

Conductive Limit Detection

Three-rod probes 11363, 11363 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

Two-point Control

The probes are for those applications requiring accurate two-point limit detection in plastic vessels and vessels made of non-conducting material.

Limit Detection

High accuracy minimum *and* maximum limit detection – and also overspill protection – in plastic vessels is realized with *one* three point probe.

Three different limit points can be detected with *one* probe in vessels with electrically conducting walls.

Variable Process Connections

- Thread G1 1/2 A (parallel)
- Thread 1 1/2" 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 1/2" to 4", 150 psi or 300 psi, also available with ring joint (11363 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 470 Z/ 570 Z/ 520 Z (required when using the probe for overspill protection).

Applications in Ex-Areas

The 11363 Z version can be used

- For applications in explosion hazardous area, Zone 0
- As overspill protection for flammable and non-flammable water polluting liquids (VbF, WHG §19) (approval pending).

Endress + Hauser

Nothing beats know-how



The Complete Measuring System

Two-point Control in Plastic Vessels

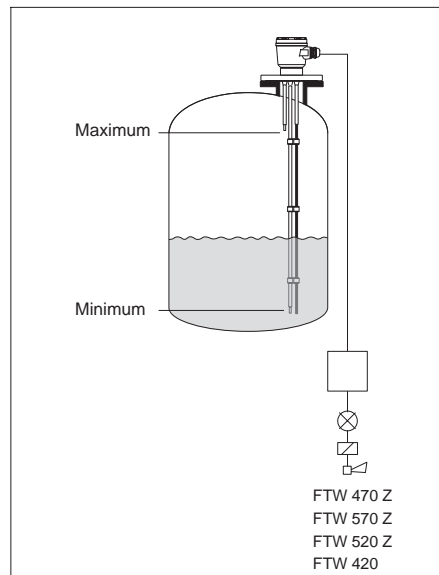
In addition to the three-rod probe, the complete measuring system comprises *one* conductivity limit switch

- 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 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.

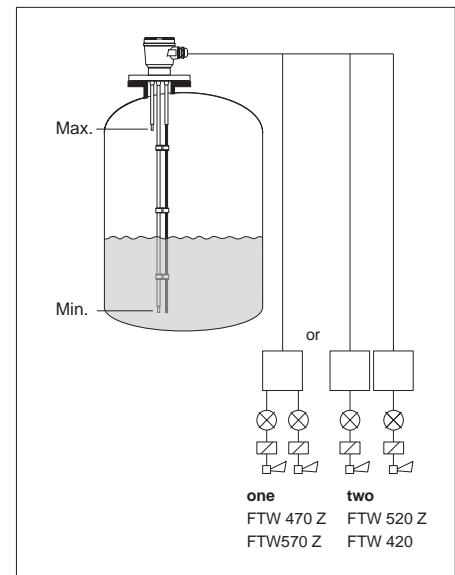
Minimum and Maximum Limit Detection in Plastic Vessels

In addition to the three-rod probe, the complete measuring system comprises

- *One* Nivotester FTW 470 Z or FTW 570 Z conductivity limit switch
or
- *Two* Nivotester FTW 520 Z or FTW 420 conductivity switches.



Two-point control in a plastic vessel



Detection of a minimum *and* maximum level limit in a plastic vessel

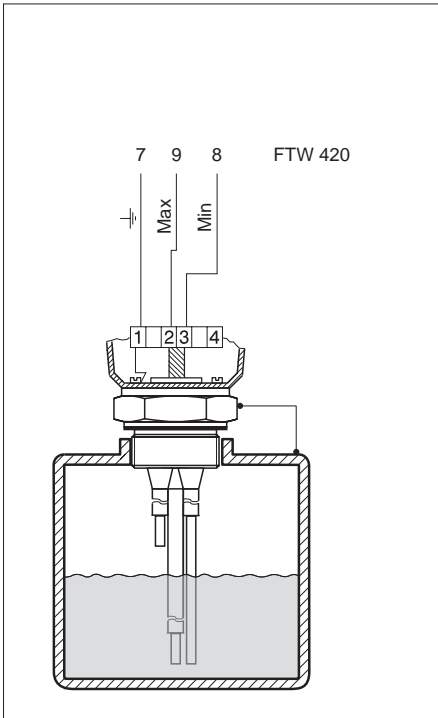
Installation

- 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).

