

P-Series Temperature Switches

FEATURES

- Precision SPDT snap-acting micro switch
- Setpoint adjustable from 0-100% of range
- Single or dual adjustable set points
- Choice of temperature ranges (from -40°F to 750°F)
- Fixed or adjustable deadband
- Direct or remote reading thermal systems
- Wide selection of switch elements

TYPICAL USES

- Refineries
- Chemical and Petrochemical Plants
- Water and Sewage Treatment Plants
- Steel Mills
- Pumps, Compressors and Turbines
- Boilers and Burners
- Reverse Osmosis Systems



P-Series
Remote Mount

P-Series
Direct Mount



PERFORMANCE SPECIFICATIONS

| | |
|-------------------------------|--|
| Set Repeatability (Accuracy): | ±1% span |
| Switch Type: | SPDT or 2 SPDT with independent setpoints |
| Setpoint and Deadband: | Single setpoint, fixed deadband Single setpoint, adjustable deadband Dual Independent setpoint, fixed deadband |
| Enclosure Ratings: | NEMA 7 & 9, IP66 |
| Enclosure Material: | Epoxy coated aluminum |
| Process Connection: | Direct Mount: ½ NPT Male Remote Mount: ½ NPT Male bushing (OPT.) |
| Electrical Termination: | ¾ NPT Female |
| Direct Mount: | Stem lengths from 2¾" to 12" |
| Remote Mount: | Capillary lengths from 5' to 25' (5 ft. increments) |
| Approvals: | UL, CSA |



CLASS I DIV 1 GROUPS B, C, & D
CLASS II DIV 1 GROUPS E, F, & G

KEY BENEFITS

- Dual chamber design provides safe setpoint adjustment even with power connected
- Epoxy-coated aluminum enclosures provides added protection in harsh environments
- Easy-to-read scale for approximate setpoint indication (±5% accuracy)
- Hermetically sealed micro switches offer improved reliability and safety (UL Class I Div II approval)

WETTED MATERIAL

| Direct Mount | Remote Mount |
|--------------|--|
| 316 SS | Bulb capillary: 316 SS Spiral armor: 302 SS |

