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GOVERNMENT APPROVED TEST LABORATORY
IN TERMS OF ARP 0108: "REGULATORY REQUIREMENTS FOR EXPLOSION PROTECTED APPARATUS"

IA CERTIFICATE

Date Issued: **17 Feb 2023**
*Expiry date: **17 Feb 2026**
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Issue: 0

Ex – Type Examination Certificate

Certificate Number: **S-XPL/23.0192 X**
Equipment: **Radar sensors**
Model / Type: **VEGAPULS C 21, C 22, C 23**
Applicant: **VEGA Grieshaber KG**
Am Hohenstein 113
77761 Schiltach
VEGA Grieshaber
Manufacturer:
Serial No: All serial numbers imported between issued- and expire date and all serial numbers covered by a valid report or acceptable product certification mark.

Supplied by
VEGA Grieshaber KG
Identified by Inspection Authority number
S-XPL/23.0192 X

And as described in the Explolabs file number **XPL/23321/23.0192** is hereby certified "Explosion Protected (Refer to clause 1, for Ex Rating)", having been examined and inspected in accordance with the relevant requirements of South African Standards.

- SANS 60079-0: 2019 Ed 6** Explosive atmospheres Part 0: Equipment — General requirements
IEC 60079-0: 2017 Ed 7
- SANS 60079-11: 2012 Ed 4** Explosive atmospheres Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-11: 2011 Ed 6
- SANS 60079-18: 2017 Ed 4** Explosive atmospheres Part 18: Equipment protection by encapsulation
IEC 60079-18: 2014 Ed 4 "m"
- SANS 60079-31: 2014 Ed 2** Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-31: 2013 Ed 2

Risk of ignition provided:

Protection afforded	Equipment Protection Level (EPL) Group	Performance of protection	Conditions of operation	T class or Max Surface Temp (°C)
Very high	Da Group III	Two independent means of protection or safe even when two faults occur independently of each other	Equipment remains functioning in zones 20, 21 and 22	T121°C T142°C
High	Gb Group II	Suitable for normal operation and frequently occurring disturbances or equipment where faults are normally taken into account	Equipment remains functioning in zones 1 and 2	T4 (135°C)
High	Db Group III		Equipment remains functioning in zones 21 and 22	T121°C T134°C T142°C T155°C

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



1. GENERAL

The marking of the Radar sensors shall include the following:

Ex ib mb IIC T4 Gb

2-wire 4-20 mA HART:

Ex ta, ta/tb IIC T₂₀₀ 121°C Da, Da/Db

Ex tb IIC T₂₀₀ 134°C Db

4-wire Modbus:

Ex ta, ta/tb IIC T₂₀₀ 142°C Da, Da/Db

Ex tb IIC T₂₀₀ 155°C Db

Radar sensors types VEGAPULS 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 or 4-wire Modbus signal. Operation and control of the sensor can either be through the wired connection or via smart phone and VEGA Tools-App (Bluetooth).

The sensor is equipped with a fixed cable of 5m, 10 m, 25m or selectable length with a G1", 1"NPT or R1" threaded connection.

Ambient and process temperature range for Ex ib mb, Ex tb: -20 to 80 °C

Ambient and process temperature range for Ex ta, ta/tb: -20 to 67 °C

Electrical Data

2-wire 4-20 mA HART:

Supply and output circuit (+ (Brown wire), - (Blue wire)):

$U_N = 12 \dots 35 \text{ V}, < 1 \text{ W}$

4-wire Modbus:

Supply (+ (Brown wire), - (Blue wire)) and output circuit (+ (Black wire), - (White wire)):

$U_N = 8 \dots 30 \text{ V}, < 1 \text{ W}$

Based on the following documentation: IECEx KIWA 19.0014X Issue No. 0

2. INSTALLATION INSTRUCTIONS

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.

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

- For electrical and thermal data refer to the general product information.
- The equipment shall be installed and maintained such that hazards caused by electrostatic discharge are excluded and that there is a low risk of mechanical danger.

4. SCHEDULE OF LIMITATIONS *(denoted by "U" after certificate number)*

Not applicable.

5. CONDITIONS OF CERTIFICATION

All production units must be covered by a QAN (Quality Assurance Notification), Product Mark Scheme or batch evaluation.

6.

MARKING

The following (or similar) information have to be clearly and permanently marked on all units:

Supplier : VEGA Grieshaber KG
 Manufacturer : VEGA Grieshaber
 Equipment : Radar sensors
 Model/Type : VEGAPULS C 21, C 22, C 23
 Serial No. : ---
 Ex Rating : Ex ib mb IIC T4 Gb
 2-wire 4-20 mA HART:
 Ex ta, ta/tb IIIC T₂₀₀ 121°C Da, Da/Db
 Ex tb IIIC T₂₀₀ 134°C Db
 4-wire Modbus:
 Ex ta, ta/tb IIIC T₂₀₀ 142°C Da, Da/Db
 Ex tb IIIC T₂₀₀ 155°C Db
 IA Certificate No : S-XPL/23.0192 X

This certification indicates compliance with R10.1 of the Mines Health and Safety Act and/or EMR 9(2) of the Occupational Health and Safety Act, provided that the apparatus is used as relevant in accordance with:

- i) SANS 10086 and IEC/SANS 61241-14 requirements as applicable;
 - ii) Any conditions mentioned in the above report;
 - iii) Any relevant requirements and codes of practice enforced in terms of the Mine Health and Safety Act or Occupational Health and Safety Act, and
 - iv) Any restrictions and conditions enforced by the Chief Inspector of Mines or the Principal Inspector or the Chief Inspector: Occupational Health and Safety.
- v) A revision certificate replaces all previous version of the certificate.
 vi) * - Only covers equipment Imported between the "Issued" and "Expire" dates.
 vii) If and when your QAN (Quality Assurance Notification) Certificate for your equipment manufacturer expires during the valid period of the IA Certification (issued for your equipment) and a new certificate is not submitted the existing IA Certification will then be cancelled. It is thus the client's responsibility to always submit the updated and valid QAN certificate(s) to Explolabs (Pty) Ltd

Responsible Testing Officer:

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 duties in terms of any contract undertaken by us. 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 manufacturer attests on his own responsibility that the equipment has been constructed in accordance with the applicable requirements of 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

