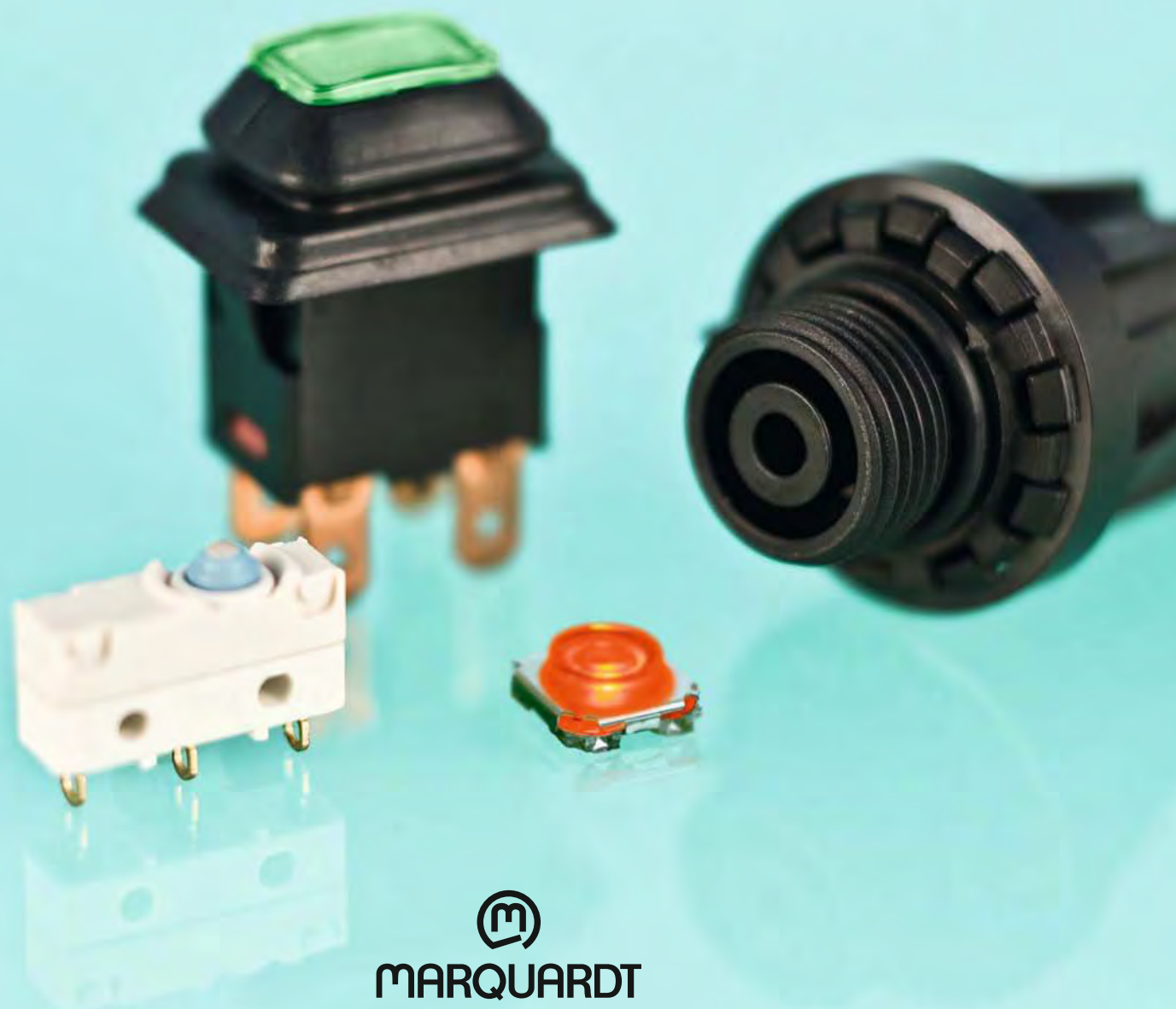




PRODUCT CATALOG SWITCHES & SENSORS

➔ WWW.MARQUARDT-SWITCHES.COM




MARQUARDT

Further information under
WWW.MARQUARDT-SWITCHES.COM

APPROVAL MARKS

	ENEC		VDE
	UL (USA)		UL (USA + Canada)
	CSA (Canada)		CSA (Canada + USA)

TERMINAL SYMBOLS

	Quick-connect terminal		Cable
	Solder terminal		Terminal strip
	Short solder terminal		Push-in terminal
	PCB terminal		Snap-in terminal
	PCB terminal angled to left		Cut terminal
	PCB terminal angled to right		Screw terminal
	Socket terminal		

ACTUATOR SYMBOLS

	Straight lever		Lever simulated roller with adjusting screw
	Lever simulated roller		Lever with adjusting screw and roller
	Lever with roller		Lever with cams
	Differential lever		Housing cams
	Spring lever		Pushbutton
	Spring lever bent		Rotary shaft
	Spring lever with molded spring cam		Standard actuator
	Lever with adjusting screw		Mushroom-shaped actuator

ABBREVIATIONS TECHNICAL DRAWING

ad	Adjustable	OP	Operating position
AN	Anode	OP NC	Operating positions normally closed contact
BL	Block	OP NO	Operating positions normally open contact
FH	Fixing hole, locating hole fixing pin	OR	On request
FI	Fields for function indicator	RC	Recommended cut-out
FP	Free position	RL	Reference level
FX	Fixing pin	SH	Shap-in hole
ju	Adjusted	SL	Symbol limit
MC	Marking cathode	SP	Solder pads
MF	Mounting frame	ST	Slide travel
MP	Measuring point	SW	Switching position
OFF	Off	TH	Terminal hole
off-range	Zero position	tk	Thick
OG	Operating range	to	Top
ON	On	TP	Permissible total travel position

SWITCHING FREQUENCY (ABBREVIATIONS)

e.g. 5E4 switching cycles $\hat{=}$ 50 000 switching cycles

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ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

MARQUARDT

CHOOSE THE BRAND OF THE BRANDS



SETTING STANDARDS

Switches and systems get into the game wherever man encounters technology. They form an important bridge between the user and the appliance.

Functional safety, shape, operating logic and comfort as well as ease of installation, life endurance, reliability and price create the environment in which the requirements for a switch or a system evolve.

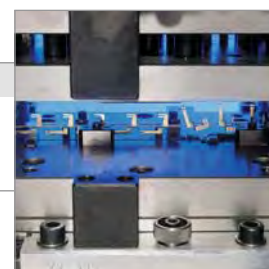
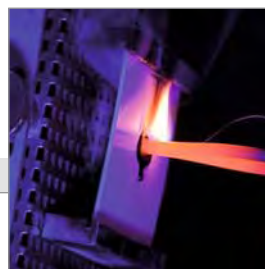
The very first switch made by Marquardt in 1925 set a new standard in its area of application. Between then and now lie hundreds of innovations and technological quantum leaps.

SOLID FOUNDATION

- ◆ An independent family business for more than 85 years
- ◆ About 10 % of the turnover annually for R&D
- ◆ The latest development tools
- ◆ Extensive test departments
- ◆ 11 production and sales locations worldwide
- ◆ Presence on the most important markets in Europe, America and Asia

TWO SUPPORTING PILLARS

By the two business units Automotive and Switches, Sensors & Controls Marquardt sets the benchmark for the most diverse applications.



BUSINESS UNIT SWITCHES, SENSORS & CONTROLS

A WIDE BASE FOR INTELLIGENT SOLUTIONS



LONG EXPERIENCE

Since the beginning the name Marquardt represents a brand which unites consistency with a pioneering spirit. A brand which is constantly exploring new territory in the switching world, taking new roads and opening up great potential benefits for its customers in marketable switching solutions.

WIDE PRODUCT RANGE

No matter whether they are looking for sensors and switches for all kinds of household appliances, for cleaning and drive technology, for heating and air conditioning technology or for standard switches which are turned out in their millions on large automatic production lines, the electrical appliance industry finds a partner here who offers much to many.

The focus is on the individual adjustment of standard products on customer requirements as well as the new development of innovative switches, sensors and systems. Our spectrum ranges from cable assembly and the production of special subassemblies to the complete mechatronic system.

KEY COMPETENCIES

- ◆ Development and design of switches and systems for large series production
- ◆ Development and manufacture of product and system-specific electronics for switching systems
- ◆ High integration of different techniques such as electronics and mechanics
- ◆ Design and production of customized switches and switching systems

GREAT PRODUCTION DEPTH

- ◆ Injection molding, varnishing and laser processing of plastic parts, multi-component injection, overmolding of metal parts
- ◆ High-speed punching technology with integrated laser welding and cleaning
- ◆ SMD and THT assembly, laser soldering and welding of plastics
- ◆ Highly integrated automatic production and assembly systems



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MICRO-SIGNAL SWITCHES

SENSORS

REFERENCE PRODUCTS

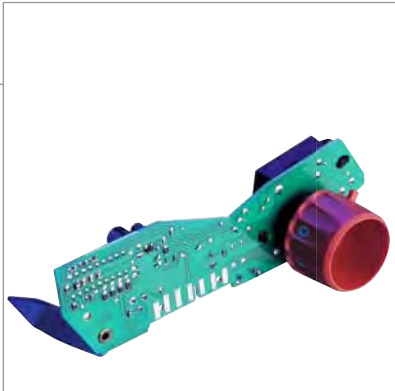
SWITCHES, SENSORS, LOCKS, LIGHTINGS



3D - imbalance sensor



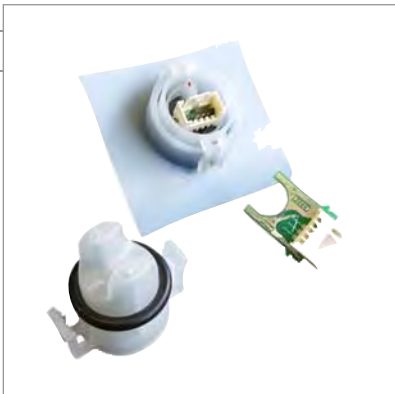
Pressure sensor



Automatic control systems



Rotary switch



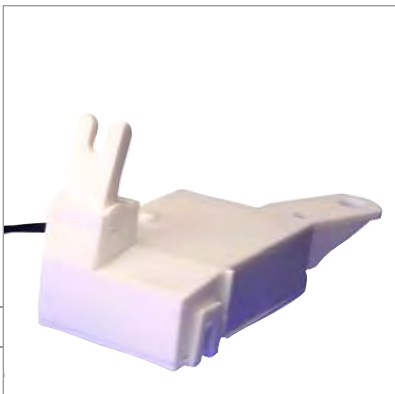
Turbidity sensor



Power switch



Door lock



Subassembly with snap-action switch



Lighting

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REFERENCE PRODUCTS

SWITCHES, CONTROL SYSTEMS FOR ELECTRIC POWER TOOLS



EC-electronics



Electronic switch for AC electric power tools



Electronic switch for AC electric power tools



Electronic switch for AC electric power tools



Electronic switch for DC electric power tools



Electronic switch for angle grinders (integrated soft start and restart protection)



ON/OFF trigger switch with time-delayed contact and suppression capacitor



Electronic switch for DC accumulator power tools with lithium ionic technology



Brushring with DT switch

ROCKER SWITCHES

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REFERENCE PRODUCTS

DRIVER AUTHORIZATION SYSTEMS, ASSEMBLIES, CONTROL PANELS FOR AUTOMOBILES



Electronic key



Electronic ignition starter switch



Electronic steering lock



Keyless antennas and control devices



Gear selection switch



Central control unit



Seat control panel



Roof control panel



Rotary light switch

ROCKER SWITCHES

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GENERAL TECHNICAL INFORMATION

ABOUT THE CATALOG

This catalog provides you with an overview of the wide range of Marquardt standard switches. The portfolio includes rocker switches, pushbutton switches, toggle switches, slide switches, rotary switches, foot switches, power tool switches, keys, snap-action switches, micro-signal switches and sensors.

Basic types are distinguished within a series to group products with identical properties, e.g. the size.

The technical data and specifications are typical characteristics, which can vary depending on the product.

In addition to the standard program, a number of modified, customized variants and special products and modules are available on request.

All standard versions are listed with their order numbers.

- ◆ The order numbers of other versions and further information are available on request.
- ◆ Sample switches, approvals and installation drawings with tolerance data can be provided.

The high quality, long-life switches from Marquardt are used in many different applications. We are constantly working on new developments and customized versions. Please ask.

The current Marquardt product program can be found on our online product catalog with filter functionality at www.marquardt-switches.com

All the products in our entire delivery program have one common feature: The consistently high quality level which has made us the favorite supplier of leading manufacturers worldwide. We are certified in accordance with ISO TS 16949: 2002, the latest QM standard of the automotive industry. Quality is a premium for us.

CODE OF CONDUCT

The self declared code of conduct is very important for Marquardt. It describes the basic rules of the ethical and legal behavior among each other, but also with business partners, public authorities and other third parties. Please contact us for more details.

APPROVALS

Almost all Marquardt switches have been tested in accordance with EN 61058-1 or IEC 61058-1 and designed for the application conditions specified therein unless specified otherwise. They carry the uniform European approval mark ENEC. The approvals for the USA and Canada are granted in accordance with UL 1054, on request also already in accordance with UL 61058 3rd ed. or CSA 61058. In the year 2015 all approvals according UL 1054 und CSA 22.2 No. 55 expire and will be replaced by the UL 61058. Marquardt started with the conversion and re-evaluation for a smooth process for our customers already. Please contact us for more details and support. Please see the catalog for the respective granted approvals. A list of the approved Marquardt products can be found on the web pages of the respective test bodies (e.g. VDE, KEMA, UL and CSA). We will provide the appropriate certificate on request.

APPROVAL MARKS

	ENEC	– Europe
	VDE	– Germany
	UL	– USA
	CSA	– Canada
	cCSAus	– Canada with confirmation of the national US requirements
	cULus	– USA with confirmation of the national Canadian requirements

Approval marks specified in the series overview are product-dependent. That means that the products are assignable in the tables based on the rating specifications (black print – Europe/ blue print – North America).

The exact assignment of the approval marks are specified on the customer drawing for each product. The drawings are available as download from the online product catalog at www.marquardt-switches.com

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ROHS (RESTRICTION OF THE USE OF CERTAIN HAZARDOUS SUBSTANCES)

From July 1, 2006 no more new electrical and electronic products may be offered in the EU which do not comply with the RoHS directive. The use of lead, mercury, hexavalent chromium, cadmium and the flame inhibitors containing bromide PBB and PBDE is prohibited for the protection of man and the environment.

Compliance with the legal regulations is a matter of principle for Marquardt.

This means all necessary measures for the implementation of the RoHS guideline have been done already, including with our suppliers. In our products are no forbidden materials included restricted by RoHS (lead, cadmium, chrome (VI), mercury and polybrominated flame retardant) anymore. The exception is the integrated printed circuit board (PCB) of the product series 3230.

As far as we know and based on the information available to us from our suppliers, the products presented in this catalog meet the requirements of the EU Directive 2002/95/EU (Edition 1.3.2010).

REACH (EG/1907/2006)

REACH stands for Registration, Evaluation, Authorization and Restriction of Chemicals.

Marquardt anxious to develop and produce all products in compliance with applicable regulations, including the REACH regulations. Please contact us for more information.

HOUSEHOLD APPLIANCES STANDARD IEC/EN 60335

Various switches in the Marquardt product portfolio are conformant with the Household Appliance Standard IEC/EN 60335-1:2001/2002, chapter 30. These switches are identified by a "G" in the specification or drawing and on the label of the smallest packing unit. Materials are used here which comply with the values for the glow-wire-flammability index (GWFI) and the glow-wire-ignition-temperature (GWIT) demanded by the standard. The appropriate switches are labeled in the catalog in the product tables of the individual series. The appropriate certificate with the confirmation of conformity is available on request.

RATING FOR ALTERNATING CURRENT VOLTAGE (AC)

The electrical reference values, i.e. the maximum permissible electrical loads in continuous operation, are specified for the respective switch series. Most Marquardt switches are suitable for ohmic resistance load and motor load.

In the specification of the reference power using the bracket notation, e.g. 16 (4) A 250 V AC, the value in front of the brackets indicates the switch-off current and the value in brackets the nominal motor current. In switches which are additionally approved by test bodies in the USA (UL) and Canada (CSA) the corresponding ratings according to North American standards are listed additionally in blue. The motor loads may also be shown as HP (Horse Power) values according to North American conventions.

RATING FOR DIRECT CURRENT VOLTAGE (DC)

Since the range of DC loads is very wide and extensive and also depends very greatly on the application, no DC values are specified for the majority of the series in this catalog. Explicit tests are recommended for this. Tests which have already been carried out are available on request and the results can be used as references. As a rule of thumb it can be assumed at low currents that the specified alternating current values (AC) correspond to the direct current values when the life is reduced to about one third. In series with DC voltage specifications the specified current always refers to an ohmic load. If inductive or capacitive loads are available, the application must be checked by tests with the original load.

LIFE ENDURANCE

The mechanical life endurance is the number of possible switching cycles *without* electrical loading of the contacts whilst the electrical life endurance is determined *with* the permissible rated electrical power for the contacts. The lower the electrical load is, the closer the electrical life is to the mechanical life when using the switch in the appliance.

GENERAL TECHNICAL INFORMATION

GOLD-PLATED CONTACTS

For applications with a rating of ≤ 300 mW or ≤ 12 V we recommend switches with gold-plated contacts, also for applications with rare actuation or in a sulfurous atmosphere or other corrosive environments. Minimum currents are not especially defined, but can be assumed in a range down to 1 mA.

SWITCHING FREQUENCY

For switches which are expected to be actuated more than 2 000 times a year, the test bodies prescribe an electrical life endurance of ≥ 50 000 switching cycles. The majority of our switches meets these requirements and is marked by the 5E4 symbol (50 000 switching cycles) as an additional specification in the rating data. Switches without specification of the switching cycles in the rating data are approved for a switching frequency of 10 000 cycles. These data refer to the load which is typical for and described in the IEC 61058-1 standard. For clear differing, e.g. slower or faster actuations, we will be glad to advise you!

CONTACT DISTANCE

The majority of our appliance switches and some of our snap-action switches have a contact distance which enables full disconnection from the mains. The opening distances are even more than 3 mm in most cases. Switches which are not suitable for full disconnection are marked with the μ symbol.

The switch standard IEC 61058-1 demands a contact distance of > 1.5 mm, the Household Appliances Standard EN60335 ≤ 3 mm depending on the application for full mains disconnection. In switch variants with < 3 mm the test bodies usually acknowledge the mains plug or a disconnection device in the installation as a disconnection from the mains. Ask your test body if in doubt.

PROOF TRACKING

The proof tracking (PTI/CTI value) indicates at what voltage the proof tracking test is passed. The tracking distance is the shortest distance along the surface of the insulating material between two conductive parts. The values specified in the catalogue correspond to the division according to EN 61058-1 or IEC 61058-1.

INRUSH CURRENT

Short capacitive peak currents mainly occur when switching devices with power supply units (e.g. computers, printers, fax machines, etc.). The duration of these currents is typically < 10 ms. The test conditions with a special test circuit are defined in EN 61058-1 or IEC 61058-1.

Values of the possible capacitive inrush currents are available for most of our appliance switches. They are labeled with the specification of the continuous current and the maximum inrush current as well as the voltage, e.g. 5/100 A 250 V AC.

Guideline for the inductive inrush current is 6 times of the specified motor current described in brackets (e.g. 24 A at 12(4) A). Please contact us in case of doubt.

AMBIENT TEMPERATURE

The designation of the permissible ambient temperature with e.g. T 85 means that the switch can be used for a maximum ambient temperature of 85 °C according to the test criteria of the European safety standards (EN 61058 or IEC 61058-1). The identification T85/55 indicates that the terminal side of the switch is suitable for an ambient temperature of 85 °C, whilst the actuating part (e.g. rocker) is subject to the room temperature of 55 °C demanded by the standard. Using the switches outside the permissible temperature range and in a very humid or corrosive atmosphere can impair the functional capability.

For UL-approved switches, the ambient temperature is determined by the RTI (Relative Temperature Index) of the used materials. Generally, the permissible ambient temperature of polyamides is 65 °C. Switches for higher ambient temperatures are available on request.

AMBIENT CONDITIONS

The ambient conditions must be considered for the individual application completely. For our switch the use of vapors, glue, silicon etc. should be avoided, because it can change the contact resistance negatively. Aggressive liquids, salts and strong durable UV light can influence or damage the surfaces.

ISOLATION CHARACTERISTICS

Devices has to be developped and constructed in a way that they work assured for conventional use. To work in an assured way it is needed to have an adequate isolation. They have to protect against the danger of current.

The measurements of this insulating based on a protection target, which also has an adequate protect against electric shocks even if there is an facile fault. This protection includes a protection against direct and indirect contact.

This target can be achieved

- ◆ by so called "Basis Insulating" and the connection of all metal parts, which are able to assume the dangerous contact strain in case of failure, with the protective conductor of the passed conduct of building installation like they are in appliances with protection class I.
- ◆ by Basis Insulating and Additional Insulating (Doubled Insulating) in appliances with protection class II
- ◆ Enforced Insulating likewise in appliances with protection class II

Most MQ switches are constructed for appliances with protection class II, which means that they can be used without additional safety measures for all others appliances independent from protection class (cf. DIN en 61058-1, Kap. 7.1.5.3.4 annotation). If there are deviant characteristics they are observed in the specification.

