



# Flow / Consumption Sensor VA 550 Ex / VA 570 Ex



**Ex-Documentation**

**Table of Content**

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**II. Table of Content**

- II. Table of Content ..... 2**
- 1 Pictograms and Symbols ..... 3**
- 2 Area of application..... 4**
- 3 Safety instructions..... 4**
  - 3.1 General safety instructions..... 4**
  - 3.2 Specific conditions ..... 5**
  - 3.3 Installation / Commissioning ..... 6**
  - 3.4 Name plate ..... 6**
  - 3.5 Cable glands..... 7**
- 4 Tightening torques ..... 7**
- 5 Connection diagram ..... 8**
  - 5.1 Potential equalization ..... 8**
- 6 Technical data..... 9**
- 7 Repairs and calibration ..... 9**
  - 7.1 Repair and Service..... 9**
  - 7.2 Calibrationg ..... 9**

1 Pictograms and Symbols



General Warning symbol (Danger, Warning, Caution)



General note



Installation- and Instruction manual to consider (on Nameplate)



Installation- and Instruction manual to consider



Hazardous area  
Important notes for use in potentially explosive atmospheres

## 2 Area of application

This Ex-documentation contains special requirements for the use of flow / consumption sensors VA 550 and VA 570 Ex Ex in gas hazardous areas which complement and modify the general requirements in the instruction manual.

## 3 Safety instructions

### 3.1 General safety instructions

- Existing national regulations regarding installation, electrical installation, commissioning and maintenance of equipment in hazardous areas must be observed.
  - ATEX-Guideline 2014/34/EU (ATEX)
  - Use of Work Equipment Directive 89/655/EEC
  - the work safety regulations / safety rules
  - any other relevant safety regulations (see also Declaration of Conformity of the device)
- Installation, electrical installation, commissioning and maintenance of the equipment must be carried out by qualified personnel, which is trained to work in hazardous areas.
- Connecting and disconnecting the electrical connections of the device only in strainless state
- All the technical data of the sensor (see nameplate) must be strictly adhered.
- Opening of the sensor is allowed only in strainless state or in area free of explosive atmosphere.
- To ensure the dust-tightness the sensor housing is to be close firmly.



### Warning

- When operating outside the performance data and use outside of the temperature range it may result in malfunction of the product.  
This means in the hazardous area Danger to life!  
Therefore: The performance specifications and temperature ranges of the operating instructions must be complied with.

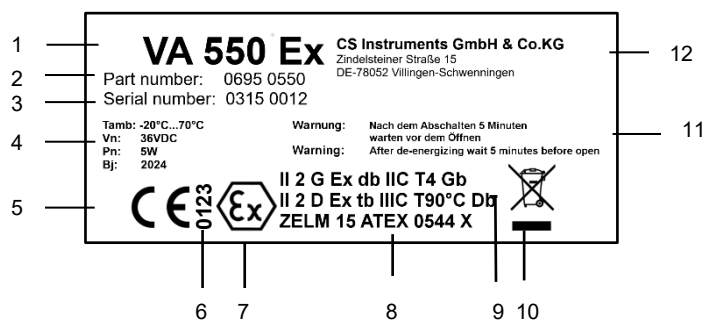
### 3.2 Specific conditions

- The manual and the Ex documentation must be observed, in particular the provisions for sufficient potential equalization and grounding and surge protection.
- Opening the housing in the hazardous area is possible in strainless state after a waiting period of at least 5 minutes after switching off. The electrical connection is to be performed only in strainless state of the sensor. Each aperture that was open is with the tightening torques conditions laid down in the instruction manual to be closed and locked.
- The repair of the flameproof case of flow-/consumption sensor VA 550 Ex and VA 570 Ex including the flameproof joints are not allowed.
- The type of ignition protection depends on the proper selection and installation of the cable glands and the plugs. All openings must be provided with appropriate cable glands or sealing plugs for unused openings. Only in accordance with the standards EN 60079-0, EN 60079-1 and EN 60079-31 with a separate EU-type examination certificate certified cable glands and sealing plugs are allowed to use. These cable glands and sealing plugs must be certified at least for a temperature range of  $-20^{\circ}\text{C}$  to  $+95^{\circ}\text{C}$ . The used cable glands and sealing plugs must have a thread in the size M20x1.5. The screw-in depth has to be min. 8 mm
- The appliance must be used exclusively with the appropriate cable glands for harmonized cables. These must be suitable for an operating temperature range of  $-20^{\circ}\text{C}$  to  $+95^{\circ}\text{C}$ .

### 3.3 Installation / Commissioning

- metal parts (housing and fixing material) are to be included in the potential equalization
- The use of the sensor is only allowed in the permissible temperature range of T4 (135°C)
- Only certified cable glands (II 2G Ex db IIC T4 Gb) are allowed to use.
- Turning or opening of the housing is allowed to perform only in strainless state and after a waiting time of > 5 minutes after switching off the sensor.
- In hazardous areas, the requirements of IEC/EN 60079-14 Section 9 must be observed.

