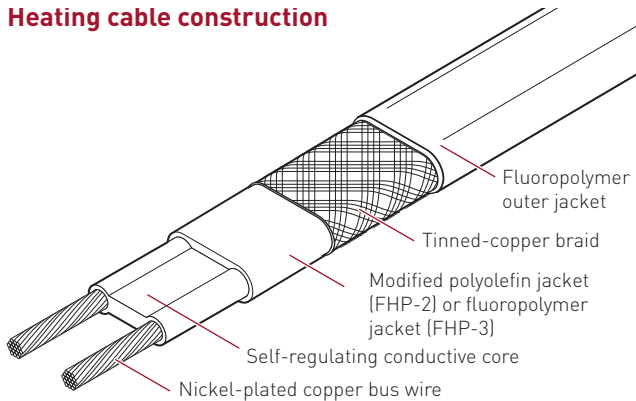


Raychem FHP

SELF-REGULATING HEATING CABLES FOR FROST HEAVE PROTECTION

Frost heave protection for cryogenic storage tank foundations

Heating cable construction



PRODUCT OVERVIEW

The FHP family of self-regulating heating cables prevents frost heave by maintaining the temperature of cryogenic and low temperature storage tank foundations above freezing.

FHP heating cables are available for all tank sizes and construction. FHP heating cables can be cut to length and terminated in the field.

The FHP heating cables have an unconditional T-rating simplifying design for use in hazardous and nonhazardous areas, including areas where corrosives may be present.

For additional information, contact your Pentair Thermal Management representative.

SPECIFICATIONS

	FHP-2	FHP-3
Catalog number	FHP-2	FHP-3
Weight (nominal)	0.15 kg/m (1.0 lb/10 ft)	0.13 kg/m (0.85 lb/10 ft)
Bus wire size	16 AWG (~1.2 mm ²)	16 AWG (~1.4 mm ²)
Outer jacket color	Black	Brown
Heating cable dimensions (nominal)	15 mm x 5 mm (0.6 in x 0.2 in)	13 mm x 5 mm (0.5 in x 0.2 in)

TEMPERATURE RATING

	FHP-2	FHP-3
Maximum maintain temperature or continuous exposure temperature (power on)	65°C (150°F)	110°C (225°F)
Maximum intermittent exposure temperature, 1000 hours (power on or off)	85°C (185°F)	110°C (225°F)
Temperature ID number (T-rating)	T6: 85°C (185°F)	T4: 135°C (275°F)
Voltage	200–277 Vac	200–277 Vac
Maximum circuit length	110 m (360 ft)	110 m (360 ft)
Minimum installation temperature		
Baseefa06ATEX0187X, IECEx BAS 06.0047X	-60°C (-76°F)	-60°C (-76°F)
FM Approved	-40°C (-40°F)	-40°C (-40°F)

APPROVALS

Hazardous Locations



Class I, Div. 1 & 2, Groups B, C, D
Class II, Div. 1 & 2, Groups E, F, G
Class III



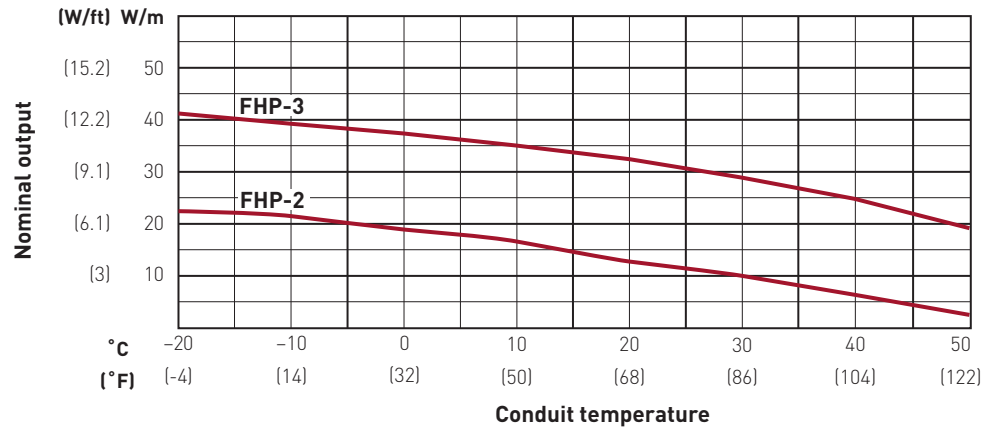
IECEx BAS 06.0047X
Ex e IIC T6 or T4 Gb
Ex tD A21 IP66 T80°C or T130°C



