

Safety Instructions

Prosonic S

FDU90, FDU91, FDU91F, FDU92

Ex ma IIC T5 Gb (FDU90)

Ex ma IIC T6 Gb (FDU91, FDU91F, FDU92)

IECEX BVS 08.0012



XA00482F-B

Safety instructions for electrical apparatus for explosion-hazardous areas according to IEC standards

Prosonic S

FDU90, FDU91, FDU91F, FDU92

english

Associated Documentation

This document is an integral part of the following Operating Instructions:
TI396/00

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

Supplementary Documentation

Explosion-protection brochure:
CP021Z/00

Designation

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

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

Gb

Designation of explosion protection

Ex ma IIC T5 Gb (only FDU90)
Ex ma IIC T6 Gb (except FDU90)

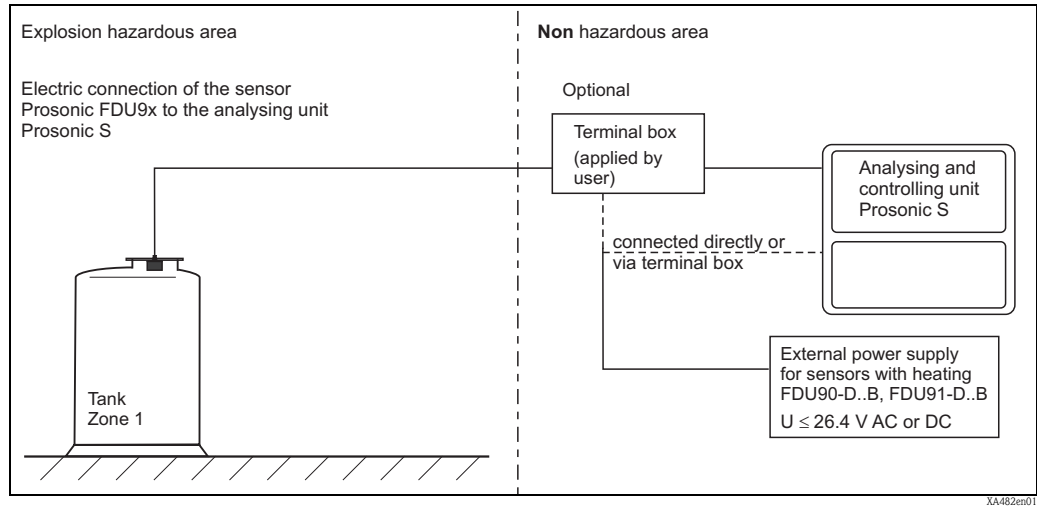


Fig. 1

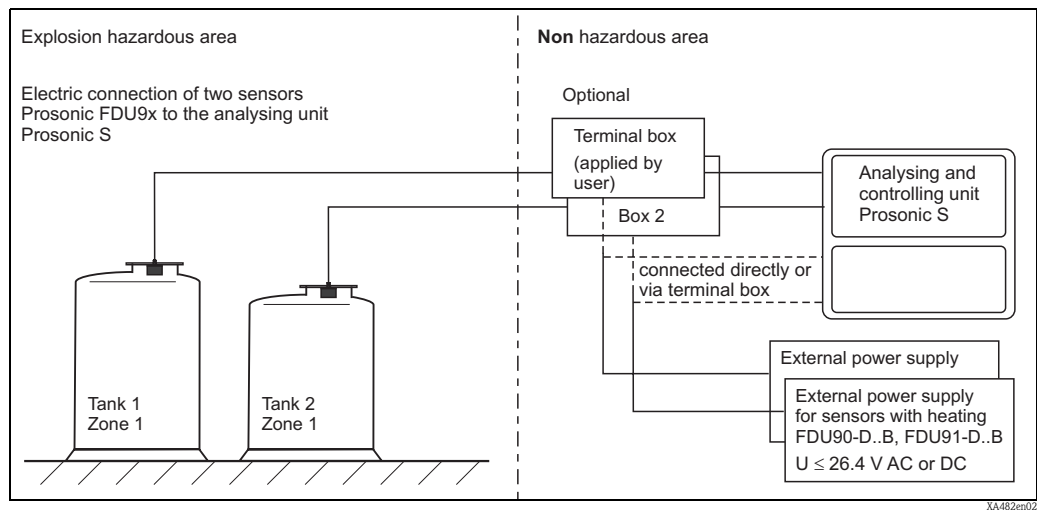


Fig. 2

Power supply	For connecting to the analysing and controlling unit Prosonic S FMU90, FMU95
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Equipment protection level (EPL)	Gb	Sensor and cable in Zone 1
Type of protection	Ex ma IIC T5...T3 Gb (only FDU90) Ex ma IIC T6...T3 Gb (except FDU90)	

Housing protection	IP68
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Sensor	FDU90	FDU91	FDU91F	FDU92
Max. working pressure*	0.4 MPa	0.4 MPa	0.4 MPa	0.4 MPa
Max. process temperature	+60 °C	+80 °C	+80 °C	+80 °C

* outside explosion hazard atmospheres at 20 °C

**Safety instructions:
Installation**

- 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 and thermal parameters.
- Only install the devices in media for which the wetted materials have sufficient durability.
- The sensor can be mounted using the alignment device FAU40.
- When using plastic accessories check the suitability for explosion hazardous areas. Observe the instructions concerning electrostatic charging.
