

Datasheet

Pressure Transmitter SP300 - Display

Introduction

The SP300 series utilizes ceramic sensors to deliver precise pressure measurement, converting raw data into standard industrial output signals and real-time displays. Enclosed in a rugged all-metal housing with a high-brightness LED digital display, this series excels in diverse industrial applications. Its dual-key design and intuitive menu ensure effortless operation, while a 330° rotatable display guarantees optimal visibility regardless of mounting orientation. With flexible process connections, the SP300 fully adapts to your specific installation requirements.



Characteristics

330° rotatable display

Pressure up to 12,000 psi

4-digit LED display

PNP / NPN programmable

4...20mA 、 0...5V + 2 switching output

Applications

Applicable to liquid / gas

Hydraulic and Pneumatic

Pump and Air Compressor

Machine Tools

Machinery Manufacturing

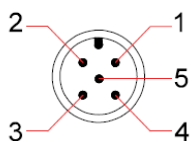
Specifications

Measuring range	See order code for details
Power supply	12...30 VDC
No-load current consumption	Max. 30mA (24VDC)
Current output	3-wire 4...20mA Load resistance: $\leq 0.5 \text{ K}\Omega$
Voltage output	3-wire 0...5V Load resistance: $\geq 10 \text{ K}\Omega$
Switching output	Push-Pull (PNP / NPN), NC, NO programmable Output current < 500mA Response time: $\leq 10 \text{ ms}$ Voltage drop: < 1V Accuracy: 0.25% FS
Wiring protection	Reverse polarity, Overvoltage and Short-circuit
Display	4-digit LED display Range: -1999...9999
Accuracy	0.25% FS
Stability (drift / year)	<0.3% FS
Ambient temperature	-4...185°F / -20...85°C
Medium temperature	-40...185°F / -40...85°C
Material	House: SS304 Sealing: FKM (Optional NBR, PTFE, EPDM, FEM, FVMQ) Wetted parts: SS316L
Electrical connection	M12x1
Process connection	NPT, G

