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### Series 01

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**General Notes**

The Series 01 illuminated pushbuttons are equipped with snap-action, low level switching elements.  
 In addition to the standard contacts (gold-plated silver), on request silver contacts for switching elements 2.8 mm plug-in terminals are available. The front dimensions of these units are 18 x 24 mm, 18 x 18 mm or 18 mm dia.  
 In addition to a number of illuminated pushbuttons, the customer can choose from a wide range of other units and accessories having the same front and mounting dimensions.

**Mounting**

Mount from the front through the mounting hole.  
 The universal terminals of the low-level switching elements permit them to be mounted on printed circuit boards (PCB).  
 These terminals are also suitable for dip soldering. For these terminals we can also supply a plug-in base which, when soldered on to the board, enables the switch to be plugged in. All rectangular switches are secured against rotation.

**Lenses**

The flat lenses, made of polymethyl methacrylate, are obtainable in various colours, as well as translucent or transparent.

**Marking**

For engraving, hot stamping and film inserts, see under "Marking" on page 33.

**Illumination**

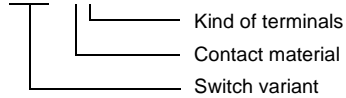
Perfect illumination of the different coloured lenses is assured by lamps T 5,5 (6-60 V).  
 For supply voltages above 60 V, it is necessary to use a voltage reduction element (external series resistor, capacitor, or transformer).  
 Do not solder the terminals directly, because of the high surface temperature. Multi-LED lamps T 5,5 (6, 12, 24, 48 V) are available in the colours white, red, yellow and green.

**Position Indication**

When a switch with maintained action is actuated, the lens remains in the depressed position mechanically. The state of the switch is apparent at all times from the position of the lens.

**Number structure**

01-XXX.OXX



01-9XX.X

Example:

Kind of terminals

Contact material

Switch variant

Lens

-Illuminated pushbutton, circular;  
 momentary action, gold-plated silver  
 contact;  
 soldered terminals, 1 switching element  
 01-131.025

-Lens red

01-983.2

**Specimen order**Indicator:

- indicator, soldering terminals,  
 18 x 24 mm

01-040.005

Recommended accessories:

- lens, blue, 18 x 24 mm

01-982.6

- LED, 1 chip, 12 VDC, white

10-2109.3139

All dimensions in mm.

We reserve the right to modify technical data.

## illuminated-/pushbutton



- 1 lens
- 2 switch housing
- 3 fixing nut

## indicator



### recommended accessories:

lens → 19

incandescent lamp → 21; LED → 22

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	diode (1N 4007)	connection method	18 x 24 mm part no.	18 x 18 mm part no.	18 mm dia. part no.	circuit drawing	technical drawing	mounting dimension	components layout	
indicator	-	PT	<b>01-040.002</b>	<b>01-050.002</b>	<b>01-030.002</b>	1	1	1	1	0,006
		ST	<b>01-040.005</b>	<b>01-050.005</b>	<b>01-030.005</b>	2	1	1	1	0,006
		UT	<b>01-041.006</b>	<b>01-051.006</b>	<b>01-031.006</b>	1	3	1	1	0,006
	1	UT	<b>01-701.006</b>	<b>01-703.006</b>	<b>01-741.006</b>	3	2	1	1	0,008
	2	UT	<b>01-702.006</b>	<b>01-704.006</b>	<b>01-742.006</b>	4	2	1	1	0,008

connection method: ST = soldering terminal; PT = plug-in terminal; UT = universal terminal; PCB plug-in base page 20

marking see page 33

technical drawing as of page 27. mounting dimensions. components layouts as of page 29. circuit drawing as of page 31

