

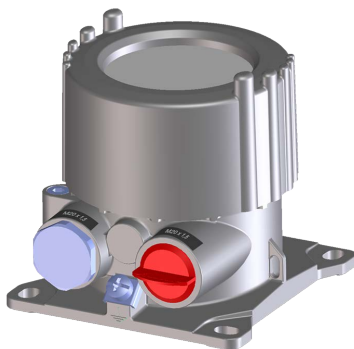


Safety instructions

VEGADIS 81

Firedamp areas in mines (group I)

BVS 06 ATEX E 018



CE 0044



Document ID: 47347



VEGA

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Supplementary documentation:

- Operating Instructions VEGADIS 81
- EU type approval certificate BVS 06 ATEX E 018 (Document ID 47348)
- EU declaration of conformity (Document ID: 43830)

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DE	Sicherheitshinweise für den Einsatz in explosionsgefährdeten Bereichen
EN	Safety instructions for the use in hazardous areas
FR	Consignes de sécurité pour une application en atmosphères explosibles
IT	Normative di sicurezza per l'impiego in luoghi con pericolo di esplosione
ES	Instrucciones de seguridad para el empleo en áreas con riesgo de explosión
PT	Normas de segurança para utilização em zonas sujeitas a explosão
NL	Veiligheidsaanwijzingen voor gebruik op plaatsen waar ontploffingsgevaar kan heersen
SV	Säkerhetsanvisningar för användning i explosionsfarliga områden
DA	Sikkerhedsforskrifter til anvendelse i explosionsfarlig atmosfære
FI	Turvallisuusohjeet räjähdysvaarallisissa tiloissa käyttöä varten
EL	Υποδείξεις ασφαλείας για τη χρησιμοποίηση σε περιοχές που υπάρχει κίνδυνος έκρηξης

DE	Die vorliegenden Sicherheitshinweise sind im Download unter www.vega.com standardmäßig in den Sprachen deutsch, englisch, französisch und spanisch verfügbar. Weitere EU-Landessprachen stellt VEGA nach Anforderungen zur Verfügung.
EN	These safety instructions are available as a standard feature in the download area under www.vega.com in the languages German, English, French and Spanish. Further EU languages will be made available by VEGA upon request.
FR	Les présentes consignes de sécurité sont disponibles au téléchargement sous www.vega.com en standard en allemand, en anglais, en français et en espagnol. VEGA met à disposition d'autres langues de l'Union Européenne selon les exigences.
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1 Area of applicability

These safety instructions apply to the display and adjustment unit VEGADIS 81 of type series:

- DIS81(*).ATI*****

According to EU type approval certificate BVS 06 ATEX E 018 (certificate number on the type label) and for all instruments with safety instruction 47347.

The classification as well as the respective standards are stated in the EU type approval certificate:

- EN IEC 60079-0: 2018
- EN 60079-11: 2012

Zündschutzkennzeichen:

- I M2 Ex ia I Mb

2 Important specification in the type code

VEGADIS 81 Version DIS81(*).abcdefghi

Position		Feature	Description
a	Scope	A	ATEX / Europa
b	Approval	T	I M2 Ex ia I Mb
c	Electronics	I	Digital (I ² C communication)
d	Housing	V	Stainless steel (precision casting)
e	Protection rating	N	IP66/IP68 NEMA 6P (0.2 bar)
f	Cable entry / Connection	1	M20 x 1.5 / without
		D	M20 x 1.5 / Blind plug
		Q	½ NPT / without
		N	½ NPT / Blind plug
g	Display and adjustment module PLICSCOM	X	without
		A	mounted
		K	mounted; with Bluetooth, magnetic pen operation
h	Mounting type	A	Wall mounting with Aluminium or stainless steel housing
		D	Carrier rail with Aluminium or stainless steel housing
		E	Tube mounting (26 ... 60 mm)
i	Certificates	X	without
		M	with

In the following, all above mentioned versions are called VEGADIS 81. If parts of these safety instructions refer only to certain versions, then these will be mentioned explicitly with their type code.

