



[1] UNITED KINGDOM CONFORMITY ASSESSMENT  
UK-TYPE EXAMINATION CERTIFICATE

[2] **Product or Protective System Intended for use in Potentially Explosive Atmospheres  
UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1**

[3] Type Examination Certificate No.: **UL21UKEX2282X Rev. 0**  
[4] Product: **Industrial Controllers, VEGAMET 141(\*), VEGAMET 142(\*)**  
[5] Manufacturer: **VEGA Grieshaber KG**  
[6] Address: **Am Hohenstein 113, 77761 Schiltach, Germany**

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

[8] UL International (UK) Ltd, Approved Body number 0843, in accordance with Regulation 44 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended by UKSI 2019:696), 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 Schedule 1 of the Regulations. The examination and test results are recorded in the confidential report **4790037837.5.1**.

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



**EN IEC 60079-0:2018 EN 60079-11:2012**

Except in respect of those requirements listed at section 18 of the schedule to this certificate.

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

[11] This UK-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations 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:

 **II (1) G**    **[Ex ia Ga] IIC**  
 **II (1) D**    **[Ex ia Da] IIIC**

**Certification Manager**  
David Lloyd



This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the Ex UK Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Regulations. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

**Date of issue:** 2021-09-30

**Approved Body**    UL International (UK) Ltd Unit 1-3 Horizon Kingsland Business Park Wade Road, Basingstoke RG24 8AH, UK  
Phone : +44 (0)1256 312100



[13]

[14]

## Schedule UK-TYPE EXAMINATION CERTIFICATE No. UL21UKEX2282X Rev. 0

[15]

Description of Product

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.

The VEGAMET 141(\*)/ 142(\*) series is configured for installation on a mounting rail in the control cabinet.

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

Temperature range

The ambient temperature range is -20 °C to +60 °C.

Electrical data

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

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



[13]  
[14]

## Schedule UK-TYPE EXAMINATION CERTIFICATE No. UL21UKEX2282X Rev. 0

Sensor input circuit:  
(terminals 1, 2, 1HART [VEGAMET 141(\*)])  
(terminals 1, 2, 1HART or 4, 5, 2HART  
[VEGAMET 142(\*)])

4...20 mA

Maximum values of the intrinsically safe signal circuit:  
 $U_o \leq 23.3 \text{ V}$   
 $I_o \leq 109.8 \text{ mA}$   
 $P_o \leq 639.6 \text{ mW}$

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 $L_o$	0.2 mH	0.5 mH	0.5 mH	2 mH	10 mH
Permissible external capacitance $C_o$	120 nF	88 nF	580 nF	470 nF	770 nF
Permissible outer $L_o/R_o$ ratio	55 $\mu\text{H}/\text{Ohm}$	55 $\mu\text{H}/\text{Ohm}$	221 $\mu\text{H}/\text{Ohm}$	221 $\mu\text{H}/\text{Ohm}$	443 $\mu\text{H}/\text{Ohm}$

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.

### Routine 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 EN 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.

[16] Test Report No. (associated with this certificate issue)  
ExTR Number DK/ULD/ExTR20.0028/00

[17] Specific conditions of use:  
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.

[18] Essential Health and Safety Requirements (Regulations Schedule 1)  
In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant reports.

[19] Drawings and Documents

Technical Documents			
Title:	Drawing No.:	Rev. Level:	Date:
Safety instructions EN VEGAMET 141,142	63696	-	2021-09-01
Product Marking	VEGAZW-6-59684-UKEX Ex ia Marking	00	2021/09/22
Printed circuit board METC11EX-1 (VEGAMET 141)	SB1603_METC11EX-1	-	2020-10-12
Printed circuit board METC12EX-1 (VEGAMET 142).	SB1603_METC12EX-1	-	2020-10-12
Isolation transformer EF12.6	GE851	2	2011-03-02
DC-DC-isolation-transformer MET 86x, 84x, 34x, 16x, 14x	BV1723-00	0	2018-07-16
component layout of METC11EX-1	BB1603_METC11EX-1	-	2020-11-17

[13]

[14]

**Schedule**  
**UK-TYPE EXAMINATION CERTIFICATE No.**  
**UL21UKEX2282X Rev. 0**

<b>Technical Documents</b>			
<b>Title:</b>	<b>Drawing No.:</b>	<b>Rev. Level:</b>	<b>Date:</b>
(VEGAMET 141) component layout of METC12EX-1 (VEGAMET 142)	BB1603_METC12EX-1	-	2020-11-17
trace layout of METC1	LP1603_METC-1	-	2020-11-17
Partlist VEGAMET 141	Part list of VEGAMET 141 Ex, circuit diagram SB1603_METC11Ex-1	-	2020-01-22
Partlist VEGAMET 142	Part list of VEGAMET 142 Ex, circuit diagram SB1603_METC12Ex-1	-	2020-01-22
Coating layout METC11/METC12	GE4300	-	2020-12-10
VEGAMET14x Ex explosion drawing	GE4238	-	2020-02-03
Optocoupler construction	GE4302	-	2020-08-06
Electronic MET142 minimum distances	GE4303	-	2020-09-01

