

## G & L-Series Multifunction Temperature Switches



G-Series

### FEATURES

- Single setpoint, fixed deadband
- Single setpoint, adjustable deadband
- Dual setpoint

Ashcroft Inc. supplies highly reliable Ashcroft® switches and controls for industrial and process applications. We begin with rock-solid designs, matching the most appropriate technology with the safety and reliability requirements of the applications. The materials of construction are specified to Ashcroft's exacting standards, and product is built to last in the toughest applications. Our modern, responsive manufacturing facility is supported by an extensive network of stocking distributors and factory sales offices located in virtually every part of the world.

Special application assistance is always just a telephone call away.

The Ashcroft G & L-Series temperature switch line is designed to satisfy most switch requirements. Materials of construction have been selected for long life. A wide variety of precision switch elements are available to meet every application requirement, including hermetically sealed contacts for added reliability and safety. The thermal systems we use have been proven in more than 20 years of service in the world's plants and mills. Special designs are available for more stringent requirements. Simplicity and ease of use are stressed to improve reliability of the installation.

Applications include: pumps, compressors, washers, filters, degreasers, evaporators, recovery systems, food processing, ground support equipment, reverse osmosis systems, heat exchangers, hydraulic systems, lubrication systems, marine equipment, textile machinery, heating and air conditioning equipment.



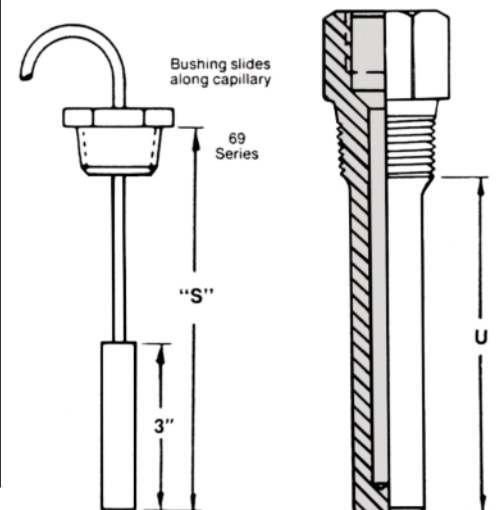
L-Series

### Thermowells

Thermowells must be used on any application where the stem of the temperature switch may be exposed to pressure, corrosive fluids or high velocity. Additionally, the use of a thermowell permits instrument interchange or calibration check without disturbing or closing down the process.

Ashcroft temperature switches have bulb diameters to match  $\frac{3}{8}$ " nominal bore thermowells. The bulbs have a sensitive portion length of  $2\frac{1}{4}$ " which can be used with  $2\frac{1}{2}$ " "U" dimensioned thermowells or longer. For maximum accuracy, a thermowell "U" dimension should be selected to permit complete immersion of the sensitive portion plus 1" when measuring the temperature of liquids; an extra 3" should be allowed when measuring the temperature of gases.

Thermowell bushings should be used with remote mount temperature switches. We recommend the standard 3" bulb and code 69 Series bushings for use with any thermowell "U" dimension. A split rubber grommet allows easy installation and "S" dimension adjustment.



# G & L-Series Multifunction Temperature Switches

## Temperature Switches

G- and L-Series temperature switches feature a SAMA Class II vapor pressure thermal system. This system provides quick, accurate response to process temperature changes with negligible ambient temperature effects. This is inherent in the design due to the precise relationship between temperature and pressure according to

the vapor pressure laws. A wide selection of sensing bulb and armored capillary lengths are available. The vapor pressure system design features small bulb sizes, making installation easy and cost-effective.

All models feature  $\pm 1$  percent of span setpoint repeatability with very high over-

temperature ratings.

