

HTS1F

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
- 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 continuous conductive cover and over-jacket 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.

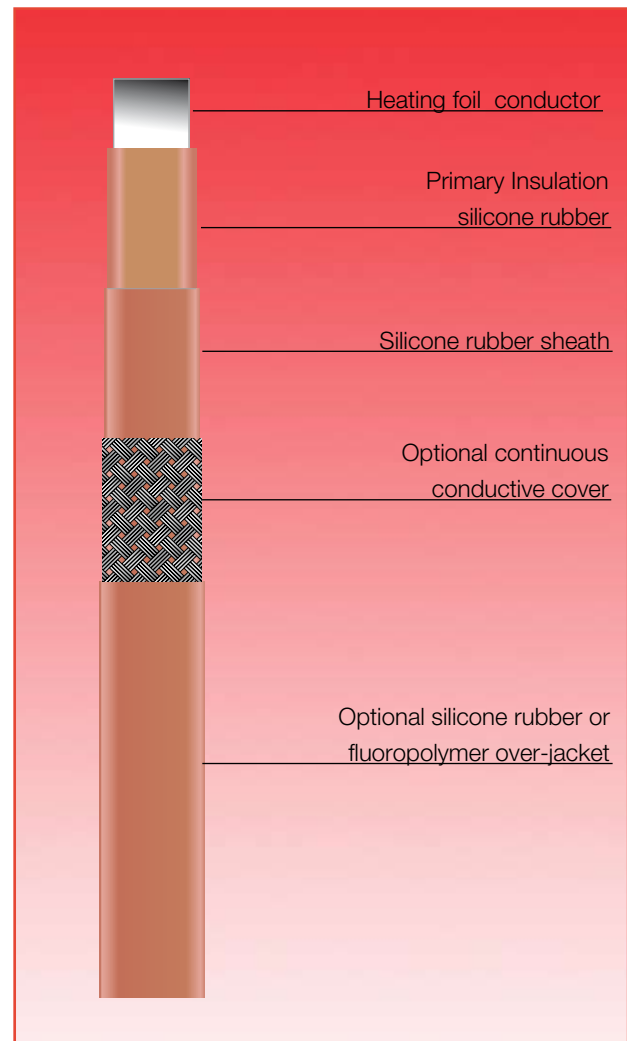
Improved Safety and Efficiency

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 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 OPERATING TEMPERATURE -80°C* (-112°F)

MINIMUM INSTALLATION TEMPERATURE HTS1F-xS -40°C (-40°F)
HTS1F-xF -20°C (-4°F)




TEMPERATURE CLASSIFICATION 205°C (T2)†
230°C (T2)
T3 (200°C)
T4 (135°C)
T5 (100°C)
or T6 (85°C) } Devices are classified according to rated output and the conditions of use. ie. limited pipe temp.

† denotes fluoropolymer outer jacket

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

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

APPROVAL DETAILS

Testing Authority	Certificate No.
ATEX 	Sira 03ATEX3292
FM 	3009080
EAC* 	TC RU C-GB.ГБ05.В.00188

CONSTRUCTION

Heating Conductors	Sized to suit application
Primary Insulation	Silicone Rubber
Sheath	Silicone Rubber
Continuous conductive cover (optional)	T-Copper/Aluminium
Over Jacket (optional)	Silicone Rubber or Fluoropolymer (FEP)

ORDERING INFORMATION

Example HTS1F-xF/1.5

Silicone Rubber Sheath	_____
One heating conductor	_____
Continuous conductive cover	_____
Fluoropolymer over-jacket	_____
Conductor thickness (mm)	_____

MAXIMUM PIPE/WORKPIECE TEMPERATURE

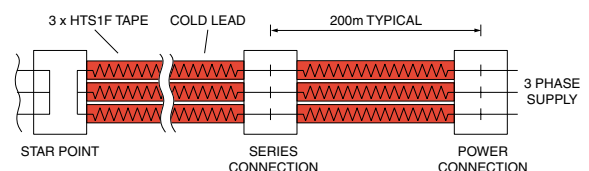
The surface of the heater must not exceed the maximum withstand temperature of its constructional materials or the Temperature Classification (if installed in a hazardous area). This is ensured by limiting the pipe or workpiece temperature to a safe level either by design calculation (a Stabilised Design)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

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

MAXIMUM PIPE/WORKPIECE TEMPERATURE (°C)

Cat Ref	Nom. Output (W/m)	Area Classification Hazardous						Safe
		T6	T5	T4	T3	T2	T1	
HTS1F	10							217
	20							189
	30							156
	40							128
	50							98
	60							50
HTS1F-x	10	47	66	107	181	217	217	217
	20	-	32	75	157	191	191	191
	30	-	-	41	132	163	163	163
	40	-	-	-	108	133	133	133
	50	-	-	-	76	97	97	97
	60	-	-	-	30	46	46	46
HTS1F-xS	10	57	73	112	181	207	207	207
	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
	60	-	-	-	-	-	-	57
HTS1F-xF	10	57	73	112	181	192	192	192
	20	37	53	93	166	177	177	177
	30	-	31	73	152	165	165	165
	40	-	-	51	127	127	127	127
	50	-	-	27	92	92	92	92
	60	-	-	-	-	-	-	57

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 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.



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