

# C-2000™ Push Buttons

600 Volts Max. AC/300 Volts Max. DC  
10 Amps. Continuous AC/2.5 Amps. Continuous DC

## Caps, Heads, Lenses & Handles For Nonilluminated Devices

| Item   | Style(s) | Catalog No. |         |         |         |         |         |         |         |          | List Price,<br>GO-10GC |
|--|----------|-------------|---------|---------|---------|---------|---------|---------|---------|----------|------------------------|
|  |          | Black       | Red     | Green   | Yellow  | Brown   | Blue    | White   | Gray    | Clear    |                        |
| Caps for flush & recessed push buttons                               | ● ○ ●    | P9ARBGN     | P9ARBGR | P9ARBGV | P9ARBGG | P9ARBGM | P9ARBGL | P9ARBGB | P9ARBGH | —        | <b>\$1.00</b>          |
|  | □        | P9ASBGN     | P9ASBGR | P9ASBGV | P9ASBGG | P9ASBGM | P9ASBGL | P9ASBGB | P9ASBGH | —        | <b>1.00</b>            |
| Caps for extended push buttons                                       | ● ○ ●    | P9ARBSN     | P9ARBSR | P9ARBSV | P9ARBSG | P9ARBSM | P9ARBSL | P9ARBSB | P9ARBSH | —        | <b>1.00</b>            |
|  | □        | P9ASBSN     | P9ASBSR | P9ASBSV | P9ASBSG | P9ASBSM | P9ASBSL | P9ASBSB | P9ASBSH | —        | <b>1.00</b>            |
| Mushroom heads, 28mm   | ● ○ ●    | P9ARB3N     | P9ARB3R | P9ARB3V | P9ARB3G | —       | —       | —       | —       | —        | <b>7.00</b>            |
| Mushroom heads, 40mm   | ● ○ ●    | P9ARB4N     | P9ARB4R | P9ARB4V | P9ARB4G | —       | —       | —       | —       | —        | <b>7.00</b>            |
| Mushroom heads, 60mm   | ● ○ ●    | P9ARB6N     | P9ARB6R | P9ARB6V | P9ARB6G | —       | —       | —       | —       | —        | <b>9.00</b>            |
| Mushroom heads, 29mm   | □        | P9ASB3N     | P9ASB3R | P9ASB3V | P9ASB3G | —       | —       | —       | —       | —        | <b>7.00</b>            |
| Heads for push-pull mushroom-head push buttons (40mm)                | ● ○ ● □  | P9ACB4N     | P9ACB4R | P9ACB4V | P9ACB4G | —       | —       | —       | —       | —        | <b>8.00</b>            |
| Knobs  | ● ○ ● □  | P9ACMNN     | P9ACMNR | P9ACMNV | P9ACMNG | —       | P9ACMNL | —       | —       | —        | <b>3.00</b>            |
| Levers   | ● ○ ●    | P9ARMVN     | —       | —       | —       | —       | —       | —       | —       | —        | <b>3.00</b>            |
| Transparent protective cap for extended push buttons                 | ● ○ ●    | —           | —       | —       | —       | —       | —       | —       | —       | P9ARCST  | <b>5.00</b>            |
|  | □        | —           | —       | —       | —       | —       | —       | —       | —       | P9ASCST  | <b>5.00</b>            |
| Transparent protective caps for flush push buttons                   | ● ○ ●    | —           | —       | —       | —       | —       | —       | —       | —       | 080CPT   | <b>5.00</b>            |
|  | □        | —           | —       | —       | —       | —       | —       | —       | —       | P9ASCGT  | <b>5.00</b>            |
| Colored protective caps for flush push buttons                       | ● ○ ●    | 080CPN      | 080CPR  | 080CPV  | 080CPG  | —       | —       | —       | —       | —        | <b>5.00</b>            |
|  | □        | P9ASCGN     | P9ASCGR | P9ASCGV | P9ASCGG | —       | —       | —       | —       | —        | <b>5.00</b>            |
| Protective silicone rubber cap for flush multi-function push buttons | ☒        | —           | —       | —       | —       | —       | —       | —       | —       | 080CPDT  | <b>5.00</b>            |
| Transparent Flush Guard Ring   | ● ○ ●    | —           | —       | —       | —       | —       | —       | —       | —       | P9ARSRPL | <b>1.24*</b>           |

\* Order quantity of 100.

