INDICATOR	PUSHBUTTON	E-STOP	KEYLOCK	SELECTOR

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 pages 89-91
Technical drawings see pages 92-93

- IP65 Protection
- Switch Rating, 5A, 250VAC
- Raised Mounting into 16mm cut out
- Flush Mounting into 22.5mm, 21x21mm and 21x27mm cut out
- Illumination using midget-grooved T1¾ lamps or single chip LED's
- All standard lenses are transparent with translucent diffuser available in different colours
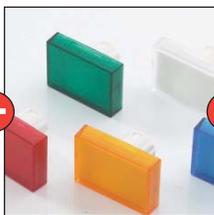- For keylock switches 135 different keys are available

☼ Indicator	💡 LED	A Accessories	A Accessories

A guide to ordering parts - choice of front bezel determines front shape

For a complete indicator you will need to order the appropriate LED, lens and bezel (for flush mount only)
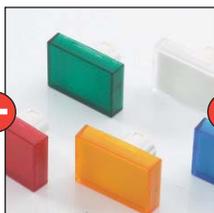
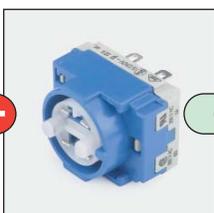| ◎ Illuminated pushbutton	⊡ Contact block	💡 LED	A Accessories	A Accessories

For a complete illuminated pushbutton you will need to order the appropriate contact block, LED, lens and bezel (for flush mount only)
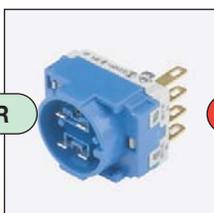
🔑 Keylock switch	⊡ Contact block	⊡ Contact block	A Accessories	A Accessories	A Accessories

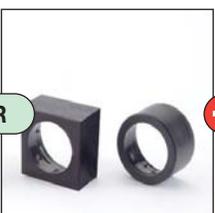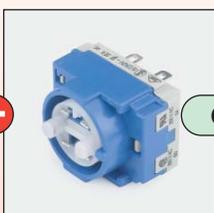OR   OR

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

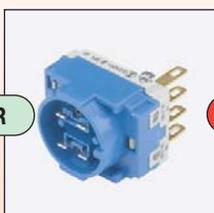| 🎛 Selector switch	⊡ Contact block	⊡ Contact block	💡 LED	A Accessories	A Accessories

OR

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

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.

| BLOCK | LED | **A** ACCESSORIES |

☀ Indicator

Indicator bodies, raised, round, square
and rectangular, black plastic, 16mm mounting

Image	Part No.	Size
1	61-0050.02	24 x 24mm
2	61-0030.02	18 x 24mm
3	61-0020.02	18 x 18mm
4	61-0010.02	18mm Ø

For complete switch also order ☼ **A**

◎ Illuminated pushbutton

Indicator body for flush mount, black plastic

Part No.
61-0000.02

For complete switch also order ☼ **A**

◎ Illuminated pushbutton

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

Image	Part No.	Momentary/Maintained	Size
1	61-1150.0	Momentary	24 x 24mm
1	61-1250.0	Maintained	24 x 24mm
2	61-1130.0	Momentary	18 x 24mm
2	61-1230.0	Maintained	18 x 24mm
3	61-1120-0	Momentary	18 x 18mm
3	61-1220.0	Maintained	18 x 18mm
4	61-1110.0	Momentary	18mm Ø
4	61-1210.0	Maintained	18mm Ø

For complete switch also order ⊡ ☼ **A**

◎ Illuminated pushbutton

Illuminated flush mount pushbutton actuator,
round, black plastic

Part No.	Momentary/Maintained
61-1100.0	Momentary
61-1200.0	Maintained

For complete switch also order ⊡ ☼ **A**

Complete switch

61

TAIL LIGHTS

Features
- IP65 front sealed for spray water protection
- Modular switching system
- Intensive LED illumination
- Raised or flush mount
- Options for engraving
- Good choice of mounting sizes
- Good snap action tactile feel
- Solder or plug in terminals
- 135 different key options available
  for keylock switches
- World wide approvals

INDICATOR	PUSHBUTTON	E-STOP	KEYLOCK	SELECTOR

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.

