

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).

Endress + Hauser

The Power of Know How



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 k Ω ...50 k Ω

or

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

or

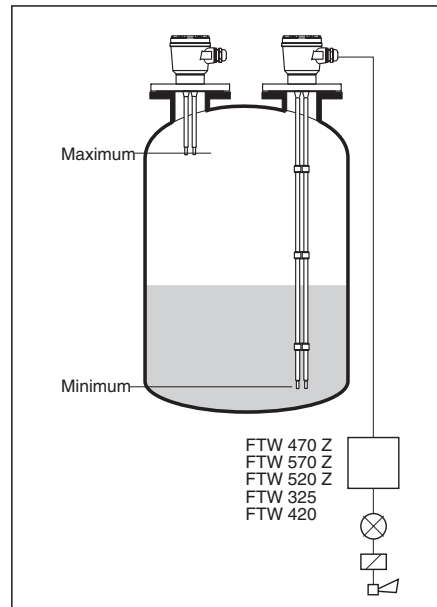
- Nivotester FTW 325 in Minipac row housing with the calibration range 1 k Ω ...200 k Ω

or

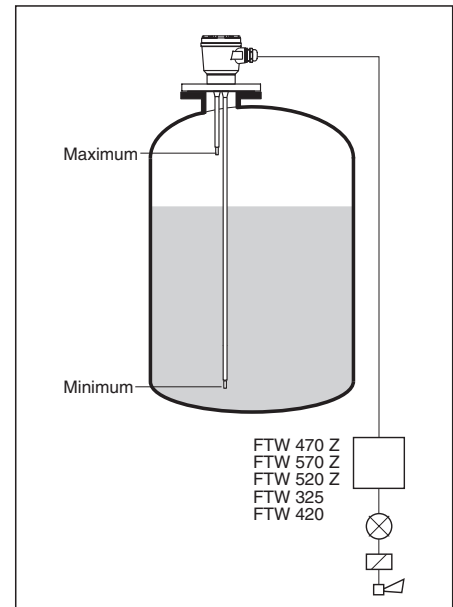
- Nivotester FTW 520 Z in Minipac row housing with the calibration range 100 Ω ...50 k Ω

or

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



Limit detection
in a plastic vessel



Two-point control
in a metal vessel

Installation

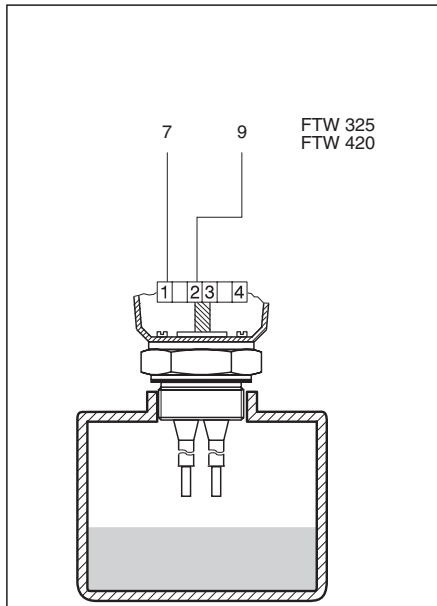
- The probes are designed to be installed vertically for most applications.
- Compact probes up to approx. 300 mm in length can be installed at any orientation.
- A support is required for those probes subjected to high lateral loads.
- For liquids tending to deposit a conductive layer on the probe insulation, 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).

