



119 Series

119 Series

PRESSURE, VACUUM, TEMPERATURE



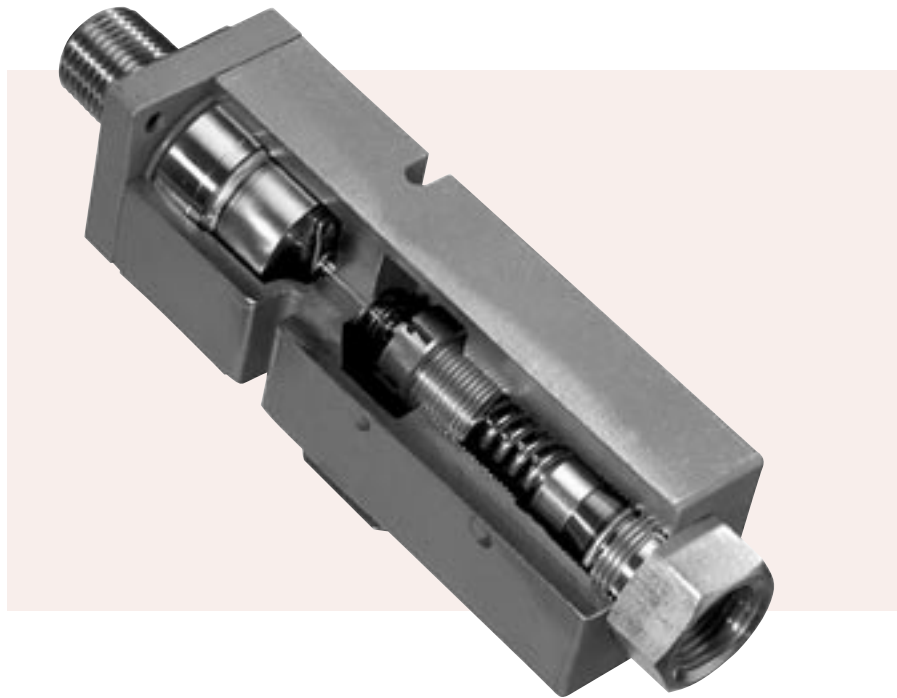
FEATURES

- **Stainless Steel Enclosure and Component Parts**
- **Hermetically Sealed Snap Switch, SPDT or DPDT Output**
- **Approved for Class I, II, III Divisions 1 and 2 Hazardous Location**
- **Adjustable Ranges:**
 - "WC ranges: 300 "wc vacuum to 250 "wc pressure
 - Pressure: 1 psi to 3500 psi (0,07 to 241 bar)
 - Temperature: -130 to 650 °F (-90 to 340 °C)



OVERVIEW

The pressure and temperature switches of the 119 Series offer the ultimate in corrosion resistance and safety. Its 316 stainless steel enclosure and wetted parts (model specific) enable the 119 to be installed directly on process lines containing reactive, corrosive, or flammable media. The dual barrier/3 chamber construction meets the intent of National Electrical Code (NEC) 501.5(f)3. Rugged, reliable and cost effective, the 119 series is an ideal choice for the most demanding applications; typically refineries, off-shore oil rigs and petrochemical plants.



FEATURES

- Dual barrier / 3 chamber design for sensor and electrical isolation
- All stainless steel construction
- Hermetically-sealed snap switch
- Welded stainless steel diaphragms
- Ultra-low pressure ranges
- Flush mount sensors

SPECIFICATIONS

| | |
|--------------------------------------|---|
| STORAGE TEMPERATURE | -65 to 160°F (-54 to 71°C) |
| OPERATING AMBIENT TEMPERATURE | -40 to 160°F (-40 to 71°C); except for models 520-525: 0 to 160°F (-17 to 71°C) Pressure models: set point typically shifts less than 1% of range for a 50°F (28°C) ambient temperature change; temperature models: set point typically shifts less than 3% of range for a 50°F (28°C) ambient temperature change |
| SET POINT REPEATABILITY | ± 1.5% of adjustable range; temperature models, models 520-535: ± 1% of adjustable range |
| SHOCK | Set point repeats after 15 Gs, 10 millisecond duration |
| VIBRATION | Set point repeats after 2.5 Gs, 5-500 Hz |
| ENCLOSURE | 316 stainless steel, 316 stainless steel nameplate |
| ENCLOSURE CLASSIFICATION | Designed to meet NEMA 4X and IP66 requirements with option M300 |
| SWITCH OUTPUT | H119, F119: One SPDT hermetically sealed. H119A, F119A: Two SPDT for DPDT action, hermetically sealed, calibrated to activate on increasing value. Option 1195 for decreasing value |
| ELECTRICAL RATINGS | 11 A 125/250 VAC resistive and 5 A inductive @ 28 VDC, 1A @ 48 VDC, 1/2 A @ 125 VDC; switch contacts gold flashed; 1 A 125 VAC. Note: loads greater will burn off gold flashing |
| ELECTRICAL CONNECTION | 1/2" NPT (male) with 18" leadwires |
| PRESSURE CONNECTION | 171-194, 484-494, 520-535: 1/2" NPT (female); models 358-376, 700-706: 1/4" NPT (female); models 560-564: 2" sanitary connection; models 565-567: 1 1/2" sanitary connection |
| WEIGHT | 3-8 lbs. Varies with model |
| BULB AND CAPILLARY | 6 feet 304 stainless steel |
| FILL | Non-toxic oil filled |
| TEMPERATURE DEADBAND | Typically 2% of range under laboratory conditions (70°F ambient circulating bath at a rate of 1/2°F per minute change) |



