

16, 22 & 30mm X Series E-Stop Switches

Features

- Plastic bezel, metallic padlock and flush bezel available (XN series)
- Install up to 20 padlocks (XN4E)
- $\varnothing 29$, $\varnothing 40$, $\varnothing 44$ or $\varnothing 60$ mm Mushroom heads available
- IDEC's original "safe break action" ensures that the contacts stay open when the contact block is detached from the operator.
- Safety-lock mechanism (IEC60947-5-5, 6.2)
- 2-in-1: Push-to-lock, Pull/Turn-to-Reset
- Push-ON LED model allows E-Stops to be illuminated only when latched
- Direct Opening Action mechanism (IEC60947-5-5, 5.2, IEC60947-5-1, Annex K)
- Very short panel depth (see chart on next page)
- Degree of protection IP65 (IEC60529)
- RoHS compliant (EU directive 2002/95/EC). Contains no lead, cadmium, mercury, hexavalent chromium, PBB or PBDE.
- XN4E series complies with OSHA and ISO 12100-2:2003 standards



Specifications

New

| | $\varnothing 16$ mm - XA | $\varnothing 22$ mm - XW | $\varnothing 30$ mm - XN | |
|---|---|--|--|---|
| Applicable Standards | IEC60947-5-1, EN60947-5-1, IEC60947-5-5, EN60947-5-5 | | | |
| | UL508, CSA C22.2 No. 14 | | UL508, UL991, CSA C22.2 No. 14 | |
| Operating Temperature | Non-illuminated: -25 to +60°C (no freezing), Illuminated: -25 to +55°C (no freezing) | | | |
| Operating Humidity | 45 to 85% RH (no condensation) | | | |
| Storage Temperature | -45 to +80°C | | | |
| Operating Force | Push-to-lock: 10.5N Pull-to-reset: 10N Turn-to-reset: 0.16N-m | Push-to-lock: 32N Pull-to-reset: 21N Turn-to-reset: 0.27 N-m | XN1E, XN5E Push-to-lock: 32N Pull-to-reset: 21N Turn-to-reset: 0.27 N-m | XN4E Push-to-lock: 32N Pull-to-reset: N/A Turn-to-reset: 0.4 N-m |
| Minimum Force Required for Direct Opening Action | 60N | 80N | | |
| Min Operator Stroke Required for Direct Opening Action | 4mm | | | |
| Maximum Operator Stroke | 4.5mm | | | |
| Contact Resistance | 50m Ω maximum (initial value) | | | |
| Contact Material | Gold plated silver | | | |
| Insulation Resistance | 100M Ω minimum (500V DC megger) | | | |
| Impulse Withstand Voltage | 2.5kV | | | |
| Pollution Degree | 3 (inside LED unit: 2) | 3 | | |
| Operation Frequency | 900 operations/hour | | | |
| Shock Resistance | Operating extremes: 150m/s ² (15G), Damage limits: 1000m/s ² (100G) | | | |
| Vibration Resistance | Operating extremes: 10 to 500Hz, amplitude 0.35mm acceleration 50m/s ² Damage limits: 10 to 500Hz, amplitude 0.35mm acceleration 50m/s ² | | | |
| Mechanical Life | 250,000 operations minimum | | | |
| Electrical Life | 100,000 operations minimum, 250,000 operations minimum (24V AC/DC, 100mA) | | | |
| Degree of Protection | IP65 (IEC60529) | Operator: IP65 (IEC60529) Terminal: IP20 (when XW9Z-VL2MF is installed) | | |
| Conditional Short-circuit Current | 1000A | | | |
| Terminal Style | Solder terminal, PC board terminal | M3.0 screw terminal | | |
| Recommended Tightening Torque for Locking Ring | 0.88N-m | 2.0 N-m | 2.5 N-m | |
| Connectable Wire | 1.25mm ² maximum (16 AWG max) | 0.75 to 1.25mm ² (16 AWG max) | | |
| Soldering Conditions | 310 to 350°C, 3 seconds maximum | - | | |
| Weight | $\varnothing 29$ mm: 23g $\varnothing 40$ mm: 28g | $\varnothing 40$ mm: 72g $\varnothing 60$ mm: 81g | Plastic bezel: 83g ($\varnothing 40$ mm), 93g ($\varnothing 60$ mm) Flush bezel: 89g Padlock type: 20g | |