The necessary testing voltage to appoint the electric strength having regard to the over voltage category II and a pollution degree II is defined in IEC 60664.

- ◆ Basis Insulating 1500 V
- ◆ Additional Insulating 1500 V
- ◆ Enforced Insulating 3000 V

This means that the switches are tested and have proven that they are able to allow an adequate protect.

Please consider the allowance for the current appliance standards of the application, which include different allowances unlike this general rules.

STORAGE CONDITIONS

The delivered products must be stored in the original Marquardt packaging in a temperature range between 5 and 45 °C and 30 to 75 % relative humidity. The storage time of 12 months may not be exceeded. Storage in different containers and different climates may impair the properties of the product. Products with solder terminals can be stored under the following conditions:

- ◆ Temperatures between 5 °C and 40 °C
- ◆ Mean relative humidity below 50 % (relative humidity max. 85 %)
- ◆ No condensation and sulfurous environments

We recommend you to examine the processing results in the case of different storage conditions or on exceeding a storage time of more than 6 months.

SOLDERING CONDITIONS

1. Recommended handling instructions for lead-free hand soldering

The basis for the solderability of the products in this catalog in the as-delivered state is DIN IEC 60068-2-20.

We recommend:

Soldering devices	electronically controlled soldering station with the typical power consumption of 50 - 80 VA
Solder	flux-filled solder wire, flux type 1.2.2
Solder temperature	350 °C ±10 °C (setting on the appliance)
Soldering time	2 to 3 s

Notes:

No force may be applied to the switch terminals during soldering, otherwise the switch properties (operating position etc.) could be changed. Longer soldering times and multiple soldering can impair the mechanical properties of the solder point and adjacent areas.

When using flux, make sure that no flux gets inside the switch via the terminals. In such cases, the switch may not be soldered "upside down", i.e. with the terminals on top.

In open switching systems the soldering fumes must be kept away from the switch by suitable means.

2. Recommended handling instructions for lead-free wave soldering

Soldering profiles are published in DIN IEC 61760 which must be adapted to the respective modules and the production conditions.

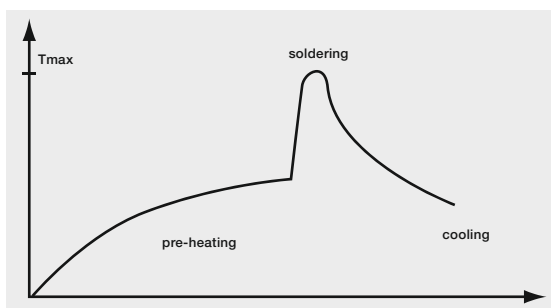
Typical and maximum values:

Pre-heating duration 80 s typical at 110 °C,
max. 125 °C

Wave soldering duration 2 - 7 s at 235 °C,
Tmax. 245 °C

Gradient pre-heating max. 2 °C/s

Gradient cooling max. -4 °C/s



These notes are guidelines which must be adapted respectively to the concrete process.

IP TYPE OF PROTECTION

The IP types of protection according to DIN EN 61058-1 and IEC 60529 specified in our documents refer to the actuating side of the switch unless stated otherwise. The customer must provide the seal between the switch and customer appliance and test for leaks at this point.

EMC (ELECTROMAGNETIC COMPATIBILITY)

Marquardt switches for use in appliances meet the requirements for interference emissions in accordance with EN 61058-1 when they are used according to our specifications. Requirements for interference suppression in the appliances can be found in the appliance or EMC specifications.

APPLIANCE SAFETY LAW

If you need to observe the valid German appliance safety law, we recommend you to use switches which have been tested and approved according to the specifications EN 61058-1 or VDE 0630. Switches without approval marks must be tested by the approval body in connection with your appliance.

CE MARK

The CE mark is an identification according to EU law for certain products with regard to the product safety. It is not a seal of quality (quality mark). By attaching the CE mark, the manufacturer confirms that the product complies with valid European regulations. The CE mark does not mean that the product has been checked for compliance with regulations by an independent body.

Following revisions of the EU regulations in 2007 some of our switches have no labeling obligation, some are subject to the low voltage directive and some are subject to the machine directive. The CE mark and the issuing of the declaration of conformity depend on the respective situation.

A CE mark is not prescribed for the components but for the smallest packing unit.

TERMINAL SYMBOLS

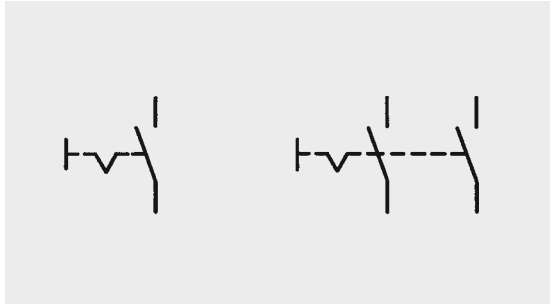
	Quick-connect terminal
	Solder terminal
	Short solder terminal
	PCB terminal
	PCB terminal angled to left
	PCB terminal angled to right
	Socket terminal
	Cable
	Terminal strip
	Push-in terminal
	Snap-in terminal
	Cut terminal
	Screw terminal

CONTACT RESISTANCE

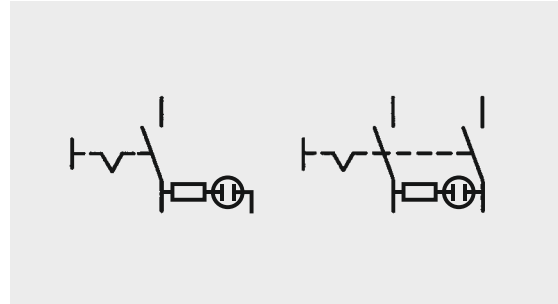
The contact resistance is the electrical resistance which can be measured at the switch terminals with closed contacts. The data refer to unwired contacts in new condition with a typical measuring current of greater than 100 mA. For silver-based contact materials this value is below 100 mΩ (measuring current 1 A at 12 V DC), for gold-based contact materials below 50 mΩ.

GENERAL TECHNICAL INFORMATION

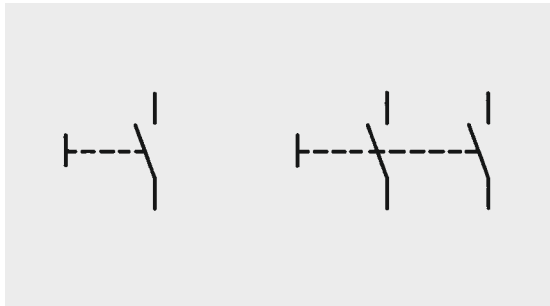
SWITCHING FUNCTIONS



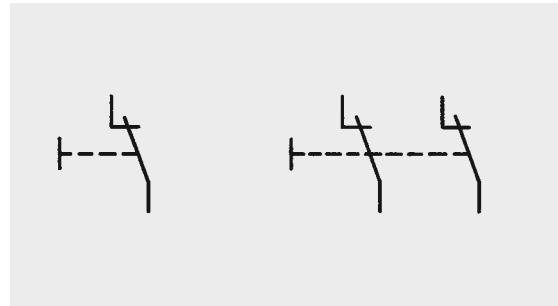
ON/OFF switch
(SPST, DPST)



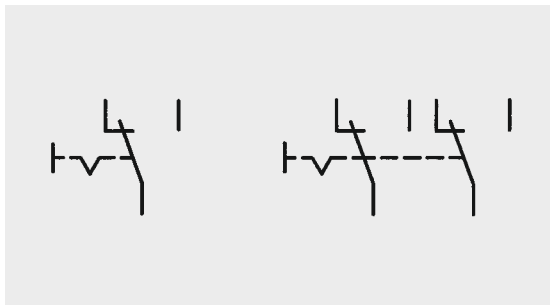
ON/OFF switch with signal lamp
(SPST-Illuminated, DPST-Illuminated)



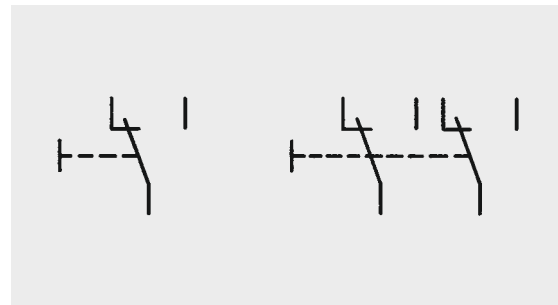
Normally open contact / pushbutton
(SPNO, DPNO)



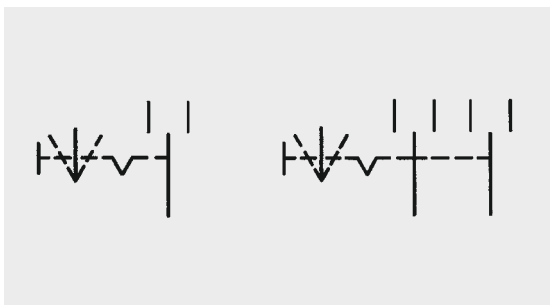
Normally closed contact / pushbutton
(SPNC, DPNC)



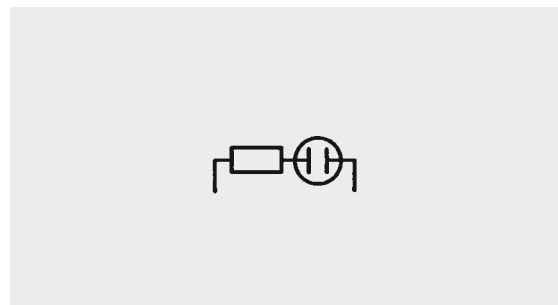
Changeover switch
(SPDT, DPDT)



Changeover switch / pushbutton
(SPDT momentary, DPDT momentary)



Changeover switch with OFF position in center
(SPDT-Center OFF, DPDT-Center OFF)



Lamp

SPECIAL INFORMATION ABOUT SNAP-ACTION SWITCHES

SWITCHING RELIABILITY

Optimum switching reliability is achieved when the pretravel and overtravel are fully exploited so that these should be fully exploited in the concrete application. Another criterion is the contact force which depends in turn on the operating force. Switches with high contact forces should be chosen if possible.

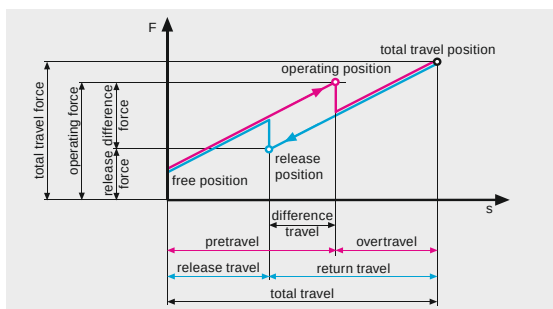
BOUNCE TIME

The bounce time is the time between the first closing of the contacts (switch-on signal) and the last time the contact resistance drops below a given threshold value. The values are typically below 5 ms at typical actuation speeds of approximately 80 mm/s.

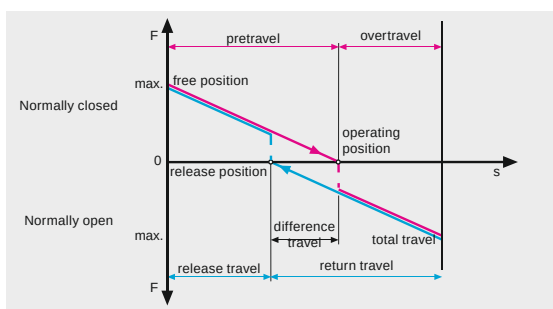
SWITCHING TIME / SWITCHING TRAVEL

Switching time/travel is the time or distance which the switching system requires to get from the first opening of the previously closed contacts to the first flow of current through the contacts closed after the snap-action. The respective operating position or release position must be exceeded reliably. Please ask about applications with very slow actuating speeds or applications in which the actuation of the switch is controlled by its switching process.

OPERATING FORCE-TRAVEL DIAGRAM



CONTACT FORCE-TRAVEL DIAGRAM



POSITIONS-FORCES-TRAVELS

Free position Position of the actuator in which no external force is applied.

Operating position Point on the actuator travel at which the snap mechanism is irreversibly set in operation.

Total travel position Position of the actuator at the end of the permissible travel.

Release position Point on the actuator travel at which the snap mechanism returns to its initial position.

Operating force Force necessary on the actuator to move this from the free position over the operating position.

Release force Force to which the operating force must be reduced for the snap mechanism to return to the initial position.

Difference force Difference between operating force and release force.

Total travel force Force necessary to keep the actuator in the permissible total travel position.

Pretravel Distance between free position and operating position.

Overtravel Distance between operating position and total travel position.

Return travel Distance between total travel position and release position.

Release travel Distance between release position and free position.

Difference travel Distance between operating position and release position.

Total travel Total of pretravel and overtravel or return and release travel.

The application conditions must be checked in advance for continuously actuated snap-action switches.

FURTHER INFORMATION

ORDER NUMBERS

The standard products in every series are shown in table form with their most important technical characteristics and their 8-digit order numbers. The accessories have a 9-digit order number.

CUSTOMIZED SOLUTIONS

The series and products shown in this catalog are only an excerpt from the complete Marquardt product range. One of Marquardt's strengths is the implementation of customer-specific requirements. This includes services such as cable assembly, extended or modified functions, other colors, labelings and designs as well as the integration into complete modules and systems. The possibilities "on request" stated in the series must be examined individually. We offer you worldwide contacts for these services.

STOCK VERSIONS / MINIMUM ORDER QUANTITIES

Many of our standard switches are usually available immediately ex-stock in quantities of at least one packing unit (PU). These versions are marked accordingly as a stock version in the tables of the individual series. Please ask about delivery times for the unmarked versions. For the non marked products a minimum order quantity is required. Delivery time is on request. Smaller quantities should be inquired at our distributors.

A list of all switches can be found on page 210. The stock versions are marked by a dot and the respective packing unit (PU) is also listed.

MODIFICATIONS / CATALOG DATA

We reserve the right to make technical modifications and improvements to our products. Data in the catalog (e.g. dimensions, photos, diagrams) are not binding. Specifications, samples and installation drawings with tolerance data will gladly be provided on request.

APPLICATION NOTE / LIABILITY

Since all the data in this catalog refer exclusively to the products delivered by us, you must check whether our products are suitable for your intended application yourselves. We will be glad to help you with advice and information.

Our liability is governed exclusively by our Terms of Delivery and Payment which we will gladly send you on request.

Further information under

WWW.MARQUARDT-SWITCHES.COM

SWITCHES AND SENSORS TAB OVERVIEW

ROCKER SWITCHES



ROCKER SWITCHES

PUSHBUTTON SWITCHES



PUSHBUTTON SWITCHES

TOGGLE SWITCHES



TOGGLE SWITCHES

SLIDE SWITCHES



SLIDE SWITCHES

ROTARY SWITCHES



ROTARY SWITCHES

FOOT SWITCHES



FOOT SWITCHES

TACT AND KEY SWITCHES



TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES



SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES



MICRO-SIGNAL SWITCHES

SENSORS



SENSORS

ORDER DAY AND NIGHT

In our new web shop you can order more than 200 standard switches independent of time and place: 24 hours per day, 7 days per week.



NEW MARQUARDT WEB SHOP
WWW.MARQUARDT-SHOP.COM

ROCKER SWITCHES

ROCKER SWITCHES		ROCKER SWITCHES
PUSHBUTTON SWITCHES		PUSHBUTTON SWITCHES
TOGGLE SWITCHES		TOGGLE SWITCHES
SLIDE SWITCHES		SLIDE SWITCHES
ROTARY SWITCHES		ROTARY SWITCHES
FOOT SWITCHES		FOOT SWITCHES
TACT AND KEY SWITCHES		TACT AND KEY SWITCHES
SNAP-ACTION SWITCHES		SNAP-ACTION SWITCHES
MICRO-SIGNAL SWITCHES		MICRO-SIGNAL SWITCHES
SENSORS		SENSORS

ROCKER SWITCHES

SERIES 1900

Smallest single-pole rocker switches
to 6 (2) A 250 V AC

Appliance cut-out: 19.2 x 6.8 mm
23.2 x 6.8 mm
30.0 x 6.8 mm



PAGE
20 - 22

SERIES 1800

Single and double-pole rocker
switches/lamps
to 12 (4) A 250 V AC

Appliance cut-out: 19.2 x 12.9 mm
19.2 x 21.9 mm



PAGE
23 - 37

SERIES 1890

Single-pole rocker switches illuminated
with LED
to 6 A 24 V DC

Appliance cut-out: 19.2 x 12.9 mm



PAGE
38 - 39

SERIES 1881

Single-pole round rocker switches
to 12 (4) A 250 V AC

Appliance cut-out: Ø 20.3 mm



PAGE
40 - 42

SERIES 1855

Smallest double-pole rocker switches
to 4 (1) A 250 V AC

Appliance cut-out: 19.2 x 12.9 mm



PAGE
43 - 45

SERIES 1858

Smallest double-pole rocker switches
to 12 (4) A 250 V AC

Appliance cut-out: 19.2 x 12.9 mm



PAGE
46 - 48

SERIES 1941

Single-pole rocker switches IP 50
to 6 (2) A 250 V AC

Appliance cut-out: 19.2 x 12.9 mm



PAGE
49 - 50

SERIES 1550

Single and double-pole rocker switches
to 16 (4) A 250 V AC

Appliance cut-out: 26.2 x 12.4 mm
27.2 x 12.2 mm
28.6 x 14.0 mm



PAGE
51 - 56

ROCKER SWITCHES

SERIES 1830

Single and double-pole rocker switches /
lamps
to 20 (4) A 250 V AC

Appliance cut-out: 30.0 x 11.0 mm
30.0 x 22.0 mm



PAGE
57 - 69

SERIES 1930

Double-pole rocker switches IP 65
to 20 (4) A 250 V AC

Appliance cut-out: 30.0 x 22.0 mm



PAGE
70 - 74

SERIES 1656

Single-pole rocker switches
to 10 A 250 V AC

Appliance cut-out: 28.0 x 13.0 mm



PAGE
75 - 76

SERIES 3230

Single and double-pole rocker switches /
lamps
to 10 (5) A 24 V DC

Appliance cut-out: 38.4 x 19.8 mm



PAGE
77 - 81

SERIES 0344

Three-pole rocker switches
to 16 (6) A 400 V AC



PAGE
82

SERIES 1900 - SMALLEST SINGLE-POLE ROCKER SWITCHES

TO 6 (2) A 250 V AC



PRODUCT FEATURES

- ◆ Reliable leaf spring contact system with contact spacing ≥ 3 mm
- ◆ Attractive, slim design
- ◆ Three sizes
- ◆ Low space requirement due to small sizes
- ◆ Variable connection technique (plug or solder)

ON REQUEST

- ◆ Other colors
- ◆ Other printing variants
- ◆ Cable assembly

Mechanical life endurance	75E3
Operating force	2 - 5 N
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +85 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator PA housing PA terminals silver plated
Plug force of the terminals	≤ 80 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



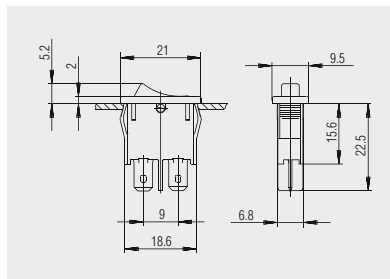
SERIES 1900 - SMALLEST SINGLE-POLE ROCKER SWITCHES

TO 6 (2) A 250 V AC

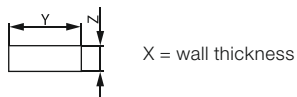
 single-pole	Actuator color / printing	Housing color	6 (2) A 250 V AC 1E4	4 (1) A 250 V AC 5E4	30 mA 12 V DC 5E4	6 A 125 - 250 V AC 1/8 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
	ON / OFF switch (SPST)											
1901.1102			●	●		●		4.8	≈ 3	Ag		●
1901.1103			●	●		●		4.8	≈ 3	Ag		●
1901.1106			●	●		●		4.8	≈ 3	Ag		
1911.1102			●	●		●		4.8	≈ 3	Ag		●
1911.1104			●	●		●		4.8	≈ 3	Ag		
1921.1101			●	●		●		4.8	≈ 3	Ag		
1921.1102			●	●		●		4.8	≈ 3	Ag		●
1901.1152					●			4.8	≈ 3	Au		



Basic type 1901
single-pole



Quick-connect terminal
4.8 x 0.8



X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	6.8 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	6.8 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	6.8 ^{+0.1}

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1900 - SMALLEST SINGLE-POLE ROCKER SWITCHES

T0 6 (2) A 250 V AC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

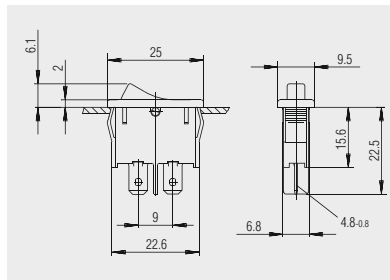
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

