



# 100 Series

Weatherproof pressure, vacuum,  
differential pressure and temperature switches



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# Glossary of Terms

|                                   |  |
|-----------------------------------|--|
| <b>Adjustable Set Point Range</b> | The upper and lower limits between which the set point can be adjusted.<br>Low end of range on fall: set points on decreasing pressure or temperature at the lower end of range may be achieved; deadband will affect maximum set point (upper range) on fall.<br>High end of range on rise: set points on increasing pressure or temperature at the upper end of range may be achieved; deadband will affect minimum set point (lower range) on rise. |
| <b>Over Range Pressure</b>        | The maximum pressure that may be applied continuously without causing damage and maintaining set point repeatability   |
| <b>Proof Pressure</b>             | The maximum pressure to which a pressure sensor may be occasionally subjected which causes no permanent damage. The unit may require calibration (i.e., start-up, testing).  |
| <b>Working pressure range</b>     | The pressure range in which the differential pressure switch can be safely operated and still maintain set point provided the difference in pressure between the low and high sides does not exceed the designated adjustable range.   |

Use the follow pages to determine the best switch for your applications, then build your part number.

## Building a Part Number

EXAMPLE: **H100-186-0140**

Type: Switch type from table below: \_\_\_\_\_

| Type                  |  |
|-----------------------|--|
| Pressure              |  |
| <b>H100</b>           | One SPDT output; epoxy coated enclosure; internal adjustment with "High-Low" reference scale |
| Differential Pressure |  |
| <b>H100K</b>          | One SPDT output; epoxy coated enclosure; internal adjustment with "High-Low" reference scale |
| Temperature           |  |
| <b>B100</b>           | Immersion stem; one SPDT output; internal adjustment with reference dial                     |
| <b>C100</b>           | Immersion stem; one SPDT output; internal adjustment with no reference                       |
| <b>E100</b>           | Bulb and capillary; one SPDT output; internal adjustment with reference dial                 |
| <b>F100</b>           | Bulb and capillary; one SPDT output; internal adjustment with no reference                   |

Model: Select the range and materials best for your application \_\_\_\_\_

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Options: Select any of available options for your switch \_\_\_\_\_

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# Specifications

Electrical Ratings without optional switches <sup>[1]</sup>

|                          | Pressure & temperature   | Specials (pressure)         | Specials (temperature)  |
|--------------------------|--|-----------------------------|-------------------------|
| <b>Models</b>            | All Standard catalog models  | 15623, 15731 - 15737, 15884 | B100-13546 & E100-13545 |
| <b>Electrical rating</b> | 15A @ 125/250/480 VAC Resistive; 2A Res. & 1A Inductive @ 24-30 VDC; 0.5A Res. & 0.03A Inductive @ 125 VDC | 20A @ 125/250/480 VAC       | 22A @ 125/250/480 VAC   |

[1] DC ratings based on experience - Consult UE for further information. VDC ratings are not listed on nameplates.

## Set point repeatability (% of full scale)

|                                    |  |        |
|------------------------------------|--|--------|
| <b>Temperature</b>                 | All models   | ± 1%   |
| <b>Pressure &amp; Differential</b> | Models: 15623, 15731-15737, 171-174, 218, 270-376, 520-535, 540-543, 700-706 | ± 1%   |
|                                    | Models: 190-194, 183-189, 483-494, 544-548, 565-567, 610-680, 15884          | ± 1.5% |

## Temperature Limits

|   | Ambient <sup>[2]</sup>       | Storage                      |
|---|------------------------------|------------------------------|
| <b>Model</b>                                  |                              |                              |
| Models 520-525, 540-548, 700-706, 15731-15736 | 0 to 160 °F (-17 to 71 °C)   | -65 to 160 °F (-54 to 71 °C) |
| All others                                    | -40 to 160 °F (-40 to 71 °C) | -65 to 160 °F (-54 to 71 °C) |

Set point typically shifts less than 1% of range for a 50 °F (28 °C) ambient temperature change; less than 2% for Types E121 & E122.

[2] Option may affect ratings, see option

|   |   |                   |                |                                 |                |
|---|---|-------------------|----------------|---------------------------------|----------------|
| <b>Shock</b>                                | Set point repeats after 15 G, 10 millisecond duration   |                   |                |                                 |                |
| <b>Vibration</b>                            | Set point repeats after 2.5 G, 5-500 Hz   |                   |                |                                 |                |
| <b>Enclosure</b>                            | Die cast aluminum, epoxy powder coated, gasketed, captive cover screws  |                   |                |                                 |                |
| <b>Enclosure classification</b>             | Certified to enclosure type 4X.   |                   |                |                                 |                |
| <b>Switch Output</b>                        | One SPDT snap action switch; switch may be wired “normally open” or “normally closed”.  |                   |                |                                 |                |
| <b>Electrical connection</b>                | 1/2” NPT (female); Two 7/8” diameter knockouts  |                   |                |                                 |                |
| <b>Deadband</b>                             | Refer to model charts for details   |                   |                |                                 |                |
| <b>Alternate materials for wetted parts</b> | The materials listed below are available on some switch models as an alternate material for wetted parts. This change may affect the temperature limits of the 100 series switches. Please consult with United Electric when selecting these materials. |                   |                |                                 |                |
|   | <b>Aflas®</b>   | <b>Buna-N</b>     | <b>Kalrez®</b> | <b>Phosphor Bronze</b>          | <b>Teflon®</b> |
|   | <b>Aluminum</b>   | <b>EPDM/EPR</b>   | <b>Kapton®</b> | <b>Polyether / Polyurethane</b> | <b>Viton®</b>  |
|   | <b>Brass</b>  | <b>Hastelloy®</b> | <b>Monel®</b>  | <b>Stainless Steel</b>          |                |

All temperature sensors use non-toxic oil fill.

