16mm 22.5mm 21x21mm 21x27mm IP65 5A 250VAC



Choose one component from each of the coloured sections to assemble a complete switch. For other options or further information please contact your local sales office.

Product Profile

The Series 61 is a high quality, modular switch range that includes pushbuttons, indicators, selector switches, keylock switches and Emergency-stops. Available in raised or flush mount.

Self cleaning snap-action and slow-make switching elements available.

Technical data see page 103

- IP65 Protection
- Switch Rating, 5A, 250 VAC
- Raised Mounting into 16 mm cut out
- Flush Mounting into 22.5 mm, 21 x 21 mm and 21 x 27 mm cut out
- Illumination using midget-grooved T13/4 lamps or single chip LED's
- All standard lenses are transparent with translucent diffuser available in different colours
- For keylock switches 135 different keys are available



For a complete selector switch you will need to order the appropriate contact block, LED, lever and bezel (for flush mount only)

16mm 22.5mm 21x21mm 21x27mm IP65 5A 250VAC

Series 61



Choose one component from each of the coloured sections to assemble a complete switch. For other options or further information please contact your local sales office.

O Indicator



Indicator body for flush mount, black plastic, 22.5 mm mounting

Part No.

61-0000.02

Illuminated pushbutton

1 2 3 4

Illuminated pushbutton actuator, raised, round, square and rectangular, black plastic, 16 mm mounting

Image	Part No.	Function	Size
1	61-1150.0	Momentary	24 x 24 mm
1	61-1250.0	Maintained	24 x 24 mm
2	61-1130.0	Momentary	18x24mm
2	61-1230.0	Maintained	18x24mm
3	61-1120.0	Momentary	18x18mm
3	61-1220.0	Maintained	18x18mm
4	61-1110.0	Momentary	18mmØ
4	61-1210.0	Maintained	18mmØ

For complete switch also order $\ddot{\mathbb{Q}}$

Indicator bodies, raised, round, square

Part No.

61-0050.02

61-0030.02

61-0020.02

61-0010.02

Image

1

2

3

4

and rectangular, black plastic, 16 mm mounting

Size

24 x 24 mm

18x24mm

18x18mm

18 mm Ø

For complete switch also order 👸 🗛

For complete switch also order \boxdot \heartsuit

Illuminated pushbutton Emergency-stop switch Keylock switch ര് Illuminated flush mount pushbutton actuator, Keylock switch, actuator, Emergency-stop, twist release and key release, round, black plastic, 22.5 mm mounting 27 mm diameter for 16 mm mounting, foolproof 2 position for raised and to EN 60947-5-5 and DIN EN ISO 13850 flush mount Part No. Graphic Part No. Function Product reference Part No. Function Key rem. 61-1100.0 Momentary 61-3440.4/1 Twist release 61-2101.0/D Momentary А 61-1200.0 Maintained 61-5441.4/K Key release 61-2201.0/D Maintained А 61-2203.0/D Maintained С 2 61-2205.0/D Maintained C + A2 For flush mount order front bezel and front bezel set

For complete switch also order 🕝 🎖 🗛

For complete switch also order 🖂 🗛

16mm 22.5mm 21x21mm 21x27mm IP65 5A 250VAC



Choose one component from each of the coloured sections to assemble a complete switch. For other options or further information please contact your local sales office.



For complete switch also order 🕢 A

For complete switch also order 🕢 A

For complete switch also order 🕝 🍟 🗛

Contact block



Contact block for pushbuttons and 2 position keylock and selector switches, snap-action, solder/plug-in terminal



Emergency-stop contact block, slow make, screw terminal or solder/plug-in terminal



Contact block, 3 position keylock and selector switch, snapaction, solder/plug-in terminal

Deut Ne	0	Oratest meterial	Incore	Devt Ne	0	Or attact an attacted	David Na	O a rata at thema	Or attact masterial
Part No.	Contact type	Contact material	Image	Part No.	Contact type	Contact material	Part No.	Contact type	Contact material
61-8410.12	1NO	Silver	1	61-8755.11	2NC	Silver	61-8520.12	2N0	Silver
61-8410.22	1NO	Gold	2	61-8755.17	2NC	Silver	61-8520.22	2N0	Gold
61-8420.12	2N0	Silver	1	61-8775.11	1N0/1NC	Silver			
61-8420.22	2N0	Gold	2	61-8775.17	1N0/1NC	Silver			
61-8470.12	1N0/1NC	Silver							
61-8470.22	1N0/1NC	Gold							

