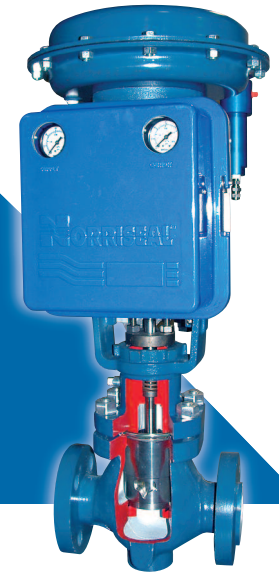
Series 4900 Pressure Controllers and Transmitters

Low-emission Operation:

Open design for easy access



Series 4900 pneumatic pressure controllers *combine reliable, low-emission operation with service-enhanced design. Series 4900 controllers provide control in proportional-only, proportional plus integral (reset), differential gap or transmitter modes. Standard pressure ratings up to 10,000 psig are available with 316 SST Bourdon tube sensing elements (consult Norriseal for higher pressure ratings). Weather-resistant enclosures assure reliable operation in harsh environments.*

Features

- Flush-mounted internals and open design allow easy access and repair
- Removable door
- Easy, field-reversible action
- Significantly reduced leak paths minimize bleeding of valuable gases
- NACE MR0175-2002 compliance with optional diaphragm seals to isolate the sensing element
- Optional instrument air regulator

Contents

Models

Model 4950	Proportional-Only Control
Model 4960	Proportional-Plus-Reset Control
Model 4970	Differential Gap Control
Model 4980	Transmitter Only

Action (Field Reversible)

- Direct-increasing sensed pressure produces increasing output signal.
- Reverse-increasing sensed pressure produces decreasing output signal.

Output Signal

Proportional Only Control or Proportional-Plus-Reset Controllers and Transmitters

- 3 to 15 psig
- 6 to 30 psig

Differential Gap Control

- O to 20 psig
- O to 35 psig

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Engineered Performance

Specifications

Proportional Band Adjustment: 3 to 100% (3 to 15 psig) or 6 to 100% (6 to 30 psig) of sensing element range

Repeat Adjustment: 0.01 to 100 repeats per minute (0.01 to 74 minutes per repeat)

Differential Gap Controller: 15 to 100% of sensing element range.

Remote Set Point Signal: 3 to 15 psig for controller with 3 to 15 psig output signal; 6 to 30 psig for controller with 6 to 30 psig output signal

Zero Adjustment-Transmitter Only: Continuously adjustable with sensing element range

Span Adjustment-Transmitter Only: 6 to 100% of sensing element range

Ambient Operating Temperature Range:
Standard: -10 to 160°F (-40 to 71°C)
High Temperature: 0 to 220°F (-18 to 104°C)

Typical Ambient Temperature Operating Effect:
Proportional Control Only: Output pressure changes ±3.0% of sensing element rating for each 50°F (28°C change for a controller set at 100% Proportional Band)
Reset Control Only: Output pressure changes ±2.0% of sensing element rating for each 50°F (28°C) change for a controller set at 100% Proportional Band

Supply and Output Connections: 1/4 inch NPT female

Supply and Output Gauges: Available with scale indications of psig, kg/cm², kPa

Mounting: Wall, panel, or directly yoke or diaphragm case of valve

Options

- Compliance with NACE MR-0175 with diaphragm seals to isolate sensing element
- Norriseal Instrument Air Regulator

