



(Pty) Ltd

7 Spanner Rd / PO Box 467
Olifantsfontein
1665
Tel: +27 (11) 316 4601
Fax: +27 (11) 316 5670
E-mail: admin-mgr@explolabs.co.za

Rea No: 1999/027771/07

GOVERNMENT APPROVED TEST LABORATORY

IN TERMS OF ARP 0108: "REGULATORY REQUIREMENTS FOR EXPLOSION PROTECTED APPARATUS"

IA CERTIFICATE

Date Issued: **11 Apr 2022**
*Expiry date: **11 Apr 2025**
Page 1 of 4
Issue: 8

Ex – Type Examination Certificate

Certificate Number: **S-XPL/08480 X**
Equipment: **Capacitive Level Switch**
Model / Type: **VEGACAP CP6*.C **Z****
Applicant: **Vega Instruments (Pty) Ltd**
PO Box 692
Wilgeheuwels
1736

Manufacturer: **VEGA Grieshaber**

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/08480 X

And as described in the Explolabs file number **XPL/9672/08480 Issue 8** 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.

- IEC/SANS 60079-0: 2004** "Electrical apparatus for explosive gas atmospheres, Part 0: General requirements"
- IEC/SANS 60079-11: 2006** "Electrical apparatus for explosive gas atmospheres, Part 11: Equipment protection by Increased safety 'i'"
- IEC/SANS 60079-26: 2004** Explosive atmospheres – Part 26: Equipment with equipment protection level (EPL) Ga

Locations	Zone 0	Gas: Surface
Frequency		Continuous as could occur under normal operation
Environment	Group IIC	Propane to Hydrogen plus Acetylene
Limiting Temp.	T6	85 °C

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

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

This report supersedes all previous documents bearing the reference no XPL/9672/08480 Issue 7.



1. GENERAL

The marking of the Capacitive Level Switch shall include the following:

Ex ia IIC T6

The capacitive level switches type VEGACAP CP6*.C_**Z** are used for monitoring or control of filling levels in explosion hazardous areas.

The measuring media are allowed to be combustible liquids, gases, mists or vapours.

Mechanical execution of the capacitive level switches:

Type	Electrodes
CP62.C **Z**	Partly insulated electrode, optionally with screening tube or concentric tube
CP63.C **Z**	Fully insulated electrode, optionally plated
CP64.C **Z**	Fully insulated electrode, optionally with screening tube, concentric tube or plated
CP65.C **Z**	Partly insulated cable electrode
CP66.C **Z**	Insulated cable electrode

If the capacitive level switches are used in explosion hazardous areas of zone 0, the permissible temperature range in the area of the electronics/of the medium dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range	Medium temperature range
T6	-20°C...+58°C	-20°C...+58°C
T5, T4, T3, T2, T1	-20°C...+60°C	-20°C...+60°C

The capacitive level switches are allowed to be operated in an explosion hazardous area of the zone 0, only if atmospheric conditions exist (pressure from 0.8 bar to 1.1 bar).

If no explosion hazardous atmospheres exist, the permissible operating temperatures and pressures have to be taken from the manufacturer's data (manual).

If the capacitive level switches are mounted in the partition wall between explosion hazardous areas of the zone 0 (electrode) and zone 1 (electronics), the permissible temperature range in the area of the electronics/of the medium dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range	Medium temperature range
T6	-40°C...+58°C	-20°C...+60°C
T5	-40°C...+73°C	-20°C...+60°C
T4, T3, T2, T1	-40°C...+80°C	-20°C...+60°C

The electrodes of the capacitive level switches are allowed to be operated in an explosion hazardous area of the zone 0, only if atmospheric conditions exist (pressure from 0.8 bar to 1.1 bar).

If no explosion hazardous atmospheres exist, the permissible operating temperatures and pressures have to be taken from the manufacturer's data (manual).

If the sensors of the capacitive level switches are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature at the electronics/housing must not exceed the values as mentioned in the a.m. table.

If the capacitive level switches are mounted in explosion hazardous areas of the zone 1, the permissible temperature range in the area of the electronics/of the medium dependent on the temperature class has to be taken from the following table:

Temperature class	Ambient temperature range	Medium temperature range for electrodes with PE-insulation	Medium temperature range for other electrodes
T6	-40°C...+58°C	-40°C...+80°C	-50°C...+85°C
T5	-40°C...+73°C	-40°C...+80°C	-50°C...+100°C
T4	-40°C...+80°C	-40°C...+80°C	-50°C...+135°C
T3*, T2*, T1*	-40°C...+80°C	-40°C...+80°C	-50°C...+150°C

* with temperature adapter for medium temperatures > 150°C...200°C

If the sensors of the capacitive level switches are operated at higher medium temperatures as listed in the a.m. table, measures have to be taken, that the danger of ignition caused by these hot surfaces is excluded. The max. permissible temperature on the electronics/housing must not exceed the values as mentioned in the a.m. table.

SAFETY PARAMETERS

Supply and signal circuit.....in type of protection „Intrinsic Safety” Ex ia IIC (Terminals K1[+], K12[-] in the housing for the electronics or., in the execution with the 2 cell housing, in the terminal housing)

only for connection to a certified intrinsically safe circuit maximum values:

$$U_i = 30 \text{ V}$$

$$I_i = 131 \text{ mA}$$

$$P_i = 983 \text{ mW}$$

The effective internal capacitances and inductances are negligibly small.

Additionally, in the execution VAGACAP CP6*.C_**Z3/4/5/9* the following values for Li' and Ci' of the connection cable mounted fixed have to be observed:

$$L' = 0.55 \text{ } \mu\text{H/m}$$

$$C'_{\text{wire/wire}} = 58 \text{ pF/m}$$

$$C'_{\text{wires/shield}} = 270 \text{ pF/m}$$

The intrinsically safe signal circuit is safe galvanically separated from the parts which can be earthed.

Based on the following documentation: TUV 04 ATEX 2611X and/or IECEx TUN 04.0022X.

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 OF USE (X)

At the plastic parts of the capacitive level switches type VEGACAP CP6*.C_**Z** there is a danger of ignition by electrostatic discharge. Observe manual of the manufacturer and warning label.

For zone 0 applications, at the metallic parts of the capacitive level switches type VEGACAP CP6*.C_**Z** made of light metal there is a danger of ignition by impact or friction. Observe manual of the manufacturer.

For zone 0 or zone 0/1 applications and at risks by pendulum or vibration the respective parts of the capacitive level switches type VEGACAP CP65.C_**Z** and type VEGACAP CP66.C_**Z** have to be secured effectively against these dangers. Observe manual of the manufacturer.

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

This report supersedes all previous documents bearing the reference no XPL/9672/08480 Issue 7.

4. **CONDITIONS OF CERTIFICATION**

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

5. **MARKING**

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

- Supplier : Vega Instruments (Pty) Ltd
- Manufacturer : VEGA Grieshaber
- Equipment : Capacitive Level Switch
- Model/Type : VEGACAP CP6*.C_**Z**
- Serial No. : --
- Ex Rating : Ex ia IIC T6
- IA Certificate No : S-XPL/08480 X

Responsible Testing Officer:



L Odendaal
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