

Specification of SMART Absolute or Gauge Pressure Transmitter

Sl. No.	Parameters	Specification
1	Type	SMART Absolute or Gauge Pressure Transmitter
2	Measurement Range	As per Table-1 in Annexure-A
3	Service Medium	As per Table-1 in Annexure-A
4	Maximum Turndown Ratio (TD)	100:1
5	Output	Two wire 4–20 mA with superimposed Digital communication HART protocol.
6	Power Supply	12 to 30 V DC.
7	Local Indication	min 4½ digits LCD – Local Alpha Numeric Digital display in Engineering units.
8	Hazardous Area Certification	Both Intrinsically safe and Explosion proof suitable for use in Hydrogen atmosphere. (CENLEC / CSA / FM / ATEX or any equivalent approval).
9	Safety Integrity Level Standard (SIL)	Safety Instrumented System Certification as per IEC 61508 standard, SIL 2 and above.
10	Zero & Span Adjustments	Zero and Span are to be adjusted from the Handheld HART Communicator and provision for local adjustment to be set anywhere within the range limits.
11	Failure mode alarms	High alarm ≥ 21.0 mA Low Alarm ≤ 3.6 mA
12	Accuracy @ TD 2.5 :1	$\leq \pm 0.09$ % of Calibrated span (including the effect of Terminal - Based linearity, hysteresis & repeatability)

13	Ambient Temperature Effect for 28°C variation @ TD 2.5 :1	≤ ± 0.4 % of span
14	Stability	≤± 0.2 % of URL for 10 years
15	Power Supply Effect	≤± 0.005 % of Calibrated Span per Volt.
16	Nominal Operating Temperature	-20 – 70°C
17	Total Response time	≤ 150 millisecond
18	Wetted Material	As per Table 3 in Annexure-A
19	Fill Fluid	As per Table 3 in Annexure-A
20	Transient/Lightening Protection	To be provided
21	Electrical Connection	½ " – 14 NPT (F) with SS plug for dust proof.
22	Transmitter Process connection	½ " – 14 NPT (F) or suitable for the quoted manifold
23	Housing Material	Polyurethane covered aluminum with ½"- 14 NPT conduit entry.
24	External Grounding screw assembly on transmitter body	Required
25	Mounting Bracket	Stainless Steel Bracket with SS fasteners, bolts, nuts, washers and U- clamps suitable for 2 inch pipe mounting.
26	Calibration	Calibration shall be carried out at room temperature in 5 steps ascending and 5 steps descending. Calibration certificate is to be provided. Calibration shall be traceable to National Standards.
27	Manifold	2-way valve manifold to be integrated with transmitter and supplied.

Specification of 2 Valve Manifold

Sl.No.	Parameters	Specification
1	Manifold Type	2 valve manifold
2	Material	316SS
3	Packing material	PTFE
4	Seat type	Integral
5	Instrument Connection	Suitable for quoted transmitter interface
6	Process connection	½ inch-14 NPTF
7	Maximum Operating Pressure	400 bar manifold for transmitter range upto 250 bar
		680 bar manifold for transmitter range between 250 to 500 bar
8	Operating Temperature	0 to 100 Deg C
9	Hydro Testing	To be carried out at 1.5 times the maximum operating pressure for all the manifolds and certificate to be provided
10	Material Test certificate	To be provided
11	Mounting Bolts	To be supplied with SS material.
12	Oxygen cleaning	Oxygen cleaning to be carried out for transmitters operating medium is oxygen