



## Safety instructions

### VEGADIS 82

Dust-Ignitionproof and Dust-Ignition Protection by Enclosure

CSA16CA70048296X



Document ID: 57049



# VEGA

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Supplementary documentation:

- Operating Instructions VEGADIS 82
- Certificate of Compliance CSA16CA70048296X (Document ID: 51679)

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## 1 Area of applicability

These safety instructions are part of VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* with dust-ignitionproof, dust-ignition protection by enclosure according to the Certificate of Compliance CSA16CA70048296X (certificate number on the type label) and for all instruments with the number of the safety instruction (57049) on the type label.

## 2 General information

The VEGADIS 82 in dust-ignitionproof, dust-ignition protection by enclosure is used for spatially separated scaling, parameter adjustment and visualisation of measured values in conjunction with a dust-ignitionproof, dust-ignition protection by enclosure certified 4 ... 20 mA and HART sensors.

The VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* are suitable for use in hazardous areas of all combustible materials of explosion group E, F or G for applications requiring Class II, Division 1 instruments or of explosion group IIIC, IIIB or IIIA for applications requiring Zone 21 AEx tb instruments .

If the VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* are installed and operated in hazardous areas, 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 trained in explosion protection who is familiar with the national regulations.

The equipment has to be operated within the specified electrical, thermal and mechanical parameters. The equipment is not intended to be used as personal protective equipment. To prevent injury, read the manual before use.

### Hazardous location designation:

Class II, Division 1, Groups E, F and G, Class III

Ex tb IIIC T94°C Db

Zone 21 AEx tb IIIC T94°C Db

### Environment designation:

Type 4x/6P, IP66/68

### Operating temperature range

-40 ... +60 °C (-40 ... 140 °F)

## 3 Technical data

### VEGADIS DIS82.CR\*A/V/H\*\*\*\*\*

Power supply and signal circuit: (terminals 1, 2, 3, 4)

$U \leq 35 \text{ V DC}$

$I = 3.5 \dots 22.5 \text{ mA}$  with superimposed HART signal

For connection to 4 ... 20 mA(HART) sensors with dust-ignitionproof, dust-ignition protection by enclosure.

Circuit of the display and adjustment module: (spring contacts in the connection compartment)

Only for connection to the display and adjustment module PLICSCOM

The supply and signal circuit is reliably galvanically separated from parts that can be grounded.

## 4 Application conditions

The max. permissible ambient temperatures depending on the temperature classes are specified in

the following table.

### Class II, III, Division 1 applications; Class II, Zone 21, Db applications

Permissible ambient temperature	-40 ... +60 °C (-40 ... 140 °F)
Max. surface temperature increase	Ambient temperature +34 K
Housing protection rating	TYPE 6P

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

WARNING – Potential electrostatic charging hazard – See instructions  
 AVERTISSEMENT – Danger potentiel de charges électrostatiques – Voir instructions

The VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* in the version with chargeable plastic parts, such as e.g. metal housing with inspection window, are provided with a caution label referring to the safety measures that must be taken in case electrostatic charging occurs during operation.

Caution: Plastic parts! Danger of electrostatic charging!

- Avoid friction
- No dry cleaning
- Construction/Installation: The VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* must be constructed/installed in such a way that
  - electrostatic charges are ruled out during operation, maintenance and cleaning.
  - process-related electrostatic charges, e.g. by measuring media flowing past, are ruled out

## 6 Installation/construction

No potential equalisation on the complete circuit between VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* and the sensor(s), associated instrument required.

The required isolation voltage is > 500 V AC.

## 7 Grounding/Potential equalization

In order to avoid the danger of electrostatic charging of the metallic parts, the VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* must be electrostatically connected to the local potential equalisation (transfer resistance ≤ 1 MΩ), e.g. via the ground terminal.

The external/internal ground connection terminal on the housing of the VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* must have a low impedance connection to the potential equalization.

## 8 Impact and friction sparks

When used in hazardous locations, the VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* in light metal versions (e.g. aluminium/titanium/zircon) must be mounted in such a way that sparks from impact and friction between light metals and steel (except stainless steel, if the presence of rust particles can be excluded) cannot occur.

## 9 Material resistance

The VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* must only be used in media against which the materials of the wetted parts are sufficiently resistant.

## 10 Dust-ignitionproof, dust-ignition protection by enclosure

The terminals for connecting the operating voltage or signal circuits are integrated in the terminal compartment with dust-ignitionproof, dust-ignition protection by enclosure.

The dust-ignitionproof housing is provided with a M20 x 1.5 or ½-14 NPT thread for connection to a certified "Conduit" system or for mounting an "Ex-t" certified cable entry.

Simple cable and wire entry types may not to be used.

The factory-installed sealing plug (depending on the type ordered) is part of the dust-ignitionproof enclosure. When using certified or suitable sealing plugs, it is obligatory to observe the appropriate certificates/documents.

