

## Description

## General Notes

The series contains indicators and illuminated pushbuttons with maintained and momentary action and one contact which may be normally closed or normally open (snap-action element for closing). The illuminated pushbuttons are fitted with snap-action or low-level switching systems.  
For technical data see pages 2 and 3.  
The front dimensions are 9 x 9 mm or 9 mm dia.

## Mounting

Mounting from the front through the mounting hole is assured even when the wiring has already been attached (mounting dimensions and spacing see page 4.).  
The units are equipped with soldering or plug-in terminals.

## Lenses

The flat lenses, made of polycarbonate, are obtainable in various colours. The transparent lens is available with translucent or transparent support.

## Marking

A limited amount of marking can be provided.

## Illumination

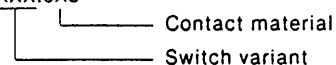
Perfect illumination of the different coloured lenses is assured by filament lamps bipin T1 longlife (6-36 V) or LED bipin T1 (2,2 V) in the colours red, yellow and green.

## 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.

## How to order

19-XXX.0X5



19-9XX.X

Lens

19-9XX.X

Other accessories

Example:

- Illuminated pushbutton; round, momentary action, gold-plated silver contact, soldering terminals  
19-139.035
- Lens, round, red  
19-931.2

All dimensions in mm.

We reserve the right to modify technical data.

### Switching system

Single-break, snap-action switching system; 1 normally open contact

### Contact material

- gold-plated silver
- silver, suitable for over 20 V

### Travel

2,8 mm

### Actuating force (measured at the lens)

1,6 N (160 g)

### Switch rating

50 VAC/72 VDC, 1 A (silver-plated)  
50 VAC/72 VDC, 100 mA (gold-plated)

### Mechanical life

2 million operations

### Electric strength

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

### Terminals

Max. wire diameter: 2 wires of 0,8 mm each  
Max. wire cross-section of stranded cable: 1 x 0,75 mm<sup>2</sup>

### Ambient temperature

- 25 °C to +65 °C without lamp
- 25 °C to +45 °C with lamp
- 25 °C to +65 °C with LED

For indicators and illuminated pushbuttons mounted as a block, make sure the heat can escape freely.

### Storage temperature

-40 °C to +85 °C

### Actuator case

Made of polyphenylene oxide, self-extinguishing  
Colour, black

### Degree of protection of front as per IEC 529

IP 40

### Approvals

SEV

### Switching system

This low-level switching system was designed for switching low powers in electronic circuits.

The switching system assures reliable switching of loads.

Single-break momentary contact, as normally open or normally closed with 4 independent points of contact.

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

### Contact material

gold-plated

### Travel

2,8 mm

### Actuating force (measured at the lens)

1,8 N  $\pm$  0,3 (180 g)

### Switch rating

10  $\mu$ A/100  $\mu$ V to 100 mA at 42 VAC/VDC

### Contact resistance

Value as new  $\leq$  50 m $\Omega$  as per IEC 512-2, test 2b

### Rebound time

typical < 100  $\mu$ s

### Mechanical life

5 million operations

### Electric strength

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

### Terminals

The universal terminals permit these units to be mounted on printed circuit boards (PCB). These terminals can also be used as soldering 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.

Max. wire diameter: 2 wires of 0,8 mm each

Max. wire cross-section of stranded cable: 1 x 0,75 mm<sup>2</sup>

Plug-in terminal: 2,0 x 0,5 mm

### Ambient temperature

-25 °C to +65 °C without lamp

-25 °C to +45 °C with lamp

-25 °C to +65 °C with LED

For indicators and illuminated pushbuttons mounted as a block, make sure the heat can escape freely.

### Storage temperature

-40 °C to +85 °C

### Shockproof (single impact, semi-sinusoidal)

15 g for 11 ms as per IEC 68-2-27

### Actuator case

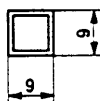
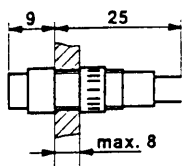
Made of polyphenylene oxide, self-extinguishing

Colour, black; grey can only be supplied on request.

