Safety instructions
B62-36G, B62-30W

Intrinsic safety "i"

0044

Document ID: 39880

Contents

Supplementary documentation:

- Operating instructions overvoltage arrester
- EU type approval certificate TÜV 07 ATEX 553276 X (Document ID: 39881)
- EU declaration of conformity (Document ID: 52685)

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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 explosiionsfarliga områden
DA	Sikkerhedsforskrifter til anvendelse i explosionsfarlig atmosfare
FI	Turvallisuusohjeet räjähdysvaarallisisssa 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.
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1 Area of applicability

These safety instructions apply to the B62-36G, B62-30W of type series:

- ÜSB62-30W.C***
- ÜSB62-36G.C***

According to EU type approval certificate TÜV 07 ATEX 553276 X (certificate number on the type label) and for all instruments with safety instruction 39880.

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

Type of protection marking:

- II 2(1)G Ex ia [ia Ga] IIC T6 … T1 Gb

2 General information

The instrument of the overvoltage arrester B62-36G, B62-30W is suitable as overvoltage protection of intrinsically safe circuits with

- the protective level Ex ia of instrument category 2G
- the protective level Ex ia [ia Ga] of instrument category 2(1)G

The overvoltage arresters B62-36G, B62-30W are suitable for certified intrinsically safe instruments, with separating wall category 1/2G.

The overvoltage arresters B62-36G, B62-30W for protection of intrinsically safe circuits with protective level Ex "i" of category 2(1)G, 2G take over the task of limiting transient overvoltages, as necessary overvoltage protection systems acc. to EN 60079-25 or EN 60079-14.

The overvoltage arresters B62-36G, B62-30W are suitable as intrinsically, electrical instrument for use in hazardous areas of all combustible substances of explosion group IIA, IIB and IIC, for applications requiring category 2G instruments. The atmospheres can be also combustible gases, fog or vapours.

The overvoltage arresters B62-36G, B62-30W are suitable for protection of certified intrinsically safe instruments in two-wire version with the following signal transmission:

- Overvoltage arresters B62-36G:
  - 4 … 20 mA current output
  - 4 … 20 mA current output with superimposed HART protocol
- Overvoltage arresters B62-30W:
  - Profibus PA
  - Foundation Fieldbus
  - Modbus and Levelmaster protocol

If the overvoltage arresters B62-36G, B62-30W are used for protection of intrinsically safe signal circuits, then the general installation regulations for explosion protection, EN 60079-14, as well as these safety instructions and the operating instructions manual must be observed.

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

3 Application area

Category 2G (EPL Gb instruments)

The overvoltage arresters B62-36G, B62-30W are suitable for installation in hazardous areas requiring a category 2G (EPL Gb) instrument.

4 Specific conditions of use ("X" identification)

The following overview is listing all special properties of B62-36G, B62-30W, which make a labelling with the symbol "X" behind the certificate number necessary.

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.

Isolation voltage against earth, test of the dielectric strength
The intrinsically safe input/output circuit is ground-free. The breakdown voltage of the overvoltage arresters B62-36G, B62-30W between intrinsically safe circuit and ground terminal is less than 500 V AC due to construction reasons.

With a metrological test of the absence of ground of intrinsically safe circuits against ground acc. to EN 60079-14, the overvoltage arrester must be removed.

Degree of housing protection
Overvoltage arresters B62-36G (type ÜSB62-36G.C*X), B62-30W (type ÜSB62-30W.C*X) must be installed in an housing that guarantees at least the degree of housing protection IP20 acc. to EN 60529.

5 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

- Close the housing lid (s) up to the stop before starting operating, to ensure the IP protection rating specified on the type label

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

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 a circuit with protection level Ex ib, the device, the sensor meas. system of the device must no more be used in hazardous areas of zone 0.
- 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 an non-intrinsically safe circuit, the instrument must be no longer used in intrinsically safe circuits
- With surface temperatures > 70 °C, the cables must be suitable for the higher application conditions

6 Safe operating mode

General operating conditions

- Do not operate the instrument outside the electrical, thermal and mechanical specifications of the manufacturer
- For assessment and reduction of the explosion risk, valid standards such as for example ISO/EN 1127-1 must be taken into account

7 Potential equalization/Grounding

To ensure the function of the overvoltage arrester, it is absolutely necessary to connect the overvoltage arrester B62-36G, B62-30W with the local potential equalization.

Potential equalization must be ensured with a wire cross.section of ≥ 4 mm^2 and secured against loosening.

8 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:

- 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

9 Electrical data

B62-30W:

Supply and signal circuit:	
Input terminals E1[+], E2[-]	Type of protection intrinsic safety Ex i IIC ● $U_i \leq 36$ V DC ● $I_i \leq 400$ mA ● $C_i = 2.5$ nF ● L_i = negligibly small ● DC response voltage 650 V
Output terminals A1[+], A2[-]	For connection to an intrinsically safe circuit. ● $U_o = U_o$ of the certified, intrinsically safe voltage supply ● $I_o = I_o$ of the certified, intrinsically safe voltage supply ● $P_o = P_o$ of the certified, intrinsically safe voltage supply ● $C_o = C_o$ of the certified, intrinsically safe voltage supply - 2.5 nF - C_{cable} ● $L_o = L_o$ of the certified, intrinsically safe voltage supply - L_{cable}

B62-36G:

Supply and signal circuit:	
Input terminals E1[+], E2[-]	Type of protection intrinsic safety Ex i IIC ● $U_i \leq 36$ V DC ● $I_i \leq 450$ mA ● $C_i = 2.5$ nF ● $L_i = 0.15$ mH ● DC response voltage 650 V
Output terminals A1[+], A2[-]	For connection to an intrinsically safe circuit. ● $U_o = U_o$ of the certified, intrinsically safe voltage supply ● $I_o = I_o$ of the certified, intrinsically safe voltage supply ● $P_o = P_o$ of the certified, intrinsically safe voltage supply ● $C_o = C_o$ of the certified, intrinsically safe voltage supply - 2.5 nF - C_{cable} ● $L_o = L_o$ of the certified, intrinsically safe voltage supply - 0.15 mH - L_{cable}

The supply voltage U_i of the overvoltage arrester B62-36G, B62-30W must not exceed 30 V DC so that the intrinsic safety is still ensured after assembly with a VEGA sensor (VEGAPULS, VEGABAR, VEGAFLEX, VEGADIF 85) or with the VEGA display (VEGADIS 82).

After assembling the measuring system - intrinsically safe supply, overvoltage arrester B81-35, sensor or display - the intrinsic safety must be ensured by carrying out the intrinsic safety proof.

Note: The overvoltage arrester passes on the parameters U_o, I_o, P_o of the intrinsically safe power supply 1 : 1 to the sensor or the display.

10 Thermal data

Permissible ambient temperatures depending on temperature class

B62-36G

Temperature class	Permissible ambient temperature
T6	-40 … +60 °C
T5, T4, T3, T2, T1	-40 … +80 °C

B62-30W

Temperature class	Permissible ambient temperature
T6	-40 … +53 °C
T5, T4, T3, T2, T1	-40 … +80 °C

The application conditions during operation without explosion-endangered atmosphere are mentioned in the respective manufacturer instructions, e.g. operating instructions manuals.

11 Protection rating

Protection class: IP30

If the overvoltage arresters B62-36G, B62-30W are mounted in the metal or plastic housing, at least protection class IP54 according to EN 60529 is met.

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Printing date:

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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