



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx FTZU 20.0001X** Page 1 of 4 [Certificate history:](#)
Issue 0 (2021-05-21)

Status: **Current** Issue No: 1

Date of Issue: 2023-11-06

Applicant: **Dresser Utility Solutions GmbH**
Hardeckstrasse 2
Karlsruhe 76185
Germany

Equipment: **Gas Volume Conversion Device Corus Evo+ (FGCE2)**

Optional accessory:

Type of Protection: **Intrinsic safety "i"**

Marking: **Ex ia IIB T4 Ga**

Approved for issue on behalf of the IECEx
Certification Body:

Dipl. Ing. Lukáš Martinák

Position:

Head of the Certification Body

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

Fyzikálne technický zkušební ústav
(Physical -Technical Testing Institute)
Pikartská 7, 71607 Ostrava - Radvanice
Czech Republic





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Manufacturer: **Dresser Utility Solutions GmbH**
Hardeckstrasse 2
Karlsruhe 76185
Germany

Manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[CZ/FTZU/ExTR20.0001/00](#)

[CZ/FTZU/ExTR20.0001/01](#)

Quality Assessment Report:

[DE/TPS/QAR20.0015/03](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The equipment Gas-Volume Conversion Device Corus Evo+ (FGCE2) is measuring instrument designed to convert the volume of gas measured under operating conditions to volume under basic conditions. The gas volume information is scanned through the meter's impulse outputs. Gas temperature and gas pressure are measured by integrated transducers. The equipment is built into a housing made of durable plastic with IP66 protection. It features a graphical display and a 6-key keyboard. It is also equipped with pulse inputs for gas meter connection and binary inputs, digital outputs. For communication with the master system, the equipment is equipped with a serial interface RS232 or RS485.

Communications can use infrared, GSM/LTE modem, supplied from the battery-volume HB-03 / HB-04.

The device is powered from the B-03 battery pack or B-03D battery pack with increased capacity. 2G / GSM modem from HB-03 battery pack, 4G / LTE modem from HB-04 battery pack.

The equipment can be powered from an external intrinsically safe source, the equipment assembled with modem can also be powered from an external power supply dedicated to the modem.

The devices can be equipped with a number of expansion modules, some of which change the device marking:

1. Communication board 2G, LTE: Ex ia IIB T3 Ga
2. PWR2 board: Ex ib IIA T3 Gb
3. SCR interface board: Ex ib IIB T4 Gb

The product can be connected to gas meter equipped with certificate active output Cyble

For intrinsic safety parameters see Annex to this CoC.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Under certain extreme circumstances, the plastic enclosure may store an ignition-capable level of electrostatic charge. Therefore the device shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge. The equipment shall only be cleaned with a damp cloth.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1:

Change of the manufacturer's and applicant's name.

Linked the new QAR.

Annex:

[Annex_to_IECEX_FTZU_20_0001X_01.pdf](#)

Applicant: **Dresser Utility Solutions GmbH**
Address: **Hardeckstrasse 2, Karlsruhe 76185, Germany**
Products> **Gas Volume Conversion Device**
Type> **Corus Evo+ (FGCE2)**

Intrinsically safe parameters of all inputs and outputs:

Digital inputs DIN (Terminals DI1, GND, DI2, GND, DI3, GND, DI4, GND)

$U_o = 6,5 \text{ V}$, $I_o = 2 \text{ mA}$, $P_o = 3 \text{ mW}$
 $U_i = 5,5 \text{ V}$, $I_i = 1 \text{ mA}$, $P_i = 1 \text{ mW}$, $C_i = 0$, $L_i = 0$
Gas Group IIA: $C_o = 100 \mu\text{F}$, $L_o = 100 \text{ mH}$
Gas Group IIB: $C_o = 20 \mu\text{F}$, $L_o = 10 \text{ mH}$

Digital outputs DOUT (Terminals U0+, GND0, DO1, DO2, DO3, DO4)

$U_i = 15 \text{ V}$, $I_i = 0,3 \text{ A}$, $\sum P_i = 0,5 \text{ W}$, $C_i = 3,3 \mu\text{F}$, $L_i = 0$