Emergency-stop switch

Emergency-stop, twist release and key release, 27mm diameter for 16mm mounting, foolproof to EN 60947-5-5 and EN 418
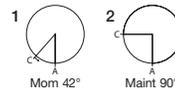
	Part No.	Product reference
	61-3440.4/1	Twist release
	61-5441.4/K	Key release

For complete switch also order ⌧ **A**

Keylock switch

Keylock switch, actuator, 2 position for raised and flush mount

1 Mom 42°　**2** Maint 90°

Drawing	Part No.	Momentary/Maintained	Key rem.
1	61-2101.0/D	Momentary	A
2	61-2201.0/D	Maintained	A
2	61-2203.0/D	Maintained	C
2	61-2205.0/D	Maintained	C+A

For flush mount order front bezel and front bezel set

For complete switch also order ⌧ **A**

Keylock switch

Keylock switch, actuator, 3 position for raised and flush mount

3 Mom 42°　**4** Maint 90°

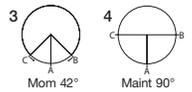| Drawing	Part No.	Momentary/Maintained	Key rem.
3	61-2501.0/D	Momentary/Momentary	A
4	61-2601.0/D	Maintained/Maintained	A
4	61-2602.0/D	Maintained/Maintained	B
4	61-2603.0/D	Maintained/Maintained	C
4	61-2604.0/D	Maintained/Maintained	A+B
4	61-2605.0/D	Maintained/Maintained	C+A
4	61-2606.0/D	Maintained/Maintained	C+B
4	61-2607.0/D	Maintained/Maintained	C+A+B

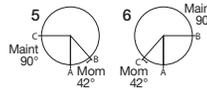For flush mount order front bezel and front bezel set

For complete switch also order ⌧ **A**

Keylock switch

Keylock switch, actuator, 3 position for raised and flush mount

5 Maint 90° Maint 90°　**6** Maint 90° Mom 42°

Drawing	Part No.	Momentary/Maintained	Key rem.
6	61-2701.0/D	Maintained/Momentary	A
6	61-2703.0/D	Maintained/Momentary	C
6	61-2705.0/D	Maintained/Momentary	C+A
5	61-2801.0/D	Momentary/Maintained	A
5	61-2802.0/D	Momentary/Maintained	B
5	61-2804.0/D	Momentary/Maintained	A+B

For flush mount order front bezel and front bezel set

For complete switch also order ⌧ **A**

Selector switch

Selector switch, actuator, 2 and 3 position for raised and flush mount

7 Mom 42°　**8** Maint 90°　**9** Mom 42°　**10** Maint 90°　**11** Maint 90° Mom 42°　**12** Maint 90° Mom 42°
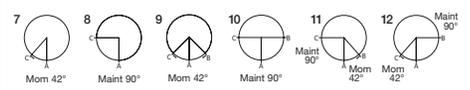
Drawing	Part No.	Momentary/Maintained
7	61-4110.0	Momentary
8	61-4210.0	Maintained
9	61-4510.0	Momentary/Momentary
10	61-4610.0	Maintained/Maintained
11	61-4710.0	Maintained/Momentary
12	61-4810.0	Momentary/Maintained

For complete switch also order ⌧ ♀ **A**

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.

| BLOCK | LED | A ACCESSORIES |
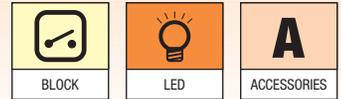
Contact block

Contact block for pushbuttons and 2 position keylock and selector switches, snap-action