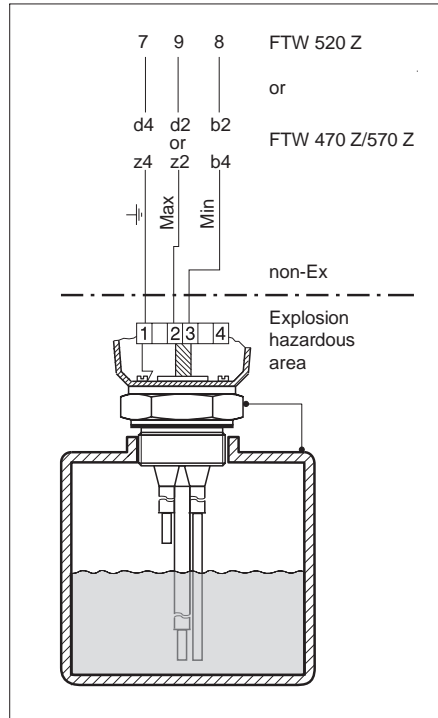
Electrical Connection

The 11363/11363 Z probe is supplied with either an integrated EW 11 Z electronic insert for cable monitoring or an integrated terminal block.

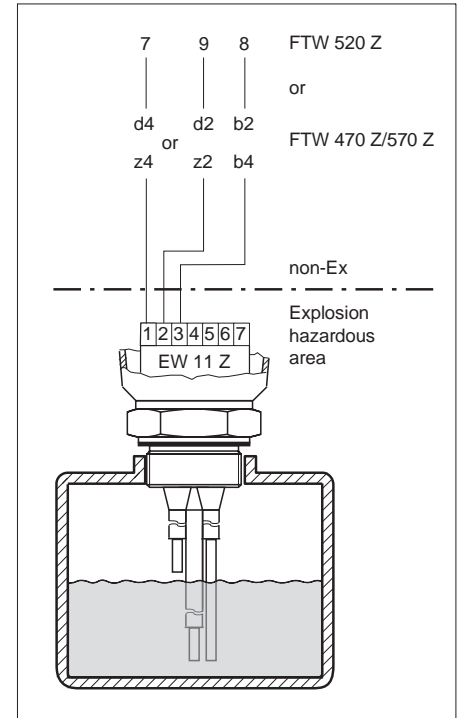
The use of the probe in explosion hazardous areas is not permitted when it is connected to the Nivotester FTW 420. After connecting, make sure that the cable gland and the probe housing are tight.



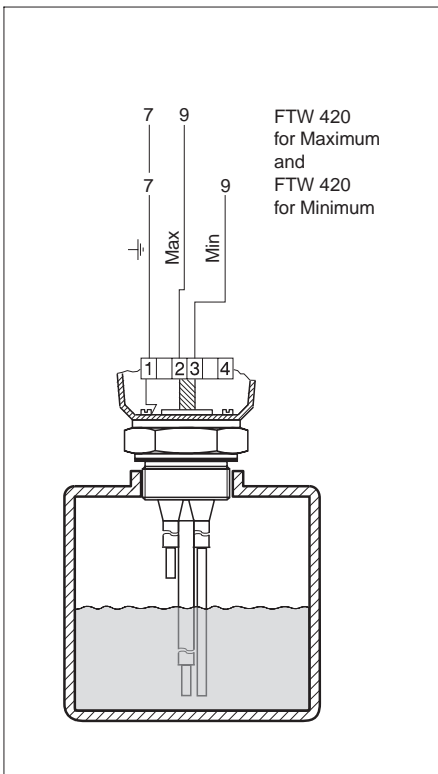
Two-point control in a plastic vessel without cable monitoring



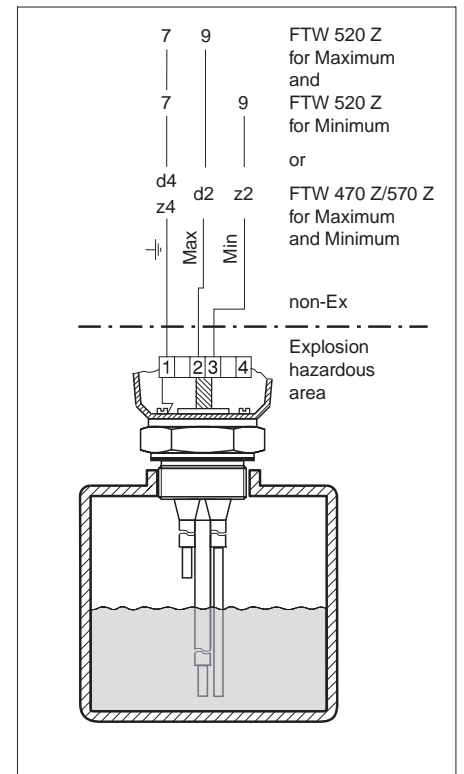
Two-point control in a plastic vessel without cable monitoring and also for use in explosion hazardous areas