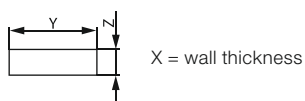
SENSORS



Basic type 1911
single-pole



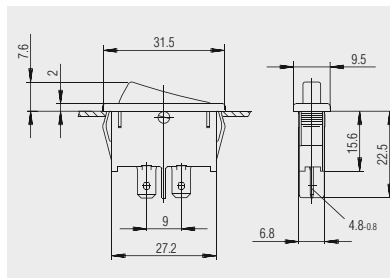
Quick-connect terminal
4.8 x 0.8



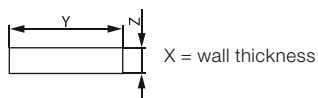
X	Y	Z
0.75 ... 1.25	23.2 -0.1	6.8 +0.1
1.25 ... 2	23.4 -0.1	6.8 +0.1
2 ... 3	23.8 -0.1	6.8 +0.1



Basic type 1921
single-pole



Quick-connect terminal
4.8 x 0.8



X	Y	Z
0.75 ... 1.25	30 -0.1	6.8 +0.1
1.25 ... 2	30.2 -0.1	6.8 +0.1
2 ... 3	30.6 -0.1	6.8 +0.1

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC



PRODUCT FEATURES

- ◆ 100 million times proven switching principle
- ◆ High, flexible design variety
- ◆ Excellent actuating characteristic
- ◆ Illuminated and non-illuminated variants

ON REQUEST

- ◆ Other colors
- ◆ Other printing variants
- ◆ Other lamp variants
- ◆ Snap-on, customized actuators
- ◆ Cable assembly

Mechanical life endurance	10E4 5E4 (basic types 1808 and 1809)
Inrush current (capacitive)	50 A 70 A (contact pairing Ag / Ag, product-dependent)
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +100 °C ... +85 °C (product-dependent) actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2 UL 94 V-0 (product-dependent)
Glow wire test temperature	850 °C
Material	actuator PA / PC housing PA terminals silver plated / tinned / gold plated
Plug force of the terminals	≤ 80 N
Approval marks	   
Suitable for appliances of protection class II	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

single-pole 	ON / OFF switch (SPST)	1800.0102	1800.0108	1800.1102	1800.1104	1800.1108	1801.1121	1801.1148	1801.1520	1801.1908	1801.1926	1801.6122	1801.6130	1801.1101	1801.1102	1801.1119	1801.1146
		230	230	230	230	230											
Lighting voltage in V																	
Actuator color / printing																	
Housing color																	
12 (4) A 250 V AC 1E4							•	•	•	•	•	•	•				
10 (4) A 250 V AC 1E4		•	•	•	•	•								•	•	•	•
8 (8) A 250 V AC 5E4							•	•	•	•	•	•	•				
6 (4) A 250 V AC 5E4		•	•	•	•	•								•	•	•	•
6 (2) A 250 V AC 1E4																	
4 (3) A 250 V AC 6E3																	
4 (2) A 250 V AC 1E4																	
30 mA 12 V DC 5E4																	
15 A 250 V AC 1 1/2 HP							•	•	•	•	•	•	•				
15 A 125 V AC 3/4 HP							•	•	•	•	•	•	•				
10 A 250 V AC 1/2 HP																	
10 A 125 V AC 1/3 HP																	
6 A 250 V AC 1/2 HP		•	•	•	•	•								•	•	•	•
6 A 125 V AC 1/4 HP														•	•	•	•
6 A 125 - 250 V AC 1/8 HP																	
6 A 125 V AC 1/10 HP																	
4 A 250 V AC 1/10 HP																	
Terminal type																	
Terminal description				4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8			4.8	4.8	4.8	4.8
Inrush current (capacitive) in A							70	70	70	70	70	70	70	50	50	50	50
Contact distance in mm		≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3
Contact material		Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag
EN 60335 cap. 30 conform "G"											•	•					
Miscellaneous		sealing plate	sealing plate						snap-on rocker								
Stock version		•				•	•	•		•	•	•		•	•	•	•

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

single-pole		ON / OFF switch (SPST)	1801.1403	1801.1601	1801.2106	1801.2402	1801.2702	1801.5102	1801.6101	1801.6102	1801.6115	1801.1151	Normally closed contact (SPNC)	1801.1302	1801.1303	Normally open contact (SPNO)	1801.6222	1801.1202
																		
Lighting voltage in V																		
Actuator color / printing																		
Housing color																		
12 (4) A 250 V AC 1E4																		
10 (4) A 250 V AC 1E4			●	●	●	●	●	●	●	●	●						●	
8 (8) A 250 V AC 5E4																		
6 (4) A 250 V AC 5E4			●	●	●	●	●	●	●	●	●						●	
6 (2) A 250 V AC 1E4																		
4 (3) A 250 V AC 6E3																		
4 (2) A 250 V AC 1E4														●	●			●
30 mA 12 V DC 5E4												●						
15 A 250 V AC 1 1/2 HP																		
15 A 125 V AC 3/4 HP																		
10 A 250 V AC 1/2 HP																	●	
10 A 125 V AC 1/3 HP																	●	
6 A 250 V AC 1/2 HP			●	●	●	●	●	●	●	●	●							
6 A 125 V AC 1/4 HP			●	●	●	●	●	●	●	●	●							
6 A 125 - 250 V AC 1/8 HP																		
6 A 125 V AC 1/10 HP														●	●			●
4 A 250 V AC 1/10 HP														●	●			●
Terminal type																		
Terminal description			4.8	4.8								4.8		4.8	4.8			4.8
Inrush current (capacitive) in A			50	50	50	50	50	50	50	50	50							
Contact distance in mm			≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3		≥ 3	≥ 3		≥ 3	≥ 3
Contact material			Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Au		Ag	Ag		Ag	Ag
EN 60335 cap. 30 conform “G”												●						
Miscellaneous			with dust cap black	terminals 30° angled		installation depth 13.2	installation depth 28.1											
Stock version			●		●			●	●	●	●	●			●		●	●

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

single-pole 	Normally open contact (SPNO)		Changeover switch (SPDT)		Changeover switch with OFF position in the center (SPDT - Center OFF)									
	1801.2202	1803.1102	1803.1121	1803.2102	1803.5102	1803.6102	1803.6152	1808.1101	1808.1102	1808.1103	1808.1112	1808.1113	1808.1202	1808.1302
Lighting voltage in V														
Actuator color / printing														
Housing color														
12 (4) A 250 V AC 1E4														
10 (4) A 250 V AC 1E4														
8 (8) A 250 V AC 5E4														
6 (4) A 250 V AC 5E4														
6 (2) A 250 V AC 1E4														
4 (3) A 250 V AC 6E3														
4 (2) A 250 V AC 1E4														
30 mA 12 V DC 5E4														
15 A 250 V AC 1 1/2 HP														
15 A 125 V AC 3/4 HP														
10 A 250 V AC 1/2 HP														
10 A 125 V AC 1/3 HP														
6 A 250 V AC 1/2 HP														
6 A 125 V AC 1/4 HP														
6 A 125 - 250 V AC 1/8 HP														
6 A 125 V AC 1/10 HP														
4 A 250 V AC 1/10 HP														
Terminal type														
Terminal description														
Inrush current (capacitive) in A														
Contact distance in mm														
Contact material														
EN 60335 cap. 30 conform “G”														
Miscellaneous														
Stock version														

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

single-pole 		Changeover switch with OFF position in the center (SPDT - Center OFF)								Changeover switch (SPDT momentary)			
Lighting voltage in V		1808.2102	1808.2302	1808.2704	1808.6102	1808.6103	1808.6202	1808.6302	1808.1152	1808.1353	1803.6222	1803.1202	1803.1252
Actuator color / printing													
Housing color													
12 (4) A 250 V AC 1E4													
10 (4) A 250 V AC 1E4													
8 (8) A 250 V AC 5E4													
6 (4) A 250 V AC 5E4													
6 (2) A 250 V AC 1E4		•	•	•	•	•	•	•			•		
4 (3) A 250 V AC 6E3													
4 (2) A 250 V AC 1E4												•	
30 mA 12 V DC 5E4									•	•			•
15 A 250 V AC 1 1/2 HP													
15 A 125 V AC 3/4 HP													
10 A 250 V AC 1/2 HP											•		
10 A 125 V AC 1/3 HP											•		
6 A 250 V AC 1/2 HP													
6 A 125 V AC 1/4 HP													
6 A 125 - 250 V AC 1/8 HP		•	•	•	•	•	•	•					
6 A 125 V AC 1/10 HP												•	
4 A 250 V AC 1/10 HP												•	
Terminal type													
Terminal description									4.8	4.8		4.8	4.8
Inrush current (capacitive) in A													
Contact distance in mm		< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	≥ 3	≥ 3	≥ 3
Contact material		Ag	Ag	Ag	Ag	Ag	Ag	Ag	Au	Au	Ag	Ag	Au
EN 60335 cap. 30 conform "G"													
Miscellaneous		PCB timed	PCB timed momentary function both sides	installation depth 29.6			momentary function one side	momentary function both sides		momentary function both sides			
Stock version		•	•		•	•		•			•	•	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

double-pole 	ON / OFF switch (DPST)	1805.6102	1805.6108	1805.7104	1805.7109	1805.7110	1805.7112	1805.7118	1802.1121	1802.1123	1802.1136	1802.2504	1802.3311	1802.6123	1802.1101	1802.1102	1802.1108
		230	230	230	230	230	110 -230	110 -230									
Lighting voltage in V																	
Actuator color / printing																	
Housing color																	
12 (4) A 250 V AC 1E4							●	●	●	●	●	●	●	●			
10 (4) A 250 V AC 1E4		●	●	●	●	●									●	●	●
8 (8) A 250 V AC 5E4							●	●	●	●	●	●	●	●			
6 (4) A 250 V AC 5E4		●	●	●	●	●									●	●	●
6 (2) A 250 V AC 1E4																	
4 (3) A 250 V AC 6E3																	
4 (2) A 250 V AC 1E4																	
30 mA 12 V DC 5E4																	
15 A 250 V AC 1 1/2 HP							●	●	●	●	●	●	●	●			
15 A 125 V AC 3/4 HP							●	●	●	●	●	●	●	●			
10 A 250 V AC 1/2 HP																	
10 A 125 V AC 1/3 HP																	
6 A 250 V AC 1/2 HP		●	●	●	●	●									●	●	●
6 A 125 V AC 1/4 HP															●	●	●
6 A 125 - 250 V AC 1/8 HP																	
6 A 125 V AC 1/10 HP																	
4 A 250 V AC 1/10 HP																	
Terminal type																	
Terminal description				4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.3 long	4.8 75° angled M3		4.8	4.8	4.8
Inrush current (capacitive) in A		50	50	50	50	50	70	70	70	70	70	70	70	70	50	50	50
Contact distance in mm		≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3
Contact material		Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag
EN 60335 cap. 30 conform "G"							●										
Miscellaneous		installation depth 17.5	installation depth 17.5	installation depth 19.5	installation depth 19.5	installation depth 19.5	installation depth 20.5 ignition voltage < 100 V	installation depth 20.5 ignition voltage < 100 V				installation depth 16.2	shortened gate				
Stock version				●	●	●		●	●	●				●	●	●	●

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

		ON / OFF switch (DPST)					Normally open contact (DPNO)					Changeover switch (DPDT)					Changeover switch with OFF position in the center (DPDT - Center OFF)		
Lighting voltage in V			1802.2102	1802.2104	1802.3102	1802.5103	1802.6152		1802.1221			1804.1102	1804.1125	1804.2102	1804.6121		1809.1102	1809.1202	1809.1302
Actuator color / printing																			
Housing color																			
12 (4) A 250 V AC 1E4																			
10 (4) A 250 V AC 1E4			•	•	•	•						•	•	•	•				
8 (8) A 250 V AC 5E4																			
6 (4) A 250 V AC 5E4			•	•	•	•						•	•	•	•				
6 (2) A 250 V AC 1E4																	•	•	•
4 (3) A 250 V AC 6E3																			
4 (2) A 250 V AC 1E4									•										
30 mA 12 V DC 5E4							•												
15 A 250 V AC 1 1/2 HP																			
15 A 125 V AC 3/4 HP																			
10 A 250 V AC 1/2 HP													•			•			
10 A 125 V AC 1/3 HP													•			•			
6 A 250 V AC 1/2 HP			•	•	•	•						•		•					
6 A 125 V AC 1/4 HP			•	•	•	•						•		•					
6 A 125 - 250 V AC 1/8 HP																	•	•	•
6 A 125 V AC 1/10 HP									•										
4 A 250 V AC 1/10 HP									•										
Terminal type																			
Terminal description					4.8 M3				4.8			4.8	1 mm longer 4.8				4.8	4.8	4.8
Inrush current (capacitive) in A			50	50	50	50													
Contact distance in mm			≥ 3	≥ 3	≥ 3	≥ 3	≥ 3		≥ 3			≥ 3	≥ 3	≥ 3	≥ 3		< 3	< 3	< 3
Contact material			Ag	Ag	Ag	Ag	Au		Ag			Ag	Ag	Ag	Ag		Ag	Ag	Ag
EN 60335 cap. 30 conform "G"																			
Miscellaneous																		momentary function one side	momentary function both sides
Stock version			•	•	•	•			•			•		•			•	•	•

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

double-pole 		Changeover switch with OFF position in the center (DPDT - Center OFF) 1809.2101 1809.2102		Changeover switch (DPDT momentary) 1804.1225 1804.2202	
Lighting voltage in V					
Actuator color / printing					
Housing color					
12 (4) A 250 V AC 1E4					
10 (4) A 250 V AC 1E4					
8 (8) A 250 V AC 5E4					
6 (4) A 250 V AC 5E4					
6 (2) A 250 V AC 1E4		●	●		
4 (3) A 250 V AC 6E3				●	●
4 (2) A 250 V AC 1E4					
30 mA 12 V DC 5E4					
15 A 250 V AC 1 1/2 HP					
15 A 125 V AC 3/4 HP					
10 A 250 V AC 1/2 HP					
10 A 125 V AC 1/3 HP					
6 A 250 V AC 1/2 HP					
6 A 125 V AC 1/4 HP					
6 A 125 - 250 V AC 1/8 HP		●	●		
6 A 125 V AC 1/10 HP				●	●
4 A 250 V AC 1/10 HP				●	●
Terminal type					
Terminal description				1 mm longer 4,8	
Inrush current (capacitive) in A					
Contact distance in mm		< 3	< 3	≥ 3	≥ 3
Contact material		Ag	Ag	Ag	Ag
EN 60335 cap. 30 conform "G"					
Miscellaneous		PCB timed	PCB timed		
Stock version					

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

Combination	ON / OFF switch (SPST) / Lamp		1806.1402		1806.1909		1806.1102		1806.6108		1806.2054		1806.1602	
	ON / OFF switch (SPST) / Lamp		1806.1402		1806.1909		1806.1102		1806.6108		1806.2054		1806.1602	
Lighting voltage in V			230		28									
Actuator color / printing														
Housing color														
12 (4) A 250 V AC 1E4														
10 (4) A 250 V AC 1E4			●		●		●		●					
8 (8) A 250 V AC 5E4														
6 (4) A 250 V AC 5E4			●		●		●		●					
6 (2) A 250 V AC 1E4													●	
4 (3) A 250 V AC 6E3														
4 (2) A 250 V AC 1E4														
30 mA 12 V DC 5E4											●			
15 A 250 V AC 1 1/2 HP														
15 A 125 V AC 3/4 HP														
10 A 250 V AC 1/2 HP														
10 A 125 V AC 1/3 HP														
6 A 250 V AC 1/2 HP			●		●		●		●					
6 A 125 V AC 1/4 HP			●		●		●		●					
6 A 125 - 250 V AC 1/8 HP														
6 A 125 V AC 1/10 HP														
4 A 250 V AC 1/10 HP														
Terminal type														
Terminal description			4.8		4.8		4.8				4.8		4.8	
Inrush current (capacitive) in A														
Contact distance in mm			≥ 3		≥ 3		≥ 3		≥ 3		≥ 3		< 3	
Contact material			Ag		Ag		Ag		Ag		Au		Ag	
EN 60335 cap. 30 conform "G"														
Miscellaneous									without separating gate				life endurance 50,000 cycles	
Stock version							●							

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

 Lamp	Lamp	1807.1102	1807.1108	1807.1126	1807.6103	1807.1115	1807.1111	1806.1508
		230	230	230	230	28	18	230 230
Lighting voltage in V		230	230	230	230	28	18	230 230
Actuator color / printing								
Housing color								
12 (4) A 250 V AC 1E4								
10 (4) A 250 V AC 1E4								
8 (8) A 250 V AC 5E4								
6 (4) A 250 V AC 5E4								
6 (2) A 250 V AC 1E4								
4 (3) A 250 V AC 6E3								
4 (2) A 250 V AC 1E4								
30 mA 12 V DC 5E4								
15 A 250 V AC 1 1/2 HP								
15 A 125 V AC 3/4 HP								
10 A 250 V AC 1/2 HP								
10 A 125 V AC 1/3 HP								
6 A 250 V AC 1/2 HP								
6 A 125 V AC 1/4 HP								
6 A 125 - 250 V AC 1/8 HP								
6 A 125 V AC 1/10 HP								
4 A 250 V AC 1/10 HP								
Terminal type								
Terminal description		4.8	4.8	4.8	4.8	4.8	4.8	4.8
Inrush current (capacitive) in A								
Contact distance in mm								
Contact material								
EN 60335 cap. 30 conform "G"								
Miscellaneous		VDE	VDE	VDE	size basic type 1805 VDE	40 mA VDE	40 mA VDE	
Stock version		●	●					

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

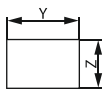
SENSORS

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

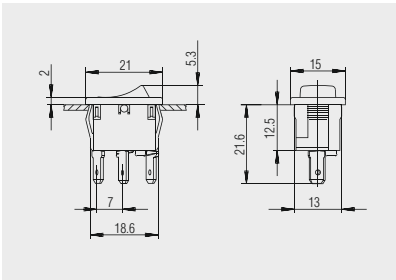


Basic types 1800, 1801, 1803
and 1808
single-pole
illuminated / non-illuminated

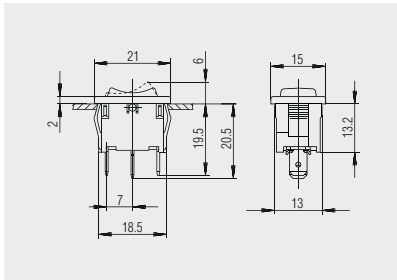


X = wall thickness

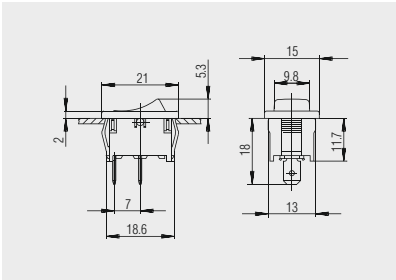
X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	12.9 ^{+0.1}



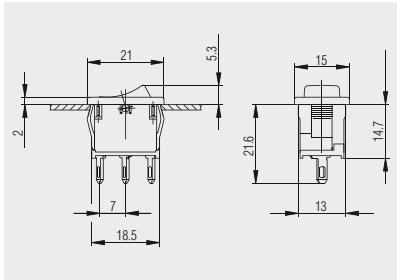
Quick-connect terminal 4.8 x 0.8
basic type 1800



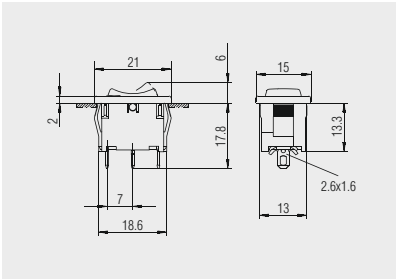
Quick-connect terminal 4.8 x 0.8
basic type 1808



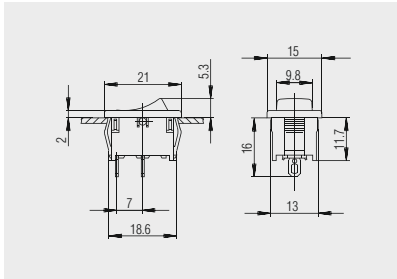
Quick-connect terminal 4.8 x 0.8
basic types 1801 and 1803



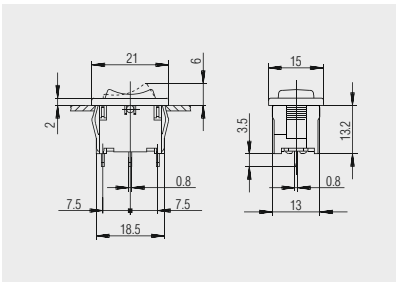
Solder terminal
basic type 1800



Solder terminal
basic type 1808



Solder terminal
basic types 1801 and 1803



PCB terminal
basic type 1808

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

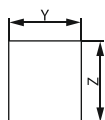
SENSORS

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

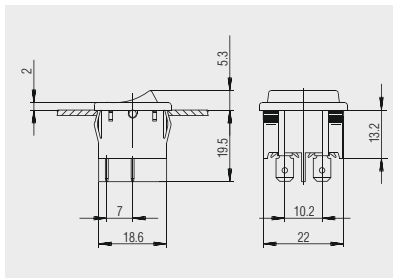


Basic types 1802, 1804 and 1805
double-pole
illuminated / non-illuminated

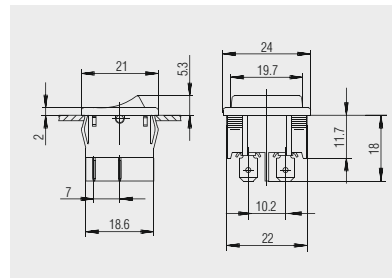


X = wall thickness

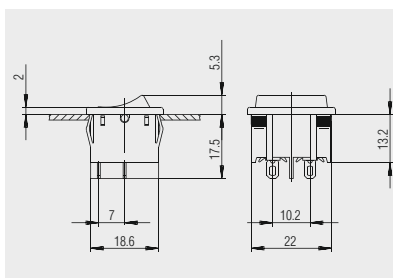
X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	21.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	21.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	21.9 ^{+0.1}