## Approx. Weight (lbs.)

|                                     |   |         |
|-------------------------------------|---|---------|
| <b>Pressure Models</b>              | 190-194, 490-494, 188-189, 488-489, 218-230, 270-274, 358-376, 700-706, 680, 5731-15736 | 2 lbs   |
|                                     | 171-174, 471-474, 565-567, 610-616, 15884, 15623  | 2.5 lbs |
|                                     | 183-186, 483-486  | 3.5 lbs |
|                                     | 520-525, 530-535, 15737   | 6 lbs   |
| <b>Differential Pressure Models</b> | 540-548   | 6 lbs   |
| <b>Local Temperature</b>            | B100 & C100   | 2.5 lbs |
| <b>Remote Temperature</b>           | F100 & E100   | 3 lbs   |

# H100 Series

Vacuum and Ultra Low Pressure Models (Adjustable Range Vacuum to 10 psi)

| Adjustable Set Point<br>("wc) | PRESSURE   |            |       | PROCESS CONNECTION       |         |         |              | Model                      |
|-------------------------------|------------|------------|-------|--------------------------|---------|---------|--------------|----------------------------|
|                               | DEADBAND   | Over Range | Proof | Wetted Material          | Thread  | Orifice | Sensor Style |                            |
|                               | ("wc)      | (psi)      | (psi) |                          | NPT (F) | Inches  |              |                            |
| <b>300 Vac to 0</b>           | 0.2 to 8   | 100        | 100   | Buna-N; Aluminum         | 1/2"    | 0.62"   | E            | <b>520</b>                 |
| <b>300 Vac to 0</b>           | 0.2 to 15  | 50         | 100   | 316L SS                  | 1/2"    | 0.72"   | F            | <b>530</b>                 |
| <b>10 Vac to 10</b>           | 0.1 to 0.6 | 100        | 100   | Buna-N; Aluminum         | 1/2"    | 0.62"   | E            | <b>521</b>                 |
| <b>10 Vac to 10</b>           | 0.1 to 0.6 | 50         | 100   | 316L SS                  | 1/2"    | 0.72"   | F            | <b>531</b>                 |
| <b>50 Vac to 50</b>           | 0.1 to 3   | 100        | 100   | Buna-N; Aluminum         | 1/2"    | 0.62"   | E            | <b>522</b>                 |
| <b>50 Vac to 50</b>           | 0.1 to 3   | 50         | 100   | 316L SS                  | 1/2"    | 0.72"   | F            | <b>532</b>                 |
| <b>50 Vac to 50</b>           | 0.5 to 10  | 100        | 100   | Buna-N; Aluminum         | 1/2"    | 0.62"   | E            | <b>15737<sup>[1]</sup></b> |
| <b>0.5 to 5</b>               | 0.1 to 0.3 | 100        | 100   | Buna-N; Aluminum         | 1/2"    | 0.62"   | E            | <b>523</b>                 |
| <b>0.5 to 5</b>               | 0.1 to 0.3 | 50         | 100   | 316L SS                  | 1/2"    | 0.72"   | F            | <b>533</b>                 |
| <b>2.5 to 50</b>              | 0.1 to 0.8 | 100        | 100   | Buna-N; Aluminum         | 1/2"    | 0.62"   | E            | <b>524</b>                 |
| <b>2.5 to 50</b>              | 0.1 to 0.8 | 50         | 100   | 316L SS                  | 1/2"    | 0.72"   | F            | <b>534</b>                 |
| <b>10 to 250</b>              | 0.1 to 6   | 100        | 100   | Buna-N; Aluminum         | 1/2"    | 0.62"   | E            | <b>525</b>                 |
| <b>10 to 250</b>              | 0.1 to 10  | 50         | 100   | 316L SS                  | 1/2"    | 0.72"   | F            | <b>535</b>                 |
| <b>30" Hg Vac to 0</b>        | 1 to 2"Hg  | 3          | 30    | Ph. Bronze; Ni pl. Brass | 1/4"    | 0.06"   | D            | <b>218</b>                 |

[1] Models that include adjustable deadband switch.

