

Electrical heating cable for freeze protection or temperature maintenance.

## **FREEZSTOP MICRO** Self-Regulating Heating Cable

- Automatically adjusts heat output in response to increasing or decreasing pipe temperature.
- Can be cut-to-length.
- Inherently temperature safe.
- Suitable for use in safe, hazardous and corrosive areas.
- Available up to 277VAC.
- Full range of controls and accessories available.

### DESCRIPTION

FREEZSTOP MICRO is an industrial grade self-regulating heating cable that can be used for freeze protection or temperature maintenance of pipework and vessels.

It is particularly suited to small diameter pipes and instrument tubing such as impulse or analyser lines.

It can be cut-to-length at site and exact piping lengths can be matched without any complicated design considerations.

FREEZSTOP MICRO is approved for use in non-hazardous and hazardous areas to world wide standards.

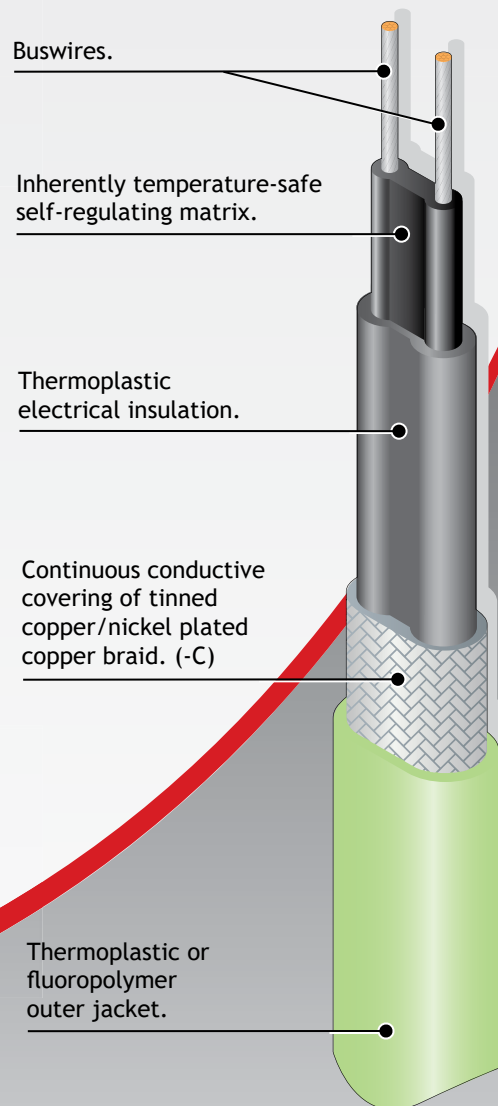
Its self-regulating characteristics improve safety and reliability. FREEZSTOP MICRO will not overheat or burnout, even when overlapped upon itself. Its power output is self-regulated in response to the pipe temperature.

The installation of FREEZSTOP MICRO is quick and simple and requires no special skills or tools. Termination, splicing and power connection components are all provided in convenient kits.

### INHERENTLY TEMPERATURE-SAFE

“ The inherent ability to self-regulate at a temperature level below the maximum product rating and withstand temperature of the insulating materials, without the need for temperature control.”

Other manufacturers self-regulating products are typically limited to a maximum energised temperature, typically 65°C at which point, their retained power output prevent the cable from self-regulating at its own limiting temperatures. All such products require temperature control to ensure their own temperature safety.



FSM-CF is supplied with a black fluoropolymer outer-jacket.



## SPECIFICATION

**MAXIMUM CONTINUOUS EXPOSURE TEMPERATURE (Power ON):** 65°C† (149°F)

**MAXIMUM PERMISSIBLE EXPOSURE TEMPERATURE (Power OFF):** 85°C† (185°F)

**MINIMUM OPERATING TEMPERATURE:** -65°C\* (-85°F)

**MINIMUM INSTALLATION TEMPERATURE:** -40°C (-40°F)

**POWER SUPPLY:** 12 - 277V AC

**TEMPERATURE CLASSIFICATION:** T6 (85°C)

**MAXIMUM RESISTANCE OF PROTECTIVE BRAIDING:** 18.2 Ohm/km

**INGRESS PROTECTION:** IP67

### WEIGHTS & DIMENSIONS:

Type Ref	Dimensions (mm) +/-0.5	Weight kg/100m	Min Bending radius	Gland Size
FSM-C	9.3 x 4.7	7.4	30mm	M20
FSM-CT	10.5 x 5.9	9.3	35mm	M20
FSM-CF	10.2 x 5.6	10.2	35mm	M20

