

EX- Documentation

VA 450 / VA 452 thermal mass flow sensor



This document contains important information for the installation and operation of the flow sensor in explosive environments. Please read the instructions carefully and follow the instructions mentioned in this manual.

In case of any different specifications between this Ex Documentation and the Instruction Manual, the specification in the Ex documentation is valid!

1. Warnings

Important information



The installation and the supply connection must be done in compliance with national regulations for devices used in potentially explosive atmospheres.

The compliance with all of the technical data of the device is mandatory (see also nameplate).

Only qualified specialists who are trained in Ex-related issues are allowed to install, connect the electricity and maintain the device

The device should be opened in a non-explosive atmosphere or in a de-energized state where a delay of 5 minutes after power down has to be ensured.

No connection of service-kit or any other devices are permitted if the atmosphere is considered to be explosive.

When opening the enclosure make sure that no dust or moisture enters into the casing.

Ensure that cable entries are tightly sealed

Materials which come in contact with the medium are of stainless steel 1.4404 / 316L and of sealing rubber NBR.

Special Attention



The device must be connected to the potential equalization system. Please refer to page 5 regarding "Potential equalization"

2. Installation

Important notes

To all terminals of the flow transmitter, only devices with ratings $U_m \leq 24 \text{ V DC}$ and $I_m \leq 500 \text{ mA}$ are allowed to be connected.

The flow transmitter is only allowed to be used in the permitted temperature class.

For ambient temperatures below -20 °C cables, drain plugs, cable glands and cable entries must be suitable and certified.

Cables and pipe entries must be certified (Ex d IIC) and must be suitable for operating temperatures of up to 105 °C . When using pipe entries, the associated sealing equipment must be fitted directly at the housing.

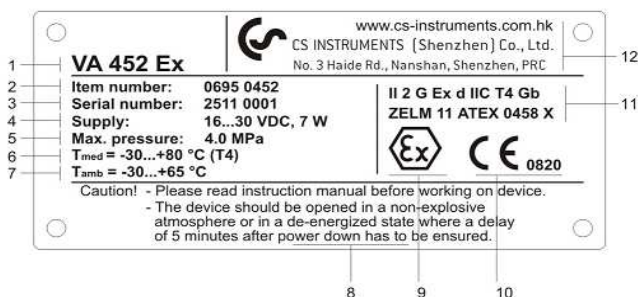
The cable entries and openings not used must be sealed tight with suitable components.

The rotation of the display is only allowed during installation and in non explosive environment! Before rotating the local display make sure that the device is powered off for at least 5 minutes.

The display version of VA 452 can be rotated in both directions 270° . For this purpose the nut at the top of the shaft has to be opened fully. Then pull up the metal casing and rotate it in the desired direction. It can be rotated in 90° steps in both directions. A metal pin locks the position. When the desired position is achieved, press down the metal casing onto the shaft so that the metal pin can insert into the position hole. Tighten up the nut.

Examination certificate, certificates of conformity

The system meets the fundamental health and safety requirements for the design and construction of devices and protective systems intended for use in potentially explosive atmospheres in accordance with appendix II of directive 94/9/EC.

Name plate


- 1) Sensor type
- 2) Item number
E.g.: 25110001
25 – week of the year
11 – year
0001 – counting number
- 3) Serial number
- 4) Power supply and power consumption
- 5) Medium pressure range
- 6) Medium temperature range
- 7) Ambient temperature range
- 8) Caution information
- 9) ATEX symbol
- 10) CE marking
- 11) Indication of type of protection, explosion group, temperature class, ingress protection
- 12) Company name and address

Temperature range



ATTENTION: The minimum temperature for fluid and ambient is -30°C

Cable entries



The cable glands/entries must be secured to prevent working loose and the seals have to be installed immediately adjacent to the casing.

Please ensure that the cable entries and cable glands are leak-tight!

The cables used must be manufactured in a way that the build-up of electrostatic charges are avoided!

Only following cable glands, reducers and closers are allowed to be used and can be ordered at CS Instruments:

	Hummel		Cable
	Order No.	Description	Thread size entry
Gland	1.622.2000.51	HSK-M-Ex-d / Metr	M20 x 1.5 7 - 12 mm
Gland	1.622.1600.51	HSK-M-Ex-d / Metr	M16 x 1.5 3 - 7 mm
Reducer	1.879.2016.50	RSD-MS-Ex-d / Metr.	M20 x 1.5 > M16 x 1.5
Blind plug	1.877.2000.50	V-Ms-Ex-d / Metr.	M20 x 1.5

Cable outer diameter must be between 7.0 ... 12 mm!

Potential equalization

For the safety of the operation in explosive environment the potential equalization is very important. The device has a screw terminal outside the enclosure to connect the earth signal.

The device can also be integrated to the equalization through the pipeline as long the earth connection is conform to regulations.

Service kit

No connection of service-kit or any other devices are permitted if the atmosphere is considered to be explosive.

Alternatively device settings can be done through the integrated Bluetooth interface with a portable notebook if the notebook is approved for usage in explosive environment. Please contact our service for available devices and software.

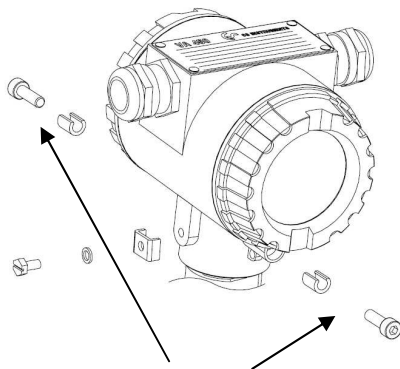
Fuse

The power supply for the flow transmitter needs to have a fuse with following specification:

Voltage 16 to 30 DC, fuse 0.5 A slow blow (according to IEC 127)

Front and back cover security seal

The front and back cover of the instrument are secured with a screw to avoid the opening of the covers through unauthorized persons. Please ensure that both security screws are tightened up after finishing the installation!



Security screws at back and front cover

Other technical information

Since this manual only contains ex-relevant information please refer to the instruction manual of VA 450 and VA 452 for technical data and further information.

Used standards

EN 60079-0:2009

EN 60079-1:2007

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