## For Illuminated Devices

| Item   | Style(s) | Catalog No. |          |          |          |          |          |          | List Price,<br>GO-10GC |
|--|----------|-------------|----------|----------|----------|----------|----------|----------|------------------------|
|  |          | Red         | Green    | Yellow   | Orange   | Blue     | White    | Clear    |                        |
| Refracted pilot light lenses   | ● ○ ● ⇨  | P9ARGLRR    | P9ARGLRV | P9ARGLRG | P9ARGLRA | P9ARGLRL | P9ARGLRB | P9ARGLRI | <b>\$ 1.00</b>         |
| Diffused pilot light lenses ①  | ● ○ ● ⇨  | P9ARGLDR    | P9ARGLDV | P9ARGLDG | P9ARGLDA | P9ARGLDL | P9ARGLDB | P9ARGLDI | <b>.50</b>             |
|  | □        | P9ASGLDR    | P9ASGLDV | P9ASGLDG | P9ASGLDA | P9ASGLDL | P9ASGLDB | P9ASGLDI | <b>1.00</b>            |
| Diffusers for pilot lights   | ● ○ ●    | —           | —        | —        | —        | —        | —        | P9ARDLS  | <b>.50</b>             |
|  | □        | —           | —        | —        | —        | —        | —        | P9ASDPL  | <b>.50*</b>            |
| Diffused push button lenses ①  | ● ○ ●    | P9ARGPDR    | P9ARGPDV | P9ARGPDG | P9ARGPDA | P9ARGPDL | P9ARGPDB | P9ARGPDI | <b>.50</b>             |
|  | □        | P9ASGPDR    | P9ASGPDV | P9ASGPDG | P9ASGPDA | P9ASGPDL | P9ASGPDB | P9ASGPDI | <b>1.00</b>            |
| Diffusers for push buttons   | ● ○ ●    | —           | —        | —        | —        | —        | —        | P9ARDPL  | <b>.50</b>             |
|  | □        | —           | —        | —        | —        | —        | —        | P9ASDPL  | <b>.50*</b>            |
| Glass pilot light lenses   | ● ○      | P9ARGLVR    | P9ARGLVW | P9ARGLVG | P9ARGLVA | P9ARGLVL | P9ARGLVB | P9ARGLVI | <b>13.50</b>           |
| Illuminated mushroom heads, 40mm                                     | ● ○ ●    | P9ARGP4R    | P9ARGP4V | P9ARGP4G | P9ARGP4A | P9ARGP4L | P9ARGP4B | P9ARGP4I | <b>7.00</b>            |
| Illuminated mushroom heads, 29mm                                     | □        | P9ASGP3R    | P9ASGP3V | P9ASGP3G | P9ASGP3A | P9ASGP3L | P9ASGP3B | P9ASGP3I | <b>7.00</b>            |
| Illuminated knobs  | ● ○ ● □  | P9ACGSLR    | P9ACGSLV | P9ACGSLG | P9ACGSLA | P9ACGSLL | P9ACGSLB | P9ACGSLI | <b>3.00</b>            |
| Heads for push-pull mushroom-head push buttons (40mm)                | ● ○ ● □  | P9ACGP4R    | P9ACGP4V | P9ACGP4G | P9ACGP4A | P9ACGP4L | P9ACGP4B | P9ACGP4I | <b>8.00</b>            |
| Protective silicone rubber cap for flush multi-function push buttons | ☒        | —           | —        | —        | —        | —        | —        | 080CPDT  | <b>5.00</b>            |
| Transparent protective cap for extended & flush push buttons         | ● ○ ●    | —           | —        | —        | —        | —        | —        | P9ARCST  | <b>5.00</b>            |
|  | □        | —           | —        | —        | —        | —        | —        | P9ASCST  | <b>5.00</b>            |

① Must order diffuser separately for round devices. Diffuser is built into square devices.

\* Order quantity—100.

## Style Legend

|                   |                |                            |                             |                                       |                  |
|-------------------|----------------|----------------------------|-----------------------------|---------------------------------------|------------------|
| ● Polished Chrome | ○ Satin Chrome | ● Round Engineered Plastic | □ Square Engineered Plastic | ⇨ Uniblock (Round Engineered Plastic) | ☒ Multi-Function |
|-------------------|----------------|----------------------------|-----------------------------|---------------------------------------|------------------|



# Section 9

The GE push button offering includes a complete line of control units and stations in both full size push buttons (30 mm) and in miniature size devices (22 mm) which are designed to be used in numerous types of industrial applications.

The CR104P full-size, heavy-duty oiltight and watertight line is complete with a variety of accessories and enclosures.