## Pressure Models (up to 100 psi)

| Adjustable Set Point<br>(psi) | PRESSURE   |            |       | PROCESS CONNECTION   |                          |         |              | Model                      |
|-------------------------------|------------|------------|-------|----------------------|--------------------------|---------|--------------|----------------------------|
|                               | DEADBAND   | Over Range | Proof | Wetted Material      | Thread                   | Orifice | Sensor Style |                            |
|                               | ("psi)     | (psi)      | (psi) |                      | NPT (F)                  | Inches  |              |                            |
| <b>1 to 20</b>                | 0.3 to 2.5 | 500        | 1000  | 316 SS; Viton        | 1/2"                     | 0.72"   | B            | <b>183</b>                 |
| <b>1 to 20</b>                | 0.3 to 2.5 | 500        | 1000  | 316 SS; Viton        | 1/2"                     | 0.06"   | B            | <b>483</b>                 |
| <b>1 to 20</b>                | 0.1 to 1   | 500        | 1000  | 316L SS              | 1/2"                     | 0.72"   | A            | <b>171</b>                 |
| <b>1.5 to 30</b>              | 1 to 2     | 500        | 600   | Buna-N; Ni pl. Brass | 1/4"                     | 0.06"   | H            | <b>701</b>                 |
| <b>3 to 30</b>                | 1.5 to 5   | 500        | 600   | Buna-N; Ni pl. Brass | 1/4"                     | 0.06"   | H            | <b>15731<sup>[1]</sup></b> |
| <b>5 to 30</b>                | 1 to 6     | 1500       | 2500  | 316 SS               | 1/2"                     | 0.70"   | C            | <b>190</b>                 |
| <b>5 to 30</b>                | 1 to 6     | 1500       | 2500  | 316 SS               | 1/2"                     | 0.06"   | C            | <b>490</b>                 |
| <b>5 to 30</b>                | 1 to 5     | 1000       | 1500  | 316L SS              | 1.5" sanitary connection |         | G            | <b>565</b>                 |
| <b>2 to 50</b>                | 0.3 to 3   | 500        | 1000  | 316 SS; Viton        | 1/2"                     | 0.72"   | B            | <b>184</b>                 |
| <b>2 to 50</b>                | 0.3 to 3   | 500        | 1000  | 316 SS; Viton        | 1/2"                     | 0.06"   | B            | <b>484</b>                 |
| <b>2 to 50</b>                | 0.1 to 1.5 | 500        | 1000  | 316L SS              | 1/2"                     | 0.72"   | A            | <b>172</b>                 |
| <b>3 to 100</b>               | 1 to 4     | 500        | 600   | Buna-N; Ni pl. Brass | 1/4"                     | 0.06"   | H            | <b>702</b>                 |
| <b>5 to 100</b>               | 3 to 9     | 500        | 600   | Buna-N; Ni pl. Brass | 1/4"                     | 0.06"   | H            | <b>15732<sup>[1]</sup></b> |
| <b>4 to 100</b>               | 0.5 to 6   | 500        | 1000  | 316 SS; Viton        | 1/2"                     | 0.72"   | B            | <b>185</b>                 |
| <b>4 to 100</b>               | 0.5 to 6   | 500        | 1000  | 316 SS; Viton        | 1/2"                     | 0.06"   | B            | <b>485</b>                 |
| <b>10 to 100</b>              | 1 to 15    | 1500       | 2500  | 316 SS               | 1/2"                     | 0.70"   | C            | <b>191</b>                 |
| <b>10 to 100</b>              | 1 to 15    | 1500       | 2500  | 316 SS               | 1/2"                     | 0.06"   | C            | <b>491</b>                 |
| <b>4 to 100</b>               | 0.1 to 2.5 | 500        | 1000  | 316L SS              | 1/2"                     | 0.72"   | A            | <b>173</b>                 |
| <b>10 to 100</b>              | 1 to 12    | 1000       | 1500  | 316L SS              | 1.5" sanitary connection |         | G            | <b>566</b>                 |

[1] Models that include adjustable deadband switch.

# H100 Series

## Pressure Models (up to 500 psi)

| Adjustable Set Point<br>(psi) | PRESSURE          |                     |                | PROCESS CONNECTION       |                          |                   |              | Model                |
|-------------------------------|-------------------|---------------------|----------------|--------------------------|--------------------------|-------------------|--------------|----------------------|
|                               | DEADBAND<br>(psi) | Over Range<br>(psi) | Proof<br>(psi) | Wetted Material          | Thread<br>NPT (F)        | Orifice<br>Inches | Sensor Style |                      |
| 8 to 200                      | 1 to 11           | 500                 | 1000           | 316 SS; Viton            | 1/2"                     | 0.72"             | B            | 186                  |
| 8 to 200                      | 1 to 11           | 500                 | 1000           | 316 SS; Viton            | 1/2"                     | 0.06"             | B            | 486                  |
| 8 to 200                      | 0.1 to 3.5        | 500                 | 1000           | 316L SS                  | 1/2"                     | 0.72"             | A            | 174                  |
| 4 to 200                      | 1 to 8            | 200                 | 250            | Ph. Bronze; Ni pl. Brass | 1/4"                     | 0.06"             | D            | 270                  |
| 15 to 200                     | 1 to 6            | 200                 | 800            | 316L SS                  | 1/4"                     | 0.09"             | D            | 358                  |
| 20 to 200                     | 12 to 26          | 500                 | 1000           | 316 SS; Viton            | 1/4"                     | 0.06"             | H            | 15623 <sup>[1]</sup> |
| 9 to 300                      | 1 to 5            | 500                 | 600            | Buna-N; Ni pl. Brass     | 1/4"                     | 0.06"             | H            | 703                  |
| 9 to 300                      | 4 to 16           | 500                 | 600            | Buna-N; Ni pl. Brass     | 1/4"                     | 0.06"             | H            | 15733 <sup>[1]</sup> |
| 15 to 300                     | 3 to 25           | 1500                | 2500           | 316 SS                   | 1/2"                     | 0.70"             | C            | 192                  |
| 15 to 300                     | 3 to 25           | 1500                | 2500           | 316 SS                   | 1/2"                     | 0.06"             | C            | 492                  |
| 15 to 300                     | 3 to 22           | 1000                | 1500           | 316L SS                  | 1.5" sanitary connection |                   | G            | 567                  |
| 20 to 300                     | 1 to 7            | 200                 | 800            | 316L SS                  | 1/4"                     | 0.09"             | D            | 361                  |
| 15 to 500                     | 2 to 8            | 1500                | 2500           | Buna-N; Ni pl. Brass     | 1/4"                     | 0.06"             | H            | 704                  |
| 15 to 500                     | 8 to 31           | 1500                | 2500           | Buna-N; Ni pl. Brass     | 1/4"                     | 0.06"             | H            | 15734 <sup>[1]</sup> |
| 20 to 500                     | 4 to 45           | 1500                | 2500           | 316 SS                   | 1/2"                     | 0.70"             | C            | 193                  |
| 20 to 500                     | 4 to 45           | 1500                | 2500           | 316 SS                   | 1/2"                     | 0.06"             | C            | 493                  |
| 6 to 300                      | 1 to 10           | 300                 | 350            | Ph. Bronze; Ni pl. Brass | 1/4"                     | 0.06"             | D            | 274                  |
| 25 to 500                     | 1.5 to 8          | 500                 | 575            | 316L SS                  | 1/4"                     | 0.09"             | D            | 376                  |

[1] Models that include adjustable deadband switch.

