



TI-P403-59  
 AB Issue 8

## CP32 Twin Tip Conductivity Probe

### Description

The Spirax Sarco CP32 conductivity probe is used in conjunction with a controller to measure the conductivity (or TDS) of water, usually in a steam boiler, for the purpose of monitoring and controlling blowdown.

The CP32 has a built-in temperature sensor, and when used with an appropriate controller, is able to detect scaling. It also automatically initiates a probe conditioning cycle. This causes any scale on the probe to become porous or fall off, allowing the probe to continue to sense at its original calibration level.

**WARNING: This feature is not a substitute for adequate boiler water treatment. If scale is occurring on a probe, it is also occurring inside the boiler, and a competent water treatment specialist must be consulted to avoid a potentially dangerous situation.**

The CP32 is supplied in three nominal tip lengths, and has a 3/8" BSP male thread (1/2" NPT to special order) for connection to a Spirax Sarco probe elbow, a screwed flange, or directly into a boiler connection.

#### Principal features :

- Twin tip conductivity probe for use in TDS control systems.
- Built-in temperature sensor - only one boiler connection needed.
- Suitable for use in steam boilers up to 239°C @ 32 bar g (462°F @ 464 psi g).
- Patented scale detection and compensation.

#### Available tip lengths mm (inches)

300 (11.8), 500 (19.7) and 1000 (39.4).

**Note:** 1000 mm probes can only be installed vertically.

#### Pressure/temperature limits

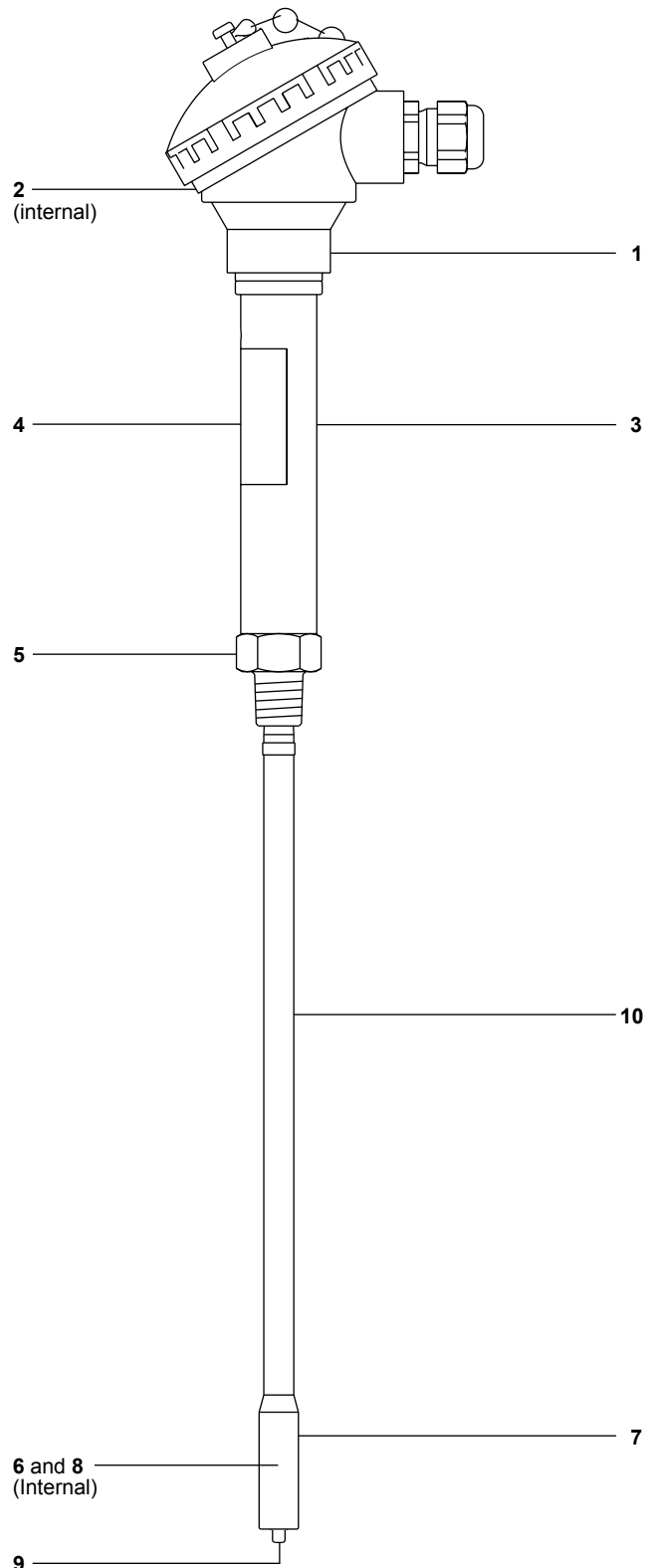
Maximum boiler pressure	32 bar g	(464 psi g)
Maximum operating temperature	239°C	(462°F)
Maximum ambient temperature	55°C	(131°F)

#### Technical data

Minimum tip distance from boiler tubes	10 mm	(0.4")
Minimum immersion depth (vertically installed probes)	100 mm	(4.0")
Maximum cable length (probe to controller)	100 m	(328 ft)
Minimum conductivity	10 µS/cm	or 10 ppm

