

Failure Mode Alarm (Output Code S)

If self-diagnosis detects a gross transmitter failure, the analog signal will be driven below 3.9 mA or above 21 mA to alert the user. High or low alarm signal is user selectable.

Level	4-20 mA Saturation Value	4-20 mA Alarm Value
Low	3.9 mA	3.8 mA
High	20.8 mA	21.75 mA

Transmitter Security (Output Code S)

Activating the transmitter security function prevents changes to the transmitter configuration, including local zero and span adjustments. Security is activated by an internal switch.

Overpressure Alarm (Output Code S)

If the sensor detects a negative overpressure value, the analog signal will be driven to 3.9 mA. If the sensor detects a positive overpressure value, the analog signal is driven to 20.8 mA.

Damping

Numbers given are for silicone fill fluid at room temperature. The minimum time constant is 0.2 seconds (0.4 seconds for Range 3). Inert-filled sensor values would be slightly higher.

Output Code S

Time constant is adjustable in 0.1 second increments from minimum to 16.0 seconds.

Output Codes E and G

Time constant continuously adjustable between minimum and 1.67 seconds.

Output Code J

Time constant continuously adjustable between minimum and 1.0 second.

Output Codes L, M

Damping is fixed at minimum time constant.

Model 1151LT

Time constant continuously adjustable between 0.4 and 2.2 seconds with silicone oil fill, or 1.1 and 2.7 seconds with inert fill for flush models and electronics codes E or G.

Turn-on Time

Maximum of 2.0 seconds with minimum damping. Low power output is within 0.2% of steady state value within 200 ms after application of power.

Performance Specifications

(Zero-based calibrated ranges, reference conditions, silicone oil fill, 316 SST isolating diaphragms)

Accuracy

Output Code S

Ranges 3 through 8, DP and GP transmitters;
Ranges 4 through 7, HP transmitters

±0.1 of calibrated span for spans from 1:1 to 10:1 of URL. Between 10:1 and 15:1 of URL.

$$\text{accuracy} = \pm \left[0.02 \left(\frac{\text{URL}}{\text{span}} \right) - 0.1 \right] \% \text{ of calibrated span}$$

All other ranges and transmitters

±0.25% of calibrated span.

Output Code S, square root mode

$$\pm \left[0.2 + 0.05 \times \left(\frac{\text{URL}}{\text{span}} \right) \right] \% \text{ of calibrated flow span}$$

Output Codes E, G, L, and M

±0.2% of calibrated span for Model 1151DP Ranges 3 through 5. All other ranges and transmitters, ±0.25% of calibrated span.

Output Code J

±0.25% of calibrated span.

Stability

Output Code S

±0.1% of URL for six months for DP and GP Ranges 3 through 8. (±0.25% for all other ranges and transmitters.)

Output Codes E and G

±0.2% of URL for six months for Ranges 3 through 5. (±0.25 for all other ranges.)

Output Codes J, L, and M

±0.25% of URL for six months.

Temperature Effect

Output Code S [-20 to 185 °F (-29 to 85 °C)]

For DP and GP transmitter Range 4 through 8;
HP transmitter Range 4 through 7:

Zero Error = ±0.2% URL per 100 °F (56 °C)
Total Error = ±(0.2% URL + 0.18% of calibrated span) per 100 °F; For Range 3, double the stated effects. For other ranges and transmitters follow analog temperature specifications (Output Code E).

Output Code E, G, L, and M [-20 to 200 °F (-29 to 93 °C)]

For Ranges 4 through 8

Zero Error = ±0.5% URL per 100 °F

Total Error = ±(0.5% URL + 0.5% of calibrated span) per 100 °F; double the effect for Range 3.

Output Code J

The total output effect, whether at zero or full scale, including zero and span errors is ±1.5% of URL per 100 °F (56 °C). ±2.5% of URL per 100 °F (56 °C) for Range 3.

Model 1151 Alphaline® Pressure Transmitters

ORDERING INFORMATION

TABLE 10. Model 1151 Differential, High Line, Gage and Absolute Pressure Transmitters. — = Not Applicable • = Applicable

Model	Transmitter Type (select one)	DP	HP	GP	AP
1151DP	Differential Pressure Transmitter	•	—	—	—
1151HP	Differential Pressure Transmitter for High Line Pressures	—	•	—	—
1151GP	Gage Pressure Transmitter	—	—	•	—
1151AP	Absolute Pressure Transmitter	—	—	—	•

Code	Pressure Ranges (URL) (select one)—For Rangeability, see below	DP	HP	GP	AP
3	30 inH ₂ O (7.46 kPa)	•	—	•	•
4	150 inH ₂ O (37.3 kPa)	•	•	•	•
5	750 inH ₂ O (186.4 kPa)	•	•	•	•
6	100 psi (689.5 kPa)	•	•	•	•
7	300 psi (2068 kPa)	•	•	•	•
8	1,000 psi (6895 kPa)	•	—	•	•
9	3,000 psi (20684 kPa)	—	—	•	—
0	6,000 psi (41369 kPa)	—	—	•	—

Code	Transmitter Output (select one)	DP	HP	GP	AP
S	4–20 mA/Digital, Smart/Variable Damping	•	•	•	•
E	4–20 mA, Linear, Analog/Variable Damping	•	•	•	•
G	10–50 mA, Linear, Analog/Variable Damping	•	•	—	—
J	4–20 mA, Square Root, Analog/Variable Damping	•	•	•	•
L	0.8 to 3.2 V, Linear, Low Power/Fixed Damping	•	•	•	•
M	1 to 5 V, Linear, Low Power/Fixed Damping	•	•	•	•

Code	MATERIALS OF CONSTRUCTION ⁽¹⁾	DP	HP	GP ⁽²⁾	AP ⁽²⁾
	Flanges/Adapters	Drain/Vents	Diaphragms	Fill Fluid	
52	Nickel-plated Carbon Steel	316 SST	316L SST	Silicone	•
53	Nickel-plated Carbon Steel	316 SST	Hastelloy C-276	Silicone	•
54	Nickel-plated Carbon Steel	316 SST	Monel	Silicone	•
55	Nickel-plated Carbon Steel	316 SST	Tantalum	Silicone	—
56	Nickel-plated Carbon Steel	316 SST	Gold-plated Monel	Silicone	•
12	Cadmium-plated Carbon Steel	316 SST	316L SST	Silicone	•
22	316 SST	316 SST	316L SST	Silicone	•
23	316 SST	316 SST	Hastelloy C-276	Silicone	•
24	316 SST	316 SST	Monel	Silicone	•
25	316 SST	316 SST	Tantalum	Silicone	—
26	316 SST	316 SST	Gold-plated Monel	Silicone	•
33 ⁽³⁾	Hastelloy C	Hastelloy C-276	Hastelloy C-276	Silicone	•
34	Hastelloy C	Hastelloy C-276	Monel	Silicone	—
35	Hastelloy C	Hastelloy C-276	Tantalum	Silicone	—

(1) Bolts and conduit plugs are plated carbon steel.

(2) On GP and AP transmitters, the low-side flange is plated carbon steel.
For a stainless-steel low-side flange, order process connection Option Code D6.

(3) These selections meet NACE material recommendations per MR 01-75.

Model 1151