

A3

Switches & Pilot Devices



## TW NEMA Style Switches with snap-on contacts

### Key features include:

- Corrosion resistant octagonal chrome plated locking bezel
- Snap-on 10A contact blocks
- Transformer or full voltage
- Incandescent or LED illumination
- Slow make, double break, self cleaning contacts
- Modular construction for maximum flexibility
- NEMA 4X and IP65 watertight/oiltight panel
- Available assembled or as sub-components
- Large M3.5 screw terminals with captive sems plate

IDEC has your 22mm switching needs covered.

Button styles include flush, extended, mushroom, or square and all bodies are crafted from fracture-resistant nylon.

All illuminated units feature two lense styles, one that maximizes light dispersion, the other accommodates direct lense engraving.

Self cleaning contact mechanisms allow for a wide current rating, 5mA to 10A, which reduces the need for various contact materials.

When looking for a 22mm switch that is durable, easy to use, and versatile, then IDEC's TW series is your solution.



UL Listed  
File No. E70646



File No. 9561116E01



CSA Certified  
File No. LR48366



File No. DK95-01696



Certificate No.  
2030010305027380

|                 |                                                                                                                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |     |                              |      |      |      |    |
|-----------------|----------------------------------------------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|------------------------------|------|------|------|----|
| Specifications  | Conforming to Standards                                                                                              |             | EN60947-1, EN60947-5-1, VDE0660-200, UL508, CSA C22-2 No.14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |     |                              |      |      |      |    |
|                 | Approvals                                                                                                            |             | <div><div><div><br/>File No. E68961</div><div><br/>File No. LR21451</div><div><br/>Certificate No. 2030010305027380</div></div><div><div><br/>TÜV Rheinland<br/>Registration No: J9551802 (E-Stops)<br/>Registration No: J9551803 (All other switches)<br/>Registration No: J9551804 (Pilot Lights)</div><div></div></div></div> <div><b>CSA:</b> pushbuttons and selector switches: A600<br/>pilot lights and illuminated pushbuttons, direct supply<br/>pilot lights and illuminated pushbuttons with integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V)<br/><b>UL:</b> pushbuttons and selector switches: A600<br/>pilot lights and illuminated pushbuttons, direct supply<br/>pilot lights and illuminated pushbuttons with integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V)<br/><b>TUV:</b> pushbuttons and selector switches: A600=P600 (NO, NC)/Q600 (NO-EM, NC-LB)<br/>pilot lights and illuminated pushbuttons, direct supply<br/>pilot lights and illuminated pushbuttons with integral transformer (100/110, 115, 120, 200/220, 230, 240, 380, 400/440, 480V)</div> |     |     |                              |      |      |      |    |
|                 | Operating Temperature                                                                                                |             | Operation: -25 to +50°C (without freezing)<br>Storage: -40 to +80°C (without freezing)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |     |                              |      |      |      |    |
|                 | Vibration Resistance                                                                                                 |             | 5 to 55Hz, 100m/sec <sup>2</sup> (10g) conforming to IEC6068-2-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |     |                              |      |      |      |    |
|                 | Shock Resistance                                                                                                     |             | 1000m/sec <sup>2</sup> (100g) conforming to IEC6068-2-7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |     |     |                              |      |      |      |    |
|                 | Electric Shock Protection                                                                                            |             | Class 0 conforming to IEC60536                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |     |                              |      |      |      |    |
|                 | Degree of Protection<br>(conforming to IEC60529)<br>(conforming to NEMA ICS6-110)                                    |             | IP65 from front of the panel; (IP54 for key switches)<br>IP20 (Type HW-F contact block)<br>NEMA 1, 2, 3, 3R, 3S, 4, 4X, 5, 12, 13 (NEMA 1, 2, 3R, 5, 12, 13 for key switches)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |     |                              |      |      |      |    |
|                 | Mechanical Life                                                                                                      |             | Momentary pushbuttons: 5,000,000 (900 operations per hour)<br>All other switches: 500,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |     |     |                              |      |      |      |    |
|                 | Pollution Degree (conforming to IEC60947-1)                                                                          |             | 3 for switches not using a transformer<br>2 for switches using a transformer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |     |     |                              |      |      |      |    |
|                 | Rated Operational Characteristics                                                                                    |             | AC-15: A600 or U <sub>e</sub> = 250V, I <sub>e</sub> = 3A (NO, NC, NO-EM, NC-LB)<br>DC-13: P600 or U <sub>e</sub> = 125V, I <sub>e</sub> = 1.1A (NO, NC)<br>DC-13: Q600 or U <sub>e</sub> = 125V, I <sub>e</sub> = 0.9A (NO-EM, NC-LB)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |     |                              |      |      |      |    |
|                 | Rated Insulation Voltage                                                                                             |             | 600V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |     |     |                              |      |      |      |    |
|                 | Rated Switching Over-Voltage                                                                                         |             | Less than 4kV, conforming to IEC60947-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |     |     |                              |      |      |      |    |
|                 | Rated Impulse Withstanding Voltage                                                                                   |             | 4kV for contact circuit<br>2.5kV for lamp circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |     |                              |      |      |      |    |
|                 | Rated Thermal Current                                                                                                |             | 10 Amp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |     |                              |      |      |      |    |
