

Mushroom-head pushbutton, IP 65

Equipment consisting of (schematic overview)

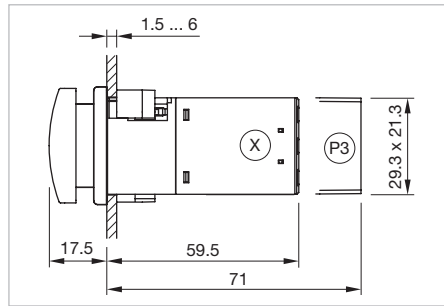
Mushroom-head cap page 11

Front bezel page 12

Actuator

Each Part Number listed below includes all the black components shown in the 3D-drawing.

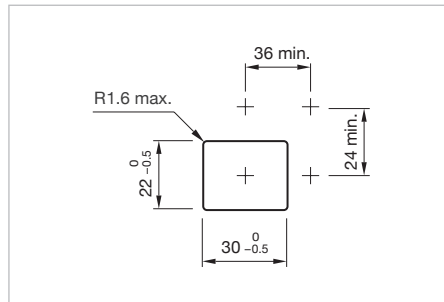
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]
 P3 = Plug-in terminal 6.3 x 0.8 mm,
 X = Screw terminal




Product can differ from the current configuration.



Mounting cut-outs [mm]

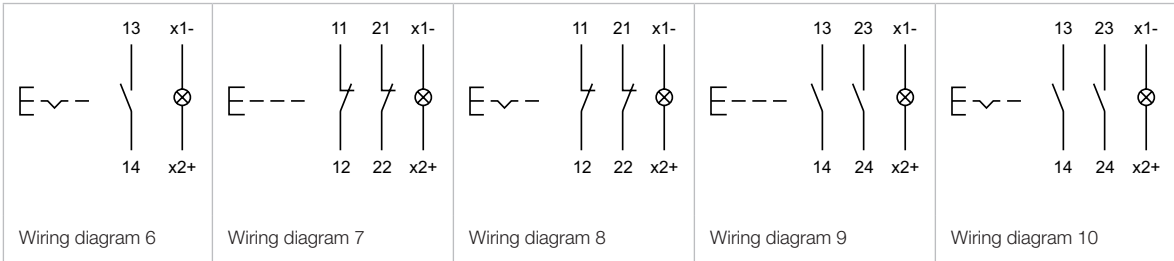
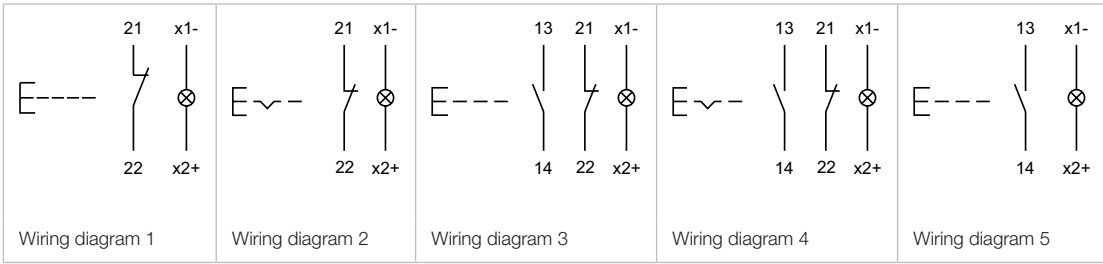
Additional Information

- For front dimension 24 x 36 mm
- Switching system snap-action element

Contacts	Switching action	Terminal	Part No.	Wiring diagram	Weight
 Mushroom-head pushbutton actuator					
1 NC	B	Screw	22-212.011	1	0.037 kg
		Plug 6.3 x 0.8 mm	22-212.014	1	0.032 kg
	C	Screw	22-222.011	2	0.037 kg
		Plug 6.3 x 0.8 mm	22-222.014	2	0.032 kg
1 NC + 1 NO	B	Screw	22-215.011	3	0.044 kg
		Plug 6.3 x 0.8 mm	22-215.014	3	0.034 kg
	C	Screw	22-225.011	4	0.044 kg
		Plug 6.3 x 0.8 mm	22-225.014	4	0.034 kg
1 NO	B	Screw	22-211.011	5	0.037 kg
		Plug 6.3 x 0.8 mm	22-211.014	5	0.032 kg
	C	Screw	22-221.011	6	0.037 kg
		Plug 6.3 x 0.8 mm	22-221.014	6	0.032 kg
2 NC	B	Screw	22-214.011	7	0.044 kg
		Plug 6.3 x 0.8 mm	22-214.014	7	0.034 kg
	C	Screw	22-224.011	8	0.044 kg
		Plug 6.3 x 0.8 mm	22-224.014	8	0.034 kg
2 NO	B	Screw	22-213.011	9	0.044 kg
		Plug 6.3 x 0.8 mm	22-213.014	9	0.034 kg
	C	Screw	22-223.011	10	0.044 kg
		Plug 6.3 x 0.8 mm	22-223.014	10	0.044 kg


Contacts: NC = Normally closed, NO = Normally open
 Switching action: B = Momentary, C = Maintain