Materials

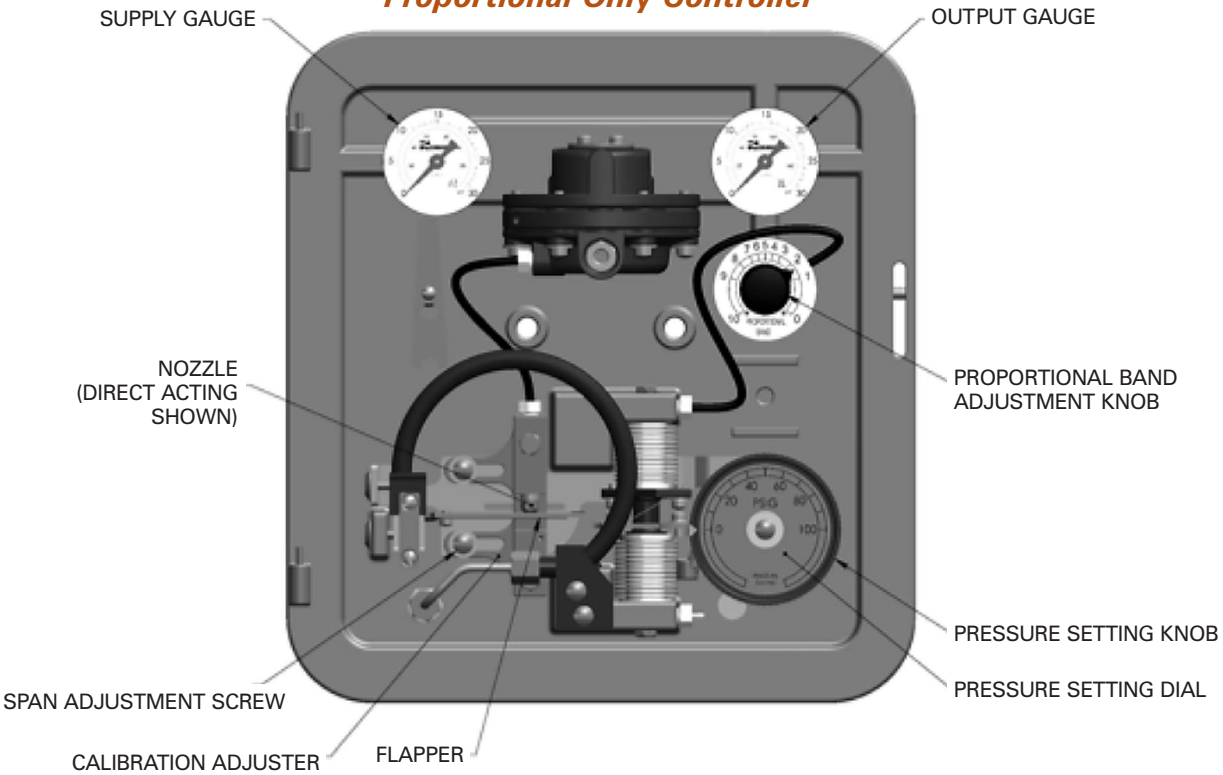
CONSTRUCTION MATERIALS

	PART	MATERIAL
In Contact with Process	Bourdon Tube	316 Stainless Steel or K-Monel - NACE (Optional)
	Control Tubing (Pressure Block to Sensing Element)	316 Stainless Steel
	Pressure Block	316 Stainless Steel
In Contact with Operating Medium	Other Internal Tubing	Polyurethane Tubing or 316 Stainless Steel (Optional)
	Relay Seat	316 Stainless Steel
	Nozzle and Action Reversing Block	316 Stainless Steel
	Relay Springs	302 Stainless Steel
	Relay Springs Plate and Cap	302/304 Stainless Steel
	Relay Diaphragm	Nitrile/Nylon (Standard), Polyacrylate/Nylon (High Temp)
	Bellow, Proportional and Reset	316 Stainless Steel
	Proportional Valve Assembly	302/303 Stainless Steel & Brass
	Reset Valve Assembly	302/303 Stainless Steel & Brass
	O-Rings	Nitrile (Standard) or Viton(2) (High Temp)
	Gaskets	Neoprene (Standard), Silicone (High Temp)
Other	Case & Cover	Aluminum, Except Acrylic Gauge Windows
	Flapper	302 Stainless Steel
	Other Internal Exposed Steel Items	Zinc Plated Steel

