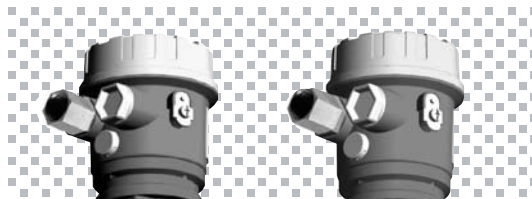


Level limit switch for multiple point detection
in conductive liquids

Liquipoint T FTW31/32

E-direct

www.e-direct.us



FTW31
Rod version

FTW32
Rope version

- Detect multiple level limits with one device
- Flexible instrumentation
- No moving parts in the tank
- No calibration required

Applications

Liquipoint T sensors are used in conductive liquids (as low as 10 $\mu\text{S}/\text{cm}$) for determining level limits. Depending on the number of measuring points, measuring tasks such as tank overspill protection, pump dry run protection, two-point control of pumps or multiple point level detection can be implemented using a single process connection.

Measurement principle

An alternating voltage exists between the rod probes in an empty tank. As soon as the conductive liquid in the tank creates a connection between the ground probe rod and, for example, the maximum probe rod, a measurable current flows and the Liquipoint T switches. With level limit detection, the Liquipoint T switches back as soon as the liquid clears the maximum probe. With two-point control, the Liquipoint T does not switch back until the MAX and MIN probe is cleared. Using alternating voltage prevents corrosion of the probe rods and electrolytic destruction of the product. The material used for the tank walls is not important for measurement because the system is designed as a closed potential-free circuit between the probe rods and the electronics. There is absolutely no safety hazard if the probe rods are touched during operation.

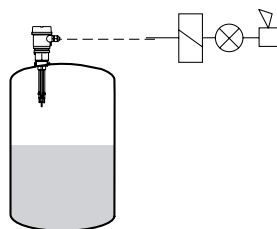
Product: liquids as low as 10 $\mu\text{S}/\text{cm}$	
Product temperature: -40 to +212 °F	Process pressure: -14.5 to +145 psi
Approval: ATEX II 2G EEx ia	

Application example

Probes with integrated electronic insert (compact-instrument version)

The measuring system consists of:

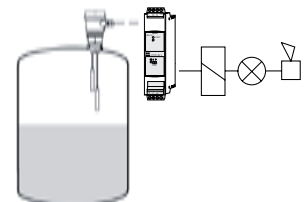
- FTW31, with three rods and an electronic insert
- Control units, switches or signal transmitters. e. g. process control systems PLC, relays



Probes without integrated electronic insert (separate-instrument version)

The measuring system consists of:

- FTW31, FTW32 with two/three rods or ropes
- Nivotester FTW325
- Control units, switches or signal transmitters. e. g. process control systems PLC, relays, etc.



Liquipoint T FTW31/32

Technical data

General

<ul style="list-style-type: none"> ■ Version ■ Sensor length ■ Minimum conductivity ■ Cable specification 	<p>Compact version: Two/three rods or ropes</p> <p>Separate version (with integrated performance control – in combination with level limit switch FTW325): Two/three/five rods or ropes</p> <p>Rod: 72" (1829 mm) Rope: 180" (4572 mm)</p> <p>≥ 10 µS/cm</p> <p>Use standard cable (25 Ω per core)</p>
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Operating conditions

<ul style="list-style-type: none"> ■ Medium temperature ■ Ambient temperature ■ Medium pressure ■ Protection ■ Process connection 	<p>-40 to +212 °F (-40 to +100 °C)</p> <p>-40 to +158 °F (-40 to +70 °C)</p> <p>-14.5 to 145 psi (-1 to +10 bar)</p> <p>NEMA 4 (IP 66)</p> <p>NPT 1½"</p>
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Material

