ft	131 ft
30 A, start-up temperature	+10 °C	(+50 °F)	541 ft	374 ft	269 ft	210 ft
30 A, start-up temperature	-29 °C	(-20 °F)	541 ft	374 ft	269 ft	210 ft
30 A, start-up temperature	-60 °C	(-76 °F)	541 ft	361 ft	256 ft	197 ft
40 A, start-up temperature	+10 °C	(+50 °F)	541 ft	374 ft	269 ft	210 ft
40 A, start-up temperature	-29 °C	(-20 °F)	541 ft	374 ft	269 ft	210 ft
40 A, start-up temperature	-60 °C	(-76 °F)	541 ft	374 ft	256 ft	210 ft

Max. length of heating circuit at AC 240 V						
Circuit Breaker size[1)]			**5 HSB**	**10 HSB**	**15 HSB**	**20 HSB**
20 A, start-up temperature	+10 °C	(+50 °F)	620 ft	361 ft	262 ft	197 ft
20 A, start-up temperature	-29 °C	(-20 °F)	489 ft	302 ft	217 ft	164 ft
20 A, start-up temperature	-60 °C	(-76 °F)	472 ft	276 ft	197 ft	148 ft
30 A, start-up temperature	+10 °C	(+50 °F)	620 ft	374 ft	269 ft	210 ft
30 A, start-up temperature	-29 °C	(-20 °F)	620 ft	374 ft	269 ft	210 ft
30 A, start-up temperature	-60 °C	(-76 °F)	620 ft	361 ft	256 ft	197 ft
40 A, start-up temperature	+10 °C	(+50 °F)	620 ft	374 ft	269 ft	210 ft
40 A, start-up temperature	-29 °C	(-20 °F)	620 ft	374 ft	269 ft	210 ft
40 A, start-up temperature	-60 °C	(-76 °F)	620 ft	374 ft	269 ft	210 ft

[1)] Breaker sizing should be based on the National Electrical Code, Canadian Electrical Code or any other applicable code. The NEC and CEC reuquire ground-fault protection of equipment for each branch circuit supplying electric heating equipment. Check local codes for ground-fault protection requirements.

Heating tape HSB



Power junction box

Installation kit

Features

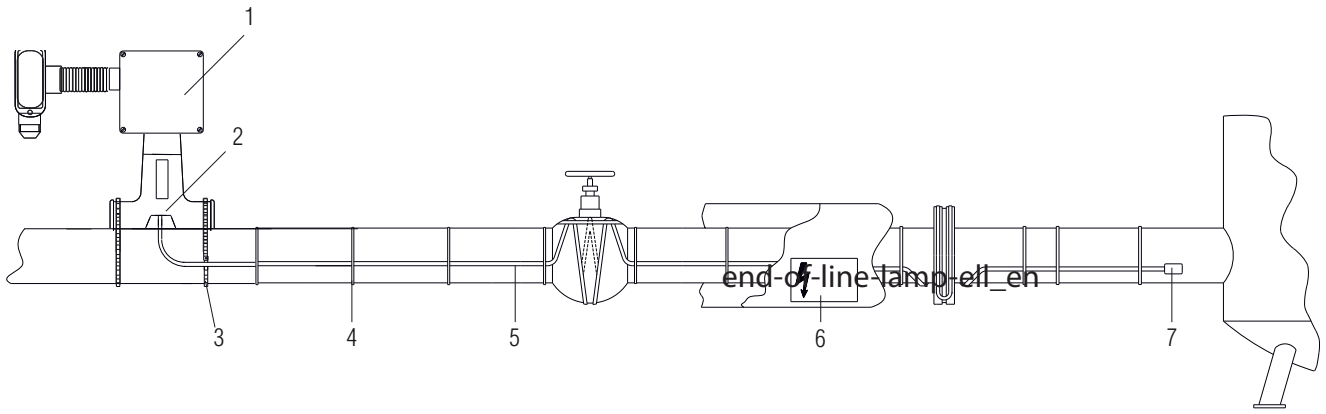
- Simple project planning
- Self-regulating, will not overheat while overlapping
- Easy installation due to on-site assembly
- Installation in non hazardous and hazardous areas
- System certificate according to
  CSA C22.2 No. 130-03
  IEEE 515, IEEE 515.1

Description

Typical applications are frost protection, temperature maintenance and heat-up in pipes, tanks, vessels or surfaces. The self-regulating heating tape HSB is available with various nominal power ratings from 5 W/ft to 20 W/ft at +50 °F.

The outer insulation jacket is made of fluoropolymer for special applications which require chemical resistance and mechanical strength. Dependant on the start-up temperature respectively the inrush current and the supply voltage a maximum heating circuit length of 620 ft is possible.

Application Example HSB heating system



1 Power junction box
2 Mounting stand
3 Pipe strap
4 Self adhesive glass fibre fixing tape
5 Heating tape HSB
6 Caution label "Electrically Heated"
7 Cold applied technology end cap

Authorized distributor

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