

IBExU Institut für Sicherheitstechnik GmbH
An-Institut der TU Bergakademie Freiberg



[1] **EU-TYPE EXAMINATION CERTIFICATE - Translation**

[2] Equipment or protective systems
intended for use in potentially explosive atmospheres, Directive 2014/34/EU

[3] EU-type examination certificate number **IBExU17ATEX1004** | Issue 0

[4] Product: **Data Collector Unit**
Type: WDC-01

[5] Manufacturer: **Woelke Industrieelektronik GmbH**

[6] Address: **Sieperstrasse 1-3**
42551 Velbert
GERMANY

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

[8] IBExU Institut für Sicherheitstechnik GmbH, notified body number 0637 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 Annex II to the Directive.

The examination and test results are recorded in the confidential test report IB-16-3-023.

[9] Compliance with the essential health and safety requirements has been assured by compliance with: EN 60079-0:2012+A11:2013, EN 60079-11:2012 and EN 50303:2000 except in respect of those requirements listed at item [18] of the schedule.

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

[11] This EU-type examination certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the product shall include the following:

Ex I M1 Ex ia I Ma
-20 °C ≤ Ta ≤ +60 °C

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By order

Certificates without signature and seal are not valid. Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.


(Dipl.-Ing. Willamowski)



Freiberg, 2017-04-26

[13] **Schedule**

[14] **Certificate number IBExU17ATEX1004 | Issue 0**

[15] **Description of product**

The data collector unit, as well as the connected sensors, record the environmental conditions such as temperature, humidity and, depending on the sensor, the gas concentration in the surrounding environment. It has 6 serial interfaces, 5 interfaces are optically isolated via optocouplers. Four of these potential-free interfaces are built in RS485 technology, one as RS422. The 6th interface is an internal parameterization interface. A relay board is also included.

The device is intended for use in potentially explosive atmospheres requiring M1 equipment. The sensors belonging to the system and the power supply are not part of this approval.

Technical data

Ambient temperature range: from -20 ° C to + 60 ° C

Type of protection: intrinsic safety "ia"

Electrical data

Supply circuit in protection type intrinsic safety Ex ia I

Pin 1 (VCC) and 3 (GND) U_i 15.5 V DC

I_i 2 A

Effective internal capacitance C_i negligible

Effective internal inductance L_i negligible

BUS circuits in protection type intrinsic safety Ex ia I (per connection)

Pin 1 (BUS A) and 3 (BUSB) RS485

Pin 2 (Y), Pin 4 (Z) only SV5 RS422 U_i 14 VDC

U_o 14 VDC

I_i 318 mA

I_o 214 mA

C_i 1,4 μ F

L_i negligible

C_o 7 μ F

L_o 1 mH

Analog inputs in protection type intrinsic safety Ex ia I (per connection)

Pin 1 (VCC) and 2 (GND) U_o 15.5 V

I_o 850 mA

C_o, L_o 0

Pin 3 (signal) and 2 (GND) U_i 5.88 V

U_o 5.88 V

I_i 47 mA

I_o 6 mA

C_i, L_i negligible

C_o 4.9 μ F

L_o 1 mH

Digital inputs in protection type intrinsic safety Ex ia I (per connection)

X2.1 signal +, X2.2 signal +, X2.3 signal + X2.9 signal GND

U_o 5.88 v

U_i 5.88 V

I_o 6 mA

I_i 6 mA

C_i, L_i negligible

C_o 4.9 μ F

L_o 1 mH

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Frequency inputs in protection type intrinsic safety Ex ia I (per connection)
X3.1 signal +, X3.2 signal +, X3.3 signal +....., X3.6 GND

U_i	15.5 V
I_i	7,1 mA
C_i, L_i	negligible
U_o	0 V
I_o	0 mA
C_o	4.9 μ F
L_o	1 mH

Digital outputs in protection type intrinsic safety Ex ia I (per connection)
X9.1 signal +, X9.2 signal +, X9.3 signal +....., X9.8 signal, X9.10 GND

U_i	0 V
I_i	0 mA
C_i, L_i	negligible
U_o	5.88 V
I_o	2.7 mA
C_o	16 μ F
L_o	25 mH

5 Relay outputs in protection type intrinsic safety Ex ia I (per connection)
X301.1 opener, X301.2 closer, X301.3 change-over contact up to X305.3

U_i	20 V
I_i	1 A
U_o	20 V
I_o	1 A

[16] Test report

The test results are recorded in the confidential test report IB-16-3-023 of 2017-04-26.

The test documents are part of the test report and they are listed there.

Summary of the test results

The data collector unit type WDC-01 fulfils the requirements of the explosion protection for intrinsically safe equipment of group I, category M1 in the type of protection intrinsic safety " ia ".

[17] Specific conditions of use

None

[18] Essential health and safety requirements

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item [9], the following are considered relevant to this product, and conformity is demonstrated in the test report: none

[19] Drawings and Documents

The documents are listed in the test report.

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