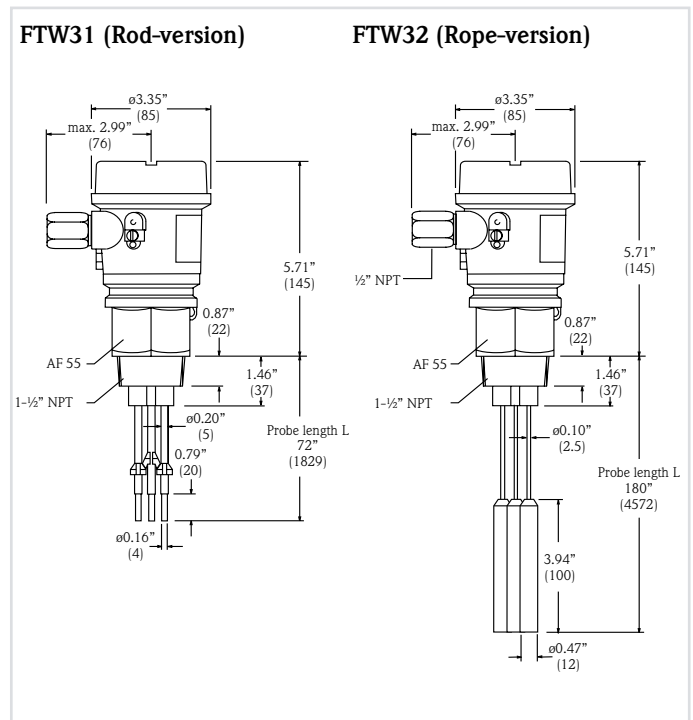
<ul style="list-style-type: none"> ■ Electrodes ■ Process connection ■ Housing F16 ■ Housing F24 	<p>Rod: 316L (1.4404)/Insulation: PP Rope: 316Ti (1.4571)/Insulation: FEP</p> <p>PPS</p> <p>For compact-instrument version: housing: PBT; cover: PBT</p> <p>For separate-instrument version housing: PPS; cover: PBT</p>
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Approvals (compact instrument version)

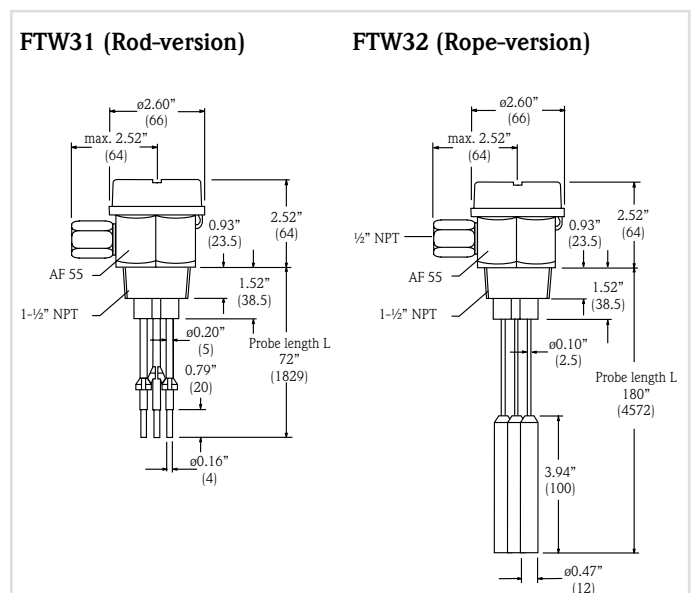
<ul style="list-style-type: none"> ■ Ex approval 	<p>ATEX II 2G EExia IIC T6</p>
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Dimensions in inches (mm)

Rod and rope version with 1½" NPT (compact-instrument version with electronic insert)



Rod and rope version with 1½" NPT (separate-instrument version without electronic insert)



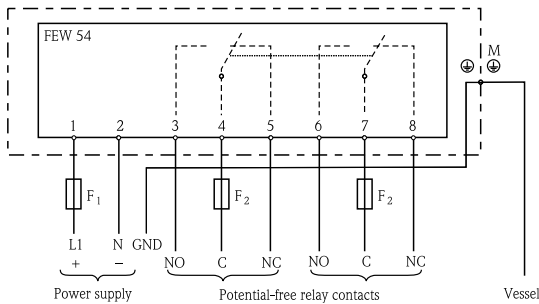
Liquipoint T FTW31/32

Electrical connection

Probes with electronic insert (compact-instrument version)

Electronic insert FEW54

- Supply voltage 20 to 55 VDC or 20 to 253 VAC, 50/60 Hz
- Peak inrush current max. 2 A, max. 400 μ S
- Pulse frequency approx. 1.5 s
- Output two potential-free SPDT relays
- Contact load capacity U~ max. 253 V, I~ max. 4 A, U = 30 V/4 A; 150 V/ 0.2 A
- Power consumption < 2.0 W
- Current consumption 60 mA



