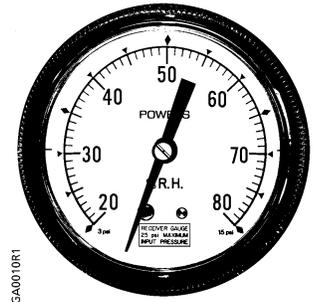


Powers® Controls

Analog Receiver Gauges



Description Analog receiver gauges are round dial instruments that indicate the output signal from a pneumatic transmitter. The gauges are available in three sizes. The 1-1/2 inch gauge is pipe mounted only. The 2-1/2 and 3-1/2 inch gauges are flush mounted, usually in the central control panel.

- Features**
- Snap-in ring for 1-1/2 inch gauge, 1/4 turn on 2-1/2 and 3-1/2 inch gauges.
 - Linkage consists of bourdon tube, geared linkage, return spring and pointer.
 - Points on the gauge dial indicate corresponding psi (kPa) measurements.

Product Numbers	Description	Table No.
	Analog Receiver Gauges – English Units	Table 1
	Analog Receiver Gauges – Metric Units	Table 2
	Analog Receiver Gauges – Dual Scale	Table 3

Specifications		
Standard operating pressure		3 to 15 psi (21 to 103 kPa)
Maximum operating pressure		25 psi (172 kPa)
Accuracy		2-1/2% of full scale for the middle half of the scale, 3-1/2% elsewhere
Scale ranges		See Tables 1, 2, and 3
Air connection		
1-1/2 inch		1/8-inch NPT male in center back
2-1/2 and 3-1/2 inch		Barbed fitting for 1/4-inch O.D. poly tubing
Dimensions		See Figures 1, 2, and 3
Weight		
1-1/2 inch		0.2 lb (0.09 kg)
2-1/2 inch		0.5 lb (0.2 kg)
3-1/2 inch		0.6 lb (0.3 kg)

Operation

As the air pressure increases, the curved bourdon tube, which has one end fixed, tends to straighten out. This action moves the precision gear linkage that is attached to the end of the tube and, in turn, rotates the pointer in a clockwise direction. As the pressure decreases, the tube tends to return to its normal curved position reversing the pointer's direction of movement.

**Table 1. Analog Receiver Gauges
 (3 to 15 psi) - English Units.**

Range	Product No. for 1-1/2-in.	Product No. for 2-1/2-in.	Product No. for 3-1/2-in.
-40°F to +120°F	142-0238	142-0258	142-0285
-40°F to +160°F	142-0430	142-0436	142-0442
-25°F to +135°F	—	142-0259	142-0286
-10°F to +65°F	142-0240	142-0260	142-0287
0°F to 100°F	142-0316	142-0327	—
25°F to 250°F	—	142-0264	142-0290
30°F to 190°F	142-0434	142-0440	—
35°F to 135°F	142-0241	142-0261	142-0288
40°F to 240°F	142-0431	142-0437	142-0443
50°F to 100°F	142-0242	142-0262	142-0284
50°F to 150°F	142-0432	142-0438	142-0444
80°F to 240°F	142-0243	142-0263	142-0289
160°F to 320°F	—	—	142-0298
20% to 80 % rh	142-0245	142-0265	142-0283
0 psi to 50 psi	142-0435	142-0441	142-0447
3 psi to 15 psi	142-0293	142-0295	—
-0.05 wg to +0.2 wg	142-0396	142-0402	142-0408
-0.5 wg to + 0.5 wg	—	142-0401	142-0407
0 H ₂ O to 3" H ₂ O	142-0246	142-0226	142-0291
0 to 10" wg	142-0394	142-0400	142-0406
0 H ₂ O to 15" H ₂ O	142-0247	142-0467	142-0292
0 FPM to 2000 FPM	—	142-0412	142-0416
0 FPM to 3000 FPM	—	142-0413	142-0417
0 FPM to 4000 FPM	—	142-0414	142-0418
0 FPM to 5000 FPM	—	142-0415	142-0419

Table 2. Receiver Gauges - Metric Units.

