

1 **UNITED KINGDOM CONFORMITY ASSESSMENT**
2 **UK TYPE EXAMINATION CERTIFICATE**

3 **Product Intended for use in Potentially Explosive Atmospheres**
4 **UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1**

5 Type Examination Certificate Number: **ExV 21UKEX1016X** Issue: **0**

6 Product: **Digital manometer, type LEX 1 Ei and type LEO RECORD Ei**

7 Manufacturer: **KELLER AG für Druckmesstechnik**

8 Address: **St. Galler Strasse 119, CH 8404 Winterthur, Switzerland**

9 This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

10 ExVeritas Limited Approved Body number 2585, 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 by UKSI 2019:696), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

11 Compliance with the applicable Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0: 2018 **EN 60079-11:2012**

Except in respect of those requirements listed at section 16 of the schedule to this certificate.

12 If the sign “X” is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

13 This TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

14 The marking of the equipment shall include the following:



T_{amb}: Refer to Section 13 'Description of Product'



No. 8613

On behalf of ExVeritas



S Clarke CEng MSc FIET
Managing Director

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Schedule

13 Description of Product

The digital manometer type LEX 1 Ei or type LEO RECORD Ei is a battery-powered pressure gauge and serves for the measurement and storage of pressure values. The digital manometer type LEX 1 Ei or LEO RECORD Ei may be used with a PT1000 temperature sensor. The RS485 interface shall only be connected outside the hazardous area.

For relationship between type of equipment, ambient temperature and temperature class, reference is made to the following table.

Digital manometer type	Ambient temperature	Temperature class
LEX 1 Ei	-20° C to +65 °C	T6
LEO RECORD Ei	-20 °C to +60 °C	T4

Electrical data

Internal supply LEX 1 Ei	3.3 V (DC); type of battery approved for power supply: Renata CR2430MFR, size coin cell
Internal supply LEO RECORD Ei	3.6 V (DC); type of battery approved for power supply: Tadiran SL-760, size AA
Temperature sensor LEO RECORD Ei	In type of protection Intrinsic Safety Ex ia IIC; When connecting an external PT-1000 temperature sensor, the maximum permissible thermal contact resistance after installation must not exceed $R_{th} = 900 \text{ K/W}$
Interface RS485 LEX 1 Ei and LEO RECORD Ei	Only for connection outside the hazardous area. The connected loads shall not exceed: safety related maximum voltage: $U_m = 6.3 \text{ V (DC)}$ connected power: $P < 0.9 \text{ W}$

14 Descriptive Documents

14.1 Associated Report and Certificate History:

Report Number	Cert Issue Date	Issue	Comment
R3481/A/4	2021-12-16	0	Initial issue of the Prime Certificate

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14.2 Compliance Drawings:

Title:	Drawing No.:	Rev. Level:	Date:
Technisches Dossier	TD070201	10	17.10.2018
Technische Beschreibung LEX 1 Ei	LEX 1 Ei	-	22.08.2018
Kalkulationstabellen 9I152 LEX 1 Ei	9I152 LEX 1 Ei	-	25.10.2018
Technische Beschreibung LEO Record Ei	LEO Record Ei	-	22.08.2018
Kalkulationstabellen 9I151 LEO Record Ei	9I151 LEO Record Ei	-	25.10.2011
Temperaturmessung im Verguss	Messung der Temperatur An Komponenten im Verguss	-	06.01.2005
Messung Temperaturerhöhung am Silizium-Chip des Drucksensors	Ermittlung Temperaturerhöhung am Silizium- Chip des Drucksensors	-	06.01.2005
Ergänzende Temperaturmessung für geänderte Bauelement	ATEX Messungen	-	08.04.2010
Testbericht RENATA 2430 MFR Kurzschlussstrom	Test251	-	26.10.2010
Mech. Zeichnung LEO Record Ei	81730	f	09.07.2018
Mech. Zeichnung Deckel zu LEO Record Ei	81730.xx	a	14.10.2011
Mech. Zeichnung LEO Record Ei mit kapazitivem Sensor	81736.5	d	09.07.2018
Mech. Zeichnung LEX 1 Ei	81770	e	09.07.2018
Mech. Zeichnung Deckel zu LEX 1 Ei	81770.xx	a	17.10.2011
Mech. Zeichnung LEX 1 Ei mit kapazitivem Sensor	81777.5	d	09.07.2018
Mech. Zeichnung	81790	B	19.02.2013

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Title:	Drawing No.:	Rev. Level:	Date:
Glasdurchführung Ei			
Printdokumentation LEO Record Ei	9I151	D	17.10.2018
Printdokumentation LEX1 Ei	9I152	D	17.10.2018
Printdokumentation kapazitiver Sensor	9C012	A	20.11.2015
Betriebsanleitung . LEX1 Ei	LEX 1 Ei	-	28.09.2018
Betriebsanleitung . LEO Record Ei	LEO Record Ei	-	28.09.2018
Testbericht Tadiran SL-760 Kurzschlussstrom	PK10V247	-	21.10.2010
Testbericht Elektrostatische Aufladung	PK07V233	-	30.08.2010
Enivarmungsmessung zur Bestimmung des Rth	PTB-MP-216072-01	-	12.07.2016
Bauteilerwärmung in Zusammenhang mit T6	PTB-MP-212131-01	-	28.06.2013
Marking Drawing For UKCA Approval in United Kingdom (LEO Record-Ei & LEX1-Ei)	04-00013-02	A	08.11.2021

15 Specific Conditions of Use

15.1 Special Conditions for Safe Use

1. The maximum permissible ambient temperature range for the digital manometer depends on the type of equipment and shall be taken from the above table.
2. The temperature class of the digital manometer depends on the type of equipment and shall be taken from the above table.
3. The RS485 digital interface of the digital manometer shall be connected to the manometer and operated only outside the hazardous area. A safety-related maximum voltage of $U_m = 6.3 \text{ V}$ and power of 0.9 W shall not be exceeded.
4. The digital manometer type LEO RECORD Ei may be used alternatively with a temperature sensor e.g., PT1000 including the associated cable. The thermal resistance shall be calculated at the installation and shall not exceed the value of $R_{th} = 900 \text{ K/W}$. The thermal resistance is related to the Temperature Class T4.
5. The batteries of the digital manometer may be replaced inside the hazardous area.

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15.2 Routine tests

- None

16 Essential Health and Safety Requirements (Regulations Schedule 1)

Essential Health and Safety Requirements are addressed by the standards listed in section 9 and where required the report listed in section 14.1

The manufacturer shall inform ExVeritas of any modifications to the design of the product described by this schedule.