

# Human Machine Interfaces

IP-RATED AND POWER SWITCHES



*everything starts here.*

**NIKK**  
SWITCHES

# Everything You Need and More

NKK Switches provides reliability, functionality and selection, with innovative switch devices for every application. In addition to a wide range of toggle, rocker, pushbutton and programmable switches including illuminated, non-illuminated, and IP-rated devices you'll find:

- Electrical ratings from logic level to 50A
- IP-rating from IP50 to IP67

## 3D CAD Models:

With a single keystroke, you can download part number-specific 3D switch models directly from NKK's website for free! We have thousands of configurable 3D models to kick-start your designs today!

## Custom Switches and Value-Added Capabilities

If we don't have it, we'll create it. Our expert team works closely with you to develop solutions for your specific applications including laser etching, screen and pad printing, and custom cable and wire assembly.

**For every industry, for every environment, and your most innovative applications. Come to NKK Switches.**

## Panel Seal Boots

NKK offers a variety of boots compatible with toggles and pushbuttons to seal switches to achieve IP65 rating at the front panel.

| PN       | AT401<br>Half Boot                                                                                                                                                                      | AT402, AT402S<br>Full Boots                                                                            | AT428<br>Full Boot                                                                                     | AT4041, AT4042<br>Full Boots                                                                             | AT4043<br>Full Boot                                                                                      | AT4181<br>Full Boot                                                                                      |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Material | <br>AT401A: Nitrile butadiene rubber<br>AT401H: Ethylene propylene rubber<br>AT401S: Silicone rubber | <br>Silicone rubber | <br>Silicone rubber | <br>Silicone rubber | <br>Silicone rubber | <br>Silicone rubber |
| Color    | Black for AT401A<br>Gray for AT401H<br>Black for AT401S                                                                                                                                 | Black, Red, Yellow,<br>Green, and Gray                                                                 | Black                                                                                                  | Black                                                                                                    | Black                                                                                                    | Black                                                                                                    |
| Bushing  | 12mm                                                                                                                                                                                    | 12mm                                                                                                   | M6 or 1/4-40 Thd                                                                                       | M6 or 1/4-40 Thd                                                                                         | 12mm                                                                                                     | 12mm                                                                                                     |

## IP Code for Degrees of Protection for Enclosures

The IP code is part of the IEC 60529 (EN 60529) standard specifying the degree of protection. The first number designates protection against solid objects or materials (e.g. fingers and dust) and the second number indicates the level of liquid (water) protection.

- |      |                                                                     |
|------|---------------------------------------------------------------------|
| IP50 | Dust protected but not against water                                |
| IP60 | Dust tight but not protected against water                          |
| IP64 | Dust tight and protected against splashing water from any direction |
| IP65 | Dust tight and protected against water jets from any direction      |
| IP67 | Dust tight and protected against effects of temporary immersion     |

## OLED and LCD Programmable Switches and Displays

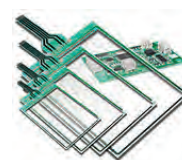
SmartSwitch Development Kits and a wide variety of accessories, including splashproof overlays, are available to assist engineers with rapid prototyping.