### 3.4 Name plate



- 1 Sensortype
- 2 Ordering No.
- 3 Serialnumber
- 4 max. Operatingtemperature of the sensor, Power supply range, power consumption and production year
- 5 CE Mark
- 6 Identification number of notified body
- 7 Ex mark
- 8 Year of first certification and report no of notified body report
- 9 Equipment group and category as per directive 2014/34/EU
- 10 WEEE-mark
- 11 Notes
- 12 CS Instruments GmbH & Co.KG Address und Logo

## Cable glands

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### 3.5 Cable glands



#### Warning

- Ignition protection minimum: II 2G Ex db IIC T4 Gb  
II 2D Ex tb IIIC T90°C Db
- Conformity to standards: EN IEC 60079-0:2018 / IEC 60079-0:2017  
EN 60079-1:2014 / IEC 60079-1:2013  
EN 60079-31:2014 / IEC 60079-31:2013
- Operating temperature range min: -20°C TO +95°C
- Connection thread: M20 × 1.5 mm
- Tightening torque must be applied in accordance with the manufacturer's instructions.
- Tightness of the cable / conduit entries must be ensured, the associated seals shall be installed directly on the casing.
- Unused cable entries must be closed with certified caps

## 4 Tightening torques

To secure and guarantee the function and tightness following tightening torques have to be applied, see table 1.

Table 1

Pos	Description	Tightening torque [Nm]
20	VA 550 Cover with glass	3
30	VA 550 Cover closed	3
50	Grub screw with hexagon socket M4x6 DIN 914 A2	2
130	VA 550 Nut	15
150	Cylinder head screw DIN 6912 - M5x10 A2-70	4
240	Stopping Plug Ex-d / Ex-t M20x1.5mm (e.g. Eaton CYA1200YXN)	8
250	Cable gland (e.g. RN16M20KNP)	8

## 5 Connection diagram

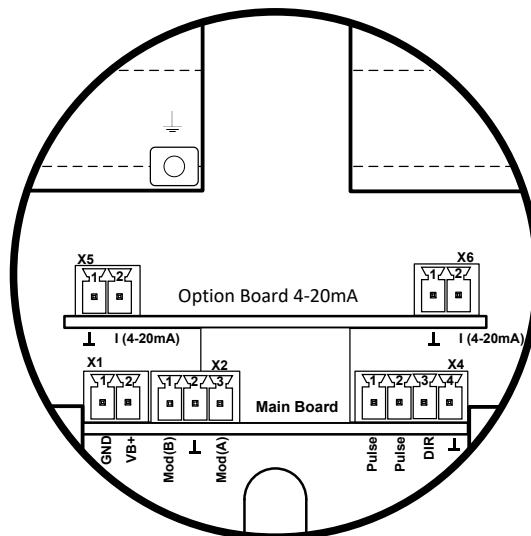
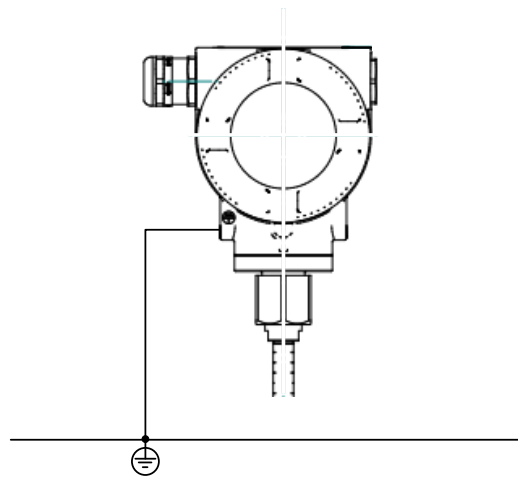


Specific conditions are to be observed!

- Before opening the housing for connection / wiring special conditions must be observed!
- General conditions of the pin assignment and wiring have to be observed in the user manual

### 5.1 Potential equalization

The sensors VA550 or VA570 are by using the outside screw terminal to integrate securely into the potential equalization.



## Technical data

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### 6 Technical data

Model description:	Flow-/ Consumption sensor VA550Ex resp. VA570Ex
Ignition protection/Marking:	II 2 G Ex db IIC T4 Gb II 2 D Ex tb IIIC T90°C Db
Conformity to standards:	EN IEC 60079-0:2018 EN 60079-1:2014 EN 60079-31:2014
Operating temperature range:	-20°C to +70°C
Permissible medium temperature range:	-20°C to +120°C
Voltage (nominal value)	Un = 36 VDC
Power consumption (nominal value):	Pn = 5 W
Protection class:	IP65

### 7 Repairs and calibration

#### 7.1 Repair and Service

Defective VA550Ex / VA570Ex sensors must be sent to CS Instruments GmbH & Co.KG.  
Spare parts cannot be provided for safety reasons..

#### 7.2 Calibrationg

It is recommended to have the VA550Ex / VA570Ex sensors calibrated at regular intervals. The calibration cycles should be based on your internal specification.



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