Design

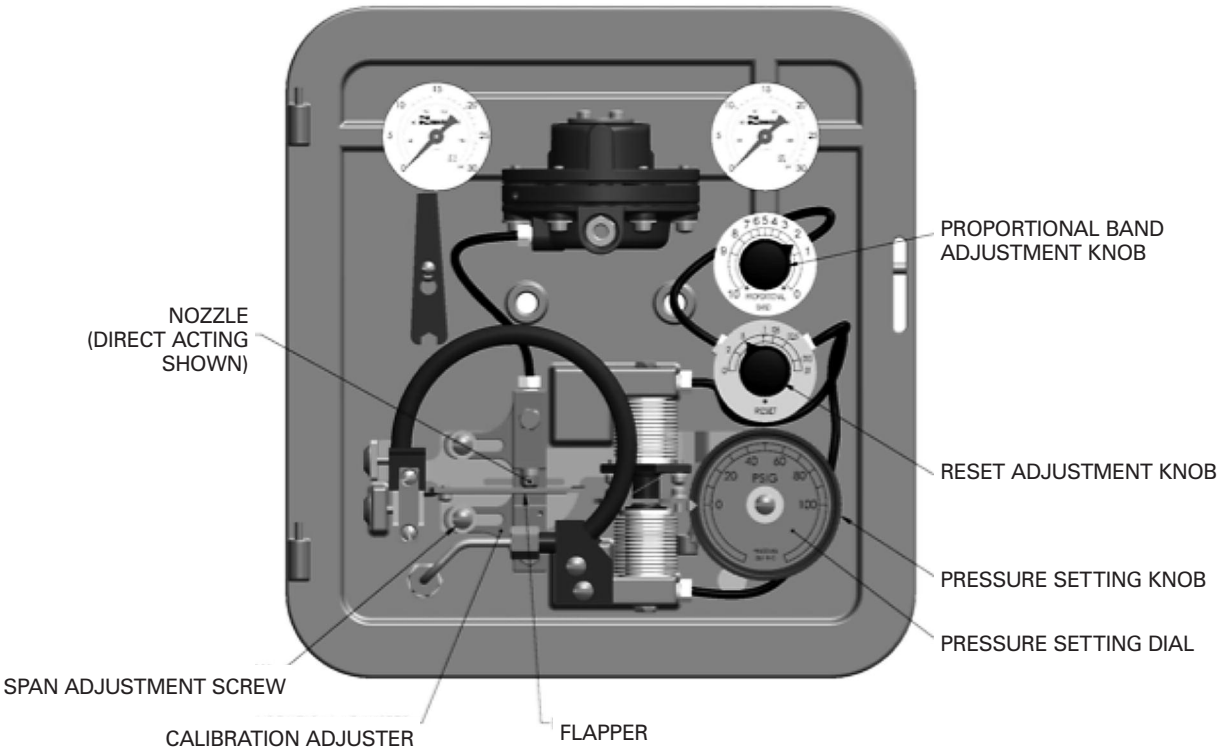
Model 4950

Proportional Only Controller



Model 4960

Proportional Plus Reset Controller



Model Code

4950 D 100 – A – OS

ACTION

Type	Code
Direct	D
Reverse	R

CONTROL MODE

Style	Code
Proportional Band Only	50
Proportional-Plus-Reset	60
Differential Gap	70
Transmitter	80

SPECIAL OPTIONS

Code	Type
	None
OS	Over Travel Stop
AW	Anti-Reset Windup
DS	Diaphragm Seal
DP	Differential Pressure Cell
RS	Remote Set Point
ST	Stainless Steel Tubing

ELEMENT RANGE (BOURDON TUBE)

Psig	Code
0 – 30	003
0 – 60	006
0 – 100	010
0 – 150	015
0 – 200	020
0 – 300	030
0 – 600*	060
0 – 1000*	100
0 – 1500*	150
0 – 3000	300
0 – 5000	500
0 – 8000	800
0 – 10,000	10K

PRESSURE GAUGE MATERIAL

Code	Type
–	Bronze
D	Bronze Liquid Filled
G	SST Liquid Filled
S	SST

SERVICE CONDITION

Type	Code
Standard	–
NACE*	N

OUTPUT

Code	Type
A	3-15 PSIG
B	6-30 PSIG

CAUTION: For operations and maintenance instructions, consult Norriseal.

*For NACE, Bourdon Tube Ranges 0-600, 0-1000, and 0-1500 become K-Monel.
All other ranges require a diaphragm seal.