- Versions with NPT adapter are intended for connection to a conduit which is suitable for the type of protection. The adapter has to be connected to the local grounding system either directly via the metallic conduit or by other measures.

FDU90

- For usage of the sensor in explosion hazardous areas due to combustible gases, mists or vapours of the category IIC and IIB: Avoid electrostatic charging of the sensor.

FDU91F

- Sensor housing consists of conductive material and is connected as well as the membrane and the mounting connection to the earth lead of the sensor cable, which must be connected to the local grounding system of the plant.

FDU91, FDU92

- The sensor must be mounted in a protected position, if mechanical stress is to be expected.

FDU92

- For usage of the sensor in explosion hazardous areas due to combustible gases, mists or vapours of the category IIC: Avoid electrostatic charging of the sensor.

Tab. 1

Zone 1 - Application

	FDU90-D..A. (without heating) and FDU90-D..B. (with heating)	FDU91-D..A. (without heating)	FDU91-D..B. (with heating)	FDU91F-D... and FDU92-D...
Temperature class:	Permissible range of ambient temperature			
T6	—	-40 °C...+60 °C	-40 °C...+40 °C	-40 °C...+60 °C
T5	-40 °C...+60 °C	-40 °C...+80 °C	-40 °C...+60 °C	-40 °C...+80 °C
T4	-40 °C...+80 °C	-40 °C...+80 °C	-40 °C...+80 °C	-40 °C...+80 °C
T3	-40 °C...+80 °C	-40 °C...+80 °C	-40 °C...+80 °C	-40 °C...+80 °C

Tab. 2

Electrical performance limits

	FDU90	FDU91	FDU91F	FDU92
Emmission/signal circuit:	(FMU90, FMU95 to FDU9x)			
Transmission voltage	≤ 55 V _{eff}	≤ 55 V _{eff}	≤ 55 V _{eff}	≤ 55 V _{eff}
Sending frequency (20 °C)	90.0 kHz	43.0 kHz	42.0 kHz	30.5 kHz
Power consumption (eff. long-term power)	0.9 W	0.4 W	0.9 W	0.9 W
NTC power supply:	(FMU90, FMU95 to FDU9x)			
Power supply	≤ 12 V	≤ 12 V	≤ 12 V	≤ 12 V
Power consumption (eff. long-term power)	≤ 0.4 mW	≤ 0.4 mW	≤ 0.4 mW	≤ 0.4 mW
External power supply for heating circuit:	≤ 26.4 V AC or DC	≤ 26.4 V AC or DC	—	—

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