## illuminated-/pushbutton



### recommended accessories:

lens → 19

incandescent lamp → 21; LED → 22

	switching system	contacts	diode (1N 4007)	switching action	connection method				circuit drawing	technical drawing	mounting dimension	components layout			
								18 mm dia. part no.							
illuminated-/pushbutton	LL	1NC	-	main	UT	<b>01-466.036</b>	<b>01-486.036</b>	<b>01-476.036</b>	14	3	1	1	0,009		
				mom	UT	<b>01-426.036</b>	<b>01-456.036</b>	<b>01-436.036</b>	28	3	1	1	0,009		
		1NC + 1NO	-	main	UT	<b>01-463.036</b>	<b>01-483.036</b>	<b>01-473.036</b>	17	3	1	1	0,009		
				mom	UT	<b>01-423.036</b>	<b>01-453.036</b>	<b>01-433.036</b>	31	3	1	1	0,009		
		1NO	-	main	UT	<b>01-465.036</b>	<b>01-485.036</b>	<b>01-475.036</b>	16	3	1	1	0,009		
				mom	UT	<b>01-425.036</b>	<b>01-455.036</b>	<b>01-435.036</b>	30	3	1	1	0,009		
		2NC	-	main	UT	<b>01-462.036</b>	<b>01-482.036</b>	<b>01-472.036</b>	15	3	1	1	0,009		
				mom	UT	<b>01-422.036</b>	<b>01-452.036</b>	<b>01-432.036</b>	29	3	1	1	0,009		
		2NO	-	main	UT	<b>01-461.036</b>	<b>01-481.036</b>	<b>01-471.036</b>	18	3	1	1	0,009		
				mom	UT	<b>01-421.036</b>	<b>01-451.036</b>	<b>01-431.036</b>	32	3	1	1	0,009		
		SA	1NC + 1NO	-	main	ST/PT		<b>01-261.022</b>	<b>01-281.022</b>	<b>01-271.022</b>	10	4	1	-	0,008
						ST		<b>01-261.025</b>	<b>01-281.025</b>	<b>01-271.025</b>	13	4	1	-	0,008
	mom					ST/PT		<b>01-121.022</b>	<b>01-151.022</b>	<b>01-131.022</b>	24	4	1	-	0,008
	1			main	mom	UT		<b>01-713.029</b>	<b>01-717.029</b>	<b>01-747.029</b>	11	5	1	1	0,010
						UT		<b>01-705.029</b>	<b>01-709.029</b>	<b>01-743.029</b>	25	5	1	1	0,010
						UT		<b>01-714.029</b>	<b>01-718.029</b>	<b>01-748.029</b>	12	5	1	1	0,010
	2			main	mom	UT		<b>01-706.029</b>	<b>01-710.029</b>	<b>01-744.029</b>	26	5	1	1	0,010
						ST		<b>01-262.025</b>	<b>01-282.025</b>	<b>01-272.025</b>	9	4	1	-	0,010
						ST		<b>01-122.025</b>	<b>01-152.025</b>	<b>01-132.025</b>	23	4	1	-	0,010
	1			main	mom	UT		<b>01-715.029</b>	<b>01-719.029</b>	<b>01-749.029</b>	7	5	1	1	0,012
						UT		<b>01-707.029</b>	<b>01-711.029</b>	<b>01-745.029</b>	21	5	1	1	0,012
						UT		<b>01-716.029</b>	<b>01-720.029</b>	<b>01-750.029</b>	8	5	1	1	0,012
	2	main	mom	UT		<b>01-708.029</b>	<b>01-712.029</b>	<b>01-746.029</b>	22	5	1	1	0,012		
				ST		<b>01-263.025</b>	<b>01-283.025</b>	<b>01-273.025</b>	6	4	1	-	0,012		
ST					<b>01-123.025</b>	<b>01-153.025</b>	<b>01-133.025</b>	20	4	1	-	0,012			
3NC + 3NO	-	main	mom	ST		<b>01-264.025</b>	<b>01-284.025</b>	<b>01-274.025</b>	5	4	1	-	0,014		
				ST		<b>01-124.025</b>	<b>01-154.025</b>	<b>01-134.025</b>	19	4	1	-	0,014		

switching system: LL = Low Level switching element, SA = snap-action switching element

switching action: main = maintained action, mom = momentary action

connection method: ST = soldering terminal; PT = plug-in terminal; UT = universal terminal; PCB plug-in base page 20

contacts: NC = normally closed, NO = normally open





power rating: Low Level switching element: 42 V/100 mA, snap-action switching element: 250 V/5 A

[marking see page 33](#)





[technical drawing as of page 27](#), [mounting dimensions](#), [components layouts as of page 29](#), [circuit drawing as of page 31](#)

