Technical
Information
TI 121F/00/en

Operating Instructions
017251-1000

Conductive Limit Detection
Double-rod probes 11362, 11362 Z

**High resistant probes,
for corrosive liquids,
for use in plastic vessels**









The probe rods and process connections are made from highly corrosion-resistant materials for use with aggressive products.

Application

Limit Detection
The probes are for those applications requiring accurate limit detection or overspill protection in plastic vessels or vessels made of non-conducting material.

Two-point Control
Two-point control can be carried out in vessels with electrically conducting walls.

Variable Process Connections
- Thread G1 ½ A (parallel)
- Thread 1 ½“ NPT (tapered)
- Flanges conforming to DIN, from DN 40 to DN 200, PN 16 or PN 40, also available with groove-ring or tongue
- Flanges conforming to ANSI, from 1 ½“ to 4", 150 psi or 300 psi, also available with ring joint (11362 only).

Function Monitoring
An EW 11 Z electronic insert can be installed for continuous cable monitoring with maximum limit indication when using a Nivotester FTW 325/470 Z/ 570 Z/ 520 Z (required when using the probe for overspill protection).

Applications in Ex-Areas
The 11362 Z version can be used
- For applications in explosion hazardous area, Zone 0,
- For applications in waste water plants, which are sometimes regarded as Zone 0 (gasoline and oil traps etc.).
- As overspill protection for water-polluting liquids (WHG).

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The Complete Measuring System

In addition to the double-rod probe, the complete measuring system comprises one conductivity limit switch

- Nivotester FTW 470 Z in Racksyst plug-in board format for the standard calibration range 1 kΩ...50 kΩ

or

- Nivotester FTW 570 Z in Racksyst plug-in board format for the extended calibration range 100 Ω...50 kΩ (for conductive deposits on the probe insulation)

or

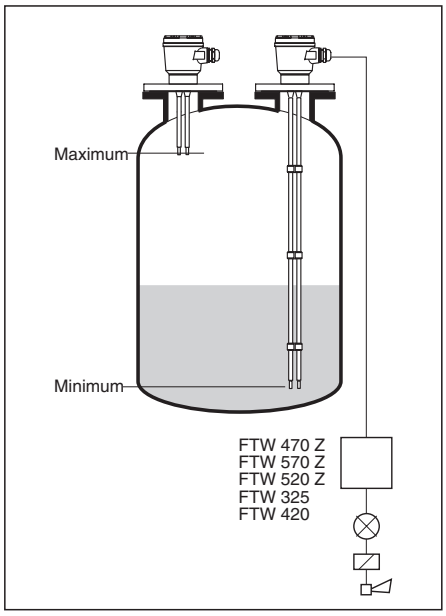
- Nivotester FTW 325 in Minipac row housing with the calibration range 1 kΩ...200 kΩ

or

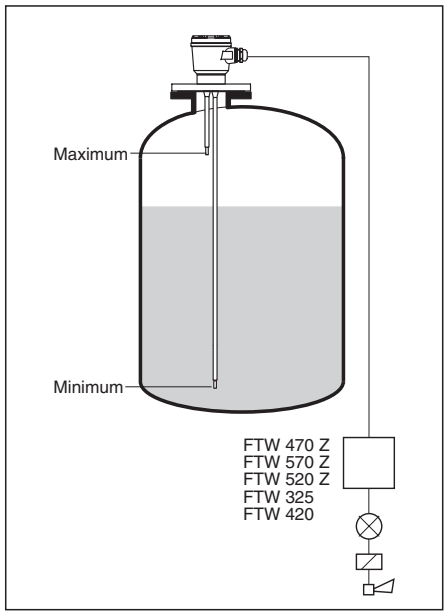
- Nivotester FTW 520 Z in Minipac row housing with the calibration range 100 Ω...50 kΩ

or

- Nivotester FTW 420 in Minipac row housing with the calibration range 0...50 kΩ or 0...1.5 kΩ (FTW 420 S) for non-certified applications.



