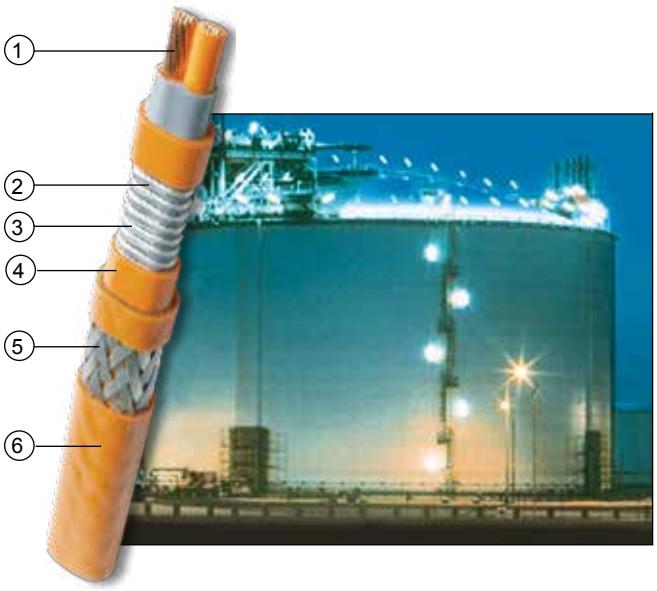
PRODUCT SPECIFICATIONS

FOUNDATION HEATING

FP CONSTANT WATT HEATING CABLE



APPLICATION

Thermon FP parallel resistance constant watt heating cables are designed to provide frost heave protection of cryogenic storage vessels. With cut-to-length parallel circuitry, FP cables can be field fabricated, eliminating the need for specific circuit lengths to be provided for the application.

FP cable construction, with its unique fiberglass overlay, provides the needed cyclic reliability for foundation heating not found in other cables of this type. The fluoropolymer overjacket provides corrosion resistance, durability for installation in conduit, and lowers the friction factor for pulling.

Because FP cables are not subject to the inrush current associated with self-regulating heating cables, the need for over sizing power distribution equipment is eliminated.

FP cables are certified for use in ordinary (nonclassified) areas and in potentially explosive atmospheres in accordance with the ATEX Directive and the IEC Ex Scheme.

RATINGS

Nominal watt density	16-33 W/m
Maximum operating voltage [1]	690 Vac
Minimum installation temperature	-60°C
Minimum bend radius	
@ -15°C	10 mm
@ -60°C	19 mm
Pull strength	500 N
Friction coefficient	0.25-0.35
Weight	0.181 kg/m

BASIC ACCESSORIES

All FP cables for foundation heating require the use of the FHT1-F-10 Power and End Termination Kit. The kit is designed to fabricate (10) power connections and (10) end connections.

Along with these components, Thermon has a complete line of installation accessories specifically for foundation heating applications.

CONSTRUCTION

1 Nickel-plated copper bus wires 3.3 mm^2
2 Nichrome heating element
3 Fiberglass overlay
4 Fluoropolymer dielectric insulation
5 Tinned copper braid
6 Fluoropolymer overjacket

CERTIFICATIONS/APPROVALS

II 2 G Ex e II T3 to T6, II 2 D Ex tD A21 IP66/IP67 T200°C to T85°C FM 07ATEX0016

International Electrotechnical Commission
IEC Certification Scheme for Explosive Atmospheres
FMG 06.0008

FM Approvals
Ordinary and Hazardous (Classified) Locations

Underwriters Laboratories Inc.
Hazardous (Classified) Locations

FP has additional hazardous area approvals including:

- CCE/CMRS

Contact Thermon for additional approvals and specific information.

Notes

1. The 690 Vac maximum operating voltage applies to IEC Ex only. Max operating voltage for all other certifications is 575 Vac.

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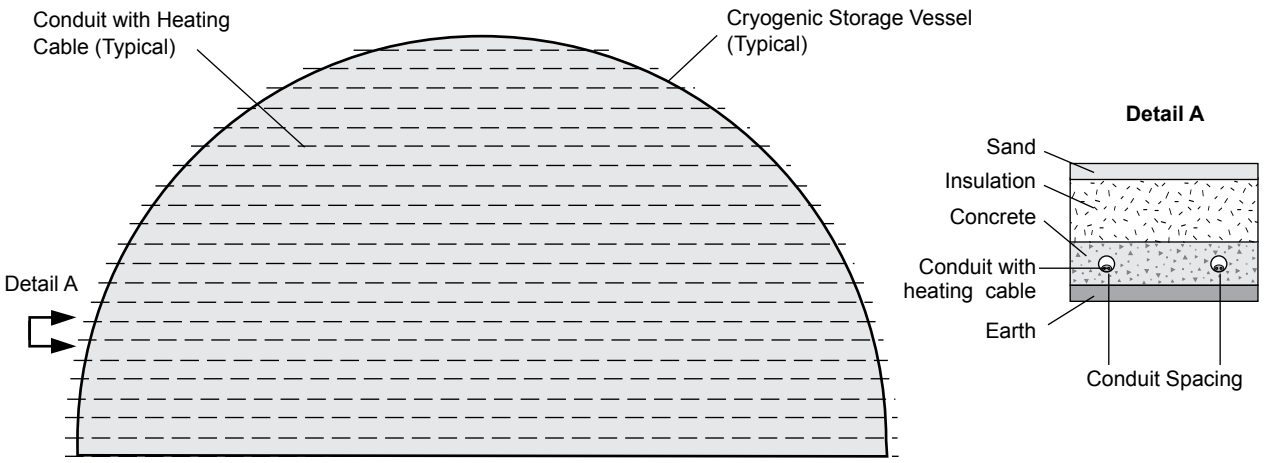

POWER OUTPUT [1]

The rated power output of FP cables for voltages typically used in foundation heating is shown in the Table 1. The heating zone length is the distance between bus wire connections.

Product Type	Operating Voltage	Power Output W/m	Zone Length cm
FP 8-2	230	24	102
FP 8-4	400	18	152
FP 10-2	230	30	76
FP 10-4	400	23	137

CIRCUIT BREAKER SIZING AND CIRCUIT LENGTH

Maximum circuit lengths for FP cables at rated voltages are shown below. Circuit breaker sizing should be based on local regulations. Ground-fault protection of equipment should be provided for each branch circuit supplying electric heating equipment.

Product Type	Operating Voltage	Max. Circuit Length m (ft)	Current Draw A/m (A/ft)
FP 8-2	230	185 (610)	0.115 (0.035)
FP 8-4	400	350 (1150)	0.050 (0.015)
FP 10-2	230	155 (510)	0.132 (0.040)
FP 10-4	400	310 (1020)	0.058 (0.018)

Notes

1. Circuit length is dependent on capacity of the circuit breaker. Contact Thermon for design assistance.

TEMPERATURE CONTROL

From both energy saving and operational standpoints, the heating system should include an effective and versatile temperature control system. Contact Thermon for recommendations on a suitable control system.

POWER AND END TERMINATION KIT

FHT1-F-10 contains components to fabricate 10 power connections and 10 end terminations for FP foundation heating cable. (Components for a single circuit shown.)

Kit includes:

- (10) Ring terminals
- (10) ET End caps
- (10) TBX Power connection boots
- (10) 76 mm Polyolefin shrink tubes
- (10) 121 mm Polyolefin shrink tubes
- (1) Rolls of Teflon® tape
- (3) Rolls of mastic tape
- (10) RTV silicone tubes