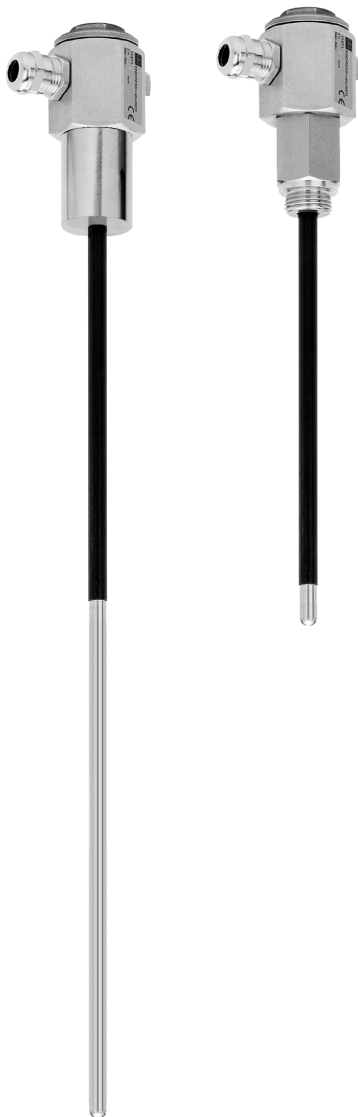


# Technical Information

## Rod probe 11371

Conductive level limit detection

Partially insulated probe for use in liquid foodstuffs



### Application

- Conductive level limit detection in process or storage tanks for all kinds of liquids:
  - e.g. for milk, beer, fruit juice
  - for temperatures from  $-10^{\circ}\text{C}$  to  $100^{\circ}\text{C}$
  - for pressures up to 10 bar
- For minimum or maximum detection in tanks
- As pump protection in pipes
- Can be used for two-point control

### Your benefits

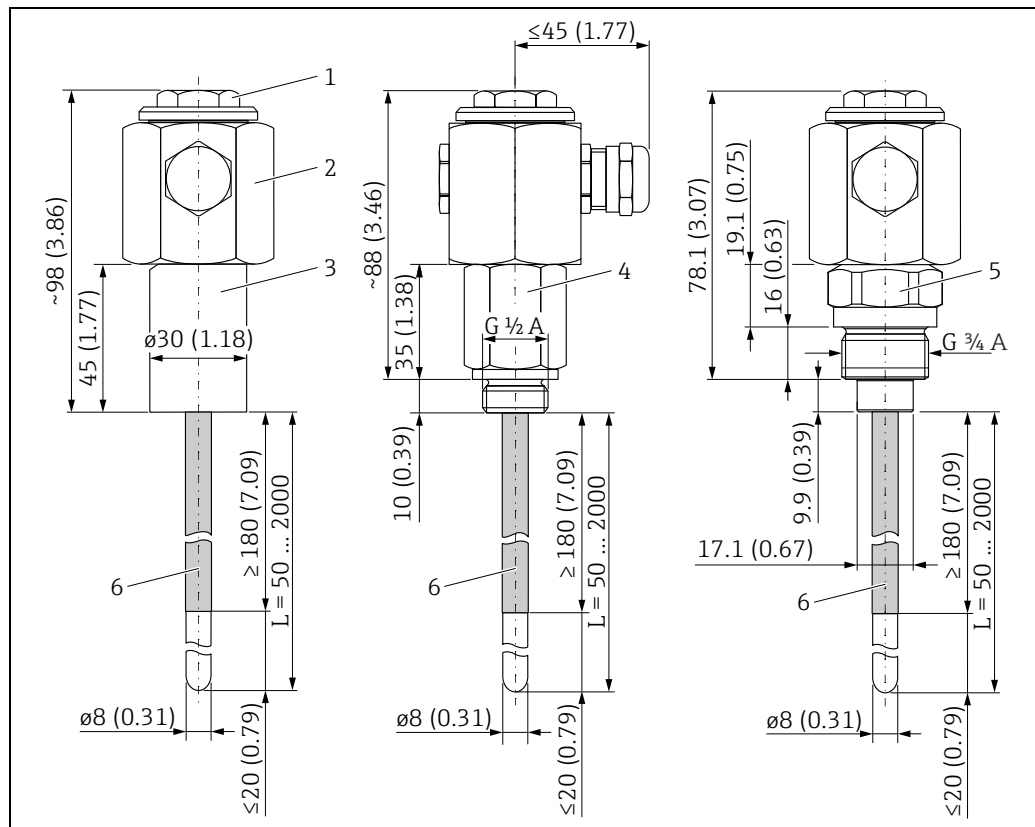
- Corrosion resistant materials for rod and insulation = can be used with aggressive materials
- For CIP and steam sterilisation = no special cleaning procedures required
- Various process connections = optimum compatibility to the application
- Probe can be shortened as required = useful for maintaining reserves stock