The dust-ignitionproof sealing plug must be tightly screwed into the housing.

The separately certified plugs or the conduits sealing facilities must be suitable for the lowest ambient temperature and the max. permissible ambient temperature on the housing or the temperature classes on the electronics.

The dust-ignitionproof connection compartment of this equipment must be provided with cable glands resp. conduits which are certified according to standard 60079 (2013) or for Divisions applications.

For Divisions classified installations enclosures with metric treaded entries shall be installed with certified metric to NPT adaptors.

When the VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* are delivered, depending on the version, the red threaded or dust protection caps must be removed before installing the device and the openings must be sealed according to the requirements of the dust-ignitionproof, and the IP protection type specified on the type label.

When wiring the connection line to the dust-ignitionproof connection compartment , it must be sufficiently secured against damage.

The connection cables, the cable entry and the plugs or the conduit sealing facilities must be suitable for the ambient temperature range.

Before opening the lid of the dust-ignitionproof connection compartment or in case it is already open (e. g. during connection or service work), make sure that either the supply cable is completely voltage free or no explosive atmosphere is present.

The cover of the dust-ignitionproof connection compartment must be screwed in completely before commissioning and secured by screwing out the lid locking screw all the way to the stop.

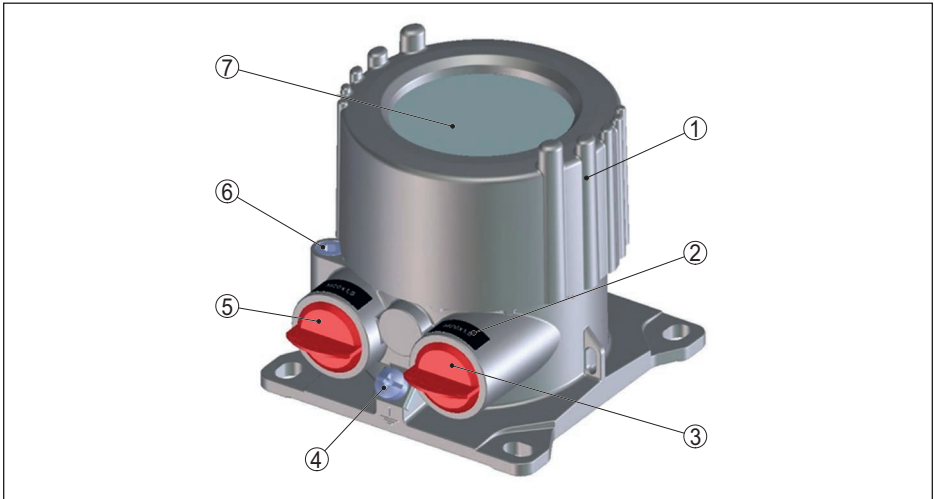


**Warning:**

Do not open when an explosive atmosphere is present.

Unused openings must be sealed according to the general Ex installation regulations in Canadian Electrical Code/US National Electrical Code, IEC 60079-14 and as well with these safety instructions.

**Aluminium/Stainless steel dust-ignitionproof housing**



- 1 *Dust-ignitionproof connection compartment with electronics module*
- 2 *Type of thread*
- 3 *Threaded mounting socket*
- 4 *External ground terminal*
- 5 *Threaded mounting socket*
- 6 *Locking screw of the lid*
- 7 *Inspection window of glass*

**11 Type and size of the threads of the field wiring entries**

The dust-ignitionproof housing is provided with a M20 x 1.5 or ½-14 NPT thread for connection to a certified "Conduit" system or for mounting of a certified dust-ignitionproof cable entry (only for zones applications).

Housing openings with the corresponding thread are closed with red thread/dust cover at delivery.

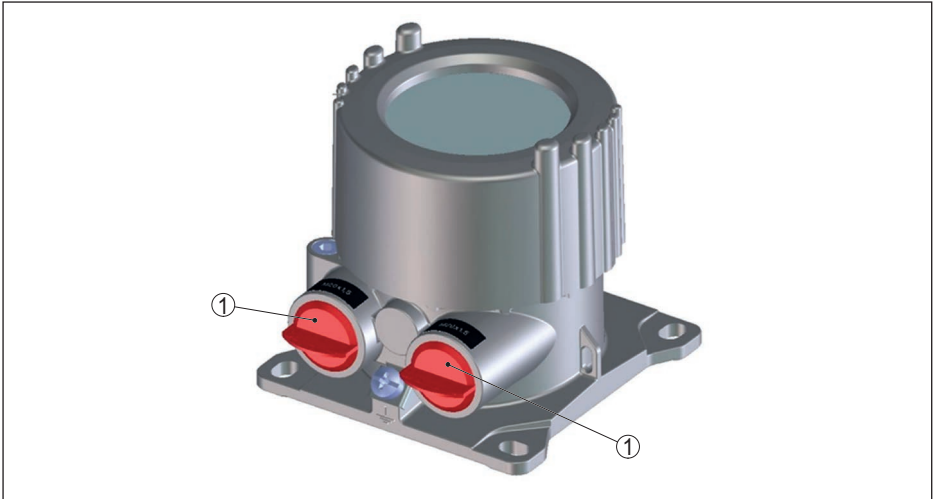
A label near the thread with the appropriate thread designation is suitable on the housing.