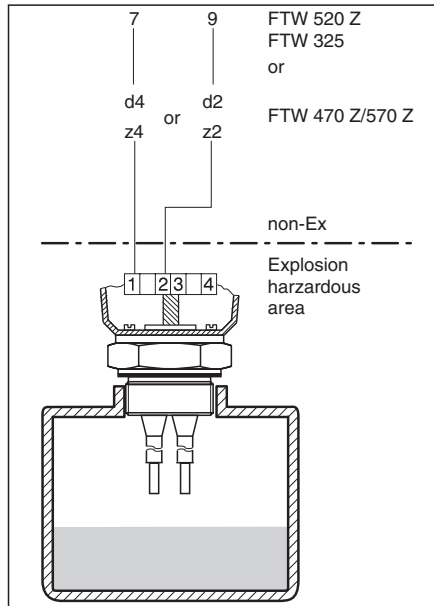
Electrical Connection

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

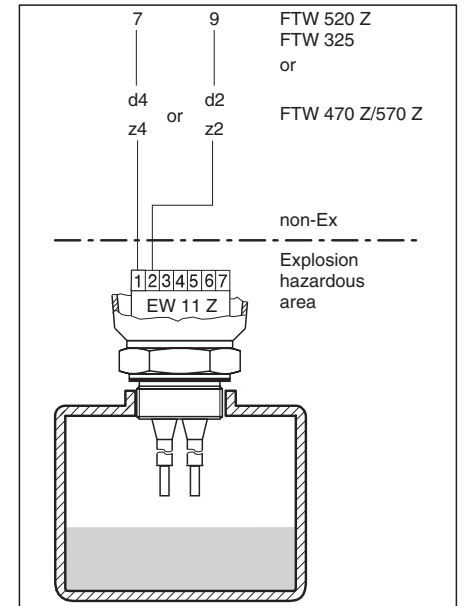
The use of the probe in explosion hazardous areas is not permitted when it is connected to the Nivotester FTW 420. After connecting, make sure that the cable gland and the probe housing are tight.



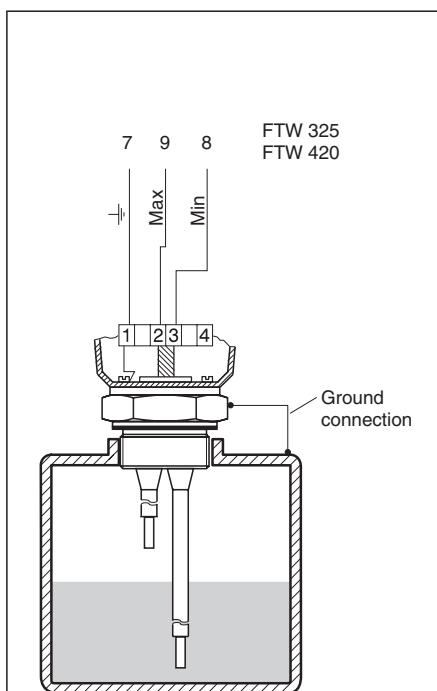
Freely selectable limit detection in a plastic vessel without cable monitoring.



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.

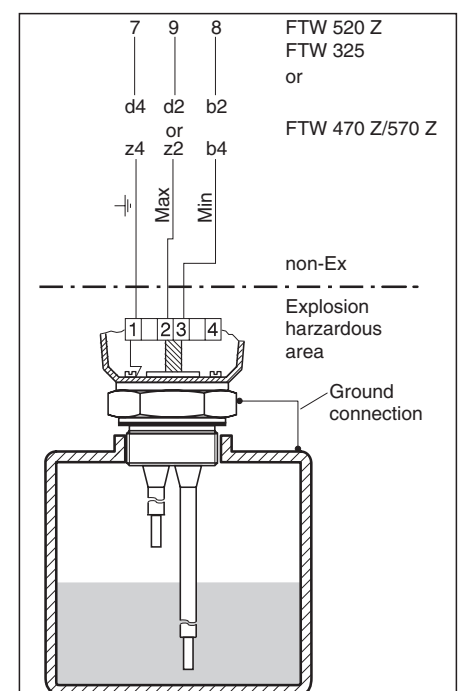


Two-point control in a metal vessel without cable monitoring.

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

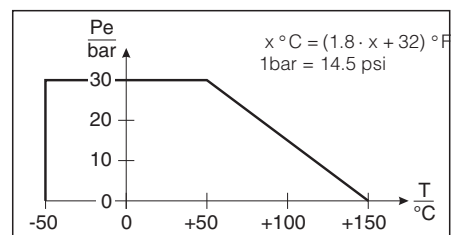
PTFE Insulation Lengths (standard)

