

Bristol® Series 5457-70G

Remote Electronic Set Point Transmitter

General

The Bristol Series 5457-70G Indicating Pneumatic Transmitter, with remote electronic setpoint, is part of the Bristol 624-II family of pneumatic instruments from Emerson Process Management. The set pointer can be adjusted electrically by either discrete or analog inputs. The input signals to the set point are received from remote areas and/or from computers.

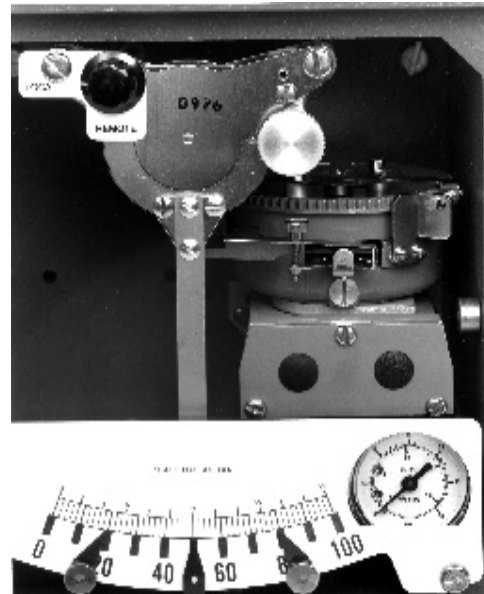
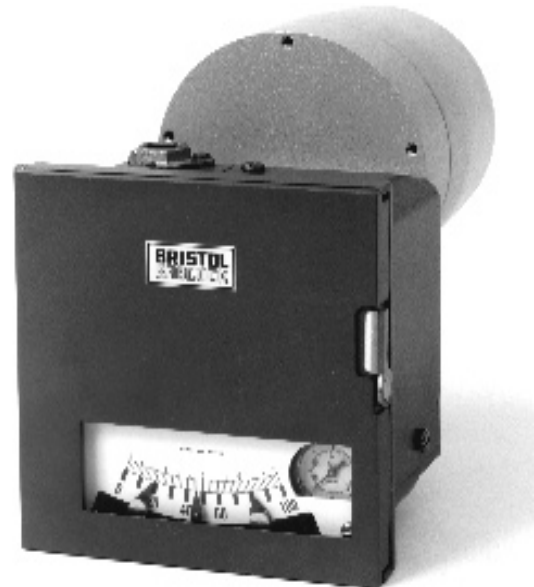
Product Description

The set point of the Pneumatic Controller is driven by a bi-directional electrically operated rotary actuator. The unit contains position feedback, manual override, and most units are explosion-proof. The motor driven set point is housed outside of the controller case.

Two basic models are provided for remote control of the set point. The discrete positioning model will drive the actuator by control pulses. Up to 1000 raise-lower input pulses in the discrete mode, from dry-contact closure or solid state, will cover the full scale. The analog positioning model will drive the motor to a set point as determined from a 4 to 20 mA input that corresponds to the full scale. A 4-20 mA set point feedback is available. The remote set point is powered by either 12 or 24 V dc.

Pneumatic Outputs

3-15 psi and 3-27 psi are standard



Features

- Compact size
- Remote set point integrally mounted
- Discrete and analog set point inputs
- Guard* feature
- Analog Feedback
- Remote-manual switch
- Adjustable speed control
- Incremental step change
- Explosion-proof actuator case

* "GUARD" In the guard position, the set point drive mechanism will be active only if the guard input signal is true.

Operating & Performance Specifications

For Setpoint Actuator Only

- Accuracy:
 - Set point position: ±0.5% of span
 - Set point feedback: ±0.5% of span
- Repeatability: 0.2% of span
- Long term stability: 0.25% per year
- Response time:
 - Analog model: Adjustable from 1 minute to 15 minutes full scale in 1 minute increments, or 20 seconds.
 - Discrete Model:
 - Step mode: Range1 0.1% to 1% in 0.1 increments. Range2 1 to 10% in 1% increments
 - Continuous mode: Adjustable from 1 minute increments, or 20 seconds.
- Input filter: 7 millisecond hardware filter plus switchable software filter which accepts input after 5 identical samples at 5 millisecond intervals.

