XA02907F-B/00/EN/02.24-00
71674104
2024-07-26

Safety Instructions
Nivotester FTL325N

2Ex ec nC [ia Ga] IIC T4 Gc X

Endress+Hauser
People for Process Automation

Nivotester FTL325N

Table of contents

About this document

The document number of these Safety Instructions (XA) must match the information on the nameplate.

Associated documentation

All documentation is available on the Internet:
www.endress.com/Deviceviewer
(enter the serial number from the nameplate).

To commission the device, please observe the Operating Instructions pertaining to the device:

BA01972F, BA01973F

Supplementary documentation

Explosion protection brochure: CP00021Z

The explosion protection brochure is available on the Internet:
www.endress.com/Downloads

Certificates and declarations

Certificate of Conformity TP TC 012/2011

Inspection authority:
LLP "T-Standard" (ТОО/ЖШС "Т-Стандарт")

Certificate number:
ЕАЭС KZ 7500525.01.01.01824

Affixing the certificate number certifies conformity with the following standards (depending on the device version):

- GOST 31610.0-2019 (IEC 60079-0:2017)
- GOST 31610.7-2017 (IEC 60079-7:2015)
- GOST 31610.11-2014 (IEC 60079-11:2011)
- GOST 31610.15-2014 (IEC 60079-15:2010)

Manufacturer address

Endress+Hauser SE+Co. KG
Hauptstraße 1
79689 Maulburg, Germany

Address of the manufacturing plant: See nameplate.

Extended order code

The extended order code is indicated on the nameplate, which is affixed to the device in such a way that it is clearly visible. Additional information about the nameplate is provided in the associated Operating Instructions.

Structure of the extended order code

FTL325N	–	**********	+	A*B*C*D*E*F*G*..
(Device type)		*(Basic specifications)*		*(Optional specifications)*

* = Placeholder
At this position, an option (number or letter) selected from the specification is displayed instead of the placeholders.

Basic specifications

The features that are absolutely essential for the device (mandatory features) are specified in the basic specifications. The number of positions depends on the number of features available.
The selected option of a feature can consist of several positions.

Optional specifications

The optional specifications describe additional features for the device (optional features). The number of positions depends on the number of features available. The features have a 2-digit structure to aid identification (e.g. JA). The first digit (ID) stands for the feature group and consists of a number or a letter (e.g. J = Test, Certificate). The second digit constitutes the value that stands for the feature within the group (e.g. A = 3.1 material (wetted parts), inspection certificate).

More detailed information about the device is provided in the following tables. These tables describe the individual positions and IDs in the extended order code which are relevant to hazardous locations.

Extended order code: Nivotester

The following specifications reproduce an extract from the product structure and are used to assign:
- This documentation to the device (using the extended order code on the nameplate).
- The device options cited in the document.

Device type

FTL325N

Basic specifications

Position 1 (Approval)		
Selected option		**Description**
FTL325N	7	EAC 2Ex ec nC [ia Ga] IIC T4 Gc X

Position 2 (Housing)		
Selected option		**Description**
FTL325N	1	Rail mounting, 22.5 mm, 1-channel
	3	Rail mounting, 45 mm, 3-channel

Position 3 (Power Supply)		
Selected option		**Description**
FTL325N	A	85-253 V AC
	E	20-30 V AC / 20-60 V DC

Position 4 (Switch Output)		
Selected option		**Description**
FTL325N	1	1x SPDT level + 1x SPST alarm
	3	3x SPDT level + 1x SPST alarm

Optional specifications

No options specific to hazardous locations are available.

