



LP21 Capacitance Level Probe

Description

The Spirax Sarco LP21 is a capacitance probe designed for modulating level control in conductive liquids, in conjunction with a PA420 preamplifier, which is supplied separately. It can also be used for adjustable on/off control.

The LP21 may be used with one or more controllers or transmitters to provide level control, level alarms, and/or outputs to a building management system.

The probe is normally installed in a steam boiler or metal tank where it is earthed through the 1/2" BSP screwed connection, the boiler or tank forming the earth return path.

It may be used in a non-conductive tank (e.g. plastic or concrete) if an earth rod is provided. The PA420 preamplifier (described in separate literature), is screwed to the top of the probe and hand tightened, enabling easy removal without the need to disturb the probe.

Caution:

The probe is not suitable for outside installation without additional environmental protection.

Available probe lengths (approximate) in mm

370, 470, 550, 600, 650, 750, 800, 900, 950, 1 050, 1 200, 1 350 or 1 500.

Note: Probe length includes the 25 mm 'dead' length at its tip.

The probe must not be cut to length.

Pressure/temperature limits

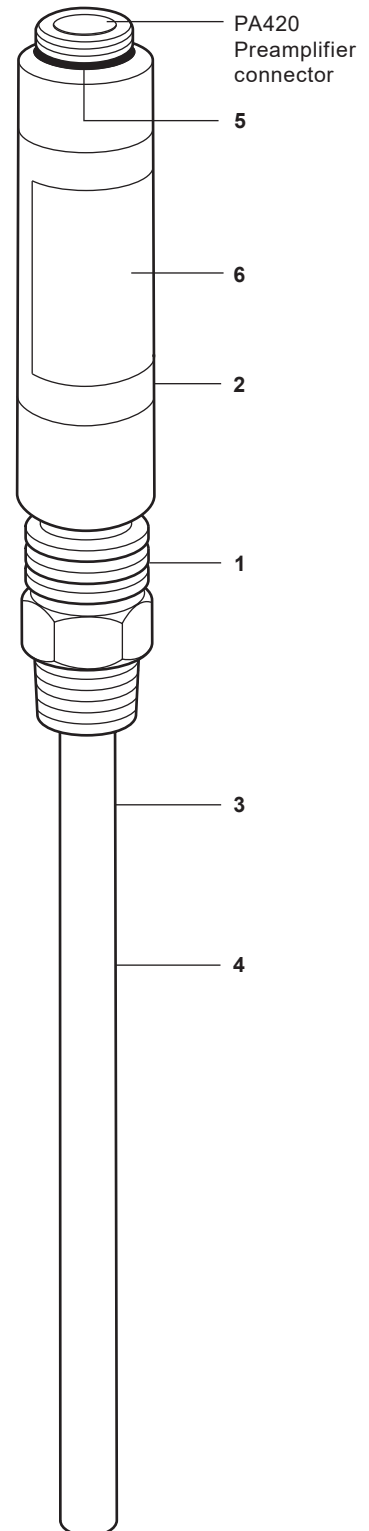
| | | |
|--|----------|-------|
| Nominal pressure rating | PN40 | |
| Maximum pressure | 32 bar g | |
| Maximum temperature | 239 °C | |
| Ambient temperature | Maximum | 70 °C |
| | Minimum | 5 °C |
| Designed for a maximum cold hydraulic test pressure of | 60 bar g | |

Technical data

| | | |
|----------------------|--------------------------|--|
| Sensing depth | Probe length minus 25 mm | |
| Minimum conductivity | 5 µS/cm or 5 ppm | |
| Degree of protection | IP54 | |