Contact Ratings

| | | | | | | | |
|--------------------------------------|------------------------------|------------------------|------------------------------|------------|------|-------|------|
| Rated Insulation Voltage (Ui) | | XA | 300V (illuminated part: 60V) | | | | |
| | | XW, XN | 250V | | | | |
| Rated Current (Ith) | | XA, XW, XN | 5A | | | | |
| Rated Operating Voltage (Ue) | | | 30V | 125V | 250V | | |
| | | | | | | | |
| Rated Operating Current | Main Contacts (NC) | AC 50/60 Hz | Resistive Load (AC-12) | XA | – | 3A | 3A |
| | | | | XW, XN | – | 5A | 3A |
| | | Inductive Load (AC-15) | XA | – | 1.5A | 1.5A | |
| | | | XW, XN | | 3A | 1.5A | |
| | | DC | Resistive Load (DC-12) | | 2A | 0.4A | 0.2A |
| | | | Inductive Load (DC-13) | | 1A | 0.22A | 0.1A |
| | Monitor Contacts (NO) | AC 50/60 Hz | Resistive Load (AC-12) | XA, XW, XN | – | 1.2A | 0.6A |
| | | | Inductive Load (AC-14) | | – | 0.6A | 0.3A |
| | | Resistive Load (DC-12) | 2A | | 0.4A | 0.2A | |
| | | | Inductive Load (DC-13) | | 1A | 0.22A | 0.1A |

- Minimum applicable load: 5V AC/DC, 1mA (reference value).
- The rated operating currents are measured at resistive/inductive load types specified in IEC 60947-5-1.

Part Numbers

XA1E - L V 3 11 Q4 V- R

Illumination
B: Non-Illuminated
L: Illuminated

Mushroom Size
3: ø29mm
4: ø40mm

Contact Configuration*
11: 1NO - 1NC
02: 2NC
13: 1NO - 3NC
04: 4NC

Terminal
blank: solder tab
V: PCB

Voltage Code
blank: Non-illuminated
Q4: Illuminated 24V AC/DC

XW1E - L V 4 11 Q4M - R

Illumination
B: Non-Illuminated
L: Illuminated LED
T: Illuminated
Push-ON LED

Mushroom Size
4: ø40mm
5: ø60mm
(non-illuminated only)

Contact Configuration*
11: 1NO - 1NC
02: 2NC
13: 1NO - 3NC
04: 4NC
22: 2NO-2NC
12: 1NO-2NC (Push-ON LED only)

Voltage Code
blank: Non-Illuminated
Q4: Illuminated 24V AC/DC

XN1E - L V 4 02 Q4 MR

Bezel
1: Plastic Bezel
4: Padlock
5: Flush Bezel

Illumination
XN1E, XN5E
BV: Non-Illuminated
LV: Illuminated LED
TV: Illuminated
Push-ON LED

XN4E
BL: Non-Illuminated
LL: Illuminated LED
TL: Illuminated
Push-ON LED

Mushroom Size
4: ø40mm: XN1E, XN5E
ø44mm: XN4E
5: ø60mm
(XN1E non-illuminated only)

New

Contact Configuration*
11: 1NO - 1NC
02: 2NC
13: 1NO - 3NC
22: 2NO - 2NC
04: 4NC
12: 1NO-2NC (Push-ON LED only)

Voltage Code
blank: Non-Illuminated
Q4: 24V AC/DC (Illuminated & Push-ON LED type)

