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UNITED KINGDOM CONFORMITY ASSESSMENT

UK-TYPE EXAMINATION CERTIFICATE



2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres –**
UKSI 2016:1107 (as amended) – Schedule 3A, Part 1

3 **UK-Type Examination Certificate No:** **FM22UKEX0061X**

4 **Equipment or protective system:** **Model 882 Weighing System comprising:**
(Type Reference and Name) 882IS and 882IS Plus Digital Weight Indicators;
mb-EPS-100-240-X2 Dual Output Power Supply &
IS6V2 Battery Module.

5 **Name of Applicant:** **Rice Lake Weighing Systems**

6 **Address of Applicant:** **230 W Coleman St.,**
Rice Lake, WI 54868
United States of America.

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8 FM Approvals Ltd, Approved Body number 1725, 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 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.

The examination and test results are recorded in confidential report number:

PR462394 dated 2nd December 2022

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN IEC 60079-0:2018, EN 60079-11:2012, EN 60079-18:2015+A1:2017 and
EN 60529:1991+A1:2000+A2:2013.

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

11 This UK-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance with the Regulations. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

Victor Aluko-Oginni
Certification Manager, FM Approvals Ltd.

Issue date: 7th December 2022

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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F UKEX 020 (Jan/21)



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SCHEDULE

to UK-Type Examination Certificate No. FM22UKEX0061X

- 12 The marking of the equipment or protective system shall include:



882IS, 882IS Plus Digital Weight Indicators & IS6V2 Battery Module

II 1 G Ex ia IIC T4 Ga -10°C ≤ Ta ≤ +40°C

II 2 D Ex ib IIIC T135°C Db -10°C ≤ Ta ≤ +40°C

mb-EPS-100-240-X2 Dual Output Power Supply

II 2(1) G Ex mb [ia Ga] IIC T4 Gb -10°C ≤ Ta ≤ +40°C

II 2(1) D Ex mb [ia Da] IIIC T135°C Db -10°C ≤ Ta ≤ +40°C

- 13 **Description of Equipment or Protective System:**

The Model 882 Weighing System comprises the 882IS or 882IS Plus Digital Weight Indicators; the mb-EPS-100-240-X2 Power Supply & the IS6V2 Battery Module.

The 882IS and 882IS Plus Digital Weight Indicators are housed in a rectangular stainless steel enclosure with an ingress rating of IP66 and incorporating the CPU board and LCD display visible through a polymeric overlay. The 882IS Plus Digital Weight Indicator incorporates a numeric keypad, the 882IS has a display with no keypad. The indicators are powered by an external power supply and have input parameters $U_i = 7.9V$, $I_i = 3.65A$, $C_i = 37.68 \mu F$, $L_i = 0 \mu H$, $P_i = 1.25W$. There are five intrinsically safe input / output circuits: J1 Load Cell; J2 Digital Input; J3A RS485; J1 Fiber Optic and J3 Power Input.

The mb-EPS-100-240-X2 Dual Output Power Supply is housed in a rectangular steel enclosure and has fully encapsulated electronics. The power supply is intended for use with the 882IS and 882IS Plus Digital Weight Indicators and has $U_o = 7.875 V$, $I_o = 1.326 A$, $C_o = 8.8 \mu F$, $L_o = 20.2 \mu H$, $P_o = 2.6 W$ A per channel. The IS6V2 Battery Module contains a 6V, 10AH sealed lead acid battery housed in a stainless steel enclosure. The supply provides one intrinsically safe output. The battery supply is intended for use with the 882IS and 882IS Plus Digital Weight Indicators and has $U_o = 7.05 V$, $I_o = 3.56 A$, $C_o = 14.6 \mu F$, $L_o = 20.2 \mu H$, $P_o = 6.0 W$.

Operation Temperature Ranges:

The ambient operating temperature range of the Weighing System is -10°C to 40°C.

Electrical data:

882IS & 882IS Plus Digital Weight Indicators

Input parameters:

Connection	U_i	I_i	C_i	L_i	P_i
J3A	5.88 V	3.65 A	37.68 μF	0 μH	1.25 W
J3	7.9 V	3.65 A	6.38 μF	0 μH	6.27 W

Output parameters:

Connection	U_o	I_o	C_o	L_o	P_o
J1	5.88 V	150 mA	5.32 μF	1577 μH	220.5 mW
J2	5.88 V	500 mA	5.32 μF	140 μH	735 mW
J3A	5.88 V	3.65 A	5.32 μF	2.669 μH	1.25 W

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SCHEDULE

to UK-Type Examination Certificate No. FM22UKEX0061X

mb-EPS-100-240-X2. Power Supply

U_o	I_o	C_o	L_o	P_o
7.875 V	1.326 A	8.8 µF	20.2 µH	2.6 W

IS6V2. Battery Module

U_o	I_o	C_o	L_o	P_o
7.05 V	3.56 A	14.6 µF	2.8 µH	6.0 W

14 Specific Conditions of Use:

1. The surface of the LCD display of the 882IS /882IS Plus Weight Indicator is considered to constitute an electrostatic discharge hazard. Clean only with a damp cloth.
2. The IS6V2 Battery Module cable lockout device must be installed over the connection between the battery and the cable. Lockout device must be in place at all times in the hazardous area and can only be removed in a non-hazardous area. The lockout device must be re-installed prior to re-entering the hazardous area.
3. The IS6V2 Battery Module is for use only with the Model NP10-6 battery manufactured by ENERSYS.

