146-208/210
150-583

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
- Contact material
- Switch variant

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^2

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 ± 0,3 (180 g)

Switch rating

10 µA/100 µV to 100 mA at 42 VAC/VDC

Contact resistance

Value as new ≤ 50 mΩ as per IEC 512-2, test 2b

Rebound time

typical < 100 µs

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 mm²
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

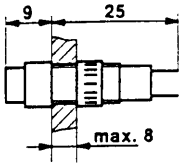
Actuator case

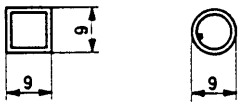
Made of polyphenylene oxide, self-extinguishing
Colour, black; grey can only be supplied on request.

Degree of protection of front as per IEC 529

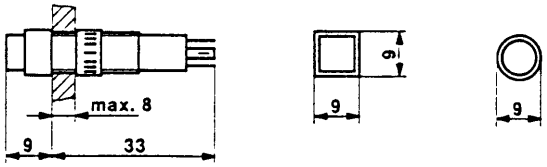
IP 40

Dimensions refer to page 5



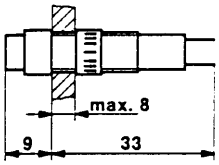


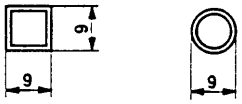
Indicators
reduced



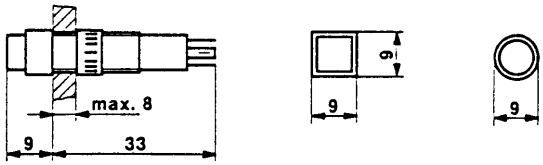
Illuminated pushbuttons with
snap-action switching system

Dimensions refer to page 6



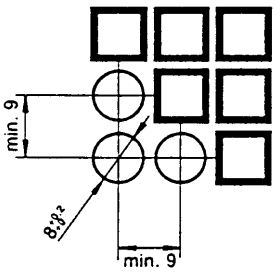


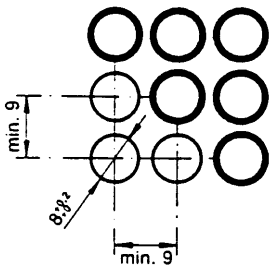
Indicators



Illuminated pushbuttons with
low-level switching system

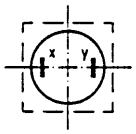
Mounting dimensions Indicators, illuminated pushbuttons

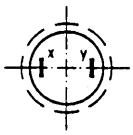




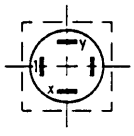
Terminals

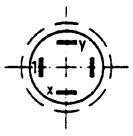
Indicator

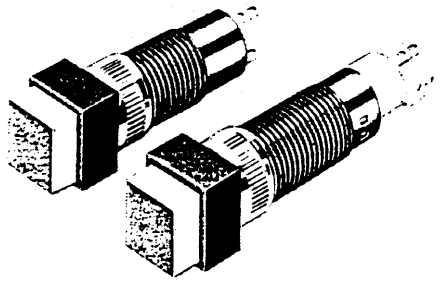




Illuminated pushbutton with
snap-action switching system and
low-level switching system

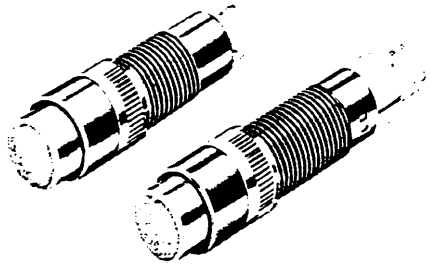






50 VAC/72 VDC, 1 A

Dimensions see page 4



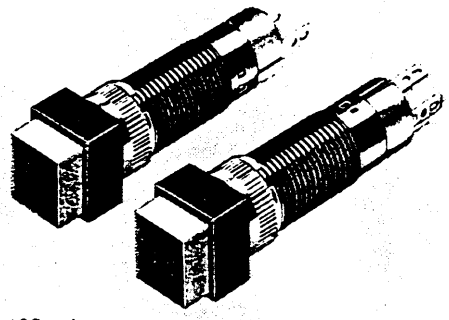
50 VAC/72 VDC, 1 A

Order lenses separately
see page 7

☐ 9 mm ∅ 9 mm **Description**	Momentary action	Maintained action		Type No.	Depth mm
Indicator reduced	–	–		☐19-050.005 ∅19-030.005	25
Illuminated pushbutton 1 normally open contact silver contact 50 VAC/72 VDC, 1 A	×	–		☐19-159.015 ∅19-139.015	33
Illuminated pushbutton 1 normally open contact silver contact 50 VAC/72 VDC, 1 A	–	×		☐19-289.015 ∅19-279.015	33
Illuminated pushbutton 1 normally open contact silver, gold-plated 50 VAC/72 VDC, 100 mA	×	–		☐19-159.035 ∅19-139.035	33
Illuminated pushbutton 1 normally open contact silver, gold-plated 50 VAC/72 VDC, 100 mA	–	×		☐19-289.035 ∅19-279.035	33