Range	Product No. for 1-1/2-in.	Product No. for 2-1/2-in.	Product No. for 3-1/2-in.
-40 to +50°C	—	—	142-0383
-20°C to 40°C	—	—	142-0356
10°C to 38°C	—	—	142-0384
25°C to 120°C	—	142-0379	142-0355
26.7°C to 116°C	142-0333	142-0451	142-0452
20% to 80% rh	142-0347	—	142-0385
-12.5 Pa to +50 Pa	142-0399	142-0405	—
-125 Pa to +125 Pa	—	142-0404	—
0 kPa to 345 kPa	—	—	142-0450
0 kPa to 747 kPa	—	—	142-0359
0 kPa to 2.5 kPa	—	142-0403	142-0409
0 m/sec to 20 m/sec	—	—	142-0422

Table 3. Dual Gauges.

Range	Product No. for 1-1/2-in.	Product No. for 2-1/2-in.	Product No. for 3-1/2-in.
0 to 100 °F -20 to 40°C	—	—	142-0229
16 to 40 BTU/lb 37 to 93 kJ/kg	—	—	142-0424

Installation

1-1/2 inch gauges have a 1/8-inch NPT male fitting for pipe mounting.

2-1/2 and 3-1/2 inch gauges are flush mounted on a panel. These have a barbed fitting for 1/4-inch O.D. poly tubing.

For panel cutout dimensions, see *TB 196, Cabinet Cutouts Technical Bulletin* (155-223).

Calibration

Measure the temperature (or humidity or pressure) that the transmitter is sensing. If the gauge does not indicate this measurement, adjust the gauge pointer.

1. Remove the gauge cover.
 - For a 1-1/2 inch gauge, pry the cover with a thin blade screwdriver.
 - For a 2-1/2 inch or 3-1/2 inch gauge, unscrew the cover.
2. Hold the pointer stationary between two fingers.
3. Insert a screwdriver into the screw at the center of the pointer and rotate the screw. See Figure 1.
 - Rotate clockwise to decrease the indicated value.
 - Rotate counterclockwise to increase the indicated value.
4. Release the pointer and check the reading.
5. Repeat, if necessary.

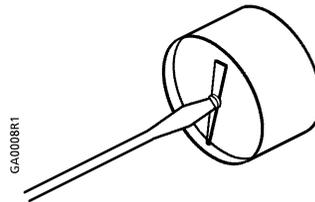


Figure 1. Adjusting the Gauge Pointer.

Dimensions in Inches (mm)

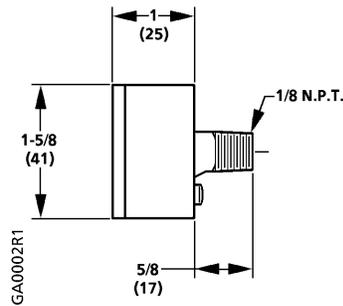


Figure 2. 1-1/2 Inch Gauge.

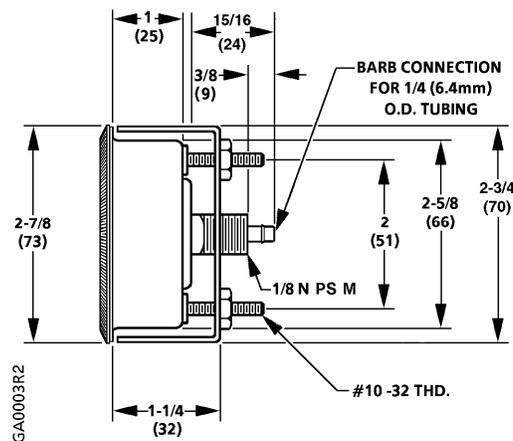


Figure 3. 2-1/2 Inch Gauge.

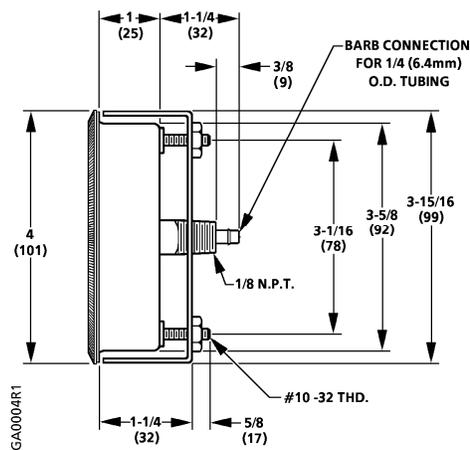


Figure 4. 3-1/2 Inch Gauge.

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