

N-Series Electronic Pressure Switches



IDEAL FOR PRESSURE ALARM, SHUTDOWN, CONTROL ON –

- Machine tools
- Injection molding machines
- Presses
- Pumps
- Hydraulic systems
- Turbines and compressors
- Pipelines
- Most process applications
- All high-cycle applications

Ashcroft® N-Series electronic pressure switches have proven reliable in the toughest industrial applications. The pressure sensor is a standard Ashcroft K-Series thin film transducer. The signal developed in the transducer is processed on a conformal coated printed circuit board to produce an output to a high quality electromechanical relay, which is rated for 10,000,000 cycles at rated load! The result is a long lasting pressure switch that will outlast mechanical switches in high cycle applications such as metal stamping presses, plastic injection molding machines, and other machine tool and special equipment. N-Series also features narrow, adjust-able deadbands that can be adjusted to less than 0.5% of range, solving many pipeline and elevated tank applications that are out of the reach of mechanical products.

The indicating model is ideally suited for applications where both a pressure indicator and a switch output for alarm, shut-down, control or interlock are needed. Sludge and slurry applications in wastewater and pulp and paper mills often require costly diaphragm seals to isolate instruments from the clogging effects of the process. You can save money by installing N-Series with indication on a single seal. You can even set the switch set and reset points on a test bench without pressure on the system, using the indicator and status lights. Look for these additional features.

PERFORMANCE SPECIFICATIONS

Ashcroft Model: N-Series

Accuracy Class (F.S.): 1.0%

| | |
|--------------------|--------|
| Nonlinearity | |
| Terminal Point* | ±0.7% |
| B.F.S.L. | ±0.4% |
| Hysteresis | ±0.2% |
| Nonrepeatability | ±0.07% |
| Interchangeability | ±1.0% |

*Includes hysteresis

Stability: ±0.5% F.S./year non-cumulative

Durability: 10⁸ cycles 20/80% F.S. with negligible performance change

Response time: Less than 5m sec

ENVIRONMENTAL CHARACTERISTICS

Temperature Limits:

| | |
|-------------|------------|
| Storage | -65/+250°F |
| Operating | -20/+180°F |
| Compensated | -20/+160°F |

Thermal Coefficients (70°F ref.):

| | |
|-----------------|----------------------|
| <u>Accuracy</u> | <u>Zero and Span</u> |
| 1.0% | ±0.040% F.S./°F |

ELECTRICAL SPECIFICATIONS

| | |
|-----------------------|------------------------|
| Output Signal: | Supply Voltage: |
| 4-20mA (2 wire) | 36 Vdc unregulated |

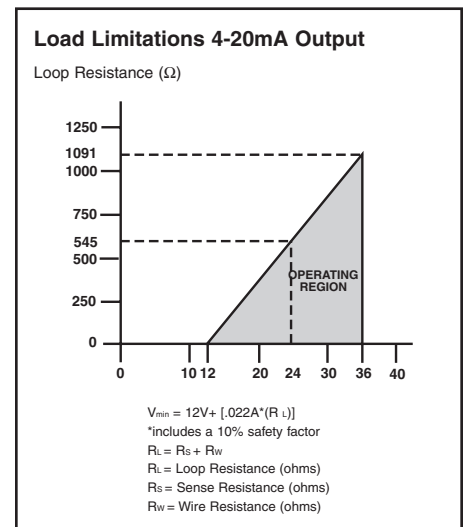
Reverse polarity protected.

Zero Offset: ±1.0%F.S.

MECHANICAL SPECIFICATIONS

Standard Construction Materials:

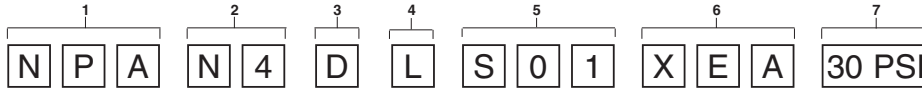
Wetted Parts:
 Diaphragm — 17-4PH SS
 Pressure Connection — 316SS



N-Series Electronic Pressure Switches

N-SERIES PRESSURE SWITCH MODEL NUMBER:

To specify the exact switch desired select entries from appropriate tables as shown in example below.