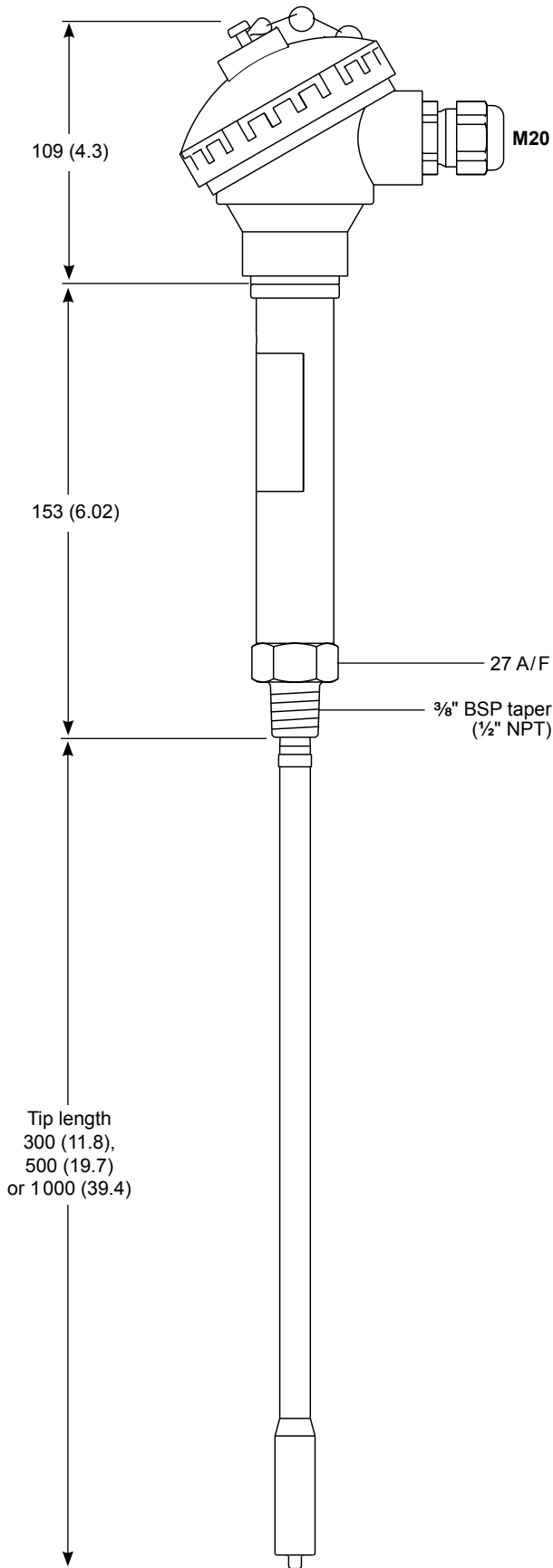
#### Materials

No.	Part	Material
1	Terminal head	Aluminium
2	'O' ring	Nitrile rubber
3	Cover tube	Austenitic stainless steel Type 316L
4	Name-plate	Polycarbonate
5	Body	Austenitic stainless steel Type 304L 1.4306
6	Spring	Austenitic stainless steel 302S26
7	Insulator	PEEK
8	Driver tip	Austenitic stainless steel Type 316
9	Sensor tip	Austenitic stainless steel UGINE 4632
10	Rod	Austenitic stainless steel Type 316 / 316L



**First for Steam Solutions**

**Dimensions (approximate) in millimetres (inches)**



**Safety information, installation and maintenance**

For full details see the Installation and Maintenance Instructions supplied with the product, which gives full wiring, commissioning and operating instructions.

**Warning:**

This product contains materials including PTFE which can give off toxic fumes if exposed to excessive heat.

**Installation note:**

**Do not** install the probe outdoors without additional weather protection.

300 mm and 500 mm probes can be installed vertically or horizontally.

**CAUTION: 1000 mm probes must be installed vertically only.**

The probe must be installed in a position where it can sense the conductivity of the boiler water, away from the feedwater inlet if possible.

The CP32 contains no user serviceable components, and periodic cleaning is all that is required. Any attempt to dismantle the probe will result in permanent damage.

**Spare parts**

There are no available spare parts for this product.

**How to specify**

TDS conductivity probes shall be Spirax Sarco type CP32 with nickel alloy sensor tips and built-in temperature sensor. They must incorporate a patented facility to check the sensor tips for scaling. When used in conjunction with an appropriate Spirax Sarco controller, they must also be able to automatically initiate a patented probe cleaning feature, which, if unable to clean the probe, will activate a warning on the controllers display panel and/or a remote alarm. The system must also be able to automatically compensate for any polarisation effects at the sensors. They must be suitable for boiler pressures up to 32 bar g and a maximum working temperature of 239°C. They must be available in 300 mm, 500 mm and 1000 mm lengths, and have a 3/8" BSPT or 1/2" NPT boiler connection.

**How to order**

**Example:** 1 off Spirax Sarco CP32, twin tip conductivity probe having a 1/2" BSP connection and 300 mm tip length.

**Weights (approximate) in kg (lb)**

Tip length	300 mm	500 mm	1000 mm
Weight	1.0 (2.2)	1.2 (2.6)	1.6 (3.5)