**12 Removing and replacing the red threaded/dust cover**

When the VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* are delivered, depending on the version, the red threaded or dust protection caps must be removed before installing the device and the openings must be sealed according to the requirements of the ignition protection type and the IP protection type specified on the type label.

When using certified or suitable cable glands, sealing plugs or plug connections, the appropriate certificates/documents must be observed.

The sealing plugs included in the delivery by VEGA meet the necessary requirements.



1 Red threaded or dust protection cap

### 13 Locking mechanism of housing cover

With VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* the lid must be tightly screwed in to the stop **before** setup and use in hazardous atmosphere. It must be secured by unscrewing the cover locking screw to the stop.



1 Locking screw of the lid

### 14 Installation, maintenance and inspection

Refer to manufacturer's written instructions before working on associated apparatus.

Inspection should be performed periodically to ensure that protection type dust-ignitionproof has not been compromised. Inspections should include reviewing for unauthorized modifications, corrosion, accidental damage, change of flammable materials, and the effects of aging.

Maintenance work must not be performed on energized apparatus in hazardous areas.

The location classification and the suitability of the dust-ignitionproof system for that classification should be verified. This includes verifying that the class, group, and temperature ratings agree with the actual classification of the location.

Prior to energizing, explosion-proof system should be inspected to ensure the following:

- Installation is in compliance with the documentation;
- Cable shields are grounded in accordance with the installation documentation;
- Modifications have been authorized;
- Cables and wiring are not damaged;
- Bonding and grounding connections are tight;
- Bonding and grounding hardware is not corroded;
- Resistance of any grounding conductor to the grounding electrode does not exceed one ohm;
- Check for signs of corrosion on the equipment and connections.

All deficiencies should be corrected.

### General

The installation must be in accordance with the Canadian Electrical Code Part 1 correspondingly the National Electrical Code section 500.

Substitution of components may impair suitability for hazardous locations.

Barriers and instruments incorporated into the system are required to carry same Agency Approval.

### Dust-ignitionproof, dust-ignition protection by enclosure

The metallic parts of the VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* are electrically connected with the internal and external earth terminals.

The VEGADIS DIS82.CR\*A/V/H\*\*\*\*\* are CSA Approved for Class II Division 1 and Zone 21 applications.

## 15 Cautionary notes, warnings and markings

### Hazardous location notes

Wiring methods must conform to all local and national codes governing the installation, and wiring must be rated for at least +10 °C above the highest expected ambient temperature.

Where the protection type allows and depends on wiring glands, the glands must be certified for the type of protection required and area classification identified on the equipment or system nameplate.

The internal grounding terminal shall be used as the primary equipment grounding means and the external grounding terminal is only for a supplemental (secondary) bonding connection where local authorities permit or require such a connection.

Approved seals against ingress of water or dust are required and the NPT or metric thread fittings must be sealed with tape or thread sealant in order to meet the highest level of ingress protection.

When the equipment is supplied with red plastic dust plugs in the conduit/cable gland entries; it is the end-user's responsibility to provide cable glands, adaptors and/or blanking plugs suitable for the environment in which the equipment is installed. When installed in a hazardous (classified) location, the cable glands, adaptors and/or blanking plugs shall additionally be suitable for the hazardous (classified) location, the product certification, and acceptable to the local authority having jurisdiction for the installation.

The end-user must consult the manufacturer for repair disclaimers, and only certified parts, such as entry plugs, mounting and cover lock screws and o-rings, supplied by the manufacturer are permitted. No substitutions with nonmanufacturer supplied parts are permitted.

The cover of the dust-ignitionproof connection compartment must be screwed in completely before commissioning and secured by screwing out the lid locking screw all the way to the stop (max.



torque 3 Nm (26.5 lb in)). Overtorquing may cause enclosure breakage.

The minimum tightening torque for M4 (No. 6) binding screw protective conductor terminals is 1.13 N·m (10 lb·in.) or greater as specified.

Care must be taken during installation to avoid impacts or friction that could create an ignition source.

Use copper, copper-clad aluminum or aluminum conductors only.

Tampering and replacement with non-factory components may adversely affect the safe use of the system.

Insertion or withdrawal of removable electrical connectors is to be accomplished only when the area is known to be free of flammable vapors.

Do not open when an explosive atmosphere is present.

Explosion hazard, do not disconnect while circuit is live unless area is known to be non-hazardous.





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# VEGA

All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.

Subject to change without prior notice

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