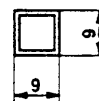
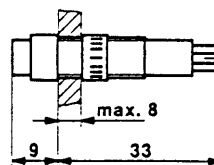
### Degree of protection of front as per IEC 529

IP 40

Dimensions refer to page 5

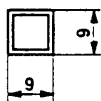
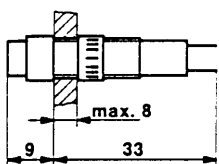


Indicators  
reduced

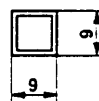
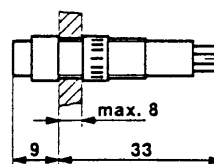


Illuminated pushbuttons with  
snap-action switching system

Dimensions refer to page 6

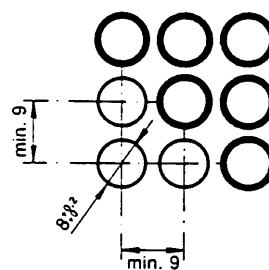
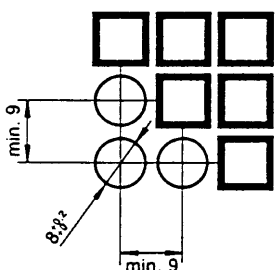


Indicators



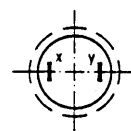
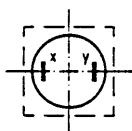
Illuminated pushbuttons with  
low-level switching system

Mounting dimensions Indicators, illuminated pushbuttons

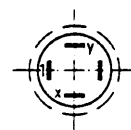
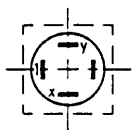


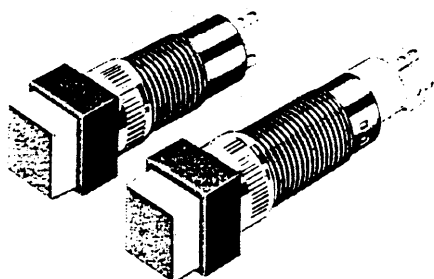
Terminals

Indicator



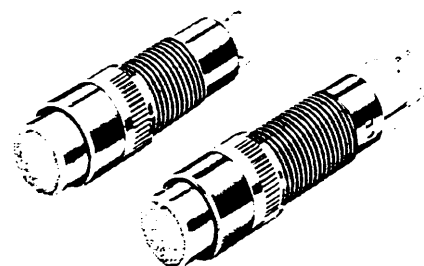
Illuminated pushbutton with  
snap-action switching system and  
low-level switching system





50 VAC/72 VDC, 1 A

Dimensions see page 4








50 VAC/72 VDC, 1 A

Order lenses separately  
see page 7

□ 9 mm

○ 9 mm

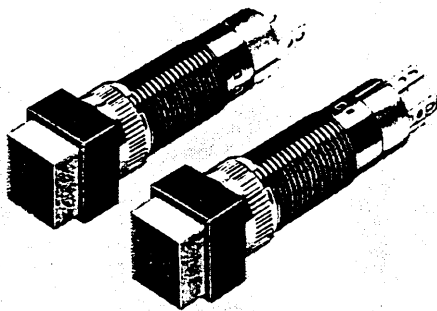
| Description   | Momentary action | Maintained action |   | Type No.                     | Depth mm |
|---|------------------|-------------------|---|------------------------------|----------|
| Indicator<br>reduced  | -                | -                 |   | □ 19-050.005<br>○ 19-030.005 | 25       |
| Illuminated pushbutton<br>1 normally open contact<br>silver contact 50 VAC/72 VDC, 1 A            | x                | -                 |  | □ 19-159.015<br>○ 19-139.015 | 33       |
| Illuminated pushbutton<br>1 normally open contact<br>silver contact 50 VAC/72 VDC, 1 A            | -                | x                 |  | □ 19-289.015<br>○ 19-279.015 | 33       |
| Illuminated pushbutton<br>1 normally open contact<br>silver, gold-plated 50 VAC/72 VDC,<br>100 mA | x                | -                 |  | □ 19-159.035<br>○ 19-139.035 | 33       |
| Illuminated pushbutton<br>1 normally open contact<br>silver, gold-plated 50 VAC/72 VDC,<br>100 mA | -                | x                 |  | □ 19-289.035<br>○ 19-279.035 | 33       |