SUPPLY PRESSURE REQUIREMENTS

OUTPUT SIGNAL	SUPPLY PRESSURE[1]	MAXIMUM ALLOW[2]	STEADY-STATE CONSUMPTION[3] Min.	Max.
3 to15 psig 0 to 20 psig	20 psig	50 psig	4.2 SCFH	27.0 SCFH
6 to 30 psig 0 to 35 psig	35 psig	50 psig	7.0 SCFH	42.0 SCFH

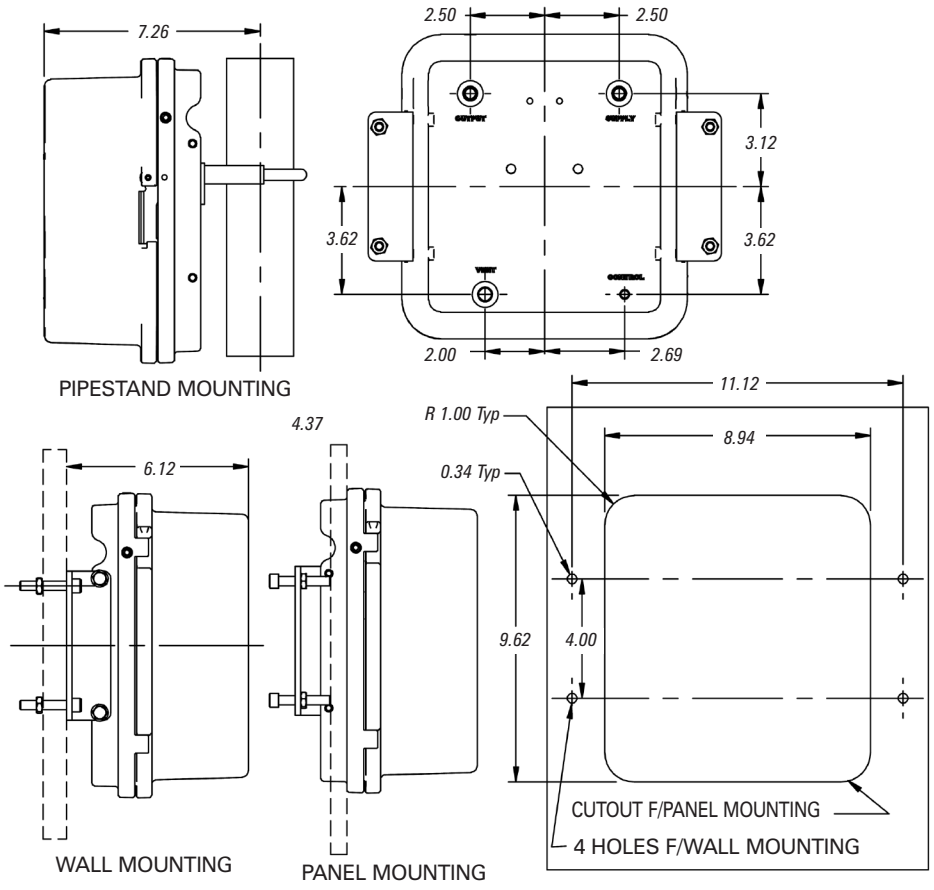
1. *Normal operating pressure. If this pressure is exceeded, control and stability may be impaired*
2. *If this pressure is exceeded, internal part damage may occur*
3. *SCFH of Air at 60° F and 14.7 psig*

Pressure Ranges

STANDARD STAINLESS STEEL BOURDON TUBE RANGES		
Maximum Allowable Static Pressure[2] Limits[3]		
PRESSURE RANGES[1] Psig	STANDARD Psig	WITH OPTIONAL TRAVEL STOP[4] Psig
0 to 30	30	48
0 to 60	60	96
0 to 100	100	160
0 to 150	150	210
0 to 200	200	280
0 to 300	300	420
0 to 600	600	720
0 to 1000	1000	1200
0 to 1500	1500	1650
0 to 3000	3000	3300
0 to 5000	5000	5500
0 to 8000	8000	8800
0 to 10,000	10,000	11,000

1. *Range marked on Bourdon tube may be in kPa (1 bar=100 kPa)*
2. *As defined in ISA Standard S51.-1979*
3. *Bourdon tube may be pressured to limit shown without permanent zero shift*
4. *Travel stop set at 110% of range*
5. *Consult Norriseal for ranges not listed above*

Mounting Options



Note: All Connections are 1/4 NPT Female

Panel, Wall & Pipe Stand Mounting

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Please contact your Norriseal representative for more details and assistance in specifying the optimal solution for your application.

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