

Temperature Probes

Installation and Maintenance Instructions

Safety information

Please read Safety Information leaflet, IM-GCM-10 before installing this product.

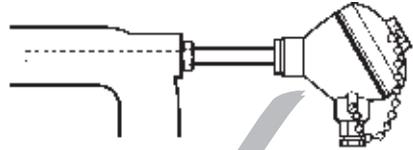
Description

The EL2270 range of temperature probes are designed for direct installation into process pipework. All probes and pockets are made from 316 stainless steel.

For best results the following guidelines should be followed during installation:

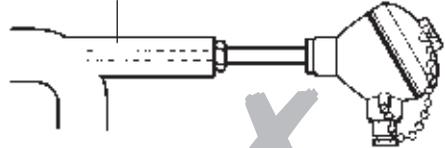
- The tip of the probe should not be installed in a static region of the line.
- If an additional pocket is used, it should contain heat transfer paste. This will improve the heat transfer between the pocket and the tip of the probe.
For steam/air applications the maximum velocity should not exceed 45 m/s.
For liquids 5 m/s is the recommended maximum velocity.
Note: 200 and 700 mm pockets should only be used for non-flow applications.
- The temperature transmitter (EL2271 or EL2810) should be installed where the ambient temperature is within acceptable limits. (See 'Technical data', overleaf).
- On steam systems horizontal installation is recommended as it helps to restrict the temperature in the electronics enclosure.

Installation



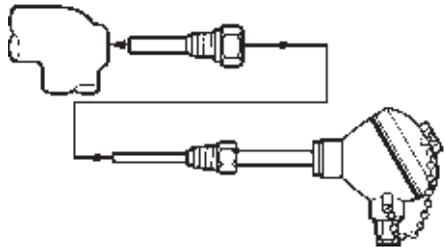
Correct installation

Static flow region



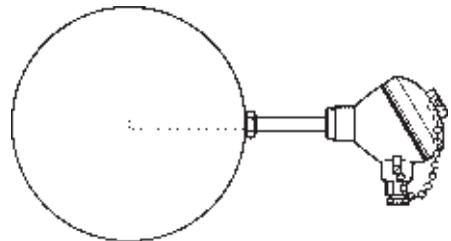
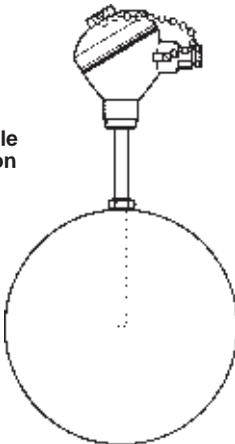
Incorrect installation

Pocket for probes



Preferred installation on steam systems

Acceptable installation



Wiring

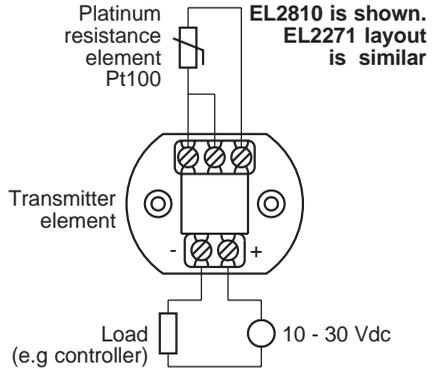
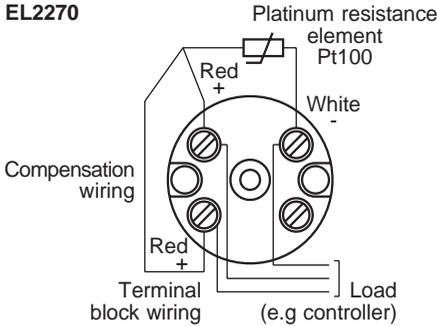
Cabling should be installed in accordance with BS 6739 - Instrumentation in Process Control Systems: Installation design and practice or local equivalent.

Access to the electrical connections on all devices is gained by unscrewing the enclosure cover. Wiring details are shown in the diagrams below.

The EL2270 and EL2271 are fitted with cable glands. These comply with the IP rating of the enclosure.

Wiring diagrams

EL2270



Cable requirements

To protect against signal noise, screened cable is strongly recommended.

Note: If screened cables are used, ensure that the screen is connected to the local earth/ground at one end, with a connection resistance of less than 1 Ω .

EL2270

3 core cable should be used (where each core is 0.2 mm by 7 strands).

The maximum cable length is governed by the device that is going to receive the signal.

Note: Cable length between the EL2270 and EL2810 should not exceed 3 m.

EL2271 and EL2810

2 core cable should be used (where each core is 0.2 mm by 7 strands).

The maximum cable length is dependant on the supply voltage and cable resistance.

For distances greater than 200 m, contact Spirax Sarco.

Technical data

Mechanical data	EL2270	EL2271	EL2810
Enclosure rating	IP65	IP65	IP65
Maximum ambient temperature	70°C	55°C	70°C
Electrical data	Pt100 to BS EN 60751: 1996 Class B	Loop powered	Loop powered
Output		4 - 20 mA	4 - 20 mA
Output on sensor failure	-	22 mA	30 mA -
Supply	-	8 to 30 Vdc	10 to 30 Vdc
Maximum loop resistance	-	800 Ω at 24 Vdc	700 Ω at 24 Vdc
Accuracy	-	$\pm(0.1^\circ\text{C} + 0.1\%$ of reading)	$\pm(0.1^\circ\text{C} + 0.1\%$ of reading)
Approvals	-	None	EEX ia. iic. T5
EMC emissions	-	BS EN 50081 - 1	BS EN 50081 - 1
EMC susceptibility	-	BS EN 50082 - 2	BS EN 50082 - 1

Note: The EL2271 transmitter has an in-head digital transmitter. Which can be re-ranged between -50°C and 350°C. (Contact Spirax Sarco for details)