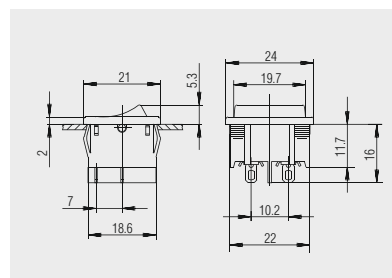
Quick-connect terminal 4.8 x 0.8
basic type 1805



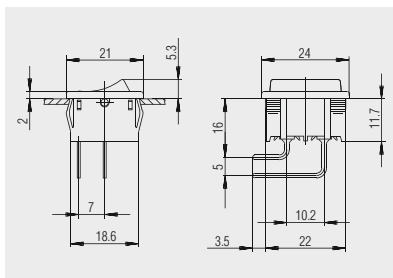
Quick-connect terminal 4.8 x 0.8
basic types 1802 and 1804



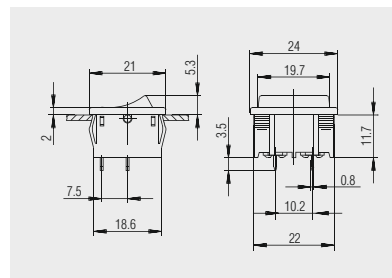
Solder terminal
basic type 1805



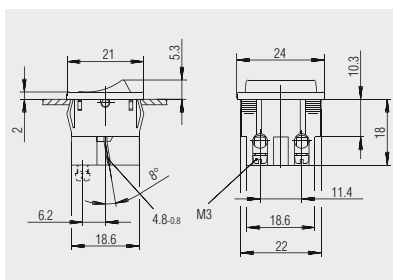
Solder terminal
basic types 1802 and 1804



PCB terminal angled



PCB terminal
basic types 1802 and 1804



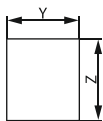
Terminal 1 2
Quick-connect terminal 4.8 x 0.8
Terminal 1a 2a
Socket terminal M3
1802.3102

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

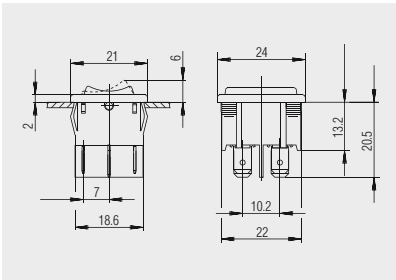


Basic type 1809
double-pole
non-illuminated

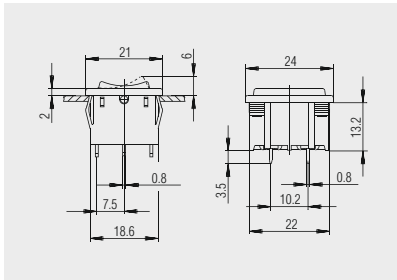


X = wall thickness

X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	21.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	21.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	21.9 ^{+0.1}



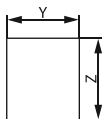
Quick-connect terminal 4.8 x 0.8



PCB terminal

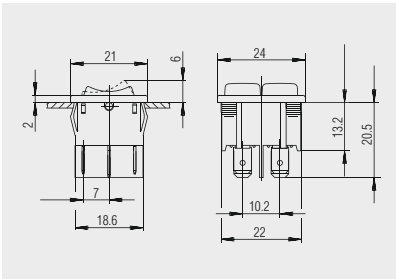


Basic type 1806
combination

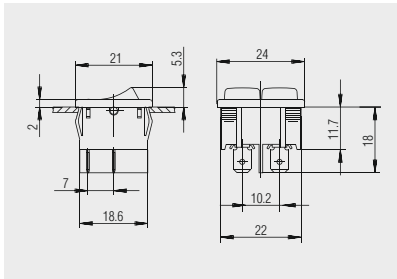


X = wall thickness

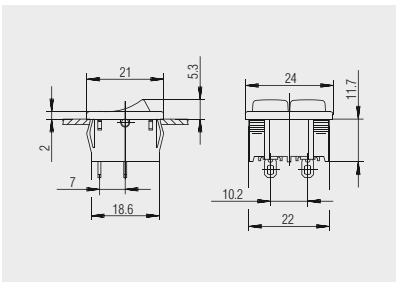
X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	21.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	21.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	21.9 ^{+0.1}



Quick-connect terminal 4.8 x 0.8
1806.1602



Quick-connect terminal 4.8 x 0.8
1806.2054 and 1806.1102



Solder terminal
1806.6108

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

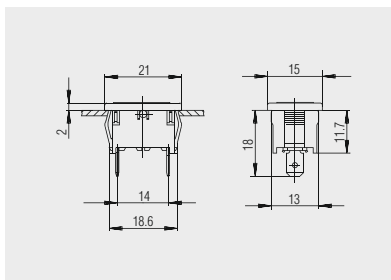
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

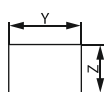
SENSORS



Basic type 1807
lamp



Quick-connect terminal 4.8 x 0.8

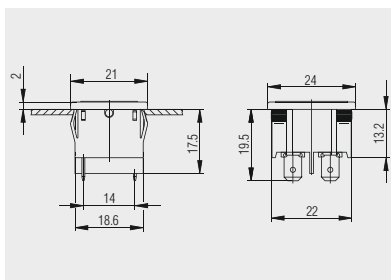


X = wall thickness

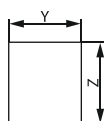
X	Y	Z
0.75 ... 1.25	19.2 -0.1	12.9 +0.1
1.25 ... 2	19.4 -0.1	12.9 +0.1
2 ... 3	19.8 -0.1	12.9 +0.1



Basic type 1807
lamp



Quick-connect terminal 4.8 x 0.8

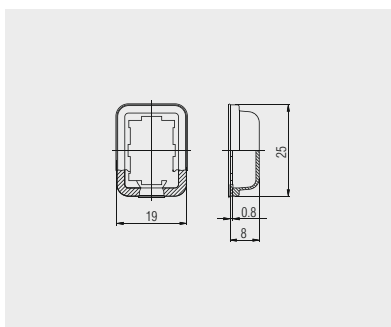


X = wall thickness

X	Y	Z
0.75 ... 1.25	19.2 -0.1	21.9 +0.1
1.25 ... 2	19.4 -0.1	21.9 +0.1
2 ... 3	19.8 -0.1	21.9 +0.1



Protection cap
203.089.011



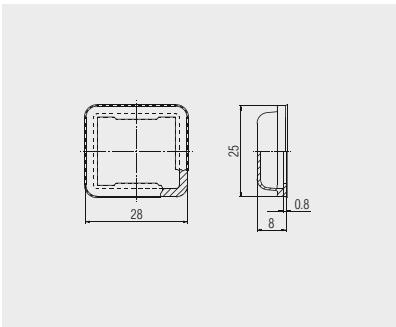
Transparent PVC - protection cap for single-pole switches of basic types 1800, 1801, 1803 and 1808. Serves as dust and water protection of the actuation side.

SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

T0 12 (4) A 250 V AC



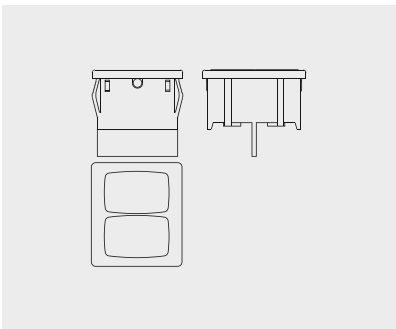
Protection cap
203.090.011



Transparent PVC - protection cap for double-pole switches of basic types 1802, 1804, 1805 and 1809. Serves as dust and water protection of the actuation side.



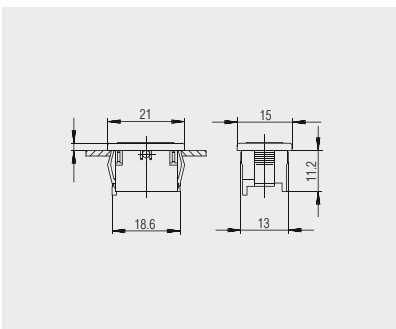
Dummy piece
203.007.013 - black
203.007.023 - blue gray



Dummy piece for size of basic type 1807 of PA



Dummy piece
203.086.013



Dummy piece for size of basic type 1806 of PA with window and housing in black

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1890 - SINGLE-POLE ROCKER SWITCHES ILLUMINATED WITH LED

TO 6 A 24 V DC



PRODUCT FEATURES

- ◆ Illuminated with LED
- ◆ High mechanical life endurance

ON REQUEST

- ◆ Other colors
- ◆ Printing
- ◆ Other terminal types
- ◆ Variant for mains application

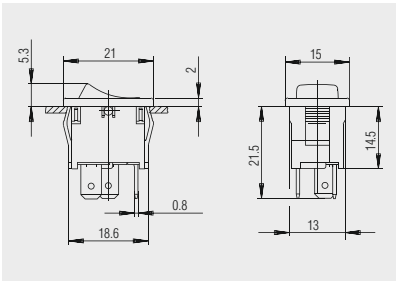
Mechanical life endurance	75E3
Operating force	3 N
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +100 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 (actuator: V-2, housing: V-0)
Glow wire test temperature	850 °C
Material	actuator PA housing PA terminals silver plated
Plug force of the terminals	≤ 80 N
Suitable for appliances of protection class II	



SERIES 1890 - SINGLE-POLE ROCKER SWITCHES ILLUMINATED WITH LED

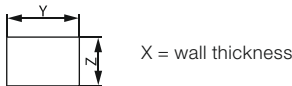
TO 6 A 24 V DC

	Lighting voltage in V	Actuator color / printing	Housing color	6 (4) A 250 V AC 5E4	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
ON/OFF switch (SPST)										
1890.1104	24					4.8	≈ 3	Ag		



 Quick-connect terminal
4.8 x 0.8

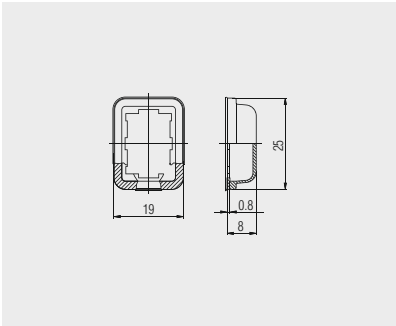
Basic type 1890



X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	12.9 ^{+0.1}



Protection cap
203.089.011



Transparent PVC - protection cap.
Serves as dust and water protection of
the actuation side.

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1881 - SINGLE-POLE ROUND ROCKER SWITCHES

TO 12 (4) A 250 V AC



PRODUCT FEATURES

- ◆ Attractive round rocker switch
- ◆ High mechanical rating with at least 100 000 switching cycles
- ◆ Variants with IP 51
- ◆ Low depth with 18.7 mm
- ◆ Appliance cut-out with 20 mm

ON REQUEST

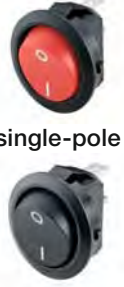
- ◆ Other colors
- ◆ Other printing variants
- ◆ Other terminal variants (e.g. PCB)
- ◆ Cable assembly
- ◆ Gold-plated contacts for low voltages
- ◆ Other switching functions (e.g. 1888 - middle off)
- ◆ Painted variants
- ◆ PVC-protection cap

Mechanical life endurance	10E4
Operating force	3 N
Inrush current (capacitive)	70 A
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40 and IP 51 (product-dependent)
Ambient temperature	terminal side -20 °C ... +100 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2 UL 94 V-0 (product-dependent)
Glow wire test temperature	850 °C
Material	actuator PA housing PA terminals silver plated
Plug force of the terminals	≤ 80 N
Approval marks	 /  /  / 
Suitable for appliances of protection class II	



SERIES 1881 - SINGLE-POLE ROUND ROCKER SWITCHES

TO 12 (4) A 250 V AC

 single-pole	Actuator color / printing	Housing color	12 (4) A 250 V AC 1E4	10 (4) A 250 V AC 1E4	8 (8) A 250 V AC 5E4	6 (4) A 250 V AC 5E4	15 A 250 V AC 1 1/2 HP	15 A 125 V AC 3/4 HP	10 A 250 V AC 1/2 HP	10 A 125 V AC 1/3 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Actuator	EN 60335 cap. 30 conform "G"	Miscellaneous	Stock version
ON / OFF switch (SPST)																		
1881.1103			●	●	●	●	●	●	●	●		4.8	≥ 3	Ag	IP 40			●
1881.1104			●	●	●	●	●	●	●	●		4.8	≥ 3	Ag	IP 40			●
1881.1105			●	●	●	●	●	●	●	●		4.8	≥ 3	Ag	IP 40			
1881.1106			●	●	●	●	●	●	●	●		4.8	≥ 3	Ag	IP 40	●		
1881.1108			●	●	●	●	●	●	●	●		4.8	≥ 3	Ag	IP 51	●	with switching system cover	
1881.1109			●	●	●	●	●	●	●	●		4.8	≥ 3	Ag	IP 40			
1881.1111			●	●	●	●	●	●	●	●		4.8	≥ 3	Ag	IP 40			
1881.1112			●	●	●	●	●	●	●	●		1 mm longer 4.8	≥ 3	Ag	IP 51	●	with switching system cover	
Normally open contact (SPNO)																		
1881.1209			●	●	●	●	●	●	●	●		4.8	≥ 3	Ag	IP 51		with switching system cover opening terminal 1b closed	
Changeover switch (SPDT)																		
1883.1105			●	●	●	●	●	●	●	●		4.8	≥ 3	Ag	IP 40			
1883.1106			●	●	●	●	●	●	●	●		4.8	≥ 3	Ag	IP 40	●		

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

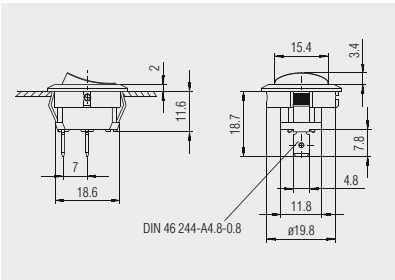
SENSORS

SERIES 1881 - SINGLE-POLE ROUND ROCKER SWITCHES

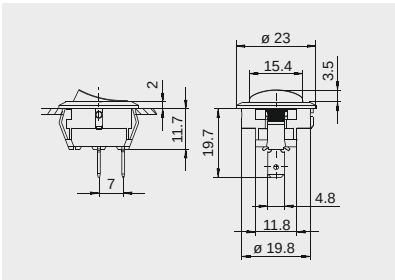
TO 12 (4) A 250 V AC



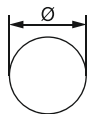
Basic type 1881



Quick-connect terminal 4.8 x 0.8



Quick-connect terminal 4.8 x 0.8
1 mm longer

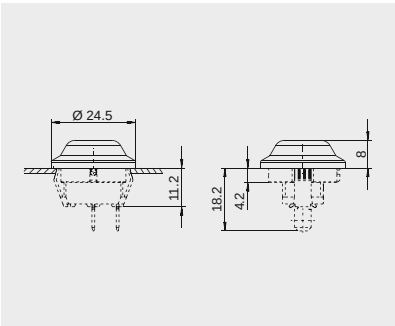


X = wall thickness

X	Ø
0.75 ... 1.25	20.3
1.25 ... 2	20.8
2 ... 3	21.1



Protection cap
on request



Transparent PVC-protection cap.
Serves as dust and water protection of
the actuation side.

SERIES 1855 - MINIATURE DOUBLE-POLE ROCKER SWITCHES

TO 4 (1) A 250 V AC



PRODUCT FEATURES

- ◆ Illuminated rocker switches
- ◆ Different lamp variants
- ◆ Powerful with 50 000 mechanical switching cycles
- ◆ Caulked terminals for reliable plugging of the receptacles

ON REQUEST

- ◆ Other colors
- ◆ Other printing variants
- ◆ Other terminal types
- ◆ Other lamp variants
- ◆ Cable assembly

Mechanical life endurance	5E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +85 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator PA housing PA terminals silver plated
Plug force of the terminals	≤ 80 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1855 - MINIATURE DOUBLE-POLE ROCKER SWITCHES

TO 4 (1) A 250 V AC

 double-pole	Lighting voltage in V	Actuator color / printing	Housing color	4 (1) A 250 V AC 1E4	6 A 125 V AC 1/10 HP	4 A 250 V AC 1/10 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	EN 60335 cap. 30 conform "G"	Stock version
ON / OFF switch (DPST)												
1855.0102	230			●		●			≈ 3	Ag		
1855.0108	230			●		●			≈ 3	Ag		●
1855.1102	230			●		●		4.8	≈ 3	Ag		●
1855.1104	230			●		●		4.8	≈ 3	Ag		●
1855.1108	230			●		●		4.8	≈ 3	Ag		●
1855.1115	230			●		●		4.8	≈ 3	Ag	●	
1855.1118	230			●		●		4.8	≈ 3	Ag	●	
1855.1122	110				●			4.8	≈ 3	Ag		
1855.1124	110				●			4.8	≈ 3	Ag		

Further information under

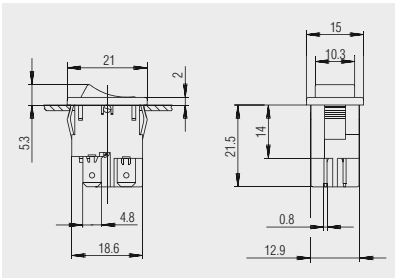
WWW.MARQUARDT-SWITCHES.COM

SERIES 1855 - MINIATURE DOUBLE-POLE ROCKER SWITCHES

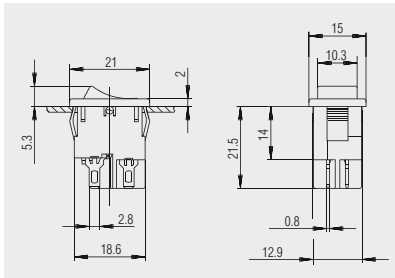
TO 4 (1) A 250 V AC



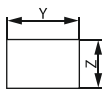
Basic type 1855



Quick-connect terminal
4.8 x 0.8



Solder terminal

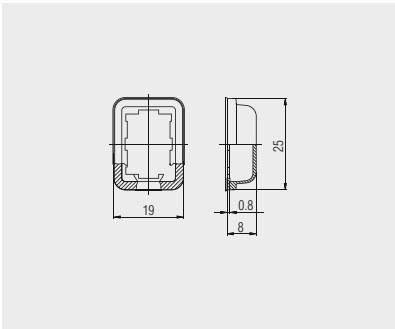


X = wall thickness

X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	12.9 ^{+0.1}



Protection cap
203.089.011



Transparent PVC - protection cap.
Serves as dust and water protection
for the actuating side.

