Mining And Surface Certification (Pty) Ltd

2015/021934/07

THIS CERTIFICATE IS ISSUED AS AN I.A. CERTIFICATE IN TERMS OF THE MINE HEALTH AND SAFETY ACT, ACT NO 29 OF 1996 (AND REGULATIONS), THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993) AND REGULATION 17 OF THE ELECTRICAL MACHINERY REGULATIONS

IA CERTIFICATE	MASC S/19-9002	**Issue**	1	
Issue Date	13 May 2022	**Expiry Date**	13 May 2025	
**** Based on Certificate No**	IECEx ULD 19.0015	**Issue / Variations / Amendment**		3
Requested by	VEGA Grieshaber KG, Am Hohenstein 113, 77761 Schiltach, Germany			
Manufacturer	VEGA Grieshaber KG, Am Hohenstein 113, 77761 Schiltach, Germany			
Additional Manufacturing sites	VEGA Americas, Inc. 4241 Allendorf Drive, Cincinnati, Ohio 45209 United States of America			
Description	The controller VEGAMET 84*(*)/ 86*(*) series are industrial 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 a 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. See Annex below for full description			
Equipment	Controllers	**Type**	VEGAMET 841(*), VEGAMET 842(*), VEGAMET 861(*), VEGAMET 862(*)	
MARKING: **Original marking as per certificate ** remains applicable.** **IA number must be added.**	**Type:** **Ex Marking:** **IA Number:** **Warnings:**	VEGAMET 841(*), VEGAMET 842(*), VEGAMET 861(*), VEGAMET 862(*) [Ex ia Ga] IIC [Ex ia Da] IIIC -40 °C ≤ Ta ≤ +60 °C MASC S/19-9002 (To be additionally marked on equipment) See Base Certificate ** (original marking must be applied)		
Quality Assurance report (QAR) / Notification (QAN) Expiry date:	DE/TUN/QAR06.0002/10			

Compliance:

The equipment as described above has been allocated the rating Explosion Protected 'as above' utilizing the SANS/IEC Standards:

- SANS (IEC) 60079-0: 2019 (2017) Equipment - General requirements
- SANS (IEC) 60079-11: 2012 (2011) Explosive atmospheres Part 11: Equipment protection by intrinsic safety i

Note: This certificate covers only the listed standards and does not imply compliance to any other standard, related or inferred. It is up to the manufacturer to ensure that the product complies to all relevant standards for the application.

Special conditions of safe use "X":

- Refer to Annex A below for more details.

Conditions of manufacture:

- Refer to Annex A below for more details.

Terine Orsmond
TECHNICAL SPECIALIST

Regardt Zeelie
TECHNICAL SPECIALIST

This certificate covers all units sold as long as the QAR/QAN remains valid.
According to the relevant requirements of the MHS Act and the OHS Act, production units of explosion protected equipment are required to comply with third party quality assurance (an approved mark scheme or batch testing by an accredited test laboratory).

Apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to:
SANS 10086 requirements;
Any conditions mentioned in the above certificate;
Any relevant requirements of the MHS Act;
Any restrictions and conditions enforced by the chief inspector of mines, principal inspector (Group I equipment) or chief inspector of factories (Group II equipment).

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Mining And Surface Certification (Pty) Ltd
Unit 5 Lelyta Park, 45 Jurg Avenue, Hennopspark, Ext 87
Centurion 0157

ANNEX A

This document is based on and must be read in conjunction with certificate IECEx ULD 19.0015

Description (According to Base Certificate) **

The controller VEGAMET 84*(*)/ 86*(*) series are industrial 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 a 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 none classified hazardous location only, providing intrinsic safe connections for equipment installed in zone classified hazardous locations for EPL Ga or EPL Da equipment.

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*(*).

An 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.