|                 | Minimum Switching Capacity                                                                                           |             | 5 mA at 3V AC/DC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |     |                              |      |      |      |    |
|                 | Contact Operation                                                                                                    |             | Slow break NC or slow make NO, self-cleaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |     |     |                              |      |      |      |    |
|                 | Recommended Terminal Torque                                                                                          |             | 0.8 N m (7.1 in lb.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |     |     |                              |      |      |      |    |
|                 | External Short-Circuit Protection                                                                                    |             | 10A 250V fuse conforming to IEC60269-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |     |                              |      |      |      |    |
|                 | Applicable Wire Size                                                                                                 |             | Minimum 1 x 22 AWG, max. 2 x 14 AWG or 1 x 12 AWG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |     |                              |      |      |      |    |
|                 | Contact Resistance                                                                                                   |             | Initial contact resistance of 50mΩ or less                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |     |                              |      |      |      |    |
|                 | Contact Gap                                                                                                          |             | 4mm (NO and NC)<br>2mm (NO-EM and NC-LB)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |     |                              |      |      |      |    |
|                 | Electrical Reliability                                                                                               |             | MTBF < 1 fault for 10 million operation cycles (3V DC, 5mA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |     |                              |      |      |      |    |
|                 | Lamp Ratings                                                                                                         |             | Incandescent: 1 W<br>LEDs: 6V: 17mA max, 12/24V: 11mA max, 120/240V: 10mA max                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |     |                              |      |      |      |    |
|                 | Horsepower Rating                                                                                                    |             | 1/4 HP @ 120V (single-phase, non-reversing motor); 1 HP @ 240V (3 phase, non-reversing motor)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |     |                              |      |      |      |    |
|                 | Maximum Inrush Current                                                                                               |             | 40 A (40 ms)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |     |     |                              |      |      |      |    |
|                 | Contact Material                                                                                                     |             | Silver                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |     |                              |      |      |      |    |
| Contact Ratings | Pushbuttons<br>Illuminated Pushbuttons<br>Selector Switches<br>Illuminated Selector Switches<br>Pushbutton Selectors |             | Contact Block                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |     | Type HW-C/HW-F               |      |      |      |    |
|                 |                                                                                                                      |             | Rated Insulation Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |     | 600V                         |      |      |      |    |
|                 |                                                                                                                      |             | Rated Continuous Current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |     | 10A                          |      |      |      |    |
|                 |                                                                                                                      |             | Contact Ratings by Utilization Category<br>IEC 60947-5-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |     | AC-15 (A600)<br>DC-13 (P600) |      |      |      |    |
| Characteristics | Contact Ratings by Utilization Category                                                                              |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |     |                              |      |      |      |    |
|                 | Operational Voltage                                                                                                  |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 24V | 48V | 50V                          | 110V | 220V | 440V |    |
|                 | Operational Current                                                                                                  | AC 50/60 Hz | AC-12 Control of resistive loads & solid state loads                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |     | 10A | —                            | 10A  | 10A  | 6A   | 2A |
|                 |                                                                                                                      |             | AC-15 Control of electromagnetic loads (> 72VA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     | 10A | —                            | 7A   | 5A   | 3A   | 1A |
|                 |                                                                                                                      | DC          | DC-12 Control of resistive loads & solid state loads                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |     | 8A  | 5A                           | —    | 2.2A | 1.1A | —  |
|                 |                                                                                                                      |             | DC-13 Control of electromagnets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     | 5A  | 2A                           | —    | 1.1A | 0.6A | —  |

Non-Illuminated Selector Switches (Assembled)

A3

Switches & Pilot Devices



Assembled Selector Switches

A S W 3 (1) (L) 20 (N) - 304

Function

S: Selector Switch

Series Designation

W: TW Series

Number of Positions

2: 2-Position

3: 3-Position

4: 4-Position

5: 5-Position

Spring Return Action

Blank: Maintained

1: Spring return from Right (2 or 3 position)

2: Spring return from Left (2 or 3 position)

3: 2-Way spring return from Left and Right (3 position only)

Circuit Number

(Standard circuits shown on following pages and A3-150.)