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1858 - MINIATURE DOUBLE-POLE ROCKER SWITCHES

TO 10 (4) A 250 V AC 1E4



PRODUCT FEATURES

- ◆ Non-illuminated rocker switch
- ◆ Powerful with inrush currents (capacitive) up to 100 A
- ◆ Immediately self-extinguishing due to UL 94 V-0 material
- ◆ Conformant acc. to EN 60065 par. 14.6

ON REQUEST

- ◆ Other colors
- ◆ Other printing variants
- ◆ Single-pole assembled
- ◆ Cable assembly

Mechanical life endurance	10E4
Operating force	≤ 5 N
Inrush current (capacitive)	100 A
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +100 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-0 UL 94 V-2 (in the versions in white)
Glow wire test temperature	850 °C
Material	actuator PA housing PA terminals silver plated
Plug force of the terminals	≤ 80 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



SERIES 1858 - MINIATURE DOUBLE-POLE ROCKER SWITCHES

TO 10 (4) A 250 V AC 1E4

 double-pole	Actuator color / printing	Housing color	10 (4) A 250 V AC 1E4	6 (4) A 250 V AC 5E4	12 A 250 V AC 1/2 HP	12 A 125 V AC 1/3 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	EN 60335 cap. 30 conform "G"	Miscellaneous	Stock version
	ON / OFF switch (DPST)												
1858.0103			●	●	●	●		≥ 3	Ag	●			●
1858.0104			●	●	●	●		≥ 3	Ag	●			
1858.1102			●	●	●	●		4.8	≥ 3	Ag	●		●
1858.1103			●	●	●	●		4.8	≥ 3	Ag	●		●
1858.1104			●	●	●	●		4.8	≥ 3	Ag	●		
1858.1105			●	●	●	●		4.8	≥ 3	Ag		terminal spacing 10	
1858.2202			●	●	●	●		≥ 3	Ag	●			●
1858.2204			●	●	●	●		≥ 3	Ag	●			
1858.4202			●	●	●	●		≥ 3	Ag	●			●
1858.4205			●	●	●	●		≥ 3	Ag	●			●
1858.9202			●	●	●	●		≥ 3	Ag	●		single-pole occupied	

Further information under

WWW.MARQUARDT-SWITCHES.COM

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

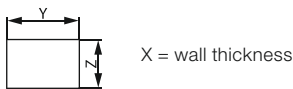
SENSORS

SERIES 1858 - MINIATURE DOUBLE-POLE ROCKER SWITCHES

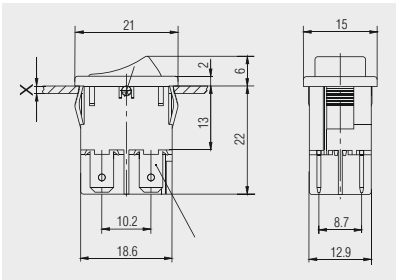
TO 10 (4) A 250 V AC 1E4



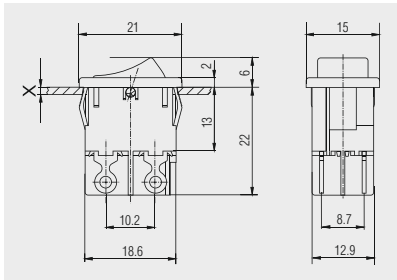
Basic type 1858
double-pole



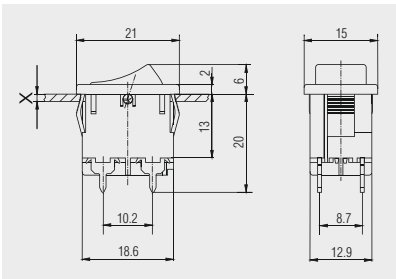
X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	12.9 ^{+0.1}



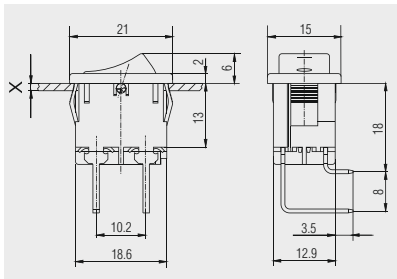
Quick-connect terminal
4.8 x 0.8



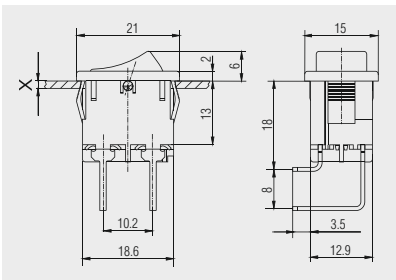
Solder terminal



PCB terminal



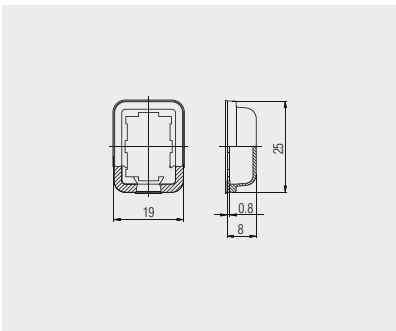
PCB terminal angled to
terminal side 1



PCB terminal angled to
terminal side 2



Protection cap
203.089.011



Transparent PVC - protection cap.
Serves as dust and water protection
of the actuation side.

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1941 - SINGLE-POLE ROCKER SWITCHES IP 50

TO 12 (8) A 250 V AC 1E4



PRODUCT FEATURES

- ◆ Single-pole rocker switch
- ◆ High dust protection with IP 50
- ◆ 100 million times proven switching principle
- ◆ Appliance cut-out same as basic type 1801

ON REQUEST

- ◆ Other colors
- ◆ Other printing variants
- ◆ Other terminal variants
- ◆ PVC - protection cap
- ◆ Higher rating (e.g. 8 A) and inrush current (capacitive) up to 70 A
- ◆ With approval mark

Mechanical life endurance	1E5 (Normally open contact 5E4)
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 50
Ambient temperature	terminal side -20 °C ... +100 °C ... +125 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator PA housing PA / PA glass fiber-reinforced
Plug force of the terminals	≤ 80 N
Suitable for appliances of protection class II	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

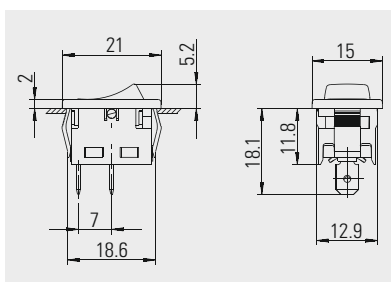
SERIES 1941 - SINGLE-POLE ROCKER SWITCHES IP 50

TO 12 (8) A 250 V AC 1E4

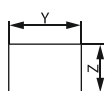
single-pole	Actuator color / printing	12 (8) A 250 V AC 1E4	8 (8) A 250 V AC 5E4	6 (4) A 250 V AC 5E4	6 (2) A 250 V AC 5E4	Terminal type	Terminal description	Contact distance in mm	Contact material	Inrush current (capacitive) in A	Miscellaneous	Stock version
ON / OFF switch (SPST)												
1941.1102		●	●				4.8	≈ 3	Ag	50	without approval mark	
1941.1103				●			4.8	≈ 3	Ag	50	0 at On-position	
1941.1105					●		4.8	≈ 3	Ag	50		
Normally open contact (SPNO)												
1941.1203					●		4.8	≈ 3	Ag		0 at On-position	



Basic type 1941
single-pole



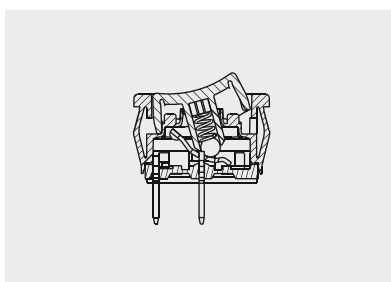
 Quick-connect terminal
4.8 x 0.8



X = wall thickness

X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}

Housing with internal meander and a hole underneath the snap-on mechanism for IP 50. Switching system is dust- and waterproof.



Sectional drawing

SERIES 1550 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 16 (4) A 250 V AC



PRODUCT FEATURES

- ◆ Inrush currents (capacitive) up to 100 A
- ◆ Two housing variants (with flange or lower lying)
- ◆ With mechanical forced opening
- ◆ Illuminated window with lens effect

ON REQUEST

- ◆ Other colors
- ◆ Other rocker labelings
- ◆ Other lamp variants
- ◆ Conformity IEC 60065 chap. 14.6
- ◆ Special rockers
- ◆ Cable assembly

Mechanical life endurance	5E4
Inrush current (capacitive)	100 A
Contact distance	≥ 3 mm
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +100 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2 UL 94 V-0 (product-dependent)
Glow wire test temperature	850 °C
Material	actuator PA / PA C3U housing PA / PA C3U
Plug force of the terminals	≤ 80 N
Approval marks	 /  /  / 
Suitable for appliances of protection class II	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1550 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 16 (4) A 250 V AC

 single-pole	Lighting voltage in V	Actuator color / printing	Housing color	16 (4) A 250 V AC 5E4	16 (4) A 250 V AC 1E4	10 (4) A 250 V AC 5E4	10 A 12 V DC	20 mA 250 V AC 5E4	20 A 250 V AC 2 HP	20 A 125 V AC 1 HP	16 A 250 V AC 2 HP	16 A 125 V AC 1 HP	Terminal type	Terminal description	Contact material	EN 60335 cap. 30 conform "G"	Miscellaneous	Stock version
ON / OFF switch (SPST)																		
1550.3102	230			●	●						●			6.3	Ag			
1550.3105	12					●								6.3	Ag			
1550.3609	12					●								6.3	Ag		lower lying flange	
1551.2602				●	●						●	●			Ag		lower lying flange	
1551.3102				●	●						●	●		6.3	Ag	●		●
1551.3103				●	●						●	●		6.3	Ag			
1551.3105				●	●						●	●		6.3	Ag			
1551.3106				●	●						●	●		6.3	Ag			
1551.4803				●	●						●	●			Ag	●	2 PCB holders lower lying flange	
1551.2654							●								Au		approvals KEMA lower lying flange	
1552.0102				●	●						●	●			Ag			●
Normally closed contact (SPNC)																		
1581.1303				●							●	●		6.3	Ag	●	increased life endurance at high electrical rating	
1551.1303					●	●					●	●		6.3	Ag			
Normally open contact (SPNO)																		
1551.3202				●	●						●	●		6.3	Ag			
1551.3702				●	●						●	●		6.3	Ag		lower lying flange	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1550 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 16 (4) A 250 V AC

 double-pole	Lighting voltage in V	Actuator color / printing	Housing color	16 (4) A 250 V AC 5E4	16 (4) A 250 V AC 1E4	10 (4) A 250 V AC 5E4	10 A 12 V DC	20 mA 250 V AC 5E4	20 A 250 V AC 2 HP	20 A 125 V AC 1 HP	16 A 250 V AC 2 HP	16 A 125 V AC 1 HP	Terminal type	Terminal description	Contact material	EN 60335 cap. 30 conform "G"	Miscellaneous	Stock version
	ON / OFF switch (DPST)																	
1555.3102	230			●	●				●	●	●			6.3	Ag	●		●
1555.3104	230			●	●						●			6.3	Ag			●
1555.3108	230			●	●						●			6.3	Ag			●
1555.3604	230			●	●						●			6.3	Ag		lower lying flange	
1555.4608	230			●	●						●				Ag		lower lying flange	
1555.8104	230			●	●						●			6.3	Ag		flange dimension 31.5 x 17 mm	
1555.3125	115			●	●				●	●	●			6.3	Ag	●		
1555.4628	115										●				Ag		lower lying flange	
1555.3109	110										●			6.3	Ag			
1555.3120	110										●			6.3	Ag			
1555.3111	12					●								6.3	Ag			
1552.2601				●	●						●	●			Ag		lower lying flange	
1552.2602				●	●						●	●			Ag	●	lower lying flange	●
1552.3102				●	●						●	●		6.3	Ag			●
1552.3104				●	●						●	●		6.3	Ag			
1552.3112				●	●						●	●		6.3	Ag	●	conform with EN 60065 par. 14.6	●
1552.3117				●	●				●	●	●	●		6.3	Ag	●		
1552.3120				●	●						●	●		6.3	Ag			
1552.3602				●	●						●	●		6.3	Ag		lower lying flange	●
1552.4602				●	●						●	●			Ag		lower lying flange	●
1552.4702				●	●						●	●			Ag		2 PCB holders lower lying flange	
1552.4802				●	●						●	●			Ag		lower lying flange	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1550 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 16 (4) A 250 V AC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

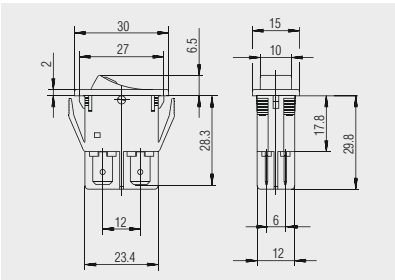
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

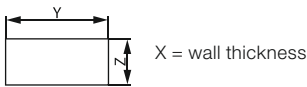
SENSORS



Basic types 1550 and 1555
single and double-pole



Quick-connect terminal
6.3 x 0.8

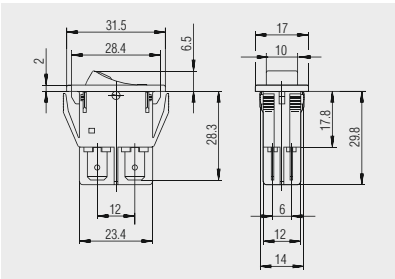


X = wall thickness

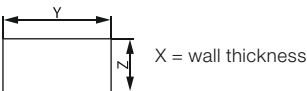
X	Y	Z
0.8 ... 5.0	27.2 ±0.1	12.2 ±0.2



1555.8104
double-pole



Quick-connect terminal
6.3 x 0.8



X = wall thickness

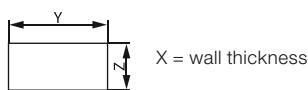
X	Y	Z
0.8 ... 5.0	28.6 ±0.1	14 ±0.2

SERIES 1550 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

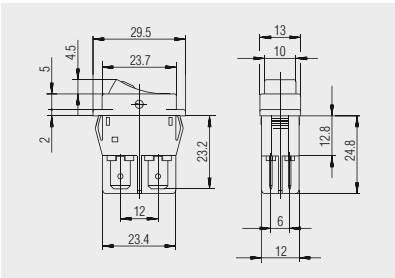
TO 16 (4) A 250 V AC



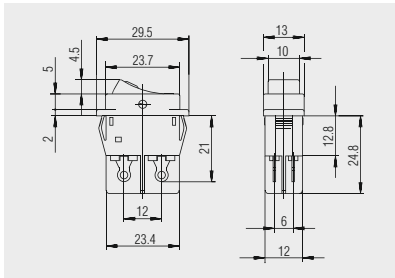
Basic types 1550 and 1555
lower lying flange
single and double-pole



X	Y	Z
0.75 ... 1.25	26.2 ^{-0.1}	12.4 ^{+0.1}
2 ... 3	26.8 ^{-0.1}	12.4 ^{+0.1}
2 ... 3	26.8 ^{-0.1}	12.4 ^{+0.1}
1.25 ... 2	26.4 ^{-0.1}	12.4 ^{+0.1}



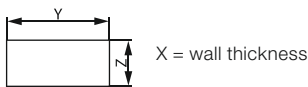
Quick-connect terminal
6.3 x 0.8



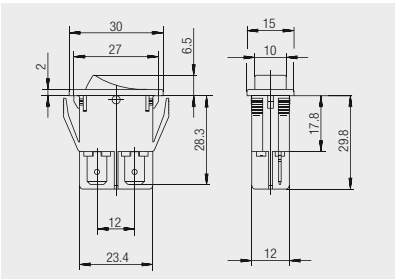
Solder terminal



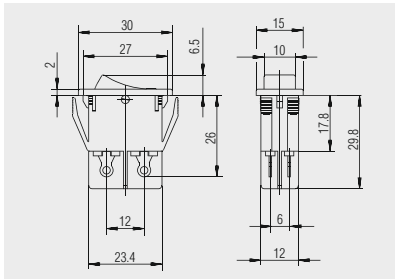
Basic types 1551 and 1552
single and double-pole



X	Y	Z
0.8 ... 5.0	27.2 ^{±0.1}	12.2 ^{+0.2}



Quick-connect terminal
6.3 x 0.8



Solder terminal

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1550 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 16 (4) A 250 V AC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

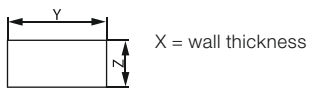
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

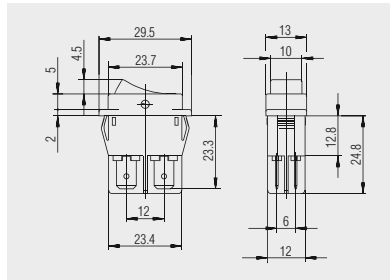
SENSORS



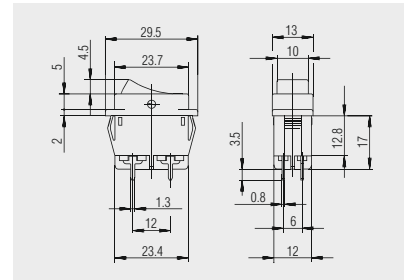
Basic types 1551 and 1552
lower lying flange
single and double-pole



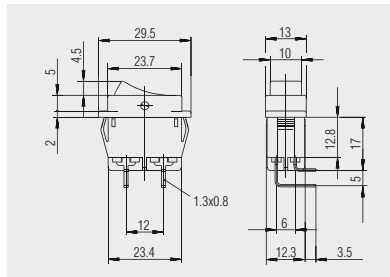
X	Y	Z
0.75 ... 1.25	26.2 ^{-0.1}	12.4 ^{+0.1}
1.25 ... 2	26.4 ^{-0.1}	12.4 ^{+0.1}
2 ... 3	26.8 ^{-0.1}	12.4 ^{+0.1}



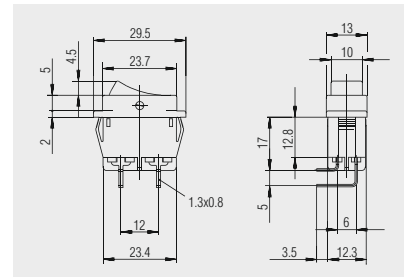
Quick-connect terminal
6.3 x 0.8



Solder terminal



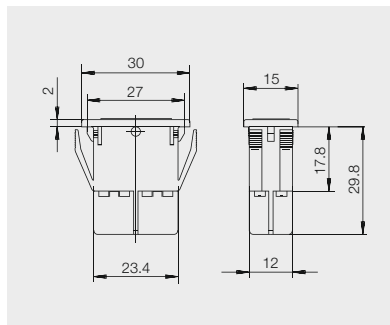
PCB terminal angled



PCB terminal angled
mirror-inverted



Dummy piece
203.103.013



Dummy piece for series 1550 of PA

Further information under

WWW.MARQUARDT-SWITCHES.COM

SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC



PRODUCT FEATURES

- ◆ 100 million times proven switching principle
- ◆ mechanical life endurance up to 1 million switching cycles
- ◆ Wide variety
- ◆ Variants with IP 67 or dust protection insert
- ◆ Two housing variants
- ◆ Actuating characteristic
- ◆ Illuminated and non-illuminated variants
- ◆ Approval for 400 V (product-dependent)

ON REQUEST

- ◆ Other colors
- ◆ Other rocker printings
- ◆ Other printing variants
- ◆ Snap-on customized actuators
- ◆ Cable assembly

Mechanical life endurance	10E4 5E4 (basic type 1839) 1E6 (product-dependent)
Inrush current (capacitive)	120 A / 50 A (contact pair Ag / Cu and basic type 1834)
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40 / IP 67 (product-dependent)
Ambient temperature	terminal side -20 °C ... +105 °C / ... +85 °C / ... +100 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2 UL 94 V-0
Glow wire test temperature	850 °C
Material	actuator PA / PC housing PA terminals silver plated / tinned
Plug force of the terminals	≤ 80 N
Approval marks	 /  /  / 
Suitable for appliances of protection class II	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

single-pole 	ON / OFF switch (SPST)							Changeover switch (SPDT momentary)	ON / OFF switch (SPST)						
	1830.3111	1830.3112	1830.3118	1830.3119	1830.8112	1830.0102	1830.6103		1835.3902	1831.0114					
Lighting voltage in V	230	230	230	230	230	230	230		230						
Actuator color / printing															
Housing color															
20 (4) A 250 V AC 1E4	•	•	•	•	•					•	•	•	•	•	•
20 (4) A 250 V AC															
16 (4) A 250 V AC 1E4															
10 (8) A 400 V AC 5E4															
10 (8) A 250 V AC 5E4	•	•	•	•	•					•	•	•	•	•	•
10 (4) A 250 V AC 1E4						•	•								
10 A 12 V DC															
6 (4) A 250 V AC 5E4						•	•								
6 (4) A 250 V AC 1E4															
6 (4) A 250 V AC															
4 (2) A 250 V AC 1E4									•						
30 mA 12 V DC															
16 A 250 V AC 1 HP	•	•	•	•	•					•	•	•	•	•	•
16 A 125 V AC 1 HP															
16 A 250 V AC 1/2 HP															
16 A 125 V AC 1/3 HP										•	•	•	•	•	•
16 A 125 V AC 1/4 HP															
6 A 250 V AC 1/2 HP						•	•								
6 A 125 V AC 1/4 HP															
6 A 125 - 250 V AC 1/8 HP															
6 A 125 V AC 1/10 HP									•						
4 A 250 V AC 1/10 HP									•						
Terminal type															
Terminal description	6.3	6.3	6.3	6.3	6.3		4.8		6.3						
Contact distance in mm	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3		≥ 3	≥ 3					
Contact material	Ag	Ag	Ag	Ag	Ag	Ag	Ag		Ag	Ag					
EN 60335 cap. 30 conform "G"				•											
Miscellaneous					lower lying flange		lower lying flange		external lamp connection two-pole size						
Stock version		•	•								•	•			

SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

single-pole 		1831.3815	1831.3933	1831.8112	1832.3508	1831.3311	1831.1107	Normally open contact (SPNO)				1831.1202	1831.3402	1831.8202	1831.1253	Changeover switch (SPDT)	1833.3312	1833.1102	1833.3307	1833.7102
Lighting voltage in V																				
Actuator color / printing																				
Housing color																				
20 (4) A 250 V AC 1E4																				
20 (4) A 250 V AC																				
16 (4) A 250 V AC 1E4																				
10 (8) A 400 V AC 5E4																				
10 (8) A 250 V AC 5E4																				
10 (4) A 250 V AC 1E4																				
10 A 12 V DC																				
6 (4) A 250 V AC 5E4																				
6 (4) A 250 V AC 1E4																				
6 (4) A 250 V AC																				
4 (2) A 250 V AC 1E4																				
30 mA 12 V DC																				
16 A 250 V AC 1 HP																				
16 A 125 V AC 1 HP																				
16 A 250 V AC 1/2 HP																				
16 A 125 V AC 1/3 HP																				
16 A 125 V AC 1/4 HP																				
6 A 250 V AC 1/2 HP																				
6 A 125 V AC 1/4 HP																				
6 A 125 - 250 V AC 1/8 HP																				
6 A 125 V AC 1/10 HP																				
4 A 250 V AC 1/10 HP																				
Terminal type																				
Terminal description		6.3	6.3	6.3	6.3	6.3	4.8					4.8	6.3	6.3	4.8		6.3	4.8	6.3	
Contact distance in mm		≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3					≥ 3	≥ 3	≥ 3	≥ 3		≥ 3	≥ 3	≥ 3	≥ 3
Contact material		Ag	Ag	Ag	Ag	Ag	Ag					Ag	Ag	Ag	Au		Ag	Ag	Ag	Ag
EN 60335 cap. 30 conform "G"																				
Miscellaneous		1E6 mechanical life endurance IP 67		lower lying flange	two-pole size									lower lying flange						lower lying flange
Stock version																				

