

Translation

# EU-Type Examination Certificate

Equipment intended for use in potentially explosive atmospheres  
Directive 2014/34/EU

EU-Type Examination Certificate Number: **BVS 18 ATEX E 040**

Product: **Dosing controller type DC155**

Manufacturer: **Gönzheimer Elektronik GmbH**

Address: **Dr.-Julius-Leber-Str. 2, 67433 Neustadt an der Weinstraße, Germany**

This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

DEKRA EXAM GmbH, Notified Body number 0158, 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 Report No. BVS PP 18.2171 EU.

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 60079-0:2012 + A11:2013    General requirements**  
**EN 60079-11:2012            Intrinsic Safety "i"**

If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

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.

The marking of the product shall include the following:

 **II 2G Ex ib IIC T6 Gb**  
**II 2G Ex ib IIC T4 Gb**

DEKRA EXAM GmbH  
Bochum, 2018-11-09

Signed: Dr Franz Eickhoff

Certifier

Signed: Deniz Pezzutto

Approver

13 **Appendix**  
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**BVS 18 ATEX E 040**

15 **Product description**

15.1 **Subject and type**

Dosing controller type DC155

**Type DC155.x.x.x.x.x.x**

- | a                     | b                      | c                    | d                    | e                  | f                 | g  |
|-----------------------|------------------------|----------------------|----------------------|--------------------|-------------------|--|
| <b>a Analog input</b> |                        |                      |                      |                    |                   |  |
| 0                     |                        |                      |                      |                    |                   |  |
| 1                     |                        |                      |                      |                    |                   |  |
| 2                     |                        |                      |                      |                    |                   |  |
| 3                     |                        |                      |                      |                    |                   |  |
| 4                     |                        |                      |                      |                    |                   |  |
|                       | <b>b Analog output</b> |                      |                      |                    |                   |  |
|                       | 0                      |                      |                      |                    |                   |  |
|                       | 1                      |                      |                      |                    |                   |  |
|                       | 2                      |                      |                      |                    |                   |  |
|                       |                        | <b>c Namur input</b> |                      |                    |                   |  |
|                       |                        | 0                    |                      |                    |                   |  |
|                       |                        | 1                    |                      |                    |                   |  |
|                       |                        |                      | <b>d Pt100 input</b> |                    |                   |  |
|                       |                        |                      | 0                    |                    |                   |  |
|                       |                        |                      | 1                    |                    |                   |  |
|                       |                        |                      |                      | <b>e Interface</b> |                   |  |
|                       |                        |                      |                      | 0                  |                   |  |
|                       |                        |                      |                      | 1                  |                   |  |
|                       |                        |                      |                      | 2                  |                   |  |
|                       |                        |                      |                      | 3                  |                   |  |
|                       |                        |                      |                      | 5                  |                   |  |
|                       |                        |                      |                      |                    | <b>f Protocol</b> |  |
|                       |                        |                      |                      |                    | 0                 |  |
|                       |                        |                      |                      |                    | 2                 |  |
|                       |                        |                      |                      |                    |                   | <b>g Separate power supply for analog output</b> |
|                       |                        |                      |                      |                    |                   | 0 Without separate terminal                      |
|                       |                        |                      |                      |                    |                   | 1 With separate terminal                         |

Depending on the configuration, circuit parts that are not required are not fitted.

15.2 **Description**

The dosing controller type DC155 evaluates signals from a flow meter as part of a dosing device for dosing off liquids and controls the dosing valves accordingly. The DC155 consists of an aluminium housing with polyester front foil into which the intrinsically safe electronics are mounted.

The electronics and all inputs and outputs of the DC155 are intrinsically safe.

The dosing controller is suitable for use in the following ambient temperature range:

Temperature class T6:	-20 °C up to +40 °C
Temperature class T4:	-20 °C up to +70 °C

### 15.3 Parameters

#### 15.3.1 Supply circuit (Terminals 1/2, 5/6 resp. 3, 5/6)

Maximum input voltage	$U_i$	30	V
Maximum input current	$I_i$	160	mA
Maximum input power	$P_i$	2.5	W
Maximum internal capacitance	$C_i$	2	nF
Maximum internal inductance	$L_i$	12	$\mu$ H

#### 15.3.2 Sensor circuit (NAMUR)

Namur input 1 (Terminals 4, 7)

Maximum output voltage	$U_o$	9.4	V
Maximum output current	$I_o$	10	mA
Maximum output power	$P_o$	23	mW
Maximum external capacitance	$C_o$	3.9	$\mu$ F
Maximum external inductance	$L_o$	30	mH

The maximum total current (2 sensors) via Terminal 4 is corresponding to 20 mA.

