

UK Type Examination Certificate CML 23UKEX2153U 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 **FB Remote I/O Gateway, type FB82*B.1.EL***

3 Manufacturer **Pepperl+Fuchs SE**

4 Address **Lilienthalstrasse 200
68307 Mannheim
Germany**

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 43 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:

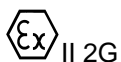
EN IEC 60079-0:2018

EN 60079-1:2014

EN 60079-5:2015

EN IEC 60079-7:2015+A1:2018

10 The equipment shall be marked with the following:



Ex db eb ib q IIC Gb



CML 23UKEX2153U
Issue 0

11 Description

The component FB Remote I/O Gateway, type FB82*B.1.EL* act as communication interface between process control systems in safe area and sensors/actors in hazardous areas via FB I/O modules.

The component FB Remote I/O Gateway, type FB82*B.1.EL* is intended to be mounted in areas requiring up to EPL Gb (Zone 1) on approved backplanes FB BP.

The component FB Remote I/O Gateway, type FB82*B.1.EL* listed in this document, meet the relevant parameter of FB GW of FB Concept.

The complete type code is listed below:

FB Remote I/O Gateway:

type FB8220B.1.EL: Ethernet I/P Adapter

type FB8221B.1.EL: Gateway Modbus TCP

type FB8222B.1.EL: Gateway Profinet

type FB8230B.1.EL: Gateway Profibus

Electrical data

- i. The Non-IS signals are derived from the power supply FB PS via the backplane FB BP and/or applied at M12 front connectors of the FB Remote I/O Gateway, type FB82*B.1.EL*.
- ii. All Non-IS signals listed below are Extra-Low Voltage Signals, type: SELV or PELV.
- iii. All Non-IS signals of FB Remote I/O Gateway must meet over voltage category II (or better). The maximum voltage U_m , (e.g. 60 V shall only be applied as a common mode failure voltage (in respect to PA/PE). As differential mode failure voltage the rated voltage U_r (e.g. +12.48V) has to be applied.

(Backplane) Power supply rail:

Value	Backplane Connector Pin 4 [+], Pin 5 [-]
Nominal voltage (U_n)	12VDC SELV/PELV
Rated Voltage (U_r)	12VDC (-2/+4%), SELV/PELV
Maximum voltage (U_m)	60VDC

(Backplane) Bus signal:

Value	Backplane Connector Pin 2, Pin 3
Nominal voltage (U_n)	$\pm 2.5V$ signal with reference level 2.5 Vdc (Manchester-Signal)
Rated Voltage (U_r)	12VDC (-2/+4%) (SELV/PELV, same GND reference as power supply)
Maximum voltage (U_m)	60VDC



CML 23UKEX2153U
Issue 0

Backplane) Data and control signals:

Value	Backplane Connector Pin 1, 8-11
Nominal voltage (Un)	5.4VDC
Rated Voltage (Ur)	12VDC (-2/+4%) (SELV/PELV, same GND reference as power supply)
Maximum voltage (Um)	60V

Backplane) Fieldbus signal:

Value	Backplane Connector Pin 7, 12-14
Nominal voltage (Un)	Depends on fieldbus: +5V (RS-485) +24V (Foundation fieldbus)
Rated Voltage (Ur)	Not defined
Maximum voltage (Um)	50VDC (SELV/PELV) RS 485 32VDC (SELV/PELV) Foundation fieldbus

FB GW M12 front connector:

Value	Front Connector, Port 1 or 2
Nominal voltage (Un)	+5 V (Ethernet)
Rated Voltage (Ur)	Not defined
Maximum voltage (Um)	32 Vdc (SELV/PELV) Ethernet

In respect to FB concept, the permitted ambient temperature range for the component FB Remote I/O Gateway, type FB82*B.1.EL* is: $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +60^{\circ}\text{C}$.

The ambient temperature range is referenced to measurement point in a distance of 30mm perpendicular to the centre of the front of the component FB Remote I/O Gateway, type FB82*8.1 EL*.

The maximum temperature rise on the surface of the component FB Remote I/O Gateway, type FB82*B.1.EL* is 30 K .

Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	13 Apr 2023	R16366G/00	Issue of Prime Certificate

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

12 Conditions of Manufacture

None.



CML 23UKEX2153U
Issue 0

13 Schedule of Limitations

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

- i. The component FB Remote I/O Gateway, type FB82*B.1.EL* shall be provided with protection that ensures a pollution degree 2 (or better).
- ii. The component FB Remote I/O Gateway, type FB82*B.1.EL* shall only be used together with approved backplanes FB BP, power supply FB PS, bus-termination FB BT and I/O modules FB IO.
- iii. Supply the component FB Remote I/O Gateway, type FB82*B.1.EL* with a power supply FB PS that meets the requirements for safety extra-low voltage (SELV) or protected extra-low voltage (PELV) with a maximum voltage of $U_m=60V$
- iv. All circuits connected to the device shall comply with the overvoltage category II (or better) according to EN 60664-1.
- v. Permitted supply short-circuit current for the component is 50A.
- vi. The component FB Remote I/O Gateway, type FB82*B.1.EL* shall be installed and operated only in a certified surrounding enclosure that complies with the safety requirements for EPL Gb enclosures according to EN 60079-0 and are rated with the degree of protection IP54 according to 60529.
- vii. The shield of the M12 connector shall be connected to the equipotential bonding of the hazardous are. Potential differences between this shield and the backplane have to be avoided.
- viii. The classification of the component FB Remote I/O Gateway type FB82*B.1.EL* into temperature class must not exceed T4.

Installation in areas requiring category 2G/EPL Gb equipment:

- i. The components FB PS and FB BT shall be installed and operated only in surrounding enclosures that comply with the safety requirements for EPL Gb enclosures according to EN 60079-0 and are rated with the degree of protection IP54 according to EN 60529.

Certificate Annex

Certificate Number CML 23UKEX2153U
Equipment FB Remote I/O Gateway, type FB82*B.1.EL*
Manufacturer Pepperl+Fuchs SE



The following documents describe the equipment defined in this certificate:

Issue 0

For drawings describing the equipment, refer to attached certificate PTB 19 ATEX 2007U. In addition to the drawings listed on PTB 19 ATEX 2007U, the following drawings include the additional marking required for this UK Type Examination certification:

Drawing No	Sheets	Rev	Approved date	Title
16-1555CM-10	1 to 2	0	13 Apr 2023	Additional Marking Requirements for UKCA