EU Type Examination Certificate CML 18ATEX3378X Issue 1

1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

2 Equipment **HTS1FAR-A (40/60) Series Resistance Round Longline (LLR-HV/Longline R)**

3 Manufacturer **Heat Trace Limited**

4 Address **Mere's Edge, Chester Road, Helsby, Frodsham, Cheshire, WA6 0DJ, United Kingdom**

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 CML B.V., Chamber of Commerce No 6738671, Koopvaardijweg 32, 4906CV Oosterhout The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 12.

7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.

8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

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

10 The equipment shall be marked with the following:

II 2 G D

Ex 60079-30-1 IIC T* Gb

Ex 60079-30-1 IIIC T**°C Db

IP67

* & ** Refer to Description for temperature class/assigned maximum surface temperature options.

Maximum withstand temperature Tp = 230°C. Minimum ambient defined in Section 14.

R C Marshall
Operations Manager

11 Description

The Longline Round High Voltage (LLR-HV) is a series of round electric resistance heating cables for long cross-country pipelines. The LLR-HV have an aluminium core, silicone rubber insulations, aluminium sheath and optional non-metallic outer jackets (MFA, PFA, TPE, PVDF, Silicone, HDPE or Polypropylene). The series is rated for a voltage of up to 6,000 V a.c. single-phase and 10,000 V a.c. three-phase.

The series offers cables with a core diameter of 40 mm or 60 mm.

Product Type	Conductor Size (mm^2)	Conductor Resistance (OHM/KM @ 20°C)
HTS1FAR-A 40	7	0.740 (+/- 5%)
HTS1FAR-A 60	9	0.458 (+/- 5%)

The cables are permitted for a maximum temperature of 230°C and supplied in line with customer's specific application. They are to be installed directly on to pipeline under insulation in accordance with the manufacturer's installation instructions.

The cables should be supplied/installed with consideration to the maximum pipe/workpiece temperatures below:

Product Type	Nominal Output (W/m)	Maximum Permissible Workpiece Temperatures (°C)					
		T6 T85°C	T5 T100°C	T4 T135°C	T3 T200°C	T2 T300°C	T1 T450°C
HTS1FAR-A 40	10	49	68	112	189	230	230
	20	10	34	85	177	230	230
	30	-	-	54	152	230	230
	40	-	-	23	130	230	230
	50	-	-	-	107	228	228
HTS1FAR-A 60	10	53	71	114	190	230	230
	20	25	44	91	174	230	230
	30	-	14	66	159	230	230
	40	-	-	40	140	230	230
	50	-	-	-	121	230	230

The Longline Round High Voltage (LLR-HV) may be spliced or terminated with the use of the HLRS splice, certificate numbers CML 18ATEX3377U.

The Longline Round High Voltage (LLR-HV) electric resistance heating cables may also be terminated with the use of the ABTECH Limited MJB Range of Junction Boxes, certified under Sira 99ATEX3176.

The Longline Round High Voltage (LLR-HV) has the following temperature limitations:

Without HLRS	With HLRS fitted
Maximum withstand temperature (Tp): 230°C	Maximum withstand temperature (Tp): 90°C
Minimum ambient temperature: -60°C	Minimum ambient temperature: -40°C
Minimum installation temperature: -40°C;	Minimum installation temperature: -40°C

Variation 1

This variation introduced the following changes:

i. To assess and permit the addition of optional materials for the outer jacket; as a result the product description was amended.
ii. To recognise and correct an editorial error in the product description.
iii. To enhance clarity, minor editorial amendments to the Conditions of Manufacture.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	16 May 2019	R12079B/00	Issue of Prime Certificate
1	13 Oct 2021	R14651A/00	Introduction of Variation 1

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

i. The primary electrical insulating jacket shall withstand a dry spark test at a minimum of 6,000 Vac. Alternatively, a dielectric strength test of 2U + 1,000 Vrms shall be applied between the conductors and the electrically conductive covering/braid for 60 seconds, as required by Clause 5.1.2 of IEC/IEEE 60079-30-1:2015-09 Ed. 1.

ii. A dielectric strength test of the polymeric sheath (outer jacket) used for corrosion resistance shall be carried out in accordance with the requirements of IEC/IEEE 60079-30-1:2015-09 Ed. 1 Clause 5.2.1.

iii. The manufacturer shall verify the output rating for each cable manufactured in accordance with EN 60079-30-1:2017 clause 5.2.2.

iv. The manufacturer shall demonstrate, through their quality programme, the thermal safety of the trace heating cable with respect to time.

v. A copy of this certificate shall be provided with the equipment or made available on request.

vi. Each unit shall be marked with the temperature class and assigned maximum surface temperature appropriate to the maximum permissible workpiece temperature, as defined on this certificate.

vii. The product incorporates separately certified parts; the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.

viii. The manufacturer shall provide the end-user and/or installer with an appropriate copy of the ATEX certificate and Instructions Manual for the separately certified parts fitted onto the equipment.

14 Specific Conditions of Use (Special Conditions)

The following conditions relate to the safe use and/or installation of the equipment:

i. The equipment comprises previously certified parts; the user and/or installer shall install and commission the equipment taking into account any restrictions or specific conditions of use that are applicable to the previously certified devices/parts that are fitted to the equipment.

Certificate Annex

Certificate Number	**CML 18ATEX3378X**
Equipment	**LONGLINE Round High Voltage (LLR-HV)**
Manufacturer	**Heat Trace Limited**

The following documents describe the equipment or component defined in this certificate:

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
HC4511/C	1 of 1	3	16 May 2019	Certification Drawing for Longline Round (LLR-HV) 40mm^2 – 60mm^2
HC4513/C	1 of 1	3	16 May 2019	Certification Drawing for Cable Marking LLR-HV (HTS1FAR-A, AS, AF, AT & AP)
LLR-02/C	1 of 1	1	16 May 2019	Certification Drawing for LLR-HV Marking Label
LLR-03/C	1 of 1	1	16 May 2019	LLR HV ATEX & IECEx Label
LLR-HV DRUM LABEL	1 of 1	1	16 May 2019	Drum Cable Label – for Cable Type LLR-HV
TK/HTS1FAR/C	1 of 1	0	16 May 2019	Termination GA for LLR HTS1FAR Via a Cable Gland (e or d)

Issue 1

Drawing No	Sheets	Rev	Approved date	Title
HC4511/C	1 of 1	4	13 Oct 2021	Certification Drawing for Longline Round (LLR-HV) 40mm^2 – 60mm^2
HC4513/C	1 of 1	4	13 Oct 2021	Certification Drawing for Cable Marking LLR-HV (HTS1FAR-A, AS, AF, AH, AM, AP & AV)