22 Flush design



Front


Lens plastic

Product attribute	Dimension	Lens	Part No.	Weight
 Lens plastic	17 x 25.5 mm	smoked transparent	22-903.1	0.003 kg
		red transparent	22-903.2	0.003 kg
illuminative	17 x 25.5 mm	orange transparent	22-903.3	0.003 kg
		yellow transparent	22-903.4	0.003 kg
		green transparent	22-903.5	0.003 kg
		blue transparent	22-903.6	0.003 kg
		colourless transparent	22-903.7	0.003 kg
		red translucent	22-901.2	0.003 kg
		orange translucent	22-901.3	0.003 kg
illuminative, not suitable for film insert, bright LEDs are visible	17 x 25.5 mm	yellow translucent	22-901.4	0.003 kg
		green translucent	22-901.5	0.003 kg
		blue translucent	22-901.6	0.003 kg
		white translucent	22-901.9	0.003 kg
		red transparent	22-905.2	0.003 kg
illuminative, less suitable for film insert	17 x 25.5 mm	yellow transparent	22-905.4	0.003 kg
		green transparent	22-905.5	0.003 kg
		colourless transparent	22-905.7	0.003 kg
		black opaque	22-901.0	0.003 kg
non-illuminative	17 x 25.5 mm	grey opaque	22-901.8	0.003 kg

Mushroom-head cap

Additional Information

- Non-illuminative
- Use only flush front bezel

Dimension	Mushroom-head cap	Part No.	Weight
 Mushroom-head cap	Plastic black	22-930.0	0.006 kg
	Plastic red	22-930.2	0.006 kg
	Plastic yellow	22-930.4	0.006 kg
	Plastic green	22-930.5	0.006 kg
	23 x 35 mm		

Front bezel flush

Additional Information

- Lens only removable with lens remover Part No. 02-905

Front bezel	Part No.	Weight
 <p>Front bezel flush, Front dimension 24 x 36 mm</p>		
Pastic black	02-965.0	0.001 kg

Front bezel raised

Additional Information

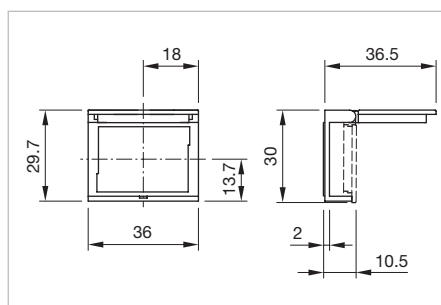
- Lens only removable with lens remover Part No. 98-969

Front bezel	Part No.	Weight
 <p>Front bezel raised, Front dimension 24 x 36 mm</p>		
Pastic black	02-967.0	0.001 kg


Protective cover, IP 65

Additional Information

- The dimensions of the mounting cut-outs are shown in the product details
- Use only flush front bezel
- Hinged, with means for sealing
- Front panel thickness reduces by 2 mm
- Please not that bigger minimum distances are necessary





Dimensions [mm]

Mounting cut-out	Material	Optics	Part No.	Weight
 <p>Protective cover</p>				
22 x 30 mm	Plastic	transparent	22-925	0.004 kg

Mounting


Lens remover

Product attribute	Part No.	Weight
 <p>Lens remover</p>		
for flush front bezel	02-905	0.011 kg
 <p>Lens remover</p>		
for raised front bezel	98-968	0.004 kg

Lamp remover

Additional Information


▲ **Caution:** A switching process might be released when replacing the lamp

Part No.	Weight
 <p>Lamp remover</p>	
61-9740.0	0.003 kg

Dismantling tool

Additional Information

- For dismantling the lens from the holder

Part No.	Weight
 <p>Dismantling tool</p>	
22-938	0.030 kg

Actuator with snap-action switching element

Switching system

Self-cleaning, double-break, snap-action switching system (with contact gap 2 x 1.5 mm).
Max. 2 normally closed or 2 normally open contacts, or one of each.

Material

Lens

Polymethylmethacrylate PMMA, as per UL 94 HB, Polycarbonate (PC), as per UL 94 V0

Front bezel

Polyphenylenoxide (PPO)

Material of contact

Hard silver

Actuator housing

Polyamide (PA), Polytherimide (PEI)

Mechanical characteristics

Terminals

Screw terminal (with self-lifting clip):
Max. wire cross-section 2 x 2.5 mm²
Max. wire cross-section of stranded cable 2 x 1.5 mm²

Plug-in terminal 6.3 x 0.8 mm

Actuating force

with 1 switching element 3.6 N ± 0.3 N
with 2 switching elements 6.8 N ± 0.3 N

Actuating travel

5.5 mm ± 0.2 mm

Travel

3 mm

Rebound time

≤ 3 ms

Mechanical lifetime

Illuminated pushbutton 1 million operations
Keylock switch 40 000 operations

Electrical characteristics

Contact resistance

Starting value ≤ 50 mΩ, as per IEC 60512-2-4

Isolation resistance

≥ 100 MΩ between all contacts at 100 VDC, as per IEC 60512-3-1

Switch rating

Power rating
min. 12 VAC, 50 mA
max. 400 VAC, 10 A

Switch rating AC (cos φ 0.7), service category AC-11
Voltage 125 VAC 250 VAC 380 VAC
Current 8 A 5 A 3 A
Operations ≥ 100 000

Switch rating DC (inductive) L:R = 30 ms, service categorie DC-11
Voltage 24 V 60 V 110 V 220 V
Current 6 A 1.5 A 0.4 A 0.2 A
Operations ≥ 100 000

Electric strength

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

Environmental conditions

Storage temperature

-40 °C ... +95 °C

Service temperature

-25 °C ... +85 °C

Protection degree

Terminal/case IP 20
Front IP 65 as per IEC 60529

Shock resistance

50 g for 11 ms, as per IEC 60512-4-3

Vibration resistance

(sinusoidal)
10 g at 10 Hz ... 2000 Hz, amplitude 0.75 mm, as per IEC 60512-4-4

Approvals

Approbations

CB (IEC 61058)
CSA
ENEC (EN 61058)
UL

Declaration of conformity

CE