Light Tower Status Indicating Lights provide information at a glance in industrial or commercial environments where you need to transmit and receive information across a distance. Modularity and versatility make them valuable in a broad range of applications.

GE's C-2000™ 22mm Global Push Buttons are designed to be applied in just about any application worldwide. C-2000 push buttons conform to all major world standards and are UL listed and CSA Certified. All devices except the double push button are rated for NEMA 1, 3, 3R, 3S, 4, 4X, 12, 13, and IP66 when mounted in a suitable enclosure. C-2000 push buttons are manufactured in an ISO 9000 facility, assuring you that these products comply with quality standards that are recognized worldwide. Pre-engraved nameplates are available in French, Spanish, Italian, German, and English. The C-2000 push button line is globally available under the same catalog numbers, packaging, and markings anywhere in the world.

An entire listing of CR2943 and CR2941 standard-duty push button control stations is available, suitable for NEMA Type 1, 4, 4X, and 7 and 9 applications.



|   |                |
|---|----------------|
| Heavy-Duty 30mm Push Buttons,<br>Selector Switches, Indicating Lights, Accessories<br>(CR104P Series) ..... | 9-2 to 9-36    |
| Light Tower Status Indicating Lights<br>(SL Series) .....   | 9-37 to 9-47   |
| C-2000™ 22mm Global Push Buttons<br>(P9 Series) .....   | 9-48 to 9-100  |
| Standard-Duty Push Button Control Stations<br>(CR2943 and CR2941 Series) .....                              | 9-101 to 9-103 |
| Palm Switches .....   | 9-104          |

**References:**

See Publication Index, Section 18.