Please see Annex B for additional information

Standard compliance	See Base Certificate **
Special conditions of safe use ("X")	• None
Conditions of manufacture	• 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
Conditions of Certification	• This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate. • As per ARP 0108 a maximum three yearly review is required on this IA Certificate (expiry is determined as per the QAR/QAN/QMS expiry date). • The apparatus must be additionally marked with the MASC marking details above. • This approval only covers the equipment as certified above and does not include any scheduled additions or variations / amendments / new issues to the certificate(s), made after the above date. • The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by the certificate on which this IA Certificate is based and any other conditions in this IA Certificate. • The certification on which this IA Certificate is based must remain valid. • The extent of the requirements in the ARP 0108 (or regulations), SANS 10108 and any other applicable regulations on the certification of the equipment must remain unchanged. • The Ex quality assurance notification/report for the equipment must remain valid.
Conclusion:	• From the above and the selective examination of the documentation, nothing contrary to the requirements of the applicable standards was found, provided that the equipment / component is used as described in the above document / certificate and according to the MASC conditions below. A MASC IA certificate is issued based on the work done as per the Base Certificate **. • The routine tests for production units according to the Base Certificate ** must be complied with (if applicable).

This document is issued based on Mining And Surface Certification's Standard Contract terms and conditions available on request.

While every endeavour is made to ensure that a test / assessment / inspection is representative and accurately performed, and that a report / certificate is accurate in the quoted results and conclusions drawn from the test / assessment / inspection, MASC or its directors/employees shall in no way be liable for any error made in carrying out the test / assessment or for any erroneous statement, whether in fact or in opinion, contained in a report / certificate issued pursuant to a test / assessment / inspection.

MASC takes no responsibility for any non-conformances, exclusions or any results / assessments / inspections not in compliance with the standards. By marking the equipment in accordance with the documentation / standard, the manufacturer / applicant attests on his own responsibility that the equipment / installation has been designed and constructed in accordance with the applicable requirements of the relevant standards and documentation, that the routine verifications / routine tests have been correctly completed and the equipment / installation complies with the documentation and standard(s).

This document is only for use and application in South Africa. It is issued based on National interpretations and accepted practices.

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ANNEX B

TYPE DESIGNATION AND PARAMETERS RELATING TO THE SAFETY

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 84*(*) 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 outputs	-	-	2	4
Bluetooth communication	Yes	Yes	Yes	Yes
Memory card slot (pluggable)	-	-	Yes	Yes
Battery for data logging (non-replaceable)	-	-	Yes	Yes

ELECTRICAL RATINGS:

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

Relay (terminals 61 to 69):
1A AC (cos phi > 0.9), 253VAC, 250 VA.
1A DC, 60V DC, 40 W.
Um = 253V AC

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

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.

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ELECTRICAL RATINGS:
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
Relay output maximum values: (terminals 61 to 72[VEGAMET 861]) (terminals 61 to 78[VEGAMET 862])	1A AC (cos phi > 0.9), 253VAC, 250 VA 1A DC, 60VDC, 40 W Um = 253V AC
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
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: Uo ≦ 23.3V Io ≦ 111.3 mA Po≦ 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 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	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.

MARKING
As above

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Mining And Surface Certification (Pty) Ltd Reg No: 2015/021934/07
Directors: Roelof Viljoen & Francois du Toit
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P.O. Box 14344, Clubview, 0014
Tel: 012 653 2959 ◊ Fax: 086 605 8568
e-mail: **info@masc-ex.co.za**

GOVERNMENT APPROVED INSPECTION AUTHORITY

Mining And Surface Certification (Pty) Ltd

2015/021934/07

THIS CERTIFICATE IS ISSUED AS AN I.A. CERTIFICATE IN TERMS OF THE RELEVANT REGULATIONS OF THE MINERALS ACT (INCORPORATING THE MINE HEALTH AND SAFETY ACT) AND THE ELECTRICAL MACHINERY REGULATIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT.