	Part No.	Contact type	Contact material
	61-8410.12	1NO	Silver
	61-8410.22	1NO	Gold
	61-8420.12	2NO	Silver
	61-8420.22	2NO	Gold
	61-8470.12	1NO/1NC	Silver
	61-8470.22	1NO/1NC	Gold
	61-8490.12	2NO/1NC	Silver
	61-8490.22	2NO/1NC	Gold

For complete switch also order ◎ ⌀ ⊞

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

Image	Part No.	Contact type	Contact material
1	61-8755.11	2NC	Silver
2	61-8755.17	2NC	Silver
1	61-8775.11	1NO/1NC	Silver
2	61-8775.17	1NO/1NC	Silver

For complete switch also order ◎

Contact block, 3 position keylock and selector switch, snap-action

	Part No.	Contact type	Contact material
	61-8520.12	2NO	Silver
	61-8520.22	2NO	Gold

For complete switch also order ⌀ ⊞

LED

LED, T1 ³/₄ MG, single chip, 12 Volt and 28 Volt

Colour	Part No.	Voltage
● Red	10-2J09.1062	12VAC/DC, 7/14mA
● Yellow	10-2J09.1064	12VAC/DC, 7/14mA
● Green	10-2J09.1065	12VAC/DC, 4/7mA
● Blue	10-2J09.1066	12VAC/DC, 7/14mA
○ White	10-2J09.1069	12VAC/DC, 7/14mA
● Red	10-2J13.1062	28VAC/DC, 7/14mA
● Yellow	10-2J13.1064	28VAC/DC, 7/14mA
● Green	10-2J13.1065	28VAC/DC, 4/7mA
● Blue	10-2J13.1066	28VAC/DC, 7/14mA
○ White	10-2J13.1069	28VAC/DC, 7/14mA

A Accessories

Lens, plastic for raised, rectangular indicator and pushbutton bodies

Colour	Part No.	Size
● Red	61-9331.2	18 x 24mm
● Yellow	61-9331.4	18 x 24mm
● Green	61-9331.5	18 x 24mm
● Blue	61-9331.6	18 x 24mm
○ Clear	61-9331.7	18 x 24mm

Lens, plastic for raised, square indicator and pushbutton bodies

Colour	Part No.	Size
● Red	61-9351.2	24 x 24mm
● Yellow	61-9351.4	24 x 24mm
● Green	61-9351.5	24 x 24mm
● Blue	61-9351.6	24 x 24mm
○ Clear	61-9351.7	24 x 24mm

Series 61

| INDICATOR | PUSHBUTTON | E-STOP | KEYLOCK | SELECTOR |

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 raised, square indicator and pushbutton bodies

Colour	Part No.	Size
Red	61-9321.2	18 x 18mm
Yellow	61-9321.4	18 x 18mm
Green	61-9321.5	18 x 18mm
Blue	61-9321.6	18 x 18mm
Clear	61-9321.7	18 x 18mm

Lens, plastic for raised, round indicator and pushbutton bodies

Colour	Part No.	Size
Red	61-9311.2	18mm Ø
Yellow	61-9311.4	18mm Ø
Green	61-9311.5	18mm Ø
Blue	61-9311.6	18mm Ø
Clear	61-9311.7	18mm Ø

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

Colour	Part No.	Size
Red	61-9681.2	24 x 30mm
Yellow	61-9681.4	24 x 30mm
Green	61-9681.5	24 x 30mm
Blue	61-9681.6	24 x 30mm
Clear	61-9681.7	24 x 30mm

A Accessories

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

Colour	Part No.	Size
Red	61-9642.2	25mm Ø
Yellow	61-9642.4	25mm Ø
Green	61-9642.5	25mm Ø
Blue	61-9642.6	25mm Ø
Clear	61-9642.7	25mm Ø

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

| Colour	Part No.	Size
Red	61-9671.2	24 x 24mm
Yellow	61-9671.4	24 x 24mm
Green	61-9671.5	24 x 24mm
Blue	61-9671.6	24 x 24mm
Clear	61-9671.7	24 x 24mm