Internal bus IB0, IB1 (Terminals GND, U+, D+, D-)

$U_o = 6,5 \text{ V}$, $I_o = 2,2 \text{ A}$, $P_o = 1,1 \text{ W}$
Gas Group IIA: $\sum C_o = 50 \mu\text{F}$, $\sum L_o = 1 \mu\text{H}$
Gas Group IIB: $\sum C_o = 24 \mu\text{F}$, $\sum L_o = 1 \mu\text{H}$
Maximal cable length: 100 m

Internal bus IB0, IB1 (Terminals GND, U+, D+, D-) only type ELCOR/DATCOM

$U_o = 6,5 \text{ V}$, $I_o = 0,7 \text{ A}$, $P_o = 0,6 \text{ W}$
Gas Group IIA: $\sum C_o = 50 \mu\text{F}$, $\sum L_o = 50 \mu\text{H}$
Gas Group IIB: $\sum C_o = 24 \mu\text{F}$, $\sum L_o = 50 \mu\text{H}$
Maximal cable length: 100 m

HF TMR Interface (Slot 0, Terminals GND, U+, DI1, DI2, U+)

$U_o = 6,5 \text{ V}$, $I_o = 2 \text{ mA}$, $P_o = 3 \text{ mW}$
Gas Group IIA: $C_o = 100 \mu\text{F}$, $L_o = 100 \text{ mH}$
Gas Group IIB: $C_o = 20 \mu\text{F}$, $L_o = 10 \text{ mH}$

EDT Interface (Slot 0, Terminals GND, U+, DI1, DI2, U+)

$U_o = 6,5 \text{ V}$, $I_o = 0,2 \text{ A}$, $P_o = 1,13 \text{ W}$
Gas Group IIA: $C_o = 50 \mu\text{F}$, $L_o = 50 \text{ mH}$
Gas Group IIB: $C_o = 24 \mu\text{F}$, $L_o = 50 \text{ mH}$
Maximal cable length: 100 m

Interface Indexer (Terminals SLOT0 TERMINALS: GND, U+, TXD, RXD, UB)

$U_o = 6,5 \text{ V}$, $I_o = 2,2 \text{ A}$, $P_o = 1,1 \text{ W}$
Gas Group IIA: $\sum C_o = 50 \mu\text{F}$, $\sum L_o = 1 \mu\text{H}$
Gas Group IIB: $\sum C_o = 24 \mu\text{F}$, $\sum L_o = 1 \mu\text{H}$

Interface SCR (Terminals SLOT0 TERMINALS: A, B)

$U_o = 8,0 \text{ V}$, $I_o = 20 \text{ mA}$, $P_o = 160 \text{ mW}$
Gas Group IIA: $C_o = 100 \mu\text{F}$, $L_o = 10 \mu\text{H}$
Gas Group IIB: $C_o = 14 \mu\text{F}$, $L_o = 8 \mu\text{H}$
Maximal cable length: 30 m

Interface NAMUR (Terminals SLOT0 TERMINALS: NAMUR+, NAMUR-)

$U_o = 10,0 \text{ V}$, $I_o = 11 \text{ mA}$, $P_o = 27 \text{ mW}$
 $U_i = 5,5 \text{ V}$, $I_i = 1 \text{ mA}$, $P_i = 1 \text{ mW}$, $C_i = 0$, $L_i = 0$
Gas Group IIA: $C_o = 100 \mu\text{F}$, $L_o = 1 \text{ mH}$
Gas Group IIB: $C_o = 20 \mu\text{F}$, $L_o = 1 \text{ mH}$



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Interface RS485 (Terminals SLOT1, 2 TERMINALS: D+, D-, GND, U+)

$U_i = 10 \text{ V}$, $I_i = 0,15 \text{ A}$, $\sum P_i = 0,33 \text{ W}$, $C_i = 4 \mu\text{F}$, $L_i = 0$

Interface RS232 (Terminals SLOT1, 2 TERMINALS: GND, CTS, RXD, TXD)

$U_i = 20 \text{ V}$, $I_i = 0,15 \text{ A}$, $\sum P_i = 0,46 \text{ W}$, $C_i = 1 \mu\text{F}$, $L_i = 0$

