Safety Instructions
Nivotester
FTC625, FTC325

[Ex ia Ga] IIC/IIB
TÜV 13.0903 X

Segurança
INMETRO TÜVRheinland OCP 0004

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Safety instructions for electrical apparatus for explosion-hazardous areas

Endress+Hauser
People for Process Automation

Nivotester
FTC625, FTC325

Associated Documentation

This document is an integral part of the following Operating Instructions:
KA00194F/00, TI00370F/00 (FTC625)
KA00221F/00, TI00380F/00 (FTC325)

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.

Designation of type of protection	**[Ex ia Ga] IIC/IIB**

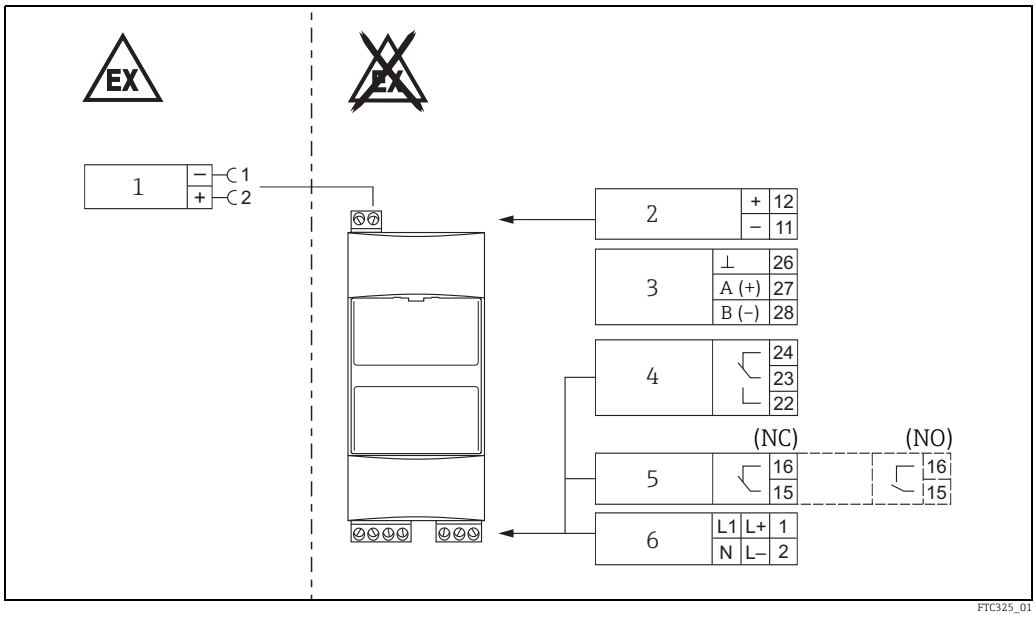
Applied standards

ABNT NBR IEC 60079-0 :2008
ABNT NBR IEC 60079-11:2009
ABNT NBR IEC 60079-26:2008

Safety instructions: General

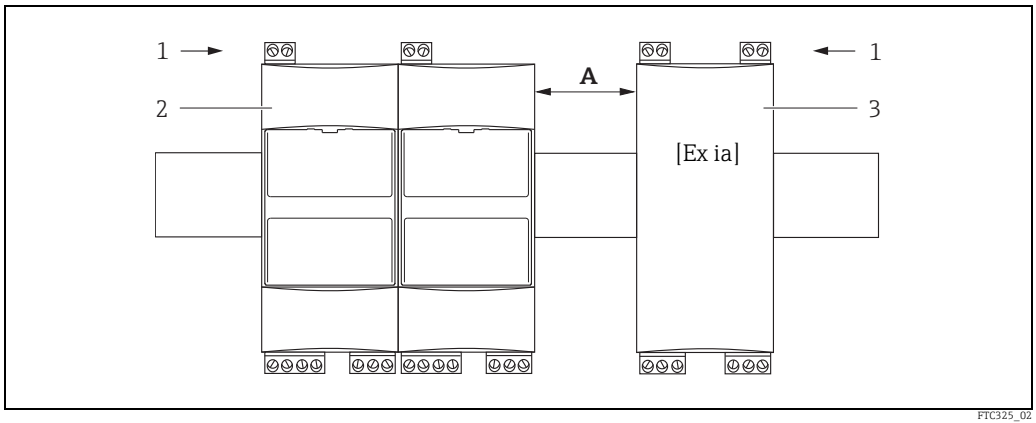
- Install the device according to the manufacturer's instructions and any other valid standards and regulations.
- Avoid electrostatic charging:
  - Of plastic surfaces (e.g. housing, sensor element, special varnishing , attached additional plates, ..)
  - Of isolated capacities (e.g. isolated metallic plates)