|                  |                                                                                     |                                                                                                                                                                                                                                                              |                                                                                                                                                                       |                                                                                                                                                                                                                                                                           |
|------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LCD 36 x 24      |    | <ul style="list-style-type: none"> <li>Product Options: 18</li> <li>Single, Bicolor or RGB Backlight</li> <li>LCD Driver on Board</li> <li>Long Life LCD</li> <li>Flexible Control of Backlight and LCD</li> <li>Up to 3 Lines, 6 Characters Each</li> </ul> | <b>Pushbutton:</b><br>23.13 x 20.59 x 23 mm<br><b>Compact Pushbutton:</b><br>19 x 18 x 23mm<br><b>Display:</b><br>17.8 x 17.2 x 9.9 mm                                | <b>Operating Temperature:</b><br>-20°C to +60°C; -4°F to +140°F<br><b>Mechanical/Electrical Life:</b><br>1,000,000 actuations min.                                                                                                                                        |
| LCD 64 x 32      |    | <ul style="list-style-type: none"> <li>RGB Backlight, 64 Colors, 8 Brightness Levels</li> <li>Controller on Board</li> <li>Control Only 2 or 3 Pins</li> <li>Long Life LCD</li> <li>Easy to Control</li> <li>Up to 4 Lines, 10 Characters Each</li> </ul>    | <b>Pushbutton:</b><br>23.13 x 20.59 x 23 mm<br><b>Compact Pushbutton:</b><br>19 x 18 x 23mm<br><b>Display:</b><br>17.8 x 17.2 x 9.9 mm                                | <b>Operating Temperature:</b><br>-15°C to +50°C; +5°F to +122°F<br><b>Mechanical/Electrical Life:</b><br>3,000,000 actuations min.<br>1,000,000 actuations min. (Compact)                                                                                                 |
| OLED COLOR       |    | <ul style="list-style-type: none"> <li>Display Videos</li> <li>65K Colors</li> <li>Sharp Display of Text/Graphics</li> <li>180 Degree Viewing Angle</li> <li>Controller on Board/SPI</li> <li>Up to 6 Lines, 10 Characters Each</li> </ul>                   | <b>Pushbutton:</b><br>23.13 x 20.59 x 23 mm<br><b>Display:</b><br>17.8 x 17.2 x 9.9 mm<br><b>Pixels:</b> 64RGB x 48                                                   | <b>Display Life:</b><br>60,000 hrs. @ 50cd/m <sup>2</sup> with 40% pixels on<br>30,000 hrs @100cd/m <sup>2</sup> with 40% pixels on<br><b>Operating Temperature:</b><br>-20°C to +70°C; -4°F to +158°F<br><b>Mechanical/Electrical Life:</b><br>3,000,000 actuations min. |
| OLED MONO        |  | <ul style="list-style-type: none"> <li>SP3T Momentary</li> <li>IP64 Dust and Water Protection</li> <li>Controller on Board/SPI</li> <li>Largest Display Area</li> <li>180 Degree Viewing Angle</li> <li>Up to 8 Lines, 16 Characters Each</li> </ul>         | <b>Rocker:</b><br>37.9 x 50.7 x 5.6 mm (Above Panel)<br>37.9 x 50.7 x 14.6 mm (Behind Panel)<br><b>Pixels:</b> 96 x 64 Monochrome                                     | <b>Display Life:</b><br>52,000 hrs. @ 100cd/m <sup>2</sup> with 30% pixels on<br><b>Operating Temperature:</b><br>-20°C to +70°C; -4°F to +158°F<br><b>Mechanical/Electrical Life:</b><br>1,000,000 actuations min.                                                       |
| DEVELOPMENT KITS |  | <ul style="list-style-type: none"> <li>Pre-programmed or User-defined</li> <li>Display Custom Programs and Graphics</li> <li>Easy Creation and Testing for Rapid Prototyping</li> <li>RS232 Communication</li> <li>Battery or AC Line Power</li> </ul>       | <b>LCD 36 x 24 Pushbutton</b><br>Compact<br>Display<br><b>LCD 64 x 32 Pushbutton</b><br>Compact<br>Display<br><b>OLED Pushbutton</b><br>Display<br><b>OLED Rocker</b> | IS-DEV KIT-5<br>IS-DEV KIT-5C<br>IS-DEV KIT-5D<br>IS-DEV KIT-6<br>IS-DEV KIT-6C<br>IS-DEV KIT-6D<br>IS-DEV KIT-7<br>IS-DEV KIT-7D<br>IS-DEV KIT-8                                                                                                                         |

## Resistive Touch Screen Products

Non-Glare and Hard Coated Surfaces

- Anti-Newton Ring (ANR) Technology
- Contact Reliability with Connector



Analog



Digital

|         | Minimum Screen | Maximum Screen | Standard Screen Sizes         | Features                     |
|---------|----------------|----------------|-------------------------------|------------------------------|
| 5-Wire  | 10.4           | 19*            | 10.4, 12.1, 15                | Finger, Glove Finger, Stylus |
| 4-Wire  | 2.5*           | 19*            | 5.7, 6.5, 8.4, 10.4, 12.1, 15 | Finger, Glove Finger, Stylus |
| Digital | 2.2*           | 12.1*          | 5.7                           | Finger, Glove Finger, Stylus |