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

Colour	Part No., Raised	Part No., Flush mount
Red	52-928.20	61-9028.20
Yellow	52-928.40	61-9028.40
Green	52-928.50	61-9028.50
Blue	52-928.60	61-9028.60
White	52-928.9	61-9028.9
Black	52-928.0	61-9028.0

BLOCK   LED   **A** ACCESSORIES
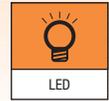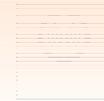
A Accessories
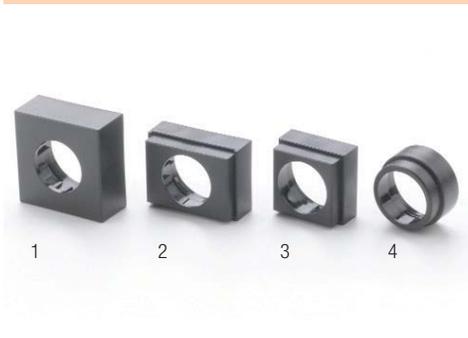
Keylock switch front bezel, raised black plastic

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.	Size
1	61-9250.0	24 x 24mm
2	61-9230.0	18 x 24mm
3	61-9220.0	18 x 18mm
4	61-9210.0	18mm Ø

Image	Part No.	Size
1	61-9931.0	18 x 24mm
2	61-9930.0	18 x 18mm
3	61-9932.0	18mm Ø

Image	Part No.	Material	Size
1	61-9933.10	Plastic	25mm Ø
2	61-9933.0	Aluminium	25mm Ø
3	61-9931.0	Plastic	24 x 30mm
4	61-9930.0	Plastic	24 x 24mm

A Accessories

Front bezel set for round flush mount selector, keylock switch and square selector switch

Flap guard, raised and flush mount

Blanking plate

Image	Part No.	Material	Size
1	61-9932.10	Plastic	25mm Ø
2	61-9936.0	Plastic	24 x 24mm
3	61-9932.0	Aluminium	25mm Ø

Image	Part No.	Size	Raised/Flush mount
1	61-9922.0	24 x 30mm	Flush
2	61-9921.0	24 x 24mm	Flush
3	61-9924.0	25mm Ø	Flush
4	61-9920.0	24 x 24mm	Raised
5	51-925	18 x 24mm	Raised
6	51-920	18 x 18mm	Raised

Image	Part No.	Size	Mounting hole
1	61-9450.0	24 x 24mm	16mm Ø
2	61-9452.0	24 x 30mm	21 x 27mm
3	61-9451.0	24 x 24mm	21 x 21mm
4	51-947.0	18 x 24mm	16mm Ø
5	51-948.0	18 x 18mm	16mm Ø
6	51-949.0	18mm Ø	16mm Ø
(see p95)	61-9453.0	25mm Ø	22.5mm Ø

INDICATOR	PUSHBUTTON	E-STOP	KEYLOCK	SELECTOR

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

Cable shoe for plug-in terminal size 2.8 x 0.5mm and insulation socket

Image	Part No.
1	31-929
2	31-946

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

Part No.
61-9965

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

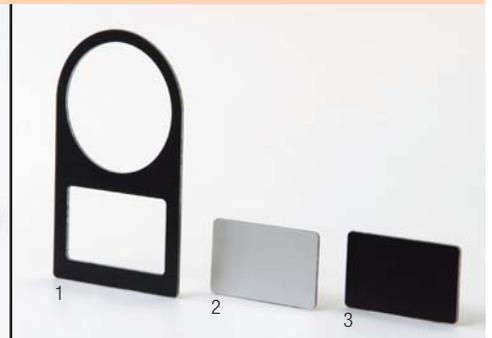| Part No.	Markings
61-9970.0	No markings
61-9970.2	Emergency Stop
61-9970.1	Not Aus
61-9970.3	Arret D'urgence