Namur input 2 (Terminals 4, 9)

Maximum output voltage	$U_o$	9.4	V
Maximum output current	$I_o$	10	mA
Maximum output power	$P_o$	23	mW
Maximum external capacitance	$C_o$	3.9	$\mu$ F
Maximum external inductance	$L_o$	30	mH

The maximum total current (2 sensors) via Terminal 4 is corresponding to 20 mA.

#### 15.3.3 Pulse input (Terminals 8/10, 5/6 active; 8/10, 1/2/3 passive)

For connection to active circuits:

Maximum input voltage	$U_i$	60	V
Maximum input current	$I_i$	160	mA
Maximum input power	$P_i$	not relevant	
Maximum internal capacitance	$C_i$	negligible	
Maximum internal inductance	$L_i$	12	$\mu$ H

For connection to passive circuits: the maximum values correspond to the values of the supply circuit.

#### 15.3.4 Digital input (Terminals 11 to 16, 5/6 active; 11 to 16, 1/2/3 passive)

For connection to active circuits:

Maximum input voltage	$U_i$	60	V
Maximum input current	$I_i$	160	mA
Maximum input power	$P_i$	not relevant	
Maximum internal capacitance	$C_i$	negligible	
Maximum internal inductance	$L_i$	12	$\mu$ H

For connection to passive circuits: the maximum values correspond to the values of the supply circuit.

#### 15.3.5 Digital output (Terminals 17-18, 19-20, 21-22)

Maximum input voltage	$U_i$	30	V
Maximum input current	$I_i$	160	mA
Maximum input power	$P_i$	1.5	W
Maximum internal capacitance	$C_i$	negligible	
Maximum internal inductance	$L_i$	12	$\mu$ H

15.3.6	Analog input (Terminals 23-24, 25-26, 27-28)			
	Maximum input voltage	$U_i$	30	V
	Maximum input current	$I_i$	160	mA
	Maximum input power	$P_i$	not relevant	
	Maximum internal capacitance	$C_i$	negligible	
	Maximum internal inductance	$L_i$	12	$\mu\text{H}$
15.3.7	Serial interface Weighing Amplifier (Terminals 25-26, 27-28)			
	Maximum input voltage	$U_i$	30	V
	Maximum input current	$I_i$	60	mA
	Maximum input power	$P_i$	19	mW
	Maximum internal capacitance	$C_i$	negligible	
	Maximum internal inductance	$L_i$	12	$\mu\text{H}$
15.3.8	Analog output (Terminals 29, 30)			
	Maximum output voltage	$U_o$	30	V
	Maximum output current	$I_o$	23	mA
	Maximum output power	$P_o$	690	mW
	Maximum external capacitance	$C_o$	54	nF
	Maximum external inductance	$L_o$	50	mH
15.3.9	Pt100 circuit (Terminals 31 to 34)			
	Maximum output voltage	$U_o$	5.4	V
	Maximum output current	$I_o$	11	mA
	Maximum output power	$P_o$	15	mW
	Maximum external capacitance	$C_o$	65	$\mu\text{F}$
	Maximum external inductance	$L_o$	100	mH
15.3.10	RS485 interface (Terminals 35, 36)			
	Maximum input voltage	$U_i$	5.4	V
	Maximum input current	$I_i$	160	mA
	Maximum input power	$P_i$	500	mW
	Maximum internal capacitance	$C_i$	negligible	
	Maximum internal inductance	$L_i$	12	$\mu\text{H}$
	Maximum output voltage	$U_o$	3.8	V
	Maximum output current	$I_o$	59	mA
	Maximum output power	$P_o$	56	mW
	Maximum external capacitance	$C_o$	100	$\mu\text{F}$
	Maximum external inductance	$L_o$	9	mH
15.3.11	TTY input (Terminals 35, 36)			
	Maximum input voltage	$U_i$	60	V
	Maximum input current	$I_i$	160	mA
	Maximum input power	$P_i$	1.25	W
	Maximum internal capacitance	$C_i$	negligible	
	Maximum internal inductance	$L_i$	12	$\mu\text{H}$
15.3.12	TTY output (Terminals 37, 38)			
	Maximum output voltage	$U_o$	18.9	V
	Maximum output current	$I_o$	23	mA
	Maximum output power	$P_o$	435	mW
	Maximum external capacitance	$C_o$	250	nF
	Maximum external inductance	$L_o$	50	mH

16 **Report Number**

BVS PP 18.2171 EU, as of 2018-11-09

17 **Special Conditions for Use**

None

18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

Drawings and documents are listed in the confidential report.

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We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH  
Bochum, dated 2018-11-09  
BVS-Fro/Rip/Mu A 20170680



\_\_\_\_\_  
Certifier



\_\_\_\_\_  
Approver