16mm 22.5mm 21x21mm 21x27mm IP65 5A 250VAC

Series 61





LED, T1¾ MG, single chip, 12 Volt and 28 Volt. Also available in 6 Volt, 24 Volt and 48 Volt

Colour	Part No.	Voltage	Colo
🔴 Red	10-2J09.1062	12VAC/DC, 7/14mA	
O Yellow	10-2J09.1064	12VAC/DC, 7/14mA	(<mark>)</mark>
🔵 Green	10-2J09.1065	12VAC/DC, 7/14mA	
O Blue	10-2J09.1066	12VAC/DC, 7/14mA	
O White	10-2J09.1069	12VAC/DC, 7/14mA	0
🔴 Red	10-2J13.1062	28VAC/DC, 7/14mA	
O Yellow	10-2J13.1064	28VAC/DC, 7/14mA	
🔵 Green	10-2J13.1065	28VAC/DC, 7/14mA	
O Blue	10-2J13.1066	28VAC/DC, 7/14mA	
O White	10-2J13.1069	28VAC/DC, 7/14mA	
 Red Yellow Green Blue 	10-2J13.1062 10-2J13.1064 10-2J13.1065 10-2J13.1066	28VAC/DC, 7/14mA 28VAC/DC, 7/14mA 28VAC/DC, 7/14mA 28VAC/DC, 7/14mA	

A Accessories



Lens, plastic for raised, rectangular indicator and pushbutton actuators

Colour	Part No.	for switch	Colour	Part No.	for switch
🔴 Red	61-9331.2	18x24mm	🔴 Red	61-9351.2	24 x 24 mm
O Yellow	61-9331.4	18x24mm	O Yellow	61-9351.4	24x24mm
🔵 Green	61-9331.5	18x24mm	🔵 Green	61-9351.5	24x24mm
O Blue	61-9331.6	18x24mm	O Blue	61-9351.6	24x24mm
◯ Clear	61-9331.7	18x24mm	○ Clear	61-9351.7	24x24mm

A Accessories



Lens, plastic for raised, square indicator and pushbutton actuators

Colour	Part No.	for switch
🔴 Red	61-9321.2	18x18mm
O Yellow	61-9321.4	18x18mm
🔵 Green	61-9321.5	18x18mm
O Blue	61-9321.6	18x18mm
◯ Clear	61-9321.7	18x18mm



Lens, plastic for raised, round indicator and pushbutton actuators

Colour	Part No.	for switch
🔴 Red	61-9311.2	18mmØ
O Yellow	61-9311.4	18mmØ
🔵 Green	61-9311.5	18mmØ
O Blue	61-9311.6	18mmØ
🔿 Clear	61-9311.7	18mmØ



Lens, plastic for flush mount, rectangular indicator and pushbutton actuators

Lens, plastic for raised, square indicator

and pushbutton actuators

Colour	Part No.	for switch
🔴 Red	61-9681.2	24 x 30 mm
O Yellow	61-9681.4	24x30mm
🔵 Green	61-9681.5	24x30mm
O Blue	61-9681.6	24 x 30 mm
◯ Clear	61-9681.7	24x30mm

16mm 22.5mm 21x21mm 21x27mm IP65 5A 250VAC



Choose one component from each of the coloured sections to assemble a complete switch. For other options or further information please contact your local sales office.

