Series 31

| INDICATOR | PUSHBUTTON | BUZZER |

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 31 is a high quality switch range that includes pushbuttons, indicators and buzzers. It is possible to choose up to 4NO/4NC snap-action switching elements per switch. Low level switching elements are also available.

Technical data see page 61

- IP40 Protection
- Switch Rating, 5A, 250 VAC
- Raised Mounting into 16 mm 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
- Buzzers voltage from 10 to 75VDC

Indicator

1   2   3

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

Image	Part No.	Size
1	31-040.005	18 x 24 mm
2	31-050.005	18 x 18 mm
3	31-030.005	18 mm ∅

For complete switch also order ☼ **A**

Illuminated pushbutton

Illuminated pushbutton actuator, snap-action, raised, rectangular, black plastic, 16 mm mounting, solder terminals, gold contacts

Part No.	Function	Contact type	Size
31-121.0252	Momentary	1NO/1NC	18 x 24 mm
31-122.0252	Momentary	2NO/2NC	18 x 24 mm
31-261.0252	Maintained	1NO/1NC	18 x 24 mm
31-262.0252	Maintained	2NO/2NC	18 x 24 mm

For complete switch also order ☼ **A**

Illuminated pushbutton

Illuminated pushbutton actuator, snap-action, raised, square, black plastic, 16 mm mounting, solder terminals, gold over silver contacts

Part No.	Function	Contact type	Size
31-151.0252	Momentary	1NO/1NC	18 x 18 mm
31-152.0252	Momentary	2NO/2NC	18 x 18 mm
31-281.0252	Maintained	1NO/1NC	18 x 18 mm
31-282.0252	Maintained	2NO/2NC	18 x 18 mm

For complete switch also order ☼ **A**

Illuminated pushbutton actuator, snap-action, raised, round, black plastic, 16 mm mounting, solder terminals, gold over silver contacts

Part No.	Function	Contact type	Size
31-131.0252	Momentary	1NO/1NC	18 mm ∅
31-132.0252	Momentary	2NO/2NC	18 mm ∅
31-271.0252	Maintained	1NO/1NC	18 mm ∅
31-272.0252	Maintained	2NO/2NC	18 mm ∅

For complete switch also order ☼ **A**

Buzzer

1   2

Buzzer, plastic bezel, raised, rectangular, 16 mm mounting, continuous or intermittant tone, 88 dB ±8 at a distance of 0.1 m

Image	Part No.	Voltage	Connection
1	31-810.005	10 - 55VAC/10 - 75VDC	Solder terminal
2	31-801.002	10 - 26VDC	Solder-/plug-in terminal

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LED	ACCESSORIES
A

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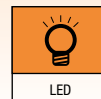
LED, T1¾ MG, single chip, 12 Volt and 28 Volt.
Also available in 6 Volt, 24 Volt and 48 Volt

Colour	Part No.	Contact type
● Red	10-2J09.1062	12 VAC/DC, 15 mA
● Yellow	10-2J09.1064	12 VAC/DC, 15 mA
● Green	10-2J09.1065	12 VAC/DC, 15 mA
● Blue	10-2J09.1066	12 VAC/DC, 15 mA
○ White	10-2J09.1069	12 VAC/DC, 15 mA
● Red	10-2J13.1062	28 VAC/DC, 14 mA
● Yellow	10-2J13.1064	28 VAC/DC, 14 mA
● Green	10-2J13.1065	28 VAC/DC, 14 mA
● Blue	10-2J13.1066	28 VAC/DC, 14 mA
○ White	10-2J13.1069	28 VAC/DC, 14 mA

A Accessories

Lens, opaque for rectangular pushbutton
bodies, not for illumination

Colour	Part No.	Size
● Black	31-901.0	18 x 24 mm

Lens, front transparent/rear translucent for
rectangular indicator and pushbutton actuators

Colour	Part No.	Size
● Red	31-903.2	18 x 24 mm
● Yellow	31-903.4	18 x 24 mm
● Green	31-903.5	18 x 24 mm
● Blue	31-903.6	18 x 24 mm
○ Clear	31-903.7	18 x 24 mm

A Accessories

Lens, opaque for square pushbutton actuators,
not for illumination

Colour	Part No.	Size
● Black	31-951.0	18 x 18 mm

Lens, front transparent/rear translucent for
square indicator and pushbutton actuators

Colour	Part No.	Size
● Red	31-953.2	18 x 18 mm
● Yellow	31-953.4	18 x 18 mm
● Green	31-953.5	18 x 18 mm
● Blue	31-953.6	18 x 18 mm
○ Clear	31-953.7	18 x 18 mm

