

# Safety Instructions

## **Gamma Modulator**

### **FHG65**

Ex d IIC T6, T5 Gb

Ex d e IIC T6, T5 Gb

IECEX KEM 08.002 1X

Document: XA00432F-B

Safety instructions for electrical apparatus for explosion-hazardous areas



# Gamma Modulator

## FHG65

### Associated Documentation

This document is an integral part of the following Operating Instructions:  
BA00373F/00

The Operating Instructions which are supplied and correspond to the device type apply.

### Supplementary Documentation

Explosion-protection brochure:  
CP00021Z/11

### Designation

Explanation of the labelling and type of protection can be found in the explosion protection brochure.

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**Designation according to IECEx  
Equipment protection level (EPL)**

**Gb**

**Designation of type of protection**

**Ex d IIC T6, T5 Gb**

**Ex d e IIC T6, T5 Gb**

### Applied standards

IEC 60079-0:2011

IEC 60079-1:2007

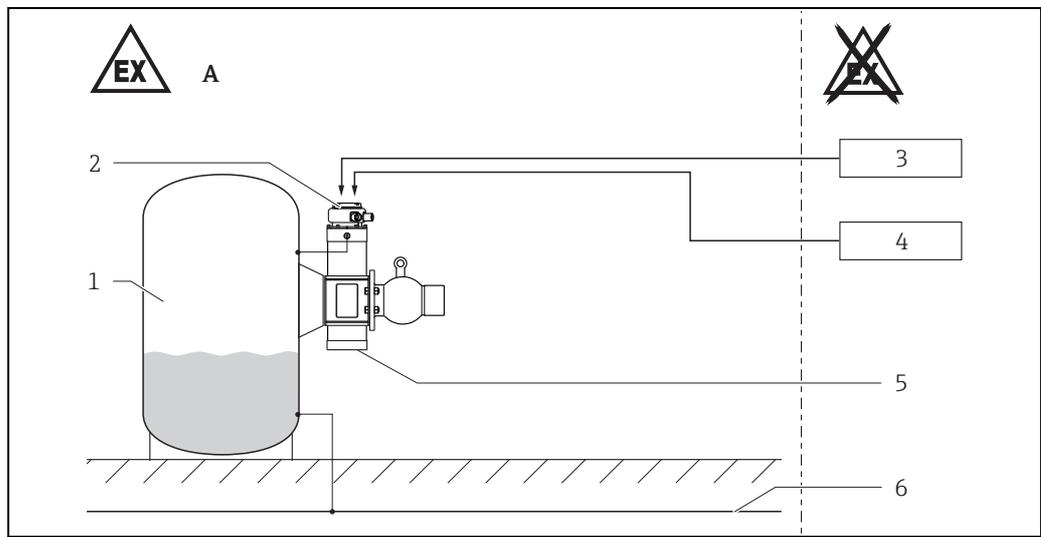
IEC 60079-7:2006

**Safety instructions:**  
**General**

- Comply with the installation and safety instructions in the Operating Instructions.
- Install the device according to the manufacturer's instructions and any other valid standards and regulations.
- Do not operate the device outside the specified electrical, thermal and mechanical parameters.
- To maintain the ingress protection of the housing IP65/IP67, install the housing cover and cable glands correctly.
- Connect the apparatus to the on-site potential equalisation line.
- Do not open the connection compartment under voltage in an explosive atmosphere.  
Waiting time before opening after switching off the power supply: 60 minutes.
- During operation, the cover must be screwed all the way in and the cover's safety catch must be fastened.
- If using the water cooling: Use a connecting cable for continuous duty temperature  $T \geq T_a + 20 \text{ K}$ .
- Tighten unused terminal screws.
- Repairs to the threaded joints are not permitted. Contact the manufacturer where necessary.

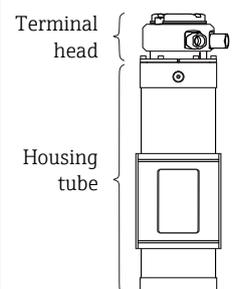
**Modulator FHG65**  
**for applications in**  
**Zone 1 or Zone 2**

Type: FHG65-Gxxxx, FHG65-Hxxxx



- A** Zone 1, Zone 2
- 1 Tank; Zone 0, Zone 1
  - 2 Connection compartment (Ex d or Ex e)
  - 3 Power supply
  - 4 Optional: Synchronizer FHG66
  - 5 Modulator FHG65
  - 6 Local potential equalization