Two-point control in a plastic vessel with cable monitoring up to the maximum probe and also for use in explosion hazardous areas



Independent two limit detection in a plastic vessel without cable monitoring



Independent two limit detection in a plastic vessel without cable monitoring and also for use in explosion hazardous areas

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)

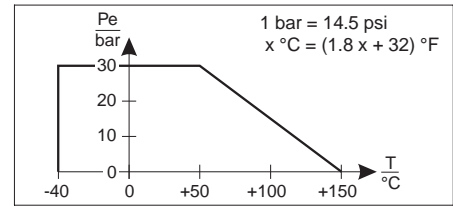
for maximum and minimum probe

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

100 mm = 3.94 in

Operating Pressures and Temperatures

- Metal process connections
Operating pressure and temperature see drawing below



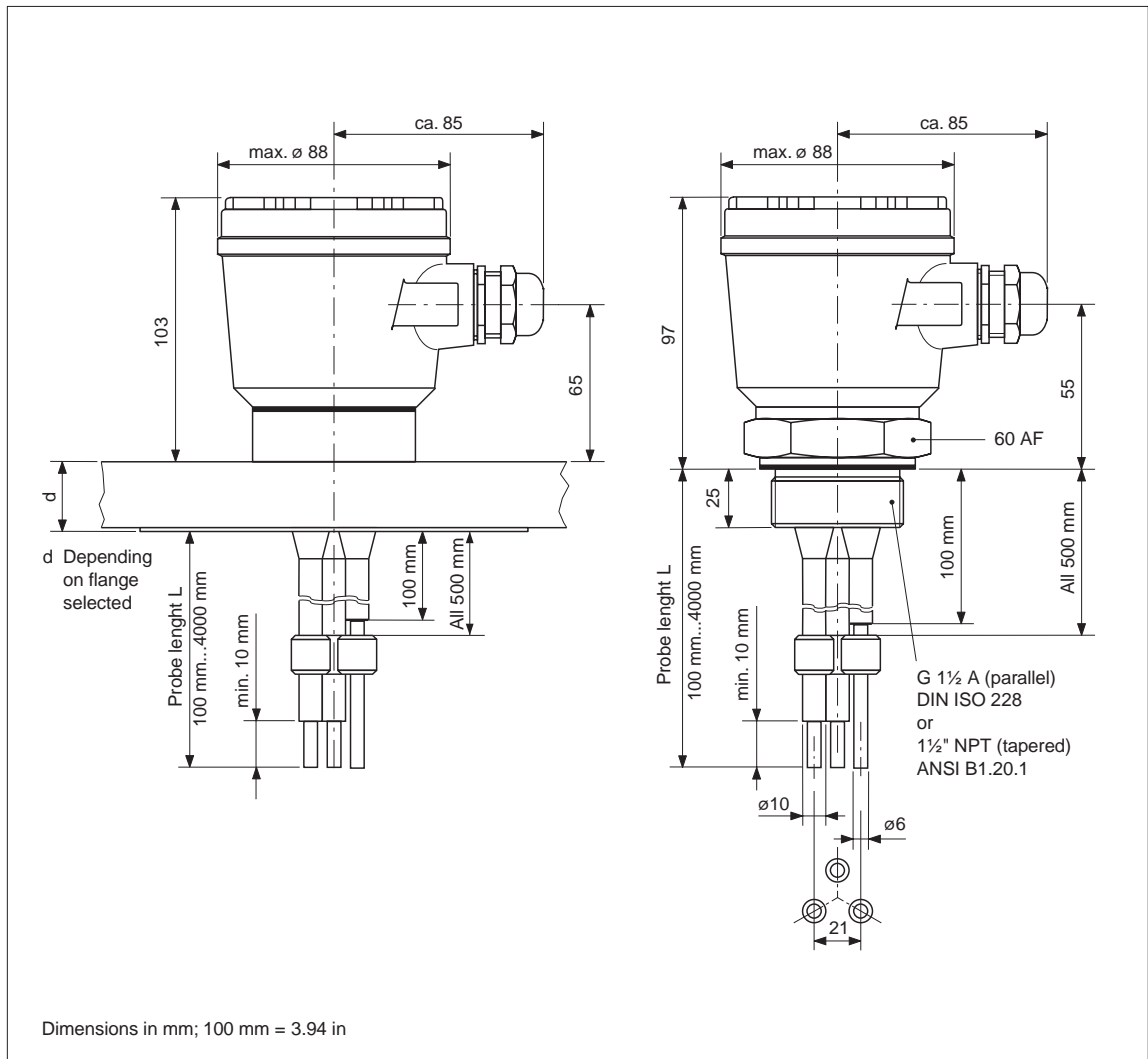
- Plastic process connections
Operating pressure p_e : -0.2...+0.2 bar
Temperature T: -25 ...+80 °C

