

NAMUR isolating amplifier

Nivotester FTL325N



Complete product information:
www.e-direct.endress.com/ftl325n

- NAMUR interface IEC EN 60947-5-6
- One- to three-channel version
- Two-point control and point level detection with vibronic point level switch Liquiphant M/S, Soliphant M, Solicap M/S, Liquicap M and Liquipoint

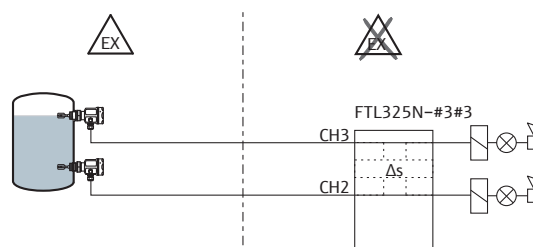
i Specs at a glance:

- **Approval:**
ATEX II (1) GD EEx ia
- **Connectable sensors:**
All NAMUR switches
- **Output:**
1 relay per channel
- **Number of channels:**
1 or 3

Application The isolating amplifier Nivotester isolates and amplifies signals coming from hazardous areas. Proximity switches, vibronic point level switches or mechanic contacts can be used as measuring sensors. Isolating amplifiers can be used for the transmission of the switch status or for limit detection. Two-point control is possible in a liquid tank using the three-channel version. Combined with a Liquiphant M or Liquiphant S the isolating amplifiers are approved as overspill protection according to WHG. For using FTL325N in field a protection housing is available.

Function The isolating amplifiers supply voltage to the measuring sensors via a two-wire loop. The switching status of the sensors is evaluated and put out via a relay. By using the quiescent-current-principle this ensures a high operational safety. At the same time, a control current is transferred along this supply line. Combined with a vibronic point level switch Liquiphant M/S and Soliphant M the measuring line is controlled of short-cut, supply fails also the vibration fork of corrosion.

Application Example



When channels CH2 and CH3 are used for two-point control Δs , the measuring device consists of:

- 2 measuring sensors
- 3-channel Nivotester
- control or signal devices

Technical data

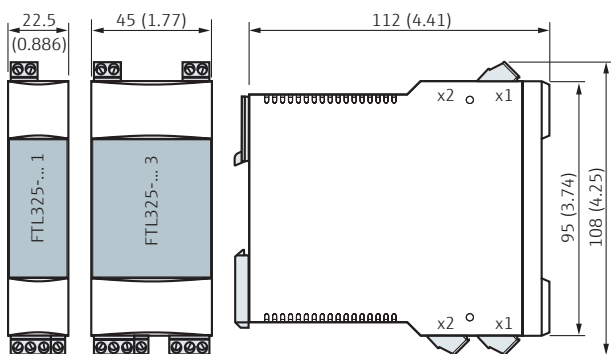
Input	
Measured variable	The limit signal can be triggered at minimum or maximum height as required
Measuring range	The measuring range is dependent on the installation location of the sensors
Input	Galvanically isolated from power supply and output
Protection type	II(1)G [Ex ia Ga] IIC II(1)D [Ex ia Da] IIIC
Connectable measuring sensors	Liquiphant M, Liquiphant S, Soliphant M, Solicap M, Solicap S, Liquicap M; sensors specified to IEC/EN 60947-5-6; contact switches with an appropriate resistance circuit
Connecting line	two-wire, screening unnecessary
Line resistance	max. 25 Ω per wire
Signal transmission	Current signal on supply line
Control current range	<1.2 mA/> 2.1 mA
Line interruption monitoring	<200 µA
Short-circuit	>6.1 mA (can be switched off)
Output	
Relay output	One potential-free switch contact for the level alarm per channel
Quiescent current fail-safe mode	MIN/MAX safety can be selected with DIL switch
Switch delay	approx. 0.5 s
Switching power of the relay contacts	U~ max. 253 V; I~ max. 2 A; P~ max. 500 VA at cos φ ≥0.7; U- max. 40 V; I- max. 2 A; P- max. 80 W
Life	at least 10 ⁸ switching operations at maximum contact load
Function displays	LEDs for operation, level alarm and fault