A Accessories

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

Image	Part No.
1	61-9480.5
2	61-9481.6

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

Image	Part No.	Product description
1	61-9730.0	Lens remover for flush mount
2	01-907	Mounting tool
3	02-905	Lens remover for raised
4	61-9711.0	Contact block remover
5	61-9740.0	LED remover

Legend plate, adhesive, natural anodised aluminium finish for flush mount round pushbuttons, 22.5mm mounting hole

Image	Part No.
1	61-9980.0
2	704.968.0
3	704.968.1

Actuator with snap-action switching element

Switching system
Self-cleaning, double-break snap-action switching system with contact opening width 2 x 0.5 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. 2 NC or 2 NO 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

Terminals

solder	rigid	flexible	superflexible
1 wire :	0.5 ... 1.5 mm^2	0.5 ... 0.75 mm^2	0.5 mm^2
2 wires :	0.75 mm^2	0.5 mm^2	

Actuating torque
selector / Keylock switch : 2.5 ... 10 Ncm

Actuating force
pushbutton : 2.7 ... 3.6 N

Actuating travel
pushbutton : 3 mm

selector-/ keylock switch	2 positions	3 positions
momentary action:	approx. 42 °	approx. 2 x 42 °
maintained action:	approx. 90 °	approx. 2 x 90 °

Rebound time
the rebound times apply to normal manual activation
contact making: 3 ms
contact breaking: 5 ms

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
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

Rated operational voltage
U_e = 250 VAC, as per EN IEC 60947-1

Rated insulation voltage
U_i = 320 VAC, as per EN IEC 60947-5-1

Rated impulse withstand voltage
U_{imp} = 4 kV, as per EN IEC 60947-1

Contact resistance
new state with silver contact : ≤100 mΩ
as per DIN IEC 60512-2-4, measured at 100 mA, 10 V

new state with gold plated contact : ≤50 mΩ
as per DIN IEC 60512-2-3, measured at 20 mV, 10 mA

Electrical life
≥50.000 cycles of operation at 250 VAC, 5 A, cos φ 0.95
as per EN IEC 60947-5-1

Electrostatic discharge
keylock switch : 11 kV

Conventional free air thermal current
I_{th} = 5 A, 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 : 2.5 A 2 A

switch rating DC for silver contact or silver contact with gold plating, service category DC-13, as per EN IEC 60947-5-1
voltage : 250 VDC
current : 0.15 A

Recommended minimum operational data

material of contact:	Silver	Silver with gold plating
voltage :	20 VAC/DC	5 VAC/DC
current :	100 mA	10 mA

Electric strength
2500 VAC, 50 Hz, 1 min., as per DIN IEC 60512-2-11 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

Environmental conditions

Storage temperature
-40 °C ... +85 °C

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

Protection degree
as per EN IEC 60529
frontside IP 65 | backside IP 40

Shock resistance
(semi-sinusoidal) max. 100 m/s^2, pulse width 11 ms,
3-axis, as per EN IEC 60068-2-27

Vibration resistance
(sinusoidal)
max. 100 m/s^2 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 °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

CE (Declaration of conformity)
CB (IEC 60947)
CB (IEC 61058)
CCA-NTR (EN 60947)
CSA
ENEC (EN 61058)
GOST
UL
VDE
German Lloyd
RoHS compliant

Actuator with slow-make switching element

Switching system
double-break slow-make system, contact opening width 2 x 1.5 mm, with 2 x 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	rigid	flexible	superflexible
1 wire :	0.5 ... 1.5 mm^2	0.5 ... 0.75 mm^2	0.5 mm^2
2 wires :	0.75 mm^2	0.5 mm^2	

screw			
1 wire :	0.5 ... 1.5 mm^2	0.5 ... 0.75 mm^2	0.5 mm^2
2 wires :	0.75 mm^2	0.5 mm^2	0.5 mm^2