P-Series Temperature Switches

| ORDERING CODE | Example: | PTA | N7 | H | 05 | A7 | 030 | XNH | 150/260F | |
|--|----------|--------|----|---|----|----|-----|-----|----------|--|
| Function/Enclosure | | | | | | | | | | |
| PTA - Temperature control, single setpoint, adjustable deadband single setpoint, adjustable deadband N7-NEMA 7 & 9, IP66, Explosion Proof Class 1, Div 1 & 2 | | PTA | | | | | | | | |
| PTD - Temperature control, two independently, adjustable setpoint, fixed deadband N7-NEMA 7 & 9, IP66, Explosion Proof Class 1, Div 1 & 2 | | | | | | | | | | |
| PTS - Temperature control, single setpoint, fixed deadband N7-NEMA 7 & 9, IP66, Explosion Proof Class 1, Div 1 & 2 | | | | | | | | | | |
| Enclosure | | | | | | | | | | |
| N7 - NEMA 7 & 9, IP66, Explosion Proof Class 1, Div 1 & 2 | | | N7 | | | | | | | |
| Switch Elements For PTA Controls | | | | | | | | | | |
| H - General purpose - 10A,125/250 Vac, 1/2A, 125 Vdc, 1/4A, 250 Vdc | | | | H | | | | | | |
| J - Hermetically sealed, general purpose - 11A, 125/250 Vac 5A, 30 Vdc | | | | | | | | | | |
| Single/Dual Switch Elements For PTD & PTS Controls | | | | | | | | | | |
| C/CC - Heavy duty ac - 22A, 125/250 Vac | | | | | | | | | | |
| E/EE - Manual reset acutates on decreasing pressure 15A, 125/250 Vac 6A, 130 Vdc, (no hazardous approval) | | | | | | | | | | |
| F/FF - Sealed environment proof - 15A, 125/250 Vac (estimated dc rating - 4A, 28 Vdc, not UL listed) | | | | | | | | | | |
| G/GG - General purpose - 15A, 125/250/480 Vac, 1/2A, 125 Vdc, ¼A, 250 Vdc (not UL listed at 480 Vac) | | | | | | | | | | |
| H/HH - General Purpose - 10A, 125/250 Vac 10A, Vdc | | | | | | | | | | |
| J/JJ - Hermetically sealed switch, general purpose - 11A, 125/250 Vac 5A, 30 Vdc | | | | | | | | | | |
| K/KK - Narrow Deadband - 15A, 125/250 Vac (estimated dc rating - 0.4A, 120 Vdc, not UL listed) | | | | | | | | | | |
| M/MM - Low level gold contacts, 1A - 125 Vac | | | | | | | | | | |
| P/PP - Hermetically sealed AC - 5A, 125/250 Vac (estimated dc rating - 2.5A, 28 Vdc, not UL listed) | | | | | | | | | | |
| S/SS - Heavy Duty DC - 10A, 125 Vac or Vdc, ½ HP, 125 Vac or Vdc | | | | | | | | | | |
| U/UU - Manual Reset, Actuates on Increasing Pressure - 15A, 125/250 Vac, 6A, 130 Vdc (no hazardous approval) | | | | | | | | | | |
| Y/YY - High Temperature 300°F Ambient - 15A, 125/250 Vac | | | | | | | | | | |
| W/WW - Ammonia Service - 5A, 125/250 Vac, 6A, 30 Vdc | | | | | | | | | | |
| Capillary Line Length | | | | | | | | | | |
| Direct Mount | | | | | | | | | | |
| 00 - Direct Mount | | | | | | | | | | |
| Remote Mount - Capillary with Armor (Consult factory for custom or longer lengths) | | | | | | | | | | |
| 05 - 5' | | | | | 05 | | | | | |
| 10 - 10' | | | | | | | | | | |
| 15 - 15' | | | | | | | | | | |
| 20 - 20' | | | | | | | | | | |
| 25 - 25' | | | | | | | | | | |
| Thermal System Selection | | | | | | | | | | |
| Direct Mount | | | | | | | | | | |
| No entry required for direct mount | | | | | | | | | | |
| Remote Mount | | | | | | | | | | |
| A7 - SS Armor (STD.) | | | | | | A7 | | | | |
| Remote Mount Bulb Length Selection | | | | | | | | | | |
| Direct Mount | | | | | | | | | | |
| | S Dim. | U Dim. | | | | | | | | |
| 027 | 2¾" | | | | | | | | | |
| 040 | 4" | 2½" | | | | | | | | |
| 060 | 6" | 4½" | | | | | | | | |
| 090 | 9" | 7½" | | | | | | | | |
| 120 | 12" | 10½" | | | | | | | | |
| Remote Mount | | | | | | | | | | |
| 030 | 3" | 2½" | | | | | | 030 | | |
| Options (see Table 1 on page 3) (If choosing an option(s) must include an "X") | | | | | | | | | X__ | |
| NH - Tagging SS | | | | | | | | | NH | |
| Temperature Ranges (see temperature range table on page 3) | | | | | | | | | | |
| 150/260°F | | | | | | | | | 150/260F | |

P-Series Temperature Switches

TABLE 1 - OPTIONS

| Code | Description | Notes |
|------|--|--|
| CH | Chained cover | |
| FP | Fungus proof | |
| FS | Factory adjusted setpoint | Setpoint must be given as increasing or decreasing |
| C8 | CSA approved | |
| JL | ¾ to ½ reducing bushing | Conduit reducing bushing |
| K3 | Terminal blocks | |
| NH | Tagging SS | |
| PM | ¾" sealed conduit connection with 16" lead wires | |
| BX | ½ Male NPT bushing | Remote mount only - seals capillary to thermowell |