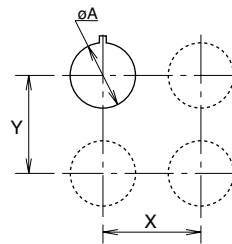
Illuminated Unit LED Ratings

| Model | Rated Voltage | Operating Voltage | Rated Current |
|---------|---------------|-------------------|---------------|
| 16mm XA | 24V AC/DC | 24V AC/DC ±10% | 11mA |
| 22mm XW | | | 15mA |
| 30mm XN | | | 15mA |

Depth Behind the Panel

| Model | Depth (mm) | Description |
|---------|------------|--|
| 16mm XA | 27.9 | 1 - 4 contacts, both illuminated & non-illuminated |
| 22mm XW | 48.7 | 1 - 4 contacts, both illuminated & non-illuminated |
| 30mm XN | 47.7 | 1 - 4 contacts, plastic bezel |
| | 60.4 | 1 - 4 contacts, flush bezel |
| | 61.4 | 1 - 4 contacts, padlock |

Mounting Hole Layout



Measurements

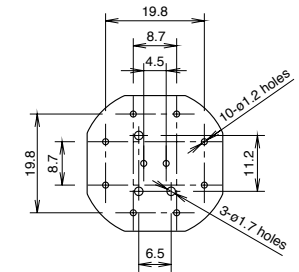
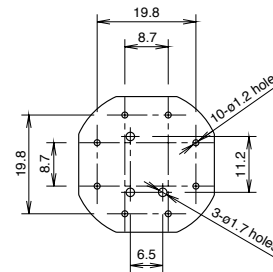
| Size | Model | øA | X & Y |
|-----------------|-------|----------------------|----------|
| 16mm XA | ø29mm | 16.2 ^{+0.2} | 40mm min |
| | ø40mm | | 50mm min |
| 22mm XW | | 22.3 ^{+0.4} | 70mm min |
| 30mm XN1E, XN5E | | 30.5 ^{+0.5} | 70mm min |

Note: For XN4E, determine the values according to the size and number of padlocks and hasp.

PC Board Layout - Bottom View (for 16mm XA only)

Non-Illuminated

Illuminated

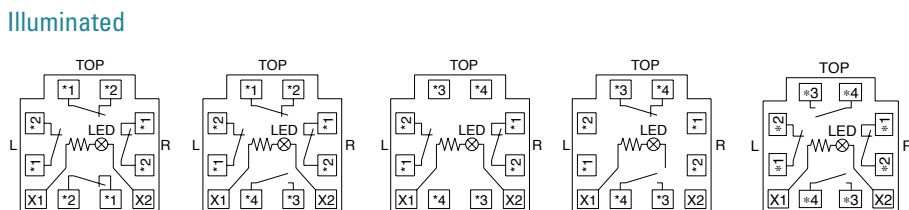
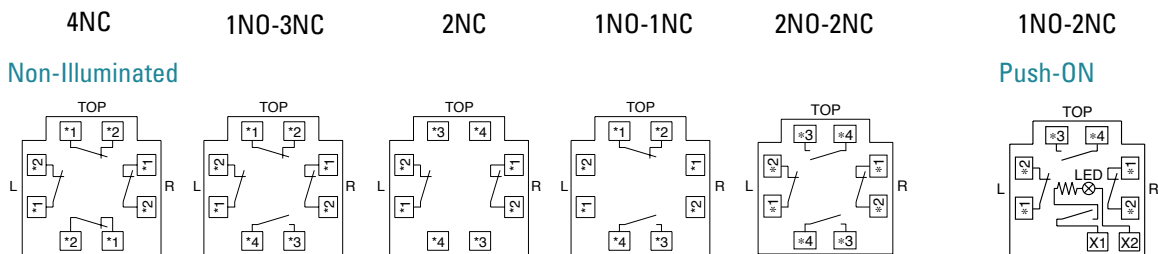


