

# Foundation Heating

## FP Constant Watt Heating Cable

### Product Specifications

#### Application . . .

##### FrostHeave Protection

Thermon FP parallel resistance constant watt heating cables are designed to provide frostheave 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 oversizing power distribution equipment is eliminated.

FP cables are approved for use in ordinary (nonclassified) areas, hazardous (classified) areas and Categories 2 and 3 ATEX classified areas.

#### Ratings . . .

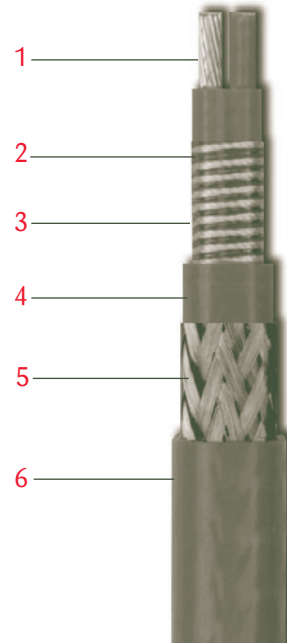
Nominal watt density .....	16-33 W/m (5-10 W/ft)
Available supply voltage .....	120-575 Vac nominal
Minimum installation temperature .....	-51°C (-60°F)
Minimum bend radius.....	19 mm ( 0.75")
Pull strength.....	445 N (100 lb.)
Friction coefficient .....	0.25-0.35
Weight .....	0.181 kg/m (0.055 lb/ft)

#### Basic Accessories . . .

##### Power Connection/End of Circuit Termination:

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<sup>2</sup> (12 AWG)
- 2 Nichrome Heating Element
- 3 Fiberglass Overlay
- 4 Fluoropolymer Dielectric Insulation
- 5 Tinned Copper Braid
- 6 Fluoropolymer Overjacket

#### Certifications/Approvals . . .

**CENELEC** European Organisation for Electrotechnical Standardisation  
Hazardous (Classified) Locations

**CE** **Ex** II 2 G EEx e IIC T2 to T6 LCIE 01 ATEX 6051X

**FM** Approved  
Hazardous (Classified) Locations

**UL** LISTED  
Underwriters Laboratories Inc.  
Hazardous (Classified) Locations

FP cable has additional hazardous area approvals including:

- SAA
- CCE/CMRS
- CSA

Contact Thermon for additional approvals and specific information.

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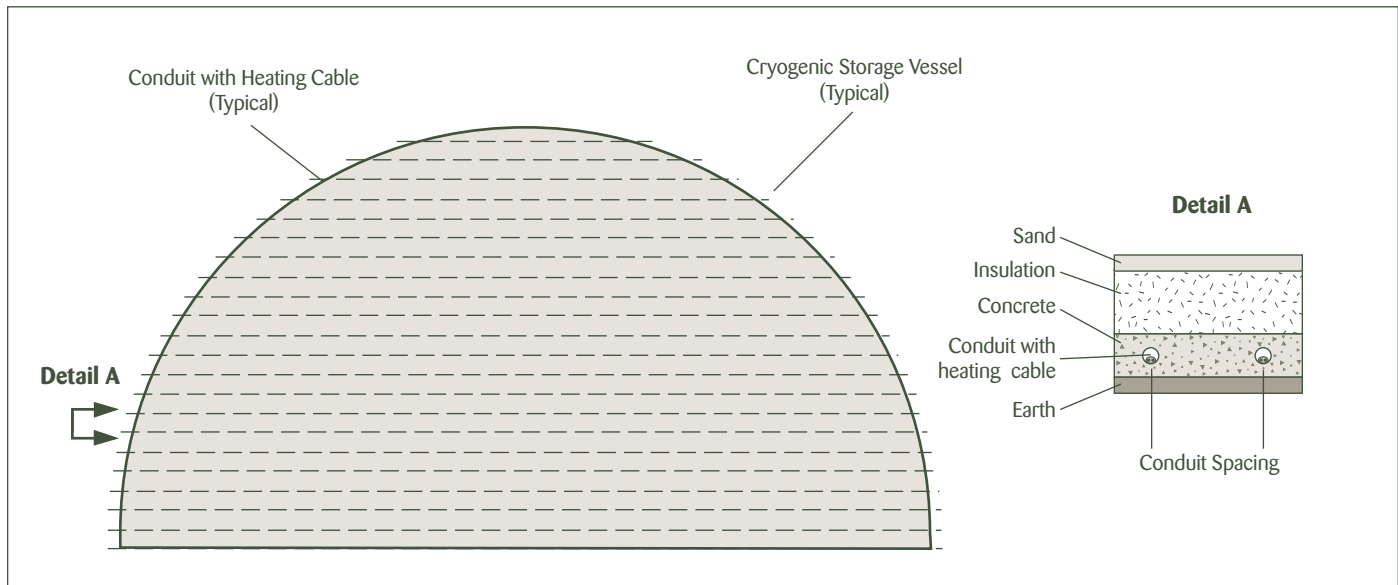
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## Product Specifications

### Conventional Foundation Heating System . . .



### Power Output<sup>1</sup> . . .

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. See Table 2 for maximum circuit lengths.

**Table 1**

Product Type	Service Voltage	Power Output W/m (W/ft)	Zone Length cm (in)
FP 8-2	230	24 (8)	102 (40)
	240	26 (8)	102 (40)
FP 8-4	400	18 (6)	152 (60)
	480	26 (8)	152 (60)
FP 10-2	230	30 (9)	76 (30)
	240	33 (10)	76 (30)
FP 10-4	400	23 (7)	137 (54)
	480	33 (10)	137 (54)

### Circuit Breaker Sizing and Circuit Length<sup>2</sup> . . .

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.

**Table 2**

Product Type	Service Voltage	Max. Circuit Length m (ft)	Current Draw A/m (A/ft)
FP 8-2	230	185 (610)	0.115 (0.035)
	240	185 (610)	0.120 (0.037)
FP 8-4	400	350 (1150)	0.050 (0.015)
	480	350 (1150)	0.060 (0.018)
FP 10-2	230	155 (510)	0.132 (0.040)
	240	155 (510)	0.138 (0.042)
FP 10-4	400	310 (1020)	0.058 (0.018)
	480	310 (1020)	0.069 (0.021)

#### Note . . .

1. Power outputs and voltages other than those shown on the tables above (i.e. 208, 220, 277, etc.) are available, contact Thermon.
2. Circuit length is dependent on ampacity 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.**