Actuating torque
selector-/ Keylock switch : 4 ... 16 Ncm

Actuating force
pushbutton : 3.5 ... 11 N
e-stop switch : max. 65 N

Actuating travel
pushbutton : 3 mm
e-stop switch : 10 mm

selector-/ keylock switch	2 positions	3 positions
momentary action :	approx. 42 °	approx. 2 x 42 °
maintained action :	approx. 90 °	approx. 2 x 90 °

Rebound time
the rebound times apply to normal manual activation
contact making and contact breaking 2 ms

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
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
≥50.000 cycles of operation at 250 VAC, 5 A, cos ϕ 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 : 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
U_e = 250 VAC, as per EN IEC 60947-1

Rated insulation voltage
U_i = 320 VAC, as per EN IEC 60947-5-1

Rated impulse withstand voltage
U_{imp} = 4 kV, as per EN IEC 60947-1

Contact resistance
new state :≤50 mΩ as per DIN IEC 60512-2-4, measured at 100 mA, 10 V

Conventional free air thermal current
I_{th} = 5 A, 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, service category AC-15, as per EN IEC 60947-5-1
125 VAC, 2.5 A | 250 VAC, 2 A

switch rating with silver contact, service category DC-13, as per EN IEC 60947-5-1
250 VDC, 0.15 A

switch rating AC with silver contact and srew terminal, service category AC-15, as per EN IEC 60947-5-1
voltage :   125 VAC   250 VAC
current :   3 A   2 A

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

Electrical characteristics for gold contacts

Rated operational voltage
U_e = 50 VAC/DC, as per EN IEC 60947-5-1

Rated insulation voltage
U_i = 320 VAC, as per EN IEC 60947-5-1

Rated impulse withstand voltage
U_{imp} = 0.8 kV, as per EN IEC 60947-1

Contact resistance
new state :≤50 mΩ as per DIN IEC 60512-2-4, measured at
20 mV, 10 mA

Conventional free air thermal current
I_{th} = 3 A, 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 gold contact, service category AC-15, as per
EN IEC 60947-5-1
voltage : 50 VAC
current : 0.5 A

switch rating with gold contact, service category DC-13, as per EN
IEC 60947-5-1
voltage : 50 VDC
current : 0.1 A

Recommended minimum operational data
voltage : 10 mVAC/DC
current : 2 mA

Recommended operational data
voltage : 5 VDC	12 VDC	24 V DC
current : 10 ... 20 mA	5 ... 10 mA	3 ... 5 mA

Environmental conditions

Storage temperature
-40 °C ... +85 °C

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

Protection degree
as per EN IEC 60529
frontside IP 65 | backside IP 40

Shock resistance
(semi-sinusoidal)
max. 100 m/s², pulse width 11 ms, 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 °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

CE (Declaration of conformity)
CB (IEC 60947)
CB (IEC 61058)
CCA-NTR (EN 60947)
ENEC (EN 61058)
GOST
SEV
UL
VDE
German Lloyd
RoHS compliant

Actuator with flasher element

Material

Lens
raised mounting Polymetylmethacrylat PMMA, as per UL 94 HB, flush
mounting Polycarbonat (PC), as per UL 94 V0

Actuator housing
polyetherimide (PEI), as per UL 94 V0, self-extinguishing

Flasher element
polyetherimide (PEI), as per UL 94 V0

Mechanical characteristics

Terminals
soldering terminal

Electrical characteristics

Illumination
filament lamp	14 V AC/DC	28 VAC/DC
power consumption :	80 mA	44 mA

single-LED	12 VAC/DC	28 VAC/DC
power consumption :	15 mA	18 mA

Flashing frequency
1 Hz ±0.25 Hz

Pulse duty factor
approx. 50 %

Operating voltage
12 ... 28 VAC/DC ±10 %

Environmental conditions

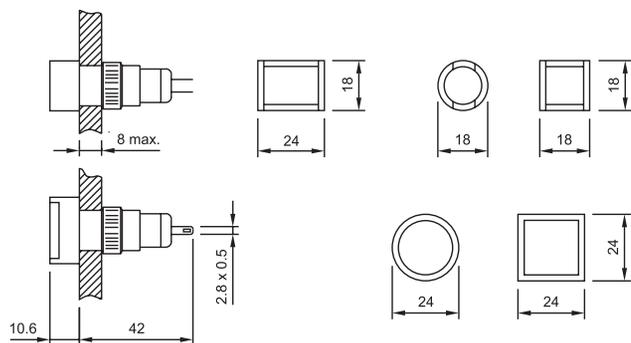**Operating temperature**
0 °C ... +45 °C