IA CERTIFICATE	MASC S/19-9002	**Issue**	0	
Issue Date	21 August 2019	**Expiry Date**	21 August 2022	
**** Based on Certificate No**	IECEx ULD 19.0015	**Issue / Variations / Amendment**	0	
Requested by	VEGA Grieshaber KG, Am Hohenstein 113, 77761 Schiltach, Germany			
Manufacturer	VEGA Grieshaber KG, Am Hohenstein 113, 77761 Schiltach, Germany			
Additional Manufacturing Location(s)	VEGA Americas, Inc., 4241 Allendorf Drive, Cincinnati, Ohio 45209, United States of America			
Description	The controller VEGAMET 84*(*)/ 86*(*) series are industrial 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 a intrinsically safe circuit (Ex ia) and can process and display their measurement values trough a 4…20 mA input or HART communication VEGAMET 86*(*) only. ** See base certificate for full description.			
Equipment	Controllers	**Type**	VEGAMET 841(*), VEGAMET 842(*), VEGAMET 861(*), VEGAMET 862(*)	
MARKING: **Original marking as per certificate * remains applicable.** **IA number to be added.**	**Type** **Ex Marking** **IA Number** **Warnings**	VEGAMET 841(*), VEGAMET 842(*), VEGAMET 861(*), VEGAMET 862(*) [Ex ia Ga] IIC [Ex ia Da] IIIC -40°C to 60°C MASC S/19-9002 See Base Certificate ** and original marking		
Quality Assurance report (QAR) / Notification (QAN) Expiry date:	DE/TUN/QAR06.0002/09			

Compliance:

The equipment as described above has been allocated the rating Explosion Protected **[Ex ia Ga] IIC, [Ex ia Da] IIIC, -40°C to 60°C** utilizing the SANS/IEC Standards:

- SANS (IEC) 60079-0: (2017) General requirements
- SANS (IEC) 60079-11: 2012 (2011) Intrinsic Safety 'i'

Special conditions of safe use "X":

- None

Conditions of manufacture:

- None

Regardt Zeelie
TECHNICAL SPECIALIST

Roelof Viljoen
TECHNICAL SPECIALIST

This certificate covers all units sold as long as the QAR/QAN remains valid.
According to the relevant requirements of the MHS Act and the OHS Act, production units of explosion protected equipment are required to comply with third party quality assurance (an approved mark scheme or batch testing by an accredited test laboratory).

Apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to:
SANS 10086 requirements;
Any conditions mentioned in the above report
Any restrictions and conditions enforced by the chief inspector of mines or chief inspector of factories
Any relevant requirements of the MHS Act.

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Unit 5 Lelyta Park, 45 Jurg Ave, Hennopspark Ext 87
Centurion, 0157

IA CERTIFICATE: MASC S/19-9002
Equipment: VEGAMET Controllers

ANNEX A

This document is based on and must be read in conjunction with certificate IECEx ULD 19.0015.	
Description (According to Base Certificate *)	
"Refer to description in Base Certfiicate ** (and any applicable schedules/issues/variations)."	
Standard compliance	See Base Certificate *
Special conditions of safe use ("X")	• None
Conditions of manufacture	• None
Conditions of Certification	• This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate. • As per ARP 0108 a maximum three yearly review is required on this IA Certificate (expiry is determined as per the QAR/QAN/QMS expiry date). • The apparatus must be additionally marked with the MASC marking details above. • This approval only covers the equipment as certified above and does not include any scheduled additions or variations / amendments / new issues to the certificate(s), made after the above date. • The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by the certificate on which this IA Certificate is based and any other conditions in this IA Certificate. • The certification on which this IA Certificate is based must remain valid. • The extent of the requirements in the ARP 0108 (or regulations), SANS 10108 and any other applicable regulations on the certification of the equipment must remain unchanged. • The Ex quality assurance notification/report for the equipment must remain valid.
Conclusion:	• From the above and the selective examination of the documentation, nothing contrary to the requirements of the applicable standards was found, provided that the equipment / component is used as described in the above document / certificate and according to the MASC conditions below. A MASC IA certificate is issued based on the work done as per the Base Certificate **. • The routine tests for production units according to the Base Certificate ** must be complied with (if applicable). o 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/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.

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