## Pressure Models (up to 5000 psi)

| Adjustable Set Point<br>(psi) | PRESSURE          |                     |                | PROCESS CONNECTION   |                   |                   |              | Model                |
|-------------------------------|-------------------|---------------------|----------------|----------------------|-------------------|-------------------|--------------|----------------------|
|                               | DEADBAND<br>(psi) | Over Range<br>(psi) | Proof<br>(psi) | Wetted Material      | Thread<br>NPT (F) | Orifice<br>Inches | Sensor Style |                      |
| 30 to 1000                    | 3 to 20           | 1500                | 2500           | Buna-N; Ni pl. Brass | 1/4"              | 0.06"             | H            | 705                  |
| 30 to 1000                    | 9 to 90           | 1500                | 2500           | Buna-N; Ni pl. Brass | 1/4"              | 0.06"             | H            | 15735 <sup>[1]</sup> |
| 50 to 1000                    | 25 to 125         | 2000                | 7000           | 316 SS; Viton        | 1/2"              | 0.50"             | B            | 188                  |
| 50 to 1000                    | 25 to 125         | 2000                | 7000           | 316 SS; Viton        | 1/2"              | 0.06"             | B            | 488                  |
| 75 to 1000                    | 30 to 150         | 6000                | 10000          | 303 SS, Buna-N       | 1/4"              | 0.06"             | C            | 610                  |
| 80 to 1700                    | 5 to 150          | 2000                | 2500           | 316 SS               | 1/2"              | 0.70"             | C            | 194                  |
| 80 to 1700                    | 5 to 150          | 2000                | 2500           | 316 SS               | 1/2"              | 0.06"             | C            | 494                  |
| 100 to 1700                   | 10 to 30          | 2000                | 2500           | Buna-N; Ni pl. Brass | 1/4"              | 0.06"             | H            | 706                  |
| 100 to 1700                   | 25 to 100         | 2000                | 2500           | Buna-N; Ni pl. Brass | 1/4"              | 0.06"             | H            | 15736 <sup>[1]</sup> |
| 100 to 1700                   | 9 to 40           | 1700                | 2500           | 316 SS               | 1/4"              | 0.06"             | D            | 680                  |
| 125 to 3000                   | 40 to 250         | 6000                | 10000          | 303 SS, Buna-N       | 1/4"              | 0.06"             | C            | 612                  |
| 250 to 3500                   | 50 to 300         | 4000                | 7000           | 316 SS; Viton        | 1/2"              | 0.50"             | B            | 189                  |
| 250 to 3500                   | 50 to 300         | 4000                | 7000           | 316 SS; Viton        | 1/2"              | 0.06"             | B            | 489                  |
| 700 to 5000                   | 40 to 375         | 6000                | 10000          | 303 SS, Buna-N       | 1/4"              | 0.06"             | C            | 616                  |
| 700 to 5000                   | 80 to 500         | 6000                | 10000          | 303 SS, Buna-N       | 1/4"              | 0.06"             | C            | 15884 <sup>[1]</sup> |

[1] Models that include adjustable deadband switch.

# H100K Series

Low Differential Pressure Models (up to 200" wcd)

| Adjustable Set Point<br>("wcd) | PRESSURE          |                           |                | PROCESS CONNECTION |                   |                   |              | Model      |
|--------------------------------|-------------------|---------------------------|----------------|--------------------|-------------------|-------------------|--------------|------------|
|                                | DEADBAND<br>("wc) | Working Pressure<br>(psi) | Proof<br>(psi) | Wetted Material    | Thread<br>NPT (F) | Orifice<br>Inches | Sensor Style |            |
| <b>0.2 to 7</b>                | 0.05 to 0.6       | 30 "Hg Vac to 200         | 400            | Buna-N; Aluminum   | 1/8"              | 0.12"             | DA           | <b>540</b> |
| <b>1 to 20</b>                 | 0.1 to 1          | 30 "Hg Vac to 200         | 400            | Buna-N; Aluminum   | 1/8"              | 0.12"             | DA           | <b>541</b> |
| <b>5 to 50</b>                 | 0.2 to 2.5        | 30 "Hg Vac to 200         | 400            | Buna-N; Aluminum   | 1/8"              | 0.12"             | DA           | <b>542</b> |
| <b>10 to 200</b>               | 0.5 to 8          | 30 "Hg Vac to 200         | 400            | Buna-N; Aluminum   | 1/8"              | 0.12"             | DA           | <b>543</b> |

Medium Differential Pressure Models (up to 500 psid)

| Adjustable Set Point<br>(psid) | PRESSURE          |                           |                | PROCESS CONNECTION |                   |                   |              | Model      |
|--------------------------------|-------------------|---------------------------|----------------|--------------------|-------------------|-------------------|--------------|------------|
|                                | DEADBAND<br>(psi) | Working Pressure<br>(psi) | Proof<br>(psi) | Wetted Material    | Thread<br>NPT (F) | Orifice<br>Inches | Sensor Style |            |
| <b>2 to 20</b>                 | 0.1 to 1.3        | 30 "Hg Vac to 1200        | 2500           | Buna-N; Aluminum   | 1/8"              | 0.12"             | DA           | <b>544</b> |
| <b>5 to 50</b>                 | 0.2 to 2.2        | 30 "Hg Vac to 1200        | 2500           | Buna-N; Aluminum   | 1/8"              | 0.12"             | DA           | <b>545</b> |
| <b>10 to 125</b>               | 0.4 to 5          | 30 "Hg Vac to 1200        | 2500           | Buna-N; Aluminum   | 1/8"              | 0.12"             | DA           | <b>546</b> |
| <b>50 to 250</b>               | 0.8 to 10         | 30 "Hg Vac to 1200        | 2500           | Buna-N; Aluminum   | 1/8"              | 0.06"             | DA           | <b>547</b> |
| <b>100 to 500</b>              | 2 to 15           | 30 "Hg Vac to 1200        | 2500           | Buna-N; Aluminum   | 1/8"              | 0.06"             | DA           | <b>548</b> |

