



## LP 20 Capacitance Level Probe

### Description

The Spirax Sarco LP20 is a capacitance probe designed for modulating level control in conductive liquids, in conjunction with a PA20 preamplifier, which is supplied separately. It can also be used for adjustable on/off control.

The LP20 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" NPT 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 PA20 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.

### Approvals:

The LP20 is available with a 1/2" NPT screwed connection, approved to UL61010. *Please note that this version will not be marked and is not suitable for Europe.*

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

### Available probe lengths approximate in inches (mm)

14.6 (370), 18.5 (470), 21.6 (550), 23.6 (600), 25.6 (650), 29.5 (750), 31.5 (800), 35.4 (900), 37.4 (950), 41.3 (1050), 47.2 (1200), 53.1 (1350), or 59.1 (1500)

**Note:** Probe length includes the 1" (25 mm) 'dead' length at its tip. **The probe must not be cut to length.**

### Pressure / temperature limits

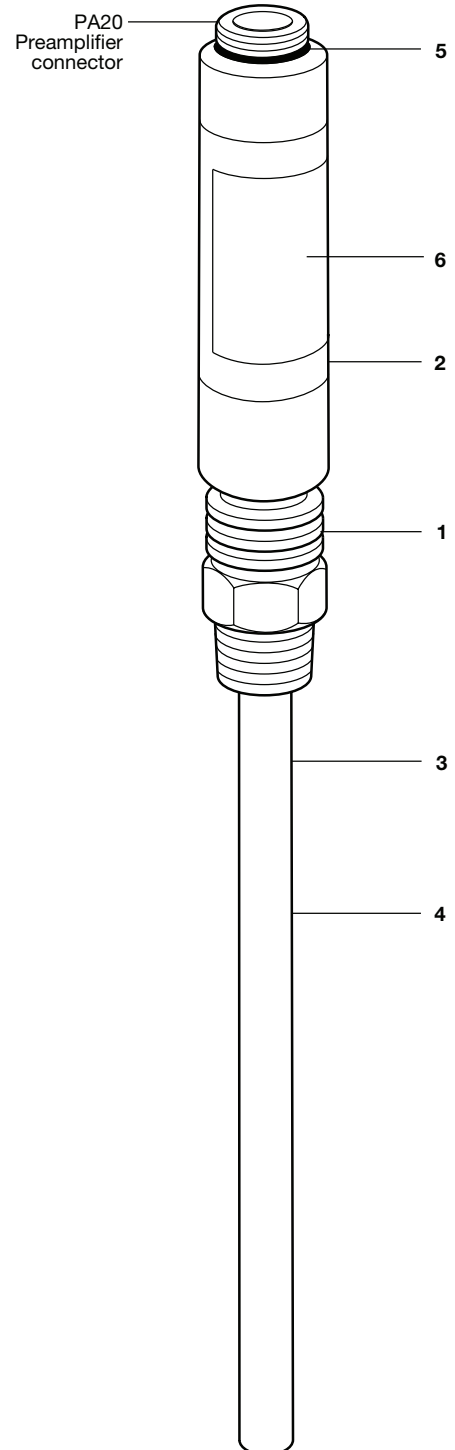
Nominal pressure rating	(PN40)
Maximum pressure	464 psig (32 bar g)
Maximum temperature	462°F (239°C)
Ambient temperature	Maximum 158°F (70°C) Minimum 41°F (5°C)
Designed for a maximum cold hydraulic test pressure of 870 psig (60 bar g)	

### Technical data

Sensing depth	Probe length minus 1" (25 mm)
Minimum conductivity	5 µS/cm or 5 ppm

### 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 ASTM A269 Gr. 316L tube
4	Probe sheathing	PTFE BS 6564 Grade UA Type 1
5	'O' ring	Nitrile rubber
6	Name-plate	Polycarbonate



