Series 71

22.5 mm   21 x 21 mm   21 x 27 mm   IP65   3 A   250 VAC
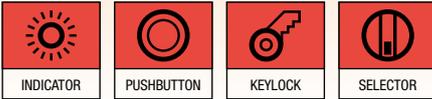
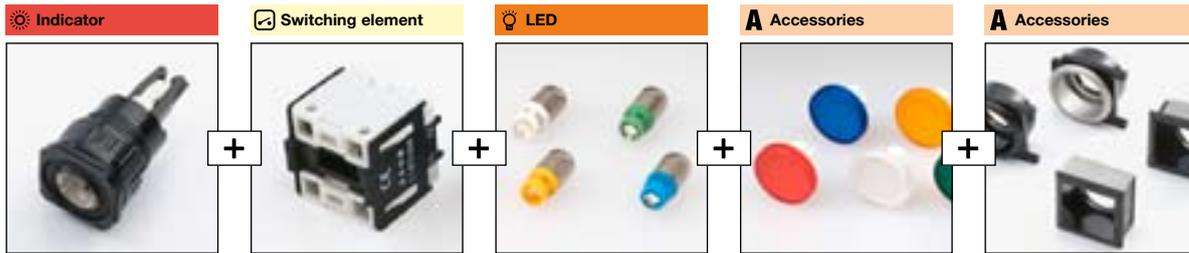| INDICATOR | PUSHBUTTON | KEYLOCK | SELECTOR |

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 71 is a high quality, modular switch range that includes pushbuttons, indicators, selector switches and keylock switches in flush mount with self cleaning snap-action switching elements. The switching elements may be soldered directly onto the PCB and the actuators are lockable with an interlocking pin, no spacing pins needed.

Technical data see page 114

- IP65 Protection
- Switch Rating, 3 A, 250 VAC
- 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
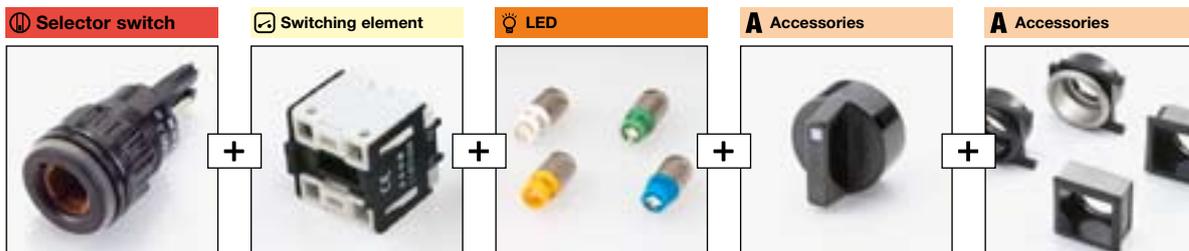- For keylock switches 135 different keys are available

| ☼ Indicator | ⊡ Switching element | ♒ LED | A Accessories | A Accessories |

 + + + +

Ordering Guide
Choice of front bezel determines front shape

For a complete indicator you will need to order the appropriate contact block, LED, lens and bezel

| ◎ Illuminated pushbutton | ⊡ Switching element | ♒ LED | A Accessories | A Accessories |
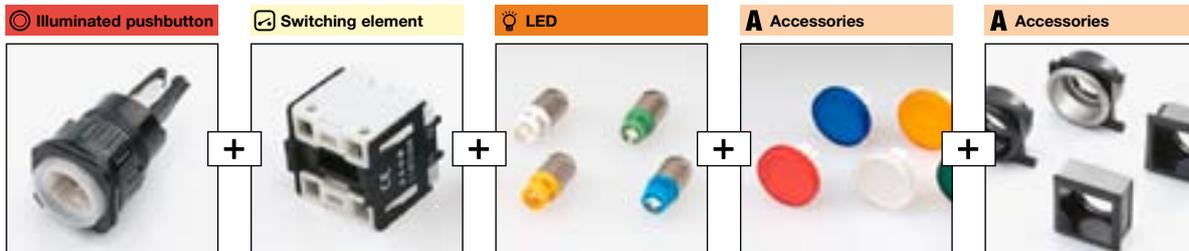
For a complete illuminated pushbutton you will need to order the appropriate contact block, LED, lens and bezel