Power supply	
Supply voltage	85 to 253 V AC, 50/60 Hz 20 to 30 V AC, 20 to 60 V DC, max. 60 mA (1-channel), max. 113 mA (3-channel), permissible residual ripple within tolerance: V _{pp} = max. 2 V The Nivotester is equipped with reverse polarity protection.
Power consumption	AC: 1-channel: max. 1.75 W 3-channel: max. 2.75 W DC: 1-channel: max. 1.2 W (at V _{min} 20 V) 3-channel: max. 2.25 W (at V _{min} 20 V)

Operating conditions	
Ambient temperature	For single installation: -20 to +60 °C (-4 to +140 °F) for rail mounting without gaps: -20 to +50 °C (-4 to +122 °F)
Storage temperature	-20 to +85 °C (-4 to +185 °F) (preferably at +20 °C/+68 °F)
Ingress Protection	IP20, IK06
EMC	Interference emission to EN 61326; Class A apparatus; interference immunity to EN 61326; Appendix A (Industry) and NAMUR Recommendation NE 21 (EMC)

Materials	
Housing	Polycarbonate
Front cover	PP polypropylene
Fixing slide	(for fixing to top-hat rail), Polyamide PA6
Approvals	
Ex approval	ATEX II(1)G [Ex ia Ga] IIC ATEX II(1)D [Ex i Da] IIIC
Overfill prevention	WHG, leak approval

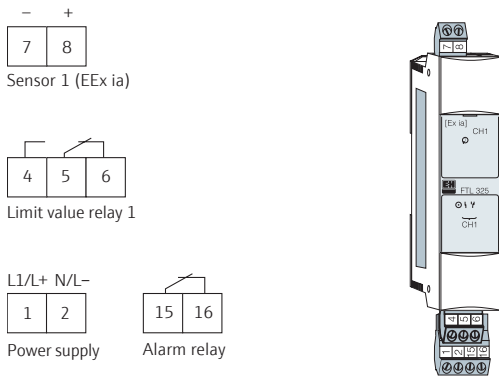
Dimensions in mm (inches)



Installation according to instruction manual.

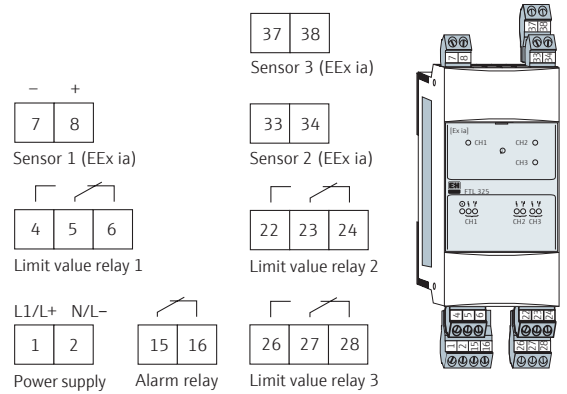
Electrical connection

1-channel version



Connection cross section max. $1 \times 2.5 \text{ mm}^2$ or $2 \times 1.5 \text{ mm}^2$

3-channel version



Connection cross section max. $1 \times 2.5 \text{ mm}^2$ or $2 \times 1.5 \text{ mm}^2$

Price table

Nivotester FTL325N		Order no.	Price/pcs. in €		
Power supply	Channels		1 to 3	4 to 10	11 to 35
85 to 253 V AC	1	FTL325N-F1A1	110.-	99.-	90.-
	3	FTL325N-F3A3	201.-	181.-	165.-
20 to 30 V AC / 20 to 60 V DC	1	FTL325N-F1E1	110.-	99.-	90.-
	3	FTL325N-F3E3	201.-	181.-	165.-

Accessories	Order no.	Price/pcs. in €
Protective housing (max. 4 FTL325N, 1-channelled) (182 × 180 × 165 mm/7.28 × 7.09 × 6.49")	52010132	74.96

Prices are applicable for Estonia until 30/06/2020, in euro per unit, net excluding value added tax (VAT), cost of packing and dispatch. Endress+Hauser retains the right to change or modify pricing at any time. The terms of sales and delivery of Endress+Hauser are applicable. Current prices and delivery times can be verified prior to ordering on www.e-direct.endress.com.

 Complete product information:
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