| 1 – FUNCTION | | |
|--------------|---|--|
| NPA | Single setpoint, adjustable deadband | |
| NPI | Single setpoint, adjustable deadband, process and setpoint indication | |

| 6 – N-SERIES OPTIONS | |
|----------------------|---|
| CODE | DESCRIPTION |
| XEA | External setpoint adjustment Consult factory for other options |

| 2 – ENCLOSURE | |
|---------------|---|
| N4 | Watertight NEMA 3, 4, 4X, 13 and IP66 |
| N7 | Explosion proof NEMA 3, 4, 4X, 13, 7, 9 and IP66 – Not available with Model NPI (display) |

| 7 – NOMINAL RANGE | | | |
|-------------------------|-----------------|-----------|-----------|
| PERFORMANCE TABLE (psi) | | | |
| Nominal Range | Setpoint Limits | psi Proof | psi Burst |
| 60 | 3-60 | 120 | 480 |
| 100 | 5-100 | 200 | 800 |
| 200 | 10-200 | 400 | 1600 |
| 300 | 15-300 | 600 | 2400 |
| 500 | 25-500 | 1000 | 4000 |
| 750 | 35-750 | 1500 | 6000 |
| 1000 | 50-1000 | 2000 | 8000 |
| 2000 | 100-2000 | 4000 | 16,000 |
| 3000 | 150-3000 | 4500 | 20,000 |
| 5000 | 250-5000 | 7500 | 22,500 |
| 7500 | 375-7500 | 9000 | 25,000 |
| 10,000 | 500-10,000 | 12,000 | 30,000 |
| 15,000 | 750-15,000 | 18,000 | 45,000 |
| 20,000 | 1000-20,000 | 24,000 | 60,000 |

| 3 – OUTPUT | | |
|------------|-------------------------------|---|
| D | SPDT Relay | 10A, 250 Vac 10A, 30 Vdc |
| I | SPDT Relay and Current Output | 10A, 250 Vac 10A, 30 Vdc and 4-20mA |

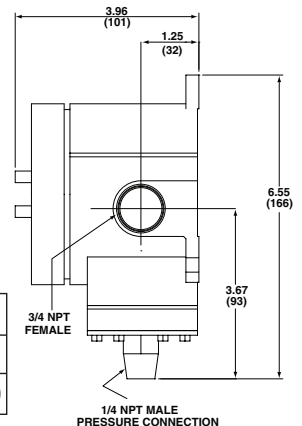
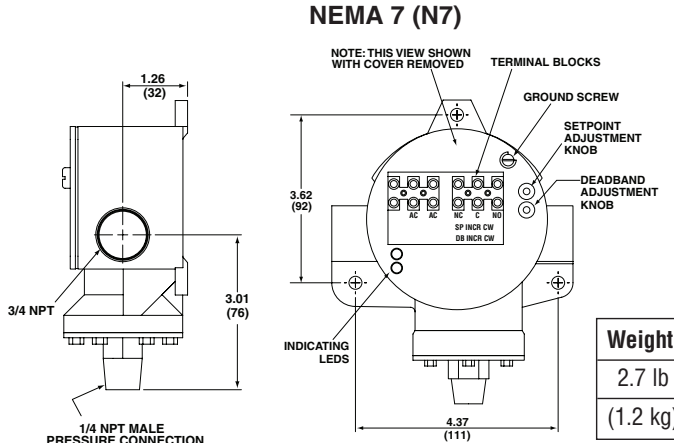
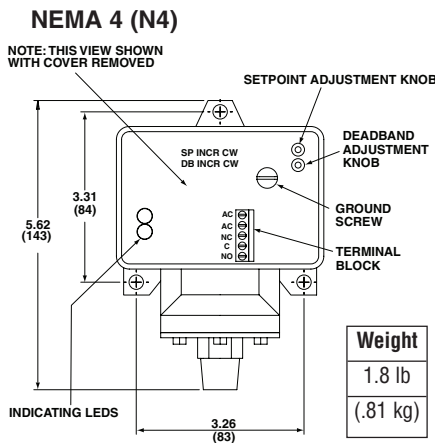
| 4 – POWER REQUIREMENT | |
|-----------------------|------------------|
| Code | |
| L | 110 Vac, 50/60Hz |
| C | 24 Vdc |
| V | 250 Vac, 50/60Hz |

| 5 – PRESSURE PORT | |
|-------------------|---------------------------------|
| Code | Description |
| S01 | 1/8" NPT Male |
| S02 | 1/4" NPT Male |
| S03 | 1/8" NPT Female |
| S04 | 1/4" NPT Female |
| S05 | 7/16"-20 SAE-1/4" SAE |
| S06 | 1/2" NPT Male 1/4" & NPT Female |
| S07 | 1/4" AMINCO – Female |

NOTE: TEMPERATURE SPECIFICATIONS (70°F ref.)

-20°F to 160°F
Setpoint shift of up to 2% of range per 50°F change can be expected

DIMENSION DRAWINGS



All specifications are subject to change without notice.
All sales subject to standard terms and conditions.
© Ashcroft Inc. 2008 12/08

Ashcroft Inc., 250 East Main Street, Stratford, CT 06614 USA
Tel: 203-378-8281 • Fax: 203-385-0408
email: info@ashcroft.com • www.ashcroft.com