Note: Dimensions are in inches

\* Indicates Custom Sizes

| Toggles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | IP-Rating                                           | Electrical Rating                                                                                                 | Operating Temperature       | Terminal Options                              | Mounting Type & Panel Cutout                                                                                               | Size/Features                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>B Series</b><br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | IP65<br>Panel Seal<br>Models with<br>A1 Bushing     | Logic Level:<br>0.4VA Max @ 28V<br>AC/DC max                                                                      | -30 ~ +85°C<br>-22 ~ +185°F | PC                                            | 6mm Bushing<br>Cutout:<br>6mm with<br>Double Flat                                                                          | Subminiature<br>Antistatic                                                                                                      |
| <b>M Series</b><br><br> AT401<br> AT4181<br> AT402S<br> AT402<br> AT428 | IP67 with<br>Bushings<br>D3<br>D8<br>B3<br>L3<br>L8 | Power Level:<br>6A @ 125V AC;<br>3A @ 250V AC;<br>3 ~ 4A @ 30V DC<br>Logic Level:<br>0.4VA Max @ 28V<br>AC/DC Max | -30 ~ +85°C<br>-22 ~ +185°F | Quick Connect<br>PC<br>Wirewrap<br>Solder Lug | 6mm, 1/4-40 Thd<br>or 12mm Bushing<br>Cutouts:<br>6.5mm with D Flat<br>12.5mm with<br>D Flat                               | Miniature<br>Wire Assembly<br>Available<br> |
| <b>P Series</b><br><br> AT401<br> AT402<br> AT4181                                                                                                                                                                                  | IP65<br>with Boots<br>AT401<br>AT402<br>AT4181      | Power Level:<br>10A @ 125V AC;<br>6A @ 250V AC<br>Motor Load:<br>400W @ 125V AC<br>Lamp Load:<br>2 ~ 3A @ 125V AC | -10 ~ +85°C<br>+14 ~ +185°F | Quick Connect<br>PC<br>Solder Lug             | 6mm or 12mm<br>Bushing<br>Cutouts:<br>6.35mm with<br>Keyway or<br>Locking Ring<br>12.5mm with<br>Keyway or<br>Locking Ring | Standard<br>Wire Assembly<br>Available<br> |
| <b>S Series</b><br><br> AT401<br> AT402<br> AT4181                                                                                                                                                                                  | IP65<br>with Boots<br>AT401<br>AT402<br>AT4181      | 2 ~ 5A<br>Low Capacity<br>Power Level:<br>5A @ 125V AC;<br>2A @ 250V AC;<br>5A @ 30V DC                           | -10 ~ +70°C<br>+14 ~ +158°F | Solder Lug                                    | 12mm Bushing<br>Cutout:<br>12.5mm<br>with Keyway                                                                           | Standard<br>Wire Assembly<br>Available<br> |

## Toggles

|                                                                                                                                                                                                                                                                                                                                                                                           | IP-Rating                                                                                                         | Electrical Rating                                                                                                                                           | Operating Temperature                                                             | Terminal Options                            | Mounting Type & Panel Cutout                                   | Size/Features                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>S Series</b><br><br><br><br><br>AT401 AT402 AT4181 | IP67<br>Panel Seal<br>Models with AW<br>or AL Bushing for<br>Locking Lever                                        | 6 ~ 25A<br>Medium/Medium High<br>Capacity<br>Power Level:<br>15 ~ 25A @ 125V AC<br>or 30V DC;<br>6 ~ 25A @ 250V AC<br>Motor Load:<br>750W @ 125V AC         | -10 ~ +70°C<br>+14 ~ +158°F<br>IP-Rated<br>Models:<br>-30 ~ +70°C<br>-22 ~ +158°F | Screw Lug<br>Quick<br>Connect<br>Solder Lug | 12mm Bushing<br>Cutout:<br>12.5mm with<br>D Flat               | Standard<br>Wire Assembly<br>Available<br> |
| <b>S Series</b><br><br><br>AT401                                                                                                                                                                                     | IP65 with<br>AT401 Boot<br>15 ~ 30A<br>Models Only                                                                | 15 ~ 50A<br>High Capacity<br>Power Level:<br>30 ~ 50A @ 125V AC<br>or 30V DC;<br>15 ~ 30A @ 250V AC;<br>30A @ 48V DC<br>Motor Load:<br>400 ~ 750W @ 125V AC | -10 ~ +70°C<br>+14 ~ +158°F                                                       | Screw Lug                                   | 12mm Bushing<br>Cutout:<br>12.5mm<br>with or without<br>Keyway | Standard<br>                             |
| <b>WT Series</b><br><br><br><br>AT401 AT4181                                                                                     | Front Panel<br>IP67<br>Behind Panel<br>IP60 for Screw<br>Lug and Solder Lug<br>Behind Panel IP67<br>for Wire Lead | Power Level:<br>10A @ 125V AC;<br>6A @ 250V AC;<br>10A @ 30V DC                                                                                             | -30 ~ +70°C<br>-22 ~ +158°F                                                       | Screw Lug<br>Wire Lead<br>Solder Lug        | 12mm Bushing<br>Cutout:<br>12.5mm<br>with D flat               | Standard<br>Wire Assembly<br>Available                                                                                        |
| <b>TL Series</b><br>                                                                                                                                                                                                                                                                                   | IP65 with AT401P<br>O-ring                                                                                        | Power Level:<br>6A @ 125V AC;<br>3A @ 250V AC;<br>6A @ 12V DC                                                                                               | -10 ~ +55°C<br>+14 ~ +131°F                                                       | Solder Lug                                  | 12mm Bushing<br>Cutout:<br>12.5mm<br>with Keyway               | Miniature<br>Fully Illuminated<br>Wire Assembly<br>Available                                                                  |