External power supply PWR1 (Terminals SLOT3, PWR1+, PWR1-)

$U_i = 6,5 \text{ V}$, $I_i = 0,2 \text{ A}$, $P_i = 0,41 \text{ W}$, $C_i = 40 \mu\text{F}$, $L_i = 1,1 \text{ mH}$

External power supply PWR2 (Terminals SLOT4, PWR2+, PWR2-)

$U_i = 6,2 \text{ V}$, $I_i = 1,0 \text{ A}$, $P_i = 6,2 \text{ W}$, $C_i = 13 \text{ mF}$, $L_i = 55 \mu\text{H}$

Analog inputs AIN (terminals SLOT1,2 TERMINALS: GND, AI1, GND, AI2)

$U_i = 28 \text{ V}$, $I_i = 93 \text{ mA}$, $P_i = 660 \text{ mW}$, $C_i = 40 \text{ nF}$, $L_i = 0$

Analog outputs AO (terminals SLOT1,2 TERMINALS: AO1+, AO1-, AO2+, AO2-)

$U_i = 28 \text{ V}$, $I_i = 100 \text{ mA}$, $P_i = 660 \text{ mW}$, $C_i = 0,46 \mu\text{F}$, $L_i = 0$

Board EXT1

Digital inputs DI1, DI2 (NAMUR) (terminals SLOT0 TERMINALS: DI1+, DI1-, DI2+, DI2-)

$U_o = 10 \text{ V}$, $I_o = 11 \text{ mA}$, $P_o = 27 \text{ mW}$

$U_i = 5,5 \text{ V}$, $I_i = 1 \text{ mA}$, $P_i = 1 \text{ mW}$, $C_i = 0$, $L_i = 0$

Gas Group IIA: $C_o = 100 \mu\text{F}$, $L_o = 1 \text{ mH}$

Gas Group IIB: $C_o = 20 \mu\text{F}$, $L_o = 1 \text{ mH}$

Digital inputs DI3-DI8 (terminals EXT1-T: GND, DI3, DI4, DI5, DI6, DI7, DI8)

$U_o = 6,5 \text{ V}$, $I_o = 2 \text{ mA}$, $P_o = 3 \text{ mW}$

$U_i = 5,5 \text{ V}$, $I_i = 1 \text{ mA}$, $P_i = 1 \text{ mW}$, $C_i = 0$, $L_i = 0$

Gas Group IIA: $C_o = 100 \mu\text{F}$, $L_o = 100 \text{ mH}$

Gas Group IIB: $C_o = 20 \mu\text{F}$, $L_o = 10 \text{ mH}$

Analog inputs AIN (terminals EXT1-T: GND, AI1, GND, AI2)

$U_i = 28 \text{ V}$, $I_i = 93 \text{ mA}$, $P_i = 660 \text{ mW}$, $C_i = 40 \text{ nF}$, $L_i = 0$

Internal bus IB1 (terminals EXT1-T: GND, U+, D+, D-)

Same parameters as IB0, IB1

Interface RS232 (terminals COM0: GND, CTS, RXD, TXD)

$U_i = 20 \text{ V}$, $I_i = 0,15 \text{ A}$, $\sum P_i = 0,46 \text{ W}$, $C_i = 1 \mu\text{F}$, $L_i = 0$

Interface TMR (Terminals SLOT0 TERMINALS: NAMUR+, NAMUR-)

$U_o = 10,0 \text{ V}$, $I_o = 11 \text{ mA}$, $P_o = 27 \text{ mW}$

$U_i = 5,5 \text{ V}$, $I_i = 1 \text{ mA}$, $P_i = 1 \text{ mW}$, $C_i = 0$, $L_i = 0$

Gas Group IIA: $C_o = 100 \mu\text{F}$, $L_o = 1 \text{ mH}$

Gas Group IIB: $C_o = 20 \mu\text{F}$, $L_o = 1 \text{ mH}$

Degree of protection by enclosure: IP66

Ambient temperature: $-40^\circ\text{C} \leq T_a \leq +70^\circ\text{C}$