Important

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

Mechanical Connection

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



Dimensions of the three-rod probes 11363 and 11363 Z. Height and diameter are similar for all housings.

Ordering Diagram

Three-rod probe 11363

Process connection / Material

AA1 Thread G 1 1/2 A / 1.4571
 AA4 Thread G 1 1/2 A / PP
 AA5 Thread G 1 1/2 A / PTFE
 AB1 Thread 1 1/2" NPT / 1.4571
 AB4 Thread 1 1/2" NPT / PP
 AB5 Thread 1 1/2" NPT / PTFE
 IC1 Flange DN 50 PN 16 / 1.4571
 IC4 Flange DN 50 / PP
 IC5 Flange DN 50 / PTFE
 IC7 Flange DN 50 PN 16 / 1.4571, PTFE-coated
 LC1 Flange DN 80 PN 16 / 1.4571
 LC4 Flange DN 80 / PP
 LC5 Flange DN 80 / PTFE
 LC7 Flange DN 80 PN 16 / 1.4571, PTFE-coated
 MC1 Flange DN 100 PN 16 / 1.4571
 MC4 Flange DN 100 / PP
 MC5 Flange DN 100 / PTFE
 MC7 Flange DN 100 PN 16 / 1.4571, PTFE-coated
 3Q1 Flange ANSI 2" 150 psi / 1.4571
 3Q4 Flange ANSI 2" / PP
 3Q5 Flange ANSI 2" / PTFE
 3Q7 Flange ANSI 2" 150 psi / 1.4571, PTFE-coated
 5Q1 Flange ANSI 3" 150 psi / 1.4571
 5Q4 Flange ANSI 3" / PP
 5Q5 Flange ANSI 3" / PTFE
 5Q7 Flange ANSI 3" 150 psi / 1.4571, PTFE-coated
 7Q1 Flange ANSI 4" 150 psi / 1.4571
 7Q4 Flange ANSI 4" / PP
 7Q5 Flange ANSI 4" / PTFE
 7Q7 Flange ANSI 4" 150 psi / 1.4571, PTFE-coated
 9Y9 Other process connections on request
 (e.g. flanges with groove-ring or tongue, ring joint etc.)

Rod Material

A 1.4571
 B Hastelloy B2
 C Hastelloy C4
 D Titanium
 E Tantalum
 F Monel
 Y Other materials on request

Length of Maximum Probe

Length of partial insulation
 see Table „Insulation Lengths“
 1 ...mm (freely selectable 100 mm...4000 mm)
 9 Other lengths on request

Length of Minimum Probe

Length of partial insulation
 see table „Insulation Lengths“
 1 ...mm (freely selectable 100 mm...4000 mm)
 9 Other lengths on request

Length of Reference Probe

The length of the partial insulation is 100 mm
 1 ...mm (freely selectable 110 mm...4000 mm)
 9 Other lengths on request

Housing

A Aluminium, Protection IP 55
 B Aluminium, Protection IP 66
 R Aluminium, plastic coated, IP 66
 K Plastic (PBTP), Protection IP 66
 S 1.4571, Protection IP 66
 Y Other housings on request

Electronic Insert

A None
 B Cable monitoring
 with integrated EW 11 Z

11363 Order Code

Please state length of maximum probe in mm

Please state length of minimum probe in mm

Please state length of reference probe in mm

Three-rod probe 11363 Z

Certification, Approval

A EEx ia IIC T4...T6 (Zone 0), VbF, WHG
 K EEx ia IIC T4...T6 (complete probe in Zone 0)
 P EEx ia IIC T4...T6 (Zone 0)
 W WHG
 Y Other certifications on request