3 General information

The VEGADIS 81 is used for separate operation and visualization of measured values.

The VEGADIS 81 and the radar, TDR, ultrasonic sensors, capacitive probes, pressure transmitters

or radiometric sensors communicate via a BUS signal.

The display and adjustment module can be mounted optionally.

The VEGADIS 81 are suitable for use in subsurface mines, in firedamp-proof plants as well as their aboveground plants for which danger due to firedamp and/or combustible, dust-generating bulk solids exists.

The VEGADIS 81 are suitable for applications requiring category M2 (EPL Mb) instruments.

4 Application area

Category M2 (EPL Mb instruments)

The VEGADIS 81 with the mechanical fixing element are installed in hazardous areas of group 1 requiring category M2 (EPL Mb) instruments.

5 Special operating conditions

The following overview lists all special features of VEGADIS 81.

Electrostatic charging (ESD)

You can find the details in chapter "*Electrostatic charging (ESD)*" of these safety instructions.

Ambient temperature

You can find the details in chapter "*Thermal data*" of these safety instructions.

6 Important information for mounting and maintenance

General instructions

The following requirements must be fulfilled for mounting, electrical installation, setup and maintenance of the instrument:

- The staff must be qualified according the respective tasks
- The staff must be trained in explosion protection
- The staff must be familiar with the respectively valid regulations, e.g. planning and installation acc. to IEC/EN 60079-14
- Make sure when working on the instrument (mounting, installation, maintenance) that there is no explosive atmosphere present, the supply circuits should be voltage-free, if possible.
- The instrument has to be mounted according to the manufacturer specifications, the EU type approval certificate and the valid regulations and standards
- Modifications on the instrument can influence the explosion protection and hence the safety, therefore repairs are not permitted to be conducted by the end user
- Modifications must only be carried out by employees authorized by VEGA company
- Use only approved spare parts
- Components for installation and connection not included in the approval documents are only permitted if these correspond technically to the latest standard mentioned on the cover sheet. They must be suitable for the application conditions and have a separate certificate. The special conditions of the components must be noted and if necessary, the components must be integrated in the type test. This applies also to the components already mentioned in the technical description.
- Vessel installations and probable flow must be taken into account

Mounting

Keep in mind for instrument mounting

- Mechanical damage on the instrument must be avoided
- Mechanical friction must be avoided

- Vessel installations and probable flow must be taken into account
- Process connections separating two areas of different Ex-zones must comply to valid regulations and standards and the protection rating must be in conformity to IEC/EN 60529
- Close the housing lid (s) up to the stop before starting operating, to ensure the IP protection rating specified on the type label
- The instruments must be mounted/installed in such a way that the following can be ruled out:
 - electrostatic charges during operation, maintenance and cleaning.
 - process-related electrostatic charges, e.g. by measuring media flowing past

Cable and wire entries

- The VEGADIS 81 must be connected via suitable cable gland or conduit systems that are in conformity with the requirements of the flame proofing and the IP protection and provided with a separate type approval certificate. When connecting VEGADIS 81 to conduit systems, the corresponding sealing facility must be connected directly to the housing.
- The red thread or/dust covers screwed in when the instruments are shipped (depending on the version) must be removed before setup and replaced by cable entries or closing screws suitable for the respective ignition protection type and IP protection.
- Note type and size of the thread: A label with the respective thread name is in the area of the respective thread
- Threads must have no damages
- Cable entries and closing screws should be mounted correctly and according to the safety instructions of the manufacturer to ensure the specified ignition protection type and IP protection rating. When using certified or suitable cable glands, closing screws or plug connections, it is absolutely necessary to note the corresponding certificates/documents. Supplied cable entries or closing screws meet these requirements.
- Unused openings must be closed with plugs suitable for the ignition protection type and IP protection. Supplied plugs meet these requirements.
- Cable or wire entries resp. the closing screws must be tightly screwed into the housing
- The connection cables resp. pipeline sealing facilities must be suitable for the application conditions (e.g. temperature range) of the application
- With surface temperatures > 70 °C, the cables must be suitable for the higher application conditions
- The connection cable of VEGADIS 81 has to be wired fix and in such a way that damages can be excluded.