Safety instructions: Installation



1

1 PFM sensor, limit level [Ex ia Ga] IIC/IIB
2 PFM sensor
3 Only FTC625: RS 485-Interface
4 Level relay
5 Fault signal relay/Level relay
6 Power supply



2

A Min. 6 mm

1 Intrinsically safe contacts
2 Nivotester FTC625 or FTC325
3 Other type, other product

- Comply with the installation and safety instructions in the Operating Instructions.
- Do not operate the device outside the specified electrical, thermal and mechanical parameters.
- Protect the device from dust and humidity, e.g. in control rooms or in a suitable protective housing so that ingress protection of at least IP55 is achieved.
- The device is an integral apparatus and may only be used outside explosion hazardous areas.
- If the intrinsically safe circuit which can be connected to the device passes through dust explosion-hazardous areas of Zones 20 or 21, make sure that the devices connected to this circuit meet the requirements of categories 1D or 2D and are certified accordingly.
- There should be a distance (thread measure) of at least 50 mm between intrinsically safe and non-intrinsically safe terminals (e.g. using an insulated partition).
- Keep to the distances and to the relevant standards and rules for combining the device with other types and products on the same top-hat rail (→ 2).
- The intrinsically safe input circuits are galvanically isolated from other circuits up to a peak value of the nominal voltage of 375 V.
- The pertinent guidelines must be observed when intrinsically safe circuits are connected together (Proof of Intrinsic Safety).
- In the event of additional or alternative special varnishing on the housing or other metal parts:
  - Observe the danger of electrostatic charging and discharge.
  - Do not rub surfaces with a dry cloth.

Temperature tables

Ambient temperature range	
Individual installation	$-20\ °C \leq T_a \leq +60\ °C$
Series installation	$-20\ °C \leq T_a \leq +50\ °C$

Connection data

Power circuit		
Terminal connections: 1, 2	AC voltage version	U = 85…253 V AC, 50/60 Hz P ≤ 6.0 VA
	DC voltage version	U = 20…60 V DC U = 20…30 V AC, 50/60 Hz P ≤ 2.0 W

Contact circuit	
Level relay Terminal connections: 22, 23, 24	U ≤ 250 V AC, I ≤ 2 A, P ≤ 500 VA at cos φ ≥ 0.7 U ≤ 40 V DC, I ≤ 2 A, P ≤ 80 W
Alarm relay Terminal connections: 15, 16	U ≤ 250 V AC, I ≤ 2 A, P ≤ 500 VA at cos φ ≥ 0.7 U ≤ 40 V DC, I ≤ 2 A, P ≤ 80 W optionally NC or NO, → 1

<table>
<tr><th colspan="6">Sensor circuit</th></tr>
<tr><td>Terminal connections:
11, 12</td><td>Connection data</td><td colspan="4">$U_o \leq 13.9$ V
$I_o \leq 99$ mA
$P_o \leq 874$ mW
$R_i \leq 391\ \Omega$
$C_i = 138$ nF
$L_i = 0.13$ mH
Trapezium-shaped characteristic</td></tr>
<tr><td rowspan="5"></td><td rowspan="2"></td><td colspan="2">[Ex ia Ga] IIC</td><td colspan="2">[Ex ia Ga] IIB</td></tr>
<tr><td>L_o</td><td>C_o</td><td>L_o</td><td>C_o</td></tr>
<tr><td rowspan="2">max. external capacitance at max. external inductance</td><td>0.85 mH</td><td>0.18 µF</td><td>0.85 mH</td><td>2.06 µF</td></tr>
<tr><td>0.35 mH</td><td>0.26 µF</td><td>4.85 mH</td><td>1.06 µF</td></tr>
<tr><td>max. external capacitance or max. external inductance</td><td>3.50 mH</td><td>0.60 µF</td><td>14.3 mH</td><td>4.56 µF</td></tr>
<tr><td rowspan="3">If using explosion protection group [Ex ib Gb] IIC/IIB the application is limited to Gb</td><td rowspan="2"></td><td colspan="2">[Ex ib Gb] IIC</td><td colspan="2">[Ex ib Gb] IIB</td></tr>
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