- Surge withstand: Meets IEEE standard 472-1974.
- Process output (Setpoint position feedback only): 4-20 mA, common ground for the position feedback, output on analog, and discrete models. Selectable choice for both models.
- Power:
 - Electrical
 - 11 to 14 or 22 to 28 V dc (This is by model selection.)
 - Maximum Consumption – 10 watts
 - Fusing – 1A
 - Power Failure Backup – from external uninterruptable power supply.
- Ambient temperature effect: ±1% max. full scale for 50°F
- Ambient temperature limits:
 - Operating temperature, -20°F to 140°F, (-29°C to 60°C)
 - Storage temperature, -40°F to 185°F, (-40°C to 85°C)
- Relative humidity limits: 1
 - 0 to 95% R.H. at -20°F to 130°F
 - 10 to 50% R.H. at 130° to 150°F
- Electro magnetic interference (R.F.I. EFFECT):
- Pressure input controllers: Effect with wiring enclosed in conduit SAMA STD PMC 33.1, class 1 and 2, 20 mHz to 500 mHz: <0.5% FS error. Effect with shielded wire SAMA STD PMC 33.1, class 1, 20 mHz to 500 mHz: <0.5% FS error.
- Electronic input controllers (R.F.I. EFFECT): Use specification sheet A118-8
- Hazardous location rating: FM approved as explosion-proof for Class 1, Division 1, Groups C and D, plus nonincendive for Class 1, Division 2, Groups, A, B, C and D.
- Failure modes: For any electrical failure, device will provide mechanical memory to retain last given set point.

General Specifications

- Basic model number breakdown: See attached pages for complete makeup of instrument model number.

For Setpoint Actuator Only

- Case: Weatherproof, explosion-proof. Cast aluminum housing with gasketed screw-on cover and light gray epoxy finish.
- Overall dimensions:
- Motor only – 6" (152.4 mm) diameter x 7" (177.8 mm) long
- Panel cutout: See overall dimensions for complete instrument
- Mounting: Flush or pipe mounting
- Electrical connections: Two ¾" conduit entries with integral screw terminals for #14 AWG wire (max.)
- Weight (approximate): 20 pounds (9 kg)

Mechanical/Pneumatic Specifications

- Case: Weatherproof, die-cast aluminum case with gasketed aluminum door and gray epoxy finish standard.
- Case dimensions: 7 23/27 inches wide x 7 13/14 inches high x 4 15/16 inches deep.
- Panel cutout dimensions: 7 3/16 inches wide x 7 9/16 inches high. 2-inch horizontal and 5-inch

vertical clearance required between adjacent panel mounted units.

- Scales: Segmental, 3 ¼-inch calibrated length. Black numerals on white background. Red pointer.
- Output: 3-15 psig, 3/27 psig standard.
- Air supply: 20 psig or 30 psig, depending upon output range.
- Connections: Supply and output, ¼" NPT female at bottom of case.
- Process connection (pressure) ½" NPT standard.
- Calibrated accuracy: Pressure: ±1/2% of span
- Response level: 0.006% of span
- Frequency response: Response curve flat to 400 cycles per minute
- Pilot capacity: 3 scfm, exhaust or delivery, for 1 psi change in output pressure.
- Air consumption: 0.05 scfm at balance with 20 psig air supply
- Temperature stability: ±1% of span change in output pressure per 100°F change in ambient temperature
- Supply pressure error: Less than 0.1% (of span) change in output per 1 psi change in supply pressure. Transmitters for 3-15 psig output range will function without damage with supply pressures to 30 psig. Transmitters for 3-27 psig output range are protected for air supply pressures to 35 psig.