| Rockers                                                                                                                                                           |  | IP-Rating                                                                                                                                                                  | Electrical Rating                                                                              | Operating Temperature                                                                                                                                                       | Terminal Options                                      | Mounting Type & Panel Cutout                                             | Size/Features                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <b>JWL and JWLW Series</b><br>                                                   |  | JWL:<br>IP50 with AT4126<br>Dust Cover<br>JWLW: IP67                                                                                                                       | Power Level:<br>16A @ 125/250V AC;<br>5A @ 72V DC<br><br>JWL: TV-8 Rated<br>High Inrush (117A) | JWL:<br>-25 ~ +70°C<br>-13 ~ +158°F<br><br>JWLW:<br>-25 ~ +85°C<br>-13 ~ +185°F                                                                                             | Solder Lug<br>.187" (4.75mm)<br>Quick Connect         | Snap-in<br>Cutout JWL:<br>29.5 x 20.5mm<br>Cutout JWLW:<br>30.7 x 20.5mm | Standard<br>Wire Assembly<br>Available<br><br>   |
| <b>JWMW Series</b><br>                                                           |  | IP67                                                                                                                                                                       | Power Level:<br>10A @ 125/250V AC;<br>10A @ 30V DC                                             | -25 ~ +85°C<br>-13 ~ +185°F                                                                                                                                                 | Solder Lug<br>.110" (2.8mm)<br>Quick Connect          | Snap-in<br>Cutout:<br>25.0 x 15.4mm                                      | Standard<br>Wire Assembly<br>Available<br><br>   |
| <b>WR Series</b><br>                                                           |  | Front Panel<br>IP67<br><br>Behind Panel<br>IP60 for Screw Lug,<br>Quick Connect and<br>Solder Lug<br><br>Behind Panel IP67<br>for Wire Lead                                | Power Level:<br>15A @ 125/250V AC<br>or 30V DC                                                 | -25 ~ +85°C<br>-13 ~ +185°F                                                                                                                                                 | Screw Lug<br>Quick Connect<br>Wire Lead<br>Solder Lug | Snap-in<br>Cutout:<br>34.2 x 17.2mm                                      | Standard<br>Wire Assembly<br>Available<br><br> |
| Rotaries                                                                                                                                                          |  | IP-Rating                                                                                                                                                                  | Electrical Rating                                                                              | Operating Temperature                                                                                                                                                       | Terminal Options                                      | Mounting Type & Panel Cutout                                             | Size/Features                                                                                                                       |
| <b>MRB and MRK Series</b><br>                                                  |  | MRB: IP67 with<br>AT535 O-ring<br>MRK: IP67                                                                                                                                | Logic Level:<br>0.4VA max @ 28V<br>AC/DC max                                                   | -10 ~ +70°C<br>+14 ~ +158°F                                                                                                                                                 | PC                                                    | 6mm Bushing<br>Cutout: 6.2mm<br>with Double Flat                         | Miniature                                                                                                                           |
| Optional Knobs for Metal Shaft                                                                                                                                    |  |                                                                                                                                                                            |                                                                                                |                                                                                                                                                                             |                                                       |                                                                          |                                                                                                                                     |
| <b>AT433</b><br><b>Plain Black Knob</b><br>Black with white indicator line<br> |  | <b>AT4103</b><br><b>Small Color Tipped Knob</b><br>Black with white indicator line<br> |                                                                                                | <b>AT4104</b><br><b>Large Color Tipped Knob</b><br>Black with white indicator line<br> |                                                       |                                                                          |                                                                                                                                     |