## Function and system design

|                            |  |
|----------------------------|--|
| <b>Measuring principle</b> | An electrically conductive connection is made between the probe and vessel wall as soon as material in the vessel is in contact with the tip of the probe.   |
| <b>Modularity</b>          | <ul style="list-style-type: none"> <li>Probe 11371 in vessels containing liquid.</li> <li>Nivotester FTW325 conductive level limit switch in the control room.</li> </ul>  |
| <b>Signal processing</b>   | <ul style="list-style-type: none"> <li>The probe in contact with the material causes a very low current to flow.</li> <li>The Nivotester FTW325 amplifies the signal and activates any switching devices connected.</li> </ul> |
| <b>Galvanic isolation</b>  | In the Nivotester FTW325.  |

## Mechanical construction

|                           |   |
|---------------------------|---|
| <b>Design, Dimensions</b> | <ul style="list-style-type: none"> <li>Rod probe, diameter 8 mm, length 50 mm to 2000 mm</li> <li>Process connection: welded boss, threaded boss G<math>\frac{1}{2}</math> A, G<math>\frac{3}{4}</math></li> <li>Housing as hex-nut 41AF</li> <li>Weight: see product structure → 3</li> <li>Electrical connection: Two terminals for wires with spade terminals</li> </ul> |
|---------------------------|---|



Dimension mm (in)

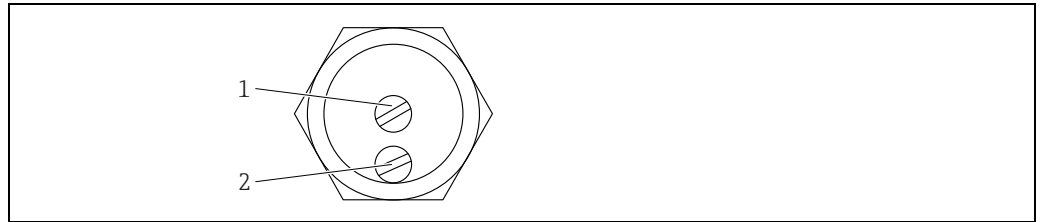
- Housing cover (22 AF)
- Housing (41 AF)
- Welded boss
- Threaded boss G $\frac{1}{2}$  A (27 AF)
- Threaded boss G $\frac{3}{4}$  A (SW32)
- Partial insulation; length of partial insulation: 20 mm (0,79) shorter than the probe length, max. 180 mm (7,09)

**Mounting**

**Caution!**

- Steam sterilisation may split the insulation of the probe rod if the surface is scratched. Care should be taken to protect the insulation when transporting, shortening and mounting the probe.
- When mounting the probe, there should be sufficient space outside the vessel so that it can be inserted into it without using force.
- Before welding: unscrew the boss from the housing and remove the rod.
- When screwing in: screw the housing in as far as possible into the welded or threaded boss. If the cable gland is not in the correct position after the probe has been screwed in, it can be exchanged with the stop on the other side.

**Electrical connection**



- 1 Central terminal for the probe rod  
 2 Side terminal for ground connection

Terminals in the housing are for wires with spade terminals for M4 screws. The M16 cable gland is designed for cable diameters from 5.5 mm to 10 mm.

**Ordering information**

**Rod probe 11371**

- Welded boss (for probe "without process connection") Order No. 517211-1000
- Supplementary documentation: Technical Information on the Nivotester FTW325 limit switch on request