9 PUSH BUTTONS



# GE Push Buttons

## C-2000™ Push Buttons

600 Volts Max. AC/300 Volts Max. DC  
10 Amps. Continuous AC/2.5 Amps. Continuous DC

### Technical Data

| General Specifications   |   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
|--|---|--|------------------------|--------------------------|---------------|---------------|---------------|--------------|-------------|--------------|----------------|--------------|------------|--------------|----------------------------|--------------|---------------|--------------|--------------|------------|-----|-----|-----|-----|----|----|----|----|--------------|----|----|----|----|---|---|-----|-----|-----------|----|----|----|----|-----|-----|-----|----------------|-----|-----|-----|-----|-----|-----|-----|------------|-----|-----|-----|-----|------|------|------|--------------|-----|-----|-----|-----|------|------|------|
| Conformity to standards  | <b>UL508</b> (USA)<br><b>NEMA ICS-2</b> (USA)<br><b>VDE 0660</b> (Germany)<br><b>BSI</b> (Great Britain)<br><b>CEI EN60947.5.1</b> (Italy)<br><b>CENELEC EN 5000 7</b> (Europe)<br><b>CSA C22.2 No. 14-M91</b> (Canada)<br><b>IEC 947.5.1</b> (International)<br><b>UTE</b> (France)<br><b>NFC 63140</b> (France)<br><b>JIS</b> (Japan)   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Approvals  | <b>UL listed</b> —File Number E66677<br><b>CSA Certified</b> —File Number 16661-63<br>Manufacturing facility is registered to <b>ISO 9000</b>   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Finger protection at terminals   | <b>IP2X</b> according to IEC 529<br>Terminal identification per <b>CENELEC EN 50013</b>   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Enclosure ratings  | Suitable for use in <b>NEMA Types 1, 3, 3R, 3S, 4, 4X, 12, and 13</b> enclosures. (Multi-function push buttons are suitable for NEMA Type 1 enclosures only unless used with protective rubber cap accessory.) <b>IP66</b> per IEC 529, when mounted in enclosures with equal or superior seal.   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Ambient temperature  | <table border="0"> <tr> <td><b>Operating</b></td> <td><b>Storage</b></td> </tr> <tr> <td>-13° to +158°F</td> <td>-40° to 158°F</td> </tr> <tr> <td>-25° to +70°C</td> <td>-40° to +70°C</td> </tr> </table>   | <b>Operating</b>   | <b>Storage</b>         | -13° to +158°F           | -40° to 158°F | -25° to +70°C | -40° to +70°C |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| <b>Operating</b>   | <b>Storage</b>  |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| -13° to +158°F   | -40° to 158°F   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| -25° to +70°C  | -40° to +70°C   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Climate suitability/humidity   | <table border="0"> <tr> <td><b>Climate Type</b></td> <td><b>Temperature</b></td> <td><b>Relative Humidity</b></td> </tr> <tr> <td>Temperature</td> <td>74°F (23°C)</td> <td>50%</td> </tr> <tr> <td>Wet</td> <td>74°F (23°C)</td> <td>83%</td> </tr> <tr> <td>Hot Wet</td> <td>104°F (40°C)</td> <td>92%</td> </tr> <tr> <td>Variable Wet</td> <td>74° to 104°F (23° to 40°C)</td> <td>83% to 92%</td> </tr> </table>   | <b>Climate Type</b>  | <b>Temperature</b>     | <b>Relative Humidity</b> | Temperature   | 74°F (23°C)   | 50%           | Wet          | 74°F (23°C) | 83%          | Hot Wet        | 104°F (40°C) | 92%        | Variable Wet | 74° to 104°F (23° to 40°C) | 83% to 92%   |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| <b>Climate Type</b>  | <b>Temperature</b>  | <b>Relative Humidity</b>   |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Temperature  | 74°F (23°C)   | 50%  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Wet  | 74°F (23°C)   | 83%  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Hot Wet  | 104°F (40°C)  | 92%  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Variable Wet   | 74° to 104°F (23° to 40°C)  | 83% to 92%   |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Resistance to vibration  | Per <b>IEC 68-2-6</b> . 16g with a frequency from 40-500 Hz and maximum peak-to-peak amplitude of 0.75mm.   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Resistance to shock  | According to <b>MIL 202B, method 202A</b> . Test was performed for 1/2 sinusoid for 11ms, 38g max for all operators with transformers and 100g for all other operators.   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Operating force  | Standard push button operator: 2.5 lbs. (11N)<br>Each contact block: 1.3 lbs. (6 N)<br>Selector switch operator: 2.4 in./lb. (0.27 N-m)   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Wire Terminals   |   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Wire capacity and terminal torque requirements (for all power supplies and contact blocks) | Suitable for #22-#12 AWG stranded or solid copper wires, single or parallel conductors of same size. Terminal torque: 7-12 in./lb. Parallel conductor size combinations (stranded or solid wire): <table border="0" style="margin-left: 40px;"> <tr> <td><b>Parallel Conductor Size Combinations (Stranded or Solid Wire)</b></td> <td><b>Terminal Torque</b></td> </tr> <tr> <td>#12 with #14</td> <td>12 in./lb.</td> </tr> <tr> <td>#14 with #16</td> <td>12 in./lb.</td> </tr> <tr> <td>#16 with #18</td> <td>12 in./lb.</td> </tr> <tr> <td>#16 with #20</td> <td>12 in./lb.</td> </tr> <tr> <td>#16 with #22</td> <td>12 in./lb.</td> </tr> <tr> <td>#18 with #22</td> <td>10-12 in./lb.</td> </tr> <tr> <td>#18 with #20</td> <td>10-12 in./lb.</td> </tr> <tr> <td>#20 with #22</td> <td>7-12 in./lb.</td> </tr> </table>   | <b>Parallel Conductor Size Combinations (Stranded or Solid Wire)</b> | <b>Terminal Torque</b> | #12 with #14             | 12 in./lb.    | #14 with #16  | 12 in./lb.    | #16 with #18 | 12 in./lb.  | #16 with #20 | 12 in./lb.     | #16 with #22 | 12 in./lb. | #18 with #22 | 10-12 in./lb.              | #18 with #20 | 10-12 in./lb. | #20 with #22 | 7-12 in./lb. |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| <b>Parallel Conductor Size Combinations (Stranded or Solid Wire)</b>                       | <b>Terminal Torque</b>  |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| #12 with #14   | 12 in./lb.  |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| #14 with #16   | 12 in./lb.  |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| #16 with #18   | 12 in./lb.  |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| #16 with #20   | 12 in./lb.  |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| #16 with #22   | 12 in./lb.  |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| #18 with #22   | 10-12 in./lb.   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| #18 with #20   | 10-12 in./lb.   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| #20 with #22   | 7-12 in./lb.  |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Quick connect terminals  | Suitable for one female tab connector measuring 0.25 x 0.03 inches (6.35 x 0.8 mm) or two female tab connectors measuring 0.11 x 0.03 inches (2.8 x 0.8 mm).  |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Contact Data   |   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Electrical reliability data  | Electrical life and reliability in low level current: 80 million operations at 12V, 5mA, resistive load. (32 contacts tested successfully for 2.5 million operations.)  |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Dust resistance  | In extremely dusty environments, electrical life at low level current is 250,000 operations at 12 V, 5mA, resistive load. In a clean environment, electrical life at low level current is 10 million operations at 12 V, 5mA, resistive load.   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Thermal current  | I <sub>th</sub> = 10A per IEC 947-5-1   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Insulation voltage   | U <sub>i</sub> = 660 Volts ac/dc (opposite polarity) except 2NO and 2NC blocks 300 Vac/dc   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Protection from electrical shock   | Class I per IEC 536 for metal operators<br>Class II (double insulation) per IEC 536 for plastic operators   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Insulation category  | Group "C" per VDE 0110  |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Dielectric strength  | 2500 Volts  |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Short circuit protection   | 10A type gG fuse, per IEC 269.1 & 269.3   |  |                        |                          |               |               |               |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Pilot duty ratings   | <b>A600</b> (maximum make volt-amperes = 7200; maximum break volt-amperes = 720; PF = .25)<br><table border="0" style="margin-left: 20px;"> <tr> <td>Volts (V)</td> <td>12</td> <td>24</td> <td>48</td> <td>60</td> <td>120</td> <td>240</td> <td>480</td> <td>600</td> </tr> <tr> <td>Continuous (A)</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> </tr> <tr> <td>Making (A)</td> <td>100</td> <td>100</td> <td>100</td> <td>100</td> <td>60</td> <td>30</td> <td>15</td> <td>12</td> </tr> <tr> <td>Breaking (A)</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>6</td> <td>3</td> <td>1.5</td> <td>1.2</td> </tr> </table><br><b>Q300</b> (maximum make or break volt-amperes = 69)<br><table border="0" style="margin-left: 20px;"> <tr> <td>Volts (V)</td> <td>12</td> <td>24</td> <td>48</td> <td>60</td> <td>125</td> <td>250</td> <td>300</td> </tr> <tr> <td>Continuous (A)</td> <td>2.5</td> <td>2.5</td> <td>2.5</td> <td>2.5</td> <td>2.5</td> <td>2.5</td> <td>2.5</td> </tr> <tr> <td>Making (A)</td> <td>2.5</td> <td>2.5</td> <td>1.4</td> <td>1.1</td> <td>0.55</td> <td>0.27</td> <td>0.23</td> </tr> <tr> <td>Breaking (A)</td> <td>2.5</td> <td>2.5</td> <td>1.4</td> <td>1.1</td> <td>0.55</td> <td>0.27</td> <td>0.23</td> </tr> </table> | Volts (V)  | 12                     | 24                       | 48            | 60            | 120           | 240          | 480         | 600          | Continuous (A) | 10           | 10         | 10           | 10                         | 10           | 10            | 10           | 10           | Making (A) | 100 | 100 | 100 | 100 | 60 | 30 | 15 | 12 | Breaking (A) | 10 | 10 | 10 | 10 | 6 | 3 | 1.5 | 1.2 | Volts (V) | 12 | 24 | 48 | 60 | 125 | 250 | 300 | Continuous (A) | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | Making (A) | 2.5 | 2.5 | 1.4 | 1.1 | 0.55 | 0.27 | 0.23 | Breaking (A) | 2.5 | 2.5 | 1.4 | 1.1 | 0.55 | 0.27 | 0.23 |
| Volts (V)  | 12  | 24   | 48                     | 60                       | 120           | 240           | 480           | 600          |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Continuous (A)   | 10  | 10   | 10                     | 10                       | 10            | 10            | 10            | 10           |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Making (A)   | 100   | 100  | 100                    | 100                      | 60            | 30            | 15            | 12           |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Breaking (A)   | 10  | 10   | 10                     | 10                       | 6             | 3             | 1.5           | 1.2          |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Volts (V)  | 12  | 24   | 48                     | 60                       | 125           | 250           | 300           |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Continuous (A)   | 2.5   | 2.5  | 2.5                    | 2.5                      | 2.5           | 2.5           | 2.5           |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Making (A)   | 2.5   | 2.5  | 1.4                    | 1.1                      | 0.55          | 0.27          | 0.23          |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |
| Breaking (A)   | 2.5   | 2.5  | 1.4                    | 1.1                      | 0.55          | 0.27          | 0.23          |              |             |              |                |              |            |              |                            |              |               |              |              |            |     |     |     |     |    |    |    |    |              |    |    |    |    |   |   |     |     |           |    |    |    |    |     |     |     |                |     |     |     |     |     |     |     |            |     |     |     |     |      |      |      |              |     |     |     |     |      |      |      |

9 PUSH BUTTONS