OPLOURS OF	LOLARS OPPLOLAR	S COPIOLARS COPI	LOLARS OPPLOLARS	THOLARS	GTIONIS GTIONIS (PLOLARS	BPLOI A	ß	
	PLO	LABS			7 Spanner	Olifan	ntsfontein 1665	STATION NA	
	Explosion Preve	ention Services	(Pty) Ltd		Fax: +	27 (11) 3	316 4601 316 5670	ALL AND	
Rec	a No: 1999/027771/	07			E-mail: admin-mgr(@exploia	abs.co.za	OTAKS	
GOVERNMENT APPROVED TEST LABORATORY IN TERMS OF ARP 0108: "REGULATORY REQUIREMENTS FOR EXPLOSION PROTECTED APPARATUS"									
					Date Issued: *Expiry date:	14 D Pag	ec 2023 ec 2026 je 1 of 4 Issue: 1	SERVICIENCE	
Ex – Typ Certificate Equipmen		n Certificate S-XPL/23.10 Industrial C						SHITON 84	
Model / Ty Applicant:	vpe:		141(*), VEGAMI shaber KG stein 113	ET 142(*)				StanOn Me	
Manufactu Manufactu		Germany VEGA Gries VEGA Ame	shaber KG					STATION &	
location:	9		Research Pkv	/у,				STATOLAR	
Serial No:		All serial nu			issued- and expire dat acceptable product certi			STATION 18	
Supplied by VEGA Grieshaber KG Identified by Inspection Authority number S-XPL/23.1619 X									
And as described in the Explolabs file number XPL/23956/23.1619 is hereby <u>certified "Explosion Protected</u> (<u>Refer to clause 1, for Ex Rating</u>)", having been examined and inspected in accordance with the relevant requirements of South African Standards.									
-	79-0: 2019 Ed 6 0: 2017 Ed 7	Explosive a	atmospheres Pa	t 0: Equip	ment — General require	ements		MONUME S	
5	79-11: 2012 Ed 11: 2011 Ed 6	4 Explosive a	itmospheres Pai	t 11: Equi	pment protection by intr	insic sa	ifety "i"	Church Str	
Risk of ignit	tion provided:							CORN I	
Protection afforded	Equipment Protection Level (EPL) Group		formance of protection		Conditions of operation	Su	ss or Max Irface np (°C)	STATION STATION	
Very high	Ga Group II	safe even w	nt means of protect when two faults occ ently of each othe	cur	Equipment remains functioning in zones 0, 1 and 2		N/A	ONLINE STATION	
Very high	Da Group III	safe even w	nt means of protect when two faults occurring ently of each othe	cur	Equipment remains functioning in zones 20, 21 and 22		N/A	CONTINUES CONTINUES	
				·					
								CONTRACTO	
si 🗆 👘								Ser.	

DOCUMENT No: XPLO213 RELEASE DATE: 29/05/2018 REV: 7



Arnours Arnours

ANNEX TO CERTIFICATE NO S-XPL/23.1619 X

PAGE 2 OF 4

GENERAL The marking of the Industrial Controllers shall include the following: [Ex ia Ga] IIC [Ex ia Da] IIIC -20 °C ≤ Ta ≤ +60 °C

The controller VEGAMET 141(*)/ 142(*) series are industrial controllers designed for use in indoor provide 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.

TYPE DESIGNATION

Safety relevant model coding of VEGAMET 140 series:

VEGAMET	а	b	с	(*)				
	1	Housin	g for the	g for the installation in the control cabinet (indoor)				
		4	Basic function, 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 420 mA sensor inputs Ex ia	1	2
Number of digital inputs	-	-
Number of 0/420 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: 24 V ... 65 V DC; 3 W (141), 4 W (142) (terminals 91, 92) 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) 1A AC (cos phi > 0.9), 250VAC, 250 VA Relay output maximum values: (terminals 61 to 69) 1A DC, 60V DC, 40 W Um = 253V AC for [Ex ia] only DOCUMENT No: XPL0213 RELEASE DATE: 29/05/2018 REV:7

PERIONES PERIONES PERIONES PERIONES PERIONES PERIONES PERIONES PERIONES PERIONES PERIONES

SUDDLESS.

perioues Apprioues Apprioues Apprioues Apprioues Apprioues Apprioues Apprioues Apprioues Apprioues

ANNEX TO CERTIFICATE NO S-XPL/23.1619 X

Communication interface:

[VEGAMET 142(*)])

Bluetooth

Sensor input circuit: 4...20 mA

(terminals 1, 2, 1HART [VEGAMET 141(*)]) (terminals 1, 2, 1HARt or 4, 5, 2HART Maximum values of the intrinsically safe signal circuit:

PAGE 3 OF 4

 $\begin{array}{l} \text{Uo} \leq 23.3 \text{ V} \\ \text{Io} \leq 109.8 \text{ mA} \\ \text{Po} \leq 639.6 \text{ mW} \\ \text{Characteristic: linear} \\ \text{Ci is negligibly small} \\ \text{Li is negligibly small} \end{array}$

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 μΗ/ 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 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.