| ⚿ Keylock switch | ⊡ Switching element | A Accessories | A Accessories |
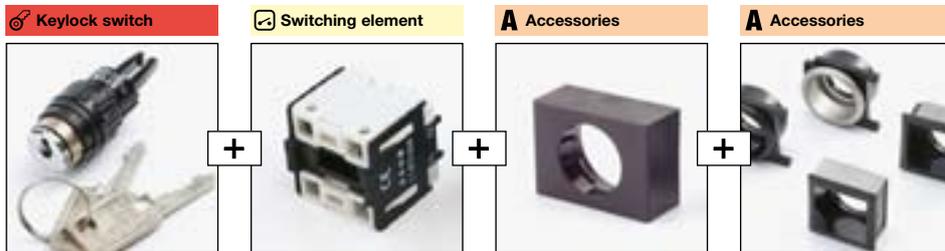
For a complete keylock switch you will need to order the appropriate contact block and bezel

| ⊞ Selector switch | ⊡ Switching element | ♒ LED | A Accessories | A Accessories |

For a complete selector switch you will need to order the appropriate contact block, LED, lever and bezel

110

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.

ELEMENT   LED   ACCESSORIES

☼ Indicator

Indicator body for flush mount, black plastic

Part No.
71-600.0

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

◎ Illuminated pushbutton

Illuminated flush mount pushbutton actuator, round, black plastic

Part No.	Function
71-611.0	Momentary
71-612.0	Maintained

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

⚷ Keylock switch

Keylock switch actuator, 2 position for flush mount

1 — Mom. 42°   2 — Maint. 90°
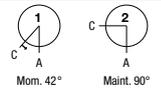
Graphic	Part No.	Function	Key rem.
1	71-621.0/D	Momentary	A
2	71-622.0/D	Maintained	A
2	71-623.0/D	Maintained	C
2	71-624.0/D	Maintained	A + C

For complete switch also order ⊡ **A**

⚷ Keylock switch

Keylock switch actuator, 3 position for flush mount

3 — Mom. 42°   4 — Mom. 42° / Maint. 90°   5 —   6 — Maint. 90°
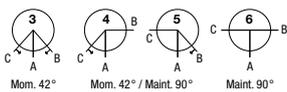
Graphic	Part No.	Function	Key rem.
3	71-631.0/D	Momentary/Momentary	A
4	71-638.0/D	Momentary/Maintained	A
4	71-639.0/D	Momentary/Maintained	A + B
5	71-636.0/D	Maintained/Momentary	A
5	71-637.0/D	Maintained/Momentary	A/C
6	71-632.0/D	Maintained/Maintained	A
6	71-635.0/D	Maintained/Maintained	A + B + C
6	71-634.0/D	Maintained/Maintained	B + C
6	71-633.0/D	Maintained/Maintained	C

For complete switch also order ⊡ **A**

▥ Selector switch

Selector switch actuator, 2 and 3 position for flush mount

7 — Mom. 42°   8 — Maint. 90°   9 — Mom. 42°   10 — Maint. 90°   11 — Maint. 90° / Mom. 42°   12 —
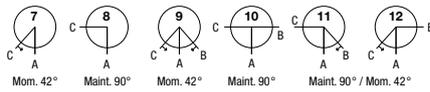
Graphic	Part No.	Function	Positions
7	71-641.0	Momentary	2
8	71-642.0	Maintained	2
9	71-651.0	Momentary/Momentary	3
12	71-658.0	Momentary/Maintained	3
11	71-656.0	Maintained/Momentary	3
10	71-652.0	Maintained/Maintained	3

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

⊡ Contact block

1   2   3

Indicator Element and Switching Element.
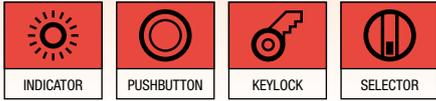Interlocking pin for PCB assembly supplied with each element

Image	Part No.	Contact type	Product description
1	71-670.006		Indicator element
2	71-671.026	1NO/1NC	Switching element
3	71-672.026	2NO/2NC	Switching element

eao ■

Series 71

| INDICATOR | PUSHBUTTON | 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.