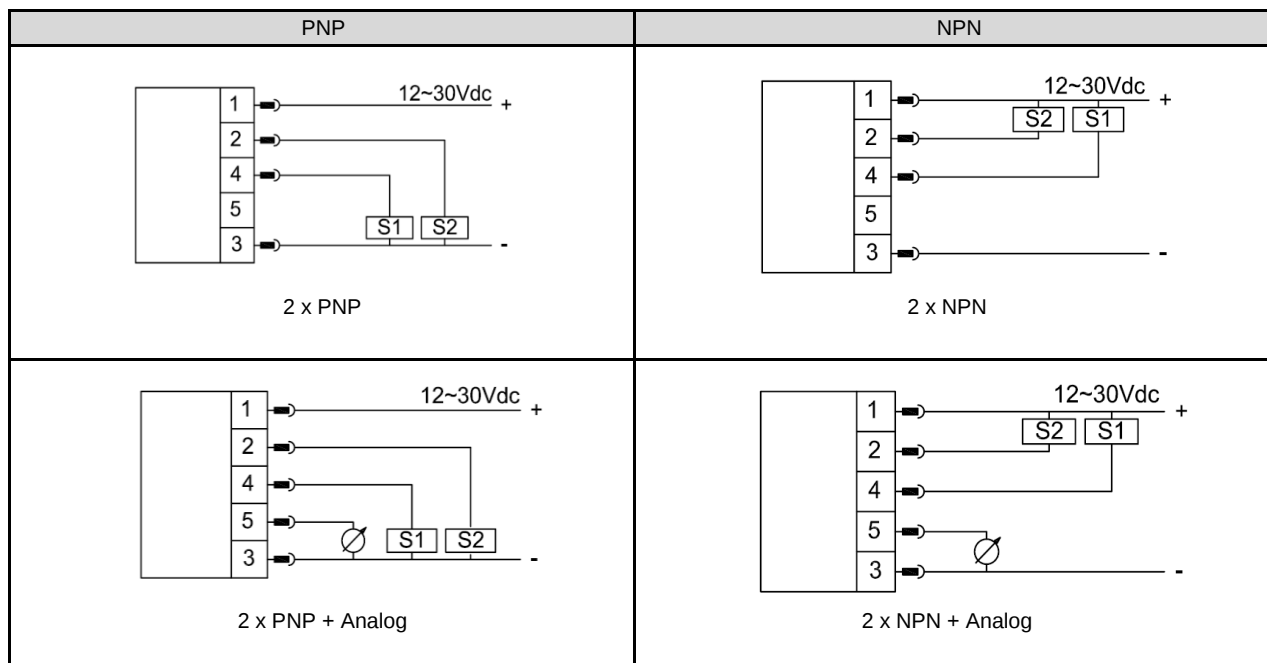
Measuring range

Code	Measuring range		Over-pressure	Burst pressure
	psi	bar		
NB1	-14.5...14.5	-1...1	x5	x6
NB2	-14.5...29	-1...2		
NB5	-14.5...72.5	-1...5		
NB10	-14.5...145	-1...10	x3	x4
GB1	0...14.5	0...1	x5	x6
GB2	0...29	0...2		
GB5	0...72.5	0...5		
GB10	0...145	0...10	x3	x4
GB16	0...232	0...16		
GB25	0...362	0...25		
GB40	0...580	0...40	x2	x3
GB60	0...870	0...60		
GB100	0...1450	0...100		
GB160	0...2320	0...160	x1.5	x2
GB250	0...3625	0...250		
GB400	0...5800	0...400		
GB600	0...8700	0...600	x1.3	x1.6
GB800	0...11600	0...800		

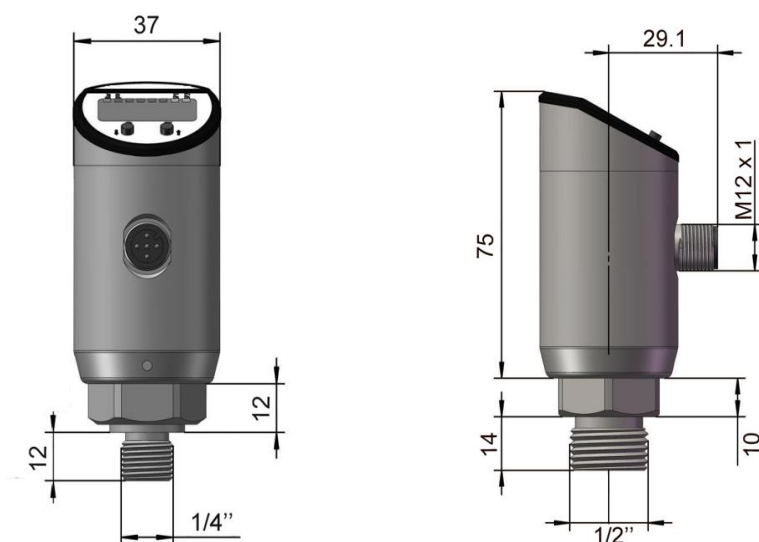
Wiring



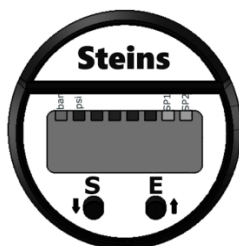
Signal	Pin	Color
Power +	1	Brown
Power -	3	Blue
Switch S1	4	Black
Switch S2	2	White
Analog Output (4...20mA / 0...5V)	5	Gray



Dimensions in mm



Panel



Keys

keys	Function
(S) + (E)	Hold together 3s to enter settings / Press together to confirm
(S)	Menu Down / Change Value
(E)	Menu Up / Move Cursor