A Accessories



Lens, plastic for flush mount, round indicator and pushbutton actuators



Lens, plastic for flush mount, square indicator and pushbutton actuators



Lever for selector switch, raised and flush mount, coloured lever bar options available as indicated

Colour	Part No.	Colour	Part No.	for switch	Colour	Part No., Raised	Part No., Flush mount
🔴 Red	61-9642.2	🔴 Red	61-9671.2	24 x 24 mm	🔴 Red	52-928.20	61-9028.20
O Yellow	61-9642.4	O Yellow	61-9671.4	24 x 24 mm	O Yellow	52-928.40	61-9028.40
🔵 Green	61-9642.5	🔵 Green	61-9671.5	24x24mm	🔵 Green	52-928.50	61-9028.50
O Blue	61-9642.6	O Blue	61-9671.6	24 x 24 mm	🔵 Blue	52-928.60	61-9028.60
○ Clear	61-9642.7	◯ Clear	61-9671.7	24x24mm	○ White	52-928.9	61-9028.9
					Black	52-928.0	61-9028.0

A Accessories



Keylock switch front bezel, raised black plastic

1 2 3

Keylock switch front bezel, flush mount or raised, black plastic



Front bezel set for flush mount indicator, illuminated pushbutton and square and rectangular keylock switch

Image	Part No.	for switch	Image	Part No.	for switch	Image	Part No.	Material	Size
1	61-9250.0	24 x 24 mm	1	61-9230.0	24 x 30 mm	1	61-9933.10	Plastic black	25mmarnothing
2	61-9230.0	18x24mm	2	61-9220.0	24 x 24 mm	2	61-9933.0	Aluminium nat.	25 mm Ø
3	61-9220.0	18x18mm	3	61-9210.0	25 mm Ø	3	61-9931.0	Plastic black	24 x 30 mm
4	61-9210.0	18 mm Ø				4	61-9930.0	Plastic black	24 x 24 mm

16mm 22.5mm 21x21mm 21x27mm IP65 5A 250VAC

Series 61



Choose one component from each of the coloured sections to assemble a complete switch. For other options or further information please contact your local sales office.

A Accessories

switch and square selector switch





Front bezel set for round flush mount selector, round keylock Flap guard, raised and flush mount



Blanking plate

Image	Part No.	Material	Size	Image	Part No.	Size	Mounting	Image	Part No.	Size	Mounting hole
1	61-9932.10	Plastic black	25 mm Ø	1	61-9922.0	24 x 30 mm	Flush	1	61-9450.0	24 x 24 mm	16mmarnothing
2	61-9936.0	Plastic black	24 x 24 mm	2	61-9921.0	24 x 24 mm	Flush	2	61-9452.0	24x30mm	21 x 27 mm
3	61-9932.0	Aluminium nat.	25 mm Ø	3	61-9924.0	25 mm Ø	Flush	3	61-9451.0	24x24mm	21 x 21 mm
				4	61-9920.0	24 x 24 mm	Raised	4	51-947.0	18x24mm	16 mm Ø
				5	51-925	18x24mm	Raised	5	51-948.0	18x18mm	16 mm Ø
				6	51-920	18x18mm	Raised	6	51-949.0	18 mm Ø	16 mm Ø
									61-9453.0	25 mm Ø	22.5 mm Ø

A Accessories



Flat receptacle for plug-in terminal size 2.8 x 0.5 mm and insulation socket



Emergency-stop protective shroud, yellow painted aluminium with 16 mm mounting hole



Emergency-stop label, 43 mm diameter, English, German, French and no markings

Image	Part No.	Part No.	Part No.	Markings
1	31-929	61-9965	61-9970.0	no markings
2	31-946		61-9970.2	EMERGENCY STOP
			61-9970.1	NOT AUS
			61-9970.3	ARRET D'URGENCE
			61-9970.6	NOT-HALT

16 mm 22.5 mm 21 x 21 mm 21 x 27 mm IP65 5 A 250 VAC



Choose one component from each of the coloured sections to assemble a complete switch. For other options or further information please contact your local sales office.

