

UK Type Examination Certificate CML 21UKEX2457X Issue 0**United Kingdom Conformity Assessment**

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **ExLRT Loop Resistance Tester**
- 3 Manufacturer **MK Test Systems Ltd.**
- 4 Address **ATE House,
Westpark 26,
Chelston,
Wellington,
TA21 9AD**

- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), 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 Schedule 1 of the Regulations.

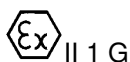
The examination and test results are recorded in the confidential reports listed in Section 12.

- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This UK Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.
- 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 60079-11:2012

- 10 The equipment shall be marked with the following:



Ex ia IIA T3 Ga

Ta = -20°C to +60°C





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11 Description

The ExLRT Loop Resistance Tester is portable battery powered equipment which is used for measuring the resistance of the electrical bonding systems within aircraft.

The equipment comprises the main control unit which houses the electronic measurement and control circuits in a non-metallic enclosure, a replaceable battery pack (safe area replacement only), loop coupling clamps, and a pair of joint probes. In use, one of the coupling clamps is driven with an AC voltage to induce current into the loop, whilst the other measures the current in the loop allowing the resistance to be measured. The joint probes allow the impedance across a part of the loop to be measured.

The battery pack is detachable and may be charged in the safe area only, either via a charging socket on the equipment itself, or in a separate charger.

The loop coupling clamps and the joint probes are connected to the main control unit via circular multi-pole plugs and sockets.

The equipment contains an optional Bluetooth wireless interface which may be used whilst in the hazardous area. A USB port is provided for connection to external equipment and this may be used in the safe area only.

Intrinsic safety is achieved by limiting energy storage and discharge within the equipment.

Variation 1

- i. The introduction of an alternative cell type

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	06 Aug 2021	R14502A/00	Issue of the prime certificate.
1	01 Aug 2023	R16697A/00	The introduction of variation 1

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

13 Conditions of Manufacture

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

- i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.



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- ii. The manufacturer shall ensure that any external source of power provided for use with this equipment has a maximum output voltage of 6.3V and which complies with one of the following:
- Is a SELV or PELV system
 - A safety isolating transformer complying with the requirements of IEC 61558-2-6 or technically equivalent standard
 - Apparatus complying with the IEC60950 series, IEC61010-1, or a technically equivalent standard
 - Fed directly from cells or batteries

14 Specific Conditions of Use

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

- i. The ExLRT shall only be used with the couplers and probes supplied by MK Test Systems Ltd.
- ii. The USB interface shall not be connected to any external equipment whilst in the hazardous area.
- iii. The equipment shall not be connected to any external source of power whilst in the hazardous area.
- iv. The battery pack shall not be disconnected, replaced, or charged in a hazardous area.
- v. The battery pack shall only be replaced with type XLR-2600 supplied by MK Test Systems Ltd. and marked for use with the ExLRT.
- vi. External power shall only be supplied from a power supply provided by MK Test Systems Ltd. and marked for use with the ExLRT equipment.

Certificate Annex

Certificate Number CML 21UKEX2943X
Equipment ExLRT Loop Resistance Tester
Manufacturer MK Test Systems Ltd.



The following documents describe the equipment defined in this certificate:

Issue 0

Drawing no.	Sheets	Rev	Approved date	Title
XLR-902	1 of 1	03	17 Jan 2020	ExLRT Connection Diagram
XLR-903	1 to 5	04	17 Jan 2020	XLR-1230-00-PC Power board Schematics and parts list
XLR-904	1 to 11	03	17 Jan 2020	XLR-1220-00-PC Main controller board Schematics/parts list
XLR-905	1 of 1	01	17 Jan 2020	XLR-1240-00-PC Battery interface board Schematics/parts list
XLR-906	1 of 1	01	17 Jan 2020	XLR-1271-00-PC Right panel button board Schematic/part list
XLR-907	1 of 1	01	17 Jan 2020	XLR-1270-00-PC Left panel button board Schematics/parts list
XLR-908	1 of 1	01	17 Jan 2020	XLR-1262-00-PC USB interface board Schematics/parts list
XLR-909	1 of 1	01	17 Jan 2020	XLR-1260-00-PC Loop interface FPC Schematics/parts list
XLR-910	1 of 1	01	17 Jan 2020	XLR-1261-00-PC Joint interface FPC Schematics/parts list
XLR-911	1 of 1	01	17 Jan 2020	XLR-2600-00-PC Battery pack board Schematics/parts list
XLR-912	1 to 2	01	17 Jan 2020	XLR-3210-00-PC Loop inline controller Schematics/parts list
XLR-913	1 to 2	02	17 Jan 2020	XLR-4310-0x-PC Joint probe Schematics/parts list
XLR-914	1 to 10	03	17 Jan 2020	XLR-1230-00-PC Power board PCB artwork
XLR-915	1 to 11	02	17 Jan 2020	XLR-1220-00-PC Main controller board PCB artwork
XLR-916	1 to 6	02	17 Jan 2020	XLR-1240-00-PC Battery interface board PCB artwork
XLR-917	1 to 6	02	17 Jan 2020	XLR-1271-00-PC Right panel button board PCB artwork
XLR-918	1 to 6	02	17 Jan 2020	XLR-1270-00-PC Left panel button board PCB artwork
XLR-919	1 to 6	02	17 Jan 2020	XLR-1262-00-PC USB interface board PCB artwork
XLR-920	1 to 7	01	17 Jan 2020	XLR-1260-00-PC Loop interface FPC PCB artwork