# Pushbuttons

|                                                                                                           | IP-Rating                                                                                                              | Electrical Rating                                                                                              | Operating Temperature                                                                             | Terminal Options                                                              | Mounting Type & Panel Cutout                                                                                                                                      | Size/Features                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MB2000 Series</b><br> | IP67 with Bushings<br>B3<br>D3<br><br>IP65 with Boots<br>AT4041<br>AT4042<br>AT4043                                    | Power Level:<br>6A @ 125V AC;<br>3A @ 250V AC<br>or 30V DC<br><br>Logic Level:<br>0.4VA max @ 28V<br>AC/DC max | -30 ~ +85°C<br>-22 ~ +185°F                                                                       | Quick Connect<br><br>PC<br><br>Wirewrap<br><br>Solder Lug                     | Bushing<br><br>Cutouts: 6.5mm<br>without Keyway<br>12.5mm without<br>Keyway                                                                                       | Miniature<br>Wire Assembly<br>Available<br><br>                                                                          |
| <b>WB Series</b><br>    | Front Panel IP67<br><br>Behind Panel<br>IP60 for Screw Lug<br>and Solder Lug<br><br>Behind Panel IP67<br>for Wire Lead | Power Level:<br>6A @ 125V AC or<br>30V DC;<br>3A @ 250V AC                                                     | -30 ~ +70°C<br>-22 ~ +158°F                                                                       | Screw Lug<br><br>Wire Lead<br><br>Solder Lug                                  | 12mm Bushing<br><br>Cutout: 12.5mm<br>with D flat                                                                                                                 | Standard<br>Wire Assembly<br>Available                                                                                                                                                                      |
| <b>LB Series</b><br>   | IP65 Panel<br>Seal Models<br><br>IP60 with<br>Dust Covers<br><br>AT4001<br>AT4002<br>AT4011                            | Power Level:<br>3A @ 125/250V AC<br>or 30V DC<br><br>Logic Level:<br>0.4VA max @ 28V<br>AC/DC Max              | Nonilluminated:<br>-25 ~ +70°C<br>-13 ~ +158°F<br><br>Illuminated:<br>-25 ~ +50°C<br>-13 ~ +122°F | Solder Lug<br>.110" (2.8mm)<br>Quick Connect<br><br>PCB Adaptors<br>Available | Bushing<br><br>Cutouts<br>Panel Seal:<br>22.0mm<br>with Keyway<br><br>Square: 16.2mm<br><br>Round: 22.0mm<br><br>Rectangular:<br>16.2 x 22.4mm<br>with Dust Cover | Standard<br><br>Incandescent,<br>Neon, LED; LED<br>Spot Illumination<br><br>Wire Assembly<br>Available<br><br>         |
| <b>YB Series</b><br>   | IP65 with<br>Panel Seal<br><br>Bushing Mount<br><br>IP60 with AT4115<br>Dust Cover                                     | Power Level:<br>3A @ 125/250V AC<br>or 30V DC<br><br>Logic Level:<br>0.4VA max @ 28V<br>AC/DC max              | Nonilluminated:<br>-25 ~ +70°C<br>-13 ~ +158°F<br><br>Illuminated:<br>-25 ~ +50°C<br>-13 ~ +122°F | Solder Lug<br>.110" (2.8mm)<br>Quick Connect                                  | Bushing<br><br>Snap-in<br><br>Cutout:<br>16.0mm<br>without Keyway                                                                                                 | Miniature<br>Round, Square and<br>Rectangular Models<br><br>LED Illumination<br><br>Wire Assembly<br>Available<br><br> |
| <b>YB2 Series</b><br>  | IP65<br>Panel Seal<br>Flush Mount                                                                                      | Power Level:<br>3A @ 125/250V AC<br>or 30V DC<br><br>Logic Level:<br>0.4VA max @ 28V<br>AC/DC max              | Nonilluminated:<br>-25 ~ +70°C<br>-13 ~ +158°F<br><br>Illuminated:<br>-25 ~ +50°C<br>-13 ~ +122°F | Solder Lug<br>.110" (2.8mm)<br>Quick Connect                                  | Bushing<br><br>Cutouts:<br>Round: 22.0mm<br>with Keyway<br>Square: 21.0mm                                                                                         | Standard<br>Round and<br>Square Models<br><br>LED Illumination<br><br>Wire Assembly<br>Available<br><br>               |