These standard designs perform well in applications where shock and vibration could be a problem and should be used with Ashcroft thermowells for bulb protection and ease of installation and maintenance.

| TEMPERATURE RANGE SELECTION  |            |             |                                     |                        |        |       |        |                        |        |         |        |  |
|------------------------------|------------|-------------|-------------------------------------|------------------------|--------|-------|--------|------------------------|--------|---------|--------|--|
| Nominal Range <sup>(1)</sup> |            | Max.        | Approximate Deadband <sup>(2)</sup> |                        |        |       |        |                        |        |         |        |  |
|                              |            |             | LTA-GTA <sup>(3)</sup>              | LTS-GTS <sup>(4)</sup> |        |       |        | LTD-GTD <sup>(4)</sup> |        |         |        |  |
|                              |            | Temp.<br>°F | Switch Element                      |                        |        |       |        |                        |        |         |        |  |
| °F                           | °C         |             | J, H                                | G                      | J, H   | K, F  | P      | GG                     | JJ, HH | KK, FF  | PP     |  |
| -40 to 60                    | -40 to 16  | 400         | 18-90                               | 4.0-10                 | 9.0-18 | 1.5-3 | 2-5    | 4-10                   | 9.0-18 | 1.5-3   | 2-5    |  |
| 0 to 100                     | -20 to 40  | 400         | 30-90                               | 5.0-15                 | 10-30  | 1.5-5 | 3-7    | 5-15                   | 10-30  | 1.5-4.5 | 3-7    |  |
| 75 to 205                    | 20 to 95   | 400         | 34-120                              | 6.0-18                 | 10-34  | 3-5.5 | 3-8    | 6-18                   | 10-34  | 3-5.5   | 3-8    |  |
| 150 to 260                   | 65 to 125  | 400         | 25-100                              | 3-13                   | 9.0-25 | 1.5-4 | 3-7    | 3-13                   | 9.0-25 | 1.5-4   | 3-7    |  |
| 235 to 375                   | 110 to 190 | 500         | 35-130                              | 6-19                   | 10-35  | 2-5.5 | 3-8    | 6-17                   | 10-35  | 2-5.5   | 3-8    |  |
| 350 to 525 <sup>(5)</sup>    | 175 to 275 | 700         | 40-165                              | 5-27                   | 15-40  | 3-7   | 3.5-11 | 5-27                   | 15-40  | 3-7     | 3.5-11 |  |
| 500 to 750 <sup>(5)(6)</sup> | 260 to 400 | 900         | 50-200                              | 20-36                  | 36-60  | 5-10  | 6-21   | 20-36                  | 36-60  | 5-10    | 6-21   |  |

### NOTES:

- Switches may generally be set between 15% and 100% of nominal range on increasing or decreasing temperature. Consult factory for applications where setpoints must be lower.
- All deadbands are given in °F.

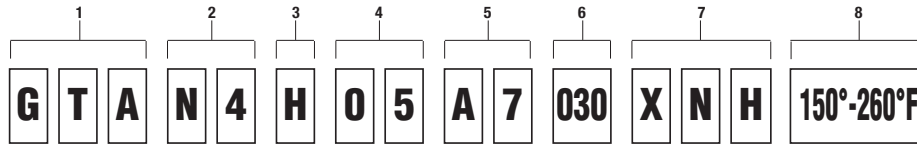
- Deadbands for LTA and GTA are adjustable between the values shown.
- Deadbands for LTS, GTS, LTD and GTD models are fixed within the range of values shown. Manufacturing and parts variances result in variation from one unit to another.
- Not available with 2 3/4" stem

- Available with remote mount thermal system only.

Switches calibrated at 70°F ambient reference.