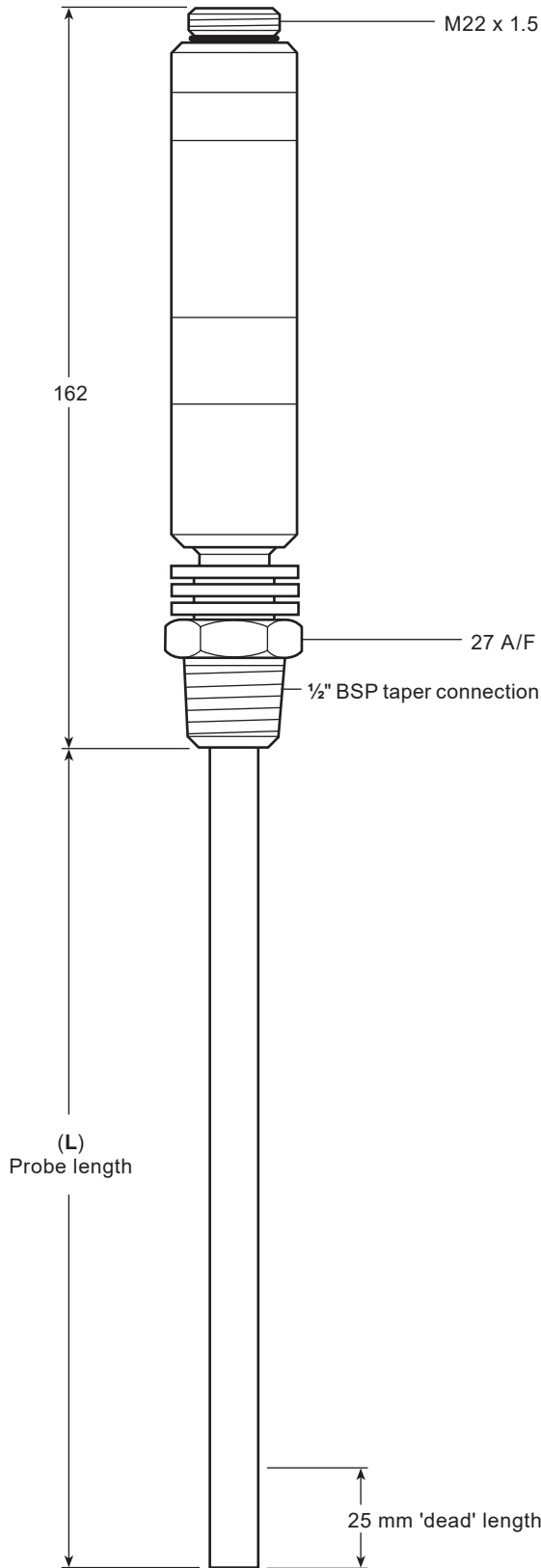
Materials

| No. | Description | Material |
|-----|------------------|---|
| 1 | Probe body | Austenitic stainless steel BS EN 10088-3 (1.4306) |
| 2 | Cover assembly | Austenitic stainless steel Type 316L |
| 3 | Probe (sheathed) | Stainless steel tube ASTM A269 Gr. 316L |
| 4 | Probe sheathing | PTFE BS 6564 Grade UA Type 1 |
| 5 | 'O' ring | Nitrile rubber |
| 6 | Name-plate | Polycarbonate |



Dimensions (approximate) in millimetres

| | | | | | | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|-------|
| L - Probe length | 370 | 470 | 550 | 600 | 650 | 750 | 800 | 900 | 950 | 1 050 | 1 200 | 1 350 | 1 500 |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|-------|



Weights (approximate) in kg

| | | | | | | | | | | | | | |
|---------------------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| Probe length | 370 | 470 | 550 | 600 | 650 | 750 | 800 | 900 | 950 | 1 050 | 1 200 | 1 350 | 1 500 |
| Weight | 0.57 | 0.60 | 0.62 | 0.67 | 0.72 | 0.74 | 0.75 | 0.77 | 0.80 | 0.82 | 0.93 | 0.96 | 1.00 |

Safety information, installation and maintenance

This document does not contain sufficient information to install the system safely. See the Installation and Maintenance Instructions supplied with the probe for full details.

Installation note:

Do not install the probe outdoors without additional weather protection.

The probe is installed in a ½" BSP female connection. If the probe is to be installed in a boiler shell or a turbulent tank, fit a protection tube. This should be as long as possible, and at least long enough to cope with expansion of the probe at higher operating temperatures. The Table below shows the maximum probe expansion possible 0 - 239 °C.

| Probe length in mm | Maximum expansion in mm (inc. 'dead' length) |
|--------------------|--|
| 470 | 13 |
| 550 | 15 |
| 600 | 16 |
| 650 | 17 |
| 750 | 20 |
| 800 | 21 |
| 900 | 23 |
| 950 | 25 |
| 1 050 | 27 |
| 1 200 | 30 |
| 1 350 | 34 |
| 1 500 | 38 |

Do not cover the vent and drain holes on the body.

Maintenance note:

No special maintenance is required. Boiler water level controls and alarms do, however require periodic testing and inspection, which is described in separate literature.

How to specify

Capacitance level probes shall be Spirax Sarco type LP21 with stainless steel body, cover assembly and probe, and PTFE probe insulation. They shall be suitable for modulating and on/off level control and be fitted with a screwed connection for attaching a Spirax Sarco PA420 preamplifier.

How to order

Example: 1 off Spirax Sarco LP21 capacitance level probe with BSP connection. Probe length 470 mm.