APPROVALS

Snap Switch Assembly: Class I, Divisions 1 & 2 Groups A, B, C, and D; Class II, Divisions 1 & 2, Groups E, F, and G; Class III
 UL listed, cUL Certified
 UL 894, file # E108283
 CSA C22.2 No. 14-25-30



119 Series: CENELEC flame proof compliance per EN 50014, EN 50018, EEx d IIC T6, ISSeP certificate #95C.103.1192x



CENELEC intrinsic safety compliance per EN 50014, EN 50020 EEx ia IIC T6 (M405 option only)
 DEMKO certificate #01E.0113749
 SAA Ex d II T6, IP66, Class I, Zone 1 DIP T6 IP66, Class II (available through UE Australia)
 CE Compliance to Low Voltage Directive (LVD)
 Compliance to NACE MR-0175 (standard on models 171-193, 483-493)

PRESSURE MODEL CHART

| Model | Adjustable Set Point Range | | Deadband | | Over Range Pressure Proof Pressure | | | |
|--|--|-------------------|-------------|----------------|------------------------------------|------|-----|-------|
| | Low end of range on fall; High end of range on rise | | "wc | mbar | psi | bar | psi | bar |
| H119 | | | | | | | | |
| Buna N diaphragm and O-ring and epoxy coated aluminum 1/2" NPT (female) pressure connection (Other material available, see page 8) | | | | | | | | |
| 520 | 300 Vac to 0 | -747,24 to 0 | 0.8 to 32.0 | 2,00 to 79,60 | 200 | 13,8 | 400 | 27,58 |
| 521 | 10 Vac to 10 | -24,91 to 24,91 | 0.4 to 2.4 | 1,00 to 5,96 | 200 | 13,8 | 400 | 27,58 |
| 522 | 50 Vac to 50 | -124,54 to 124,54 | 0.4 to 12.0 | 1,00 to 29,88 | 200 | 13,8 | 400 | 27,58 |
| 523 | 0.5 to 5 | 1,25 to 12,45 | 0.4 to 1.2 | 1,00 to 3,00 | 200 | 13,8 | 400 | 27,58 |
| 524 | 2.5 to 50 | 6,23 to 124,54 | 0.4 to 3.2 | 1,00 to 7,96 | 200 | 13,8 | 400 | 27,58 |
| 525 | 10 to 250 | 24,91 to 622,70 | 0.4 to 24.0 | 1,00 to 59,76 | 200 | 13,8 | 400 | 27,58 |
| Welded 316L stainless steel diaphragm and 1/2" NPT (female) pressure connection | | | | | | | | |
| 530 | 300 Vac to 0 | -747,24 to 0 | 0.8 to 60.0 | 2,00 to 149,60 | 50 | 3,45 | 100 | 6,9 |
| 531 | 10 Vac to 10 | -24,91 to 24,91 | 0.4 to 2.4 | 1,00 to 5,96 | 50 | 3,45 | 100 | 6,9 |
| 532 | 50 Vac to 50 | -124,54 to 124,54 | 0.4 to 12.0 | 1,00 to 29,88 | 50 | 3,45 | 100 | 6,9 |
| 533 | 0.5 to 5 | 1,25 to 12,45 | 0.4 to 1.2 | 1,00 to 3,00 | 50 | 3,45 | 100 | 6,9 |
| 534 | 2.5 to 50 | 6,23 to 124,54 | 0.4 to 3.2 | 1,00 to 7,96 | 50 | 3,45 | 100 | 6,9 |
| 535 | 10 to 250 | 24,91 to 622,70 | 0.4 to 40.0 | 1,00 to 99,60 | 50 | 3,45 | 100 | 6,9 |
| | psi | bar | psi | bar | psi | bar | psi | bar |
| Welded 316L stainless steel diaphragm and pressure connection; 2" sanitary connection | | | | | | | | |
| 560 | 1 to 15 | 0,07 to 1,03 | 0.3 to 3 | 0,03 to 0,21 | 200 | 13,8 | 300 | 20,69 |
| 561 | 2 to 25 | 0,14 to 1,72 | 0.3 to 4.5 | 0,03 to 0,30 | 200 | 13,8 | 300 | 20,69 |
| 562 | 2 to 50 | 0,14 to 3,45 | 0.3 to 7.5 | 0,03 to 0,51 | 200 | 13,8 | 300 | 20,69 |
| 563 | 4 to 100 | 0,28 to 6,90 | 0.3 to 12 | 0,03 to 0,84 | 200 | 13,8 | 300 | 20,69 |
| 564 | 8 to 200 | 0,56 to 13,79 | 0.3 to 15 | 0,03 to 1,02 | 200 | 13,8 | 300 | 20,69 |

