



(1) **UK - Type Examination Certificate**

(2) Equipment and protective systems intended for use in potentially explosive atmospheres – **UKSI 2016:1107 (as amended)**

(3) UK - Type Examination Certificate Number

**EPS 22 UKEX 1 045 X**

**Revision 0**

(4) Equipment: BEx1-Remote IO - Type 142\*\*\*\*\*, 143\*\*\*\*\*, 152\*\*\*\*\*, 153\*\*\*\*\*

(5) Manufacturer: BEx-Solution GmbH

(6) Address: Lange Straße 99  
76199 Karlsruhe  
Germany

(7) This equipment and any acceptable variation thereto are specified in the annex to this certificate and the documentation therein referred to.

(8) Bureau Veritas Consumer Products Services United Kingdom Limited, approved body No. 8507 in accordance with UKSI 2016:1107 (as amended) Part 4, certifies that this equipment has been found to comply with the essential health and safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Schedule 1 of UKSI 2016:1107 (as amended). The examination and test results are recorded in the confidential documentation under the reference number 19TH0298.

(9) Compliance with the essential health and safety requirements has been assured by compliance with:

**EN IEC 60079-0:2018**

**EN IEC 60079-7:2015/A1:2018**

**EN 60079-31:2014**

**EN 60079-11:2012**

**EN 60079-18:2015/A1:2017**

(10) 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 annex to this certificate.

(11) This UK - Type Examination Certificate relates only to the design and construction of the specified equipment in accordance with UKSI 2016:1107 (as amended). Further requirements apply to the manufacture of this equipment and its placing on the market. Those requirements are not covered by this certificate.

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**Revision 0**

(12) The marking of the equipment shall include the following:


**Type 142\*\*\*\*\*:**

 II 2(1) G Ex eb mb [ia Ga] IIC T4 Gb  
II (1) D [Ex ia Da] IIIC


**Type 152\*\*\*\*\*:**

 II 2 G Ex eb mb IIC T4 Gb

**Type 143\*\*\*\*\*:**

 II 2(1) G Ex eb mb [ia Ga] IIC T4 Gb  
II 2(1) D Ex tb [ia Da] IIIC T110°C Db

**Type 153\*\*\*\*\*:**

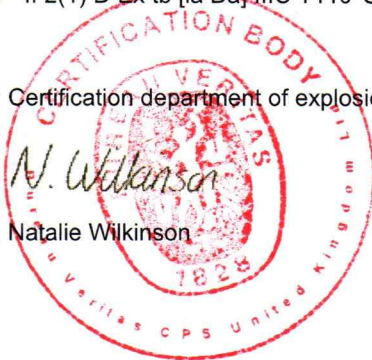
 II 2(1) G Ex eb mb IIC T4 Gb  
II 2 D Ex tb IIIC T110°C Db



Certification department of explosion protection

Warrington, 2022-05-19

*N. Wilkinson*  
Natalie Wilkinson



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(13)

## Annex

(14) **UK - Type Examination Certificate EPS 22 UKEX 1 045 X**

Revision 0

(15) Description of equipment:

### Type 152\*\*\*\* and 153\*\*\*\* (Ex e)

The equipment is a remote IO system with increased safe digital IO channels. The equipment is suitable to be located in zone 1 (EPL Gb) and the output circuits are suitable to be connected to increased safety circuits in zone 1 (EPL Gb). The remote IO system includes a variety of different modules, differing in the bus type to be connected. **Type 152\*\*\*\* (IP 20 Modul):** The equipment requires an enclosure which is fully certified and the installation of the IO modules must be acknowledged by the certification of the enclosure.

### Type 142\*\*\*\* and 143\*\*\*\* (Ex i)

The equipment is a remote IO system which isolates the non-intrinsically safe input circuits and the supply circuits from the intrinsically safe output circuits. It provides a transfer of non-intrinsically safe input signals to intrinsically safe output signals. The input circuits are suitable to be located in zone 1 (EPL Gb) and the output circuits are suitable to be connected to other intrinsically safe circuits in zone 0 (EPL Ga). The equipment is also suitable to be located outside a hazardous area and the output circuits to be connected to other intrinsically safe circuits in zone 0 (EPL Ga). The remote IO system includes a variety of different modules, differing in the bus type to be connected. **Type 142\*\*\*\* (IP 20 Modul):** The equipment requires an enclosure which is fully certified and the installation of the IO modules must be acknowledged by the certification of the enclosure.