XN5E-BV411MR

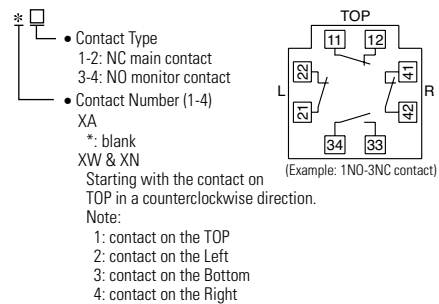


XN4E-LL411MR

Terminal Arrangements (Bottom View)

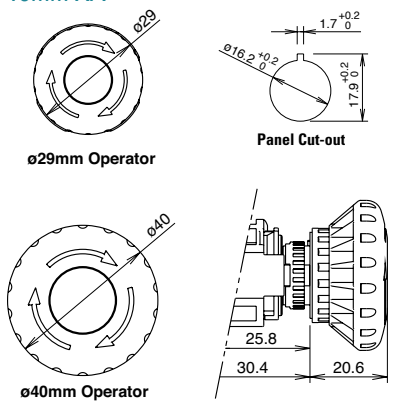


Terminal Marking Description

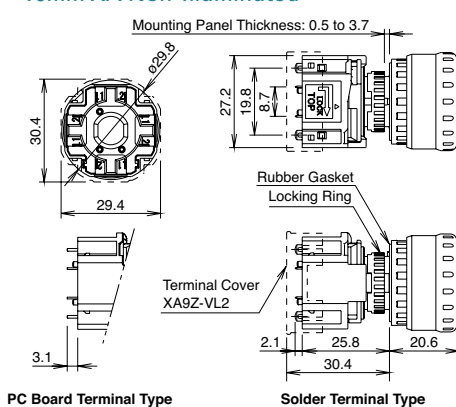


Dimensions (mm)

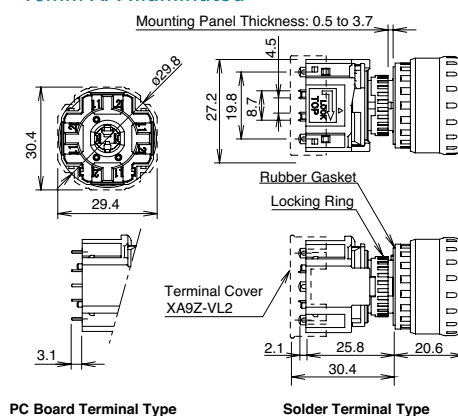
16mm XA



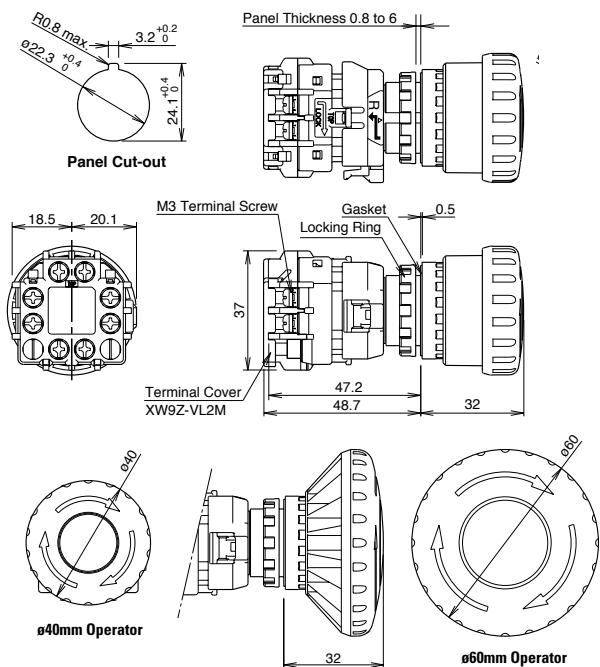
16mm XA Non-Illuminated



16mm XA Illuminated



22mm XW Non-Illuminated (with terminal cover)



22mm XW LED Illuminated/ Push-ON (with terminal cover)