Maintenance

To ensure the functionality of the device, periodic visual inspection is recommended for:

- Secure mounting
- No mechanical damages or corrosion
- Worn or otherwise damaged cables
- No loose connections of the line connections, equipotential bonding connections
- Correct and clearly marked cable connections

The parts of the VEGADIS 81 being in contact with flammable media during operation must be included in the periodic overpressure test of the plant.

Intrinsic safety "i"

- Valid regulations for connection of intrinsically safe circuits, e.g. proof of intrinsic safety according to IEC/EN 60079-14 must be observed
- The instrument is only suitable for connection to certified, intrinsically safe instruments
- When connecting an intrinsically safe instruments with classification mark Ex ia to a circuit with protection level Ex ib, then the classification mark of the instrument changes to Ex ib. After the

use as instrument with Ex ib power supply, the instrument must no more be used in circuits with protection level Ex ia

- When connecting an intrinsically safe instrument to a non-intrinsically safe circuit, the instrument must be no longer used in intrinsically safe circuits



- 1 Label: Type and size of the thread ½-14 NPT or M20 x 1.5
- 2 Label: Type and size of the thread ½-14 NPT or M20 x 1.5
- 3 Screw plug

7 Safe operating mode

General operating conditions

- Do not operate the instrument outside the electrical, thermal and mechanical specifications of the manufacturer
- Use the instrument only in media against which the wetted parts are sufficiently resistant
- Note the relation between process temperature on the sensor/antenna and the permissible ambient temperature on the electronics housing. For permissible temperatures, see the respective temperature tables. See chapter " *Thermal data*".
- If necessary, a suitable overvoltage arrester can be connected in front of the VEGADIS 81

8 Potential equalization/Grounding

- Integrate the instruments into the local potential equalisation, e.g. via the internal or external earth terminal
- The potential equalization terminal must be secured against loosening and twisting
- If grounding of the cable screening is necessary, this must be carried out acc. to the valid standards and regulations, e.g. acc. to IEC/EN 60079-14
- The intrinsically safe input and the intrinsically safe output circuits are ground-free. The voltage resistance against ground is min. 500 Veff.

9 Electrostatic charging (ESD)

In case of instrument versions with electrostatically chargeable plastic parts, the danger of electrostatic charging and discharging must be taken into account!

The following parts can charge and discharge:

- Lacquered housing version or alternative special lacquering
- Plastic housing, plastic housing parts
- Metal housing with inspection window
- Plastic process fittings
- Plastic-coated process fittings and/or plastic-coated sensors
- Connection cable for separate versions
- Type label
- Isolated metallic labels (measuring point identification plate)

Take note in case of danger of electrostatic charges:

- Avoid friction on the surfaces
- Do not dry clean the surfaces

The instruments must be mounted/installed in such a way that the following can be ruled out:

- in the case of extremely flammable dusts with a minimum ignition energy of less than 3 mJ, the device must not be used in areas where intensive electrostatic charging processes can be expected
- electrostatic charges during operation, maintenance and cleaning.
- process-related electrostatic charges, e.g. by measuring media flowing past

The warning label indicates danger:

WARNING - POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS

10 Electrical data

DIS81(*).ATI*****

Supply and signal circuit: Terminals 5, 6, 7, 8	Type of protection intrinsic safety Ex ia I For connection to a certified, intrinsically safe circuit. $U_i \leq 6\text{ V}$ $P_i \leq 332\text{ mW}$ $C_i = \text{negligibly small}$ $L_i = \text{negligibly small}$
Circuit of the display and adjustment module: Spring contacts in the connection compartment	Type of protection intrinsic safety Ex ia I Only for connection to the display and adjustment module PLICSCOM or for service purposes the interface adapter VEGACONNECT, if it is ensured that no explosive atmosphere is present!