15 Essential Health and Safety Requirements:

In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the confidential report identified in item 8.

16 Test and Assessment Procedure and Conditions:

This UK-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for UKCA Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Regulations in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's UKCA Certification Scheme.

17 Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Approved Body.

18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
7 th December 2022	Original Issue.

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Blueprint Report

Rice Lake Weighing Systems (1000003334)

Class No 3610 Date Printed October 13 2022

Original Project I.D. 3062120

Certificate I.D. FM22UKEX0061X

<u>Drawing No.</u>	<u>Revision</u>	<u>Drawing Title</u>	<u>Last Report</u>	<u>Electronic Drawing</u>
163768	C	GASKET 880 INDICATOR	RR224409	Yes (pdf)
174868	D	OVERLAY 882IS INDICATOR MEMBRANE SWITCH WITH NUMERIC KEYS	RR227796	Yes (pdf)
175220	D	OVERLAY 882IS INDICATOR MEMBRANE SWITCH WITH NUMERIC KEYS	RR227796	Yes (pdf)
180801	C	ENCLOSURE 882IS IS INDICATOR	3062120	Yes (pdf)
180831	C	BATTERY OPTION IS6VS	RR227796	Yes (pdf)
180837	B	POWER SUPPLY MB-EPS-100-240-X2	3062120	Yes (pdf)
180862	C	LABEL FM DATAPLATE 882IS	PR462394	Yes (pdf)
180948	C	882IS CONTROL DRAWING	RR231732	Yes (pdf)
182301	A	mb-EPS-100-240-X2 CONTROL DRAWING	3062120	Yes (pdf)
185634	A	IS POTTED BARRIER FOR IS6V2 BATTERY	3062120	Yes (pdf)
186430	A	IS6V2 BATTERY CONTROL DRAWING	3062120	Yes (pdf)
187140	A	POWER CORD ASSY 882IS POWER SUPPLY	3062120	Yes (pdf)
190545	C	LABEL FM DATAPLATE IS6V2 BATTERY BOX	PR462394	Yes (pdf)
190546	B	LABEL FM DATAPLATE MB-100-240-X2	PR462394	Yes (pdf)
191698	C	882IS/882IS PLUS CONDITIONS OF USE IN HAZARDOUS LOCATIONS	PR462394	Yes (pdf)
882IS-IND	B	INDICATOR, 882IS PLUS LCD DISPLAY	3062120	Yes (pdf)
A174791	B	PCB ASSY 882IS CPU	RR219977	Yes (pdf)
A180631	B	PCB ASSY 882IS DUAL PWRSUP	RR220857	Yes (pdf)
A185628	A	PCB ASSEMBLY IS6V2 BARRIER	3062120	Yes (pdf)
B174791RB1_BOM	B1	ASSY PCB 882IS DISPLAY/CPU BOM	RR227796	Yes (pdf)
B180631RB_BOM	B	ASSY PCB 882IS PWRSUP BOM	RR227796	Yes (pdf)
B185628RA_BOM	A	ASSY PCB 185628 IS6V_BARRIER BOM	3062120	Yes (pdf)
DS174791	B1	SUBJECT: ASSEMBLY, PRINTED CIRCUIT BOARD 882IS HMI 17491	RR227796	Yes (pdf)
DS180631	B	PCB DESIGN SPEC 882IS DUAL POWER SUPPLY	RR220857	Yes (pdf)
DS185628	A	PCB DESIGN SPEC IS6V2 BARRIER	3062120	Yes (pdf)
F174791	B	PCB Fabrication 882IS CPU	RR219977	Yes (pdf)
F180631	B	PCB FABRICATION 882IS DUAL POWER SUPPLY	RR220857	Yes (pdf)
F187278	A	PCB FABRICATION IS6V2 BARRIER BOARD	3062120	Yes (pdf)
RLW494	B	ENGINEERING SPEC SWITCH MEMBRANE	RR221534	Yes (pdf)
S174791	B1	882IS CPU RA1 PCB BLOCK DIAGRAM	RR227796	Yes (pdf)
S180631RB_SCH	B	SCHEMATIC 882IS DUAL PWRSUP PCB BLOCK DIAGRAM	RR227796	Yes (pdf)
S185628RA_SCH	A	SCHEMATIC IS6V2 BARRIER IS BARRIER CKT	3062120	Yes (pdf)