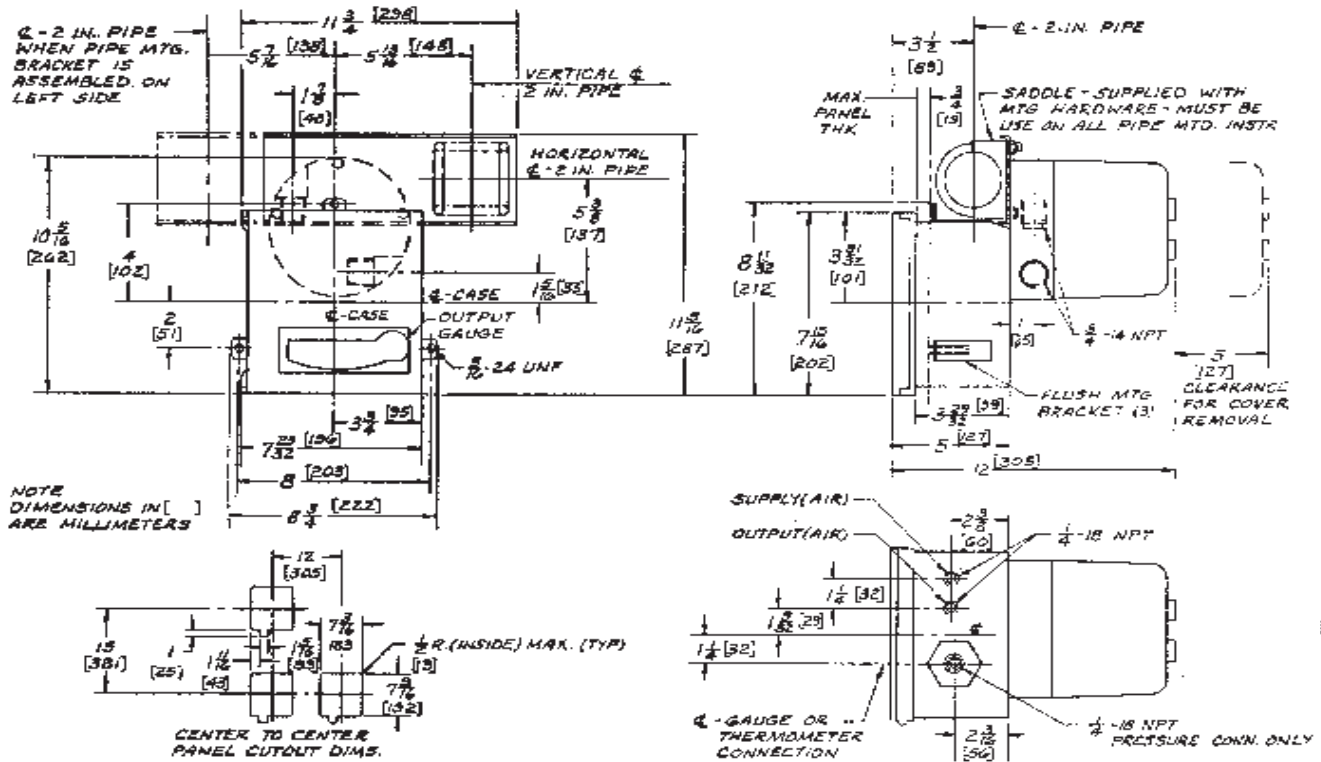
624-II REMOTE SET TRANSMITTER

Model No: 5457-70G

A - B - C - D - E - F

5457-70G

SELECT	DESCRIPTION	CODE
A	TRANSMITTER X545770BAS	
10	3-15 psi output 20 psi supply	1
	3-27 psi output 30 psi supply	2
	6-30 psi output 35 psi supply	3
B	PAGE XEXFEED	
20	Discrete Input	1
	Analog Input	2
C	REMOTE SET POINT FEEDBACK	
30	PDM Feedback	1
	4-20 MA Feedback	2
D	POWER	
40	12 Volts DC	1
	24 Volts DC	2
E	MANUAL-AUTOMATIC STATION XMAN-AUTO	
50	Without	0
	With (Note 6)	1
F	MOUNTING X500MOUNT	
60	Wall	1
	Flush	2
	Pipe	3



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