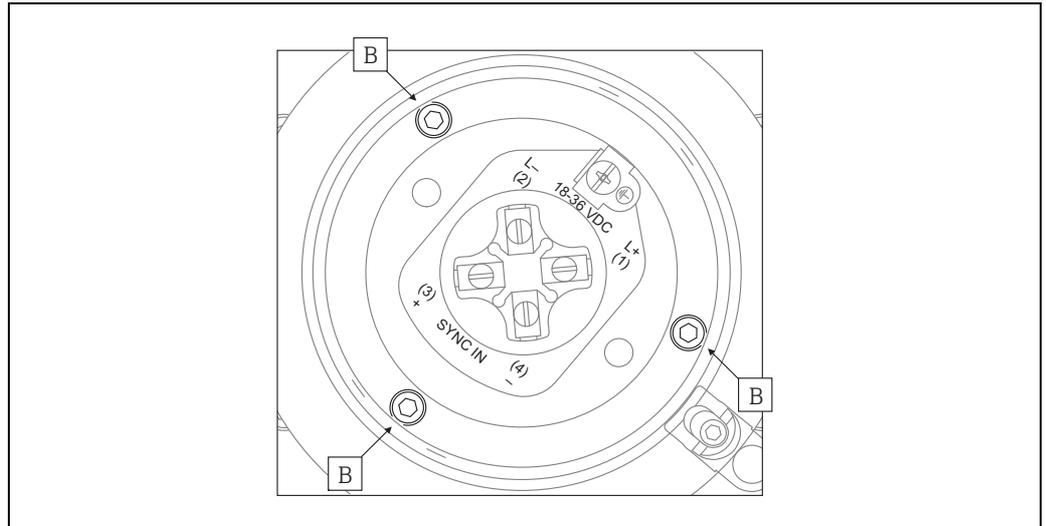
<b>EPL</b>	IECEX KEM 08.0021X	Gb
<b>Type of protection</b>	Device:	Ex d or Ex d e
	Connection compartment:	Ex d or Ex e
<b>Ambient temperature</b>	Modulator without water cooling or with water cooling out of operation:	$-40 \text{ °C} \leq T_a \leq +60 \text{ °C}$
	Modulator with water cooling in operation: <ul style="list-style-type: none"> <li>■ at the housing tube (within the water cooling):</li> <li>■ at the terminal head:</li> </ul>	$-40 \text{ °C} \leq T_a \leq +60 \text{ °C}$ $-40 \text{ °C} \leq T_a \leq +75 \text{ °C}$
<b>Temperature class</b>	Modulator without water cooling or with water cooling out of operation:	T6: $-40 \text{ °C} \leq T_a \leq +60 \text{ °C}$
	Modulator with water cooling in operation:	T5: $-40 \text{ °C} \leq T_a \leq +75 \text{ °C}$ T6: $-40 \text{ °C} \leq T_a \leq +70 \text{ °C}$
<b>Gas group</b>	IIC	



### Connection compartment in type of protection Increased safety "e"

Type: FHG65-Gxxxx

- Only use cable glands with an appropriate IECEx approval providing the following minimum specifications:
  - IP-Rating: IP65/IP67 or better
  - Temperature range: -40 °C to +100 °C
  - Type of protection: Ex e IIC
  - EPL: Gb or Ga
- Replace cable glands, sealing plugs and sealings only with identical parts.
- Do not open screws [B].



FHG\_03

B Screws

<b>Supply</b>	(1) L+ (2) L-	U = 18...36 VDC P = 3.2 W
<b>Signal circuit SYNC IN (optional)</b>	(3) + (4) -	Only for connection to Synchronizer FHG66
<b>Protective earth</b>	*	

### Connection compartment in type of protection Flameproof Enclosure "d"

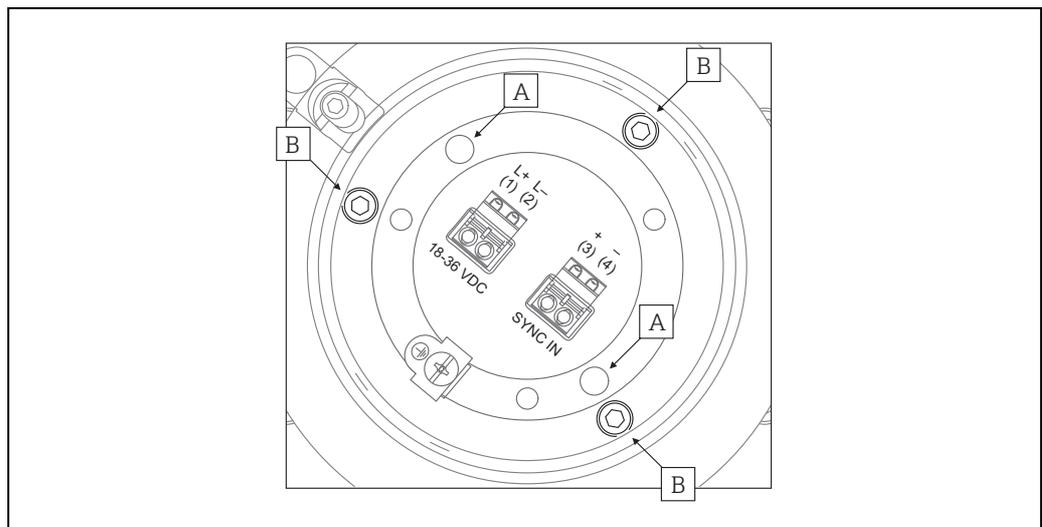
Type: FHG65-Hxxxx

- Connect the device using suitable cable and wire entries or using piping systems of protection type "Flameproof Enclosure d".
- Close unused entry glands with approved (Ex d) sealing plugs.
- Do not close threaded holes [A].
- Do not open screws [B].

#### Safety instructions: Ex d joints

Specifications according to IEC/EN 60079-1:2007, Chapter 5.1

- If required or if in doubt: ask manufacturer for specifications.



FHG\_04

- A Threaded holes  
B Screws

Ex d volume < 1.9 l

<b>Supply</b>	(1) L+ (2) L-	U = 18...36 VDC P = 3.2 W
<b>Signal circuit SYNC IN (optional)</b>	(3) + (4) -	Only for connection to Synchronizer FHG66
<b>Protective earth</b>	*	





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