STANDARD TEMPERATURE RANGE SELECTION

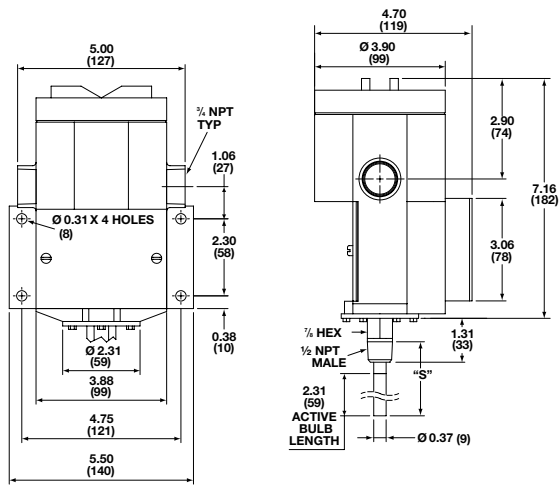
| Nominal Range | | Max. Temperature °F | Approximate Deadband Switch Element in °F | | | | | | | | |
|---------------|------------|------------------------|---|--------|-------|---------|--------|--------|-------|---------|--------|
| °F | °C | | PTA | PTS | | | | PTD | | | |
| | | | J,H | G | J,H | K,F | P | G,G | JJ,HH | KK,FF | PP |
| -40 to 60 | -40 to 16 | 400 | 8-90 | 2-10 | 9-18 | 1-2 | 1-5 | 2-10 | 9-18 | 1-2 | 1-5 |
| 0 to 100 | -20 to 40 | 400 | 30-90 | 2-15 | 10-30 | 1-3 | 1.5-7 | 2-15 | 10-30 | 1.5-3 | 1.5-7 |
| 75 to 205 | 20 to 95 | 400 | 34-120 | 2-17 | 10-34 | 1.5-3.5 | 1.5-8 | 2-17 | 10-34 | 1.5-3.5 | 1.5-8 |
| 150 to 260 | 65 to 125 | 400 | 25-100 | 2.5-12 | 9-25 | 1-2.5 | 1-7 | 2.5-12 | 9-25 | 1-2.5 | 1-7 |
| 235 to 375 | 110 to 190 | 500 | 35-130 | 2-18 | 10-35 | 1-4.5 | 1.5-8 | 2-18 | 10-35 | 1-3.5 | 1.5-8 |
| 350 to 525 | 175 to 275 | 700 | 40-165 | 3-25 | 15-40 | 2-3.5 | 2.5-11 | 3-25 | 15-40 | 2-4.5 | 2.5-11 |
| 500 to 750 | 260 to 400 | 900 | 50-200 | 20-36 | 36-60 | 5-10 | 6-21 | 20-36 | 36-60 | 5-10 | 6-21 |

P-Series Temperature Switches

DIMENSIONS in [] are millimeters

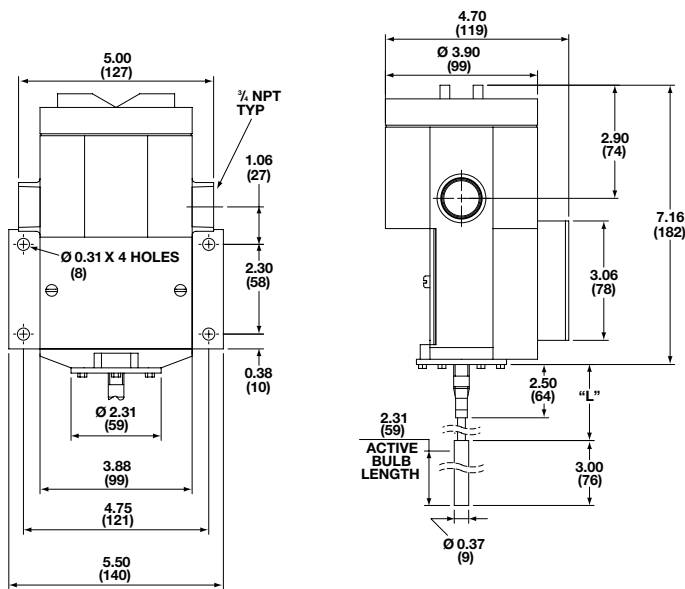
For reference only, consult Ashcroft for specific dimensional drawings

DIRECT MOUNT



| "S" Dimensions | |
|----------------|-------|
| 2 3/4" | [70] |
| 4" | [102] |
| 6" | [152] |
| 9" | [229] |
| 12" | [305] |

REMOTE MOUNT



| "G" Dimensions | |
|----------------|-------|
| 3" | [76] |
| 6" | [152] |
| 7 1/2" | [191] |
| 10 1/2" | [267] |
| 13 1/2" | [343] |