

Electrical heating cable for freeze protection or temperature maintenance.

## FREEZSTOP EXTRA 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 EXTRA is an industrial grade, self-regulating heating cable that can be used for freeze protection or temperature maintenance to 100°C.

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

FREEZSTOP EXTRA is approved for use in non-hazardous, hazardous and corrosive environments to world wide standards.

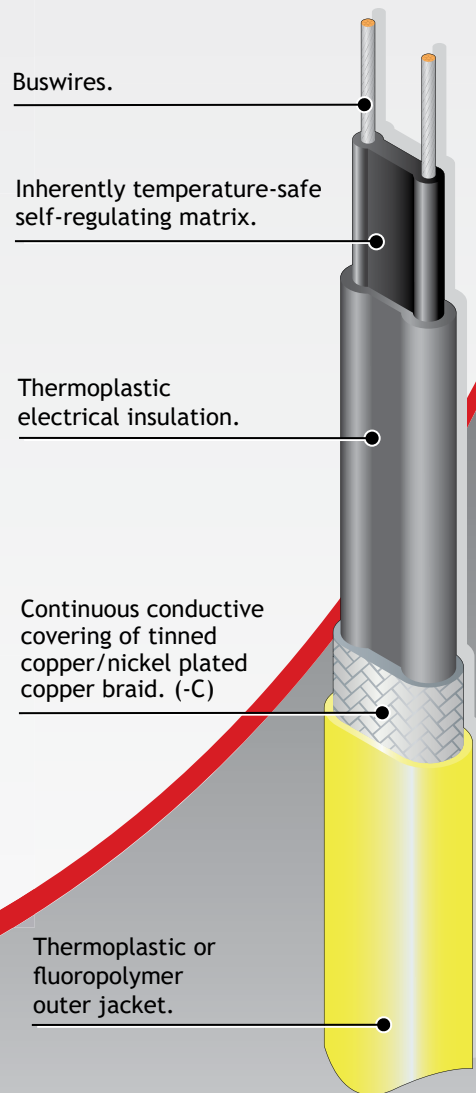
Its self-regulating characteristics improve safety and reliability. FREEZSTOP EXTRA will not overheat or burnout, even when overlapped upon itself. Its power output is self-regulated in response to the pipe temperature.

The installation of FREEZSTOP EXTRA 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.



*FSE-CF & FSEw-CF are supplied with a black fluoropolymer outer-jacket.*



The Heat Tracing Authority™



## SPECIFICATION

### MAXIMUM CONTINUOUS EXPOSURE

TEMPERATURE (Power ON): 100°C (212°F)

### MAXIMUM PERMISSIBLE EXPOSURE

TEMPERATURE (Power OFF): 100°C (212°F)

### MINIMUM OPERATING

TEMPERATURE: -65°C\* (-85°F)

### MINIMUM INSTALLATION

TEMPERATURE: -40°C (-40°F)

POWER SUPPLY: 12 - 277V AC

### TEMPERATURE CLASSIFICATION:

up to 45W/m @ nom voltage - T4 (135°C)  
>45W/m @ nom 230V powered to 277V - T3 (200°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 Bend radius	Gland Size
FSE..C	11.5 x 4.75	9.5	30mm	M20
FSE..CT	12.7 x 5.95	12.4	35mm	M20
FSE..CF	12.4 x 5.65	13.2	35mm	M20
FSEw..C	14.2 x 5.3	12.9	30mm	M20
FSEw..CT	15.4 x 6.5	17.0	40mm	M25
FSEw..CF	15.1 x 6.2	16.6	40mm	M25

### APPROVAL DETAILS:

ATEX - FSE: CML 19ATEX3379  
FSEw: CML 19ATEX3380

IECEX - FSE: CML 19.0122  
FSEw: CML 19.0123

DNV-GL - TAE00002KA

EAC\* - TC RU C-GB.MI062.B.06041

Japanese - FSE - CML 17JPN3004X 1 to 2

CNEx - FSE + FSEw - CNEx19.1552U

### ORDERING INFORMATION:

Example:

Output 45W/m at 10°C 45 FSEw 2 - C T  
 FREEZSTOP EXTRA WIDE  
 Supply Voltage 220 - 277V AC  
 Metal Braid  
 Thermoplastic Outerjacket

### ATEX & IECEX MARKINGS:

Ⓔ II 2GD  
Ex e IIC T4 Gb  
FSE Ex tb IIIC T135°C Db  
EN 60079-0:2018  
EN 60079-30-1:2007, IEC 60079-31:2014

Ⓔ II 2GD  
Ex e IIC T4 Gb  
FSEw Ex tb IIIC T135°C Db  
Ex e IIC T3 Gb  
Ex tb IIIC T200°C Db  
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EN 60079-30-1:2007, IEC 60079-31:2014

### MAXIMUM LENGTH (m) vs. CIRCUIT BREAKER SIZE:

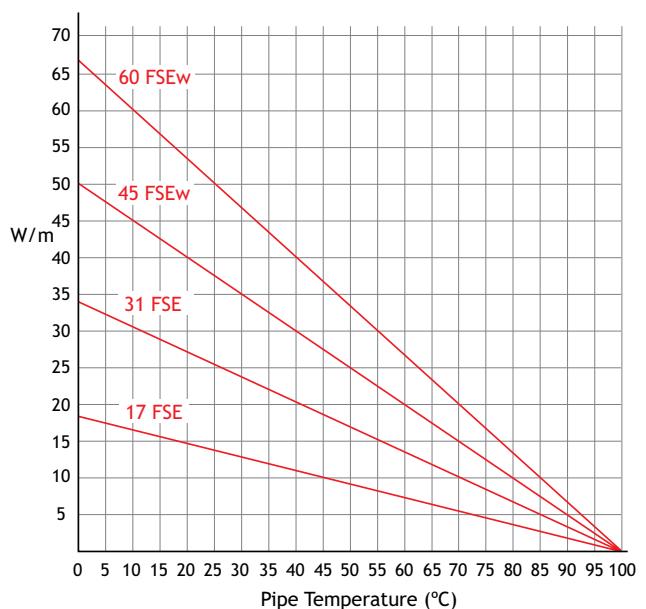
The following circuit details relate specifically to the trace heating of pipework and equipment. For any other application consult Heat Trace.

Cat Reference	Start-up Temperature	230V				
		6A	10A	16A	20A	25A
17FSE	10°C	46	76	120	148	-
	0°C	36	62	98	122	148
	-20°C	24	42	66	82	102
	-40°C	16	28	44	56	68
31FSE	10°C	32	52	82	104	110
	0°C	26	42	68	84	106
	-20°C	16	28	46	56	70
	-40°C	12	18	30	38	48
45FSEw	10°C	24	38	62	76	96
	0°C	20	32	50	64	80
	-20°C	12	22	34	42	52
	-40°C	8	14	22	28	34
60FSEw	10°C	20	35	52	66	82
	0°C	16	28	44	56	70
	-20°C	12	20	32	40	50
	-40°C	8	14	22	28	34

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 115V or 230V when FSE is installed on thermally insulated carbon steel pipes.



### FURTHER INFORMATION:

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

**HEAT TRACE**™

SETTING THE STANDARDS LEADING THE WAY

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