# G & L-Series Multifunction Temperature Switches

## G- and L-SERIES TEMPERATURE SWITCHES ORDERING INFORMATION



### 1 – FUNCTION

**GTS/LTS** - Temperature Control, Single Setpoint, Fixed Deadband

**GTA/LTA** - Temperature Control, Single Setpoint, Adjustable Deadband

**GTD/LTD** - Temperature Control, Two Independently Adjustable Setpoints, Fixed Deadband

### 2 – ENCLOSURE

**N4** - NEMA 4, 4X

L-Series: Epoxy Coated, Die Cast Aluminum, IP66

G-Series: 316 SS IP65

### 3 – SWITCH ELEMENTS FOR GTA/LTA CONTROLS

| Code | Description/Maximum Electrical Ratings<br>UL/CSA listed                       |
|------|---|
| H    | General purpose<br>10A, 125/250 Vac<br>1/2A, 125 Vdc<br>1/4A, 250 Vdc         |
| J    | Hermetically sealed switch, general purpose<br>11A, 125/250 Vac<br>5A, 30 Vdc |

### SWITCH ELEMENTS FOR FOR GTD/LTD & GTS/LTS CONTROLS

| Code             |                   | Switch elements UL/CSA listed   |
|------------------|-------------------|---|
| Single           | Dual              |   |
| K <sup>(4)</sup> | KK                | Narrow deadband<br>15A, 125/250 Vac   |
| F <sup>(4)</sup> | FF                | Sealed environment proof<br>15A, 125/250 Vac                                  |
| G <sup>(5)</sup> | GG                | General purpose<br>15A, 125/250/480 Vac<br>1/2A, 125 Vdc<br>1/4A, 250 Vdc     |
| P <sup>(3)</sup> | PP<br>deadband    | Hermetically sealed switch, narrow deadband<br>5A, 125/250 Vac                |
| J                | JJ                | Hermetically sealed switch, general purpose<br>11A, 125/250 Vac<br>5A, 30 Vdc |
| W                | WW                | Ammonia service<br>15A, 125/250 Vac   |
| C                | CC                | Heavy duty ac<br>22A, 125/250 Vac   |
| S <sup>(6)</sup> |                   | Heavy duty dc<br>10A, 125 Vac or dc<br>½ HP, 125 Vac or dc                    |
| Y                | YY                | High temp. 300°F<br>15A, 125/250 Vac  |
| U <sup>(7)</sup> | UU <sup>(7)</sup> | Manual reset trip on increasing<br>15A, 125/250 Vac                           |
| E <sup>(7)</sup> | EE <sup>(7)</sup> | Manual reset trip on decreasing<br>15A, 125/250 Vac                           |
| L                | LL                | Hermetically sealed switch, gold contacts<br>5A, 125/250 Vac                  |
| M                | MM                | Low level, gold contacts<br>1A, 125/250 Vac                                   |

### 4 – LINE LENGTH<sup>(4)</sup>

| DIRECT MOUNT |                |           |
|--------------|----------------|-----------|
| Order Code   | Line Length ft | Style     |
| 00           | Not Applicable | Rigid     |
| REMOTE MOUNT |                |           |
| 05           | 5              | Capillary |
| 10           | 10             | with      |
| 15           | 15             | Armor     |
| 20           | 20             | (Std.)    |
| 25           | 25             |           |

### 5 – THERMAL SYSTEM SELECTION

| LINE MATERIAL |                                    |
|---------------|------------------------------------|
| Direct Mount  |                                    |
| Order Code    | Description                        |
|               | No entry required for direct mount |
| Remote Mount  |                                    |
| A7            | SS Armor (Std.)                    |

### 6 – BULB LENGTH SELECTION<sup>(5)</sup>

| DIRECT MOUNT |               |                                  |
|--------------|---------------|----------------------------------|
| Order Code   | "S" Dimension | Minimum Thermowell "U" Dimension |
| 027          | 23/4"         | —                                |
| 040          | 4"            | 2½"                              |
| 060          | 6"            | 4½"                              |
| 090          | 9"            | 7½"                              |
| 120          | 12"           | 10½"                             |
| REMOTE MOUNT |               |                                  |
| 030          | 3"            | 2½"                              |