Baseefa06ATEX0187X
II 2 GD Ex e IIC T6 or T4 Gb
Ex tD A21 IP66 T80°C or T130°C

NOMINAL POWER OUTPUT RATING IN METAL CONDUIT AT 240 VAC

	Adjustment Factors	
	Power Output	Circuit Length
208 V		
FHP-2	0.87	0.92
FHP-3	0.83	0.89
277 V		
FHP-2	1.12	1.09
FHP-3	1.11	1.12



GROUND-FAULT PROTECTION

A 30-mA residual current device or ground leakage circuit breaker must be used to provide protection from arcing or fire and to comply with Pentair Thermal Management requirements, agency certifications, and national electrical codes. Where properly installed circuits result in a higher leakage current due to their long length, devices with higher trip currents, to a maximum of 300 mA, may be used. Suitable ground-fault breakers include Square D Type QO-EPD, QOB-EPD and EDB-EPD, and Cutler Hammer (Westinghouse) Type QBGFEP.

DESIGN AND INSTALLATION

Application must be engineered by Pentair Thermal Management and use Pentair Thermal Management connection kits.

CONNECTION KITS

The connection kits listed below, or Pentair Thermal Management approved equivalents, must be used to ensure that the FHP system functions properly and complies with warranty, code, and approvals requirements. These connection kits are part of the FHP engineered system and must be selected by Pentair Thermal Management.

Type	Catalog number	Description	Approvals
Power connection kit	HAK-C-100 and HAK-JB3-100	Explosion-proof multiple-entry power, splice, tee and end termination kit	FM
	JBS-100-E	Single-entry power connection with junction box	Baseefa (ATEX & IECEx)
	JBS-100-EP	Single-entry power connection with junction box with earth plate	Baseefa (ATEX & IECEx)
	JBM-100-E	Multiple-entry power connection with junction box	Baseefa (ATEX & IECEx)
	JBM-100-EP	Multiple-entry power connection with junction box with earth plate	Baseefa (ATEX & IECEx)
End seal	C-150-E	Low profile power connection	Baseefa (ATEX & IECEx)
	FHP-PL-E	End seal kit with pulling lug	Baseefa (ATEX & IECEx)
	E-150	Low profile end seal	Baseefa (ATEX & IECEx)
	E-06	Heat shrink end seal	Baseefa (ATEX & IECEx)

CONNECTION KITS, CONTINUED

Type	Catalog number	Description	Approvals
Connection kits to be used with junction boxes	C75-100-A	Heating cable gland kit	FM
	C25-21-FHP	Connection kit, M25 (heat shrinkable)	Baseefa (ATEX & IECEx)
	C25-100-FHP	Connection kit, M25 (cold applied)	Baseefa (ATEX & IECEx)
	CCON25-100-FHP	Conduit connection kit, M25 (cold applied)	Baseefa (ATEX & IECEx)
	C25-100-METAL-FHP	Brass connection kit, M25 (cold applied)	Baseefa (ATEX & IECEx)
	C25-100-METAL-NP-FHP	Nickel-plated brass connection kit, M25 (cold applied)	Baseefa (ATEX & IECEx)
	C3/4-100-METAL-FHP	Brass connection kit, 3/4" NPT (cold applied)	Baseefa (ATEX & IECEx)
Junction box	JBU-100-E-FHP	Junction box to be engineered according to constraints mentioned in approval	Baseefa (ATEX & IECEx)
	JBU-100-EP-FHP	Junction box with earth plate to be engineered according to constraints mentioned in approval	Baseefa (ATEX & IECEx)



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