TI-P322-02
MI Issue 7

EL2600
Pressure Transmitter and 'U' Syphons

Description

The EL2600 is a combined pressure sensor and transmitter which is designed for general and industrial use.
It has a 2-wire 4-20 mA current loop, and a ¼" NPT process connection. Two syphon tube and valve assemblies are available, one with a maximum design pressure of 25 bar g, and one with a maximum design pressure of 80 bar g.

Available ranges

m bar g	0-100	0-250	0-600					
bar g	0-0.1	0-0.25	0-0.6	0-1	0-1.6	0-2.5	0-4	0-6
	0-10	0-16	0-25	0-40	0-60	0-100*	0-160*	0-250*
bar a	0-1.6	0-2.5						

*No 'U' syphon is available for these ranges, therefore maximum operating temperature is limited to 100°C

Limiting conditions

Pressure/temperature limits EL2600

Minimum operating temperature	-30°C (medium) -20°C (ambient)
Maximum operating temperature (without syphon tube)	100°C (medium) 80°C (ambient)

Low pressure syphon tube/valve

Maximum design pressure	25 bar g
Maximum design temperature	260°C
Maximum working conditions	21 bar g @ 217°C

High pressure syphon tube

Maximum design pressure	80 bar g
Maximum design temperature	450°C
Maximum working conditions	60 bar g @ 450°C

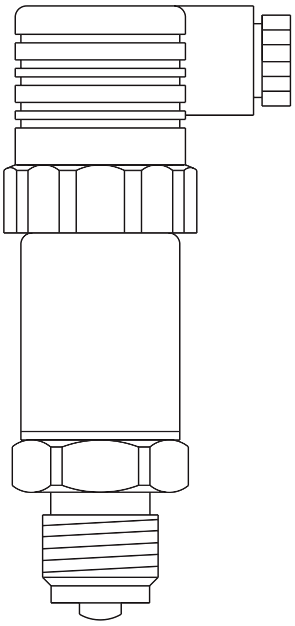
Overpressure limit table

Calibrated pressure range	Overpressure P max (bar)
0-1.6 bar a, 0-2.5 bar a	10
0-0.1 bar g	1
0-0.25 bar g	2
0-0.6 bar g	4
0-1 bar g	5
0-1.6 bar g, 0-2.5 bar g	10
0-4 bar g	17
0-6 bar g, 0-10 bar g	35
0-16 bar g, 0-25 bar g	80
0-40 bar g	120
0-60 bar g	200
0-100 bar g	320
0-160 bar g	500
0-250 bar g	800

Note: High pressure 'spikes' above maximum overpressure, even of very short (milli-seconds) duration, could damage sensors. If pressure peaks are likely to occur in your application, we recommend the use of a pressure snubber. Alternatively, a higher range pressure transmitter could be used, though this would mean some loss of signal resolution.

Process connection

For fluids below 100°C the EL2600 may be mounted directly via its ¼" NPT connection.
Above 100°C, a 'U' syphon and isolating valve must be fitted between the EL2600 and the vessel or pipeline.



Technical data

Sensor type	0-1.6 bar a to 0-16 bar g	Piezorresistive
	0-40 bar g to 0-400 bar g	Thin film
Supply voltage		10 Vdc to 30 Vdc
Accuracy		≤ 0.5%
Repeatability		≤ 0.05 of span
Hysteresis		≤ 0.1% of span
Protection rating		IP65

Approvals

EMC emissions	2004/108/EC, EN 61 326 Emission (Group 1, Class B)
EMC susceptibility	2004/108/EC, EN 61 326 Emission (Group 1, Class B) and Immunity (industrial locations)

Materials

EL2600

Part	Material	
Body	Stainless steel	316L WS 1.4435
Connector	Moulded plastic	Polyamide PA 66

Low pressure syphon tube assembly (Valve ordered separately)

Part		Material
Tube		Carbon steel ASTM A 106 Gr. B. Phosphated
Valve	Body	Brass
	Handle	Phenolic

High pressure syphon tube assembly

Part		Material
Tube		Carbon steel BS 3602: Part.1 1987 CFS 360 (zinc plated/passivated).
Valve	Body	Carbon steel
	Seat	PEEK/Polymain

Local regulations may restrict the use of this product to below the conditions quoted.
In the interests of development and improvement of the product, we reserve the right to change the specification without notice.