| Model | Adjustable Set Point Range | | Deadband | | Over Range Pressure | | Proof Pressure | |
|--|----------------------------|---------------|-----------|---------------|---------------------|-----|----------------|-----|
| | psi | bar | psi | bar | psi | bar | psi | bar |
| Low end of range on fall; High end of range on rise | | | | | | | | |
| H119 | | | | | | | | |
| Welded 316L stainless steel diaphragm and pressure connection; 1½" sanitary connection | | | | | | | | |
| 565 | 5 to 30 | 0,34 to 2,60 | 3 to 15 | 0,21 to 1,02 | 1000 | 68 | 1500 | 103 |
| 566 | 10 to 100 | 0,69 to 6,90 | 3 to 36 | 0,21 to 2,49 | 1000 | 68 | 1500 | 103 |
| 567 | 15 to 300 | 1,03 to 20,60 | 9 to 66 | 0,63 to 4,59 | 1000 | 68 | 1500 | 103 |
| Welded 316L stainless steel diaphragm and 1/2" NPT (female) pressure connection, large 0.72" orifice for clean-out purposes | | | | | | | | |
| 171 | 1 to 20 | 0,07 to 1,38 | 0.1 to 2 | 0,007 to 0,14 | 500 | 34 | 1000 | 68 |
| 172 | 2 to 50 | 0,14 to 3,45 | 0.1 to 3 | 0,007 to 0,20 | 500 | 34 | 1000 | 68 |
| 173 | 4 to 100 | 0,28 to 6,90 | 0.1 to 5 | 0,007 to 0,35 | 500 | 34 | 1000 | 68 |
| 174 | 8 to 200 | 0,56 to 13,79 | 0.1 to 9 | 0,007 to 0,62 | 500 | 34 | 1000 | 68 |
| 316 stainless steel diaphragm (*optional Hastelloy® C, Monel® or Tantalum); Viton® GLT O-ring (optional Kalrez®, Silicone, Ethylene Propylene, Aflas®); 316 stainless steel 1/2" NPT (female) pressure connection (optional Hastelloy® B or C, or Monel®) (See "Optional Material"), large 0.72" orifice for clean-out purposes. Models 188 and 189 316L stainless steel pressure connection | | | | | | | | |
| 183 | 1 to 20 | 0,07 to 1,38 | 0.3 to 5 | 0,021 to 0,35 | 500 | 34 | 1000 | 68 |
| 184 | 2 to 50 | 0,14 to 3,45 | 0.3 to 7 | 0,021 to 0,48 | 500 | 34 | 1000 | 68 |
| 185 | 4 to 100 | 0,28 to 6,90 | 0.5 to 12 | 0,03 to 0,83 | 500 | 34 | 1000 | 68 |
| 186 | 8 to 200 | 0,56 to 13,79 | 0.5 to 17 | 0,03 to 1,17 | 500 | 34 | 1000 | 68 |
| 188 | 50 to 1000 | 3,45 to 68,95 | 30 to 300 | 2,07 to 20,69 | 2000 | 137 | 7000 | 482 |
| 189 | 250 to 3500 | 17,24 to 241 | 50 to 500 | 3,45 to 34,48 | 4000 | 275 | 7000 | 482 |
| 316L stainless steel diaphragm (optional Hastelloy® C, Monel® or Tantalum); Viton® GLT O-ring (optional Kalrez®, Silicone, Ethylene Propylene, Aflas®); 316 stainless steel 1/2" NPT (female) pressure connection, (optional Hastelloy® B or C, or Monel®), 0.06" orifice. Models 488 and 489 316L stainless steel pressure connection | | | | | | | | |
| 483 | 1 to 20 | 0,07 to 1,38 | 0.3 to 5 | 0,021 to 0,35 | 500 | 34 | 1000 | 68 |
| 484 | 2 to 50 | 0,14 to 3,45 | 0.3 to 7 | 0,021 to 0,48 | 500 | 34 | 1000 | 68 |
| 485 | 4 to 100 | 0,28 to 6,90 | 0.5 to 12 | 0,03 to 0,83 | 500 | 34 | 1000 | 68 |
| 486 | 8 to 200 | 0,56 to 13,79 | 0.5 to 17 | 0,03 to 1,17 | 500 | 34 | 1000 | 68 |
| 488 | 50 to 1000 | 3,45 to 68,95 | 30 to 300 | 2,07 to 20,69 | 2000 | 137 | 7000 | 482 |
| 489 | 250 to 3500 | 17,24 to 241 | 50 to 500 | 3,45 to 34,48 | 4000 | 275 | 7000 | 482 |

