

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

**IA CERTIFICATE**

Date Issued: **29 Sep 2021**  
\*Expiry date: **29 Sep 2024**  
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**Issue: 0**

**Ex – Type Examination Certificate**

Certificate Number: **S-XPL/21.0900 X**  
Equipment: **Vibrating level switch VEGAWAVE**  
Model / Type: **WE6\*(\*)..GI\*\*\*\*\* and/or WE6\*(\*)..\*\*\*\*\***  
Applicant: **Vega Instruments (Pty) Ltd**  
**PO Box 692**  
**Wilgeheuwels**  
**1736**

Manufacturer: **VEGA Grieshaber KG**  
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 Instruments (Pty) Ltd**  
Identified by Inspection Authority number  
**S-XPL/21.0900 X**

And as described in the Explolabs file number **XPL/22271/21.0900** 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 60079-31: 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)	Performance of protection	Conditions of operation	T class or Max Surface Temp (°C)
	Group			
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	see manual
High	Db Group III	Suitable for normal operation and frequently occurring disturbances or equipment where faults are normally taken into account	Equipment remains functioning in zones 21 and 22	see manual

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

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1.

**GENERAL**

The marking of the Vibrating level switch VEGAWAVE shall include the following:

**Ex ta IIIC T see manual Da**

**Ex ta/tb IIIC T see manual Da/Db**

**Ex tb IIIC T see manual Db**

**IP66**

**Description**

The Vibrating Level Switch type VEGAWAVE WE6\*(\*)GI\*\*\*\*\* and/or VEGAWAVE WE6\*(\*)GX\*\*\*\*\* is used for level monitoring, controlling and regulating in silos with dust generating material. The probe of the Vibrating Level Switch vibrates at its mechanical resonant frequency. In case the probe is covered with material, the vibration is damped and a switch signal is generated.

**Subject and type:**

Vibrating level switch type VEGAWAVE

WE6\*(\*)\*\*\*\*\*

Additional features  
X = without

Cable entry  
M = M20x1,5  
N = 1/2NPT

Enclosure / type of protection  
A = aluminium enclosure IP66  
\* = aluminium enclosure with special colour

Electronics  
C = contactless switch  
AC/DC 20...253 V  
R = relay output  
DC 20...72 V / AC 20...253 V  
T = floating transistor (NPN/PNP)  
DC 10...55 V  
Z = two-wire (intrinsically safe version)  
N = NAMUR EN60947-5-7-6 (intrinsically safe version)

Process connection see manual  
Version / temperature range / material  
A = standard/  
-40 °C...150 °C / 1.4435 (316 L)  
B = with adapter /  
-40 °C...250 °C / 1.4435 (316 L)  
C = detection of solids in water /  
-40 °C...150 °C / 1.4435 (316 L)  
D = detection of solids in water /  
-40 °C...+250 °C  
E = with CarboCer coating; minimizing buildup,  
no protection against corrosion/abrasion /  
-40 °C...+150 °C  
F = with CarboCer coating; minimizing buildup,  
no protection against corrosion/abrasion /  
-40 °C...+250 °C

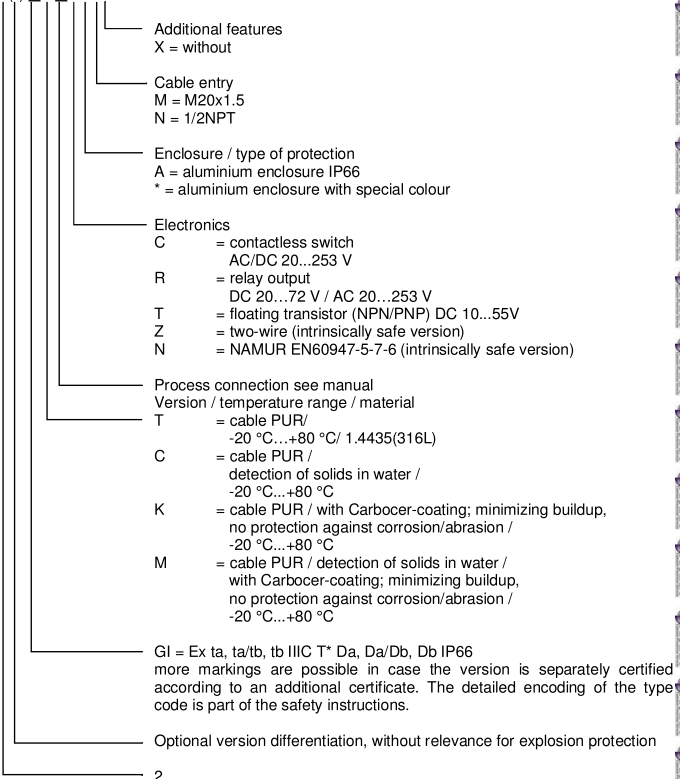
GI = Ex ta, ta/tb, tb IIIC T\* Da, Da/Db, Db IP66  
more markings are possible in case the version is separately certified according to an additional certificate. The detailed encoding of the type code is part of the safety instructions.