Based on the following documentation: IECEx ULD 20. 0028X Issue: 0

INSTALLATION INSTRUCTIONS

EXPLOIVES

ETHOLARS

3.

It is the manufacturer's responsibility to supply installation instructions with each unit offered for sale as required by IEC/SANS 60079-0 Clause 30.

SPECIAL CONDITIONS FOR SAFE USE (denoted by "X" after certificate number)

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.

DOCUMENT No: XPL0213 RELEASE DATE: 29/05/2018 REV : 7

Genoues Genoues Genoues Genoues Genoues Genoues Genoues Genoues Genoues Genoues

PIOLASS	DOLOTA	S GTIOURS (GTIOU ANI	IS GRIGHT G	
STHOMAS	4.	CONDITIONS OF All production uni Scheme or batch e	ts must be covered by a QAN (Quality Assurance Notification), Product Mark	New Indexed and
TETHOLAS TEMOLAS TEMOL	5.	Supplier Manufacturer Equipment	imilar) information have to be clearly and permanently marked on all units: : VEGA Grieshaber KG : Industrial Controllers : VEGAMET 141(*), VEGAMET 142(*)	CIEDED Service Internet
THE STADIAS		Model/Type Serial No. Ex Rating	: : [Ex ia Ga] IIC [Ex ia Da] IIIC	
	This seatify		-20 °C ≤ Ta ≤ +60 °C : S-XPL/23.1619 X	
P		paratus is used as relevant SANS 10086 and IEC/SAI Any conditions mentioned	NS 61241-14 requirements as applicable;	INDUCED SAV
AMORE SMORE	iv) v) vi) vii)	and Safety. A revision certificate repla * - Only covers equipment If and when your QAN (Qu Certification (issued for yo	tions enforced by the Chief Inspector of Mines or the Principal Inspector or the Chief Inspector: Occupational Health ces all previous version of the certificate. Imported between the "Issued" and "Expire" dates. Juality Assurance Notification) Certificate for your equipment manufacturer expires during the valid period of the IA ur equipment) and a new certificate is not submitted the existing IA Certification will then be cancelled. It is thus the ways submit the updated and valid QAN certificate(s) to Explolabs (Pty) Ltd	THE ABORT OF AND A

Responsible Testing Officer:

20

brows grows grows grows grows grows grows grows grows grows

D Maree Technical Specialist EXPLOLABS EXPLOSION PREVENTION SERVICES

This report/certificate shall not be reproduced except in full without the written approval of the company Explolabs (Pty) Ltd shall not be liable for any losses or damages sustained on account of any failure or omission to properly perform our dulles in terms of any contract undertaken by us; notwithstanding anything to the contrary, save for this disclaimer is immutable and automatically incorporated in any contract undertaken by us; notwithstanding anything to the contrary, save for the express written waiver of our managing director. By marking the equipment in accordance with the documentation/standard, the relevant standards and that the routine verifications and tests have been successfully completed and that the product complies with the documentation and standard(s). The contents of electronic reports/certificates cannot be guaranteed. Original certification documents will be kept on file at Explolabs (Pty) Ltd

SUMOLAS







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 ACTI AND THE ELECTRICAL MACHINERY REGULATIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT.

IA CERTIFICATE	MASC S/20-90	005X	Issue	0			
Issue Date	27 January 20	21	Expiry Date	27 January 2024			
** Based on Certificate No	IECEx ULD 20	0.0028X Issue / Variations / Amendment 0					
Requested by	VEGA Griesha	VEGA Grieshaber KG, Am Hohenstein 113, 77761 Schiltach, Germany					
Manufacturer	VEGA Griesha	ber KG,		VEGA Americas, Inc			
	Am Hohenstei	tein 113, 77761 Schiltach, Germany 4241 Allendorf Drive, Cincinnati, Ohio United States of America					
Description	applications as They are able display their m Up to two curre indicating instr The devices cc using Bluetoot The measured No further inte Refer to Annex	associated apparatule to supply up to two si easurement values the ant outputs can be us uments and up to 3 m an be operated via pu h Smart, which is a lin value is shown on a faces are available of c B below for more de	is permitted to be ensors with an ini- nrough a 420 n eed for data trans- elay outputs can ishbutton or reme mited energy Blu- display. on the controller, etails.	mission to other control equipment or external be used to operate equipment. otely using smartphone/ tablet and PC/Laptop letooth communication.			
Equipment	Industrial Cont		Туре	VEGAMET 141(*), VEGAMET 142(*)			
MARKING:	Type:	VEGAMET 141(*),	VEGAMET 142(*	*)			
Original marking as per certificate ** remains	Ex Marking:	[Ex ia Ga] IIC [Ex ia Da] IIIC					
applicable.		-20 °C ≤ Ta ≤ +60 °C					
IA number must be	IA Number:	MASC S/20-9005X (To be additionally marked on equipment)					
added.	Warnings:	See Base Certificate ** (original marking must be applied)					
Quality Assurance report (0	QAR) /	DE/TUN/QAR06.00	02/10				
Notification (QAN) Expiry d	ate:						

