



# 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.

<b>IA CERTIFICATE</b>	MASC S/20-9000X	<b>Issue</b>	0
<b>Issue Date</b>	23 January 2020	<b>Expiry Date</b>	23 January 2023
<b>** Based on Certificate No</b>	IECEX KIWA 19.0015X	<b>Issue / Variations / Amendment</b>	0
<b>Requested by</b>	VEGA Grieshaber KG, Am Hohenstein 113, 77761 Schiltach, Germany		
<b>Manufacturer</b>	VEGA Grieshaber KG, Am Hohenstein 113, 77761 Schiltach, Germany		
<b>Additional Manufacturing Location(s)</b>	VEGA Americas, Inc., 4241 Allendorf Drive, Cincinnati, Ohio 45209, United States of America		
<b>Description</b>	<p>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 filling 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 4...20mA HART signal. Operation and control of the sensor can either be through the wired connection or via smart phone and VEGA Tools-App (Bluetooth).</p> <p>VEGAPULS 21 and 31 are electrically identical where type 21 is equipped without a display module and a blind cover and type 31 is equipped with a display module and a windowed cover.</p> <p>Ambient temperature range for VEGAPULS 21, 31: -40°C to +70°C            Ambient temperature range for VEGAPULS C 21, C 22, C 23: -40°C to +80°C            Process temperature range: -40°C to +80°C</p> <p><b>Electrical Data</b>            VEGAPULS C 21, C 22, C 23:            Supply and output circuit (+ (Brown wire), - (Blue wire)):            in type of protection intrinsic safety Ex ia IIC or Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:            Ui = 30 V; li = 131 mA; Pi = 983 mW; Ci = 0.18 nF/m; Li = 0.65 µH/m</p> <p>VEGAPULS 21, 31:            Supply and output circuit (+ (terminals 1), - (terminal 2)):            in type of protection intrinsic safety Ex ia IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:            Ui = 30 V; li = 131 mA; Pi = 983 mW; Ci = 0 nF; Li = 0 µH</p> <p><b>Routine tests</b> (as per NL/KIWA/ExTR19.0017/00):            Radar sensors types VEGAPULS 21, 31 shall be subjected to inspection of the encapsulation process.</p> <p>** Full description as per base certificate.</p>		
<b>Equipment</b>	Radar sensors	<b>Type</b>	VEGAPULS 21, 31, C 21, C 22, C 23
<b>MARKING:</b> Original marking as per certificate * remains applicable. IA number must be added.	<b>Type:</b> <b>Ex Marking:</b>  <b>IA Number:</b> <b>Warnings:</b>	VEGAPULS 21, 31, C 21, C 22, C 23 <ul style="list-style-type: none"> <li>• VEGAPULS 21, 31:               <ul style="list-style-type: none"> <li>○ Ex ia IIC T4 Ga or Ga/Gb</li> </ul> </li> <li>• VEGAPULS C 21, C 22, C 23:               <ul style="list-style-type: none"> <li>○ Ex ia IIC T4 Ga or Ga/Gb</li> <li>○ Ex ia IIIC T134°C Da, Da/Db</li> </ul> </li> </ul> MASC S/20-9000X (To be additionally marked on equipment) See Base Certificate ** (original marking must be applied)	
<b>Quality Assurance report (QAR) / Notification (QAN) Expiry date:</b>	DE/TUN/QAR06.0002/09		

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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# IA CERTIFICATE: MASC S/20-9000X

**Equipment: Radar Sensors types VEGAPULS 21, 31, C 21, C 22, C 23**

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<p><b>Compliance:</b> The equipment as described above has been allocated the rating <u>Explosion Protected Ex ia IIC T4 Ga or Ga/Gb and Ex ia IIC T134°C Da, Da/Db</u> utilizing the SANS/IEC Standards:</p> <ul style="list-style-type: none"> <li>SANS (IEC) 60079-0: 2019 (2017) Equipment - General requirements</li> <li>SANS (IEC) 60079-11: 2012 (2011) Equipment protection by Intrinsic Safety 'i'</li> <li>SANS (IEC) 60079-26: 2016 (2014) Equipment with Equipment Protection Level (ELP) Ga</li> </ul>	
<p><b>Special conditions of safe use "X":</b></p> <ul style="list-style-type: none"> <li>For electrical and thermal data refer to Description above.</li> <li>The equipment shall be installed and maintained such that hazards caused by electrostatic discharge are excluded.</li> </ul>	
<p><b>Conditions of manufacture:</b></p> <ul style="list-style-type: none"> <li>No additional conditions as may be applicable for the base certificate **</li> </ul>	
 <b>Regardt Zeelie</b> <b>TECHNICAL SPECIALIST</b>	 <b>Roelof Viljoen</b> <b>TECHNICAL SPECIALIST</b>
<p><small>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).</small></p>	

## ANNEX A

<p>This document is based on and must be read in conjunction with certificate IECEx KIWA 19.0015X</p>	
<p><b>Description (According to Base Certificate *)</b></p>	
<p>"Refer to description in Base Certificate ** (and any applicable schedules/issues/variations)."</p>	
<b>Standard compliance</b>	See Base Certificate *
<b>Special conditions of safe use ("X")</b>	<ul style="list-style-type: none"> <li>As above</li> </ul>
<b>Conditions of manufacture</b>	<ul style="list-style-type: none"> <li>As above</li> </ul>
<b>Conditions of Certification</b>	<ul style="list-style-type: none"> <li>This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate.</li> <li>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).</li> <li>The apparatus must be additionally marked with the MASC marking details above.</li> <li>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.</li> <li>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.</li> <li>The certification on which this IA Certificate is based must remain valid.</li> <li>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.</li> <li>The Ex quality assurance notification/report for the equipment must remain valid.</li> </ul>
<b>Conclusion:</b>	<ul style="list-style-type: none"> <li>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 **.</li> <li>The routine tests for production units according to the Base Certificate ** must be complied with (if applicable).</li> </ul>

**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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