Dimensions/weights (approximate) in mm and kg

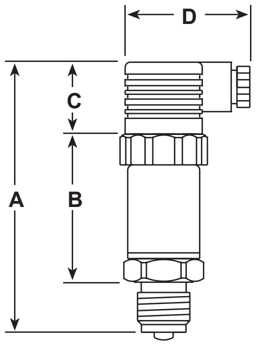
EL2600

A	B	C	D	Weight
104	57	28	48	0.2

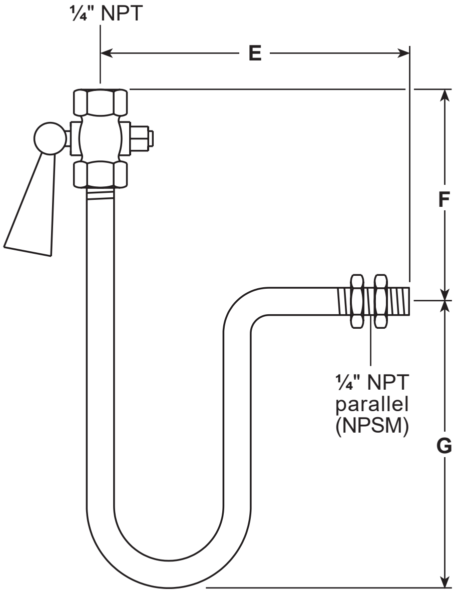
'U' Syphon and isolating valve

E	F	G	H	J	K	Weight
160	50	150	160	60	150	0.5

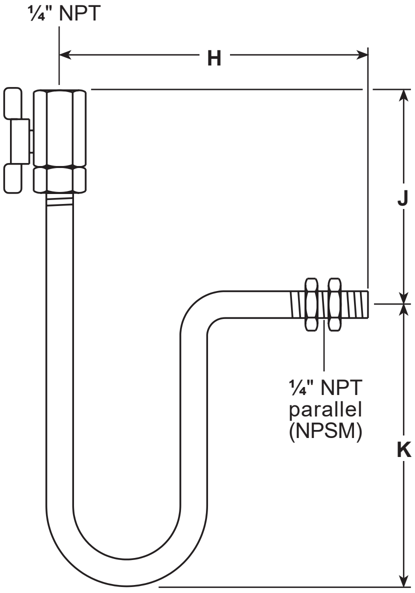
EL2600



Low pressure 'U' syphon



High pressure 'U' syphon



Safety information, installation and maintenance

This document does not contain sufficient information to install the product safely. See the Installation and Maintenance Instructions supplied with the product.

Safety note:
You attention is drawn to Safety Information Leaflet IM-GCM-10.

Installation note:
It is essential to use a 'U' syphon and valve for temperatures above 100°C to avoid damage to the unit.

Maintenance note:
No specific maintenance is required, but we recommend inspection and re-calibration of the transmitter once a year.

How to order

Example: 1 - Spirax Sarco EL2600 pressure transmitter, range 0 - 16 bar g, with low pressure 'U' syphon and isolating valve.

TI-P322-06
EMM Issue 13

spirax sarco

EL2270 and EL2271 Temperature Probes

Description

EL2270

The EL2270 is a Pt100 platinum resistance temperature sensor for general industrial use. The sensing device is an RTD 3 wire device that meets EN 60751: Class A. This sensor can be connected directly to any temperature indicator or controller that has a 3 wire Pt100 input. A quick response version (40 mm insertion length only) is also available for applications such as plate heat exchanger control. A miniature version of the EL2270 may also be ordered. This has a ¼" BSP taper thread, and a tip length of 39 mm.

EL2271

The EL2271 is a combined Pt100 sensor and transmitter assembly. The sensing element is a 3 wire device that meets EN 60751: Class A and the transmitter has a 4 - 20 mA output.
An ATEX approved version is available to special order.
A comprehensive standard range is normally available from stock. Non-standard ranges can be obtained to special order, subject to a low limit of -50 °C, and a maximum of +500 °C. The 4 - 20 mA output can be connected directly to any temperature indicator, controller or flow computer that has a 4 - 20 mA input. Contact Spirax Sarco for further details. Transmitters with 3 point calibration are available to special order.

Pockets (thermowells)

General

Three types of pockets are available:

1. Thin wall with a ½" NPT process connection for non-flow applications only.
2. Drilled taper with a ½" NPT process connection.
3. Sanitary pocket, with a 1½" sanitary clamp connection (ASME BPE) electropolished to 0.4 μm.
   This pocket is available with certification to EN10204 3.1.
   Note: All certification/inspection requirements must be stated at the time of order placement.