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

single-pole 	Changeover switch with OFF position in the center (SPDT - Center OFF)										Changeover switch (SPDT momentary)		
	1838.0305	1838.3901	1838.1402	1838.1502	1838.1509	1838.1602	1838.4307	1838.8302	1838.3402	1838.3502	1833.1202	1833.3402	1833.6202
Lighting voltage in V													
Actuator color / printing													
Housing color													
20 (4) A 250 V AC 1E4													
20 (4) A 250 V AC													
16 (4) A 250 V AC 1E4	•	•											
10 (8) A 400 V AC 5E4													
10 (8) A 250 V AC 5E4													
10 (4) A 250 V AC 1E4													
10 A 12 V DC													
6 (4) A 250 V AC 5E4													
6 (4) A 250 V AC 1E4			•	•	•	•	•	•					
6 (4) A 250 V AC									•	•			
4 (2) A 250 V AC 1E4											•	•	•
30 mA 12 V DC													
16 A 250 V AC 1 HP													
16 A 125 V AC 1 HP													
16 A 250 V AC 1/2 HP	•	•											
16 A 125 V AC 1/3 HP	•	•											
16 A 125 V AC 1/4 HP													
6 A 250 V AC 1/2 HP													
6 A 125 V AC 1/4 HP													
6 A 125 - 250 V AC 1/8 HP			•	•	•	•	•	•	•	•			
6 A 125 V AC 1/10 HP											•	•	•
4 A 250 V AC 1/10 HP											•	•	•
Terminal type													
Terminal description		6.3	4.8	4.8	4.8	4.8	2.8	6.3	6.3	6.3	4.8	6.3	4.8
Contact distance in mm	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3
Contact material	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag
EN 60335 cap. 30 conform "G"													
Miscellaneous	momentary function both sides 1EG mechanical life endurance IP 67		momentary function both sides			momentary function one side	momentary function one side	momentary function both sides lower lying flange	momentary function both sides				lower lying flange
Stock version			•	•		•			•				

SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

double-pole																		
 																		
Lighting voltage in V																		
Actuator color / printing																		
Housing color																		
20 (4) A 250 V AC 1E4																		
20 (4) A 250 V AC																		
16 (4) A 250 V AC 1E4																		
10 (8) A 400 V AC 5E4																		
10 (8) A 250 V AC 5E4																		
10 (4) A 250 V AC 1E4																		
10 A 12 V DC																		
6 (4) A 250 V AC 5E4																		
6 (4) A 250 V AC 1E4																		
6 (4) A 250 V AC																		
4 (2) A 250 V AC 1E4																		
30 mA 12 V DC																		
16 A 250 V AC 1 HP																		
16 A 125 V AC 1 HP																		
16 A 250 V AC 1/2 HP																		
16 A 125 V AC 1/3 HP																		
16 A 125 V AC 1/4 HP																		
6 A 250 V AC 1/2 HP																		
6 A 125 V AC 1/4 HP																		
6 A 125 - 250 V AC 1/8 HP																		
6 A 125 V AC 1/10 HP																		
4 A 250 V AC 1/10 HP																		
Terminal type																		
Terminal description																		
Contact distance in mm																		
Contact material																		
EN 60335 cap. 30 conform "G"																		
Miscellaneous																		
Stock version																		

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

double-pole 	ON / OFF switch (DPST)												Normally open contact (DPNO)	1832.3407	1832.8204
	1832.3311	1832.3312	1832.3313	1832.3602	1832.6112	1832.7103	1832.8112	1832.9103	1832.0113	1832.1102	1832.3307	1832.9101			
Lighting voltage in V															
Actuator color / printing															
Housing color															
20 (4) A 250 V AC 1E4	•	•	•	•	•	•	•	•							
20 (4) A 250 V AC															
16 (4) A 250 V AC 1E4									•						
10 (8) A 400 V AC 5E4															
10 (8) A 250 V AC 5E4	•	•	•	•	•	•	•	•							
10 (4) A 250 V AC 1E4										•	•	•			
10 A 12 V DC															
6 (4) A 250 V AC 5E4										•	•	•			
6 (4) A 250 V AC 1E4															
6 (4) A 250 V AC															
4 (2) A 250 V AC 1E4														•	•
30 mA 12 V DC															
16 A 250 V AC 1 HP	•	•	•	•	•	•	•	•							
16 A 125 V AC 1 HP								•							
16 A 250 V AC 1/2 HP									•						
16 A 125 V AC 1/3 HP	•	•	•	•	•	•	•								
16 A 125 V AC 1/4 HP									•						
6 A 250 V AC 1/2 HP										•	•	•			
6 A 125 V AC 1/4 HP										•	•	•			
6 A 125 - 250 V AC 1/8 HP															
6 A 125 V AC 1/10 HP														•	•
4 A 250 V AC 1/10 HP														•	•
Terminal type															
Terminal description	6.3	6.3	6.3	6.3	4.8		6.3			4.8	6.3			6.3	6.3
Contact distance in mm	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3		≥ 3	≥ 3
Contact material	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag		Ag	Ag
EN 60335 cap. 30 conform "G"			•												
Miscellaneous				cover frame 33.2 long	lower lying flange	lower lying flange	lower lying flange	lower lying flange	dust protection inlay			lower lying flange			lower lying flange
Stock version	•	•		•						•	•				

SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

 double-pole		Changeover switch (DPDT)	1834.3311	1834.3312	1834.1102	1834.3302	1834.3309	1834.3603	1834.6103	Changeover switch with OFF position in the center (DPDT - Center OFF)	1839.3512	1839.1402	1839.1407	1839.1410	1839.1502	1839.1507	1839.1509	1839.1518
Lighting voltage in V																		
Actuator color / printing																		
Housing color																		
20 (4) A 250 V AC 1E4																		
20 (4) A 250 V AC																		
16 (4) A 250 V AC 1E4			•	•							•							
10 (8) A 400 V AC 5E4																		
10 (8) A 250 V AC 5E4																		
10 (4) A 250 V AC 1E4					•	•	•	•	•									
10 A 12 V DC																		
6 (4) A 250 V AC 5E4					•	•	•	•	•									
6 (4) A 250 V AC 1E4												•	•	•	•	•	•	•
6 (4) A 250 V AC																		
4 (2) A 250 V AC 1E4																		
30 mA 12 V DC																		
16 A 250 V AC 1 HP																		
16 A 125 V AC 1 HP																		
16 A 250 V AC 1/2 HP			•	•							•							
16 A 125 V AC 1/3 HP											•							
16 A 125 V AC 1/4 HP			•	•														
6 A 250 V AC 1/2 HP					•	•	•	•	•									
6 A 125 V AC 1/4 HP					•	•	•	•	•									
6 A 125 - 250 V AC 1/8 HP												•	•	•	•	•	•	•
6 A 125 V AC 1/10 HP																		
4 A 250 V AC 1/10 HP																		
Terminal type																		
Terminal description			6.3	6.3	4.8	6.3	6.3	6.3	4.8		6.3	4.8	4.8	4.8	4.8	4.8	4.8	4.8
Contact distance in mm			≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3		≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3
Contact material			Ag	Ag	Ag	Ag	Ag	Ag	Ag		Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag
EN 60335 cap. 30 conform "G"								•										
Miscellaneous								cover frame 33.2 long	lower lying flange			momentary function both sides	momentary function both sides	dust protection inlay momentary function both sides				dust protection inlay
Stock version						•						•	•			•		

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

double-pole 	Changeover switch with OFF position in the center (DPDT - Center OFF)									
	1839.1602	1839.2203	1839.3402	1839.3502	1839.3503	1839.3602	1839.7304	1839.3352	1839.0105	1834.3402
Lighting voltage in V										
Actuator color / printing										
Housing color										
20 (4) A 250 V AC 1E4										
20 (4) A 250 V AC										
16 (4) A 250 V AC 1E4										
10 (8) A 400 V AC 5E4										
10 (8) A 250 V AC 5E4										
10 (4) A 250 V AC 1E4										
10 A 12 V DC										
6 (4) A 250 V AC 5E4										
6 (4) A 250 V AC 1E4	•	•	•	•	•	•	•			
6 (4) A 250 V AC										
4 (2) A 250 V AC 1E4										•
30 mA 12 V DC								•		
16 A 250 V AC 1 HP										
16 A 125 V AC 1 HP										
16 A 250 V AC 1/2 HP										
16 A 125 V AC 1/3 HP										
16 A 125 V AC 1/4 HP										
6 A 250 V AC 1/2 HP										
6 A 125 V AC 1/4 HP										
6 A 125 - 250 V AC 1/8 HP	•	•	•	•	•	•	•			
6 A 125 V AC 1/10 HP										•
4 A 250 V AC 1/10 HP										•
Terminal type										
Terminal description	4.8		6.3	6.3	6.3	6.3		6.3		6.3
Contact distance in mm	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3
Contact material	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Au	Ag	Ag
EN 60335 cap. 30 conform "G"										
Miscellaneous	momentary function one side	momentary function one side	momentary function both sides			momentary function one side	dust protection inlay momentary function one side lower lying flange	cover frame 33.2 long momentary function both sides	dust protection inlay	
Stock version			•							

SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

 		Lamp	1837.118	1837.2504	1837.3102	1837.8102	1837.8108
Lighting voltage in V			230	230	230	230	230
Actuator color / printing							
Housing color							
20 (4) A 250 V AC 1E4							
20 (4) A 250 V AC							
16 (4) A 250 V AC 1E4							
10 (8) A 400 V AC 5E4							
10 (8) A 250 V AC 5E4							
10 (4) A 250 V AC 1E4							
10 A 12 V DC							
6 (4) A 250 V AC 5E4							
6 (4) A 250 V AC 1E4							
6 (4) A 250 V AC							
4 (2) A 250 V AC 1E4							
30 mA 12 V DC							
16 A 250 V AC 1 HP							
16 A 125 V AC 1 HP							
16 A 250 V AC 1/2 HP							
16 A 125 V AC 1/3 HP							
16 A 125 V AC 1/4 HP							
6 A 250 V AC 1/2 HP							
6 A 125 V AC 1/4 HP							
6 A 125 - 250 V AC 1/8 HP							
6 A 125 V AC 1/10 HP							
4 A 250 V AC 1/10 HP							
Terminal type							
Terminal description			4.8		6.3	6.3	6.3
Contact distance in mm							
Contact material							
EN 60335 cap. 30 conform "G"							
Miscellaneous				lower lying flange		size basic type 1835	size basic type 1835
Stock version							

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

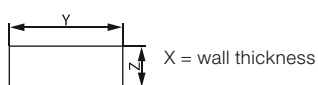
SENSORS

SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

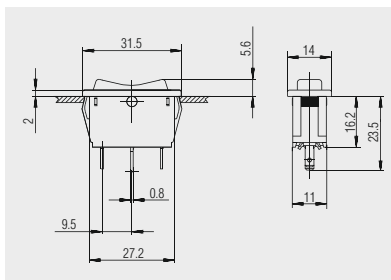
TO 20 (4) A 250 V AC



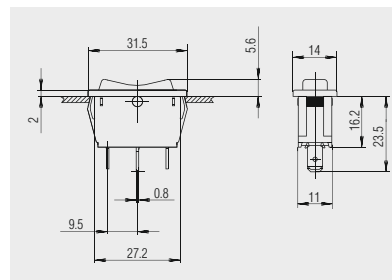
Basic types 1830, 1831, 1833
and 1838
single-pole
illuminated / non-illuminated



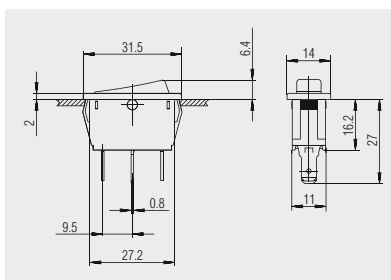
X	Y	Z
0.75 ... 1.25	30 ^{-0.1}	11 ^{+0.1}
1.25 ... 2	30.2 ^{-0.1}	11 ^{+0.1}
2 ... 3	30.6 ^{-0.1}	11 ^{+0.1}



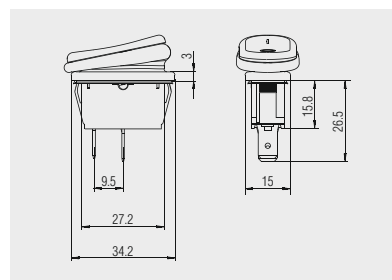
Quick-connect terminal 2.8 x 0.8
1838.4307



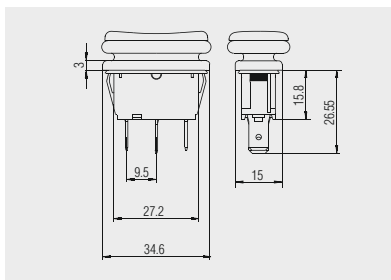
Quick-connect terminal 4.8 x 0.8
basic type 1838



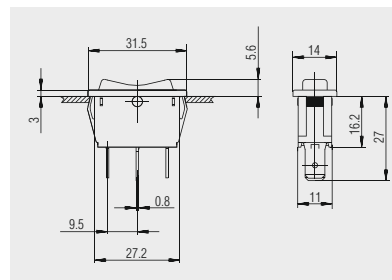
Quick-connect terminal 4.8 x 0.8
basic types 1830, 1831 and 1833



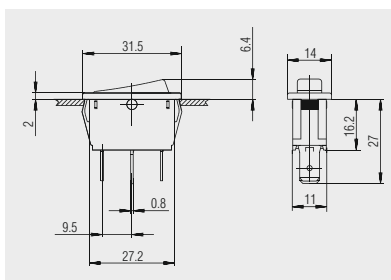
Quick-connect terminal 6.3 x 0.8
1831.3815



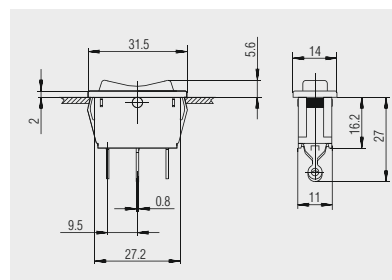
Quick-connect terminal 6.3 x 0.8
1838.3901



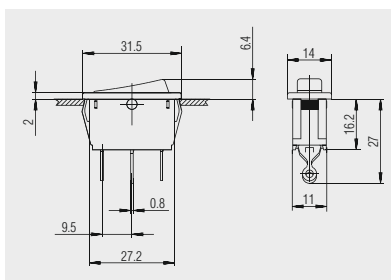
Quick-connect terminal 6.3 x 0.8
basic type 1838



Quick-connect terminal 6.3 x 0.8
basic types 1831 and 1833



Solder terminal
basic type 1838



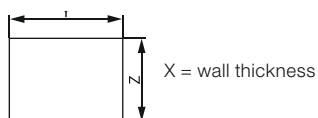
Solder terminal
basic types 1830 and 1831

SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

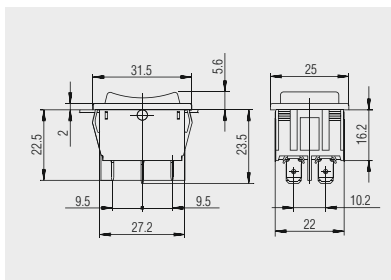
TO 20 (4) A 250 V AC



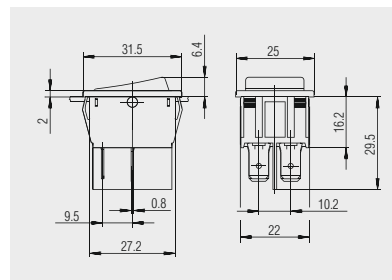
Basic types 1832, 1834, 1835
and 1839
double-pole
illuminated / non-illuminated



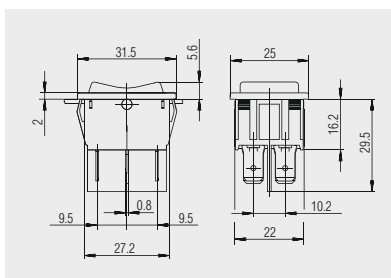
X	Y	Z
0.75 ... 1.25	30 ^{-0.1}	22 ^{+0.2}
1.25 ... 2	30.2 ^{-0.1}	22 ^{+0.2}
2 ... 3	30.6 ^{-0.1}	22 ^{+0.2}



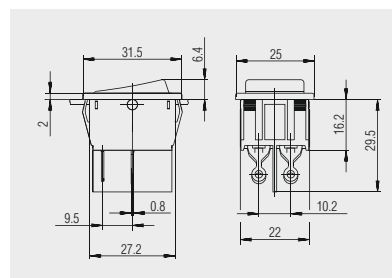
Quick-connect terminal 4.8 x 0.8



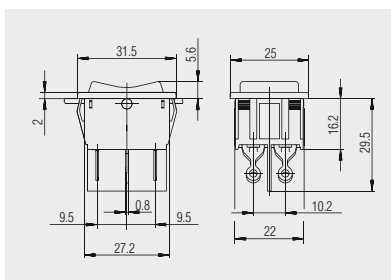
Quick-connect terminal
6.3 x 0.8 / 4.8
basic types 1832, 1834 and 1835



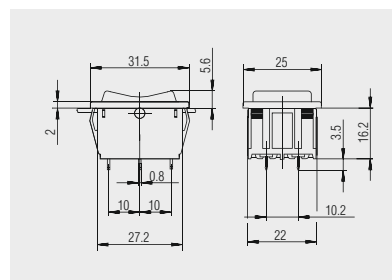
Quick-connect terminal 6.3 x 0.8
basic type 1839



Solder terminal
basic type 1832



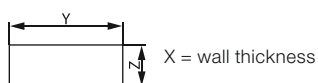
Solder terminal
basic type 1839



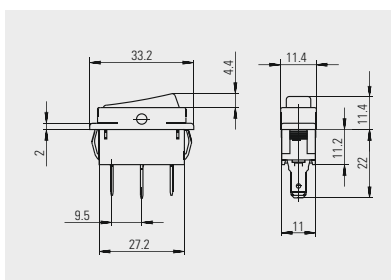
PCB terminal
basic type 1839



Basic types 1830, 1831 and 1833
single-pole, lower lying flange
illuminated / non-illuminated



X	Y	Z
0.75 ... 1.25	30 ^{-0.1}	11 ^{+0.1}
1.25 ... 2	30.2 ^{-0.1}	11 ^{+0.1}
2 ... 3	30.6 ^{-0.1}	11 ^{+0.1}



Quick-connect terminal 4.8 x 0.8
basic types 1830, 1831 and 1833

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

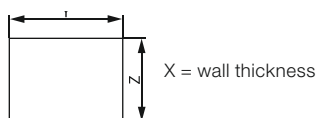
SENSORS

SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

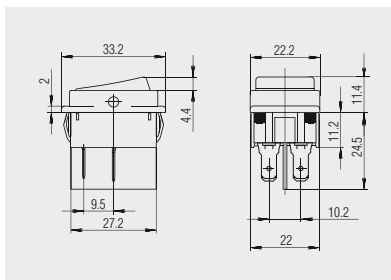
TO 20 (4) A 250 V AC



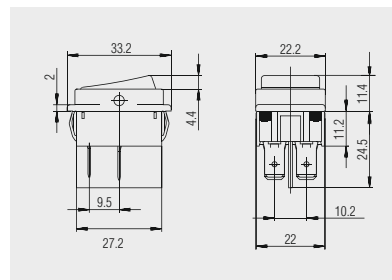
Basic types 1832, 1834, 1835 and 1839
double-pole, lower lying flange
illuminated / non-illuminated



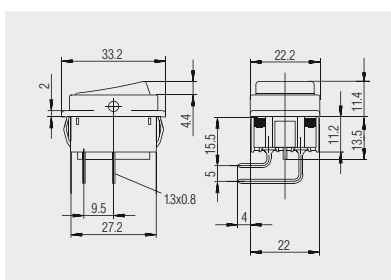
X	Y	Z
0.75 ... 1.25	30 ^{-0.1}	22 ^{+0.2}
1.25 ... 2	30.2 ^{-0.1}	22 ^{+0.2}
2 ... 3	30.6 ^{-0.1}	22 ^{+0.2}



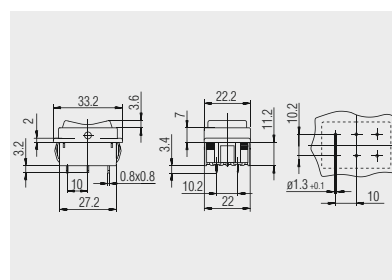
Quick-connect terminal 4.8 x 0.8
basic types 1832 and 1834



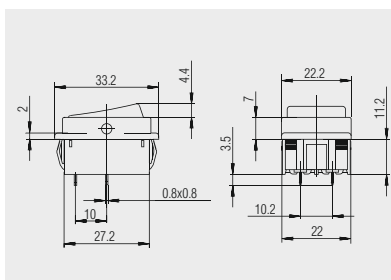
Quick-connect terminal 6.3 x 0.8
basic type 1832



PCB terminal angled
basic types 1832 and 1835



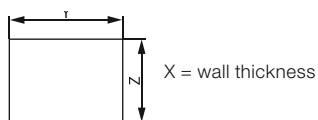
PCB terminal
basic type 1839



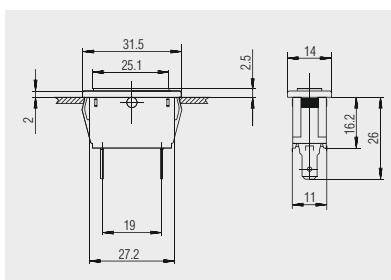
PCB terminal
basic types 1832 and 1835



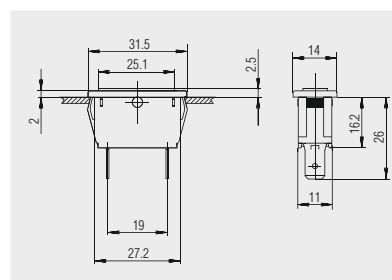
Basic type 1837 lamp
single and double-pole



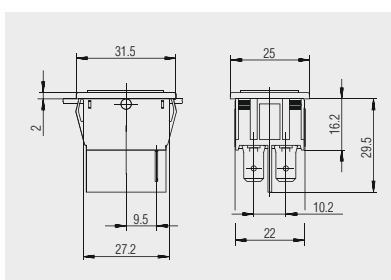
X	Y	Z
0.75 ... 1.25	30 ^{-0.1}	22 ^{+0.2}
1.25 ... 2	30.2 ^{-0.1}	22 ^{+0.2}
2 ... 3	30.6 ^{-0.1}	22 ^{+0.2}



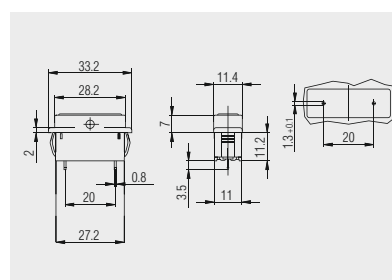
Quick-connect terminal 4.8 x 0.8
single-pole size



Quick-connect terminal 6.3 x 0.8
single-pole size



Quick-connect terminal 6.3 x 0.8
double-pole size



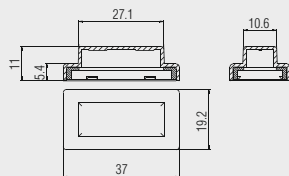
PCB terminal
lower lying flange
1837.2504

SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC



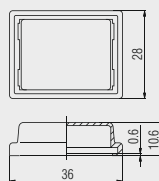
Protection ap
203.731.011



Transparent PVC - protection cap for single-pole switches of basic types 1830, 1831, 1833 and 1838. Serves as dust and water protection of the actuation side.



