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## Schedule

# EU-TYPE EXAMINATION CERTIFICATE No.

## DEMKO 19 ATEX 2144 Rev. 4

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Description of Product:

The controller VEGAMET 84\*(\*)/ 86\*(\*) series are controllers designed for use 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 or HART communication VEGAMET 86\*(\*) only.

Up to three current outputs can be used for data transmission to other control equipment or external indicating instruments and up to 6 relay outputs can be used to operate equipment.

In addition to those features, the controllers VEGAMET 86\*(\*) have up to four digital inputs to implement more complex controller tasks and a memory card slot which can be used to log data.

Every process controller is equipped with limited energy Bluetooth communication which allows for an easy setup over mobile devices.

The controller VEGAMET 84\*(\*)/ 86\*(\*) are associated apparatuses and can be adjusted via pushbutton permitted for installation in non-classified hazardous location only, providing intrinsic safe connections for equipment installed in zone classified hazardous locations of category 1G or 1D.

The measured value is shown on a display.

An internal, non-replaceable battery is used to store the real time for the data logger function of VEGAMET 86\*(\*).

A pluggable internal memory card is used to store data for the data logger function of VEGAMET 86\*(\*).

Individual adaptations to demanding applications through adjustment, control and data logger functions are possible.

The VEGAMET 84\*(\*)/ 86\*(\*) series is suitable for wall or pipe mounting and is suitable for level, pressure and flow measurement in all industries.

Safety relevant model coding of VEGAMET 800 series:

VEGAMET	a	b	c	(*)
	8	Housing for outdoor use		
		4	Basic functions, for simple control tasks	
		6	Extended functions, for complex 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 84x(\*) is reserved and considered as not safety relevant.

Safety relevant features	VEGAMET 841	VEGAMET 842	VEGAMET 861	VEGAMET 862
Number of 4...20 mA sensor inputs Ex ia	1	2	1	2
HART communication	-	-	Yes	Yes
Number of 0/4...20 mA outputs	1	2	1	3
Number of relay outputs	3	3	4	6
Number of digital inputs	-	-	2	4
Bluetooth communication	Yes	Yes	Yes	Yes
Memory card slot (pluggable)	-	-	Yes	Yes
Battery for data logging (non-replaceable)	-	-	Yes	Yes

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Temperature range:

The ambient temperature range is -40 °C to +60°C.

Electrical data

VEGAMET 841(\*), VEGAMET 842(\*)

Power supply (terminals 91, 92):

24 V ... 65 V DC (-15 % ... +10 %)  
 100 V ... 230 V AC (-15 % ... +10 %) 50/60 Hz.  
 Um = 253V AC for [Ex ia] only

Relay (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 841])  
 (terminals 41 to 44 [VEGAMET 842])

0/4...20 mA  
 U ≤ 16 V  
 Load = max. 500 Ω  
 Um = 253V AC for [Ex ia] only

Communication interface:

Bluetooth

Sensor input circuit:

(terminals 1, 2 [VEGAMET 841])  
 (terminals 1, 2, 4, 5 [VEGAMET 842])

4...20 mA  
 in type of protection intrinsic safety Ex ia  
 Maximum values of the intrinsically safe signal circuit:  
 Uo ≤ 23.3V  
 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

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 253V rms in the event of a fault. VEGAMET 841(\*), VEGAMET 842(\*) have intrinsically safe circuits and non-intrinsically safe circuits.

Electrical data

VEGAMET 861(\*), VEGAMET 862(\*)

Power supply (terminals 91, 92):

24 V ... 65 V DC (-15 % ... +10 %)  
 100 V ... 230 V AC (-15 % ... +10 %) 50/60 Hz.  
 Um = 253V AC for [Ex ia] only

Relay output maximum values:

(terminals 61 to 72 [VEGAMET 861])  
 (terminals 61 to 78 [VEGAMET 862])

1A AC (cos phi > 0.9), 250VAC, 250 VA  
 1A DC, 60VDC, 40 W  
 Um = 253V AC for [Ex ia] only

Digital input:

(terminals 21 to 26 [VEGAMET 861])  
 (terminals 21 to 32 [VEGAMET 862])

max. 30 V DC  
 max. 30 mA

Current output:

(terminals 41, 42 [VEGAMET 861])  
 (terminals 41 to 46 [VEGAMET 862])

0/4...20 mA  
 U ≤ 16 V  
 Load = max. 500 Ω  
 Um = 253V AC for [Ex ia] only

Communication interface:

Bluetooth

Sensor input circuit:

(terminals 1, 2 [VEGAMET 861])  
 (terminals 1, 2, 4, 5 [VEGAMET 862])

4...20 mA, HART  
 in type of protection intrinsic safety Ex ia.  
 Maximum values of the intrinsically safe signal circuit:



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$U_o \leq 23.3V$   
 $I_o \leq 111.3 mA$   
 $P_o \leq 648.4 mW$

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	760 nF

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 253V rms in the event of a fault. VEGAMET 861(\*), VEGAMET 862(\*) 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. The devices shall be subjected to a routine verification of coatings in accordance with document No. OS-3886 and OS-3887.

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Descriptive Documents

The scheduled drawings are listed in the report no. provided under item No. [ 8 ] on page 1 of this Type Examination Certificate.

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Specific Conditions of Use:

None

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Essential Health and Safety Requirements

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

Additional information

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in Annex III to Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014.



The trademark **VEGA** will be used as the company identifier on the marking label.