Optional version differentiation, without relevance for explosion protection

1, 3

Vibrating level switch type VEGAWAVE

WE6(\*)\*\* \*\* \*\* \*\*



Additional features  
X = without

Cable entry  
M = M20x1.5  
N = 1/2NPT

Enclosure / type of protection  
A = aluminium enclosure IP66  
\* = aluminium enclosure with special colour

Electronics  
C = contactless switch  
AC/DC 20...253 V  
R = relay output  
DC 20...72 V / AC 20...253 V  
T = floating transistor (NPN/PNP) DC 10...55V  
Z = two-wire (intrinsically safe version)  
N = NAMUR EN60947-5-7-6 (intrinsically safe version)

Process connection see manual  
Version / temperature range / material  
T = cable PUR/  
-20 °C...+80 °C/ 1.4435(316L)

C = cable PUR /  
detection of solids in water /  
-20 °C...+80 °C  
K = cable PUR / with Carbocer-coating; minimizing buildup,  
no protection against corrosion/abrasion /  
-20 °C...+80 °C

M = cable PUR / detection of solids in water /  
with Carbocer-coating; minimizing buildup,  
no protection against corrosion/abrasion /  
-20 °C...+80 °C

GI = Ex ta, ta/tb, tb IIC T\* Da, Da/Db, Db IP66  
more markings are possible in case the version is separately certified  
according to an additional certificate. The detailed encoding of the type  
code is part of the safety instructions.

Optional version differentiation, without relevance for explosion protection

2

**Parameters****Electrical data**

Type VEGAWAVE WE6\*(\*).GI\*\*\*C\*\*\* and/or VEGAWAVE WE6\*(\*).GX\*\*\*C\*\*\* with electronics insert WE60C built in

supply voltage	DC/AC 20...253 V
output	contactless switch
current	< 5 mA
load current min.	10 mA max.
	400 mA
Maximum short circuit current	$I_{cn}$ 100 A

Type VEGAWAVE WE6\*(\*).GI\*\*\*R\*\*\* and/or VEGAWAVE WE6\*(\*).GX\*\*\*R\*\*\* with electronics insert WE60R built in

supply voltage	AC	20...253 V (3A)
or	DC	20... 72 V
power consumption		1...8 VA/max. 1.6 W
relay circuit		
max. values:		253 V, 3 A, 500 VA
		253 V, 1 A, 41 W
Maximum short circuit current		$I_{cn}$ 35 A

Type VEGAWAVE WE6\*(\*).GI\*\*\*T\*\*\* and/or VEGAWAVE WE6\*(\*).GX\*\*\*T\*\*\* with electronics insert WE60T built in

supply voltage	DC	10...55 V
power consumption		max. 0.5 W
load current		max. 400 mA
Maximum short circuit current		$I_{cn}$ 100 A

Type VEGAWAVE WE6\*(\*).GI\*\*\*Z\*\*\* and/or VEGAWAVE WE6\*(\*).GX\*\*\*Z\*\*\* with intrinsically safe electronics insert WE60Z built in

Supply and signal circuit in type of protection  
Intrinsic Safety Ex ia IIC  
only for connection to a certified intrinsically safe  
circuit with the following maximum values:  
 $U_i$  = 30 V  
 $I_i$  = 131 mA  
 $P_i$  = 983 mW  
effective internal capacitance negligible  
effective internal inductance negligible