# B, C, E & F Series

## Type B100, C100

| TEMPERATURE                  |             |                                     |                        | Material        | STEM                                       |    | Sensor Style                            | Type & Model |
|------------------------------|-------------|-------------------------------------|------------------------|-----------------|--|----|---|--------------|
| Adjustable Set Point<br>(°F) | Max<br>(°F) | Dial Div.<br><sup>[1]</sup><br>(°F) | Deadband<br>@70 °F TYP |                 | Size <sup>[2]</sup><br>(Diameter x Length) |    |   |              |
| 0 to 225                     | 275         | 10                                  | 2%                     | Ni plated brass | 9/16" x 1 7/8" below 1/2" NPT              | TA | <b>120</b>                              |              |
| 0 to 225                     | 275         | 10                                  | 2%                     | 316 SS          | 9/16" x 1 7/8" below 1/2" NPT              | TA | <b>120 + M504</b>                       |              |
| 200 to 425                   | 475         | 10                                  | 2%                     | Ni plated brass | 9/16" x 1 7/8" below 1/2" NPT              | TA | <b>121</b>                              |              |
| 200 to 425                   | 475         | 10                                  | 2%                     | 316 SS          | 9/16" x 1 7/8" below 1/2" NPT              | TA | <b>121 + M504</b>                       |              |
| 15 to 140                    | 160         | 5                                   | 2%                     | 304 SS          | 9/16" x 2-11/16 long                       | TA | <b>13272 (B100 only) <sup>[3]</sup></b> |              |

[1] Dial available on B100 only.

[3] Heat tracing

[2] Optional immersion stem length available. Consult UE.

## Type E100

| TEMPERATURE                  |             |                   |                        | Material <sup>[2]</sup> | BULB                                       |    | Sensor Style                | Model |
|------------------------------|-------------|-------------------|------------------------|-------------------------|--|----|-----------------------------|-------|
| Adjustable Set Point<br>(°F) | Max<br>(°F) | Dial Div.<br>(°F) | Deadband<br>@70 °F TYP |                         | Size <sup>[1]</sup><br>(Diameter x Length) |    |                             |       |
| -120 to 100                  | 150         | 10                | 2%                     | 304 SS                  | 3/8 x 2 5/8"                               | TB | <b>2BSA</b>                 |       |
| -120 to 100                  | 150         | 10                | 2%                     | Copper                  | 3/8 x 2 5/8"                               | TB | <b>2BCA</b>                 |       |
| 30 to 250                    | 300         | 10                | 2%                     | 304 SS                  | 3/8 x 2 5/8"                               | TB | <b>2BSB</b>                 |       |
| 30 to 250                    | 300         | 10                | 2%                     | Copper                  | 3/8 x 2 5/8"                               | TB | <b>2BCB</b>                 |       |
| 100 to 400                   | 450         | 10                | 2%                     | 304 SS                  | 3/8 x 2 1/8"                               | TB | <b>3BS</b>                  |       |
| 100 to 400                   | 450         | 10                | 2%                     | Copper                  | 3/8 x 2 1/8"                               | TB | <b>3BC</b>                  |       |
| 25 to 100                    | 150         | 2                 | 2%                     | 304 SS                  | 3/8 x 6 3/4"                               | TB | <b>4BS</b>                  |       |
| 25 to 100                    | 150         | 2                 | 2%                     | Copper                  | 3/8 x 6 3/4"                               | TB | <b>4BC</b>                  |       |
| -20 to 80                    | 130         | 5                 | 2%                     | 304 SS                  | 3/8 x 5"                                   | TB | <b>5BS</b>                  |       |
| -20 to 80                    | 130         | 5                 | 2%                     | Copper                  | 3/8 x 5"                                   | TB | <b>5BC</b>                  |       |
| 350 to 640                   | 690         | 10                | 2%                     | 304 SS                  | 3/8 x 3 1/4"                               | TB | <b>8BS</b>                  |       |
| 350 to 640                   | 690         | 10                | 2%                     | Copper                  | 3/8 x 3 1/4"                               | TB | <b>8BC</b>                  |       |
| 25 to 325                    | 360         | 10                | 2%                     | 304 SS                  | 1/8 x 11 5/8"                              | TB | <b>13545 <sup>[3]</sup></b> |       |

[1] Standard capillary length is 6ft, except model 13545 which is 10 ft. Optional capillary lengths available. Consult UE.

[3] Heat tracing

[2] Optional stainless steel armored or Teflon covered capillary available. Consult UE.

# B, C, E & F Series

## Type F100

| TEMPERATURE               |          |                     | Material | BULB                |                     | Sensor Style | Model      |
|---------------------------|----------|---------------------|----------|---------------------|---------------------|--------------|------------|
| Adjustable Set Point (°F) | Max (°F) | Deadband @70 °F TYP |          | Size <sup>[3]</sup> | (Diameter x Length) |              |            |
| -125 to 350               | 400      | 1%                  | 304 SS   | 3/8 x 2 5/8"        |                     | TB           | <b>2BS</b> |
| -125 to 350               | 400      | 1%                  | Copper   | 3/8 x 2 5/8"        |                     | TB           | <b>2BC</b> |
| -125 to 500               | 550      | 1%                  | 304 SS   | 3/8 x 2 1/8"        |                     | TB           | <b>3BS</b> |
| -125 to 500               | 550      | 1%                  | Copper   | 3/8 x 2 1/8"        |                     | TB           | <b>3BC</b> |
| -40 to 120                | 170      | 1%                  | 304 SS   | 3/8 x 6 3/4"        |                     | TB           | <b>4BS</b> |
| -40 to 120                | 170      | 1%                  | Copper   | 3/8 x 6 3/4"        |                     | TB           | <b>4BC</b> |
| -40 to 180                | 230      | 1%                  | 304 SS   | 3/8 x 5"            |                     | TB           | <b>5BS</b> |
| -40 to 180                | 230      | 1%                  | Copper   | 3/8 x 5"            |                     | TB           | <b>5BC</b> |
| 0 to 250                  | 300      | 1%                  | 304 SS   | 3/8 x 4.5"          |                     | TB           | <b>6BS</b> |
| 0 to 250                  | 300      | 1%                  | Copper   | 3/8 x 4.5"          |                     | TB           | <b>6BC</b> |
| 0 to 400                  | 450      | 1%                  | 304 SS   | 3/8 x 3"            |                     | TB           | <b>7BS</b> |
| 0 to 400                  | 450      | 1%                  | Copper   | 3/8 x 3"            |                     | TB           | <b>7BC</b> |
| 50 to 650                 | 700      | 1%                  | 304 SS   | 3/8 x 3 1/4"        |                     | TB           | <b>8BS</b> |
| 50 to 650                 | 700      | 1%                  | Copper   | 3/8 x 3 1/4"        |                     | TB           | <b>8BC</b> |

[1] Optional capillary lengths available. Consult UE.