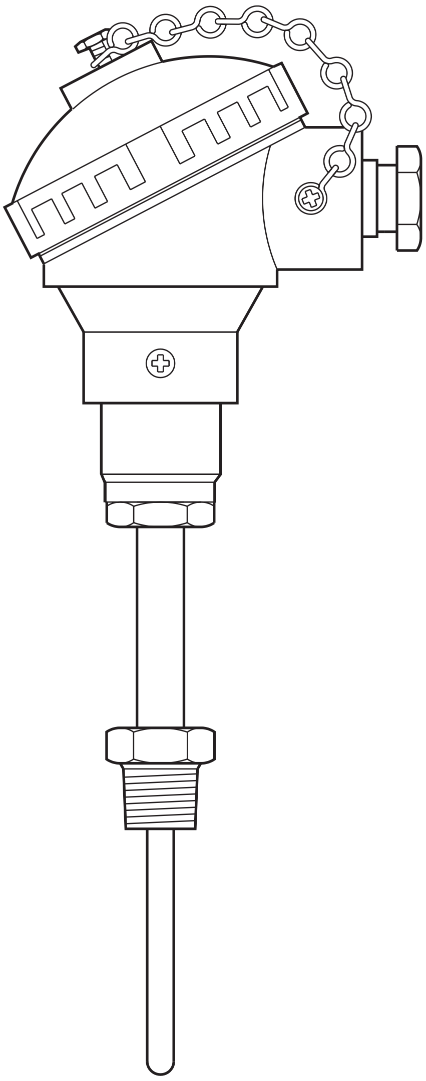
Note: No pocket is available for the miniature EL2270.

Material	316 stainless steel
Maximum temperature	500 °C

Selection

Pockets are sized to suit the probe tip length '**D**', and are specified as 'pocket to suit a __ mm probe'.

Note 1 - The pocket dimension '**F**' is 25 mm shorter than the probe length '**D**', which appears to be incorrect. The reason is that the threaded body of the pocket acts as a stand-off, and therefore allows adequate clearance between the probe tip and the end of the pocket.
Note 2 - Pockets to suit 225 mm and 725 mm probes **are for non-flow applications only** (maximum flow velocity 0.65 m/sec).



EL2270 and EL2271

Dimensions (approximate) in mm

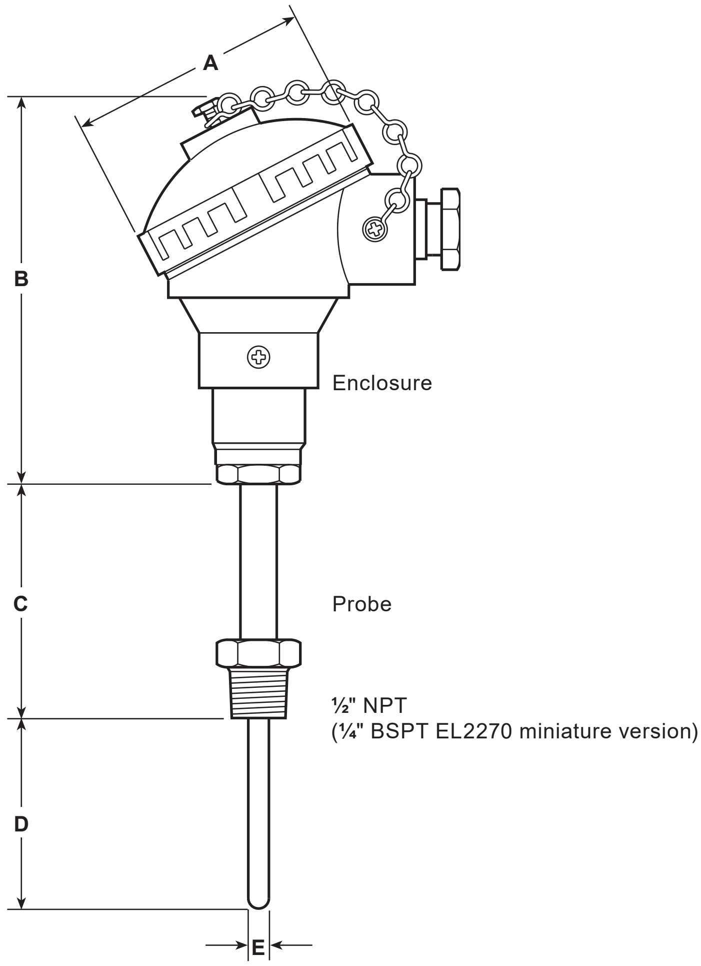
Product range	EL2270*			EL2271
	Standard	Miniature	Quick repsonse and duplex quick response	
A	88	58	88	88
B	130	62	150	130
C	75	63	75	75
D	25, 50, 75,125, 225, 725	39	40	25, 50, 75, 125
E	6	6	4.5	6

* **Note:** The quick response EL2270 is only available with an insertion length of 40 mm.