Menus

Menus	Description	Options
unit	Display Unit	bar / psi
SP1	Switch 1 Set Point	2%...100% of measuring range
rP1	Switch 1 Reset Point	0...98% of measuring range
out1	Switch 1 Output Mode	Hno / Hnc / Fno / Fnc*
SP2	Switch 2 Set Point	2%...100% of measuring range
rP2	Switch 2 Reset Point	0...98% of measuring range
out2	Switch 2 Output Mode	Hno / Hnc / Fno / Fnc*
Sfun	Switch Output Type	PnP / nPn
Afr	Analog Output Lower Limit	0...75% of measuring range
Ato	Analog Output Upper Limit	25%...100% of measuring range
Aout	Analog Output Range	0...20mA / 4...20mA
dAp	Damping of Switching Output	0...8s
Sto	Save	YES / NO

*

Hno - Hysteresis normally open**Hnc** - Hysteresis normally close**Fno** - Window normally open**Fnc** - Window normally close**Note:**

- 1) The difference between the set point and the reset point must be at least 2% of the measuring range, or one of them will be adjusted automatically.
- 2) The difference between the analog output upper limit and lower limit must be at least 25% of the measuring range; or one of them will be adjusted automatically.

Others	Description
OL	Above High Limit Alarm
UL	Below Low Limit Alarm

Output Mode - Window / Hysteresis

Hysteresis Mode

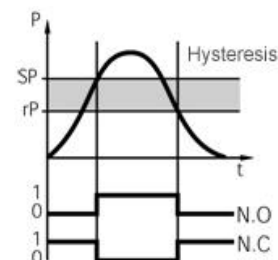
Hysteresis is used to prevent output instability when the pressure fluctuates around the set point.

Example using NC (Normally Closed) logic:

The hysteresis zone (SP - rP) is represented by the gray area in the diagram on the right.

Rising pressure: The switch opens when the pressure rises above the set point (SP).

Falling pressure: The switch closes only when the pressure drops below the reset point (rP).



Window Mode

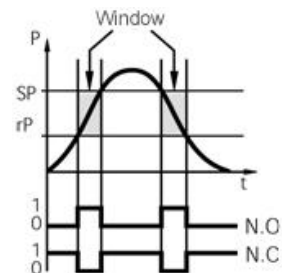
Window mode is used to monitor whether the pressure remains within a specific range. An alert will trigger if the pressure moves outside of this range.

Example using NC (Normally Closed) logic:

The window range is represented by the gray area in the diagram on the right.

Inside the range: The switch closes when the pressure is between the set point (SP) and the reset point (rP).

Outside the range: The switch opens if the pressure rises above the set point (SP) or drops below the reset point (rP).



Order Code

Example: SP300-P101AN12

1. Model

SP300- Pressure transmitter with display

2. Measuring range

GB10 Select a range code from measuring range table.

3. Output

2S 2 switching outputs
 1A 4...20mA output
 3A 4...20mA + 2 switching outputs
 1V 0...5V output
 3V 0...5V + 2 switching outputs

4. Process connection

N12 NPT1/2" male thread
 N14 NPT1/4" male thread
 G12 G1/2" male thread
 G14 G1/4" male thread
 other connection on request

Accessory - power/signal cable with socket

1. Connecting cable with socket

ET04- 4-pin M12 x 1 connecting cable with socket
 ET05- 5-pin M12 x 1 connecting cable with socket
 5-pin cable is for 2 switching + analog output

2. Material

PU Material: PUR

3. Length

02 6.5ft / 2m (default)
 05 16.5ft / 5m

4. Type

R Regular cable
 S Shielded cable

5. Connector

G Straight socket
 W Angled socket



Accessory - Welding socket

1. Model

TT01- Welding socket

2. Thread

N12 Fitting thread: 1/2" NPT thread
 N14 Fitting thread: 1/4" NPT thread
 G12 Fitting thread: 1/2" G thread
 G14 Fitting thread: 1/4" G thread

