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 ULD 20.0028X**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2020-12-22		
Applicant:	**VEGA Grieshaber KG** Am Hohenstein 113 77761 Schiltach **Germany**		
Equipment:	**Industrial Controllers, VEGAMET 141(*), VEGAMET 142(*)**		
Optional accessory:			
Type of Protection:	**Intrinsic Safety "ia"**		
Marking:	[Ex ia Ga] IIC [Ex ia Da] IIIC -20 °C ≤ Ta ≤ +60 °C		

Approved for issue on behalf of the IECEx Certification Body: **Katy A. Holdredge**

Position: **Senior Staff Engineer**

Signature: (for printed version)

Date: 2020-12-22

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Certificate issued by:

UL International DEMKO A/S
Borupvang 5A
DK-2750 Ballerup
Denmark

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Certificate No.: **IECEx ULD 20.0028X**

Date of issue: 2020-12-22

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Manufacturer: **VEGA Grieshaber KG**
Am Hohenstein 113
77761 Schiltach
Germany

Additional manufacturing locations: **VEGA Americas, Inc**
4241 Allendorf Drive
Cincinnati, Ohio 45209
United States of America

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 Report:

DK/ULD/ExTR20.0028/00

Quality Assessment Report:

DE/TUN/QAR06.0002/10

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The controller VEGAMET 141(*)/ 142(*) series are industrial controllers designed for use in indoor applications as associated apparatus permitted to be installed in non-hazardous location only.

They are able to supply up to two sensors with an intrinsically safe circuit (Ex ia) and can process and display their measurement values through a 4…20 mA input.

Up to two current outputs can be used for data transmission to other control equipment or external indicating instruments and up to 3 relay outputs can be used to operate equipment.

The devices can be operated via pushbutton or remotely using smartphone/ tablet and PC/Laptop using Bluetooth Smart, which is a limited energy Bluetooth communication.

The measured value is shown on a display.

No further interfaces are available on the controller.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The installation orientation of the device must be in accordance with the instructions.
- The installer must also ensure that the rated ambient temperature range of the equipment is not exceeded when installed in an enclosure with other equipment and that sufficient separation is provided around the device.
- The service sockets 1HART, 2HART are parallel to the intrinsically safe output terminals 1,2 or 4,5 – see instructions.

Annex:

Annex to IECEx ULD 20.0028X Issue 0.pdf

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Certificate No.: IECEx ULD 20. 0028X

Issue No.: 0

TYPE DESIGNATION

Safety relevant model coding of VEGAMET 140 series:

VEGAMET	*a*	*b*	*c*	*(*)*
	1	Housing for the installation in the control cabinet (indoor)		
		4	Basic functions, for simple control tasks	
			1	Single channel version, for use with one sensor
			2	Dual channel version, for use with one or two sensors

The placeholder within brackets (VEGAMET 14x(*)) is reserved and considered as not safety relevant. It is for internal production control without effect on the product construction.

Safety relevant features	VEGAMET 141(*)	VEGAMET 142(*)
Number of 4…20 mA sensor inputs Ex ia	1	2
Number of digital inputs	-	-
Number of 0/4…20 mA current outputs	1	2
Number of relay outputs	3	3
Bluetooth communication	Yes	Yes

PARAMETERS RELATING TO THE SAFETY

ELECTRICAL RATINGS:

VEGAMET 141(*), VEGAMET 142(*)

Power supply: Nominal range: (terminals 91, 92)	24 V ... 65 V DC; 3 W (141), 4 W (142) 100 V … 230 V AC; 50/60 Hz; 10 VA (141), 12 VA (142) Um = 253V AC for [Ex ia] only
Ambient temperature range:	-20 °C ≤ Tamb ≤ +60 °C
Protection rating:	IP20 (IEC 60529)
Relay output maximum values: (terminals 61 to 69)	1A AC (cos phi > 0.9), 250VAC, 250 VA 1A DC, 60V DC, 40 W Um = 253V AC for [Ex ia] only
Current output: (terminals 41, 42 [VEGAMET 141(*)]) (terminals 41 to 44 [VEGAMET 142(*)])	0/4…20 mA U ≤ 16 V Load = max. 500 Ω Um = 253V AC for [Ex ia] only
Communication interface:	Bluetooth

Sensor input circuit: 4…20 mA

(terminals 1, 2, 1HART [VEGAMET 141(*)])
(terminals 1, 2, 1HARt or 4, 5, 2HART [VEGAMET 142(*)])

Maximum values of the intrinsically safe signal circuit:

Uo ≦ 23.3 V
Io ≦ 109.8 mA
Po ≦ 639.6 mW

Characteristic: linear
Ci is negligibly small
Li is negligibly small

The maximum values in the table may be used as concentrated capacitances and concentrated inductances.

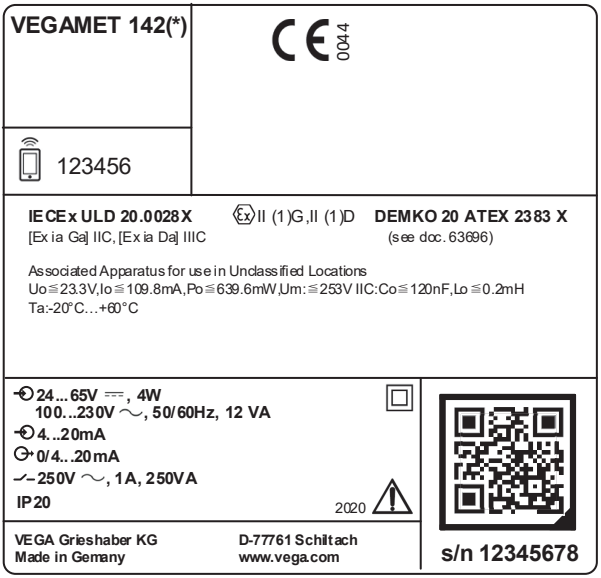
Ex ia	IIC		IIB, IIIC		IIA
Permissible external inductance Lo	0.2 mH	0.5 mH	0.5 mH	2 mH	10 mH
Permissible external capacitance Co	120 nF	88 nF	580 nF	470 nF	770 nF
Permissible outer Lo/Ro -ratio	55 µH/Ohm	55 µH/Ohm	221 µH/ Ohm	221 µH/ Ohm	443 µH/ Ohm

The intrinsically safe circuit is safely separated from the non-intrinsically safe circuits up to a peak value of the nominal voltage of 375V.

The maximum voltage at the non-intrinsically safe circuits must not exceed 253Vrms in the event of a fault. VEGAMET 140 series have intrinsically safe circuits and non-intrinsically safe circuits.

MARKING

Marking has to be readable and indelible; it has to include the following indications:



VEGAMET 141 (*)marking is identical with VEGAMET 142(*) marking.

(Difference to VEGAMET141(*): power consumption: 3W, 10VA)

ROUTINE EXAMINATIONS AND TESTS

Transformer TR101 and TR201 shall be subjected to a voltage of 2500 V rms between primary and secondary windings, for at least 60 seconds, in accordance with the requirements of Clause 11.2 of IEC 60079-11. Alternatively, the test may be carried out at 1.2 times the test voltage, but with a reduced duration of at least 1 second.