Limit detection
in a plastic vessel



Two-point control
in a metal vessel

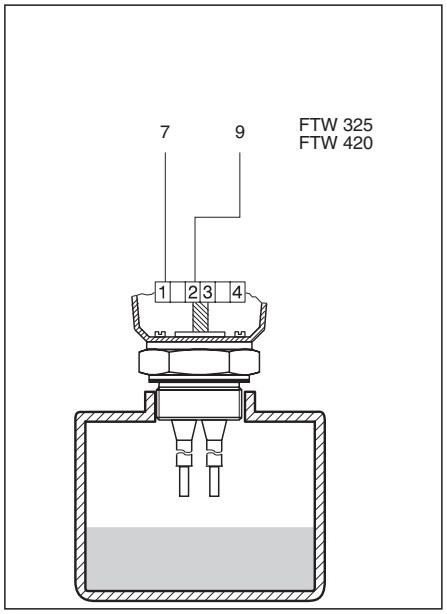
Installation

- The probes are designed to be installed vertically for most applications.
- Compact probes up to approx. 300 mm in length can be installed at any orientation.
- A support is required for those probes subjected to high lateral loads.
- For liquids tending to deposit a conductive layer on the probe insulation, the final spacer should be moved at least 100 mm away from the end for high contact resistance when the probe is exposed.
- If the probe has to be shortened, then clamp the rods such that the insulation is not damaged and that the feed-throughs in the flange or threaded boss are not subject to mechanical force.
  Remove the rod insulation at the probe tip by at least a further 20 mm (see Technical Data).

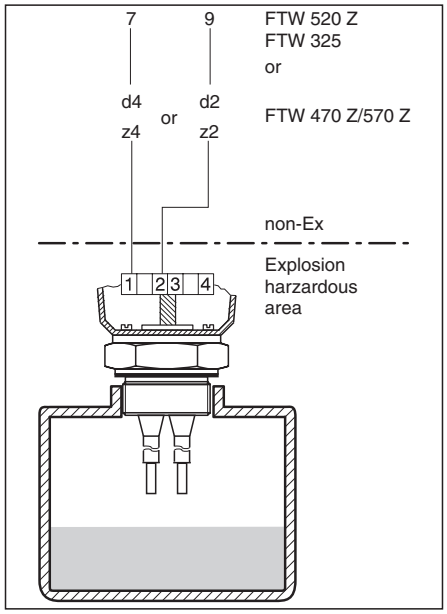
Electrical Connection

The 11362/11362 Z probe is supplied with either an integrated EW 11 Z electronic insert for cable monitoring or an integrated terminal block.

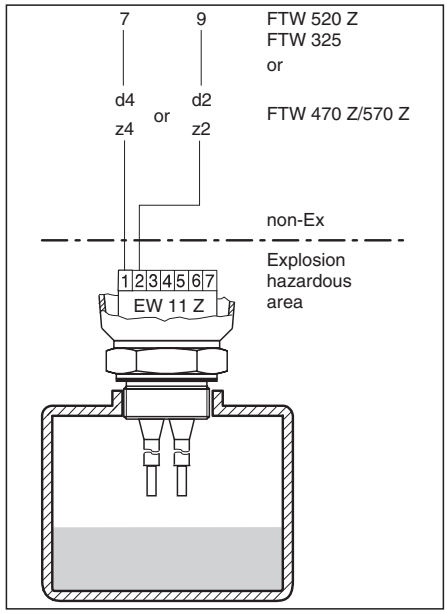
The use of the probe in explosion hazardous areas is not permitted when it is connected to the Nivotester FTW 420. After connecting, make sure that the cable gland and the probe housing are tight.