Lens, opaque for round pushbutton actuators,
not for illumination

Colour	Part No.	Size
● Black	31-931.0	18 mm ∅

Series 31

16 mm   IP40   5 A   250 VAC

| INDICATOR | PUSHBUTTON | BUZZER |

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A Accessories

Lens, front transparent with white diffuser for round indicator and pushbutton actuators

Colour	Part No.	Size
● Red	31-933.2	18 mm ⌀
● Yellow	31-933.4	18 mm ⌀
● Green	31-933.5	18 mm ⌀
● Blue	31-933.6	18 mm ⌀
○ Clear	31-933.7	18 mm ⌀

Flap guard, raised, square and rectangular

Image	Part No.	Size
1	31-925	18 x 24 mm
2	31-920	18 x 18 mm

Sprayproof cover, square and rectangular, IP65

Image	Part No.	Comment
1	31-924.2	PVC rear, silicon front
2	31-923	Both PVC

A Accessories

Blanking plate

Image	Part No.	Size
1	01-947.0	18 x 24 mm
2	01-948.0	18 x 18 mm
3	01-949.0	18 mm ⌀

Mounting tool, lens and LED remover

Image	Part No.	Product description
1	01-907	Mounting tool
2	02-905	Lens remover
3	61-9740.0	LED remover

Actuator with snap-action switching element

Switching system

Self-cleaning, double-break, snap action switching system (with contact gap 2 x 0.5 mm).
1 Normally closed or 1 Normally open contact per element.
Snap-action switching elements with soldering terminals at the sides:
Up to 4 switching element can be on a pushbutton (max.
4 Normally closed and 4 Normally open contacts).
Snap-action switching element with axial plug-in terminals 2.8 mm stachable, only 1 switching element can be on a pushbutton.

Material

Material of contact
Gold plated silver

Switch housing
Axial plug-in-/soldering terminal 2.8 mm:
Diallylphthalate (DAP), Polyamide (PA66), Polysulfone, heat-resistant and self-extinguishing
Soldering terminal: PA 6.6 Ultramide

Actuator housing
Polyetherimide, self-extinguishing

Mechanical characteristics

Terminals
Snap-action switching element with tinned soldering terminals at the sides:
Max. wire diameter 2 wires à 1.2 mm
Max. wire cross-section of stranded cable 1 x 1 mm²
Snap-action switching element with axial plug-in terminals, which can also be used as soldering terminals: Plug-in terminal 2.8 x 0.5 mm

Soldering terminal:
Max. wire diameter 1 wire of 1.5 mm²
Max. wire cross-section of stranded cable 2 x 0.75 mm² or 1 x 1.0 mm²

Actuating force
2 N ... 5.5 N, depending on the number of switching elements

Actuating travel
3 mm

Rebound time
≤5 ms

Mechanical lifetime
Momentary action 2 million cycles of operation
Maintained action 1 million cycles of operation

Electrical characteristics

Standards
IEC 61058, EN 61058

Rated voltage
250 VAC/VDC

Rated current
5 A

Contact resistance
Starting value (initial) ≤50 mΩ

Conventional free air thermal current
5 A
The maximum current in continuous operation and at ambient temperature not exceeding the quoted maximum values.

Switch rating
250 VAC, 5 A (cosϕ 1)
250 VAC, 3 A (cosϕ 0.3)

Switch rating AC (cosϕ 0.7)

Voltage	125 VAC	250 VAC
Current	3 A	2 A

Switch rating DC (inductive) L:R = 30 ms

Voltage	24 VDC	60 VDC	110 VDC	220 VDC
Current	2 A	0.7 A	0.2 A	0.1 A

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

Protection class
Class ll

Environmental conditions

Storage temperature
−40 °C ... +85 °C

Service temperature
−25 °C ... +55 °C
For indicators and illuminated pushbuttons mounted as a block, make sure the heat can escape freely.

Protection degree
Front as per:
IP40
IP65 with spray cover

Shock resistance
(Single impacts, semi-sinusoidal)
15 g for 11 ms, as per IEC 60512-4-3, IEC 60068-2-27

Vibration resistance
(sinusoidal)
10 g at 0-2000 Hz, amplitude 1.5 mm, as per IEC 60512-4-4, IEC 60068-2-6

Climate resistance
Standard condition, as per IEC 60068-2-3 and 2-30
Changing condition, as per IEC 60068-2-14 and 2-33