### APPROVAL DETAILS:

ATEX† - CML 19ATEX3381  
 IECEx† - CML 19.0124  
 FM† - 3009080  
 CSA - 1295278, 1547590  
 EAC\*† - TC RU C-GB.MIO62.B.06041  
 Japanese† - CML 17JPN3005X 1 to 2

### ORDERING INFORMATION:

Example:

Output 17W/m at 5°C \_\_\_\_\_ **17 FSM 2 - C T**  
 FREEZSTOP MICRO \_\_\_\_\_  
 Supply Voltage 220 - 277V AC \_\_\_\_\_  
 Metal Braid \_\_\_\_\_  
 Thermoplastic Outerjacket \_\_\_\_\_

### ACCESSORIES:

Heat Trace supply a complete range of accessories including termination/splice kits, end seals, junction boxes and controls. Such items carry separate approvals from the heating cables. Use only approved components, as per system certification.

### ATEX & IECEx MARKINGS:

Ⓔ II 2GD  
 Ex 60079-30-1 IIC T6 Gb  
 Ex 60079-30-1 IIIC T85°C Db

EN 60079-0:2018  
 EN 60079-30-1:2017

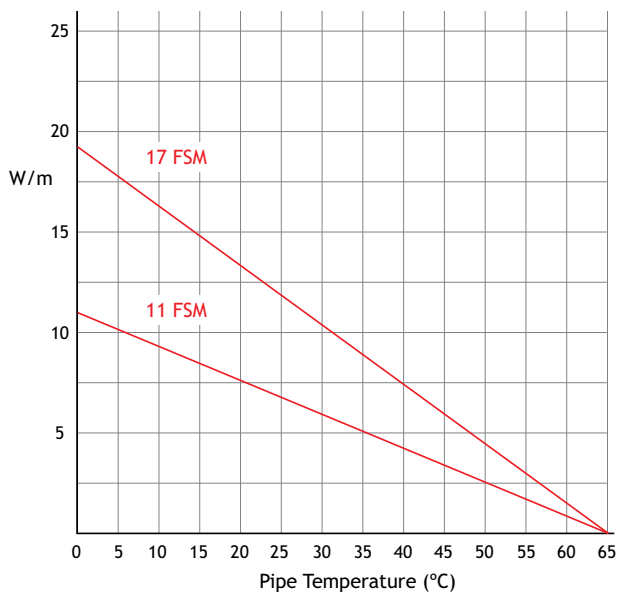
**MAXIMUM LENGTH (m) vs. CIRCUIT BREAKER SIZE:**  
 The following circuit details relate specifically to the trace heating of pipework and equipment. For any other application consult Heat Trace.

Cat. Reference	Start-up Temperature	230V			
		6A	10A	16A	20A
11FSM	5°C	76	126	128	-
	0°C	70	118	128	-
	-20°C	46	78	124	128
	-40°C	36	60	96	120
17FSM	5°C	54	88	102	-
	0°C	50	84	102	-
	-20°C	34	56	88	102
	-40°C	26	42	68	86

Residential buildings	Commercial buildings	Industry and Infrastructure
MCB's certified IEC 60898-1	MCB's certified according both IEC 60898-1 & IEC 60947-2	

### THERMAL RATINGS:

Nominal output at 230V when FSM is installed on insulated metallic pipes and as outlined in the procedures within IEC62395 and IEC60079-30.  
 Note: Please refer to Evolution for more precise power output values as a function of pipe temperature.



### FURTHER INFORMATION:

Please consult the appropriate termination instructions and the Heat Trace Design, Installation, & Maintenance Manual (HTDIMM 010) for further details.