## at front

### lens

	shape	lens/support	colour	 18 x 24 mm part no.	 18 x 18 mm part no.	18 mm dia. part no.		
<b>lens</b> 12,8 x 18,8 mm, of plastic	flat	transparent/translucent	blue	<b>01-982.6</b>	<b>01-985.6</b>	<b>01-983.6</b>	0,001	
			colourless, clear	<b>01-982.7</b>	<b>01-985.7</b>	<b>01-983.7</b>	0,001	
			green	<b>01-982.5</b>	<b>01-985.5</b>	<b>01-983.5</b>	0,001	
			orange	<b>01-982.3</b>	<b>01-985.3</b>	<b>01-983.3</b>	0,001	
			red	<b>01-982.2</b>	<b>01-985.2</b>	<b>01-983.2</b>	0,001	
of plastic (not for film insert and LED)	flat	translucent/translucent	blue	<b>01-901.6</b>	<b>01-951.6</b>	<b>01-931.6</b>	0,001	
			green	<b>01-901.5</b>	<b>01-951.5</b>	<b>01-931.5</b>	0,001	
			orange	<b>01-901.3</b>	<b>01-951.3</b>	<b>01-931.3</b>	0,001	
			red	<b>01-901.2</b>	<b>01-951.2</b>	<b>01-931.2</b>	0,001	
			white	<b>01-901.9</b>	<b>01-951.9</b>	<b>01-931.9</b>	0,001	
of plastic (not for film insert and illumination)	flat	opaque/translucent	black	<b>01-901.0</b>	<b>01-951.0</b>	<b>01-931.0</b>	0,001	
			grey	<b>01-901.8</b>	<b>01-951.8</b>	<b>01-931.8</b>	0,001	
of plastic (not recommended for film insert)	flat	transparent/transparent	colourless, clear	<b>01-972.7</b>	<b>01-975.7</b>	<b>01-973.7</b>	0,001	
			green	<b>01-972.5</b>	<b>01-975.5</b>	<b>01-973.5</b>	0,001	
			red	<b>01-972.2</b>	<b>01-975.2</b>	<b>01-973.2</b>	0,001	
			yellow	<b>01-972.4</b>	<b>01-975.4</b>	<b>01-973.4</b>	0,001	



### protective cover

	 18 x 24 mm part no.	 18 x 18 mm part no.	technical drawing		
<b>protective cover</b> hinged, transparent, cover to prevent accidental operation	<b>01-925</b>		6	0,002	
		<b>31-920</b>	7	0,002	

[technical drawing as of page 27](#)



### sprayproof cover

front protection IP 67

	front shape	material	part no.	technical drawing	mounting dimension		
<b>sprayproof cover</b> two-part	rectangular	made of silicone	<b>31-924.2</b>	8	2	0,003	
	square	made of PVC	<b>31-923</b>	8	2	0,003	





[technical drawing as of page 27](#), [mounting dimensions as of page 29](#)

## protective guard

	construction	part no.	technical drawing		
<b>protective guard</b> matt chromium-plated	broad sides bent upwards	<b>01-927</b>	10	0,011	
	narrow ends bent upwards	<b>01-926</b>	9	0,011	

[technical drawing as of page 27](#)



## blind plug

	colour	 18 x 24 mm part no.	 18 x 18 mm part no.	18 mm dia. part no.	mounting dimension		
<b>blind plug</b>	black	<b>01-947.0</b>	<b>01-948.0</b>	<b>01-949.0</b>	1	0,001	

[mounting dimensions as of page 29](#)

## at back



### PCB plug-in base

	for	pin orientation	part no.	components layout		
<b>PCB plug-in base</b> 16.4 mm dia. x 9.8 mm high 17.8 mm dia. x 9.8 mm high 17.9 x 8.4 mm high	Low Level switching element	axial	<b>31-940</b>	2	0,002	
	snap-action switching element 2.8 mm	axial	<b>31-942</b>	4	0,002	
	Low Level switching element With the extendable mounting the distance between PCB plug-in base and PCB can be varied up to 3mm.	right-angled	<b>31-941</b>	3	0,004	

[components layouts as of page 29](#)





## cable shoe



	connection method	part no.	 kg	
cable shoe	plug-in terminal 2.8 x 0.5 mm	<b>31-946</b>	0,001	
	universal terminal 2.0 x 0.5 mm	<b>31-945</b>	0,001	

connection method: PT = plug-in terminal, UT = universal terminal

## insulation socket



	part no.	 kg	
insulation socket for connector 31-945	<b>31-928</b>	0,001	
for connector 31-946	<b>31-929</b>	0,001	
for snap-action switching element 2.8 mm to cover the plug-in terminals	<b>01-928</b>	0,001	