Type VEGAWAVE WE6\*(\*).GI\*\*\*N\*\*\* and/or VEGAWAVE WE6\*(\*).GX\*\*\*N\*\*\* with intrinsically safe electronics insert WE60N built in

Supply and signal circuit  
in type of protection Intrinsic Safety Ex ia IIC/IIB or  
Ex ib IIC/IIB only for connection to a certified  
intrinsically safe circuit with the following maximum  
values:  
 $U_i$  = 20 V  
 $I_i$  = 103 mA  
 $P_i$  = 516 mW  
effective internal capacitance negligible  
effective internal inductance  $L_i$  < 5  $\mu$ H

**Thermal data**

The max. surface temperature is the higher one of the values listed below.

Permitted process temperature at the probe	
types VEGAWAVE WE61/63(*) .GIA/C/E*****	-40 °C...+150 °C
types VEGAWAVE WE61/63(*) .GIB/D/F*****	-40 °C...+250 °C
types VEGAWAVE WE62(*) .GIC/K/M/T*****	-20 °C... +80 °C
or	
types VEGAWAVE WE61/63(*) .GXA/C/E*****	-40 °C...+150 °C
types VEGAWAVE WE61/63(*) .GXB/D/F*****	-40 °C...+250 °C
types VEGAWAVE WE62(*) .GXC/K/M/T*****	-20 °C... +80 °C

Max. surface temperature T at the probe process temperature +6 K

Permitted ambient temperature at the electronics enclosure (Zone 20 or Zone 21)  
-40 °C...+ 60 °C

Maximum surface temperature at the electronics enclosure Zone 20

type VEGAWAVE WE6(*) .GI***C/R/T***	
with thermo fuse limited to	98 °C
type VEGAWAVE WE6(*) .GI***N*** ambient temperature	+23 K
type VEGAWAVE WE6(*) .GI***Z*** ambient temperature	+43 K
or	
type VEGAWAVE WE6(*) .GX***C/R/T***	
with thermo fuse limited to	98 °C
type VEGAWAVE WE6(*) .GX***N*** ambient temperature	+23 K
type VEGAWAVE WE6(*) .GX***Z*** ambient temperature	+43 K

Maximum surface temperature at the electronics enclosure Zone 21

type VEGAWAVE WE6(*) .GI***C/R/T***	
with thermo fuse limited to	98 °C
type VEGAWAVE WE6(*) .GI***N*** ambient temperature	+23 K
type VEGAWAVE WE6(*) .GI***Z*** ambient temperature	+36 K
or	
type VEGAWAVE WE6(*) .GX***C/R/T***	
with thermo fuse limited to	98 °C
type VEGAWAVE WE6(*) .GX***N*** ambient temperature	+23 K
type VEGAWAVE WE6(*) .GX***Z*** ambient temperature	+36 K

Degrees of protection according to IEC/SANS 60529 IP66

Based on the following documentation:

IECEx BVS 06.0013X Issue No.: 2 and/or BVS 06 ATEX E 092 X up to Supplement 2

**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)

The prospective short-circuit current I<sub>cn</sub> must not exceed the specified value. In case of extremely ignitable dusts (MIE < 3 mJ) the equipment must not be used in areas where intensive charging processes are to be expected.

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

None.

**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 Instruments (Pty) Ltd
- Manufacturer : VEGA Grieshaber KG
- Equipment : Vibrating level switch VEGAWAVE
- Model/Type : WE6\*(\*).GI\*\*\*\*\* and/or WE6\*(\*).\*\*\*\*\*
- Serial No. : ---
- Ex Rating : Ex ta IIIC T see manual Da  
          : Ex ta/tb IIIC T see manual Da/Db  
          : Ex tb IIIC T see manual Db  
          : IP66

IA Certificate No : S-XPL/21.0900 X

**Responsible Testing Officer:**

Digitally signed by  
Leon Odendaal  
Date: 2021.09.29  
11:01:53 +02'00'



**L Odendaal**

**Technical Specialist**

**EXPLOLABS EXPLOSION PREVENTION SERVICES**

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