Contacts Terminal Style

Blank: standard

N: Fingersafe (IP20)

Contact Arrangement Code

10: 1NO      01: 1NC

20: 2NO      02: 2NC

40: 4NO      04: 4NC

11: 1NO-1NC    22: 2NO-2NC

Operator Style Code

Blank: Knob Operator

L: Lever Operator

K: Key Operator



- 1. Use only when interpreting part numbers. Do not use for developing part numbers.
- 2. Custom contact configurations available, contact IDEC for details.
- 3. Portions of part number inside ( ) are optional.

## **Non-Illuminated Selector Switches (Assembled) con't**

### **Part Numbers: 2-Position Selector Switches**

| Style      | Contact | Mounting | Operator Position |   |                | Part Number                              | Part Number                                 | Part Number                                 |
|------------|---------|----------|-------------------|---|----------------|------------------------------------------|---------------------------------------------|---------------------------------------------|
|            |         |          | L                 | R |                |                                          |                                             |                                             |
|            |         |          |                   |   |                |                                          |                                             |                                             |
| 1NO        | 1       | 2        | O                 | X | Knob Lever Key | ASW210<br>ASW2L10<br>ASW2K10             | ASW2110<br>ASW21L10<br>ASW21K10             | ASW2210<br>ASW22L10<br>ASW22K10             |
| 1NC        | 1       | 2        | X                 | O | Knob Lever Key | ASW201-116<br>ASW2L01-116<br>ASW2K01-116 | ASW2101-116<br>ASW21L01-116<br>ASW21K01-116 | ASW2201-116<br>ASW22L01-116<br>ASW22K01-116 |
| 1NO<br>1NC | 1       | 2        | X                 | O | Knob Lever Key | ASW211<br>ASW2L11<br>ASW2K11             | ASW2111<br>ASW21L11<br>ASW21K11             | ASW2211<br>ASW22L11<br>ASW22K11             |
| 2NO        | 1       | 2        | O                 | X | Knob Lever Key | ASW220<br>ASW2L20<br>ASW2K20             | ASW2120<br>ASW21L20<br>ASW21K20             | ASW2220<br>ASW22L20<br>ASW22K20             |
| 2NC        | 1       | 2        | X                 | O | Knob Lever Key | ASW202-104<br>ASW2L02-104<br>ASW2K02-104 | ASW2102-104<br>ASW21L02-104<br>ASW21K02-104 | ASW2202-104<br>ASW22L02-104<br>ASW22K02-104 |
| 2NO<br>2NC | 1       | 2        | O                 | X | Knob Lever Key | ASW222<br>ASW2L22<br>ASW2K22             | ASW2122<br>ASW21L22<br>ASW21K22             | ASW2222<br>ASW22L22<br>ASW22K22             |
| 2NO<br>2NC | 1       | 2        | O                 | X | Knob Lever Key | ASW222-111<br>ASW2L22-111<br>ASW2K22-111 | ASW2122-111<br>ASW21L22-111<br>ASW21K22-111 | ASW2222-111<br>ASW22L22-111<br>ASW22K22-111 |

### **Part Numbers: 3-Position Selector Switches**

| Style      | Contact | Mounting | Operator Position |   |   | Part Number    | Part Number                              | Part Number                                 | Part Number                                 |
|------------|---------|----------|-------------------|---|---|----------------|------------------------------------------|---------------------------------------------|---------------------------------------------|
|            |         |          | L                 | C | R |                |                                          |                                             |                                             |
|            |         |          |                   |   |   |                |                                          |                                             |                                             |
| 2NO        | 1       | 2        | X                 | O | O | Knob Lever Key | ASW320<br>ASW3L20<br>ASW3K20             | ASW3120<br>ASW31L20<br>ASW31K20             | ASW3220<br>ASW32L20<br>ASW32K20             |
| 2NC        | 1       | 2        | O                 | X | X | Knob Lever Key | ASW302<br>ASW3L02<br>ASW3K02             | ASW3102<br>ASW31L02<br>ASW31K02             | ASW3202<br>ASW32L02<br>ASW32K02             |
| 2NO<br>2NC | 1       | 2        | X                 | O | O | Knob Lever Key | ASW322<br>ASW3L22<br>ASW3K22             | ASW3122<br>ASW31L22<br>ASW31K22             | ASW3222<br>ASW32L22<br>ASW32K22             |
| 2NO<br>2NC | 1       | 2        | X                 | O | X | Knob Lever Key | ASW322-309<br>ASW3L22-309<br>ASW3K22-309 | ASW3122-309<br>ASW31L22-309<br>ASW31K22-309 | ASW3222-309<br>ASW32L22-309<br>ASW32K22-309 |
| 2NO<br>2NC | 1       | 2        | O                 | X | O | Knob Lever Key | ASW322-310<br>ASW3L22-310<br>ASW3K22-310 | ASW3122-310<br>ASW31L22-310<br>ASW31K22-310 | ASW3222-310<br>ASW32L22-310<br>ASW32K22-310 |
| 4NO        | 1       | 2        | X                 | O | O | Knob Lever Key | ASW340<br>ASW3L40<br>ASW3K40             | ASW3140<br>ASW31L40<br>ASW31K40             | ASW3240<br>ASW32L40<br>ASW32K40             |
| 4NC        | 1       | 2        | O                 | X | X | Knob Lever Key | ASW304<br>ASW3L04<br>ASW3K04             | ASW3104<br>ASW31L04<br>ASW31K04             | ASW3204<br>ASW32L04<br>ASW32K04             |



