

- Circuit lengths up to 5km
- Single supply point – minimises supply cabling costs
- High efficiency, flat and flexible
- For process temperature maintenance,
- freeze protection or heat raising
- High power outputs – up to 60W/m
- Easy installation in convenient lengths

APPLICATIONS

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, eg. up to 5km.

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

MINIMAL SUPPLY / DISTRIBUTION COSTS

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

FEATURES

Construction

The single conductor is sheathed with silicone rubber for flexibility.

A copper braid and overjacket can be provided for additional mechanical protection or for grounding purposes.

The Design

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.

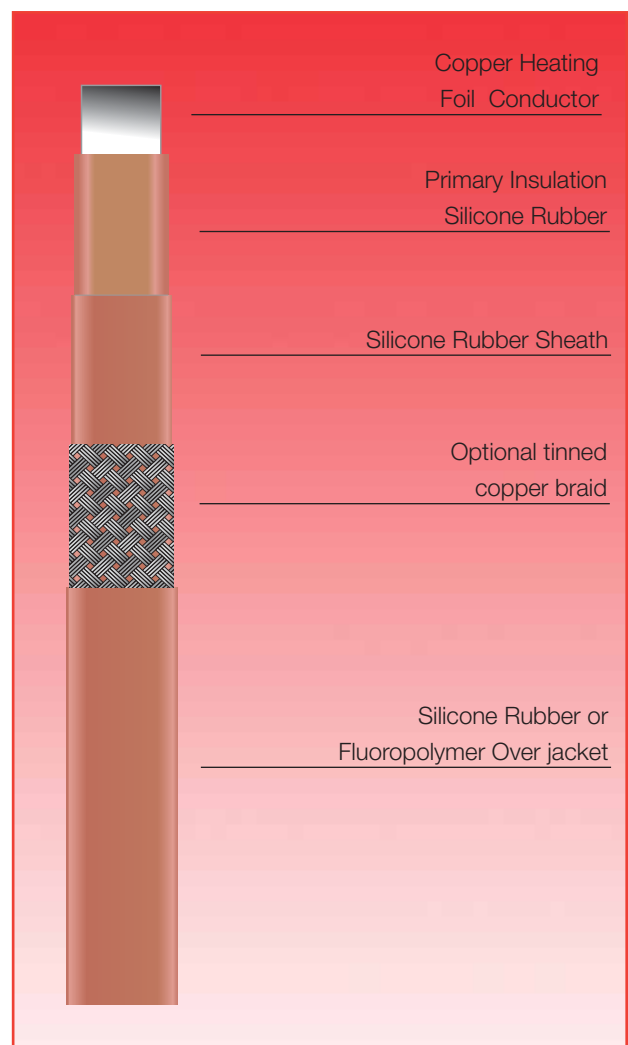
Improved Safety and Efficiency

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 60W/m) per tape.

Installation

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, eg. 200m for series connection at site.



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.

SPECIFICATION

MAXIMUM TEMPERATURE Un-energised 230°C (446°F)
205°C (401°F)†

MINIMUM INSTALLATION TEMPERATURE -40°C (-40°F)
-20° C (-4°F)†

POWER SUPPLY up to 1000V 3 phase
according to application requirements

POWER OUTPUT up to 60W/m by design
according to application requirements

HEATING CONDUCTOR THICKNESSES
i) 16mm wide
1.0, 1.25, 1.5mm
ii) 20mm wide
1.75, 2.0mm

Please note that Heat Trace will size conductors to provide the required W/m output for required circuit length.

WEIGHTS AND DIMENSIONS


20mm Foil Width

Type Ref	Nom. Dims (mm)	Weight kg/100m	Min. Bending Radius (mm)
HTS1F	20.0 x 6.0	36	35
HTS1F-C	21.0 x 7.0	44	35
HTS1F-CS	23.0 x 9.0	52	50
HTS1F-CF	22.0 x 8.0	65	75

20mm Foil Width

Type Ref	Nom. Dims (mm)	Weight kg/100m	Min. Bending Radius (mm)
HTS1F	24.0 x 6.0	48	35
HTS1F-C	25.0 x 7.0	58	35
HTS1F-CS	28.0 x 9.0	69	50
HTS1F-CF	27.0 x 8.0	86	75

APPROVAL DETAILS

Testing Authority	Certificate No.	Standard
FM 	3009080	ANSI/IEEE Std 515

CONSTRUCTION

Heating Conductors	Copper
Primary Insulation	Silicone Rubber
Sheath	Silicone Rubber
Braid (optional)	Tinned Copper
Over Jacket (optional)	Silicone Rubber or Fluoropolymer (FEP)

ACCESSORIES

Heat Trace supply and 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.

MAXIMUM PIPE / WORKPIECE TEMPERATURES

The surface of the heater must not exceed the maximum withstand temperature of its constructional materials. 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:-

MAXIMUM PIPE / WORKPIECE TEMPERATURES (°C)

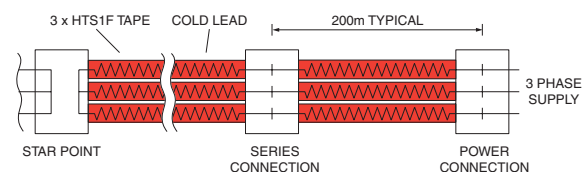
HEATER NOMINAL OUTPUT (W/m)	MAXIMUM PERMISSIBLE PIPE TEMP (°C)			
	HTS1F	HTS1F-C	HTS1-CS	HTS1-CF
10	217	218	208	192
20	189	191	180	178
30	156	164	158	165
40	128	134	127	127
50	98	97	93	93
60	50	46	57	57

For conditions other than worst case, or pipes of other materials (eg. Plastic, Stainless Steel, etc.), consult Heat Trace.

Tolerances : Voltage +10%; Resistance ±10%

Pipe temperatures much higher than those given above may be accommodated by using Heat Trace Ltd voltage compensating devices eg. POWERMATCH™ – call for further details.

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.

ORDERING INFORMATION

Example	HTS1F-CF/1.5
Silicone Rubber Sheath	_____
One heating conductor	_____
Tinned Copper Braid	_____
Fluoropolymer Over Jacket	_____
Conductor Thickness (mm)	_____

† Fluoropolymer (FEP) overjacket