Approvals

Approbations
CB (IEC 61058)
CSA
ENEC (EN 61058)
Germanischer Lloyd
UL

Declaration of conformity
CE

Buzzer Typ-Nr. 31-810.005

Switching system

Buzzer system
Electronic non-contacting buzzer
with IC oscillator

Material

Alarm buzzer case
Polyetherimide

Front bezel
Polyamide

Mechanical characteristics

Terminals
Soldering terminal

Electrical characteristics

Frequency (tone)
Approx. 2.8 kHz

Interval frequency
approx. 3 Hz

Sound pressure
88 dB (A) ±8 dB at a distance of 0.1 m
Volume variable with a 1 MΩ potentiometer or corresponding fixed
resistor

Operation Voltage/Current
Typ. 10 VAC ... 55 VAC, 25 mA
Typ. 10 VDC ... 75 VDC, 15 mA

Environmental conditions

Storage temperature
–40 °C ... +85 °C

Service temperature
–25 °C ... +55 °C

Protection degree
IP40

Approvals

Approbations
Germanischer Lloyd

Declaration of conformity
CE

Buzzer Typ-Nr. 31-801.002

Switching system

Buzzer system
Electronic non-contacting buzzer
with IC oscillator

Material

Alarm buzzer case
Polyetherimide

Front bezel
Polyamide

Mechanical characteristics

Terminals
Plug-in terminal 2.8 x 0.5 mm

Electrical characteristics

Frequency (tone)
ca. 2.0 kHz

Interval frequency
2 Hz

Sound pressure
88 db (A) ±8 dB at a distance of 0.1 m

Operation Voltage/Current
10 VDC ... 26 VDC, ≤20 mA

Environmental conditions

Storage temperature
–40 °C ... +85 °C

Service temperature
–25 °C ... +55 °C

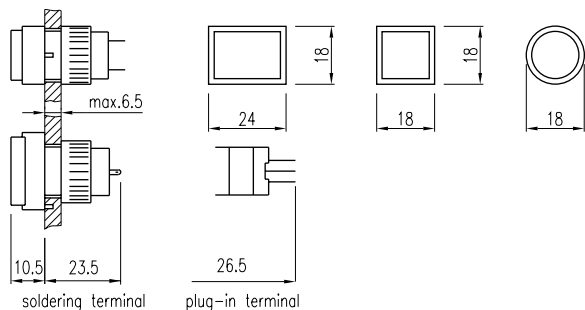**Protection degree**
IP40

Approvals

Approbations
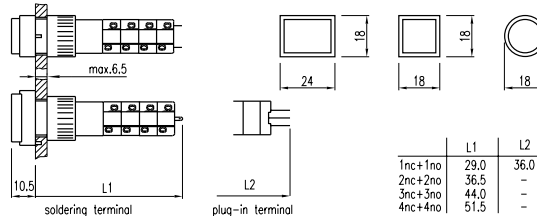Germanischer Lloyd

Declaration of conformity
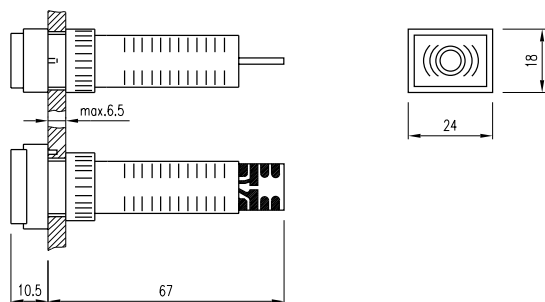CE

31 Indicator

Raised, Round, Square, Rectangular

max.6.5

24

18

18

18

18

10.5 23.5

26.5

soldering terminal   plug-in terminal

31 Pushbutton

Illuminated, Raised, Round, Square, Rectangular

max.6.5

10.5 L1

L2

soldering terminal   plug-in terminal

24

18

18

18

18

18

	L1	L2
1nc+1no	29.0	36.0
2nc+2no	36.5	–
3nc+3no	44.0	–
4nc+4no	51.5	–

31 Buzzer

Raised

max.6.5

18

24

10.5 67

31 Buzzer

Raised, Solder-/plug-in terminal

2.8±0.5

10

max.6

10.5 36

18

24
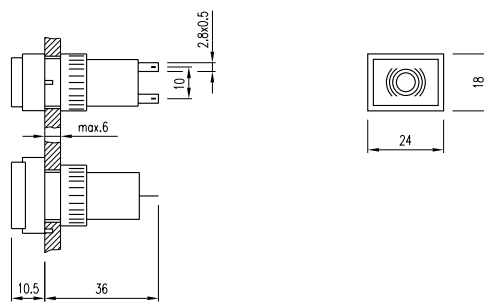
31 Cut-outs

Raised, Round, Square, Rectangular

min. 18

16 +0.2/0

2

min. 24 10.4

min. 18

16 +0.2/0

min. 18

min. 18

16 +0.2/0

min. 18

eao