A Accessories



Emergency-stop switch enclosure with 16 mm mounting hole, 65 mm (w) x 65 mm (h) x 57 mm (d) and cable gland M16, IP66



Lens remover for flush mount, mounting tool, lens remover for raised, contact block remover and LED remover



Legend plate, adhesive, natural anodised aluminium finish for flush mount round pushbuttons, 25 mm mounting hole

Image	Part No.	Thread	Image	Part No.	Product description	Image	Part No.	Size	Colour
1	61-9480.5		1	61-9730.0	Lens remover for flush mount	1	61-9980.0	50 x 30 mm Ø	Black
2	61-9481.6	M16	2	01-907	Mounting tool	2	704.968.0		Aluminium
			3	02-905	Lens remover for raised	3	704.968.1		Black
			4	61-9711.0	Contact block remover				
			5	61-9740.0	LED remover				

A Accessories



Lens plastic transparent; illuminated ring; for raised and flush mounting, round indicators and illuminated pushbuttons



Lens aluminium; convex raised; for raised and flush mounting, round indicators and illuminated pushbuttons



Lens with spot illumination; aluminium; for raised and flush mounting, round indicators and illuminated pushbuttons

Colour	Part No.	Comment	Colour	Part No.	Colour	Part No.
Red	61-9643-201		Red	61-9842.2	🔴 Red	61-9841.2A
🔴 Orange	61-9643-301		O Yellow	61-9842.4	O Yellow	61-9841.4A
O Yellow	61-9643-401		Green	61-9842.5	🔵 Green	61-9841.5A
Green	61-9643-501		O Blue	61-9842.6	O Blue	61-9841.6A
O Blue	61-9643-601		O Aluminium	61-9842.8	O Aluminium	61-9841.8A
◯ Clear	61-9643-701		Black	61-9842.0	Black	61-9841.0A

Actuator with snap-action switching element

Switching system

Self-cleaning, double-break snap-action switching system with contact opening width 2x0.5 mm (switch with small contact opening width as per EN IEC 61058-1).

The switching elements are optionally equipped with the following switching functions:

One to three normally open (NO) or normally closed (NC), or any combination of NO and NC plus connections for T1 3/4 LED or lamp. The number of switching elements cannot exceed three.

The switching elements provided for the 3-position switch actuators are equipped with max. 2NC or 2NO or any combination. The number of switching elements cannot exceed two.

Material

Lens

Raised mounting Polymethylmethacrylat (PMMA), as per UL 94 HB, flush mounting Polycarbonat (PC), as per UL 94 V0, or Aluminium anodized

Front bezel

Polyetherimid (PEI), as per UL 94 V0, or Aluminium anodized

Front ring

Aluminium anodized Material of contact

Silver or silver with gold plating

Switching element

Diallylphthalate (DAP), as per UL 94 V0 and Polyamide (PA 66), as per UL 94 V0

Actuator housing

Polyetherimide (PEI), as per UL 94 V0, self-extinguishing

Mechanical characteristics

Pushbutton momentary action

Keylock switch

Selector switch

Terminals

- Solder 1 wire 2 wires	rigid 0.5 1.5mm² 0.75mm²	flexible 0.5 0.75 mm ² 0.5 mm ²	superflexible 0.5 mm²
Actuating to Selector-/Ke	•	2.5 10 Ncm	
Actuating for Pushbutton			
Actuating tr Pushbutton Selector-/ ke Momentary a	3mm ylock switch	2 positions approx. 42°	3 positions approx. 2x42°
Maintained a		approx. 90°	approx. 2x90°
Rebound timeThe rebound times apply to normal manual activationContact making3msContact breaking5ms			
Mechanical lifetime as per DIN IEC 60512-5-6 and EN IEC 60947-5-1 Pushbutton maintained action 1 million cycles of operation			

2 million

50 000

100 000

cycles of operation

cycles of operation

cycles of operation

Electrical characteristics

Standards

The devices comply with: EN IEC 61058-1 and EN IEC 60947-5-1

Rated Operational Voltage Ue 250 VAC/DC as per EN IEC 60947-1

Rated Insulation Voltage Ui 320 VAC, as per EN IEC 60947-5-1

Rated Impulse Withstand Voltage Uimp 4 kV, as per EN IEC 60947-5-1

Contact resistance

New state with silver contact $\leq 100 \text{ m}\Omega$ as per DIN IEC 60512-2-4, measured at 100 mA, 10V New state with gold plated contact \leq 50 m Ω as per DIN IEC 60512-2-3, measured at 20 mV, 10 mA

Electrical life

EN IEC 60947-5-1

Electrostatic discharge

Keylock switch 11 kV

Conventional free air thermal current Ith 5A, as per EN IEC 60947-5-1

the maximum current in continuous operation and at ambient

temperature must not exceed the quoted maximum values.