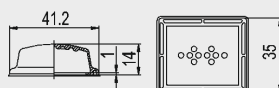
Protection cap
203.201.011



Transparent PVC - protection cap for double-pole switches of basic types 1832, 1834, 1835 and 1839 with frame length 33.2 mm. Serves as dust and water protection of the actuation side.



Protection cap
203.078.011



Transparent PVC-protection cap with burling. Serves as dust and water protection of the actuation side for double-pole basic types 1832, 1834, 1835 and 1839 with standard flange length 30 mm.



Dummy cap
203.145.051



Housing
217.132.031

Housing and dummy cap for double-pole size of basic types 1830, 1831, 1833, 1837 and 1838 of PA black.

Housing and dummy cap must be assembled by the customer and makes only sense in combination



Dummy cap
203.146.051



Housing
217.127.491

Housing and dummy cap for double-pole size of basic types 1832, 1834, 1835 and 1839 of PA black.

Housing and dummy cap must be assembled by the customer and makes only sense in combination

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1930 - DOUBLE-POLE ROCKER SWITCHES IP 65

TO 20 (4) A 250 V AC



PRODUCT FEATURES

- ◆ Illuminated and non-illuminated variants with various switching functions
- ◆ IP 65 with integrated gasket for high dust and water protection
- ◆ Inrush current (capacitive) up to 120 A
- ◆ Approval for 400 V
- ◆ 100 million times proven switching principle
- ◆ Modern rocker design
- ◆ High, flexible variety

ON REQUEST

- ◆ Other switching functions (e.g. Changeover switch)
- ◆ Other terminal types
- ◆ Other colors (e.g. red)
- ◆ Other printing variants
- ◆ Other lamp variants
- ◆ Cable assembly

Mechanical life endurance	5E4
Operating force	3 - 8 N
Inrush current (capacitive)	120 A 100 A (basic type 1939) 50 A (basic type 1934)
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 65 (recessed installation)
Ambient temperature	terminal side -30 °C ... +105 °C actuating side -30 °C ... +55 °C
Flammability	UL 94 V-2 UL 94 V-0 (housing and socket only)
Glow wire test temperature	850 °C
Material	actuator PC / TPU (bellows) housing PA terminals silver plated
Plug force of the terminals	≤ 80 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



SERIES 1930 - DOUBLE-POLE ROCKER SWITCHES IP 65

TO 20 (4) A 250 V AC

double-pole 		ON / OFF switch (DPST)								Normally open contact (DPNO)		ON / OFF switch (DPST)							
Lighting voltage in V		1935.3135		1935.3137		1935.3112		1935.3113		1935.3114		1935.3118		1935.3119		1935.3129		1935.3218	
Actuator color / printing		400		400		250		250		250		250		250		250		250	
Housing color		400		400		250		250		250		250		250		250		250	
		125 - 250		125		125		24		12									
20 (4) A 250 V AC 1E4																			
12 (4) A 250 V AC 1E4																			
10 (8) A 400 V AC 5E4																			
10 (8) A 250 V AC 5E4																			
10 A 24 V DC																			
10 A 12 V DC																			
6 (4) A 250 V AC 5E4																			
16 A 250 V AC 1 HP																			
16 A 125 V AC 3/4 HP																			
16 A 125 V AC 1/3 HP																			
14 A 250 V AC 3/4 HP																			
14 A 250 V AC 1/2 HP																			
14 A 125 V AC 1/3 HP																			
14 A 125 V AC 1/4 HP																			
12 A 250 V AC 1 HP																			
12 A 125 V AC 1/2 HP																			
Terminal type																			
Terminal description																			
Contact distance in mm																			
Contact material																			
EN 60335 cap. 30 conform "G"																			
Miscellaneous																			
Stock version																			

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1930 - DOUBLE-POLE ROCKER SWITCHES IP 65

TO 20 (4) A 250 V AC

double-pole 	ON / OFF switch (DPST)										Normally closed contact (DPNC)		Normally open contact (DPNO)	
Lighting voltage in V														
Actuator color / printing											 			
Housing color											 			
20 (4) A 250 V AC 1E4	●	●	●	●	●	●	●	●	●	●				
12 (4) A 250 V AC 1E4														
10 (8) A 400 V AC 5E4														
10 (8) A 250 V AC 5E4	●	●	●	●	●	●	●	●	●	●				
10 A 24 V DC														
10 A 12 V DC														
6 (4) A 250 V AC 5E4														
16 A 250 V AC 1 HP	●	●	●	●	●	●	●	●	●	●				
16 A 125 V AC 3/4 HP	●	●	●	●	●	●	●	●	●	●				
16 A 125 V AC 1/3 HP							●							
14 A 250 V AC 3/4 HP														
14 A 250 V AC 1/2 HP														
14 A 125 V AC 1/3 HP														
14 A 125 V AC 1/4 HP														
12 A 250 V AC 1 HP														
12 A 125 V AC 1/2 HP														
Terminal type											 			
Terminal description	4.8	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3		6.3	
Contact distance in mm	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3		≥ 3	
Contact material	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag		Ag	
EN 60335 cap. 30 conform “G”							●	●	●	●				
Miscellaneous										single-pole occupied				
Stock version						●							●	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1930 - DOUBLE-POLE ROCKER SWITCHES IP 65

TO 20 (4) A 250 V AC

double-pole 		Changeover switch (DPDT)					Changeover switch with OFF position in the center (DPDT - Center OFF)				
		1934.3112	1934.3114	1934.2114	1939.3119	1939.3312	1939.3314	1939.3318	1939.0454		
Lighting voltage in V											
Actuator color / printing											
Housing color											
20 (4) A 250 V AC 1E4											
12 (4) A 250 V AC 1E4					•	•	•	•			
10 (8) A 400 V AC 5E4											
10 (8) A 250 V AC 5E4		•	•								
10 A 24 V DC											
10 A 12 V DC											
6 (4) A 250 V AC 5E4				•							
16 A 250 V AC 1 HP											
16 A 125 V AC 3/4 HP											
16 A 125 V AC 1/3 HP											
14 A 250 V AC 3/4 HP					•						
14 A 250 V AC 1/2 HP						•	•	•			
14 A 125 V AC 1/3 HP					•						
14 A 125 V AC 1/4 HP						•	•	•			
12 A 250 V AC 1 HP		•	•	•							
12 A 125 V AC 1/2 HP		•	•	•							
Terminal type											
Terminal description		6.3	6.3		6.3	6.3	6.3	6.3			
Contact distance in mm		≥ 3	≥ 3	≥ 3	≥ 3	< 3	< 3	< 3	< 3		
Contact material		Ag	Ag	Ag	Ag	Ag	Ag	Ag	Au		
EN 60335 cap. 30 conform "G"											
Miscellaneous						momentary function both sides	momentary function both sides	momentary function both sides	single-pole occupied momentary function both sides		
Stock version											

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1930 - DOUBLE-POLE ROCKER SWITCHES IP 65

TO 20 (4) A 250 V AC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

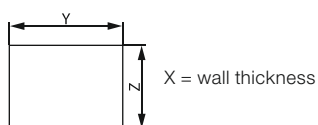
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

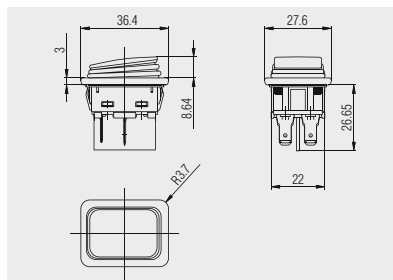
SENSORS



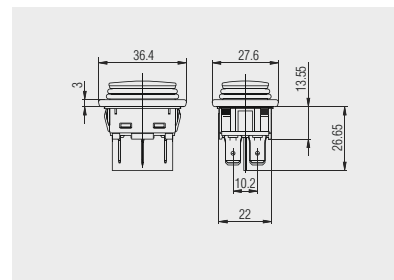
Basic types 1932, 1934, 1935 and 1939 double-pole



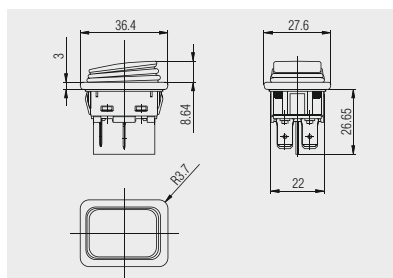
X	Y	Z
0.75 ... 1.25	30 ^{-0.1}	22 ^{+0.2}
1.25 ... 3	30.2 ^{-0.1}	22 ^{+0.2}



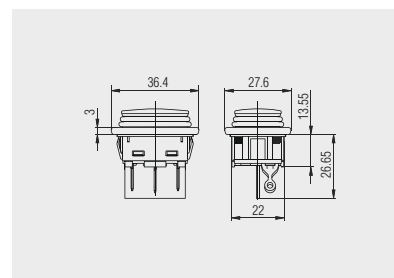
Quick-connect terminal 4.8 x 0.8 basic type 1932



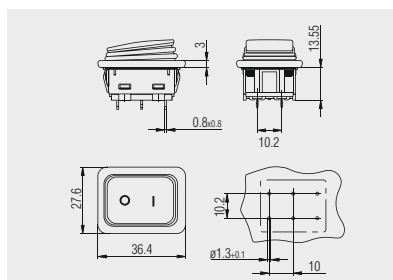
Quick-connect terminal 6.3 x 0.8 basic type 1939



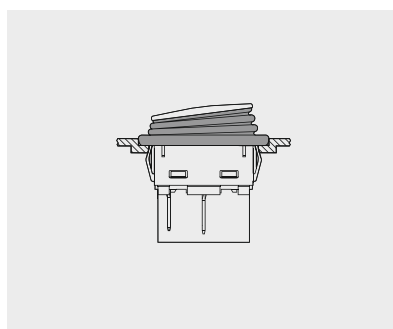
Quick-connect terminal 6.3 x 0.8 basic types 1932, 1934 and 1935



Solder terminal basic type 1939



PCB terminal basic type 1934



Sunken installation recommended for IP 65

A correct assembly and examination on tightness according to IP 65 in the equipment must be ensured by the customer.

SERIES 1656 - SINGLE-POLE ROCKER SWITCHES

TO 10 A 250 V AC



PRODUCT FEATURES

- ◆ Powerful, illuminated rocker switch with leaf spring switching system
- ◆ Silk matt printable surface
- ◆ Can be mounted from rear (alternatively with frame)
- ◆ Switching system sealed from rocker to protect against overflowing water (VDE 700 part 15)
- ◆ Snap fastening for wall thicknesses > 2 mm

ON REQUEST

- ◆ Other actuator forms (e.g. oval)
- ◆ As a double switch
- ◆ Other colors
- ◆ Other printing variants
- ◆ Other terminal types
- ◆ Other lamp variants
- ◆ Variant without illumination
- ◆ Cable assembly

Mechanical life endurance	2E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Ambient temperature	terminal side -20 °C ... +100 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator PA housing PA terminals Cu and CuZn bare (bearing terminal silver plated)
Plug force of the terminals	≤ 80 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

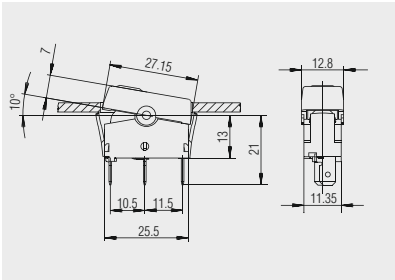
SERIES 1656 - SINGLE-POLE ROCKER SWITCHES

TO 10 A 250 V AC

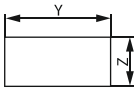
single-pole	Lighting voltage in V	Actuator color / printing	10 A 250 V AC 1E4	10 A 250 V AC 1/2 HP	10 A 125 V AC 1/3 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
ON / OFF switch (SPST)											
1656.1702	230		●	●			4.8	≈ 3	Ag		
1656.1703	230		●	●			4.8	≈ 3	Ag		
1656.1723	90				●		4.8	≈ 3	Ag	glow lamp with ignition voltage < 90 V	



Basic type 1656



Quick-connect terminal
4.8 x 0.8

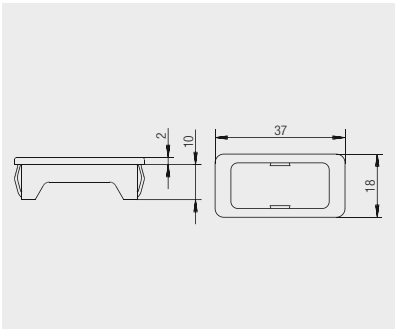


X = wall thickness

X	Y	Z
≥ 2	28 ±0.1	13 ±0.1



Additional parts



Mounting frame of polyamide
217.313.011 - black
217.313.041 - anthracite metallic

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 3230 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 10 (5) A 24 V DC



PRODUCT FEATURES

- ◆ Attractive rocker switch (rocker separate)
- ◆ Million times proven, friction snap-action contact system
- ◆ Powerful with 100 000 switching cycles electrically and mechanically for DC voltage applications
- ◆ Indicator lamp identical
- ◆ Dust and water protected
- ◆ High variety
- ◆ With or without function illumination (LED)
- ◆ Installation from the front directly or with assembly frame
- ◆ Plug connector support

ON REQUEST

- ◆ Other colors
- ◆ Other rocker symbols (laser etched)
- ◆ Other switching functions
- ◆ Other lamp variants
- ◆ With assembled rocker
- ◆ Water and dust proof version

Mechanical life endurance	10E4	
Ambient temperature	-40 °C ... +85 °C	
Material	actuator housing terminals	PA glass fiber-reinforced PA silver plated
Miscellaneous	illumination with assembled rocker: day design = light gray / night design = pea green	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 3230 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 10 (5) A 24 V DC

 single-pole (rocker separate)	Lighting voltage in V	Housing color	10 (5) A 24 V 10E4	10 (5) A 12 V 10E4	Terminal type	Terminal description	Miscellaneous	Stock version
Normally open contact snapping 1-step (SPST)								
3230.0202	24		●			3.0 x 0.8	with function indication circuit symbol: 3.03	
3230.0201	12			●		3.0 x 0.8	with function indication circuit symbol: 3.03	
3230.0102			●			3.0 x 0.8	circuit symbol: 3.01	
3230.0101				●		3.0 x 0.8	circuit symbol: 3.01	
Normally open contact momentary 1-step (SPNO)								
3230.0302			●			3.0 x 0.8	circuit symbol: 3.02	
3230.0301				●		3.0 x 0.8	circuit symbol: 3.02	
 double-pole (rocker separate)	Lighting voltage in V	Housing color	10 (5) A 24 V 10E4	10 (5) A 12 V 10E4	Terminal type	Terminal description	Miscellaneous	Stock version
Changeover switch snapping 1-step (DPDT momentary)								
3230.1902			●			3.0 x 0.8	circuit symbol: 3.09	

SERIES 3230 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 10 (5) A 24 V DC

	Combination (rocker separate)	Lighting voltage in V	Housing color	10 (5) A 24 V 10E4	10 (5) A 12 V 10E4	Terminal type	Terminal description	Miscellaneous	Stock version
Changeover switch maintained 2-step (SPDT momentary)									
3230.0602	24		●				3.0 x 0.8	2 x single-pole changeover switch, with function indication, circuit symbol: 3.33	
3230.0601	12			●			3.0 x 0.8	2 x single-pole changeover switch, with function indication, circuit symbol: 3.33	
3230.0502			●				3.0 x 0.8	2 x single-pole changeover switch circuit symbol: 3.31	
3230.0501				●			3.0 x 0.8	2 x single-pole changeover switch circuit symbol: 3.31	
Changeover switch momentary 2-step (SPDT momentary)									
3230.0702			●				3.0 x 0.8	2 x single-pole changeover switch circuit symbol: 3.32	
3230.0701				●			3.0 x 0.8	2 x single-pole changeover switch circuit symbol: 3.32	
	Lamp (cap separate)	Lighting voltage in V	Housing color	10 (5) A 24 V 10E4	10 (5) A 12 V 10E4	Terminal type	Terminal description	Miscellaneous	Stock version
Lamp									
3237.0102	24 24						3.0 x 0.8	LED red / red	
3237.0104	24 24						3.0 x 0.8	LED red / green	
3237.0106	24 24						3.0 x 0.8	LED green / green	
3237.0108	24 24						3.0 x 0.8	LED yellow / green	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 3230 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 10 (5) A 24 V DC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

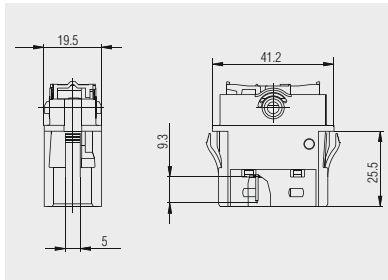
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS



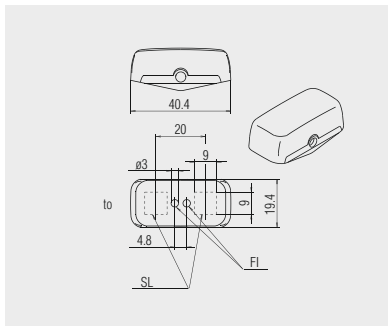
Basic types 3230 and 3237



Quick-connect terminal
3.0 x 0.8



Rocker
190.389.011 - without stop
(switching function both sides)
190.389.021 - with stop
(switching function one side)
Cap
203.442.011 - with stop both
sides (for lamp 3237)

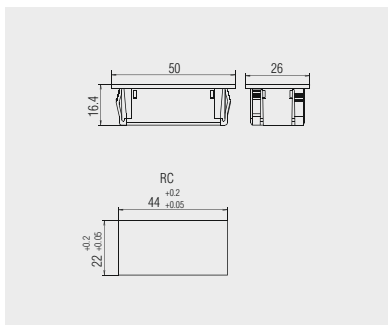


Snap-on rocker for basic type 3230 and cap for basic type 3237 (without switching function) painted black with or without stop for both or one-sided switching function. Laser etched by customer or on request.

Note:
Rocker must be ordered separately in addition to the basic switch. Assembly on customer side.