Note: Use of optional diaphragm materials for models 483-489 may increase deadband.

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 Kalrez® is a registered trademark of DuPont Dow Elastomers
 Aflas® is a registered trademark of Asahi Glass
 Viton® is a registered trademark of E.I. DuPont



PRESSURE MODEL CHART

| Model | Adjustable Set Point Range | | Deadband | | | Over Range Pressure | | Proof Pressure | |
|---|----------------------------|---------------|----------------------|--------------------|----------------------|---------------------|-----|----------------|-----|
| | psi | bar | Lower 75% range span | Top 25% range span | Lower 75% range span | psi | bar | psi | bar |
| H119 | | | | | | | | | |
| Welded 316 stainless steel diaphragm and 1/2" 316L stainless steel NPT (female) pressure connection, large 0.72" orifice for clean-out purposes | | | | | | | | | |
| 190 | 5 to 30 | 0,34 to 2,07 | 1 to 5 | 7 max | 0,07 to 0,48 | 1500 | 103 | 2500 | 172 |
| 191 | 10 to 100 | 0,69 to 6,90 | 1 to 15 | 25 max | 0,07 to 1,72 | 1500 | 103 | 2500 | 172 |
| 192 | 15 to 300 | 1,03 to 20,69 | 3 to 25 | 35 max | 0,21 to 2,41 | 1500 | 103 | 2500 | 172 |
| 193 | 20 to 500 | 1,38 to 34,48 | 4 to 35 | 60 max | 0,28 to 4,2 | 1500 | 103 | 2500 | 172 |
| 194 | 80 to 1700 | 5,60 to 117 | 10 to 150 | 200 max | 0,69 to 13,79 | 2000 | 138 | 2500 | 172 |
| Welded 316 stainless steel diaphragm and 1/2" 316L stainless steel NPT (female) pressure connection, 0.06" orifice | | | | | | | | | |
| 490 | 5 to 30 | 0,34 to 2,07 | 1 to 5 | 7 max | 0,07 to 0,48 | 1500 | 103 | 2500 | 172 |
| 491 | 10 to 100 | 0,69 to 6,90 | 1 to 15 | 25 max | 0,07 to 1,72 | 1500 | 103 | 2500 | 172 |
| 492 | 15 to 300 | 1,03 to 20,69 | 3 to 25 | 35 max | 0,21 to 2,41 | 1500 | 103 | 2500 | 172 |
| 493 | 20 to 500 | 1,38 to 34,48 | 4 to 35 | 60 max | 0,28 to 4,2 | 1500 | 103 | 2500 | 172 |
| 494 | 80 to 1700 | 5,60 to 117 | 10 to 150 | 200 max | 0,69 to 13,79 | 2000 | 138 | 2500 | 172 |
| Welded 316 stainless steel bellows and 1/4" 316L stainless steel NPT (female) pressure connection | | | | | | | | | |
| 358 | 15 to 200 | 1,03 to 13,79 | 6 to 20 | 0,42 to 1,38 | | 200 | | 800 | 55 |
| 361 | 20 to 300 | 1,38 to 20,69 | 8 to 22 | 0,55 to 1,52 | | 300 | | 800 | 55 |
| 376 | 25 to 500 | 1,72 to 34,48 | 10 to 28 | 0,69 to 1,93 | | 500 | | 800 | 55 |
| Viton® diaphragm and O-ring and 1/4" 316L stainless steel NPT (female) pressure connection | | | | | | | | | |
| 700 | 3 to 20 | 0,21 to 1,38 | 0.5 to 4 | 0,03 to 0,21 | | 500 | 34 | 1000 | 68 |
| 702 | 3 to 100 | 0,21 to 6,90 | 1 to 6 | 0,07 to 0,42 | | 500 | 34 | 1000 | 68 |
| 704 | 15 to 500 | 1,03 to 34,48 | 4 to 30 | 0,28 to 2,07 | | 1000 | 68 | 2500 | 172 |
| 706 | 100 to 1700 | 6,90 to 117 | 4 to 80 | 0,28 to 5,51 | | 2000 | 138 | 2500 | 172 |