11 Thermal data

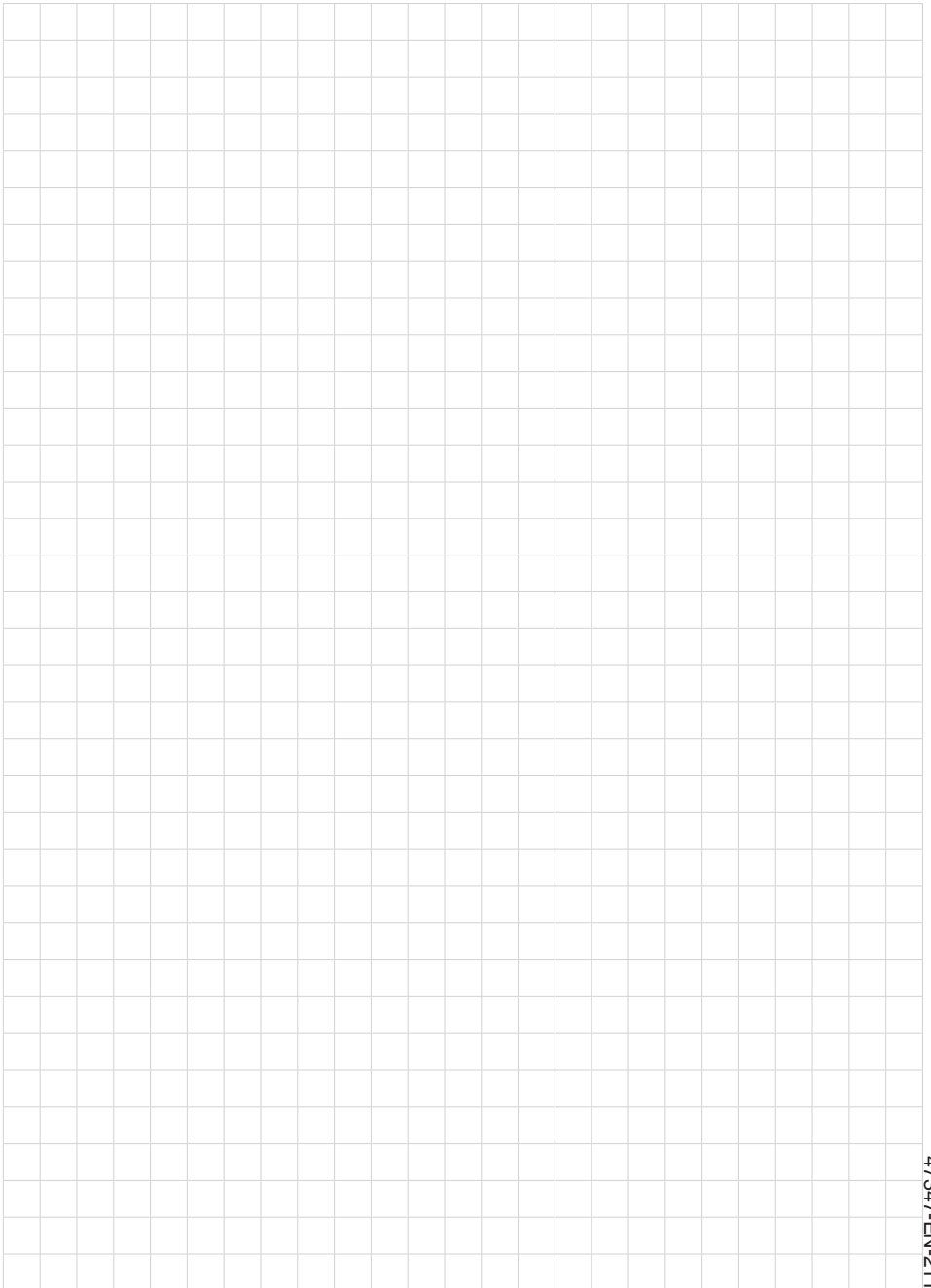
The following thermal data are valid for all housing and electronics versions.

DIS81(*).ATI*****	
Permissible ambient temperature on the electronics housing	-40 ... +60 °C

12 Mechanical data

The following mechanical data are valid for all housing and electronics versions.

DIS81(*).AT1*****	
Housing protection rating	IP66



Printing date:

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.

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