## Toggles

|                                                                                                             | Electrical Rating                                                                                                                                                                | Operating Temperature       | Terminal Options                  | Mounting Type & Panel Cutout                                                                    | Size/Features                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>S821D and S822D</b><br> | 4 ~ 30A<br>DC High Capacity<br>Power Level:<br>20A @ 125V DC;<br>15A @ 250V DC;<br>30A @ 30V or 48V DC;<br>4A @ 400V DC;<br>(10A @ 400V DC)<br>( ) Capacity due to series Wiring | -10 ~ +70°C<br>+14 ~ +158°F | Screw Lug                         | 12mm Bushing<br>Cutout:<br>12.5mm Dia, 12.5mm Dia with Locking Ring or Keyway                   | Standard<br><br>30A @ 30V DC,<br>15A @ 125V DC |
|                                                                                                             | Electrical Rating                                                                                                                                                                | Operating Temperature       | Terminal Options                  | Mounting Type & Panel Cutout                                                                    | Size/Features                                                                                                                     |
| <b>CWS Series</b><br>      | Power Level:<br>6A @ 250V AC                                                                                                                                                     | -10 ~ +70°C<br>+14 ~ +158°F | Quick Connect<br>PC<br>Solder Lug | Snap-in<br>Cutout:<br>19.2 x 12.9mm                                                             | Miniature<br>Wire Assembly Available<br>       |
| <b>CWT Series</b><br>    | Power Level:<br>6A @ 125V AC;<br>3A @ 250V AC;<br>4A @ 30V DC                                                                                                                    | -25 ~ +70°C<br>-13 ~ +158°F | Solder Lug                        | Snap-in<br>Cutout:<br>19.2 x 6.8mm                                                              | Miniature<br>Wire Assembly Available<br>     |
| <b>P Series</b><br>      | Power Level:<br>10A @ 125V AC;<br>6A @ 250V AC<br>Motor Load:<br>400W @ 125V AC<br>Lamp Load:<br>2 ~ 3A @ 125V AC                                                                | -10 ~ +85°C<br>+14 ~ +185°F | Quick Connect<br>PC<br>Solder Lug | Frame Mount<br>Cutouts:<br>Small Actuator:<br>17.8 x 10.1mm<br>Large Actuator:<br>28.5 x 16.0mm | Standard<br>Wire Assembly Available<br>      |
| <b>SW Series</b><br>     | Medium Capacity<br>Power Level:<br>15 ~ 20A @ 125V AC or 30V DC<br>6 ~ 10A @ 250V AC                                                                                             | -10 ~ +70°C<br>+14 ~ +158°F | Solder Lug                        | 2-screw Panel or Subpanel Mount<br>Cutout:<br>28.0 x 14.5mm                                     | Standard<br>Wire Assembly Available<br>      |
| <b>SW Series</b><br>     | High Capacity<br>Power Level:<br>30A @ 125/250V AC or 30V DC                                                                                                                     | -10 ~ +70°C<br>+14 ~ +158°F | Screw Lug                         | 2-screw Panel or Subpanel Mount<br>Cutout:<br>37.0 x 23.0mm                                     | Standard<br>                                 |