Safety instructions: General

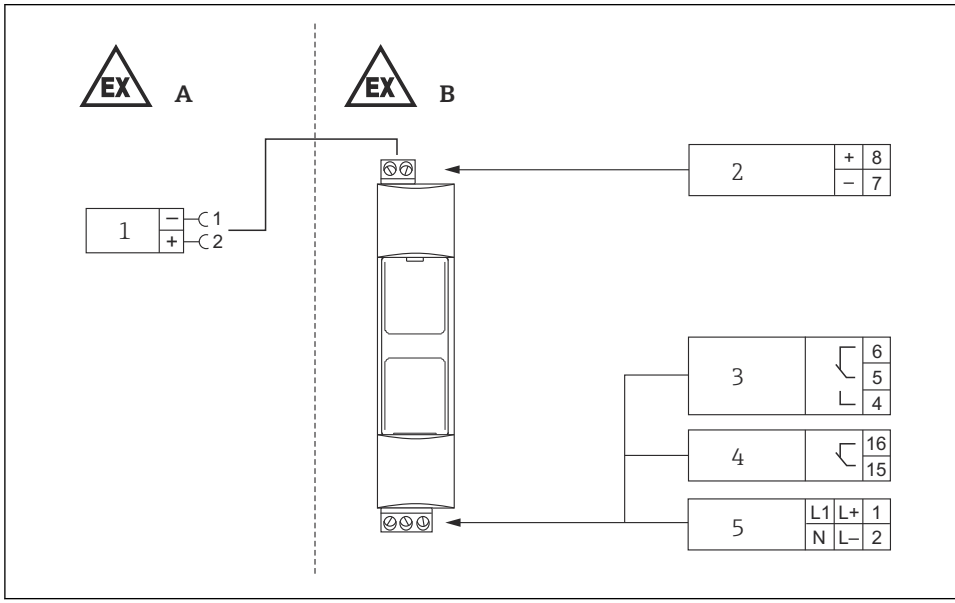
- Staff must meet the following conditions for mounting, electrical installation, commissioning and maintenance of the device:
  - Be suitably qualified for their role and the tasks they perform
  - Be trained in explosion protection
  - Be familiar with national regulations
- Install the device according to the manufacturer's instructions and national regulations.
- Do not operate the device outside the specified electrical, thermal and mechanical parameters.
- Avoid electrostatic charging.

Safety instructions: Specific conditions of use

- The device shall only be used in an area of pollution degree 2 or better.
- The circuits have to be limited to overvoltage Category II.
- The device must be installed in an enclosure that provides an ingress protection of at least IP54 in accordance with IEC 60079-0 or equivalent national standards.
- In potentially explosive atmospheres: Do not disconnect electrical connections when energized.
- The device must be externally protected against transient overvoltage up to 140 % of the maximum voltage.