Deadband Note: H119 models 190-194, 490-494 are expressed as the lower 75% and top 25% of the range span because of the operating characteristics of the welded stainless steel diaphragm sensor.

| Model | Adjustable Set Point Range | | Deadband | | Over Range Pressure | | Proof Pressure | |
|---|--|---------------|-----------|---------------|---------------------|------|----------------|-------|
| | Low end of range on fall; High end of range on rise | | | | | | | |
| | psi | mbar | psi | mbar | psi | bar | psi | bar |
| H119A | | | | | | | | |
| Welded 316L stainless steel diaphragm and pressure connection; 2" sanitary connection | | | | | | | | |
| 560 | 1 to 15 | 0,07 to 1,03 | 0.3 to 4 | 0,03 to 0,21 | 200 | 13,8 | 300 | 20,67 |
| 561 | 2 to 25 | 0,14 to 1,72 | 0.3 to 6 | 0,03 to 0,30 | 200 | 13,8 | 300 | 20,67 |
| 562 | 2 to 50 | 0,14 to 3,45 | 0.3 to 10 | 0,03 to 0,51 | 200 | 13,8 | 300 | 20,67 |
| 563 | 4 to 100 | 0,28 to 6,90 | 0.3 to 16 | 0,03 to 0,84 | 200 | 13,8 | 300 | 20,67 |
| 564 | 8 to 200 | 0,56 to 13,79 | 0.3 to 20 | 0,03 to 1,02 | 200 | 13,8 | 300 | 20,67 |
| Welded 316L stainless steel diaphragm and pressure connection; 1 1/2" sanitary connection | | | | | | | | |
| 565 | 5 to 30 | 0,34 to 2,60 | 3 to 20 | 0,21 to 1,02 | 1000 | 68 | 1500 | 103 |
| 566 | 10 to 100 | 0,69 to 6,90 | 3 to 48 | 0,21 to 2,49 | 1000 | 68 | 1500 | 103 |
| 567 | 15 to 300 | 1,03 to 20,60 | 9 to 88 | 0,63 to 4,59 | 1000 | 68 | 1500 | 103 |
| Welded 316L stainless steel diaphragm and 316 stainless steel 1/2" NPT (female) pressure connection, large 0.72" orifice for clean-out purposes | | | | | | | | |
| 171 | 1 to 20 | 0,07 to 1,38 | 0.1 to 2 | 0,007 to 0,14 | 500 | 34 | 1000 | 68 |
| 172 | 2 to 50 | 0,14 to 3,45 | 0.1 to 3 | 0,007 to 0,20 | 500 | 34 | 1000 | 68 |
| 173 | 4 to 100 | 0,28 to 6,90 | 0.1 to 5 | 0,007 to 0,35 | 500 | 34 | 1000 | 68 |
| 174 | 8 to 200 | 0,56 to 13,79 | 0.1 to 9 | 0,007 to 0,62 | 500 | 34 | 1000 | 68 |
| Welded 316 stainless steel diaphragm and 1/2" NPT (female) pressure connection, large 0.72" orifice for clean-out purposes | | | | | | | | |
| 190 | 5 to 30 | 0,34 to 2,07 | 1 to 7 | 0,07 to 0,48 | 1500 | 103 | 2500 | 172 |
| 191 | 10 to 100 | 0,69 to 6,90 | 1 to 25 | 0,07 to 1,72 | 1500 | 103 | 2500 | 172 |
| 192 | 15 to 300 | 1,03 to 20,69 | 5 to 60 | 0,35 to 4,13 | 1500 | 103 | 2500 | 172 |
| 193 | 20 to 500 | 1,38 to 34,48 | 10 to 125 | 0,69 to 8,61 | 1500 | 103 | 2500 | 172 |
| 194 | 80 to 1700 | 5,60 to 117 | 25 to 250 | 1,72 to 17,20 | 2000 | 138 | 2500 | 172 |
| Welded 316 stainless steel diaphragm and 1/2" NPT (female) pressure connection, 0.06" orifice | | | | | | | | |
| 490 | 5 to 30 | 0,34 to 2,07 | 1 to 7 | 0,07 to 0,48 | 1500 | 103 | 2500 | 172 |
| 491 | 10 to 100 | 0,69 to 6,90 | 1 to 25 | 0,07 to 1,72 | 1500 | 103 | 2500 | 172 |
| 492 | 15 to 300 | 1,03 to 20,69 | 5 to 60 | 0,35 to 4,13 | 1500 | 103 | 2500 | 172 |
| 493 | 20 to 500 | 1,38 to 34,48 | 10 to 125 | 0,69 to 8,61 | 1500 | 103 | 2500 | 172 |
| 494 | 80 to 1700 | 5,60 to 117 | 25 to 250 | 1,72 to 17,20 | 2000 | 138 | 2500 | 172 |