| Rockers                                                                                                              | Electrical Rating                                                                                                                                                       | Operating Temperature                                                                          | Terminal Options                                                                                                 | Mounting Type & Panel Cutout                                   | Size/Features                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SW3821D<br/>SW3822D</b><br>      | DC High Capacity<br>Power Level:<br>20A @ 125V DC;<br>15A @ 250V DC;<br>30A @ 30V or 48V DC<br>4A @ 400V DC;<br>(10A @ 400V DC)<br>( ) Capacity due to<br>Series Wiring | -10 ~ +70°C<br>+14 ~ +158°F                                                                    | Screw Lug                                                                                                        | 2-screw Panel<br>or Subpanel Mount<br>Cutout:<br>37.0 x 23.0mm | Standard<br><br>30A @ 30V DC,<br>15A @ 125V DC                                          |
| <b>CWSB and<br/>CWSC Series</b><br> | Power Level:<br>9A @ 125V AC<br>6A @ 250V AC<br>for CWSC Only                                                                                                           | CWSB:<br>-20 ~ +85°C<br>-4 ~ +185°F<br>CWSC:<br>-10 ~ +50°C<br>+14 ~ +122°F                    | CWSB:<br>Solder Lug<br>.187" (4.75mm)<br>Quick Connect<br>CWSC:<br>Solder Lug<br>.110" (2.79mm)<br>Quick Connect | Snap-in<br>Cutout:<br>CWSB or CWSC:<br>19.2 x 12.9mm           | Miniature<br>CWSB: Full Face Neon<br>CWSC: Full Face LED<br>Wire Assembly Available<br> |
| <b>JWS Series</b><br>             | Power Level:<br>5 ~ 10A @ 125/250V AC                                                                                                                                   | Nonilluminated:<br>-25 ~ +70°C<br>-13 ~ +158°F<br>Illuminated :<br>-25 ~ +50°C<br>-13 ~ +122°F | Solder Lug<br>.187" (4.75mm)<br>Quick Connect                                                                    | Snap-in<br>Cutout:<br>19.2 x 12.9mm                            | Miniature<br>LED Spot Illumination<br>Wire Assembly Available<br>                     |
| <b>LW3021A</b><br>                | Power Level:<br>20A @ 110V AC                                                                                                                                           | -10 ~ +50°C<br>+14 ~ +122°F                                                                    | Solder Lug                                                                                                       | 2-screw Panel<br>or Subpanel Mount<br>Cutout:<br>28.0 x 14.0mm | Standard/High Capacity<br>Neon Spot Illumination<br>Wire Assembly Available                                                                                                |
| <b>LW Series</b><br>              | Power Level:<br>10A @ 125V AC;<br>6A @ 250V AC<br>or 12V DC                                                                                                             | -20 ~ +50°C<br>-4 ~ +122°F                                                                     | Solder Lug                                                                                                       | Snap-in<br>Cutout:<br>32.0 x 19.8mm                            | Standard/High Capacity<br>Incandescent or Neon<br>Illumination<br>Wire Assembly Available                                                                                  |

| Pushbuttons                                                                                              | Electrical Rating                                                                                 | Operating Temperature                                                                         | Terminal Options                              | Mounting Type & Panel Cutout                                           | Size/Features                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>JPL Series</b><br>   | Power Level:<br>16A @ 125/250V AC<br>TV-8 Rated<br>High Inrush (117A)                             | -10 ~ +70°C<br>+14 ~ +158°F                                                                   | Solder Lug<br>.187" (4.75mm)<br>Quick Connect | Snap-in<br>Cutout:<br>28.0 x 21.2mm                                    | Standard<br>Wire Assembly<br>Available<br>                        |
| <b>JPM Series</b><br>   | Power Level:<br>10A @ 125/250V AC<br>TV-5 Rated<br>High Inrush (78A)                              | -10 ~ +70°C<br>+14 ~ +158°F                                                                   | Solder Lug<br>.187" (4.75mm)<br>Quick Connect | Snap-in<br>Cutout:<br>28.0 x 21.2mm                                    | Standard<br>Wire Assembly<br>Available<br>                        |
| <b>SB Series</b><br>   | Power Level:<br>3 ~ 15A @ 125V;<br>1.5 ~ 9A @ 250V AC                                             | -10 ~ +70°C<br>+14 ~ +158°F                                                                   | Solder Lug                                    | 12mm Bushing<br>Cutout:<br>12.5mm<br>with Keyway                       | Standard<br>Wire Assembly<br>Available<br>                      |
| <b>SCB Series</b><br> | Power Level:<br>15A and 0.5HP @<br>125/250V AC<br>Lamp Load:<br>5A @125V AC                       | -40 ~ +85°C<br>-40 ~ +185°F                                                                   | Quick Connect                                 | 12mm Bushing<br>Cutout:<br>12.5mm with Keyway                          | Standard<br>                                                    |
| <b>UB Series</b><br>  | Power Level:<br>5A @ 125/250V AC;<br>5A @ 30V DC<br>Logic Level:<br>0.4VA Max @ 28V AC/<br>DC Max | Nonilluminated:<br>-20 ~ +70°C<br>-4 ~ +158°F<br>Illuminated:<br>-25 ~ +50°C<br>-13 ~ +122°F  | PC<br>Solder Lug                              | Snap-in<br>Cutouts:<br>Square: 16.2mm<br>Rectangular:<br>16.2 x 22.4mm | Miniature<br>LED Illumination<br>Wire Assembly<br>Available<br> |
| <b>UB2 Series</b><br> | Power Level:<br>5A @ 125/250V AC or<br>30V DC<br>Logic Level:<br>0.4VA max @ 28V AC/<br>DC max    | Nonilluminated:<br>-25 ~ +70°C<br>-13 ~ +158°F<br>Illuminated:<br>-25 ~ +50°C<br>-13 ~ +122°F | PC<br>Solder Lug                              | Snap-in<br>Cutout:<br>17.4mm Square                                    | Miniature<br>LED Illumination<br>Wire Assembly<br>Available<br> |

