

Electrical heating cable for the heating of long pipelines.

## LONGLINE

High Efficiency Series Resistance  
Single Conductor Heating Cable

- Circuit lengths up to 5km.
- Single supply point - minimises supply cabling costs.
- Available up to 1000VAC 3 phase.
- Power outputs up to 50W/m.
- Easy installation in convenient lengths.
- Full range of controls and accessories available.

### DESCRIPTION

LONGLINE HTS1F is a series resistance, single conductor heating cable supplied in multiples of 3 cables for configuring with a 3 phase heating system. It is used for freeze protection or process temperature maintenance of long pipelines.

A typical application is the temperature maintenance of crude or fuel oils in above ground and buried transfer lines.

LONGLINE minimises the number of electrical supplies needed and so minimises supply cabling and distribution equipment costs. Circuits are often fed at the pipe ends only.

The single conductor is sheathed with silicone rubber for flexibility.

A continuous conductive cover and over-jacket can be provided for additional mechanical protection or for grounding purposes.

The number of heating cables and their conductor sizes are designed to produce the desired output for the circuit length required. The LONGLINE heaters are connected directly to the 3 phase mains voltage or, when required, to a step-up transformer.

The large heated surface of LONGLINE'S flat foil construction results in lower operating temperatures than equivalent round conductor constructions thereby improving safety and system life. The high efficiency produces high power capability (up to 50W/m) per cable.

LONGLINE cable may be straight run to above ground pipes. For buried lines, cables are usually drawn into channel raceways within a pre-insulated pipeline system.

Cable is provided in convenient lengths for series connection at site.

Heating foil conductor.

High temperature electrical insulation.

Metal braid (-C).

Continuous metal jacket (-A).

Optional over jacket, silicone rubber or fluoropolymer for added corrosion resistance, scuff/anti friction jacket for pulling into tubes/channels.



## SPECIFICATION

### MAXIMUM CONTINUOUS EXPOSURE

TEMPERATURE (Power ON): 200°C (392°F)

### MAXIMUM PERMISSABLE EXPOSURE

TEMPERATURE (Power OFF): 200°C (392°F)

### MINIMUM OPERATING

TEMPERATURE: -80°C (-112°F)\*

### MINIMUM INSTALLATION

TEMPERATURE: -40°C (-40°F)

### POWER SUPPLY:

up to 600V single phase  
up to 1000V 3 phase  
according to application requirements

### POWER OUTPUT:

up to 50W/m by design  
according to application requirements

### TEMPERATURE CLASSIFICATION:

(See workpiece temperature tables)

**APPROVAL DETAILS:** - Specific constructions have the following approvals

ATEX - SIRA 17ATEX2136X  
IECEX - IECEX SIR 17.0025X  
FM - 3009080  
EAC\* - EA3C RU C-GB.MH062.B.01122/19

### CONSTRUCTION:

Heating Conductors: Sized to suit application  
Max Conductor size: 16mm<sup>2</sup> - 60mm<sup>2</sup>  
Insulation: Silicone Rubber  
Continuous Conductive  
Covering: Braid/Aluminium  
Over Jacket: Silicone or Fluoropolymer

### ORDERING INFORMATION:

Example: HTS 1FA - A S /16

Silicone Rubber Sheath \_\_\_\_\_  
One heating conductor \_\_\_\_\_  
(1F) Copper or (1FA) - Aluminium \_\_\_\_\_  
Continuous conductive cover \_\_\_\_\_  
(C) Metal Braid or (A) Continuous Metal jacket \_\_\_\_\_  
Optional over-jacket \_\_\_\_\_  
(F) Fluoropolymer \_\_\_\_\_  
or (S) Silicone \_\_\_\_\_  
Nominal cross section (mm<sup>2</sup>) \_\_\_\_\_

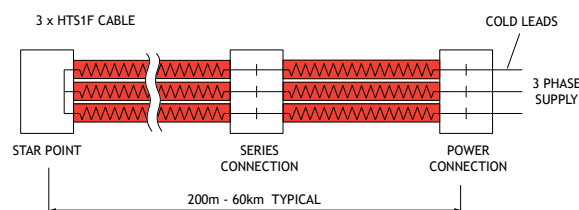
### MAXIMUM PIPE / WORKPIECE TEMPERATURE:

The surface of the heater must not exceed the maximum withstand temperature of its constructional materials or the Temperature Classification (if installed in a hazardous area). This is ensured by limiting the pipe or workpiece temperature to a safe level either by design calculation (a Stabilised Design) or by means of temperature controls.

For worst case conditions, the temperature of steel pipes should be limited to the following levels.

| Cat Ref  | Nom.<br>Output<br>(W/m) | Area Classification |    |     |     |     |     | Safe |
|----------|-------------------------|---------------------|----|-----|-----|-----|-----|------|
|          |                         | Hazardous           |    |     |     |     |     |      |
|          |                         | T6                  | T5 | T4  | T3  | T2  | T1  |      |
| HTS1F-x  | 10                      | 47                  | 66 | 107 | 181 | 200 | 200 | 200  |
|          | 20                      | –                   | 32 | 75  | 157 | 191 | 191 | 191  |
|          | 30                      | –                   | –  | 41  | 132 | 163 | 163 | 163  |
|          | 40                      | –                   | –  | –   | 108 | 133 | 133 | 133  |
|          | 50                      | –                   | –  | –   | 76  | 97  | 97  | 97   |
| HTS1F-xS | 10                      | 57                  | 73 | 112 | 181 | 200 | 200 | 200  |
|          | 20                      | 37                  | 53 | 93  | 166 | 180 | 180 | 180  |
|          | 30                      | –                   | 31 | 73  | 152 | 157 | 157 | 157  |
|          | 40                      | –                   | –  | 51  | 127 | 127 | 127 | 127  |
|          | 50                      | –                   | –  | 27  | 92  | 92  | 92  | 92   |
| HTS1F-xF | 10                      | 57                  | 73 | 112 | 181 | 200 | 200 | 200  |
|          | 20                      | 37                  | 53 | 93  | 166 | 180 | 180 | 180  |
|          | 30                      | –                   | 31 | 73  | 152 | 157 | 157 | 157  |
|          | 40                      | –                   | –  | 51  | 127 | 127 | 127 | 127  |
|          | 50                      | –                   | –  | 27  | 92  | 92  | 92  | 92   |

### TYPICAL ARRANGEMENT:



### CIRCUIT PROTECTION:

Circuit breakers, switch gear and supply cabling should be sized to cater for cold start-up conditions. Heat Trace Ltd will advise operating and start-up loads.

### ACCESSORIES:

Heat Trace supply a complete range of accessories including termination/splice kits, end seals, junction boxes, controls and fixing tape. These items are recommended for the correct operation of LONGLINE products.

### LONGLINE - A COMPLETE SYSTEM:

Reliability of the heating system is usually paramount. LONGLINE cables form only part of a high integrity LONGLINE heating system including power control, temperature control and circuit health monitoring/ alarm equipment - all specifically developed and produced by Heat Trace Ltd.