Switch rating

Switch rating AC with silver contact or silver contact with gold plating, service category AC-15, as per EN IEC 60947-5-1 Voltage 125 VAC 250 VAC Current 2.5A 2A

Switch rating DC for silver contact or silver contact with gold plating, service category DC-13, as per EN IEC 60947-5-1 250 VDC Voltage Current 0.15A

Recommended minimum operational data

Material of contact Voltage Current

Silver with gold plating 5VAC/DC 20 VAC/DC 100 mA 10 mA

Electric strength

2500 VAC, 50 Hz, 1 min., as per DIN IEC 60512-2-11 between all terminals and earth

Silver

Overvoltage category

III, as per EN IEC 60947-5-1

Protection class

Class II, as per EN IEC 61058-1

Degree of pollution 3, as per EN IEC 60947-1

Environmental conditions

Storage temperature -40 °C ... +85 °C

Operating temperature -25 °C ... +55 °C

Protection degree as per EN IEC 60529 Frontside IP65 | rear side IP40

Shock resistance (semi-sinusoidal) max. 100m/s², pulse width 11ms, 3-axis, as per

EN IEC 60068-2-27 Vibration resistance

(sinusoidal) max. 100 m/s² at 10 Hz ... 500 Hz, as per EN IEC 60068-2-6

Climate resistance Damp heat, cyclic

96 hours, +25 °C / 97%, +55 °C / 93% relative humidity, as per EN IEC 60068-2-30

Damp heat, state 56 days, +40 $^{\circ}\text{C}$ / 93% relative humidity, as per EN IEC 60068-2-78

Rapid change of temperature 100 cycles, -40 °C ... +80 °C, as per EN IEC 60068-2-14

Approvals

Approbations

CB (IEC 60947) CB (IEC 61058) CSA ENEC (EN 61058) Germanischer Lloyd GOST UL VDE Declaration of conformity CF

Actuator with slow-make switching element

Switching system

Double-break slow-make system, contact opening width 2×1.5 mm, with 2×2 contact points per switching element. NC-contact elements in the slow-make elements fulfill requirements of switches with forced opening as per EN IEC 60947-5-1 2.17 The slow-make elements are optionally obtainable with the following switching functions: 1 NO or 2 NO, 1 NC or 2 NC, 1 NO + 1 NC.

Material

Lens

Raised mounting Polymethylmethacrylat (PMMA), as per UL 94 HB, flush mounting Polycarbonat (PC), as per UL 94 V0, or Aluminium anodized

Front bezel

Polyetherimid (PEI), as per UL 94 V0, or Aluminium anodized

Front ring Aluminium anodized

Material of contact

Silver or gold (specified for operation for low level switching)

Switching element

Diallylphthalate (DAP), as per UL 94 V0 and Polyamide (PA 66), as per UL 94 V0

Actuator housing

Polyetherimide (PEI), as per UL 94 V0, self-extinguishing

Mechanical characteristics

Terminals

- Solder 1 wire 2 wires	rigid 0.5 1.5 mm² 0.75 mm²	flexible 0.5 0.75mm² 0.5mm²	superflexible 0.5 mm²	
- Screw 1 wire 2 wires	0.5 1.5 mm² 0.75 mm²	0.5 0.75 mm² 0.5 mm²	0.5 mm² 0.5 mm²	
Actuating to Selector-/ Ke	erque Bylock switch	4 16 Ncm		
Actuating for Pushbutton Emergency-s		3.5 11 N max. 65 N		
Actuating tra Pushbutton Emergency-s		3 mm 10 mm		
Selector-/ ke Momentary a Maintained a	action	2 positions approx. 42° approx. 90°	approx. 2 x 42°	
Rebound time 2 ms, contact making and contact breaking the rebound times apply to normal manual activation				

