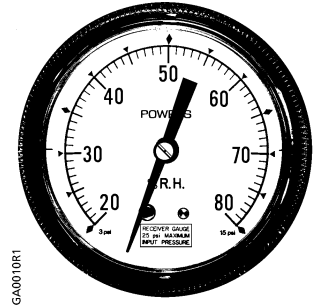


Powers™ Controls

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 <i>Tables 1, 2, and 3</i> |
| 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 <i>Figures 1, 2, and 3</i> |
| 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" | Product No. for 2-1/2" | Product No for 3-1/2" |
|---------------------------|------------------------|------------------------|-----------------------|
| -40 to +120°F | 142-0238 | 142-0258 | 142-0285 |
| -40 to +160°F | 142-0430 | 142-0436 | 142-0442 |
| -25 to +135°F | 142-0239 | 142-0259 | 142-0286 |
| -10 to +65°F | 142-0240 | 142-0260 | 142-0287 |
| 0 to 100°F | 142-0316 | 142-0327 | — |
| 3 to 71°F | — | 142-0272 | — |
| 25 to 250°F | 142-0244 | 142-0264 | 142-0290 |
| 30 to 190°F | 142-0434 | 142-0440 | 142-0446 |
| 35 to 135°F | 142-0241 | 142-0261 | 142-0288 |
| 40 to 240°F | 142-0431 | 142-0437 | 142-0443 |
| 50 to 90°F | 142-0433 | 142-0439 | 142-0445 |
| 50 to 100°F | 142-0242 | 142-0262 | 142-0284 |
| 50 to 150°F | 142-0432 | 142-0438 | 142-0444 |
| 80 to 240°F | 142-0243 | 142-0263 | 142-0289 |
| 160 to 320°F | — | — | 142-0298 |
| 20 to 80 % rh | 142-0245 | 142-0265 | 142-0283 |
| 0 to 50 psi | 142-0435 | 142-0441 | 142-0447 |
| 3 to 15 psi | 142-0293 | 142-0295 | — |
| -0.05 to +0.2 wg | 142-0396 | 142-0402 | 142-0408 |
| -0.5 to + 0.5 wg | 142-0395 | 142-0401 | 142-0407 |
| 0 to 3" H ₂ O | 142-0246 | 142-0226 | 142-0291 |
| 0 to 10" wg | 142-0394 | 142-0400 | 142-0406 |
| 0 to 15" H ₂ O | 142-0247 | 142-0467 | 142-0292 |
| 0 to 2000 FPM | — | 142-0412 | 142-0416 |
| 0 to 3000 FPM | — | 142-0413 | 142-0417 |
| 0 to 4000 FPM | — | 142-0414 | 142-0418 |
| 0 to 5000 FPM | — | 142-0415 | 142-0419 |

Table 2. Receiver Gauges - Metric Units.

| Range | Product No. for 1-1/2" | Product No. for 2-1/2" | Product No for 3-1/2" |
|-----------------|------------------------|------------------------|-----------------------|
| -40 to +50°C | — | — | 142-0383 |
| -25 to 20°C | — | — | 142-0354 |
| -20 to 40°C | 142-0345 | — | 142-0356 |
| 1 to 58°C | — | — | 142-0382 |
| 1.67 to 57.2°C | 142-0332 | — | — |
| 10 to 38°C | 142-0346 | — | 142-0384 |
| 25 to 120°C | — | 142-0379 | 142-0355 |
| 26.7 to 116°C | 142-0333 | 142-0451 | 142-0452 |
| 20 to 80% rh | 142-0347 | — | 142-0385 |
| -12.5 to +50 Pa | 142-0399 | 142-0405 | 142-0411 |
| -125 to +125 Pa | 142-0398 | 142-0404 | 142-0410 |
| 0 to 345 kPa | 142-0448 | 142-0449 | 142-0450 |
| 0 to 747 kPa | 142-0352 | — | 142-0359 |
| 0 to 2.5 kPa | 142-0397 | 142-0403 | 142-0409 |
| 0 to 10 m/sec | — | — | 142-0420 |
| 0 to 15 m/sec | — | — | 142-0421 |
| 0 to 20 m/sec | — | — | 142-0422 |
| 0 to 28 m/sec | — | — | 142-0423 |

Table 3. Dual Gauges.

| Range | Product No. for 1-1/2" | Product No. for 2-1/2" | Product No for 3-1/2" |
|-----------------------------------|------------------------|------------------------|-----------------------|
| 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.

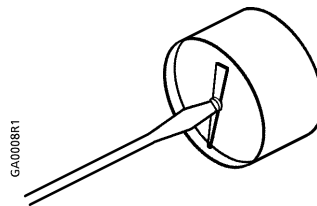


Figure 1. Adjusting the Gauge Pointer.

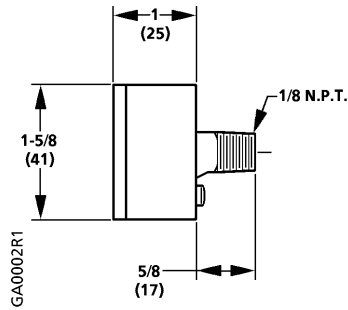


Figure 2. Dimensions of the 1-1/2 Inch Gauge.

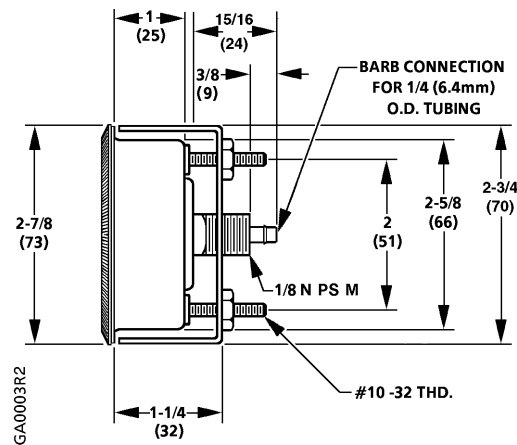


Figure 3. Dimensions of the 2-1/2 Inch Gauge.

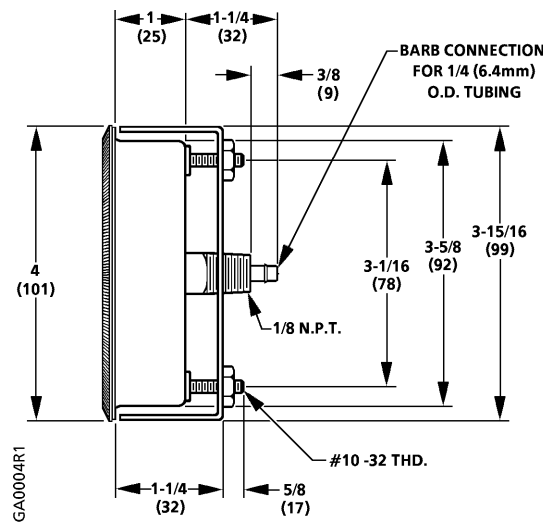


Figure 4. Dimensions of the 3-1/2 Inch Gauge.

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