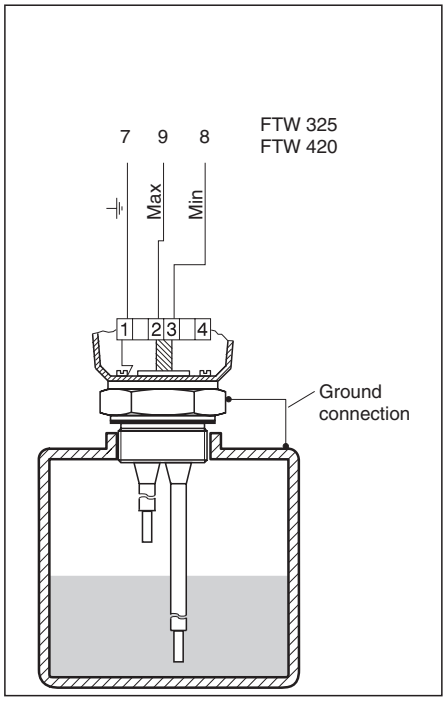
Freely selectable limit detection in a plastic vessel without cable monitoring.



Freely selectable limit detection in a plastic vessel without cable monitoring and also for use in explosion hazardous areas.

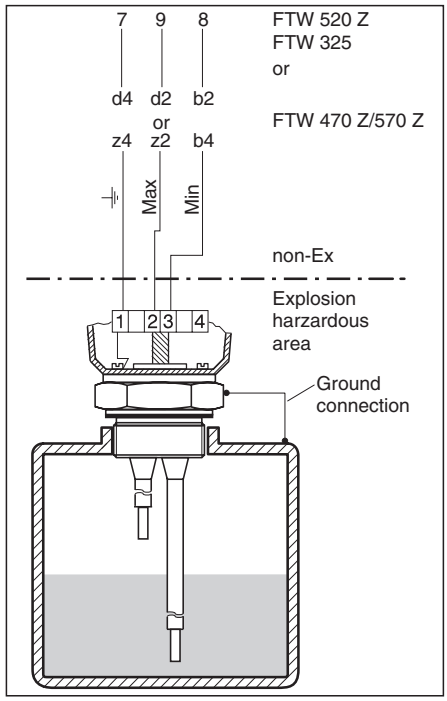


(Maximum) limit detection in a plastic vessel with cable monitoring and also for use in explosion hazardous areas.



Two-point control in a metal vessel without cable monitoring.

It is important to have a good ground connection between the probe head and the vessel.



Two-point control in a metal vessel without cable monitoring and also for use in explosion hazardous areas.

It is important to have a good ground connection between the probe head and the vessel.

Technical Data

The most important data are listed in the ordering diagram.

Further Technical Data:

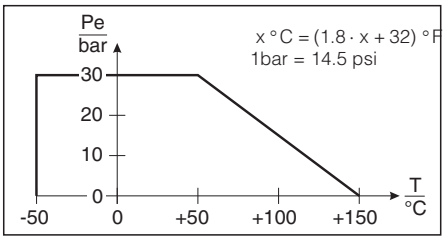
Other Materials
Spacer material: PFA
Seal for version with thread:
elastomer/fibre, non-asbestos

PTFE Insulation Lengths (standard)

Probe length L	Insulation length	
	with EW 11 Z	with terminals
up to 150 mm	L minus 10 mm	L minus 10 mm
150...2000 mm	L minus 20 mm	L minus 20 mm
2000...3000 mm	L minus 30 mm	L minus 30 mm
3000...4000 mm	L minus 30 mm	L minus 70 mm