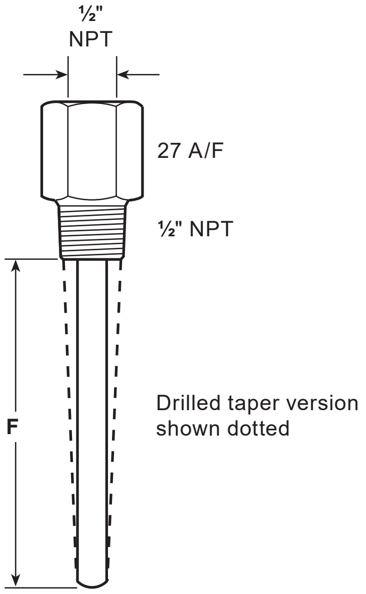
Pockets

Product range	Standard		Hygenic 1½" sanitary clamp connector Fabricated
	Fabricated	Solid drilled	
F	200, 700	25, 50, 100	25, 50, 100, 200

EL2270 and EL2271



Pocket



Mechanical data

Product range		**EL2270*** **Note:** A quick response version of the EL2270 is also available to order	**EL2271**
Enclosure		KNE - aluminium alloy - epoxy coated	KNE - aluminium alloy - epoxy coated
Probe		316 stainless steel	316 stainless steel
Process connection		½" NPT	½" NPT
Electrical connection		M20 with cable gland fitted	M20 with cable gland fitted
Enclosure rating		IP65	IP65
Ambient temperature	**Minimum**	-50 °C	-50 °C
	Maximum	+70 °C	+85 °C

*** The EL2270 quick response sensor has a time constant of 1.7 seconds.**

Electrical data

Available ranges	-50 °C to +500 °C	-50 °C to +50 °C
		0 °C to +100 °C
		100 °C to +250 °C
Output	Pt100 to EN 60751: Class A	Loop powered 4 - 20 mA
Output on sensor failure	-	23 mA typical
Supply	-	10 to 30 Vdc
Maximum loop resistance	-	636 Ω at 24 Vdc
		909 Ω at 30 Vdc
Transmitter - Thermal drift measuring deviation	-	± 0.1% / 10 K_{TAMB} per EN 60770 ± 0.2%
Maximum values for connection of the current loop circuit (connections + and -)	-	U_o = 30 Vdc I_o = 120 mA P_i = 800 mW C_i = 6.2 µF L_i = 110 µH
Maximum values for connection of the sensor circuit (connections 1 up to 3)	-	U_o = 6.4 Vdc I_o = 42.6 mA P_o = 37.1 mW **Group II B:** C_o = 500 µF L_o = 50 mH **Group II C:** C_o = 20 µF L_o = 10 mH
EMC emissions and susceptibility	-	Electromagnetic compatibility EMC 2014/30/EU EN61326:2013 EN61326-2-3:2013

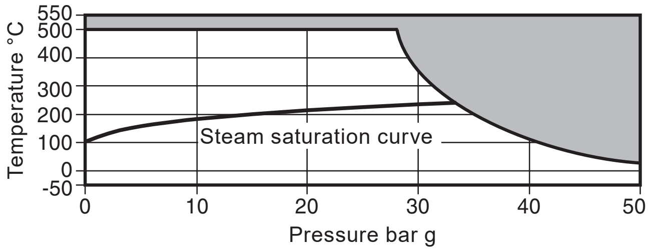
Pressure/temperature limits

The **EL2270** and **EL2271** temperature probes can be used in applications where the process temperature is within the following limits. Where greater temperatures and pressures are present, the temperature probe should be fitted with a pocket.

For air and steam applications, flow velocities must be below 45 m/s (32 m/s for fabricated pockets).

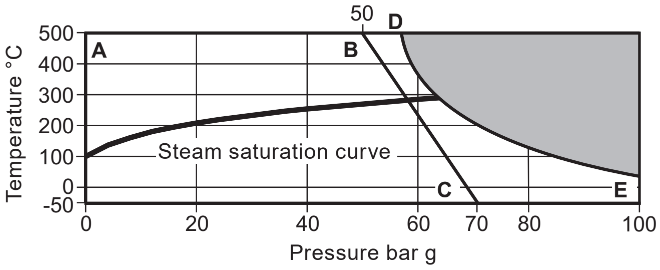
For liquids a recommended velocity is 5 m/s (**700 mm and 200 mm** non-flow applications only).