Safety instructions: Installation

One channel version

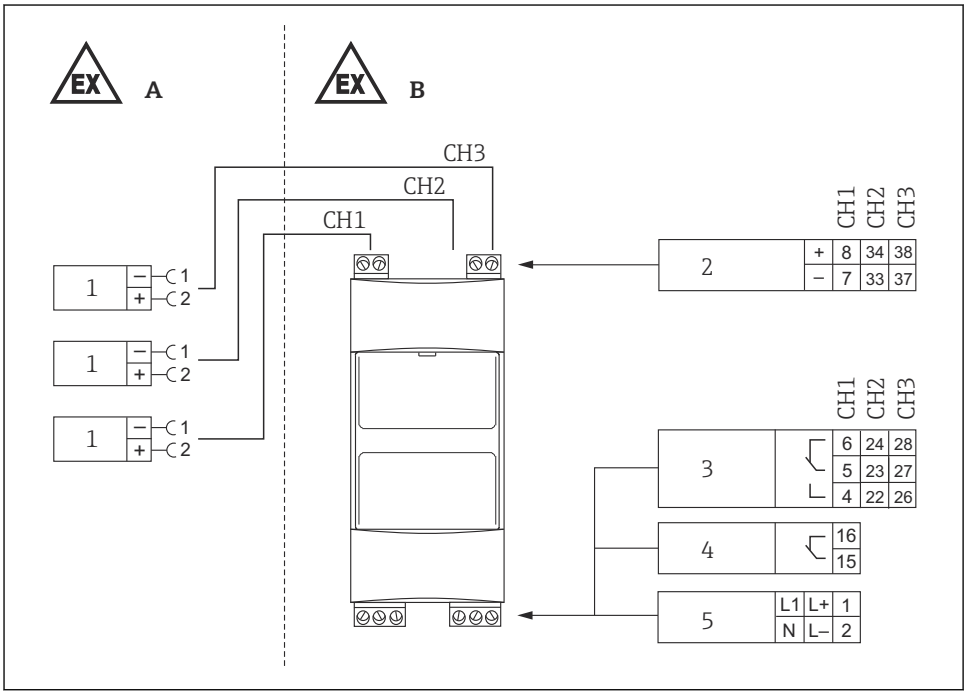


A0027416

1

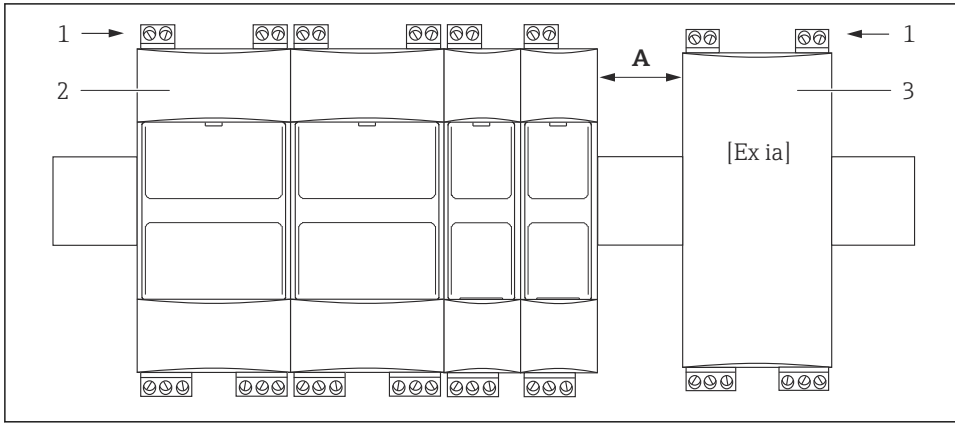
A Zone 0, Zone 1
B Zone 2
1 Sensor, Limit level
2 Sensor
3 Level relay
4 Fault signal relay
5 Power supply

Three channel version



2

A Zone 0, Zone 1
B Zone 2
CH1 Channel 1
CH2 Channel 2
CH3 Channel 3
1 Sensor, Limit level
2 Sensor
3 Level relay
4 Fault signal relay
5 Power supply



3

A Min. 6 mm
1 Intrinsically safe contacts
2 Nivotester FTL325N
3 Other type, other product

- To achieve an ingress protection of at least IP55: Protect the device from dust and humidity, e.g. in control rooms, or located in a suitable protective enclosure.
- There must be a distance (thread measure) of at least 50 mm between intrinsically safe and nonintrinsically safe terminals.
- When combining the device with other types and products on the same top-hat rail: Keep the distances comply to the relevant standards and rules.

Intrinsic safety

- Observe the pertinent guidelines when interconnecting intrinsically safe circuits.
- The intrinsically-safe input circuits are galvanically isolated from other circuits up to a peak value of the nominal voltage of 375 V.

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 supply circuit		
Terminal connections: 1, 2	AC voltage	U = 85 to 253 V_{AC}, 50/60 Hz P ≤ 1.75 W (one channel version) P ≤ 2.75 W (three channel version)
	DC voltage	U = 20 to 60 V_{DC} U = 20 to 30 V_{AC}, 50/60 Hz P ≤ 1.20 W (one channel version) P ≤ 2.25 W (three channel version)

Contact circuit	
Level relay Terminal connections: Channel 1 (CH1): 4, 5, 6 Channel 2 (CH2): 22, 23, 24 [1] Channel 3 (CH3): 26, 27, 28 [1] **Fault signal 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

1) not available in one channel version

Sensor circuit					
Terminal connections: Channel 1 (CH1): 7, 8 Channel 2 (CH2): 33, 34 [1] Channel 3 (CH3): 37, 38 [1]	Connection data:	U_o ≤ 12 V I_o ≤ 34 mA P_o ≤ 154 mW Trapezium-shaped characteristic		R_i ≥ 644 Ω C_i = 0 L_i = 0	
		[Ex ia Ga] IIC		**[Ex ia Ga] IIB**	
		L_o	**C_o**	**L_o**	**C_o**
	Max. external capacitance at max. external inductance	0.5 mH	500 nF	1.0 mH	2.0 µF
		1.0 mH	450 nF	5.0 mH	1.5 µF
	Max. external capacitance or max. external inductance	30 mH	1.4 µF	120 mH	9.0 µF
If using explosion protection group [Ex ib Gb] IIC/IIB the application is limited to **II (2) G**		**[Ex ib Gb] IIC**		**[Ex ib Gb] IIB**	
		L_o	**C_o**	**L_o**	**C_o**
	Max. external capacitance or max. external inductance	30 mH	1.4 µF	120 mH	9.0 µF

1) not available in one channel version

www.addresses.endress.com

Endress+Hauser

People for Process Automation