Safety instructions
VEGABOX 03

CSA 70053891

CL I DIV 1, GP ABCD

Ex ia IIC T6 Ga;

CL I Zone 0, 1, AEx ia IIC T6 Ga

Document ID: 52432

Contents

Please note:

These safety instructions are part of the following documentation:

- 45925 - VEGABOX 003
- 52433 - Certificate of Conformity CSA 70053891

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1 Area of applicability

These safety instructions apply to the breather housing VEGABOX 03 series VEGABOX BOX03.CC/CO****** according to Certificate of Conformity CSA 70053891 (certificate number on the type label) and for all instruments with the number of the safety instruction (52432) on the type label.

2 General information

The VEGABOX 03 is preferably used for field mounting for separated connection of sensor circuits and as breather housing. The VEGABOX 03 of type series VEGABOX BOX03.CC/CO****** with integrated connection terminals are preferably used for pressure compensation of the pressure measuring cell and as terminal box in conjunction with pressure transmitters of Messrs. VEGA in the cable version with capillary cable.

In VEGABOX 03 only terminal blocks as type VEGABOX BOX03.CC/CO****** for connection of intrinsically safe circuits can be installed. A terminal block is preferably used for connection of an inrinsically safe circuit of VEGA pressure transmitters in the version with connection cable with corresponding power supply or signal conditioning instrument.

The VEGABOX BOX03.CC/CO****** is an intrinsically safe electrical instrument for installation in hazardous atmospheres of all combustible materials of explosion groups A, B, C, D for applications requiring Class I, Div 1 instruments or for explosion groups IIA, IIB, IIC for applications requiring Class I, Zone 0, 1 Ex ia instruments or for installation outside of hazardous areas.

If the VEGABOX BOX03.CC/CO****** are installed and operated in hazardous areas, the general Ex installation regulations in the Canadia Electrical Code/national Electrical Code, IEC 60079-14 as well as these safety instructions must be observed.

The operating instructions as well as the installation regulations or standards that apply for explosion protection of electrical systems must generally be observed.

The installation of explosion-endangered systems must always be carried out by qualified personnel.

3 Electrical data

In version VEGABOX BOX03.CC/CO**** with installed terminal blocks**

Power supply and signal circuit: (terminal 1, 2)	In ignition protection type intrinsic safety Ex ia IIC/IIB For connection to an intrinsically safe circuit. Maximum values: ● Ui = 30 V ● Ii = 150 mA ● Pi = 1000 mW ● Ci = 0 ● Li = 0 When using the supplied connection cable, the following cable inductances L_i' and cable capacitances C_i' have to be taken into account: ● Li = 0.6 µH/m ● $C_{i\ wire/wire}$ = 133 pF/m ● $C_{i\ wire/screen}$ = 215 pF/m

Temperature circuit: (terminals 3 … 6)

In ignition protection type intrinsic safety Ex ia IIC/IIB

For connection to an intrinsically safe circuit.

Maximum values:

- Ui = 30 V
- Ii = 100 mA
- Pi = 500 mW
- Ci = 0
- Li = 0

When using the supplied connection cable, the following cable inductances L_i' and cable capacitances C_i' have to be taken into account:

- Li = 0.6 µH/m
- $C_{i\ wire/wire}$ = 188 pF/m
- $C_{i\ wire/screen}$ = 555 pF/m

The intrinsically safe circuits are electrically isolated from each other and from parts which can be grounded.

4 Application conditions

In version VEGABOX BOX03.CC/CO**** with terminal blocks**

Permissible ambient temperatures depending on temperature class

EPL-Ga instrument

Temperature class	**T6 … T1**
Permissible ambient temperature	-20 … +60 °C

The connection housing must only be operated in a hazardous area requiring instruments of category EPL-Ga if there are atmospheric conditions (pressure of 0.8 bar to 1.1 bar). If there is no explosive atmosphere, then the permissible operating temperatures and pressures must be taken from the manufacturer specifications.