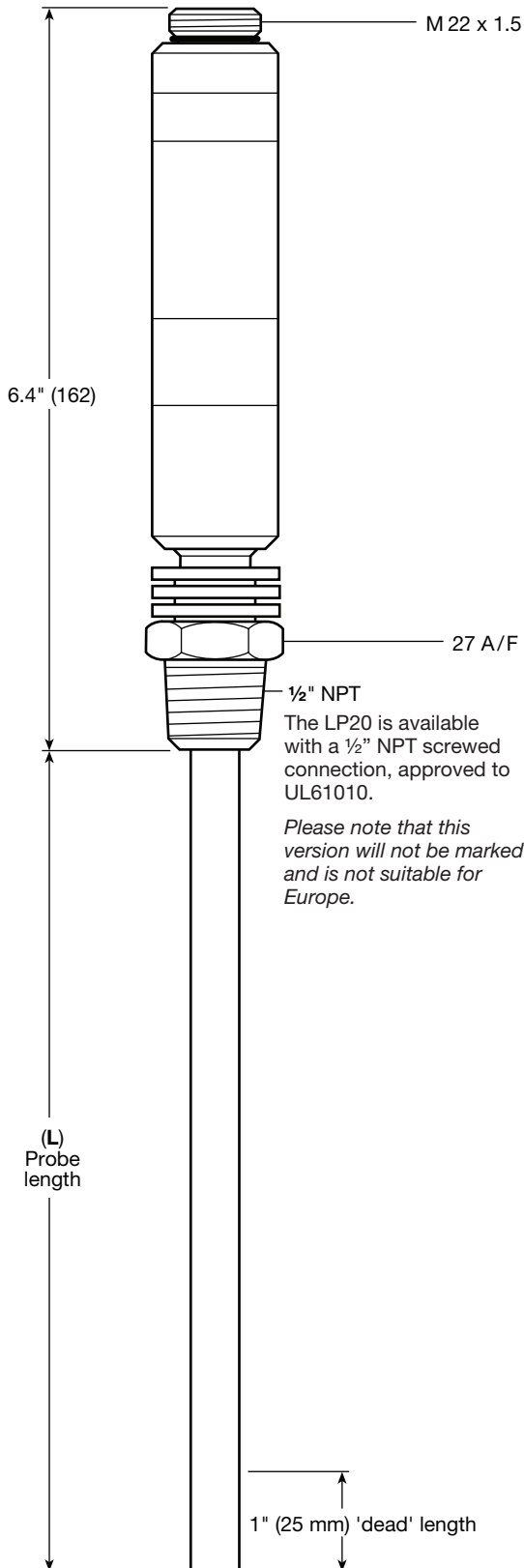
Local regulation may restrict the use of this product below the conditions quoted. Limiting conditions refer to standard connections only. In the interests of development and improvement of the product, we reserve the right to change the specification.

TI-P402-39-US 5.17

# LP 20 Capacitance Level Probe

**Dimensions** approximate in inches (mm) **Weights** approximate in pounds (kg) including immediate packaging

<b>Probe length</b>	14.6 (370)	18.5 (470)	21.6 (550)	23.6 (600)	25.6 (650)	29.5 (750)	31.5 (800)	35.4 (900)	37.4 (950)	41.3 (1050)	47.2 (1200)	53.1 (1350)	59.1 (1500)
<b>Weight</b>	1.8 (.82)	1.9 (.84)	2.0 (.91)	2.2 (.98)	2.3 (1.03)	2.4 (1.08)	2.6 (1.17)	2.8 (1.26)	3.0 (1.34)	3.1 (1.42)	3.3 (1.50)	3.6 (1.64)	3.7 (1.68)



## 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 1/2" NPT 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 32-462°F (0-239°C).

Probe length in inches (mm)	Maximum expansion in inches (mm) (inc. 'dead' length)
14.6 (370)	0.4 (10)
18.5 (470)	0.5 (13)
21.6 (550)	0.5 (15)
23.6 (600)	0.6 (16)
25.6 (650)	0.7 (17)
29.5 (750)	0.8 (20)
31.5 (800)	0.8 (21)
35.4 (900)	0.9 (23)
37.4 (950)	1.0 (25)
41.3 (1050)	1.1 (27)
47.2 (1200)	1.2 (30)
53.1 (1350)	1.3 (34)
59.1 (1500)	1.5 (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 LP20 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 PA20 preamplifier.

### How to order

**Example:** 1 off Spirax Sarco LP20 capacitance level probe with NPT connection. Probe length 18.5" (470mm).