Protection degree
as per EN IEC 60529
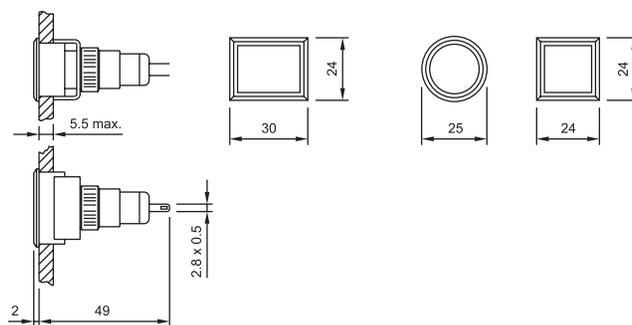frontside IP 65 | backside IP 40
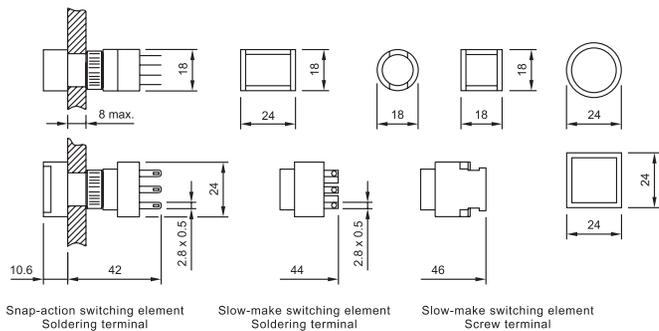
61 Indicator