TEMPERATURE MODEL CHART

| Model | Adjustable Range | | Max. Temp. | | Bulb Size OD x Length |
|-------------------|------------------|-----------|------------|-----|--------------------------|
| | °F | °C | °F | °C | |
| F119/F119A | | | | | |
| H20BS* | -130 to 120 | -90 to 50 | 170 | 75 | 3/8 x 4 1/2" |
| H21BS | 0 to 150 | -17 to 65 | 200 | 93 | 3/8 x 6 7/8" |
| H22BS | 50 to 300 | 10 to 150 | 350 | 176 | 3/8 x 4 7/8" |
| H23BS | 150 to 650 | 65 to 340 | 700 | 370 | 3/8 x 3 5/8" |

*Model not available with H119A



HOW TO ORDER

BUILDING A PART NUMBER

Select a type

Refer to the "Type" section below.

Determine type number based on switch output, enclosure, adjustment and reference.

Fill in the type portion of your part number with the corresponding number.

Select a Model

Refer to the "Model Charts".

Determine model or stock number based on adjustable range, deadband and proof pressure.

Fill in the model portion of your part number with the corresponding number.

Select an Option

Refer to the

"Options" section.

Determine option number based on switch output, optional materials or other product enhancements.

Fill in the option portion of your part number with the corresponding number. Leave "option" portion blank if no options are needed. FOR MULTIPLE OPTIONS: Call United Electric Controls.

TYPE

Pressure

DESCRIPTION

Type H119 - One SPDT output; stainless steel enclosure; internal adjustment with no reference scale

Type H119A - Two SPDT outputs **for DPDT**; stainless steel enclosure; internal adjustment with no reference scale

Temperature

Type F119 - Bulb and capillary; **One** SPDT output; stainless steel enclosure; internal adjustment with no reference scale

Type F119A - Bulb and capillary; **Two** SPDT outputs **for DPDT**; stainless steel enclosure; internal adjustment with no reference scale

switch and other Options

| | |
|----------|--|
| 1195 | Hermetically sealed, DPDT, 11 A 125/250 VAC; products set on falling pressure or temperature due to inherent separation of circuits on rising pressure or temperature; AVAILABLE ON H119A, F119A |
| M201 | Factory set one switch |
| M276 | Range indicated on nameplate in bars/mbars. NOT AVAILABLE ON TEMPERATURE VERSIONS |
| M278 | Range indicated on nameplate in Kg/cm ² . NOT AVAILABLE ON TEMPERATURE VERSIONS |
| M300 | NEMA 4X construction (no CENELEC approval) |
| M311 | NEMA 4X construction with CENELEC approval (includes venting of adjustment chamber, 1/8" NPT (female). Allows media to be vented to a remote reservoir in the event of a sensor rupture. Piping to this vent must be properly routed to prevent moisture from entering adjustment chamber) |
| M405 | Intrinsic safety approval |
| M441 | Metric thread (M20) on electrical connection |
| M444 | Paper ID tag |
| M446 | Stainless steel ID tag & wire attachment |
| M513 | Explosion proof junction box, pre-wired, with (2) 3/4" electrical connections. (Junction box does not meet NEMA 4X requirements.) |
| M550 | Oxygen service cleaning; internal construction may change |
| 6361-704 | Surface Mounting Hardware |

SENSOR OPTION MATERIALS

AVAILABLE MODELS 520-525:

| | |
|-------|---|
| XC001 | Aluminum pressure connection, Viton® diaphragm, Viton® O-ring |
| XC002 | Aluminum pressure connection, Kapton® diaphragm, Buna-N O-ring |
| XC003 | Aluminum pressure connection, Kapton® diaphragm, Viton® O-ring |
| XC004 | 316L Stainless steel pressure connection, 316L Stainless steel diaphragm, Viton® O-ring (Over range pressure is limited to 100 psi) XC005 |
| 316L | stainless steel pressure connection, Viton® diaphragm, Viton® O-ring |
| XC006 | 316L stainless steel pressure connection, Kapton® diaphragm, Viton® O-ring |
| XC007 | 316L stainless steel pressure connection, Teflon® diaphragm, Viton® O-ring |