Mechanical lifetime

as per DIN IEC 60512-5-6 and EN	IEC 60947-5-1	
Pushbutton maintained action	1 million	cycles of operation
Pushbutton momentary action	2 million	cycles of operation
Emergency-stop pushbutton	6 050	cycles of operation
Keylock switch	50 000	cycles of operation
Selector switch	100 000	cycles of operation

Electrical characteristics

Standards

The devices comply with: EN IEC 61058-1 and EN IEC 60947-5-1, EN IEC 60947-5-5 (Emergency-stop)

Electrical life

 ${\geq}50~000$ cycles of operation at 250 VAC, 5A, $\cos\phi$ 0.95, as per EN IEC 60947-5-1

Switching Element of Emergency-stop 6050 cycles of operation, as per EN IEC 60947-5-5

Electrostatic discharge Keylock switch

eylock switch 11 kV

Electric strength 4000 VAC, 50 Hz, 1 min., as per DIN IEC 60512-2 between all terminals and earth

Overvoltage category

III, as per EN IEC 60947-5-1

Protection class Class II, as per EN IEC 61058-1

Degree of pollution 3, as per EN IEC 60947-1

Electrical characteristics for silver contacts

Rated Operational Voltage Ue 250 VAC/DC as per EN IEC 60947-1

Rated Insulation Voltage Ui 320 VAC, as per EN IEC 60947-5-1

Rated Impulse Withstand Voltage Uimp

4 kV, as per EN IEC 60947-5-1

Contact resistance

New state \leq 50 m Ω , as per DIN IEC 60512-2-4, measured at 100 mA, 10 V

Conventional free air thermal current Ith

5A, as per EN IEC 60947-5-1 the maximum current in continuous operation and at ambient

temperature must not exceed the quoted maximum values.

Switch rating

Switch rating AC with silver contact and srew terminal, servicecategory AC-15, as per EN IEC 60947-5-1Voltage125 VAC250 VACCurrent3A2A