Raised, Round, Square, Rectangular

61 Indicator
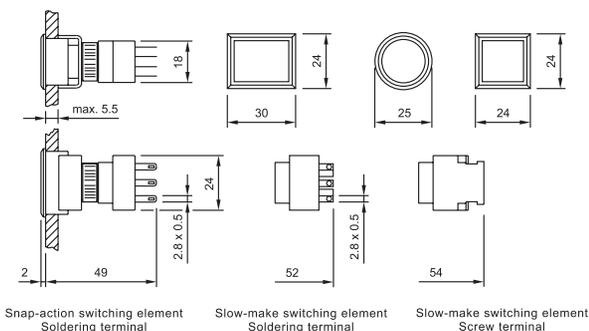
Flush, Round, Square, Rectangular

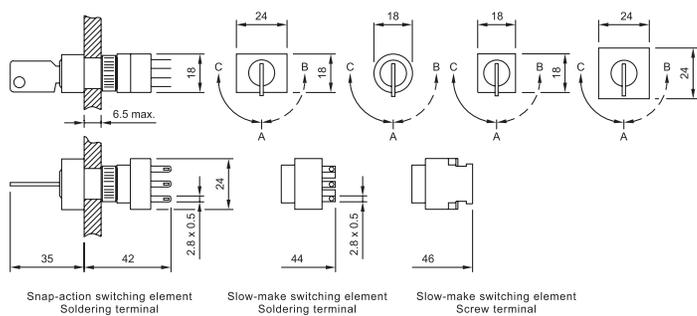## 61 Pushbutton

Illuminated, Raised, Round, Square, Rectangular

Snap-action switching element
Soldering terminal

Slow-make switching element
Soldering terminal

Slow-make switching element
Screw terminal

61 Pushbutton

Illuminated, Flush, Round, Square, Rectangular

Snap-action switching element
Soldering terminal

Slow-make switching element
Soldering terminal

Slow-make switching element
Screw terminal

61 Keylock

2 & 3-Position, Round, Square, Rectangular

Snap-action switching element
Soldering terminal

Slow-make switching element
Soldering terminal

Slow-make switching element
Screw terminal

61 Selector

2 & 3-Position, Round, Square, Rectangular

Snap-action switching element
Soldering terminal

Slow-make switching element
Soldering terminal

Slow-make switching element
Screw terminal
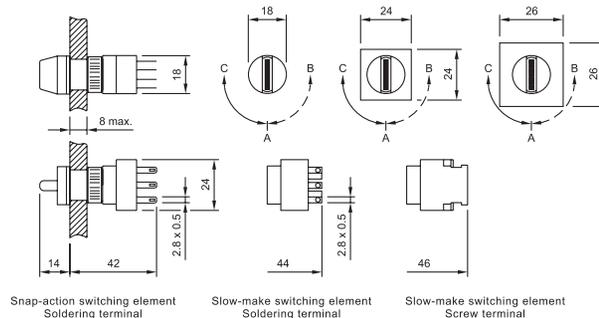
61 E-Stop

EN 418, EN 418 with Key

Slow-make switching element
Soldering terminal

Slow-make switching element
Screw terminal
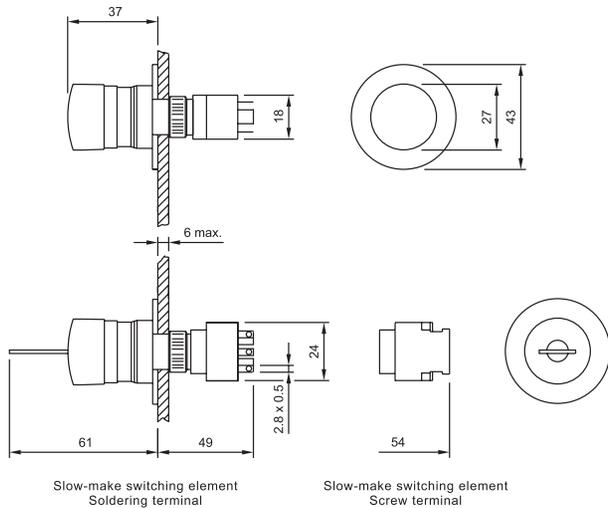
61 Cut-outs

Raised Indicators, Pushbuttons, Keylocks and Selectors

Ø18 mm   18 x 18 mm   18 x 24 mm   Ø24 mm   24 x 24 mm
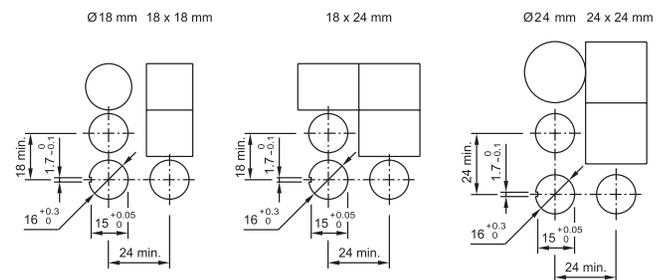
61 Cut-outs

Indicator Flush, Pushbutton Flush

Ø25 mm   24 x 30 mm   24 x 24 mm
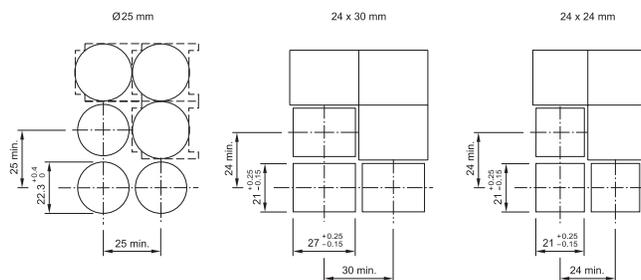
61 E-Stop Cut-outs

EN 418, EN 418 with Key