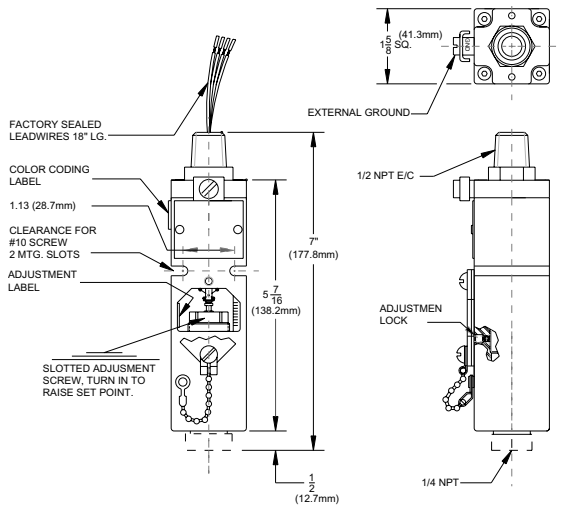
AVAILABLE MODELS 183-189, 483-489:

| | |
|-------|---------------------------------|
| XD002 | Hastelloy C diaphragm |
| XD003 | Monel diaphragm |
| XD004 | Tantalum diaphragm |
| XP111 | Hastelloy B pressure connection |
| XP112 | Hastelloy C pressure connection |
| XP113 | Monel pressure connection |
| XR211 | Kalrez O-ring |
| XR212 | Silicone O-ring |
| XR213 | EPR O-ring |
| XR214 | Aflas O-ring |

DIMENSIONAL DRAWINGS

Internal Set Point Adjustment

Types H119, H119A, F119, F119A



All dimensions stated in inches (millimeters)

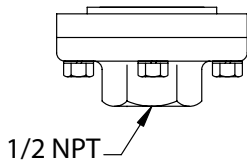
Dimension A

| Models | Inches | mm | NPT |
|----------|--------|-------|-------------------------|
| 171-174 | 7.94 | 201,7 | 1/2 |
| 183-186 | 7.94 | 201,7 | 1/2 |
| 188, 189 | 7.16 | 182,6 | 1/2 |
| 190-194 | 7.00 | 179,9 | 1/2 |
| 358-376 | 7.69 | 195,4 | 1/4 |
| 483-486 | 7.94 | 201,7 | 1/2 |
| 488, 489 | 7.16 | 182,6 | 1/2 |
| 490-494 | 7.00 | 179,9 | 1/2 |
| 520-525 | 8.81 | 223,8 | 1/2 |
| 530-535 | 8.38 | 212,9 | 1/2 |
| 560-564 | 7.06 | 179,4 | 2" Sanitary fitting |
| 565-567 | 7.06 | 179,4 | 1 1/2" Sanitary fitting |
| 700-706 | 6.94 | 176,3 | 1/4 |

| Models | Material Type |
|--------|---------------|
|--------|---------------|

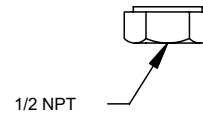
| Temperature | Material Type | Temperature |
|---------------|---------------------|------------------|
| H21 BS-H23 BS | 304 Stainless Steel | Bulb & Capillary |

Pressure Sensors

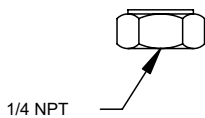


Models 183-186, 483-486

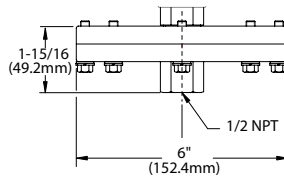
Models 171-174



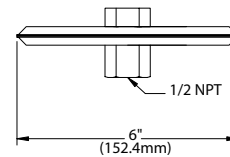
Models 188-194, 488-494



Models 358-376, 700-706



Models 520-525



Models 530-535

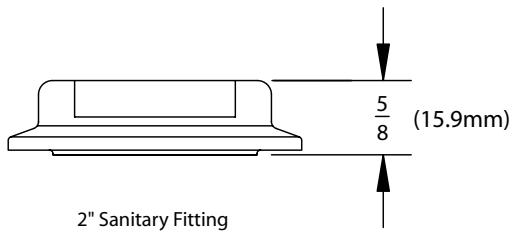


119 Series

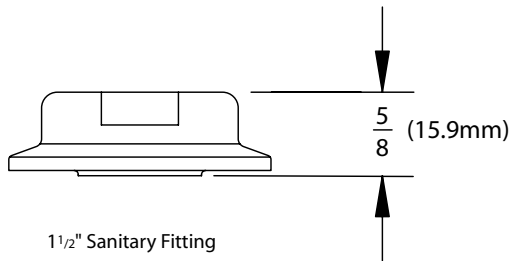
119 Series

Pressure Sensors (continued)