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Drawing no.	Sheets	Rev	Approved date	Title
XLR-921	1 to 7	01	17 Jan 2020	XLR-1261-00-PC Joint interface FPC PCB artwork
XLR-922	1 to 6	02	17 Jan 2020	XLR-2600-00-PC Battery pack board PCB artwork
XLR-923	1 to 10	02	17 Jan 2020	XLR-3210-00-PC Loop inline controller PCB artwork
XLR-924	1 to 10	02	17 Jan 2020	XLR-4310-0x-PC Joint probe PCB Artwork
XLR-926	1 to 2	04	17 Jan 2020	Cables specification
XLR-2600-00-GA	1 to 2	7	17 Jan 2020	ExLRT battery pack assembly
XLR-2601-01-DT	1 of 1	3	17 Jan 2020	Battery Front
XLR-2601-02-DT	1 of 1	3	17 Jan 2020	Battery Rear
XLR-2602-01-SA	1 of 1	3	17 Jan 2020	Battery Sub Assembly
XLR-2607-03-RS	1 to 3	1	17 Jan 2020	Battery Label requirements
XLR-3001-00-WD	1 of 1	1	17 Jan 2020	ExLRT Loop Cable Assembly - MK52 Clamps Wiring Diagram
XLR-3001-XX-GA	1 of 1	2	17 Jan 2020	ExLRT Loop Cable Assembly - MK52 Clamps
XLR-3102-00-SA	1 of 1	2	17 Jan 2020	MK52 Split Core with windings
XLR-3201-00-SA	1 of 1	2	17 Jan 2020	Loop Cable Sub Assembly
XLR-3301-00-SA	1 of 1	2	17 Jan 2020	Drive Coupler Sub Assembly (Red)
XLR-3302-00-SA	1 of 1	2	17 Jan 2020	Sense Coupler Sub Assembly (Blue)
XLR-4001-00-WD	1 of 1	1	17 Jan 2020	ExLRT Joint Probe Cable Assembly Wiring Diagram
XLR-4001-XX-GA	1 of 1	2	17 Jan 2020	ExLRT Joint Cable Assembly
XLR-4201-00-SA	1 of 1	2	17 Jan 2020	Connector terminated to Cable only
XLR-4301-00-SA	1 of 1	2	17 Jan 2020	Master Joint Probe
XLR-4302-00-SA	1 of 1	2	17 Jan 2020	Slave Joint Probe
XLR-1000-00-GA	1 to 2	7	17 Jan 2020	ExLRT General Assembly
XLR-1007-04-RS	1 to 5	3	17 Jan 2020	ExLRT Labelling Requirement
XLR-1100-00-SA	1 of 1	4	17 Jan 2020	Front Module Sub Assembly
XLR-1300-00-SA	1 to 2	6	17 Jan 2020	Front Module Fascia Sub Assembly
XLR-1302-00-SA	1 of 1	1	17 Jan 2020	Front Fascia Assembly
XLR-1400-00-SA	1 to 2	4	17 Jan 2020	Front Module Cover Sub Assembly
XLR-1500-00-SA	1 to 2	5	17 Jan 2020	Rear Module Sub Assembly
XLR-1600-00-SA	1 to 2	4	17 Jan 2020	Rear Module Fascia Sub Assembly

Certificate Annex

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Drawing no.	Sheets	Rev	Approved date	Title
XLR-1700-00-SA	1 of 1	4	17 Jan 2020	Rear Module Cover Sub Assembly
XLR-1800-00-SA	1 of 1	5	17 Jan 2020	Battery Door Sub Assembly
XLR-1007-04-DT	1 of 1	3	06 Aug 2021	ExLRT Label set
XLR-1007-04-RS-4	1 to 5	-	06 Aug 2021	Label requirement ExLRT

Issue 1

Drawing No.	Sheets	Rev	Approved date	Title
XLR-2602-01-SA	1 of 1	04	01 Aug 2023	Battery Sub Assembly