EPL-Gb instrument

Temperature class	**T6 … T1**
Permissible ambient temperature	-50 … +80 °C

The permissible operating temperatures without explosion-endangered atmosphere are mentioned in the respective manufacturer instructions, e.g. operating instructions manuals.

5 Protection against static electricity

The VEGABOX BOX03.CC/CO****** housing has a warning label referring to the safety instructions that must be followed in case there is a danger of electrostatic charging during operation in explosion-endangered areas.

Caution: Plastic parts! Danger of electrostatic charging!

- Avoid friction

- No dry cleaning
- Do not mount in areas with flowing, non-conductive products

6 Installation

If a cable other than the VEGA connection cable is used as interconnection for signal and power supply circuit and the temperature circuit (PT100-measuring circuit), please make sure that the insulation voltage of at least 500 V AC according to IEC 50020 sect. 6.4.12 is maintained and the insulation thickness of the wire insulation is at least 0.25 mm.

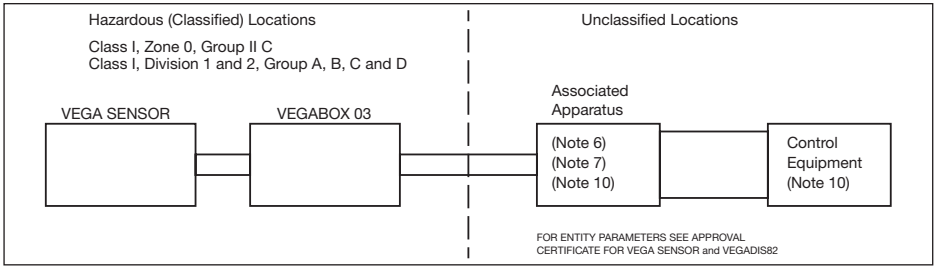
7 Grounding

The external earth terminal of VEGABOX BOX03.CC/CO******* must be grounded. When using a screened connection cable between VEGABOX BOX03.CC/CO****** and the signal conditioning instrument, the cable screen is only connected to the intended earth terminal in the VEGABOX BOX03.CC/CO******. If another grounding of the cable screen is necessary, it should be carried out according to IEC 60079-14 sect. 16.2.2.3

8 Material resistance

The instrument should only be used in media against which the wetted parts are sufficiently resistant.

9 Installation Control Diagram



NOTES:

1. The Intrinsic Safety Entity concept allows the interconnection of two CSA certified Intrinsically safe devices with entity parameters not specifically examined in combination as a system when: Uo or Voc or Vt < Vmax, Io or Isc or It < Imax, Ca or Co > Ci + Ccable, La or Lo > Li + Lcable, Po < Pi.

2. For Division 2 installation, the Associated Apparatus is not required to be CSA Certified under Entity Concept if the VEGA Sensor is installed in accordance with the Canadian Electrical Code, CSA C22.1 Part 1 Appendix F for Division 2 wiring methods excluding Nonincendive field wiring.

3. Control equipment connected to the Associated Apparatus shall not use or generate more than 250 Vrms or Vdc.

4. Division 1 installation should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the the Canadian Electrical Code.

5. The configuration of associated Apparatus shall be CSA certified under Entity Concept.

6. Associated Apparatus manufacturer's installation drawing shall be followed when installing this equipment.

7. The configuration of Field Device shall be CSA certified under Entity Concept.

8. The Field Device manufacturer's installation drawing shall be followed when installing this equip-

ment.

9. VEGA Sensor is CSA cerified for Class I, Zone 0, applications. If connecting AEx[ib] Associated Apparatus or AEx ib I.S. Field Device to VEGA Sensor the I.S. circuit is only suitable for Class I, Zone 1, and is not suitable for Class I, Zone 0 or Class I, Division 1, Hazardous (Classified) Locations.

10. No revision to drawing without prior Agency Approval.

11. Warning: Substitution of components may impair suitability for hazardous locations.

12. If the Electrical parameters are unknown, the following values may be used: Ccable = 60pF/ft Lcable = 0.20uH/ft

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