Models 560-564

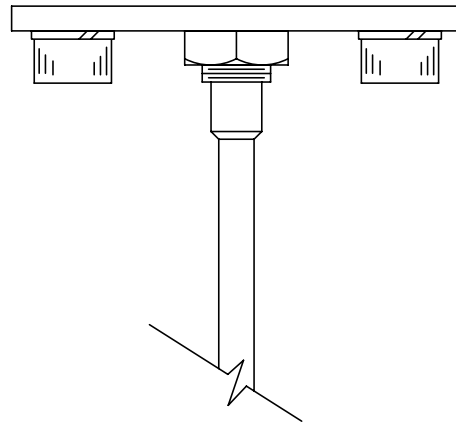


Models 565-567



Temperature Sensors

Models H21BS-H23BS



RECOMMENDED PRACTICES AND WARNINGS

United Electric Controls Company recommends careful consideration of the following factors when specifying and installing UE pressure and temperature units. Before installing a unit, the Installation and Maintenance instructions provided with unit must be read and understood.

- To avoid damaging unit, proof pressure and maximum temperature limits stated in literature and on nameplates must never be exceeded, even by surges in the system. Operation of the unit up to maximum temperature is acceptable on a limited basis (i.e., start-up, testing) but continuous operation must be restricted to the designated adjustable range. Excessive cycling at maximum temperature limits could reduce sensor life.
- A back-up unit is necessary for applications where damage to a primary unit could endanger life, limb or property. A high or low limit switch is necessary for applications where a dangerous runaway condition could result.
- The adjustable range must be selected so that incorrect, inadvertent or malicious setting at any range point cannot result in an unsafe system condition.
- Install unit where shock, vibration and ambient temperature fluctuations will not damage unit or affect operation. Orient unit so that moisture does not enter the enclosure via the electrical connection. When appropriate, this entry point should be sealed to prevent moisture entry.
- Unit must not be altered or modified after shipment. Consult UE if modification is necessary.
- Monitor operation to observe warning signs of possible damage to unit, such as drift in set point or faulty display. Check unit immediately.
- Preventative maintenance and periodic testing is necessary for critical applications where damage could endanger property or personnel.
- For all applications, a factory set unit should be tested before use.
- Electrical ratings stated in literature and on nameplate must not be exceeded. Overload on a switch can cause damage, even on the first cycle. Wire unit according to local and national electrical codes, using wire size recommended in installation sheet.
- Use only factory authorized replacement parts and procedures.
- Do not mount unit in ambient temp. exceeding published limits.

LIMITED WARRANTY OF REPAIR AND REPLACEMENT

Seller warrants that the product hereby purchased is, upon delivery, free from defects in material and workmanship and that any such product which is found to be defective in such workmanship or material will be repaired or replaced by Seller (F.O.B. UE Watertown); provided, however, that this warranty applies only to equipment found to be so defective within a period of 18 months from the date of manufacture by the Seller (36 months for the Spectra 12 and One Series products). Seller shall not be obligated under this warranty for alleged defects which examination discloses are due to tampering, misuse, neglect, improper storage, and in any case where products are disassembled by anyone other than authorized Seller's representatives.

EXCEPT FOR THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED ABOVE, SELLER DISCLAIMS ALL WARRANTIES WHATSOEVER WITH RESPECT TO THE PRODUCT, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

LIABILITY LIMITATION

SELLER'S LIABILITY TO BUYER FOR ANY LOSS OR CLAIM, INCLUDING LIABILITY INCURRED IN CONNECTION WITH (I) BREACH OF ANY WARRANTY WHATSOEVER EXPRESSED OR IMPLIED, (II) A BREACH OF CONTRACT, (III) A NEGLIGENT ACT OR ACTS (OR NEGLIGENT FAILURE TO ACT) COMMITTED BY SELLER, OR (IV) AN ACT FOR WHICH STRICT LIABILITY WILL BE IMPUTED TO SELLER, IS LIMITED TO THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED HEREIN. IN NO EVENT SHALL THE SELLER BE LIABLE FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR OTHER DAMAGES OF A LIKE GENERAL NATURE, INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS OR PRODUCTION, OR LOSS OR EXPENSES OF ANY NATURE INCURRED BY THE BUYER OR ANY THIRD PARTY.

UE specifications subject to change without notice.

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