 Switch rating with silver contact and screw terminal, service category

 DC-13, as per EN IEC 60947-5-1

 Voltage
 250 VDC

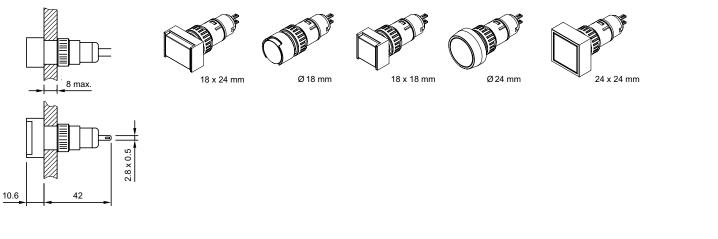
 Current
 0.2 A

Recommended minimum operational data

20 VAC/DC, 100 mA

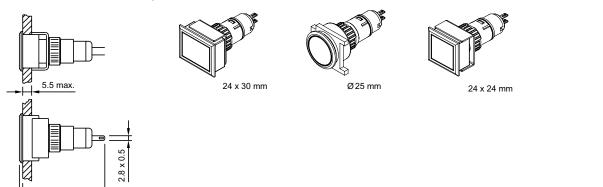
61 Indicator

Raised, Round, Square, Rectangular



61 Indicator

Flush, Round, Square, Rectangular

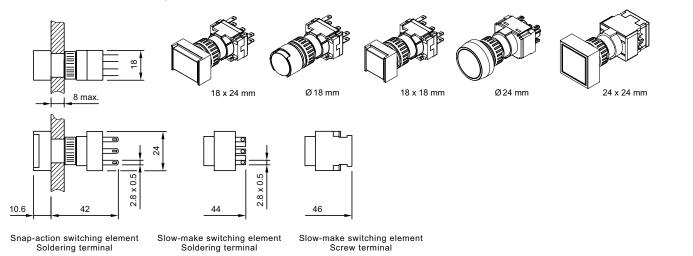


61 Illuminated Pushbutton

49

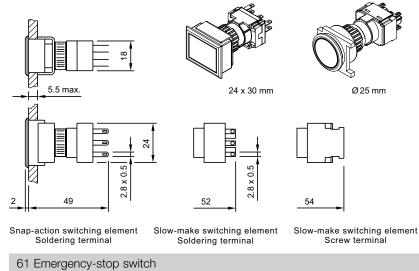
2

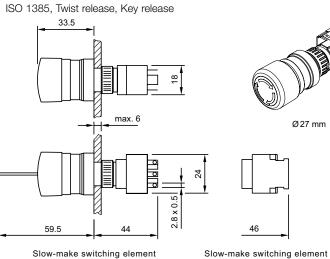
Raised, Round, Square, Rectangular



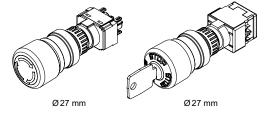
61 Illuminated Pushbutton

Flush, Round, Square, Rectangular





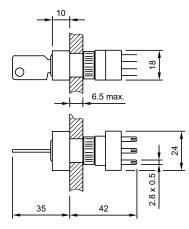
Soldering terminal



24 x 24 mm

61 Keylock switch

2 & 3-Position, Raised, Round, Square, Rectangular



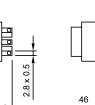
Snap-action switching element Soldering terminal

K	18 x 2	4 mm	

×3

46

Screw terminal



44

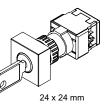
Slow-make switching element Soldering terminal



Ø 18 mm

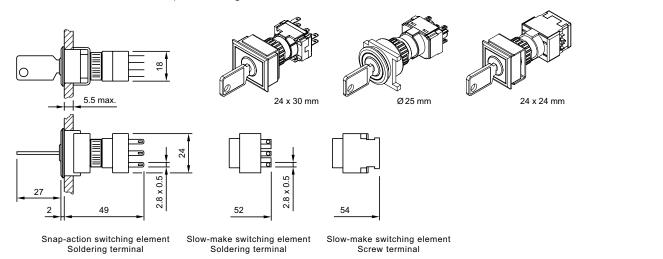
18 x 18 mm

Slow-make switching element Screw terminal



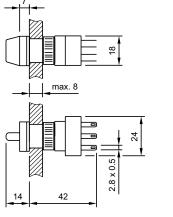
61 Keylock switch

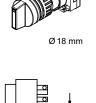
2 & 3-Position, Flush, Round, Square, Rectangular



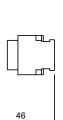
61 Selector switch

2 & 3-Position, Raised, Round, Square, Rectangular





2.8 x 0.5



Snap-action switching element Soldering terminal Slow-make switching element Soldering terminal

44

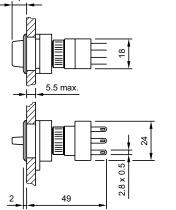
Slow-make switching element Screw terminal

24 x 24 mm

26 x 26 mm

61 Keylock switch

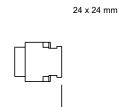
2 & 3-Position, Flush, Round, Square, Rectangular





d d d

2.8 × 0.5



54

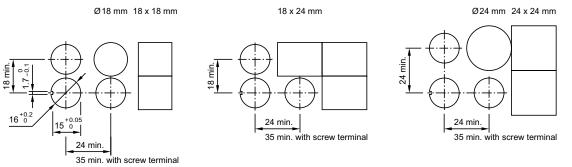
Snap-action switching element Soldering terminal Slow-make switching element Soldering terminal

51

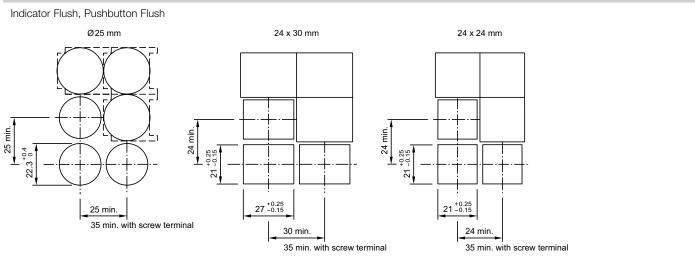
Slow-make switching element Screw terminal

61 Cut-outs





61 Cut-outs



61 Cut-outs, Emergency-Stop

ISO 13850, Twist release, Key release