# Common Options

| Option                    | Description  | Models                             |                  |         |         |         |         |         |         |         |     |         |         |                    |       | Temperature Models |              |
|---------------------------|--|------------------------------------|------------------|---------|---------|---------|---------|---------|---------|---------|-----|---------|---------|--------------------|-------|--------------------|--------------|
|                           |  | 171-174, 471-474, 190-194, 490-494 | 183-189, 483-489 | 218-230 | 270-274 | 358-376 | 520-525 | 530-535 | 565-567 | 610-616 | 680 | 700-706 | 540-548 | 15623, 15731-15737 | 15884 | All Temp. Models   | 13545 & 1546 |
| <b>Switch options</b>     |  |                                    |                  |         |         |         |         |         |         |         |     |         |         |                    |       |                    |              |
| <b>0140</b>               | Gold Contact, 1A 125 VAC resistive   | •                                  | •                | •       | •       | •       | •       | •       | •       | •       | •   | •       | •       | •                  | •     | •                  | •            |
| <b>0500</b>               | Close deadband, 5A 125/250 VAC resistive                                   | •                                  | •                | •       | •       | •       |         |         | •       | •       | •   | •       |         |                    |       |                    |              |
| <b>1010</b>               | DPDT switch, 10A 250 VAC resistive   |                                    |                  | •       | •       | •       |         |         |         | •       |     | •       |         |                    |       |                    |              |
| <b>1070</b>               | High DC, 10A 125 VDC resistive   |                                    |                  | •       | •       | •       |         |         |         | •       | •   | •       | •       |                    |       | •                  |              |
| <b>1519<sup>[3]</sup></b> | Adjustable deadband, 15A 120/250/480 VAC resistive                         |                                    |                  | •       | •       | •       | •       | •       | •       |         | •   | •       | •       |                    |       | •                  | [1]          |
| <b>1530</b>               | External manual reset, latches on rise only, 15A 120/250/480 VAC resistive | •                                  | •                | •       | •       | •       | •       | •       | •       | •       | •   | •       | •       |                    |       | •                  |              |
| <b>2000<sup>[2]</sup></b> | 20A 120/250/480 VAC resistive  | •                                  | •                | •       | •       | •       |         |         | •       | •       | •   | •       |         |                    |       | •                  |              |
| <b>3000<sup>[2]</sup></b> | 30A 120/250/277 VAC resistive  |                                    |                  | •       | •       | •       |         |         |         | •       |     | •       |         |                    |       | •                  |              |
| <b>Misc. Options</b>      |  |                                    |                  |         |         |         |         |         |         |         |     |         |         |                    |       |                    |              |
| <b>M020</b>               | External red light   | •                                  | •                | •       | •       | •       | •       | •       | •       | •       | •   | •       | •       |                    |       | •                  |              |
| <b>M201</b>               | Factory setting  | •                                  | •                | •       | •       | •       | •       | •       | •       | •       | •   | •       | •       | •                  | •     | •                  | •            |
| <b>M400</b>               | SIL2 Certification   | •                                  | •                | •       | •       | •       | •       | •       | •       | •       | •   | •       | •       | •                  |       | •                  |              |
| <b>M444</b>               | Paper ID tag   | •                                  | •                | •       | •       | •       | •       | •       | •       | •       | •   | •       | •       | •                  |       | •                  | •            |
| <b>M446</b>               | Stainless Steel tag  | •                                  | •                | •       | •       | •       | •       | •       | •       | •       | •   | •       | •       | •                  | •     | •                  | •            |
| <b>Accessories</b>        |  |                                    |                  |         |         |         |         |         |         |         |     |         |         |                    |       |                    |              |
| <b>6361-704</b>           | Mounting bracket kit   | •                                  | •                | •       | •       | •       | •       | •       | •       | •       | •   | •       | •       | •                  | •     | •                  | •            |
| <b>SD6285-51</b>          | 1/2" NPT (F) conduit kit   | •                                  | •                | •       | •       | •       | •       | •       | •       | •       | •   | •       | •       | •                  | •     | •                  | •            |

• Available

[1] Not available on types B100 and E100

[2] Deadbands will increase with these switch options

[3] Adjustable deadband switch can only be set on rise. It will ship with the lowest deadband setting