Operating Pressures and Temperatures

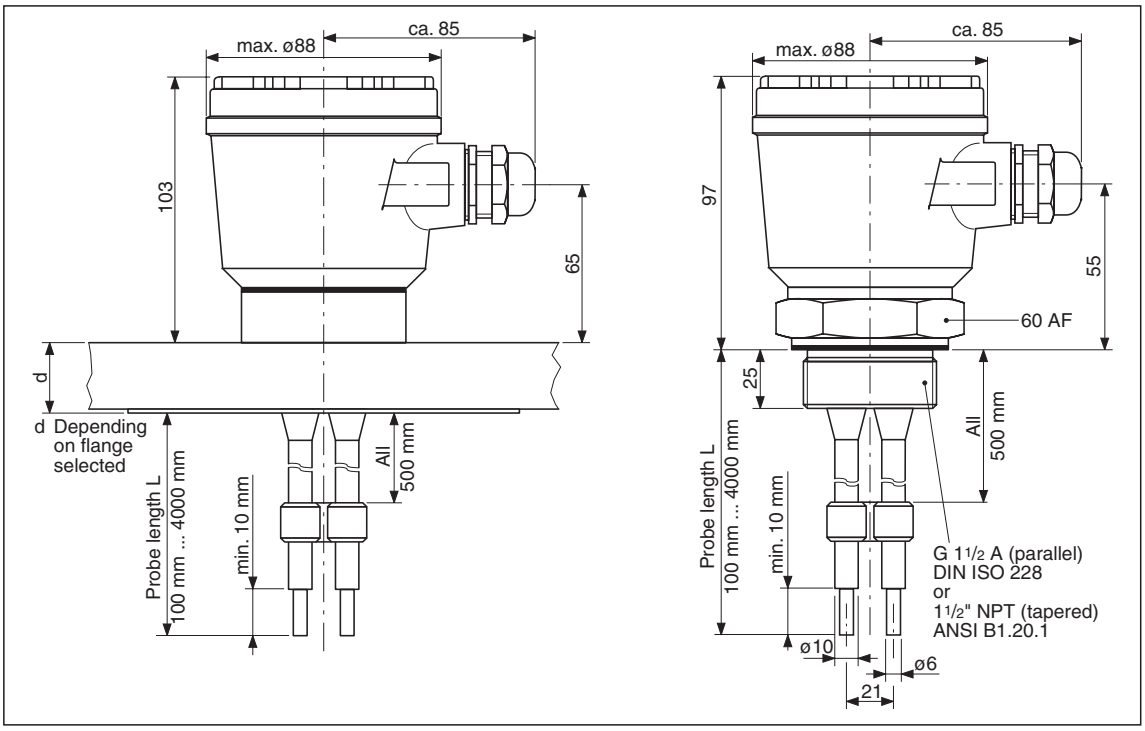
- Metal process connections
  Operating pressure and temperature see drawing below



- Plastic process connections
  Operating pressure p_e –0.2...+0.2 bar
  Temperature –25°C...+80°C

Important
The maximum permissible operating temperature is 80°C when using the EW 11 Z electronic insert

Mechanical Connection
The dimensions of plastic connection flanges in PP or PTFE correspond to DIN flanges for PN 16 or ANSI flanges for 150 psi.



Dimensions in mm of the double-rod probes 11362 and 11362 Z. Height and diameter are similar for all housings.