LED

LED, T1¾ MG, 12 Volt and 28 Volt.
(Also available in 6 Volt, 24 Volt and 48 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, 7/14mA
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, 7/14mA
Blue	10-2J13.1066	28VAC/DC, 7/14mA
White	10-2J13.1069	28VAC/DC, 7/14mA

A Accessories

Lens, plastic for flush mount rectangular
indicator and pushbutton actuators

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

Lens, plastic for flush mount round indicator
and pushbutton actuators

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

A Accessories

Lens, plastic for flush mount square indicator
and pushbutton actuators

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

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

Colour	Part No.
Red	61-9028.20
Yellow	61-9028.40
Green	61-9028.50
Blue	61-9028.60
White	61-9028.9
Black	61-9028.0

Keylock switch front bezel, black plastic

Image	Part No.	Size
1	61-9230.0	24 x 30 mm
2	61-9220.0	24 x 24 mm
3	61-9210.0	25 mm ∅

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.

| ELEMENT | LED | ACCESSORIES |

A Accessories

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

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

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

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

Flap guard, flush mount

Image	Part No.	for switch
1	61-9922.0	24 x 30 mm
2	61-9921.0	24 x 24 mm
3	61-9924.0	25 mm ∅

A Accessories

Blanking plate

Image	Part No.	Mounting hole
1	61-9453.0	22.5 mm ∅
2	61-9452.0	21 x 27 mm
3	61-9451.0	21 x 21 mm

Lens remover for flush mount, mounting tool and LED remover

Image	Part No.	Product description
1	61-9730.0	Lens remover for flush mount
2	01-907	Mounting tool
3	61-9740.0	LED remover

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System switch 71

Switching system

Self-cleaning, double-break snap-action switching system with one NC- (Normally closed) and one NO-contact (Normally open).

Material

Lens
Polycarbonat (PC), as per UL 94 V0, or Aluminium anodized

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

Material of contact
AgNi, 2 µm gold plated

Switching element
Polyethylene terephthalate (PETP), as per UL 94 V0

Actuator housing
Polyetherimide (PEI), as per UL 94 V0

Mechanical characteristics

Terminals
PCB terminal, Brass gold plated

Actuating torque
Selector-/Keylock switch   4 Ncm ... 8 Ncm

Actuating force
Pushbutton   2 N ... 3 N

Actuating travel
Pushbutton   3 mm

	2 positions	3 positions
Selector-/keylock switch		
Momentary action	approx. 42°	approx. 2 x 42°
Maintained action	approx. 90°	approx. 2 x 90°

Rebound time
≤1 ms

Mechanical lifetime

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

Resistance to heat of soldering

Manual soldering	350 °C, 3 sec.
Flow soldering	260 °C, 5 sec.