# Pressure Options

## H100 & H100K

| Option         | Description                             | Models                                |                  |         |         |         |         |         |         |         |     |                  |         |                       |       |
|----------------|---|---------------------------------------|------------------|---------|---------|---------|---------|---------|---------|---------|-----|------------------|---------|-----------------------|-------|
|                |   | 171-174, 471-474,<br>190-194, 490-494 | 183-189, 483-489 | 218-230 | 270-274 | 358-376 | 520-525 | 530-535 | 565-567 | 610-616 | 680 | 700-706          | 540-548 | 15623,<br>15731-15737 | 15884 |
| Switch options |   |                                       |                  |         |         |         |         |         |         |         |     |                  |         |                       |       |
| M277           | Range in KPa/MPa                        | •                                     | •                | •       | •       | •       | •       | •       | •       | •       | •   | •                | •       | •                     |       |
| M278           | Range in Kg/cm2                         | •                                     | •                | •       | •       | •       | •       | •       | •       | •       | •   | •                | •       | •                     |       |
| M401           | NACE MR0175 Compliance                  | • <sup>[2]</sup>                      | •                |         |         |         |         |         |         |         |     |                  |         |                       |       |
| M449           | Mounting bracket                        |                                       |                  |         |         | •       | •       |         |         |         |     |                  | •       |                       |       |
| M540           | Viton elastomer                         |                                       |                  |         |         |         |         |         |         | •       |     | • <sup>[1]</sup> | •       |                       |       |
| M550           | O <sub>2</sub> service cleaning         | •                                     | •                | •       | •       | •       | •       | •       | •       | •       | •   | •                | •       | •                     |       |
| M914           | 1/2" NPT (F) connection                 |                                       |                  |         |         | •       |         |         |         | •       |     |                  |         |                       |       |
| M921           | Brass connection                        |                                       |                  |         |         |         |         |         |         | •       |     |                  |         |                       |       |
| XC001          | Viton Elastomer                         |                                       |                  |         |         |         | •       |         |         |         |     |                  |         |                       |       |
| XC002          | Kapton Diaphragm                        |                                       |                  |         |         |         | •       |         |         |         |     |                  |         |                       |       |
| XC003          | Kapton Diaph. / Viton seal              |                                       |                  |         |         |         | •       |         |         |         |     |                  |         |                       |       |
| XC004          | 316 Stainless Steel Diaph. / Viton seal |                                       |                  |         |         |         | •       |         |         |         |     |                  |         |                       |       |
| XC005          | 316L Stainless Steel / Viton diaph.     |                                       |                  |         |         |         | •       |         |         |         |     |                  |         |                       |       |
| XC007          | 316L Stainless Steel / Teflon & Viton   |                                       |                  |         |         |         | •       |         |         |         |     |                  |         |                       |       |
| XD002          | Hastelloy C276 Diaph.                   |                                       | •                |         |         |         |         |         |         |         |     |                  |         |                       |       |
| XD003          | Monel 400 Diaph.                        |                                       | •                |         |         |         |         |         |         |         |     |                  |         |                       |       |
| XP112          | Hastelloy C276 P/C                      |                                       | •                |         |         |         |         |         |         |         |     |                  |         |                       |       |
| XP113          | Monel 400 P/C                           |                                       | •                |         |         |         |         |         |         |         |     |                  |         |                       |       |
| XR211          | Kalrez seal                             |                                       | •                |         |         |         |         |         |         |         |     |                  |         |                       |       |
| XR213          | EPR seal                                |                                       | •                |         |         |         |         |         |         |         |     |                  |         |                       |       |
| XR214          | Aflas seal                              |                                       | •                |         |         |         |         |         |         |         |     |                  |         |                       |       |

• Available

[1] Not available on model 706

[2] Not available on model 194 & 494

# Temperature Options

| Option                                       | Replacement Part # | Material | Description                                   | Local Stem Models |     |       | Bulb and Capillary Models              |          |          |          |          |          |          |       |
|--|--------------------|----------|---|-------------------|-----|-------|--|----------|----------|----------|----------|----------|----------|-------|
|  |                    |          |   | 120               | 121 | 13546 | 2BS, 2BC,<br>2BSA, 2BCA,<br>2BSB, 2BCB | 3BS, 3BC | 4BS, 4BC | 5BS, 5BC | 6BS, 6BC | 7BS, 7BC | 8BS, 8BC | 13545 |
| M504   |                    | 316L SS  | Immersion Stem                                | ●                 | ●   |       |  |          |          |          |          |          |          |       |
| M550   |                    |          | O <sub>2</sub> service cleaning               | ●                 | ●   |       | ●                                      | ●        | ●        | ●        | ●        | ●        | ●        | ●     |
| Union Connectors for bulb & capillary models |                    |          |   |                   |     |       |  |          |          |          |          |          |          |       |
| W027   | SD6213-27          | Brass    | 1/2" NPT W/3/4" bushing                       |                   |     |       | ●                                      | ●        | ●        | ●        | ●        | ●        | ●        | ●     |
| W028   | SD6213-28          | 304 SS   | 1/2" NPT W/3/4" bushing                       |                   |     |       | ●                                      | ●        | ●        | ●        | ●        | ●        | ●        | ●     |
| W045   | SD6213-45          | Brass    | 3/4" NPT                                      |                   |     |       | ●                                      | ●        | ●        | ●        | ●        | ●        | ●        | ●     |
| W046   | SD6213-46          | 304 SS   | 3/4" NPT                                      |                   |     |       | ●                                      | ●        | ●        | ●        | ●        | ●        | ●        | ●     |
| W051   | SD6213-51          | Brass    | 1/2" NPT                                      |                   |     |       | ●                                      | ●        | ●        | ●        | ●        | ●        | ●        | ●     |
| W050   | SD6213-50          | 304 SS   | 1/2" NPT                                      |                   |     |       | ●                                      | ●        | ●        | ●        | ●        | ●        | ●        | ●     |
| Thermowells for bulb & capillary models      |                    |          |   |                   |     |       |  |          |          |          |          |          |          |       |
| W075   | SD6225-75          | Brass    | 4" BT, 1/2" NPT with 3/4" NPT adapter bushing |                   |     |       | ●                                      | ●        |          |          |          | ●        | ●        |       |
| W076   | SD6225-76          | 316 SS   | 4.5" BT, 3/4" NPT                             |                   |     |       | ●                                      | ●        |          |          |          | ●        | ●        |       |
| W191   | SD6225-191         | Brass    | 4" BT, 1/2" NPT                               |                   |     |       | ●                                      | ●        |          |          |          | ●        | ●        |       |
| W193   | SD6225-193         | 316 SS   | 4.5" BT, 1/2" NPT                             |                   |     |       | ●                                      | ●        |          |          |          | ●        | ●        |       |
| W118   | SD6225-118         | Brass    | 7" BT, 1/2" NPT with 3/4" NPT adapter bushing |                   |     |       | ●                                      | ●        | ●        | ●        | ●        | ●        | ●        | ●     |
| W119   | SD6225-119         | 316 SS   | 7.5" BT, 3/4" NPT                             |                   |     |       | ●                                      | ●        | ●        | ●        | ●        | ●        | ●        | ●     |
| W192   | SD6225-192         | Brass    | 7" BT, 1/2" NPT                               |                   |     |       | ●                                      | ●        | ●        | ●        | ●        | ●        | ●        | ●     |
| W177   | SD6225-177         | 316 SS   | 7.5" BT, 1/2" NPT                             |                   |     |       | ●                                      | ●        | ●        | ●        | ●        | ●        | ●        | ●     |
| Thermowells for all immersion stem models    |                    |          |   |                   |     |       |  |          |          |          |          |          |          |       |
| W139   | SD6225-139         | Brass    | 3/4" NPT x 1-23/32" Below Thread              | ●                 | ●   |       |  |          |          |          |          |          |          |       |
| W140   | SD6225-140         | 316 SS   | 3/4" NPT x 1-23/32" Below Thread              | ●                 | ●   |       |  |          |          |          |          |          |          |       |
| W000   |                    | Brass    | No thread                                     | ●                 | ●   |       |  |          |          |          |          |          |          |       |
| W097   |                    | Brass    | 1/2" NPT x 1-23/32" Below Thread              | ●                 | ●   |       |  |          |          |          |          |          |          |       |
| W099   |                    | 316 SS   | 1/2" NPT x 1-23/32" Below Thread              | ●                 | ●   |       |  |          |          |          |          |          |          |       |