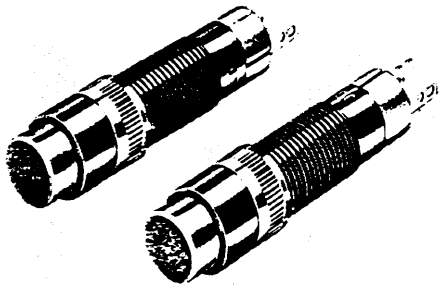
Please note our new series 18 with very small depth and compact indicators for direct connection to 2.2, 12 or 24 VDC.

For lamps see page 8



42 VAC/VDC, 100 mA

Dimensions see page 4



42 VAC/VDC, 100 mA

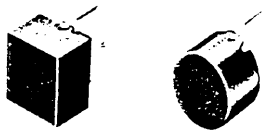
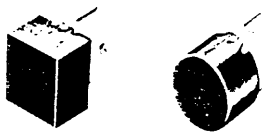
Order lenses separately
see page 7

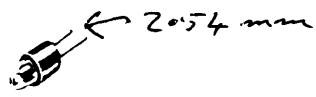
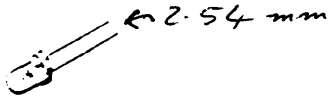
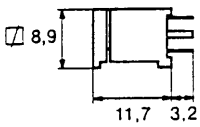
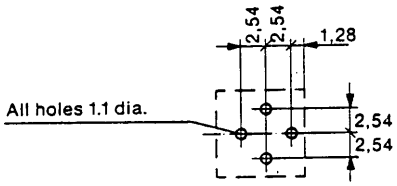
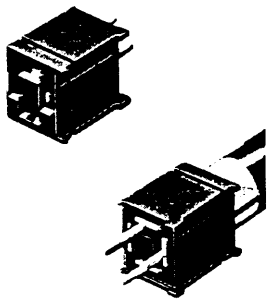
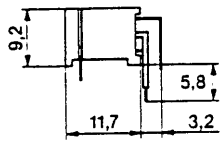
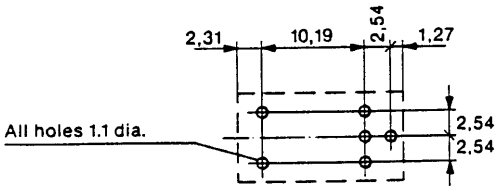
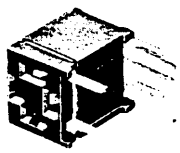
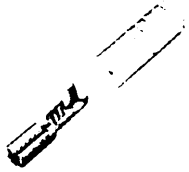
☐ 9 mm
∅ 9 mm

Description	Momentary action	Maintained action		Type No.	Depth mm
Indicator (The total length is the same as that of the illuminated pushbutton)	–	–		☐19-051.005 ∅19-031.005	33
Illuminated pushbutton 1 normally open contact	×	–		☐19-451.035 ∅19-431.035	33
Illuminated pushbutton 1 normally closed contact	×	–		☐19-452.035 ∅19-432.035	33
Illuminated pushbutton 1 normally open contact	–	×		☐19-481.035 ∅19-471.035	33
Illuminated pushbutton 1 normally closed contact	–	×		☐19-482.035 ∅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

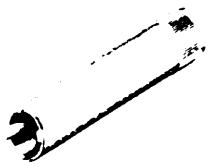
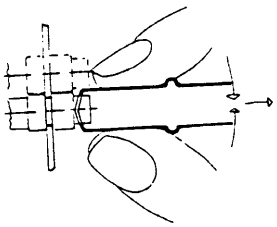
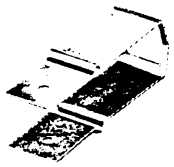
Description	Colour ● opaque	☐ 7 x 7 mm Type No.	∅ 7 mm Type No.	
Flat, **transparent lens** with translucent support (for filament lamp and Multi-LED)	● black red yellow green blue ● grey white	19-951.0 19-951.2 19-951.4 19-951.5 19-951.6 19-951.8 19-951.9	19-931.0 19-931.2 19-931.4 19-931.5 19-931.6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

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

11.92

eao

Mounting Tools, Various

Description			Type No.	
Assembly wrench for tightening (or loosening) fixing nuts			19-905	
Lamp remover			11-906	
Dressing tool used as aid to aligning buttons			19-906	
Lens remover			19-910	
Blind plug	square 9 x 9 mm	black	19-948.0	
	circular 9 mm dia.	black	19-949.0	
Fixing nut 9 mm dia. x 13 mm 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:

Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

Адрес: 198099, Санкт-Петербург,
Промышленная ул, дом № 19, литера Н,
помещение 100-Н Офис 331