## terminal cover



	part no.	 kg	
terminal cover	<b>01-929</b>	0,010	

## for illumination

### incandescent lamp



	voltage/current	part no.	 kg	
incandescent lamp base T 5.5	6 AC/DC/200 mA	<b>10-1106.1369 (01-903.0)</b>	0,001	
	12 AC/DC/100 mA	<b>10-1109.1329 (01-903.1)</b>	0,001	
	12 AC/DC/50 mA	<b>10-1109.1279 (01-913.12)</b>	0,001	
	24 AC/DC/25 mA	<b>10-1112.1199 (01-913.24)</b>	0,001	
	24 AC/DC/50 mA	<b>10-1112.1279 (01-903.2)</b>	0,001	
	28 AC/DC/40 mA	<b>10-1113.1249 (01-903.28)</b>	0,001	
	30 AC/DC/40 mA	<b>10-1114.1249 (01-903.3)</b>	0,001	
	36 AC/DC/35 mA	<b>10-1116.1229 (01-903.4)</b>	0,001	
	48 AC/DC/25 mA	<b>10-1119.1199 (01-903.5)</b>	0,001	
	60 AC/DC/20 mA	<b>10-1120.1179 (01-903.6)</b>	0,001	

## LED

	number of chips	voltage/current	colour	part no.		
<b>LED</b> base T 5.5	1 chip	12 VDC/14 mA	white	<b>10-2109.3139</b>	0,001	
		24 VDC/14 mA	white	<b>10-2112.3139</b>	0,001	
		28 VDC/14 mA	white	<b>10-2113.3139</b>	0,001	
	6 chips	6 VDC/45 mA	green	<b>10-5106.3255 (01-968.05)</b>	0,001	
			red	<b>10-5106.3252 (01-968.02)</b>	0,001	
			yellow	<b>10-5106.3254 (01-968.04)</b>	0,001	
		12 VDC/30 mA	green	<b>10-5109.3205 (01-968.15)</b>	0,001	
			red	<b>10-5109.3202 (01-968.12)</b>	0,001	
			yellow	<b>10-5109.3204 (01-968.14)</b>	0,001	
		24 VDC/15 mA	green	<b>10-5112.3145 (01-968.25)</b>	0,001	
			red	<b>10-5112.3142 (01-968.22)</b>	0,001	
			yellow	<b>10-5112.3144 (01-968.24)</b>	0,001	
		28 VDC/15 mA	green	<b>10-5113.3145 (01-968.35)</b>	0,001	
			red	<b>10-5113.3142 (01-968.32)</b>	0,001	
			yellow	<b>10-5113.3144 (01-968.34)</b>	0,001	
		48 VDC/14 mA	green	<b>10-5119.3135 (01-968.45)</b>	0,001	
red	<b>10-5119.3132 (01-968.42)</b>		0,001			
yellow	<b>10-5119.3134 (01-968.44)</b>		0,001			

## capacitor


for lamp voltage reduction

	value	part no.		
<b>capacitor</b> use with 60 VAC/20 mA, 50 Hz lamp voltage	230 VAC/0.27 $\mu$ F	<b>02-917.0</b>	0,004	

Wire in accordance with local electrical safety regulations.

## series resistor


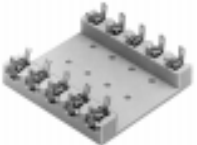
for lamp voltage reduction

	value	part no.		
<b>series resistor</b> use with 60 VAC/20 mA lamp rating	110 V/2.7 kOhm	<b>02-904.0</b>	0,003	
	125 V/3.3 kOhm	<b>02-904.1</b>	0,003	
	145 V/4.7 kOhm	<b>02-904.3</b>	0,003	
	230-240 V/10 kOhm	<b>02-904.7</b>	0,003	


Wire in accordance with local electrical safety regulations.

## terminal plate empty

for fitting with series resistors and capacitors


	no. of spaces	part no.		
<b>terminal plate empty</b>	5 spaces	<b>02-912.1</b>	0,015	
	10 spaces	<b>02-912.2</b>	0,045	
	15 spaces	<b>02-912.3</b>	0,040	
	20 spaces	<b>02-912.4</b>	0,045	

## terminal plate with capacitor

	value	no. of components	part no.	$\frac{SP}{kg}$	
<b>terminal plate with capacitor</b> use with 60 VAC/20 mA lamp rating	0,27 $\mu$ F/230 VAC/60 VAC	5 spaces	<b>02-914.10</b>	0,045	
		10 spaces	<b>02-914.20</b>	0,090	
		15 spaces	<b>02-914.30</b>	0,135	
		20 spaces	<b>02-914.40</b>	0,180	

Wire in accordance with local electrical safety regulations.


