

### Installation and Maintenance Instructions

## 1. Safety information

Your attention is drawn to Safety Information Leaflet IM-GCM-10, as well as to any National or Regional regulations (in the UK, to IEE Regulations BS 7671).

This product is designed and constructed to withstand the forces encountered during normal use. Use of the product other than as a conductivity sensor could cause damage to the product and may cause injury or fatality to personnel.

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

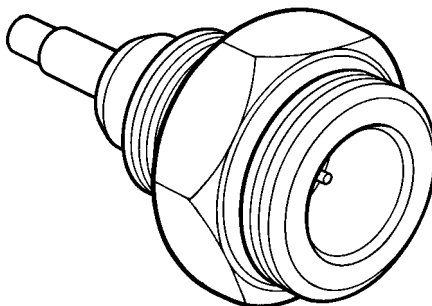


Fig. 1 CP10 sensor

## 2. Description

The CP10 sensor is a conductivity probe specified for use in total dissolved solids (TDS) and conductivity control systems.

It is a sealed unit consisting of a central stainless steel sensor tip, PEEK insulator, PTFE sealing ring, stainless steel body, disc springs and washer.

The sensor is threaded  $\frac{3}{8}$ " BSP parallel for mounting in a sensor chamber, and has a 24 mm A/F hexagon. It is supplied with an S-type stainless steel gasket.

Electrical connection is via an IP65 connector (supplied separately).

The CP10 sensor and PT2 plug tail are intended for use with a low voltage limited power source. These are approved by Underwriters Laboratory as Listed accessories for use with BC3200, BC3210 and BC1100 controllers.

## 3. Limiting conditions

Body design	PN40
Maximum pressure /temperature	32 bar g at 239°C (464 psi g at 462°F)
Designed for a maximum cold hydraulic test pressure of:	60 bar g (870 psi g)
Minimum conductivity generally	10 $\mu$ S/cm or 10 ppm, but see controller IMI.

## 4. Installation

**Caution: Do not install the sensor outdoors without additional weather protection.** Fit the sensor chamber in a vertical or horizontal pipeline with suitable isolation valves to allow inspection/cleaning of the sensors. Reducers may be fitted if required. Flow can be in either direction. The sensors themselves must be horizontal.

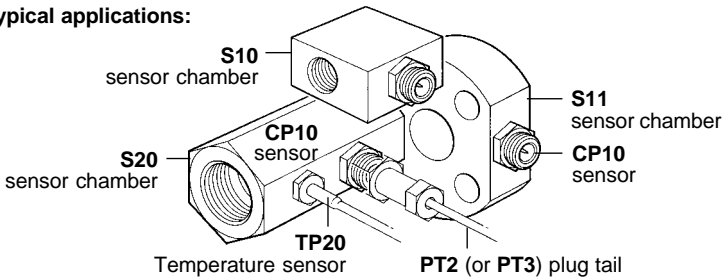
The TP20 has a taper thread, and may be installed using PTFE sealing tape if required.

The CP10 sensor is provided with an S-type stainless steel gasket for sealing. PTFE tape may be used on the CP10 threads, but check that the resistance to earth is less than 1 Ω after installation. Fit the sensors to the chamber and tighten to a torque of 60 N m (44 lbf ft).

Fit TP2 plug tail (or other Spirax Sarco plug tail) to the CP10 sensor and tighten.

**Caution: Ensure the PT2 wire is not exposed to a temperature greater than 120°C (248°F)**

Fig. 2 Typical applications:



### 4.1 Electrical installation

Ensure resistance from probe body to pipework/boiler shell is less than 1 Ω.

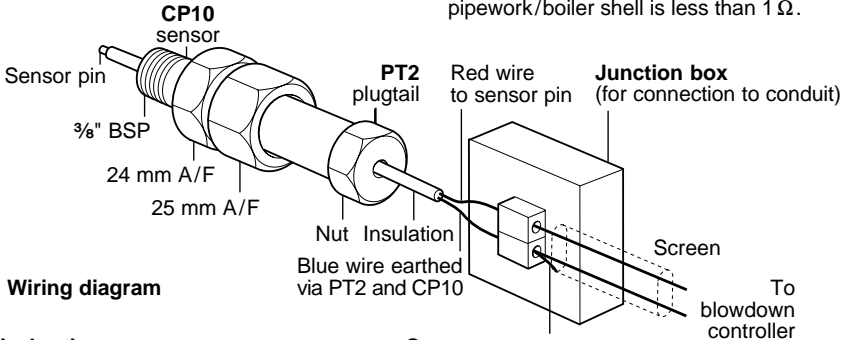


Fig. 3 Wiring diagram

#### Electrical rating:

Maximum voltage	20 Vdc, 14 Vac
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Maximum current	10 mA
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Connect screen to earth (blue wire).

Cabling should be installed in accordance with BS 6739 - Instrumentation in Process Control Systems: Installation design and practice or local equivalent.

## 5. Maintenance

We recommend that the CP10 is removed for cleaning and inspection at least once a year, though the frequency of maintenance will depend on the quality and flowrate of the boiler water or condensate.

- Isolate and depressurise the system, (or with the system empty), remove the CP10.
- Clean the sensor tip with fine wet-or-dry paper, and the insulator with a cloth or bristle (not wire) brush.
- Inspect the insulator and sensor tip for erosion, damage, or pitting, and refit or replace as necessary.
- Retighten the CP10 to a torque of 60 N m (44 lbf ft). **Note:** Always fit a new gasket.

#### Available spares

<b>Gasket</b>	Stock No. 0957191	Pack of 10
<b>CP10 and gasket</b>	Stock No. 0861079	Set of 1