Compliance:

The equipment as described above has been allocated the rating Explosion Protected [Ex ia Ga] IIC, [Ex ia Da] IIIC, -20 °C ≤ Ta ≤ +60 °C utilizing the SANS/IEC Standards:

- SANS (IEC) 60079-0: 2019 (2017) Equipment General requirements
- SANS (IEC) 60079-11: 2012 (2011) Equipment protection by Intrinsic Safety 'i' .

Special conditions of safe use "X":

- 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
- Conditions of manufacture:
- No additional conditions as may be applicable for the base certificate ** ٠





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

This certificate amay only be reproduced in full. This certificate is not transferable and remains the property of the issuing body

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

IA CERTIFICATE: MASC S/20-9005X Equipment: Industrial Controllers, VEGAMET 141(*), VEGAMET 142(*)

Page 2 of 4

ANNEX A

This document is based on and must be read in conjunction with certificate IECEx ULD 20.0028X							
Description (According to Base Certificate **)							
"Refer to description i	n Base Certificate ** (and any applicable schedules/issues/variations)."						
Standard compliance	See Base Certificate **						
Special conditions of safe use ("X")	As above						
Conditions of manufacture	As above						
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/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

This document may only be reproduced in full. This certificate is not transferable and remains the property of the issuing body. This document will not be supported by MASC for certification purposes outside the borders of South Africa.

IA CERTIFICATE: MASC S/20-9005X Equipment: Industrial Controllers, VEGAMET 141(*), VEGAMET 142(*)

Page 3 of 4

ANNEX B

TYPE DESIGNATION

Safety relevant model coding of VEGAMET 140 series:

IET	а	b	С	(*)						
	1	Hou	sing fo	g 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 420 mA sensor inputs Ex ia	1	2
Number of digital inputs	-	-
Number of 0/420 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)

Ambient temperature range:

Protection rating:

Relay output maximum values: (terminals 61 to 69)

Current output: (terminals 41, 42 [VEGAMET 141(*)]) (terminals 41 to 44 [VEGAMET 142(*)])

Communication interface:

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

-20 °C ≤ Tamb ≤ +60 °C

IP20 (IEC 60529)

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

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

Bluetooth

4...20 mA

Maximum values of the intrinsically safe signal circuit:

 $Uo \leq 23.3 V$ $Io \leq 109.8 mA$ $Po \leq 639.6 mW$

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.

This document may only be reproduced in full. This certificate is not transferable and remains the property of the issuing body. This document will not be supported by MASC for certification purposes outside the borders of South Africa.

> Mining and Surface Certification (Pty) Ltd Reg No: 2015/021934/07 Directors: Roelof Viljoen & Francolus du Toit Unit #5, Lelyta Park, 45 Jurg Avenue, Hennopspark Ext 87, Centurion, 0157 P.O. Box 14344, Clubview, 0014 Tel: 012 653 2959 0 Fax: 086 605 8568 e-mail: info@masc-ex.co.za

IA CERTIFICATE: MASC S/20-9005X Equipment: Industrial Controllers, VEGAMET 141(*), VEGAMET 142(*)

Page 4 of 4

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: Note: Refer to base certificate for original marking.

VEGAMET 142(*)							
123456							
MASC S/20-9005X (IE [Ex ia Ga] IIC, [Ex ia Da] III		see doc. 66050)					
	Associated Apparatus for use in Unclassified Locations Uo ≤ 23.3V, Jo ≤ 109,8mA,Po ≤ 639,6mW,Um ≤ 253V, IIC:Co ≤ 120nF,Lo ≤ 0.2mH Ta20°C+60°C						
-€ 2465V, 4W 100230V ~, 50/60 € 420mA ← 0/420mA ~250V ~, 1A, 250VA IP20							
VEGA Grieshaber KG Made in Gemany	D-77761 Schiltach www.vega.com	s/n 12345678					

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 ms 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.

> This document may only be reproduced in full. This certificate is not transferable and remains the property of the issuing body. This document will not be supported by MASC for certification purposes outside the borders of South Africa.