100 mm = 3.94 in
1 in = 25.4 mm

Ordering Diagram

Double-rod probe 11362

Process connection, material

AA1	G 1 ½ A,	Thread	ISO228,	316Ti
AA4	G 1 ½ A,	Thread	ISO228,	PP
AA5	G 1 ½ A,	Thread	ISO228,	PTFE
AB1	1 ½“ NPT,	Thread	ANSI,	316Ti
AB3	1 ½“ NPT,	Thread	ANSI,	Alloy C4
AB4	1 ½” NPT,	Thread	ANSI,	PP
AB5	1 ½“ NPT,	Thread	ANSI,	PTFE
HC1	DN 40,	PN 10/16 B,	DIN2527,	316Ti
HC4	DN 40,	drilled as PN 16 B, DIN2527,		PP
HC5	DN 40,	PN 10/16 B,	DIN2527,	PTFE
IC1	DN 50,	PN 10/16 B,	DIN2527,	316Ti
IC4	DN 50,	PN 16 B,	DIN2527,	PP max. 1.5 bar abs
IC5	DN 50,	PN 10/16 B,	DIN2527,	PTFE
IC7	DN 50,	PN 10/16,	DIN2527,	PTFE >316Ti
IE1	DN 50,	PN 25/40 B,	DIN2527,	316Ti
LCA	DN 80,	PN 10/16,	DIN2527,	Alloy C4 >316Ti
LC4	DN 80,	PN 16 B,	DIN2527,	PP max. 1.5 bar abs
LC7	DN 80,	PN 10/16,	DIN2527,	PTFE >316Ti
MC4	DN 100,	PN 16 B,	DIN2527,	PP max. 1.5 bar abs
PC4	DN 150,	drilled as PN 16 B, DIN2527,		PP
2Q1	1 ½”,	150 lbs, RF,	ANSI B16.5,	316Ti
2Q7	1 ½”,	150 lbs,	ANSI B16.5,	PTFE >316Ti
3Q1	2",	150 lbs, RF,	ANSI B16.5,	316Ti
3Q4	2",	150 lbs, FF,	ANSI B16.5,	PP max. 22 psia
3Q5	2",	150 lbs, FF,	ANSI B16.5,	PTFE max. 22 psia
3Q7	2”,	150 lbs,	ANSI B16.5,	PTFE >316Ti
5Q1	3",	150 lbs, RF,	ANSI B16.5,	316Ti
5Q4	3”,	150 lbs, FF,	ANSI B16.5,	PP max. 22 psia
5Q7	3",	150 lbs,	ANSI B16.5,	PTFE >316Ti
7Q1	4”,	150 lbs, RF,	ANSI B16.5,	316Ti
7Q4	4”,	150 lbs, FF,	ANSI B16.5,	PP max. 22 psia
7Q7	4",	150 lbs,	ANSI B16.5,	PTFE >316Ti
9Y9	Special version			

Rod material
- A 316Ti
- B Alloy B
- C Alloy C4
- D Titanium
- E Tantalum
- F Monel
- Y Special version

Length of partial insulation
- 1 Standard length of partial insulation
- 9 Special version

Probe length L
- 1 .....mm (100 mm...4000 mm)
- 9 Special version

Housing (IP66)
- C Aluminium, E-Housing, ½” NPT
- D Aluminium, E-Housing, G ½”
- E Aluminium, E-Housing, M20x1,5
- F Aluminium, E-Housing, HNA24 plug
- L Polyester, E-Housing, ½” NPT
- M Polyester, E-Housing, G ½”
- O Polyester, E-Housing, M20x1,5
- P Polyester, E-Housing, HNA24 plug
- S 316Ti, E-Housing, Pg16 gland
- T Alu. coated, E-Housing, ½” NPT
- U Alu. coated, E-Housing, G ½”
- V Alu. coated, E-Housing, M20x1,5
- W Alu. coated, E-Housing, HNA24 plug
- Y Special version

Electronic insert
- A without electronic insert
- B Line monitor EW 11 Z installed
- Y Special version

11362 [ ][ ][ ][ ][ ][ ] Order code

[ ][ ][ ][ ] Please state length of probe in mm

Double-rod probe 11362 Z

Certificate
- A ATEX II 1/2 G, EEx ia IIC T6, WHG
- K ATEX II 1 G, EEx ia IIC T6
- P ATEX II 1/2 G, EEx ia IIC T6
- R For non-hazardous area use
- W For non-hazardous areas, WHG
- Y Special version

For use with... (Label text)
- 1 FTW 325 / 470 Z / 520 Z / 570 Z
- 8 non specific instrument
- 9 Special version