The ambient temperature range is:  $-40\text{ }^{\circ}\text{C} \leq T_a \leq 70\text{ }^{\circ}\text{C}$

#### Electrical data:

### Type 142\*\*\*\* and 143\*\*\*\* (Ex i):

$U_m = 30\text{ V DC}$  (Terminals X9 / X10)

Terminal block X1 to X8 (output parameters of each clamp, clamps are not allowed to be combined):

Clamp (26 V):  
 $U_o = 26\text{ V d.c.}$   
 $I_o = 82\text{ mA}$   
 $P_o = 533\text{ mW}$

| Group IIC       |        |        |        |        |
|-----------------|--------|--------|--------|--------|
| $L_o$           | 3 mH   | 1 mH   | 0.5 mH | 0 mH   |
| $C_o$           | 42 nF  | 62 nF  | 78 nF  | 99 nF  |
| Group IIB / III |        |        |        |        |
| $L_o$           | 20 mH  | 2 mH   | 0.5 mH | 0 mH   |
| $C_o$           | 350 nF | 350 nF | 490 nF | 770 nF |

Clamp (9.6 V):  
 $U_o = 9.6\text{ V d.c.}$   
 $I_o = 31\text{ mA}$   
 $P_o = 75\text{ mW}$

| Group IIC       |                 |                   |                   |                   |
|-----------------|-----------------|-------------------|-------------------|-------------------|
| $L_o$           | 49 mH           | 10 mH             | 1 mH              | 0 mH              |
| $C_o$           | 310 nF          | 640 nF            | 1.1 $\mu\text{F}$ | 3.6 $\mu\text{F}$ |
| Group IIB / III |                 |                   |                   |                   |
| $L_o$           | 100 mH          | 10 mH             | 1 mH              | 0 mH              |
| $C_o$           | 2 $\mu\text{F}$ | 3.6 $\mu\text{F}$ | 6.1 $\mu\text{F}$ | 26 $\mu\text{F}$  |

Clamp (GND): Galvanically separated from input GND

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|         | Type: 14200*00              | Type: 14200*01              | Type: 14200*02              |
|---------|-----------------------------|-----------------------------|-----------------------------|
| Clamp 1 | U <sub>o</sub> = 26 V d.c.  | U <sub>o</sub> = 26 V d.c.  | U <sub>o</sub> = 9.6 V d.c. |
| Clamp 2 | GND                         | GND                         | GND                         |
| Clamp 3 | U <sub>o</sub> = 26 V d.c.  | U <sub>o</sub> = 9.6 V d.c. | U <sub>o</sub> = 9.6 V d.c. |
| Clamp 4 | GND                         | GND                         | GND                         |
| Clamp 5 | U <sub>o</sub> = 9.6 V d.c. | U <sub>o</sub> = 9.6 V d.c. | U <sub>o</sub> = 9.6 V d.c. |
| Clamp 6 | GND                         | GND                         | GND                         |
| Clamp 7 | U <sub>o</sub> = 26 V d.c.  | U <sub>o</sub> = 26 V d.c.  | U <sub>o</sub> = 9.6 V d.c. |
| Clamp 8 | GND                         | GND                         | GND                         |

**Type 152\*\*\*\*\* and 153\*\*\*\*\* (Ex e):**

U<sub>m</sub> = 30 V DC (Terminals X9 / X10)

Terminal block X1 to X8 (output parameters of each clamp, clamps are not allowed to be combined):

Clamp (24 V):  
 U<sub>max</sub> = 24 V d.c.  
 I<sub>max</sub> = 0.5 A (clamp 3)  
 I<sub>max</sub> = 2.0 A (clamp 5)

(16) Reference number: 19TH0298

(17) Special conditions for safe use:

**Type 142\*\*\*\*\* , Type 152\*\*\*\*\*:**

The BEx1-Remote IO of the types 142\*\*\*\*\* and type 152\*\*\*\*\* shall be mounted in an enclosure which is fully certified according to UKSI 2016:1107 (as amended). The installation of the IO modules of the types mentioned above shall be acknowledged by the certification of the enclosure.

The permitted range of the service temperature after installation inside the additional enclosure is -40 °C to +70 °C.

**All types:**

The non-intrinsically safe terminals of the equipment (terminals X9 and X10) shall be supplied by a source providing SELV output circuit or conforming to IEC 61010 or IEC 60950 (U<sub>m</sub>=30V DC).

(18) Essential health and safety requirements:

Met by compliance with standards.



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