## terminal plate with series resistor

	value	no. of components	part no.	$\frac{SP}{kg}$	
<b>terminal plate with series resistor</b> use with 60 VAC/20 mA lamp rating	2.7 kOhm/110/60 V	5 spaces	<b>02-913.10</b>	0,040	
		10 spaces	<b>02-913.20</b>	0,075	
		15 spaces	<b>02-913.30</b>	0,115	
		20 spaces	<b>02-913.40</b>	0,155	
	3.3 kOhm/125/60 V	5 spaces	<b>02-913.11</b>	0,040	
		10 spaces	<b>02-913.21</b>	0,075	
		15 spaces	<b>02-913.31</b>	0,115	
		20 spaces	<b>02-913.41</b>	0,155	
	10 kOhm/230-240/60 V	5 spaces	<b>02-913.17</b>	0,040	
		10 spaces	<b>02-913.27</b>	0,075	
		15 spaces	<b>02-913.37</b>	0,115	
		20 spaces	<b>02-913.47</b>	0,155	


Wire in accordance with local electrical safety regulations.

## assembling


### lens remover

	part no.	$\frac{SP}{kg}$	
<b>lens remover</b>	<b>02-905</b>	0,011	



### lamp remover

	part no.	$\frac{SP}{kg}$	
<b>lamp remover</b>	<b>02-906</b>	0,002	



### LED remover

	part no.	$\frac{SP}{kg}$	
<b>LED remover</b>	<b>51-996</b>	0,024	

## dressng tool

	part no.		
<b>dressng tool</b> for alignng buttons	<b>01-906</b>	0,030	

## mountng tool

	part no.		
<b>mountng tool</b> for tightng (or loosng) fixing nuts	<b>01-907</b>	0,020	

**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 not stachable, only 1 switching element can be on a pushbutton.

**material****actuator case**

polyphenylene PPO, self-extinguishing

**material of contacts**

gold-plated silver

**switching element**

axial plug-in-/soldering terminal 2.8 mm:  
diallyl phthalate DAP, polyamide 66, polysulfone, heat-resistant and self-extinguishing  
soldering terminal: PA 6.6 Ultramid

**mechanical characteristics****actuating force**

2-5.5 N, depending on the number of switching elements

**actuating travel**

3 mm

**ambient air temperature**

-25°C to +55°C

for indicators and illuminated pushbuttons mounted as a block , make sure the heat can escape freely  
(as per DIN IEC 68-)

**connection method**

snap-action switching element with tinned soldering terminals at the sides:

max. wire diameter: 2 wires of 1.2 mm

max. wire cross-section of stranded cable: 1x 1 mm<sup>2</sup>.

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: 2 wires of 1 mm<sup>2</sup>

max. wire cross-section of stranded cable: 2 x 0.75 mm<sup>2</sup> or 1 x 1.0 mm<sup>2</sup>

**degree of protection**

front as per IEC 529:

IP 40

IP 67 with spray cover

**mechanical life**

momentary action 2 million cycles of operation

maintained action 1 million cycles of operation

**rebound time**

<= 5ms

**resistance to climate**

standard condition as per IEC 68-2-3 and 2-30

changing condition as per IEC 68-2-14 and 2-33

**resistance to shock**

(single impacts, semi-sinusoidal)

15 g for 11 ms as per IEC 512-4-3, IEC 68-2-27

**resistance to vibration**

(sinusoidal)

10 g at 0-2000 Hz, amplitude 1.5 mm as per IEC 512-4-4, IEC 68-2-6

**storage temperature**

-40°C to + 85°C

(as per DIN IEC 68-)

**electrical characteristics****continuous thermal current I<sub>th2</sub>**

5 A

The maximum current in continuous operation and at ambient temperature not exceeding the quoted maximum values.

**electric strength**

2500 VAC, 50 Hz, 1 min. between all terminals and earth, as per IEC 512-2-11.

**protection class**

II

**rated current**

5 A

**rated voltage**

250 VAC/VDC

**switch rating**

250 VAC/5 A (cos φ 1)

250 VAC/3 A (cos φ 0.3)

switch rating AC, cos φ 0,7:

voltage 125 V 250 V

current 3 A 2 A

switch rating DC (inductive), L:R = 30 ms:

voltage 24 V 60 V 110 V 220 V

current 2 A 0,7 A 0,2 A 0,1 A

**volume resistance**

starting value (initial) <= 50 mΩ

**rules**

IEC 1058 EN 61 058

**approvals**

- SEV 250 VAC/5A

- CSA 300 VAC

- UL

**actuator with Low Level switching element****switching system**

This low level switching element was designed for switching low powers in electronic circuits. The mechanism assures reliable switching of loads ranging from a few μA/μV up to 100 mA/42 VAC/VDC.