Process connection, material

AA1	G 1 ½ A,	Thread	ISO228,	316Ti
AA2	G 1 ½ A,	Thread	ISO228,	Alloy B
AA3	G 1 ½ A,	Thread	ISO228,	Alloy C4
AA4	G 1 ½ A,	Thread	ISO228,	PP
AA5	G 1 ½ A,	Thread	ISO228,	PTFE
AB1	1 ½“ NPT,	Thread	ANSI,	316Ti
AB3	1 ½“ NPT,	Thread	ANSI,	Alloy C4
HC1	DN 40,	PN 10/16 B,	DIN2527,	316Ti
HE1	DN 40,	PN 25/40 B,	DIN2527,	316Ti
ICA	DN 50,	PN 10/16,	DIN2527,	Alloy C >316Ti
ICC	DN 50,	PN 16 F,	DIN2512,	316Ti
IC1	DN 50,	PN 10/16 B,	DIN2527,	316Ti
IC4	DN 50,	PN 16 B,	DIN2527,	PP max. 1.5 bar abs
IC5	DN 50,	PN 10/16 B,	DIN2527,	PTFE max. 1.5 bar abs
IC7	DN 50,	PN 10/16,	DIN2527,	PTFE >316Ti
IE1	DN 50,	PN 25/40 B,	DIN2527,	316Ti
IE7	DN 50,	PN 25/40,	DIN2527,	PTFE >316Ti
LC1	DN 80,	PN 10/16 B,	DIN2527,	316Ti
LC4	DN 80,	PN 16 B,	DIN2527,	PP max. 1.5 bar abs
LC7	DN 80,	PN 10/16,	DIN2527,	PTFE >316Ti
LC8	DN 80,	PN 10/16,	DIN2527,	Alloy B >316Ti
LE1	DN 80,	PN 25/40 B,	DIN2527,	316Ti
MC1	DN 100,	PN 10/16 B,	DIN2527,	316Ti
MC4	DN 100,	PN 16 B,	DIN2527,	PP max. 1.5 bar abs
3QB	2”,	150 lbs, RJ,	ANSI B16.5,	316Ti
3Q1	2",	150 lbs, RF,	ANSI B16.5,	316Ti
3Q4	2",	150 lbs, FF,	ANSI B16.5,	PP max. 22 psia
3Q7	2”,	150 lbs,	ANSI B16.5,	PTFE >316Ti
3R1	2”,	300 lbs, RF,	ANSI B16.5,	316Ti
5Q1	3”,	150 lbs, RF,	ANSI B16.5,	316Ti
5Q5	3”,	150 lbs, FF,	ANSI B16.5,	PTFE max. 22 psia
9Y9	Special version			

Rod material
- A 316Ti
- B Alloy B
- C Alloy C4
- D Titanium
- E Tantalum
- F Monel
- Y Special version

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- 1 Standard length of partial insulation
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Probe length L
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- D Aluminium, E-Housing, G ½”
- E Aluminium, E-Housing, M20x1,5
- F Aluminium, E-Housing, HNA24 plug
- L Polyester, E-Housing, ½” NPT
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- O Polyester, E-Housing, M20x1,5
- P Polyester, E-Housing, HNA24 plug
- S 316Ti, E-Housing, Pg16 gland
- T Alu. coated, E-Housing, ½” NPT
- U Alu. coated, E-Housing, G ½”
- V Alu. coated, E-Housing, M20x1,5
- W Alu. coated, E-Housing, HNA24 plug
- Y Special version

Electronic insert
- A without electronic insert
- B Line monitor EW 11 Z installed
- Y Special version

11362 Z [ ][ ][ ][ ][ ][ ][ ][ ] Order code

[ ][ ][ ][ ] Please state length of probe in mm

Supplementary Documentation

- ❑ Nivotester FTW 470 Z/570 Z
  Conductivity limit switch for liquids.
  Double limit switch in Racksyst format, also for two-point control.
  Technical Information TI 039F

- ❑ Nivotester FTW 520 Z
  Conductivity limit switch for liquids in Minipac row housing, also for two-point control.
  Technical Information TI 079F

- ❑ Nivotester FTW 325
  Conductivity limit switch for liquids in Minipac row housing, two-point control and limit detection with one switching device.
  Technical Information TI 373F

- ❑ Nivotester FTW 420
  Conductivity limit switch for liquids in Minipac row housing, also for two-point control.
  Technical Information TI 080F

- ❑ Three-rod probe 11363, 11363 Z.
  Technical Information TI 122F

Endress+Hauser
GmbH+Co. KG
Instruments
International
P.O. Box 2222
D-79574 Weil am Rhein
Germany

Tel. (0 76 21) 9 75-02
Fax (0 76 21) 9 75-3 45
http://www.endress.com
info@ii.endress.com

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