For Connection to (as stated on nameplate)

1 FTW 470 Z/570 Z/520 Z
 8 No allocated instruments

Process connection / Material

AA1 Thread G 1 1/2 A / 1.4571
 AA4 Thread G 1 1/2 A / PP
 AA5 Thread G 1 1/2 A / PTFE
 AB1 Thread 1 1/2" NPT / 1.4571
 AB4 Thread 1 1/2" NPT / PP
 AB5 Thread 1 1/2" NPT / PTFE
 IC1 Flange DN 50 PN 16 / 1.4571
 IC4 Flange DN 50 / PP
 IC5 Flange DN 50 / PTFE
 IC7 Flange DN 50 PN 16 / 1.4571, PTFE-coated
 LC1 Flange DN 80 PN 16 / 1.4571
 LC4 Flange DN 80 / PP
 LC5 Flange DN 80 / PTFE
 LC7 Flange DN 80 PN 16 / 1.4571, PTFE-coated
 MC1 Flange DN 100 PN 16 / 1.4571
 MC4 Flange DN 100 / PP
 MC5 Flange DN 100 / PTFE
 MC7 Flange DN 100 PN 16 / 1.4571, PTFE-coated
 3Q1 Flange ANSI 2" 150 psi / 1.4571
 3Q4 Flange ANSI 2" / PP
 3Q5 Flange ANSI 2" / PTFE
 3Q7 Flange ANSI 2" 150 psi / 1.4571, PTFE-coated
 5Q1 Flange ANSI 3" 150 psi / 1.4571
 5Q4 Flange ANSI 3" / PP
 5Q5 Flange ANSI 3" / PTFE
 5Q7 Flange ANSI 3" 150 psi / 1.4571, PTFE-coated
 7Q1 Flange ANSI 4" 150 psi / 1.4571
 7Q4 Flange ANSI 4" / PP
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 9Y9 Other process connections on request
 (e.g. flanges with groove-ring or tongue)

Rod Material

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 D Titanium
 E Tantalum
 F Monel
 Y Other materials on request

Length of Maximum Probe

Length of partial insulation
 see Table „Insulation Lengths“
 1 ...mm (freely selectable 100 mm...4000 mm)
 9 Other lengths on request

Length of Minimum Probe

Length of partial insulation
 see Table „Insulation Lengths“
 1 ...mm (freely selectable 100 mm...4000 mm)
 9 Other lengths on request

Length of Reference Probe

The length of partial insulation is 100 mm
 1 ...mm (freely selectable 110 mm...4000 mm)
 9 Other lengths on request

Housing

A Aluminium, Protection IP 55
 B Aluminium, Protection IP 66
 R Aluminium, plastic coated, IP 66
 K Plastic (PBTP), Protection IP 66
 S 1.4571, Protection IP 66
 Y Other housings on request

Electronic Insert

A None
 (no VbF, WHG certification)
 B Cable monitoring
 with integrated EW 11 Z

11363 Z Order Code

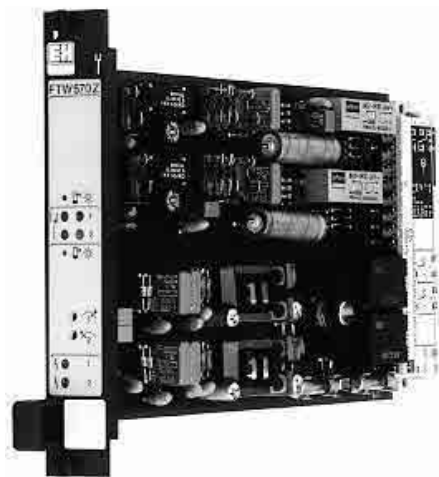
Please state length of maximum probe in mm

Please state length of minimum probe in mm

Please state length of reference 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 039
- ❑ Nivotester FTW 520 Z
Conductivity limit switch for liquids
in Minipac row housing, also for
two-point control.
Technical Information TI 079



- ❑ Double rod probe 11362, 11362 Z.
Technical Information TI 121
- ❑ Nivotester FTW 420
Conductivity limit switch for liquids
in Minipac row housing, also for
two-point control. Standard version
(not certified).
Technical Information TI 080



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