Electrical characteristics

Contact resistance
Starting value (initial)   ≤50 mΩ

Isolation resistance
≥10^{12} Ω

Switch rating
Switch rating AC cosϕ 0.7 ... 0.8

Voltage	250 VAC
Current	3 A

Switch rating DC

Voltage	24 VDC	250 VDC
Current	3 A	0.5

Recommended minimum operational data

Voltage	5 VAC
Current	10 mA

Electric strength
2000 VAC, 50 Hz, 1 min. between all terminals and earth

Environmental conditions

Storage temperature
−40 °C ... +85 °C

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

Protection degree
Frontside IP65

Shock resistance
(semi-sinusoidal)
max. 500 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, state
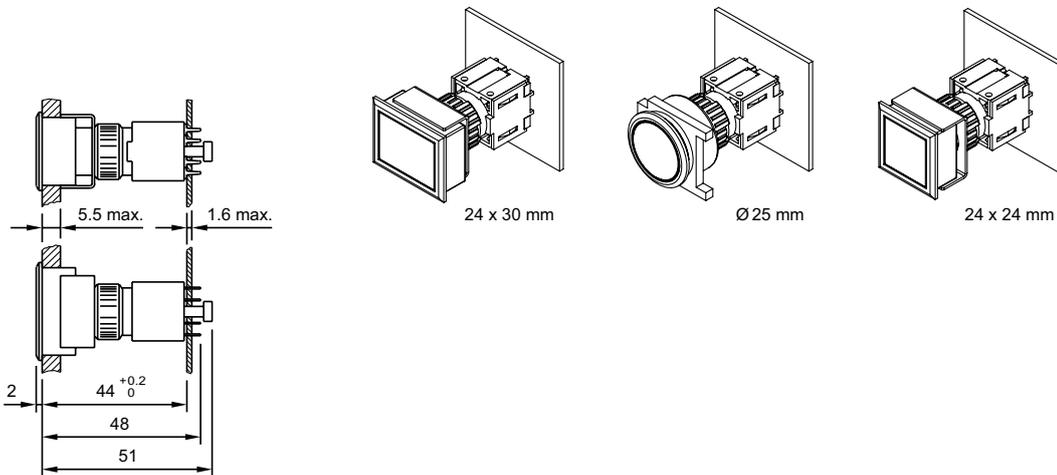56 days, +40 °C / 93% relative humidity, as per EN IEC 60068-2-78
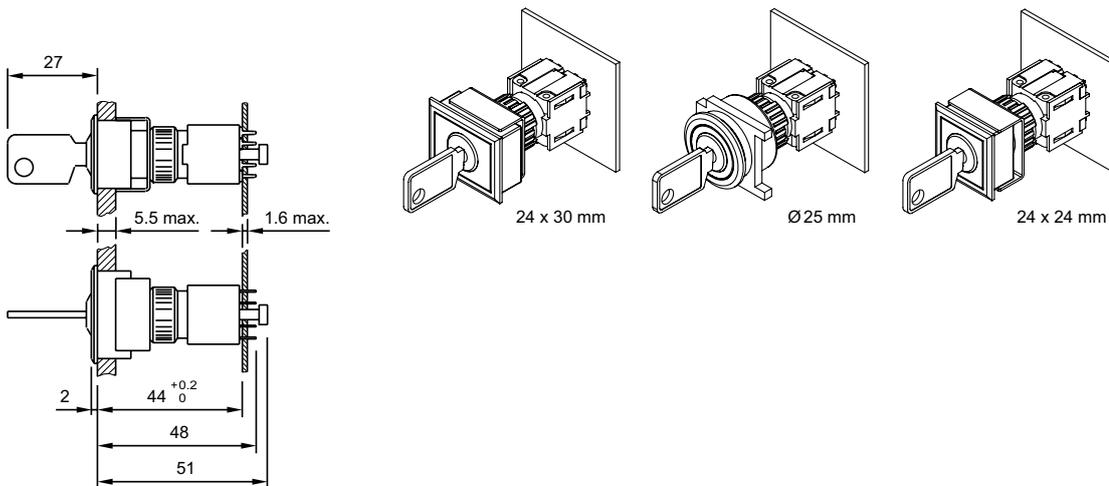
Approvals

Declaration of conformity
CE

71 Indicator Illuminated, Pushbutton
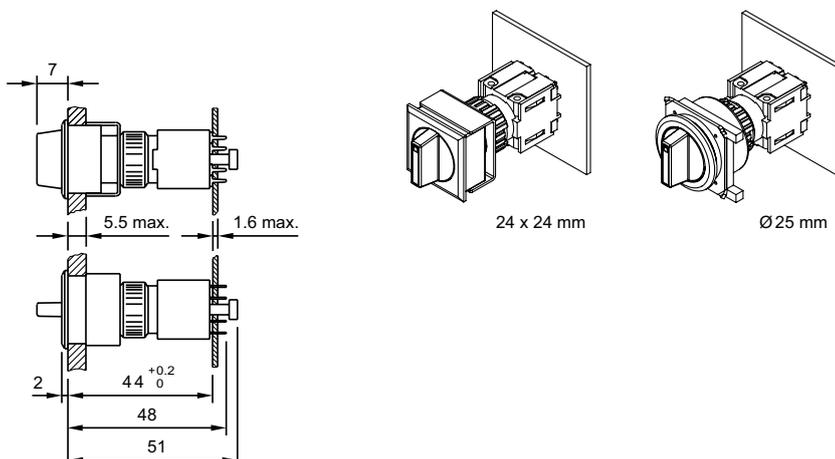
Flush, Round, Square, Rectangular

5.5 max.   1.6 max.

2    $44^{+0.2}_{0}$

48

51

24 x 30 mm   Ø 25 mm   24 x 24 mm

71 Keylock switch

Flush, Round, Square, Rectangular

27

5.5 max.   1.6 max.

2    $44^{+0.2}_{0}$

48

51

24 x 30 mm   Ø 25 mm   24 x 24 mm

71 Selector switch

Flush, Round, Square, Rectangular

7

5.5 max.   1.6 max.