| Rotaries                                                                                                         | Electrical Rating                                                                                                             | Operating Temperature       | Terminal Options                                                            | Mounting Type & Panel Cutout                                                                        | Size/Features                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HS13 and HS16 Series</b><br> | HS13 Power Level:<br>6A @ 125V AC;<br>3A @ 250V AC;<br>5A @ 30V DC<br><br>HS16 Power Level:<br>12A @ 125V AC;<br>6A @ 250V AC | -10 ~ +70°C<br>+14 ~ +158°F | Solder Lug                                                                  | 10mm Bushing<br><br>Cutouts:<br>10.3mm Dia with Keyway<br>10.5mm Dia with Locking Ring              | Standard<br>Wire Assembly Available<br><br><b>HS16:</b>  |
| <b>PS Series</b><br>            | Power Level:<br>30A @ 125/250V AC                                                                                             | -10 ~ +70°C<br>+14 ~ +158°F | Screw Lug                                                                   | 10mm Bushing<br><br>Cutout:<br>20.0mm Radius without Locking Ring                                   | Standard                                                                                                                                    |
| <b>TS Series</b><br>           | Power Level:<br>6A @ 125/250V AC                                                                                              | -10 ~ +70°C<br>+14 ~ +158°F | Screw Lug                                                                   | 10mm Bushing<br><br>Cutouts:<br>10.3mm Dia with Keyway<br>10.5mm Dia with Locking Ring              | Standard                                                                                                                                    |
| Optional Knobs for Rotary Switches (Only Models with D Flat Shaft)                                               |                                                                                                                               |                             |                                                                             |                                                                                                     |                                                                                                                                             |
| <b>AT431</b><br><b>Large Rotary Knob</b><br>Black with white indicator line                                      |                                            |                             | <b>AT432</b><br><b>Small Rotary Knob</b><br>Black with white indicator line |                |                                                                                                                                             |
| Keylocks                                                                                                         | Electrical Rating                                                                                                             | Operating Temperature       | Terminal Options                                                            | Mounting Type & Panel Cutout                                                                        | Size/Features                                                                                                                               |
| <b>CK Series</b><br>          | High Security<br><br>Power Level:<br>3A @ 250V AC                                                                             | -25 ~ +70°C<br>-13 ~ +158°F | Solder Lug                                                                  | Bushing<br><br>Cutout CKM:<br>16.0mm with Double Flat<br><br>Cutout CKL:<br>19.0mm with Double Flat | Standard<br>Wire Assembly Available                                                                                                         |
| <b>SK Series</b><br>          | Low and Medium Security<br><br>Power Level:<br>1 ~ 3A @ 250V AC                                                               | -25 ~ +70°C<br>-13 ~ +158°F | Solder Lug                                                                  | 12mm Bushing<br><br>Cutout:<br>12.0mm with Double Flat                                              | Miniature<br>Wire Assembly Available<br><br>           |



*everything starts here.*

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