



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/20-9000X	Issue	1	
Issue Date	18 January 2023	Expiry Date	18 January 2026	
** Based on Certificate No	IECEX KIWA 19 0015X	Issue / Variatio	ns/Amendment 0	
Requested by	VEGA Grieshaber KG An	Hohenstein 113 7	7761 Schiltach Germany	
Manufacturer	VEGA Griesbaber KG, An	Hohenstein 113, 7	7761 Schiltach, Germany	
Additional Manufacturing sites	VEGA Americas Inc. 387	7 Mason Research	Parkway 45036 Mason Obio/USA	
Description	Radar sensors types VEGAPULS 21, 31, C 21, C 22, C 23 for use in explosive			
200011011011	atmospheres caused by t	ne presence of com	bustible gases or dusts are used for	
	monitoring and control of	filling levels by mea	ns of microwave technology. The	
	electronics mounted in a	nlastic enclosure co	inverts the reflected microwave echo	
	indicating the filling level	into a 2-wire 4 20r	A HART signal. Operation and control of	
	the sensor can either be t	hrough the wired co	nnection or via smart phone and VEGA	
	Tools-App (Bluetooth)		······································	
	Refer to Annex below for	a full description		
Equipment	Radar sensors	Type VEG	APULS 21, 31, C 21, C 22, C 23	
MARKING:	Type:	VEGAPULS 21, 31	C 21, C 22, C 23	
Original marking as per	Ex Marking:	• VEGAPLIIS 21	31.	
certificate ** remains applicable.	g.	• Fx ia IIC T	4 Ga or Ga/Gb	
IA number must be added.		0 Exiditor		
		• VEGAPLIES C 2	1 C 22 C 23	
			1, 0 22, 0 23. 4 Ga or Ga/Gb	
		 Exiallicit 	134°C Da Da/Db	
	IA Number:	MASC S/20-0000V	(To be additionally marked on equipment)	
	Warninge:	See Base Certificat	** (original marking must be applied)	
Quality Accurance report (QAR) /	Notification (OAN)			
Evpiny date:			102/12	
Compliance:				
The equipment as described above	has been allocated the ratio	a Explosion Protoct	od 'as above' utilizing the SANS/IEC	
Standarda:	has been allocated the fath	y Explosion Flotect	ed as above dulizing the SANS/IEC	
 SANS (IEC) 60079-0. 2019 (201) SANS (IEC) 60079-44: 2042 (201) 	() Equipment - General requ			
 SANS (IEC) 60079-11: 2012 (20 	(1) Equipment protection by	Intrinsic Salety 1		
 SAINS (IEC) 60079-26: 2016 (20 	14) Equipment with Equipme	ent Protection Level	(ELP) Ga	
Note: This certificate covers only the	e listed standards and does	not imply complian	ce to any other standard, related or interred.	π
Is up to the manufacturer to ensure	that the product complies to	all relevant standa	rds for the application.	
Special conditions of safe use "A"	· ·			
Refer to Annex A below for mor	e details.			
Conditions of manufacture:				
Refer to Annex A below for mor	e details.			
			al	
Acon			Dela	
(Chon 10			-0	
Terine Orsmon	nd		Regardt Zeelie	
PROJECT MANA	GER		ECHNICAL SPECIALIST	
A	This certificate covers all units sold a	is long as the QAR/QAN r	emains valid.	
According to the relevant requirements of the r	ance (an approved mark scheme or b	atch testing by an accredi	ted equipment are required to comply with third party quality ted test laboratory).	/
۵	engratus in hazardous locations	is subject to the follow		
	as applicable which	h shall be adhered to:	ng provisions	
	SANS 1008	requirements:		
	Any conditions mention	ed in the above certific	ate:	
	Any relevant require	ments of the MHS Act		
Any re:	strictions and conditions enforced	by the chief inspector	of mines, principal	
inspect	or (Group I equipment) or chief i	nspector of factories (C	iroup II equipment).	
5 🗾 💷	This certificate may o	nly be reproduced in fu		
The c	ertiticate is not transferable and	remains the property o	t the issuing body.	
ÿ —	Mining And Surface	Castification (Dh.) Ltd		
	Ivining And Surface	Avenue Hennenssel	Evt 87	
	Unit S Letyta Fark, 45 Jurg	ine OIE7		222
	Lentu	100 0137		1 1 1 4

EN-230118

IA CERTIFICATE: MASC S/20-9000X Issue 1 Equipment: Radar Sensors types VEGAPULS 21, 31, C 21, C 22, C 23 (Expiry date: 18 January 2026)