Please note our new series 18 with very small depth and compact indicators for direct connection to 2.2, 12 or 24 VDC.

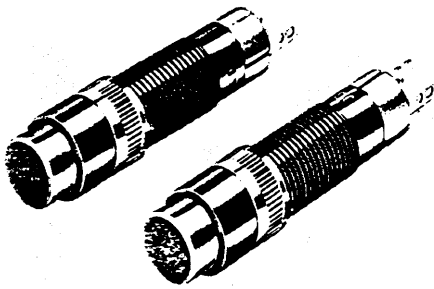
For lamps see page 8

# Indicator, Illuminated Pushbuttons with Low-level Switching System

19 LL



42 VAC/VDC, 100 mA  
Dimensions see page 4









42 VAC/VDC, 100 mA  
Order lenses separately  
see page 7

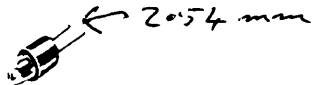
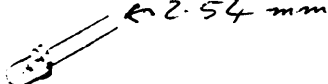

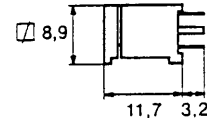
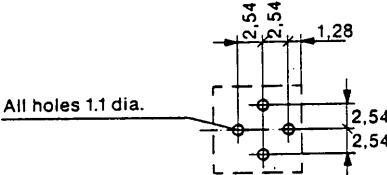
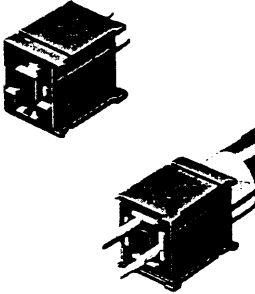
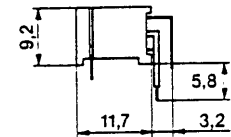
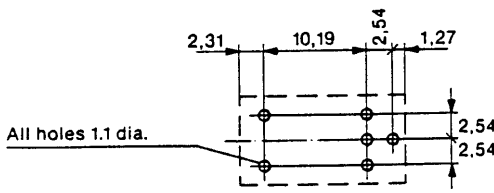
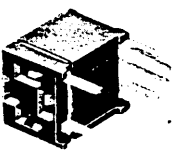
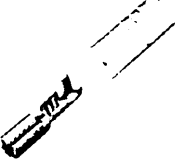
□ 9 mm  
○ 9 mm

| Description  | Momentary action | Maintained action |  | Type No.                     | Depth mm |
|--|------------------|-------------------|--|------------------------------|----------|
| Indicator<br>(The total length is the same as<br>that of the illuminated pushbutton) | -                | -                 |  | □ 19-051.005<br>○ 19-031.005 | 33       |
| Illuminated pushbutton<br>1 normally open contact                                    | x                | -                 |  | □ 19-451.035<br>○ 19-431.035 | 33       |
| Illuminated pushbutton<br>1 normally closed contact                                  | x                | -                 |  | □ 19-452.035<br>○ 19-432.035 | 33       |
| Illuminated pushbutton<br>1 normally open contact                                    | -                | x                 |  | □ 19-481.035<br>○ 19-471.035 | 33       |
| Illuminated pushbutton<br>1 normally closed contact                                  | -                | x                 |  | □ 19-482.035<br>○ 19-472.035 | 33       |

Please note our new series 18 with very small depth and compact indicators for direct connection to 2.2, 12 or 24 VDC.