### 7 – G- & L-SERIES TEMP. SWITCH OPTIONS

| Code               | Description  |
|--------------------|--|
| XCH                | Chained Cover  |
| XFP                | Fungus Proof   |
| XFS                | Factory Adjusted Setpoints                           |
| XJL                | ¾" to ½" Reducing Bushing                            |
| XK3                | Terminal Blocks                                      |
| XNH                | Tagging Stainless Steel                              |
| XPK                | Pilot Lights, L-Series                               |
| XPM                | ¾" Sealed Conduit Connection with 16" Lead Wires     |
| X2C <sup>(6)</sup> | DPDT with Single Setpoint Adjustment                 |
| XBX                | 69 Series Bushing for Thermowell Systems, ½ Male NPT |

### 8 – STANDARD TEMPERATURE RANGE

See page 2

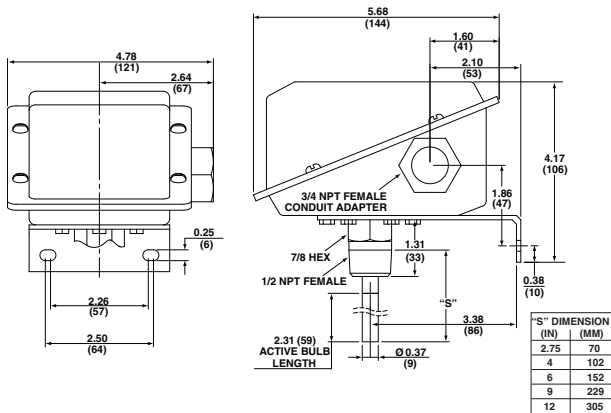
### NOTES:

- Estimated dc rating, 2.5A, 28 Vdc (not UL listed)
- Estimated dc rating, 0.4A, 120 Vdc (not UL listed)
- Not UL listed at 480 Vac
- Additional line lengths available, call factory.
- Additional bulb lengths available, call factory.
- Available with LTS and GTS models only.
- Available on L-Series only.
- Not available with dual setpoints.

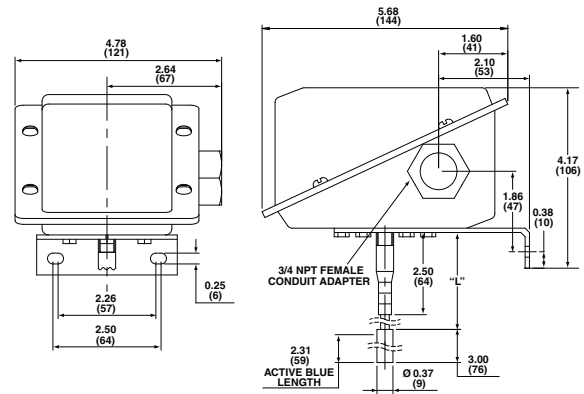
# G & L-Series Multifunction Temperature Switches

## Dimensions – G-Series

### Temperature Switch – Direct Mount

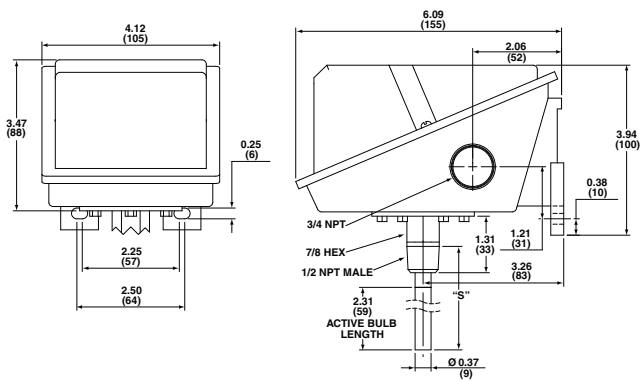


### Temperature Switch – Remote Mount



## Dimensions – L-Series

### Temperature Switch – Direct Mount



### Temperature Switch – Remote Mount