2    $44^{+0.2}_{0}$

48

51

24 x 24 mm   Ø 25 mm

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71 Cut-outs

Indicator, Pushbutton Flush, Keylock Flush, Selector Flush
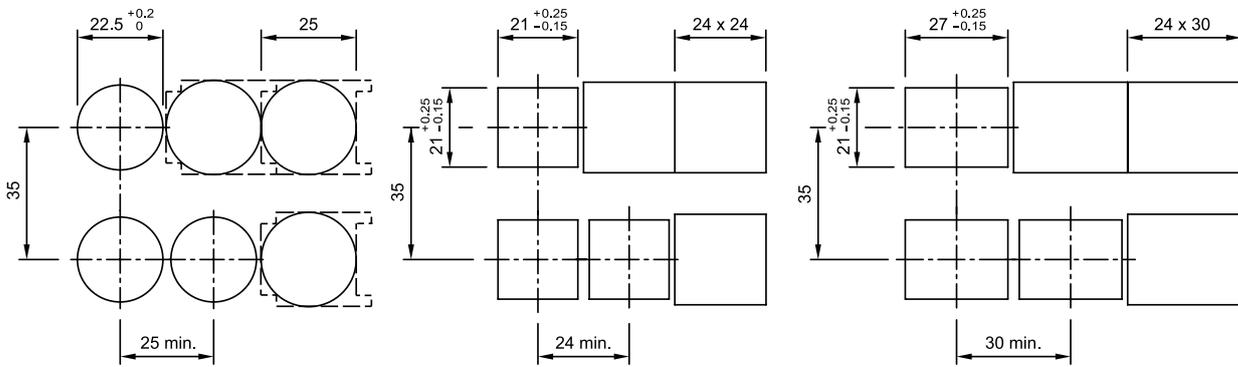
71 PCB Layout
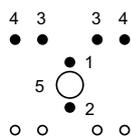
Indicator, Pushbutton Flush, Keylock Flush, Selector Flush

Drilling plan (Elementside)
Through-connection recommended

Position interlocking pin
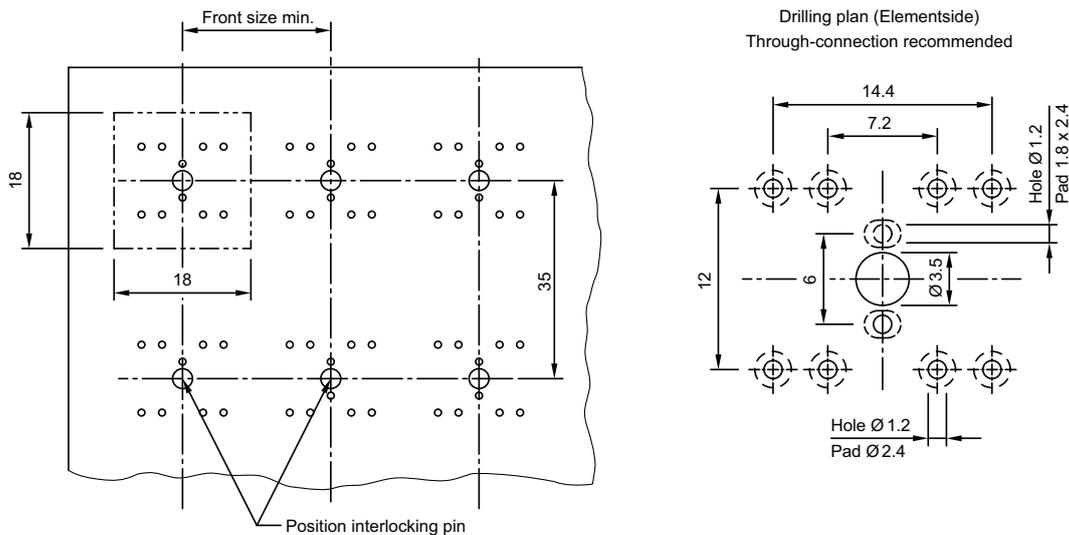
Note:
Pitch of the print circuit board hole Ø 3.5 must agree with the mounting holes on the front plate
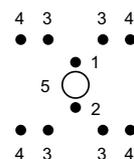
Layout
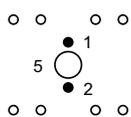
| Illumination element 71-670.006 | Switching element 71-671.026 | Switching element 71-672.006 |

1 Lamp cathode (-)
2 Lamp anode (+)
3 Contact normally closed
4 Contact normally open
5 Hole for interlocking pin