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

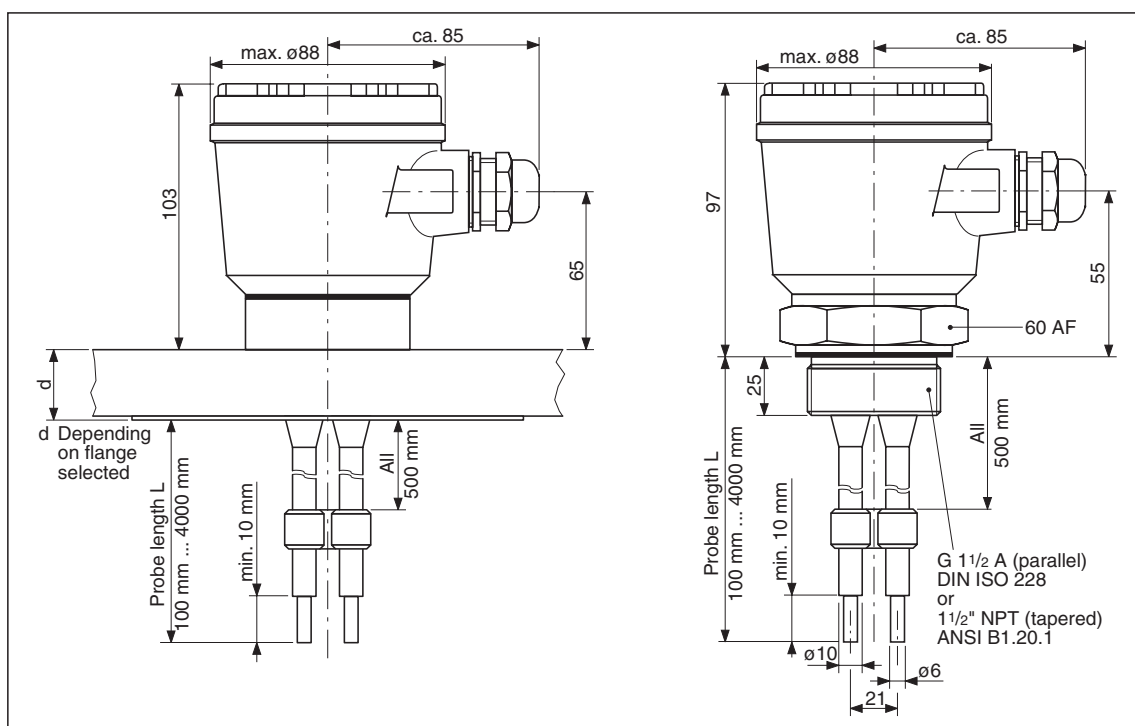
Temperature $-25^{\circ}\text{C} \dots +80^{\circ}\text{C}$

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.

$$\begin{aligned} 100 \text{ mm} &= 3.94 \text{ in} \\ 1 \text{ in} &= 25.4 \text{ mm} \end{aligned}$$

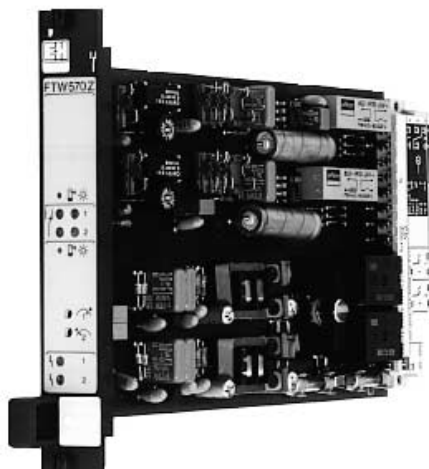
Ordering Diagram

Double-rod probe 11362									
Process connection, material									
AA1	G 1 1/2 A,	Thread	ISO228,	316Ti					
AA4	G 1 1/2 A,	Thread	ISO228,	PP					
AA5	G 1 1/2 A,	Thread	ISO228,	PTFE					
AB1	1 1/2" NPT,	Thread	ANSI,	316Ti					
AB3	1 1/2" NPT,	Thread	ANSI,	Alloy C4					
AB4	1 1/2" NPT,	Thread	ANSI,	PP					
AB5	1 1/2" 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 1/2",	150 lbs,	RF,	ANSI B16.5, 316Ti					
2Q7	1 1/2",	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, 1/2" NPT								
D	Aluminium, E-Housing, G 1/2"								
E	Aluminium, E-Housing, M20x1,5								
F	Aluminium, E-Housing, HNA24 plug								
L	Polyester, E-Housing, 1/2" NPT								
M	Polyester, E-Housing, G 1/2"								
O	Polyester, E-Housing, M20x1,5								
P	Polyester, E-Housing, HNA24 plug								
S	316Ti, E-Housing, Pg16 gland								
T	Alu. coated, E-Housing, 1/2" NPT								
U	Alu. coated, E-Housing, G 1/2"								
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 1/2 A,	Thread	ISO228,	316Ti					
AA2	G 1 1/2 A,	Thread	ISO228,	Alloy B					
AA3	G 1 1/2 A,	Thread	ISO228,	Alloy C4					
AA4	G 1 1/2 A,	Thread	ISO228,	PP					
AA5	G 1 1/2 A,	Thread	ISO228,	PTFE					
AB1	1 1/2" NPT,	Thread	ANSI,	316Ti					
AB3	1 1/2" 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					
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F	Aluminium, E-Housing, HNA24 plug								
L	Polyester, E-Housing, 1/2" NPT								
M	Polyester, E-Housing, G 1/2"								
O	Polyester, E-Housing, M20x1,5								
P	Polyester, E-Housing, HNA24 plug								
S	316Ti, E-Housing, Pg16 gland								
T	Alu. coated, E-Housing, 1/2" NPT								
U	Alu. coated, E-Housing, G 1/2"								
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

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