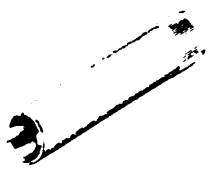

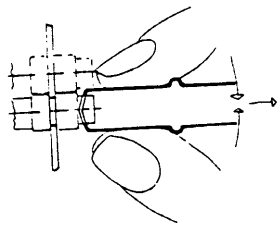




For lamps see page 8

| Description   | Colour   | <br>7 x 7 mm | <br>7 mm |   |
|---|----------|---|---|---|
|   | ● opaque | Type No.  | Type No.  |   |
| Flat, transparent lens<br>with translucent support<br>(for filament lamp and Multi-LED) | ● black  | 19-951.0  | 19-931.0  |   |
|   | red      | 19-951.2  | 19-931.2  |   |
|   | yellow   | 19-951.4  | 19-931.4  |   |
|   | green    | 19-951.5  | 19-931.5  |   |
|   | blue     | 19-951.6  | 19-931.6  |   |
|   | ● grey   | 19-951.8  | 19-931.8  |   |
|   | white    | 19-951.9  | 19-931.9  |   |
|   |          |   |   |   |
|   |          |   |   |   |
|   |          |   |   |   |
| Flat, transparent lens<br>with transparent support<br>(for film insert and LED)         | red      | 19-952.2  | 19-932.2  |   |
|   | yellow   | 19-952.4  | 19-932.4  |   |
|   | green    | 19-952.5  | 19-932.5  |   |
|   | blue     | 19-952.6  | 19-932.6  |   |
|   | clear    | 19-952.7  | 19-932.7  |   |
|   |          |   |   |   |

| Description   | Lamp voltage  | Power consumption   | Type No.   |   |
|---|---|---|--|---|
| <b>Lamp bipin T1</b><br>To prevent the casing from being overheated we recommend underrunning the lamp by 20% | 6 V<br>12 V<br>18 V<br>24 V<br>28 V<br>36 V   | 117 mA<br>58 mA<br>28 mA<br>25 mA<br>25 mA<br>19 mA                                 | 19-903.0<br>19-903.1<br>19-903.2<br>19-903.3<br>19-903.4<br>19-903.5 |    |
| <b>LED bipin T1, 2,2 V</b><br>Pins 9 mm long  |   | red<br>yellow<br>green  | 19-943.02<br>19-943.04<br>19-943.05                                  |    |
| <b>Multi-LED bipin T1</b><br>with built-in series resistor  | red<br>orange<br>yellow<br>green  | 28 V 20 mA<br>28 V 20 mA<br>28 V 15 mA<br>28 V 15 mA                                | 11-968.32<br>11-968.33<br>11-968.34<br>11-968.35                     |    |
| <b>Axial PCB plug-in base</b>   |  |   | 19-940   |   |
| <b>Right-angled PCB plug-in base</b>  |  |  | 19-941   |  |
| <b>Flat connector for plug-in terminals 2,0 mm</b><br><b>Insulating sleeve for flat connector 31-945</b>      |   |   | 31-945<br>31-928   |  |



# Mounting Tools, Various

| Description  |                       |       | Type No. |   |
|--|-----------------------|-------|----------|---|
| <b>Assembly wrench</b><br>for tightening (or loosening) fixing nuts  |                       |       | 19-905   |    |
| Lamp remover   |                       |       | 11-906   |   |
| <b>Dressing tool</b><br>used as aid to aligning buttons  |                       |       | 19-906   |    |
| <b>Lens remover</b><br> |                       |       | 19-910   |  |
| Blind plug   | square<br>9 x 9 mm    | black | 19-948.0 |  |
|  | circular<br>9 mm dia. | black | 19-949.0 |  |
| <b>Fixing nut</b><br>9 mm dia. x 13 mm<br>Only for sheet < 3 mm thick                                      |                       |       | 19-991   |  |



**Стандарт  
Электрон  
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

**Наши контакты:**

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