Single-break momentary contact, as normally open or normally closed with 4 independent points of contact. 2 momentary contacts per switching element; combination of normally open and normally closed is possible.

Special features are the long life, extremely short rebound time and stable contact resistance.

**material****actuator case**

polyphenylene PPO, self-extinguishing

**material of contacts**

gold-plated

## switching element

polysulfone, heat-resistant and self-extinguishing

## mechanical characteristics

### actuating force

3-3.5 N

### actuating travel

3 mm

### ambient air temperature

-25°C to +55°C

for indicators and illuminated pushbuttons mounted as a block ,  
make sure the heat can escape freely  
(as per DIN IEC 68-)

### connection method

The universal terminals permit these units to be mounted on printed  
circuit boards (PCB). These terminals can also be used as solder-  
ing or plug-in terminals.

For these terminals we can also supply a plug-in base which, when  
soldered on to the board, enables the switch to be plugged in.

soldering terminal:

max. wire diameter: 2 wires à 0.8 mm

max. wire cross-section of stranded cable: 1x 0.75 mm<sup>2</sup>

plug-in terminal:

2.0 x 0.5 mm

### degree of protection

front as per IEC 529:

IP 40

IP 67 with spray cover

### mechanical life

momentary action 5 mio. cycles of operation

maintained action 1 mio. cycles of operation

### rebound time

Typ. < 100 µs

### resistance to climate

standard condition as per IEC 68-2-3 and 2-30

changing condition as per IEC 68-2-14 and 2-33

### resistance to shock

(single impacts, semi-sinusoidal)

15 g for 11 ms as per IEC 512-4-3, IEC 68-2-27

### storage temperature

-40°C to + 85°C

(as per DIN IEC 68-)

## electrical characteristics

### electric strength

2500 VAC, 50 Hz, 1 min. between all terminals and earth, as per IEC  
512-2-11.

### protection class

II

### switch rating

10 µA/100 µV to 100 mA at 42 VAC/VDC

### volume resistance

starting value (initial) <= 50 mΩ

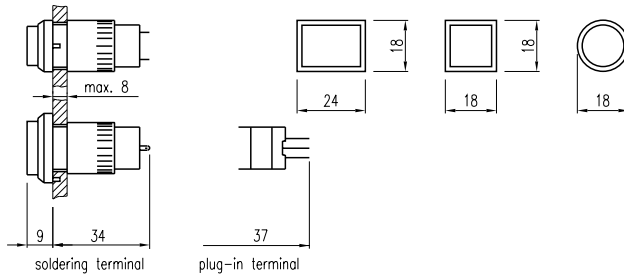
## rules

EN 61 058

## technical drawing

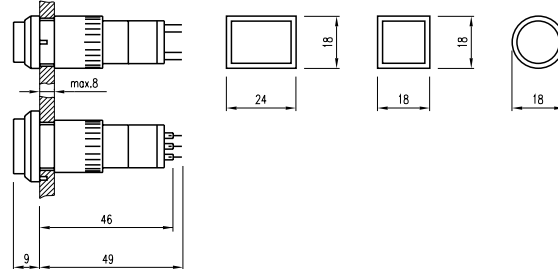
### 1 indicator

page 17



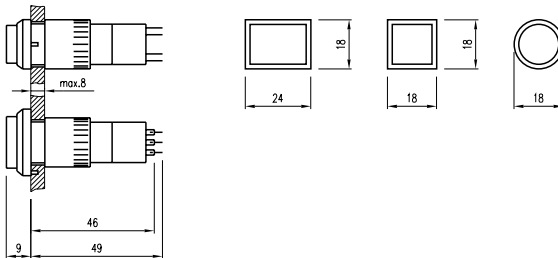
### 2 indicator

page 17



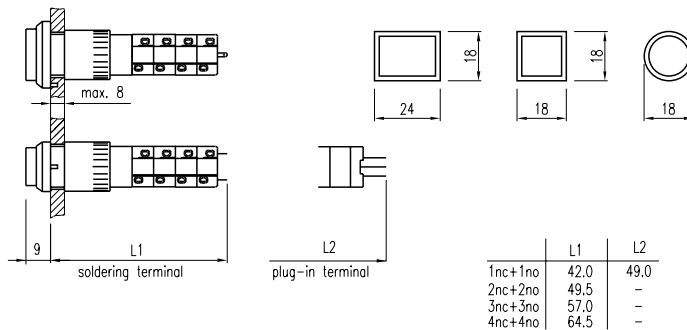
### 3 indicator, illuminated-/pushbutton