Connecting the FEW54 electronic insert.
 F1: Fine-wire fuse 200 mA, semi-time lag
 F2: Fine-wire fuse to protect the relay contact, load-dependent

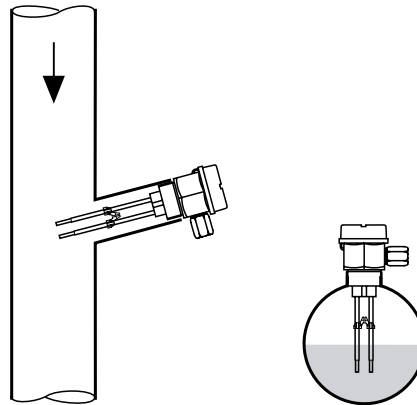
Installation instructions

Mounting location

The rod and rope probes are mounted predominantly in tanks made of plastic or metal.

Piping (partially filled)

Rod probes can be used in piping as, for example, dry running protection for pumps.

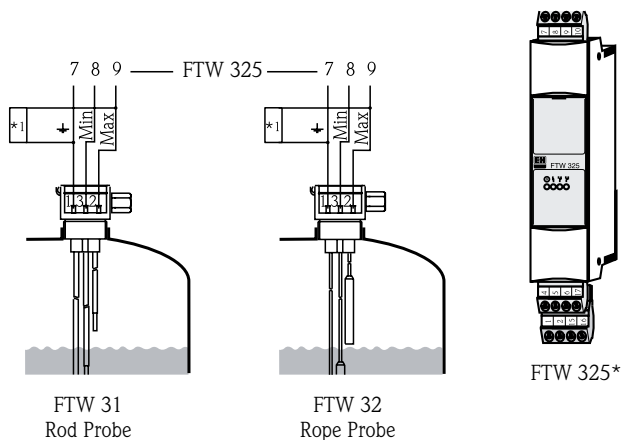


Probes without integrated electronic insert (separate-instrument version)

For monitoring, an FTW325 external switch is needed.

Application example

Separate electronics for three-rod or rope-probes



*For FTW325 information, see Technical Datasheet no. TD026E/US/ae

Liquipoint T FTW31/32

Many other models, versions and options are available.
Please contact Endress+Hauser for more information.

(1) Separate-instrument versions require electronics of the Nivotester FTW325

Product	Version	Order no.	Price/piece in \$			we hereby order:	total price:
			1 to 5	6 to 15	16 to 35		
FTW31	(Rod-version) Separate-instrument version (1)						
	3 rods, 6 ft.	FTW31-A2A3EB0A	\$154.00	\$139.00	\$125.00	pcs	\$
	Compact-instrument version						
	3 rods, 6 ft/FEW54 20-253 VAC/20-55 VDC	FTW31-A2A3EB4A	\$268.00	\$242.00	\$218.00	pcs	\$
FTW32	(Rope-version) Separate-instrument version (1)						
	2 ropes, 15 ft.	FTW32-A2D2EB0A	\$138.00	\$125.00	\$112.00	pcs	\$
	3 ropes, 15 ft.	FTW32-A2D3EB0A	\$174.00	\$157.00	\$141.00	pcs	\$
FTW325	85 to 253 VAC						
	Standard	FTW325-A2A1A	\$156.00	\$141.00	\$127.00	pcs	\$
	20 to 30 VAC, 20 to 60 VDC						
	Standard	FTW325-A2B1A	\$156.00	\$141.00	\$127.00	pcs	\$
Accessories	Protective housing (max. 4 pcs. FTW325)	51002468	\$114.00			pcs	\$

Net excluding cost of shipping and taxes.
Acceptance per our Standard Terms and Conditions (find at www.e-direct.us).

Total price:

FOB Greenwood, IN; shipped pre-paid; shipping charges and applicable taxes added to invoice.

\$ _____

E-direct catalog (free)

Shipping method Ground Priority One Day Priority Two Day



E-direct
Endress+Hauser, Inc.
2350 Endress Place
Greenwood, IN 46143

(For customers in the USA only)

Online Shop www.e-direct.us
Order: by phone **888-EH DIRECT**
(343-4732)
by fax **800-321-7754**
For special requests, e-mail us: e-direct@us.endress.com

Warranty

Should an instrument fail during the 1 year warranty period, a replacement unit will be provided.

Delivery

Shipment from receipt of order for quantities 1-3 within 2 business days.



People for Process Automation