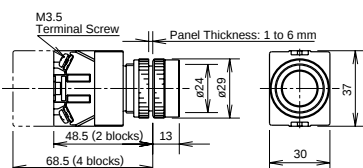
- The truth table indicates the operating position of contact block when the operator is switched to that position.  
X = On (closed contacts)  
O = Off (open contacts)  
X-X = Overlapping Contacts: Remain on (closed contacts) when switch is moved between these two positions.
- All knob and lever selector switches come in black. Other colors are available by ordering the knob or lever separately.
- Every key selector switch uses an identical key. The key is removable in any maintained position. If a different configuration is required, contact an IDEC representative for more information.
- Custom contact configurations are available, see page A3-150 or contact IDEC for details.


**A3**
**Switches & Pilot Devices**

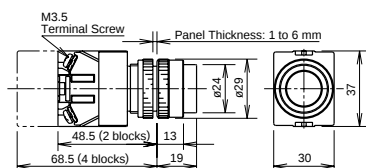
## Dimensions — TW Series

### Pushbuttons

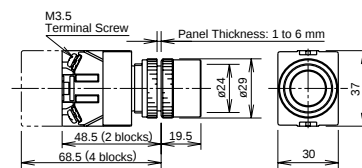
#### Flush



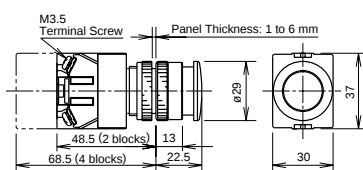
#### Extended



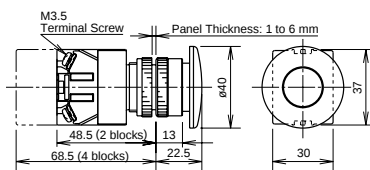
#### Extended with Full Shroud



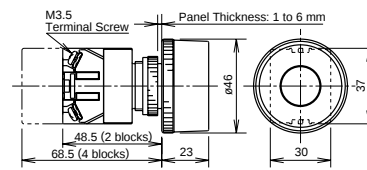
#### 29mm Mushroom



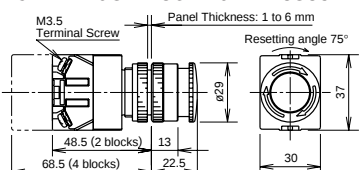
#### 40mm Mushroom



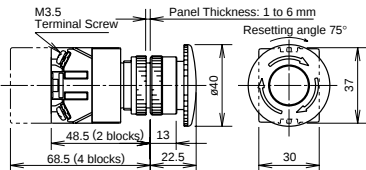
#### Mushroom with Full Shroud



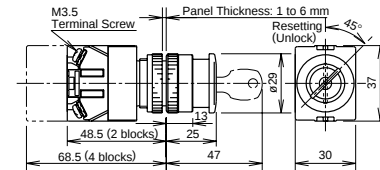
#### 29mm Push-Lock-Turn-Reset



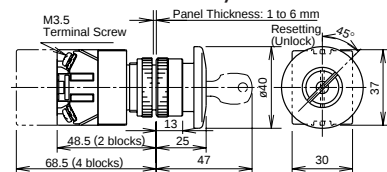
#### 40mm Push-Lock-Turn-Reset



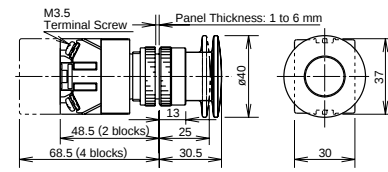
#### Keylock Push On/Off



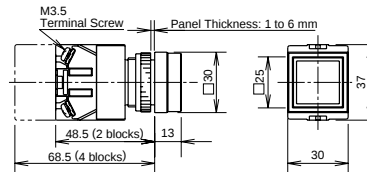
#### 40mm Pushlock Key Reset



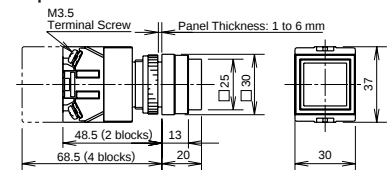
#### 40mm Push-Pull



#### Square Flush



#### Square Extended



### Selector Switches