page 17, 18



### 4 illuminated-/pushbutton

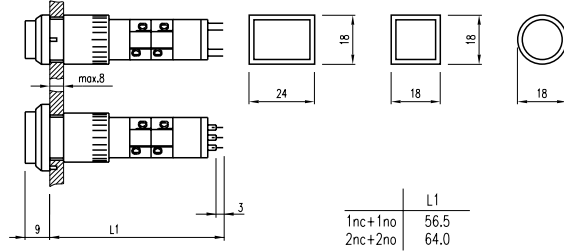
page 18



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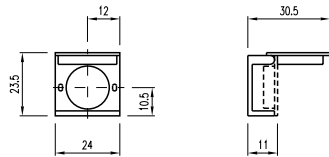
## 5 illuminated-pushbutton

page 18



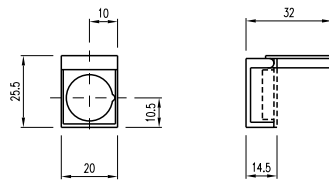
## 6 protective cover

page 19



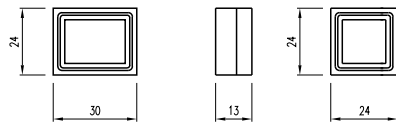
## 7 protective cover

page 19



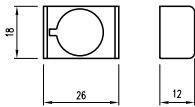
## 8 sprayproof cover

page 19



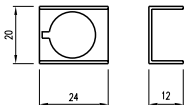
## 9 protective guard

page 20



## 10 protective guard

page 20

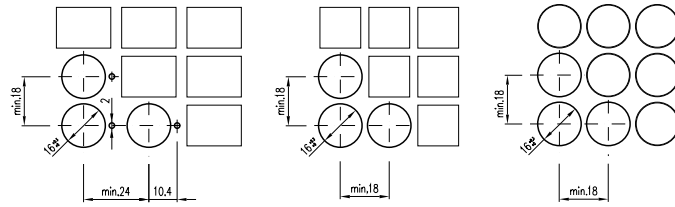




## mounting dimension

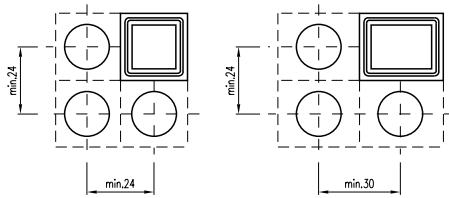
### 1 indicator, illuminated-/pushbutton, blind plug

page 17, 18, 20



### 2 sprayproof cover

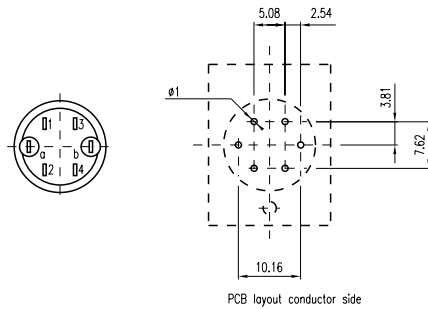
page 19



## components layouts

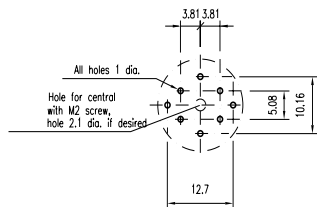
### 1 indicator, illuminated-/pushbutton

page 17, 18



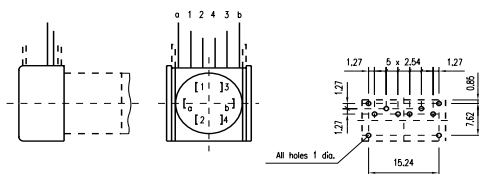
### 2 PCB plug-in base

page 20

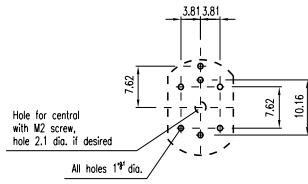


### 3 PCB plug-in base

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## 4 PCB plug-in base page 20

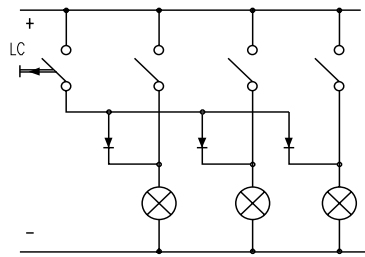


	circuit drawing		circuit drawing
1		21	
2		22	
3		23	
4		24	
5		25	
6		26	
7		27	
8		28	
9		29	
10		30	
11		31	
12		32	
13			
14			
15			
16			
17			
18			
19			
20			

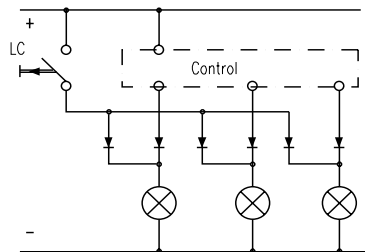
0

With indicators and illuminated pushbuttons equipped with diodes, the user is able to perform a lamp check or wire an alarm circuit simply with a considerable saving of space.