● Available

# Sensors

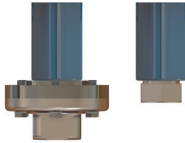
## Pressure sensors

**A**



Models 171-174

**B**



Models 183-189, 483-489

**C**



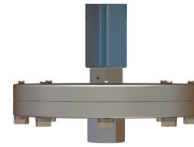
Models 190-194, 490-494, 610-616 and 15584

**D**



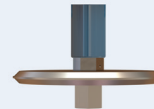
Models 218-274, 358-376 and 680

**E**



Models 520-525 and 15737

**F**



Models 530-535

**G**



Models 565-567

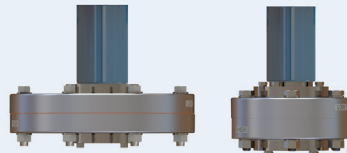
**H**



Models 701-706, 15623 and 15731-15736

## Differential Pressure sensors

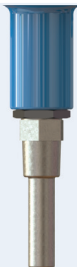
**DA**



Models 540-548

## Temperature sensors

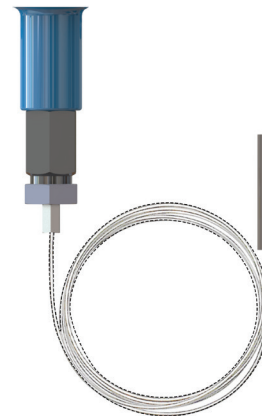
**TA**



Immersion stem with 1/2" NPT (F) pressure connection

Models 120-121, 13272\*, 13322\*  
\* No NPT connection available on these models

**TB**






Bulb and capillary for remote installations




Models 2BS-8BS, 13273, 13321



# Certifications

|   | Region        | Agency | Classification  |
|---|---------------|--------|---|
|  | North America | UL     | Pressure Switch: UL E42272, V1S7<br>ANSI/UL 508; CSA-C22.2 No. 14<br>Certificate #: 20181026-E42272<br>Temperature Switch: UL E10667, V3S1<br>UL 873; CSA-C22.2 No. 24<br>Certificate #: 20181204-E10667  |
|  | Europe        | ATEX   | II 1 G Ex ia IIC T6 Ga (OPTIONAL – code M405)<br>-50 °C < T <sub>amb</sub> < +60 °C<br>Certificate #: Demko 11 ATEX 1105261X<br>Pressure Equipment Directive (PED) (2014/68/EU)<br>Compliant to PED UL 508, UL 61010<br>Products rated lower than 7.5 psi are outside the scope of the PED<br>Low Voltage Directive (LVD) (2014/35/EU)<br>UEC compliant to LVD EN 61058-1, EN 61010-1<br>Products rated lower than 50 VAC and 75 VDC are outside of the scope of the LVD<br>The Low Voltage Directive does not apply to products for use in hazardous locations |
|  | International | IECEX  | Ex ia IIC T6 Ga (OPTIONAL – code M405)<br>Tamb = -50 °C to +60 °C<br>Certificate #: IECEX UL 14.0075X   |

# Regional certifications

|   | Country  | Option | Classification  |
|---|--|--------|---|
|  | China (CCC)  | M408   | Ex ia IIC T6 Ga<br>Tamb = -50 °C to +60 °C<br>CCC Certificate #: 2020322304002958           |
|  | Brazil (InMetro)   | M391   | Ex ia IIC T6 Ga<br>Tamb = -50 °C to +60 °C<br>Certificate #: UL-BR 15.0169X                 |
|  | India (Peso)   | M405   | Ex ia IIC T6 Ga<br>Tamb = -50 °C to +60 °C<br>Certificate #: P417586/1                      |
|  | United Kingdom (UKCA)                                      | M462   | II 1 G Ex ia IIC T6 Ga<br>Tamb = -50 °C to +60 °C<br>Certificate #: UL21UKEX2238X           |
|   | EAC (Russia, Armenia, Belarus, Kazakhstan, and Kyrgyzstan) | M406   | 0Ex ia IIC T6 Ga X<br>Tamb = -50 °C to +60 °C<br>EAC Certificate #: RU C-US.AA87.B.00503/20 |
|  | Taiwan   |        | ITRI available through Taiwan channel partner. Consult United Electric.                     |

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180 Dexter Avenue  
Watertown, MA 02472 - USA  
Telephone: 617 926-1000 - Fax: 617 926-2568  
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