Pressure and temperature limits of temperature probe.
(ANSI 300 rated)



▨ The product **must not** be used in this region.

Pressure and temperature limits of standard pockets.
(ANSI 600 rated)



▨ The product **must not** be used in this region.

A-B-C Fabricated pocket

A-D-E Solid drilled pocket

TI-P170-01
EMM Issue 5

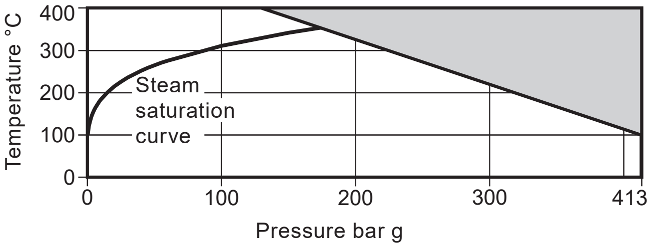
spirax sarco

F50C
Isolating Valve

Description
The F50C is a needle type isolating valve designed for primary isolation in flowmetering applications with steam and other industrial fluids. No spares are available.

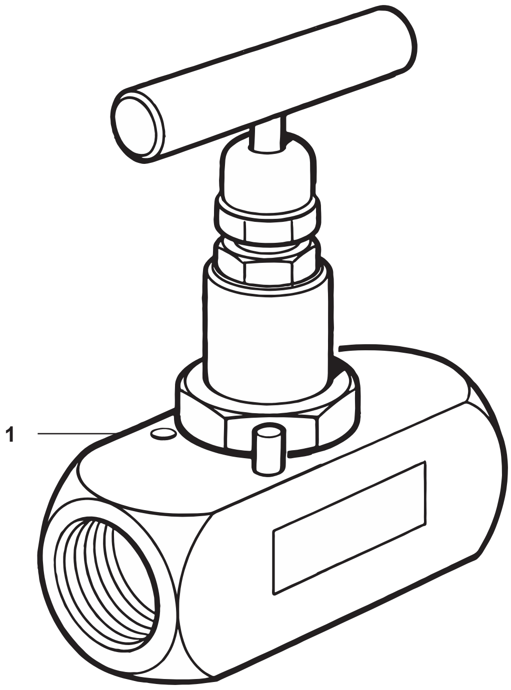
Sizes and pipe connections
½" screwed NPT.

Pressure/temperature limits



▨ The product **must not** be used in this region.

Maximum operating pressure	413 bar g	(6 000 psi g)
Maximum operating temperature	400 °C	(752 °F)



Materials

No.	Part	Material
1	Body	Carbon steel, zinc plated and passivated
2	Seals	Graphoil (not shown)

K_v values

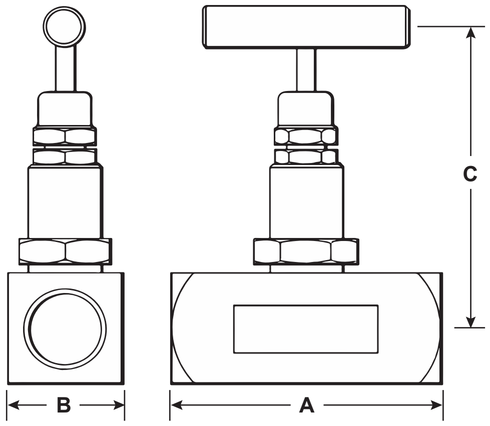
0.474

For conversion:
C_v (UK) = K_v x 0.963
C_v (US) = K_v x 1.156

Dimensions/weight
(approximate) in mm and kg

A	B	C	Connections	Weight
66	28	76*	½" NPT	0.5

*With valve open



Safety information, installation and maintenance
Your attention is drawn to Safety information leaflet IM-GCM-10.
This document does not give sufficient information to install the product in a safe manner.
See the relevant system Installation and Maintenance Instructions for full details.
The F50C valve may be installed in any position, but the flow should be in the direction of the arrow on the valve body.
When used as an isolating valve in a steam meter impulse line, it is important to install the valve on the centre line of the flowmeter rather than below it, so that the valve is in steam rather than water.

How to order
Example: 1 off Spirax Sarco F50C isolating valve.