|            |                           |   |                                   |
|------------|---------------------------|---|-----------------------------------|
| <b>10</b>  | <b>Approval</b>           |   |                                   |
|            | 1                         | Non-hazardous area                          |                                   |
| <b>20</b>  | <b>Process Connection</b> |   | <b>Basic weight <sup>1)</sup></b> |
|            | 1                         | Weld-in socket 30 mm                        | 0,59 kg                           |
|            | 2                         | Thread ISO 228 G1/2, 316 Ti                 | 0,53 kg                           |
|            | 3                         | w/o process flange connection <sup>2)</sup> | 0,41 kg                           |
|            | 4                         | Thread ISO 228 G3/4, 316 Ti                 | 0,50 kg                           |
|            | 9                         | Special version                             |                                   |
| <b>30</b>  | <b>Probe length</b>       |   | <b>Additional weight</b>          |
|            | 1                         | ..... mm L, 316 Ti + PFA                    | 0.04 kg/dm                        |
|            | 2                         | 200 mm L, 316 Ti + PFA                      | 0.08 kg                           |
|            | 3                         | 500 mm L, 316 Ti + PFA                      | 0.20 kg                           |
|            | 9                         | Special version                             |                                   |
| <b>995</b> | <b>Marking</b>            |   |                                   |
|            | 1                         | Tagging (TAG)                               |                                   |
| 11371      |                           | Product designation                         |                                   |

1) Basic weight: Complete probe without stated length  
 2) For installation in pre-mounted welding neck adapter



Please state probe length in mm when ordering. Probe length is always measured from the lower edge of the process connection.

## Technical Data

|                           |  |  |
|---------------------------|--|--|
| <b>Application</b>        | Limit detection: Maximum or minimum detection in vessels with liquid, conductive food stuffs.  |  |
| <b>Input</b>              | <ul style="list-style-type: none"> <li>■ Measured variable: Height (limit value, binary)</li> <li>■ Measuring range (detection range): Length specified by vertically mounted probe (50 to 2000 mm from above). Specified by installation point when probe mounted horizontally.</li> </ul>  |  |
| <b>Output</b>             | <ul style="list-style-type: none"> <li>■ Probe: current, supplied by Nivotester.</li> <li>■ Nivotester FTW325: See Technical Information.</li> </ul>   |  |
| <b>Mounting</b>           | At any orientation; vertical from above preferred; probe length up to approx. 500 mm when mounted from the side, tip of sensor points slightly downwards for liquid to run off and prevent build-up of material.   |  |
| <b>Ambient conditions</b> | <ul style="list-style-type: none"> <li>■ Ambient temperature and ambient temperature range: <math>-20^{\circ}\text{C}</math> to <math>+120^{\circ}\text{C}</math> (<math>0^{\circ}\text{F}</math> to <math>250^{\circ}\text{F}</math>)<br/>Note temperature resistance of connecting cable!</li> <li>■ Storage temperature: <math>-20^{\circ}\text{C}</math> to <math>+120^{\circ}\text{C}</math> (<math>0^{\circ}\text{F}</math>...<math>250^{\circ}\text{F}</math>)</li> <li>■ Ingress protection: With cable gland M16 x 1,5: IP66/ IP68 (1m, 1h) to EN 60529</li> <li>■ Electromagnetic compatibility (EMC): Interference immunity and interference emission: see Nivotester FTW325 limit switch</li> </ul>                |  |
| <b>Process conditions</b> | <ul style="list-style-type: none"> <li>■ Process temperature (operating temperature <math>T_B</math>): <math>-10^{\circ}\text{C}</math> to <math>+100^{\circ}\text{C}</math> (<math>10^{\circ}\text{F}</math> to <math>210^{\circ}\text{F}</math>)</li> <li>■ Process temperature limit: <math>+150^{\circ}\text{C}</math> (<math>300^{\circ}\text{F}</math>)<br/>(cleaning temperature, max. 30 min)</li> <li>■ Process pressure (operating pressure <math>p_e</math>): <math>-1</math> bar to <math>+10</math> bar (<math>-14.5</math> psi to <math>+150</math> psi)</li> <li>■ Maximum process pressure: 10 bar (150 psi)</li> <li>■ Conductivity of liquid: min. 0.02 mS/cm, see Nivotester FTW325 limit switch</li> </ul> |  |

### Materials

| part                            | material                                   |
|---------------------------------|--|
| probe rod                       | stainless steel 1.4571 (AISI 316 Ti)       |
| welded boss                     |  |
| threaded boss G $\frac{1}{2}$ " |  |
| housing                         |  |
| threaded boss G $\frac{3}{4}$ " | 316L (1.4435)                              |
| partial insulation              | 0,2 mm PFA, sinter-fused                   |
| gasket in process connection    | silicone                                   |
| cable gland M16                 | brass, nickel-plated, with silicone gasket |









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