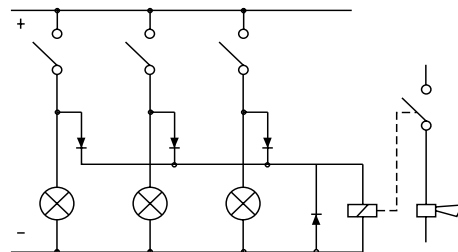
lamp check



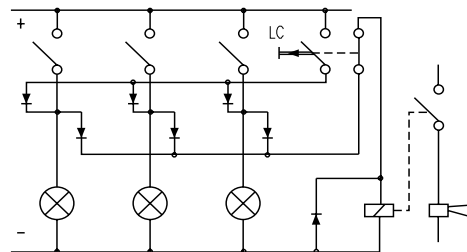
lamp check with blocking diodes



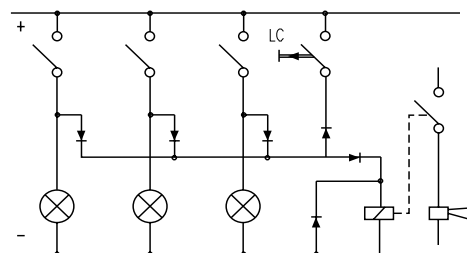
alarm circuit from fault annunciating system



lamp check and alarm circuit



lamp check and alarm circuit with only one diode and AC voltage



LC = lamp check

## 1. Engraving

### Typefaces

In addition to the most commonly used world languages (see DIN 1451) with close spacing, the following typefaces are available: Scandinavian, Slavian, Greek, Russian.

### Coloured filling of engraving

Specify whether engraving should be on the diffuser, or on the lens.

Specify the infill colour, character height and the text or symbol orientation.

### Symbols

A list of the symbols available can be supplied on request.

## 2. Hot stamping

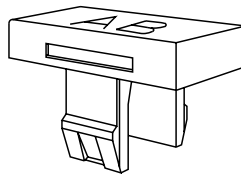
For large batches it is worth while to have the lettering produced by hot stamping.

### Typefaces

For letters and figures, typefaces with 2,5 mm, 3 mm and 4 mm are available..

### Symbols

A list of the symbols available can be supplied on request.



## 3. Film inserts

Instead of using engraving, the lenses can be fitted with transparent film inserts.

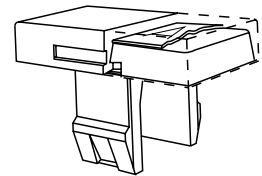
For this purpose, though, it is advisable to use transparent lenses. When a smoked lens is used, the lettering does not become visible until the lens lights.

To insert the film, the feet of the lens support have to be pushed together far enough to enable the lens to be lifted off easily.

### Film dimensions

max. 10,2 x 16,2 mm  
10,2 x 10,2 mm  
12,8 mm

### Film thickness 0,2 mm



### Important!

Before engraving, check the position of the illuminated pushbuttons or indicator.

Height of letters	Thickness of letters	Horizontal mounting			Vertical mounting			Number of lines	Number of letters per line	Number of letters per line	Number of lines	Number of letters per line	Number of letters per line
		Number of lines	Number of letters per line	Number of letters per line	Number of lines	Number of letters per line	Number of letters per line						
h	s		(caps)	(small)		(caps)	(small)		(caps)	(small)		(caps)	(small)
2,5	0,4	3	10	10-11	4	6-7	7	3	6	6	3	6-7	7
3	0,4	2	8-9	9	4	5-6	6	2	5	6	2	5-6	6
4	0,5	2	6	6-7	3	4	4	2	3	4	2	4	4
5	0,5	1	5	5-6	2	3	3-4	1	2	3	1	3	3-4
6	0,6	1	4	4-5	1	2-3	3	1	2	2	1	2-3	3
8	0,6	1	3	3-4	1	2	2	1	2	2	1	2	2