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ANNEX A

This	document is based on and must be read in conjunction with certificate IECEx KIWA 19.0015X			
Description (According to Base Certificate) **				
Radar sensors types VEGAPULS 21, 31, C 21, C 22, C 23 for use in explosive atmospheres caused by the presence of combustible gases or dusts, are used for monitoring and control of filing levels by means of microwave technology. The electronics, mounted in a plastic enclosure converts the reflected microwave echo, indicating the filling level, into a 2-wire 420mA HART signal. Operation and control of the sensor can either be through the wired connection or via smart phone and VEGA Tools-App (Bluetooth).				
VEGAPULS 21 and 3 equipped with a displa	1 are electrically identical where type 21 is equipped without a display module and a blind cover and type 31 is ay module and a windowed cover.			
Ambient temperature Ambient temperature Process temperature	range for VEGAPULS 21, 31: -40°C to +70°C range for VEGAPULS C 21, C 22, C 23: -40°C to +80°C range: -40°C to +80°C			
Electrical Data VEGAPULS C 21, C 2 Supply and output cirri in type of protection in maximum values: Ui = 30 V; Ii = 131 mA	22, C 23: zuit (+ (Brown wire), - (Blue wire)): trinsic safety Ex ia IIC or Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with the following ; Pi = 983 mW; Ci = 0.18 nF/m; Li =0.65 μH/m			
VEGAPULS 21, 31: Supply and output cirr in type of protection ir values: Ui = 30 V; li = 131 mA	cuit (+ (terminals 1), - (terminal 2)): trinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with the following maximum y; Pi = 983 mW; Ci ≈ 0 nF; Li ≈ 0 µH			
Routine tests (as per Radar sensors types '	NL/KIWA/ExTR19.0017/00): VEGAPULS 21, 31 shall be subjected to inspection of the encapsulation process.			
** Full description as r	per base certificate			
"Refer to description i	n Base Certificate ** (and any applicable schedules/issues/variations)."			
Standard	See Base Certificate **			
compliance				
Special conditions	For electrical and thermal data refer to Description above.			
of safe use ("X")	The equipment shall be installed and maintained such that hazards caused by electrostatic discharge are			
Conditions of	excluded.			
manufacture	No additional conditions as may be applicable for the base certificate ""			
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 / NCOP 2021 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 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 potification/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 do	αμμιτουνογ.			
This docum	iem is issued based on Mining And Surrace Certification's Standard Contract terms and conditions available on request.			
While every endeavou accurate in the quoted any error made in carry	r is made to ensure that a test/assessment / inspection is representative and accurately performed, and that a report / certificate is results and conclusions drawn from the test/assessment / inspection, MASC or its directors/employees shall in no way be liable for ring 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 respor	sibility for any non-conformances, exclusions or any results / assessments / inspections not in compliance with the standards. By			

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.

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







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/20-90	X00X	Issue	0		
Issue Date	23 January 20	20	Expiry Date	23 January 2023		
** Based on Certificate No	IECEx KIWA 19.0015X 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	VEGA Americas, Inc., 4241 Allendorf Drive, Cincinnati, Ohio 45209, United States of America					
Location(s)						
Description	Radar sensors by the presence means of micr reflected micrc and control of Tools-App (Blu VEGAPULS 2: and a blind coo Ambient tempe Process tempe Process tempe Electrical Dat VEGAPULS 2: Supply and ou in type of prote safe circuit, wil Ui = 30 V; Ii = VEGAPULS 2: Supply and ou in type of prote with the followi Ui = 30 V; Ii = Routine tests Radar sensors	 types VEGAPULS 21, 31, C 21, C 22, C 23 for use in explosive atmospheres caused se of combustible gases or dusts, are used for monitoring and control of filling levels by owave technology. The electronics, mounted in a plastic enclosure converts the wave echo, indicating the filling level, into a 2-wire 420mA HART signal. Operation the sensor can either be through the wired connection or via smart phone and VEGA letotohi. 1 and 31 are electrically identical where type 21 is equipped without a display module ver and type 31 is equipped with a display module and a windowed cover. erature range for VEGAPULS 21, 31: -40°C to +70°C erature range for VEGAPULS C 21, C 22, C 23: -40°C to +80°C erature range: -40°C to +80°C ia :21, C 22, C 23: tput (+ (Brown wire), - (Blue wire)): socion intrinsic safety Ex ia IIC or Ex ia IIIC, only for connection to a certified intrinsically th the following maximum values: 131 mA; Pi = 983 mW; Ci = 0.18 nF/m; Li =0.65 µH/m 1, 31: MA; Pi = 983 mW; Ci = 0 nF; Li = 0 µH (a seer NI (KIWA/ExTR19.0017/00): 				
	** Full description as per base certificate.					
Equipment	Radar sensors	VEONBLILO OS AS	I ype	VEGAPULS 21, 31, C 21, C 22, C 23		
MARKING:	Type:	VEGAPULS 21, 31,	C 21, C 22, C 23			
Continue as per	Ex Marking:	VEGAPULS 21, 3	31:			
		 Exia IIC 14 0 	Sa or Ga/Gb			
applicable.						
IA number must be		VEGAPULS C 21	, C 22, C 23:			
auueu.		 Exia IIC T4 0 	ja or Ga/Gb			
		 Ex ia IIIC T13 	34°C Da, Da/Db			
	IA Number:	MASC S/20-9000X	(To be additionally	marked on equipment)		
	Warnings:	See Base Certificate	e ** (original marki	ng must be applied)		
Quality Assurance report (QAR) /		DE/TUN/QAR06.00	02/09			
Notification (QAN) Expiry d	ate:					



Apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to: SANS 10006 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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> Mining And Surface Certification (Pty) Ltd Unit 5 Lelyta Park, 45 Jurg Ave, Hennopspark Ext 87 Centurion, 0157

IA CERTIFICATE: MASC S/20-9000X Equipment: Radar Sensors types VEGAPULS 21, 31, C 21, C 22, C 23 Page 2 of 2

Compliance:

The equipment as described above has been allocated the rating Explosion Protected Ex ia IIC T4 Ga or Ga/Gb and Ex ia IIIC T134°C Da, Da/Db 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'
- SANS (IEC) 60079-26: 2016 (2014) Equipment with Equipment Protection Level (ELP) Ga

Special conditions of safe use "X":

For electrical and thermal data refer to Description above.

The equipment shall be installed and maintained such that hazards caused by electrostatic discharge are excluded.

Conditions of manufacture:

No additional conditions as may be applicable for the base certificate **

Regardt Zeelie

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).

ANNEX A

This document is based on and must be read in conjunction with certificate IECEx KIWA 19.0015X				
Description (According to Base Certificate *)				
"Refer to description in 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 extent of the requirements in the ARP 0108 (or regulations), SANS 10108 and any other applicable regulation on the certification of the equipment must remain unchanged. 			
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 directorsemployees 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 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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