Installation frame
217.353.021



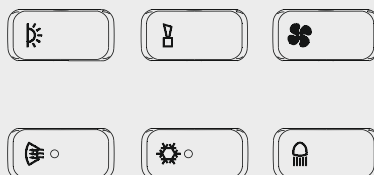
Installation frame for basic types 3230 and 3237 in black



Dummy piece
203.069.013



Dummy piece for the basic types 3230 and 3237 with mounted black cap



Laser etched rocker symbols

SERIES 3230 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 10 (5) A 24 V DC

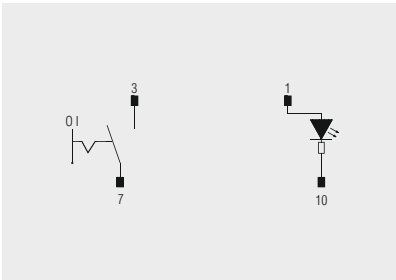


Cable connector
product number on request

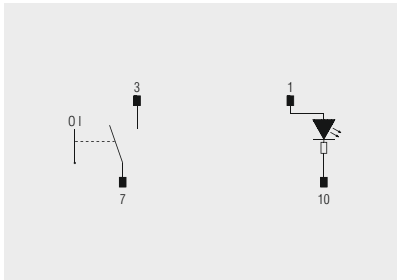


Wire connector for 3230. Terminals
for connector (Junior Power Timer) on
request

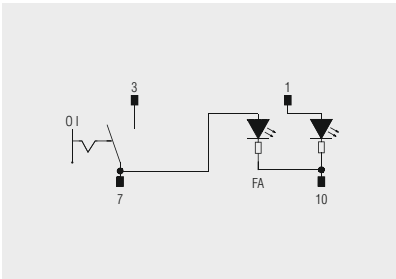
Circuit symbols



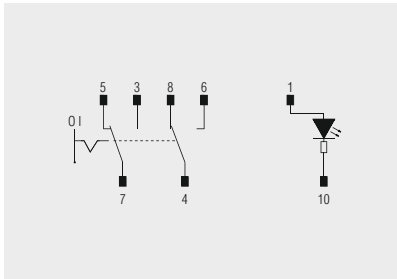
Circuit symbol: 3.01



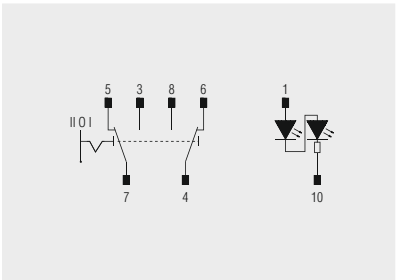
Circuit symbol: 3.02



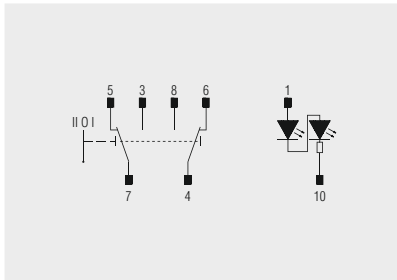
Circuit symbol: 3.03



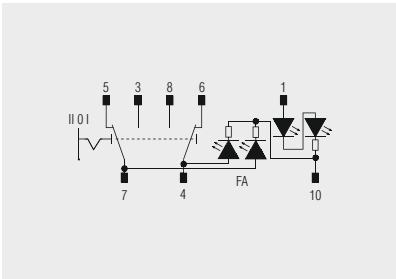
Circuit symbol: 3.09



Circuit symbol: 3.31



Circuit symbol: 3.32



Circuit symbol: 3.33

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 0344 - THREE-POLE ROCKER SWITCHES

TO 16 (6) A 400 V AC

PRODUCT FEATURES

- ◆ Robust and powerful rocker switch
- ◆ Dust protected
- ◆ Approval for 400 V

ON REQUEST

- ◆ Other terminal variants

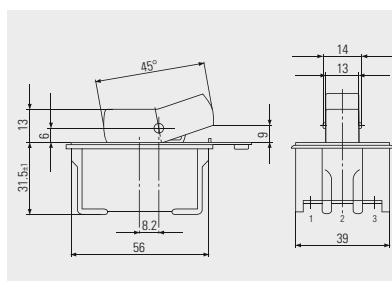
Material	actuator housing terminals	PA Duroplast / chromated galvanized steel chromated
Approval marks		



three-pole	Actuator color / printing	Housing color	16 (6) A 400 V AC 5E4	25 A 400 V AC	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
ON / OFF switch (TPST)										
0344.0102			●	●		M4	≥ 3	Ag		
0344.0201			●	●		M4	≥ 3	Ag		



Basic type 0344



 Screw terminal M4

PUSHBUTTON SWITCHES

ROCKER SWITCHES		ROCKER SWITCHES
PUSHBUTTON SWITCHES		PUSHBUTTON SWITCHES
TOGGLE SWITCHES		TOGGLE SWITCHES
SLIDE SWITCHES		SLIDE SWITCHES
ROTARY SWITCHES		ROTARY SWITCHES
FOOT SWITCHES		FOOT SWITCHES
TACT AND KEY SWITCHES		TACT AND KEY SWITCHES
SNAP-ACTION SWITCHES		SNAP-ACTION SWITCHES
MICRO-SIGNAL SWITCHES		MICRO-SIGNAL SWITCHES
SENSORS		SENSORS

PUSHBUTTON SWITCHES

SERIES 1680

Single and double-pole pushbutton switches

to 16 (4) A / 12 (12) A 250 V AC



PAGE
86 - 91

SERIES 1683

Single and double-pole pushbutton switches

to 16 A 250 V AC

Appliance cut-out: 19.2 x 12.9 mm



PAGE
92 - 95

SERIES 1691

Smallest single-pole pushbutton switches

for low voltages



PAGE
96

SERIES 1247

Double-pole pushbutton switches

to 7 A 250 V AC



PAGE
97 - 98

SERIES 5000

Round pushbutton switches
for at least 200 000 mechanical
switching cycles

Appliance cut-out: Ø 16,0 mm



PAGE
99 - 100

SERIES 1846

Single-pole pushbutton switches
to 2 (1) A 250 V AC

Appliance cut-out: 19.2 x 12.9 mm



PAGE
101 - 102

SERIES 1840

Single-pole pushbutton switches
to 6 (4) A 250 V AC

Appliance cut-out: Ø 12,0 mm



PAGE
103 - 106

PUSHBUTTON SWITCHES

SERIES 1660

Single and double-pole pushbutton switches / lamps

to 16 (4) A 250 V AC

Appliance cut-out: 30.0 x 22.2 mm



PAGE
107 - 110

SERIES 1670

Single and double-pole pushbutton switches / lamps

to 16 (4) A 250 V AC

Appliance cut-out: 30.0 x 22.2 mm



PAGE
111 - 114

Further information under

WWW.MARQUARDT-SWITCHES.COM

SERIES 1680 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A / 12 (12) A 250 V AC



PRODUCT FEATURES

- ◆ Million times proven double lifting contact system with at least 100 000 mechanical switching cycles
- ◆ High electrical rating up to 16 A
- ◆ High mechanical load capacity up to 750 N (for foot actuation)
- ◆ Great variety
- ◆ Variable housing and pushbutton form with holders
- ◆ With pole separating wall (basic type 1689)

ON REQUEST

- ◆ Special plastics
- ◆ Other terminal variants
- ◆ Customized actuators and housing contours
- ◆ Cable assembly
- ◆ Behind PCB mountable variants

Mechanical life endurance	10E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +100 °C ... +125 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 (actuator: V-0, socket: V-1, housing: V-2) UL 94 V-0 (product-dependent)
Glow wire test temperature	850 °C
Material	actuator: PBTP / PA Latamid / PA (product-dependent) housing: PA / PA glass fiber-reinforced / PA C3U / PA Latamid glass fiber-reinforced (product-dependent) terminals: silver plated / tinned / copper bare (product-dependent)
Plug force of the terminals	≤ 80 N
Approval marks	 /  /  /  (product-dependent)
Suitable for appliances of protection class II	



SERIES 1680 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A / 12 (12) A 250 V AC

 single-pole	16 (4) A 250 V AC 1E4	12 (12) A 250 V AC 5E4	12 (12) A 250 V AC 1E4	12 (8) A 250 V AC 1E4	10 (8) A 250 V AC 5E4	16 A 125 - 250 V AC	12 A 125 - 250 V AC 1/2 HP	5 A 125 V AC L	Terminal type	Terminal description	Contact distance in mm	Contact material	Operating force in N	Free position (FP) max. in mm	Operating position (OP) in mm	Permissible total travel position (TP) in mm	EN 60335 cap. 30 conform "G"	Miscellaneous	Actuator description	Stock version
	ON / OFF switch (SPST)																			
	1681.2102		●				●			vertical	≈ 3	Ag	7.0 ±2.5	26.5	23.8	22.2	●	resting pin		
	1681.3104		●				●			4.8 horizontal	≈ 3	Ag	7.0 ±2.5	26.5	23.8	22.2	●			
	1681.4403		●				●			horizontal	≈ 3	Ag	7.0 ±2.5	24	21.3	19.7	●	resting pin		
1681.4431		●			●	●			5.3 long horizontal	≈ 3	Ag	7.0 ±2.5	24	21.3	19.8		flange on the end faces			
1681.1101				●	●	●			4.8 vertical	≈ 3	Ag	7.0 ±2.5	26.5	23.8	22.2				●	
1681.1702				●	●	●			4.8 vertical	≈ 3	Ag	7.0 ±2.5	24	21.3	19.7	●				
1681.3101				●	●	●			4.8 horizontal	≈ 3	Ag	7.0 ±2.5	26.5	23.8	22.2					
1681.3701				●	●	●			4.8 horizontal	≈ 3	Ag	7.0 ±2.5	24	21.3	19.7					
1681.4402				●	●	●			horizontal	≈ 3	Ag	7.0 ±2.5	24	21.3	19.7		rest pin		●	
1681.4701				●	●	●			horizontal	≈ 3	Ag	7.0 ±2.5	24	21.3	19.7		resting pin			
1681.5701										≈ 3	Ag	7.0 ±2.5	24	21.3	19.7					
Normally closed contact (SPNC)																				
1681.9408			●		●				horizontal	≈ 3	Ag	6.5 ±1.5	26.85	29.4	22.8		resting pin			
Normally open contact (SPNO)																				
1681.1202		●				●			4.8 vertical	≈ 3	Ag	7.0 ±2.5	26.5	23.8	22.2	●				
1681.1304		●				●			4.8 vertical	≈ 3	Ag	7.0 ±2.5	24	≤ 21.3	19.8	●				
1681.1354				●	●	●			4.8 vertical	≈ 3	Au	7.0 ±2.5	24	≤ 21.3	19.7	●	special housing contour			
1681.3501				●	●	●			4.8 horizontal	≈ 3	Ag	7.0 ±2.5	24	21.3	19.7					

ROCKER SWITCHES

DISCUSSION

SERIES 1680 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A / 12 (12) A 250 V AC

 double-pole	16 (4) A 250 V AC 1E4	12 (12) A 250 V AC 5E4	12 (12) A 250 V AC 1E4	12 (8) A 250 V AC 1E4	10 (8) A 250 V AC 5E4	16 A 125 - 250 V AC	12 A 125 - 250 V AC 1/2 HP	5 A 125 V AC L	Terminal type	Terminal description	Contact distance in mm	Contact material	Operating force in N	Free position (FP) max. in mm	Operating position (OP) in mm	Permissible total travel position (TP) in mm	EN 60335 cap. 30 conform "G"	Miscellaneous	Actuator description	Stock version
	ON / OFF switch (DPST)																			
1682.7704	●					●				6.3 vertical	≥ 3	Ag	9.0 ±3	24	21.3	19.7	●			
1689.1302	●			●	●		●			4.8 vertical	≥ 3	Ag	9.0 ±3	24	≤ 20.95	19.7	●			
1689.3803	●		●		●		●			4.8 horizontal	≥ 3	Ag	9.0 ±3	24	≤ 20.95	19.7	●	special housing contour		
1682.1101				●	●		●			4.8 vertical	≥ 3	Ag	9.0 ±3	26.5	23.8	22.2				●
1682.1702				●	●		●			4.8 vertical	≥ 3	Ag	9.0 ±3	24	21.3	19.7	●			
1682.1802				●	●		●			4.8 vertical	≥ 3	Ag	9.0 ±3	24	21.3	19.7		special housing contour		
1682.2701				●	●		●			vertical	≥ 3	Ag	9.0 ±3	24	21.3	19.7				
1682.3101				●	●		●			4.8 horizontal	≥ 3	Ag	9.0 ±3	26.5	23.8	22.2				●
1682.3702				●	●		●			4.8 horizontal	≥ 3	Ag	9.0 ±3	26.5	23.8	22.2	●			
1682.6101				●	●		●			180° angled	≥ 3	Ag	9.0 ±3	24	21.3	19.8	●			
Normally open contact (DPNO)																				
1689.4202	●			●	●		●			horizontal	≥ 3	Ag	9.0 ±3	24	≤ 20.95	19.7	●	rest pin		
1682.1201				●	●		●			4.8 vertical	≥ 3	Ag	9.0 ±3	26.5	23.8	22.2				
1682.1902				●	●		●	●		4.8 vertical	≥ 3	Ag	9.0 ±3	28.8	26.1	24.5		with cap 205.021.011		
1682.3201				●	●		●			4.8 horizontal	≥ 3	Ag	9.0 ±3	26.5	23.8	22.2				

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

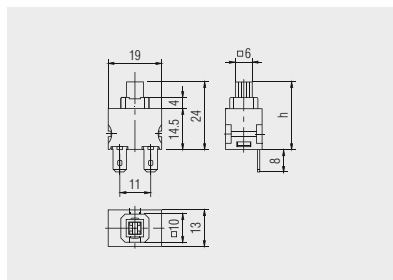
SENSORS

SERIES 1680 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

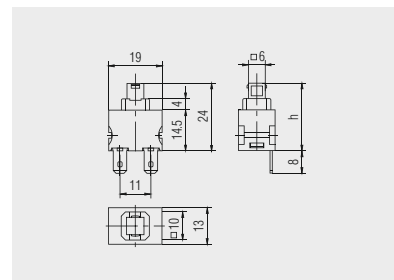
TO 16 (4) A / 12 (12) A 250 V AC



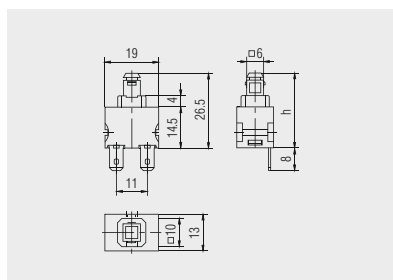
Basic type 1681
single-pole



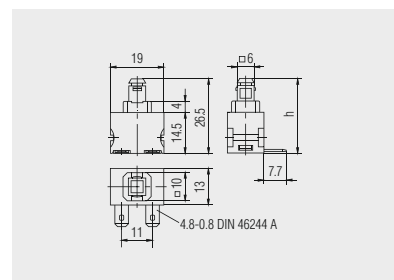
Quick-connect terminal 4.8 x 0.8
vertical (actuator with holder for
different caps)



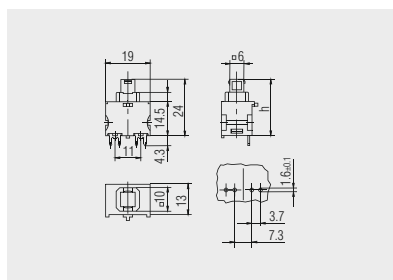
Quick-connect terminal 4.8 x 0.8
vertical (shortened actuator)



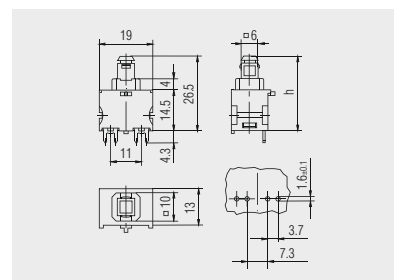
Quick-connect terminal 4.8 x 0.8
vertical (standard actuator)



Quick-connect terminal 4.8 x 0.8
horizontal (standard actuator)



PCB terminal vertical



PCB terminal vertical
(standard actuator)

Further information under

WWW.MARQUARDT-SWITCHES.COM

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1680 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A / 12 (12) A 250 V AC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

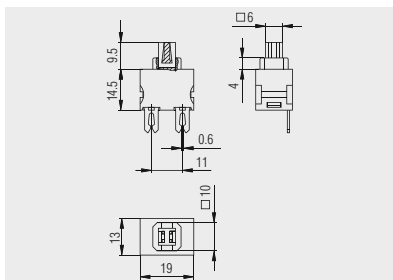
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

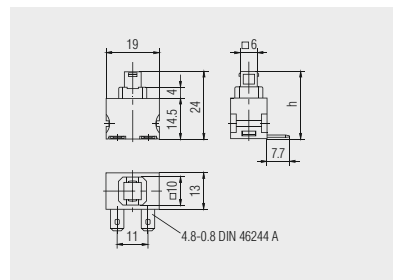
SENSORS



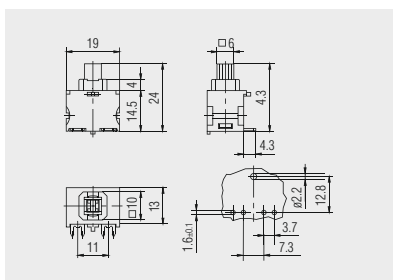
Basic type 1681
single-pole



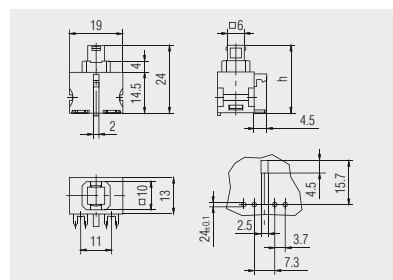
⌋ Cut terminal
(actuator with holder for different caps)



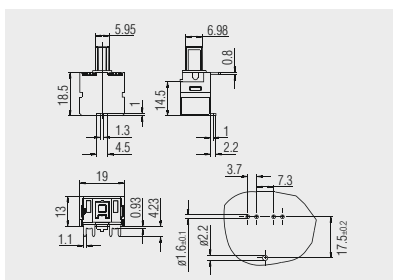
⌋ Quick-connect terminal 4.8 x 0.8
horizontal (shortened actuator)



⌋ PCB terminal horizontal
(actuator with holder for different caps)



⌋ PCB terminal horizontal
(shortened actuator)



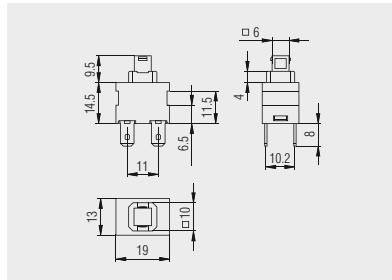
⌋ PCB terminal horizontal 1681.9408
normally closed contact SPNC
(actuator with holder for different caps)

SERIES 1680 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

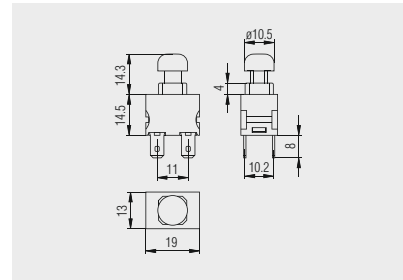
TO 16 (4) A / 12 (12) A 250 V AC



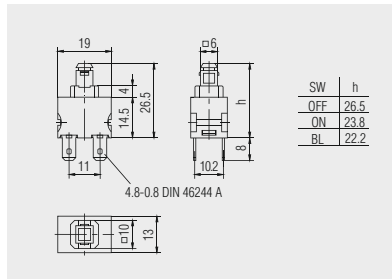
Basic types 1682 and 1689
double-pole



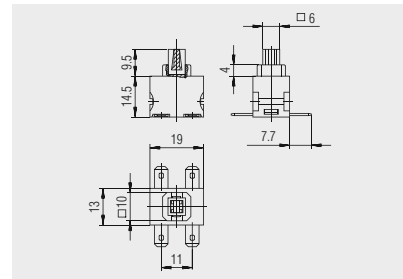
Quick-connect terminal 4.8 x 0.8
vertical (shortened actuator)



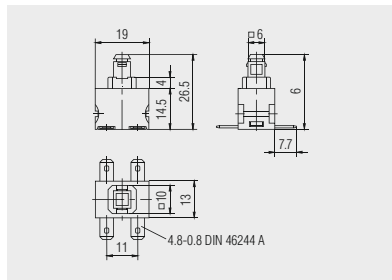
Quick-connect terminal 4.8 x 0.8
vertical (with mounted cap)



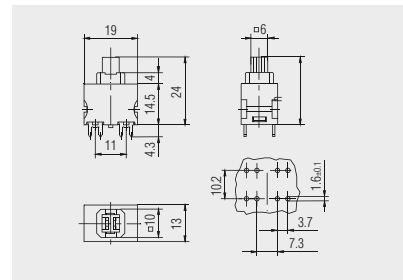
Quick-connect terminal 4.8 x 0.8
vertical (standard actuator)



Quick-connect terminal 4.8 x 0.8
horizontal (actuator with holder for
different caps)



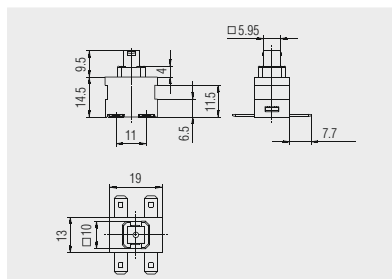
Quick-connect terminal 4.8 x 0.8
horizontal (standard actuator)



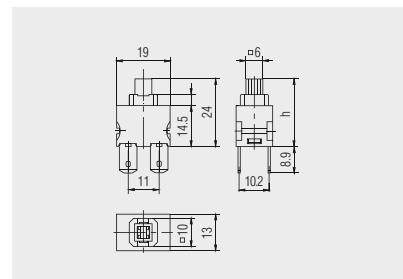
PCB terminal vertical
(actuator with holder for different caps)



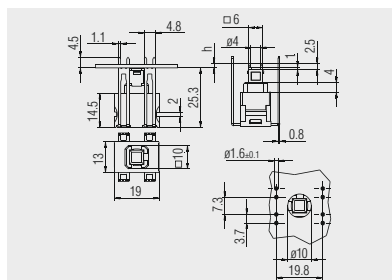
Basic types 1682 and 1689
double-pole



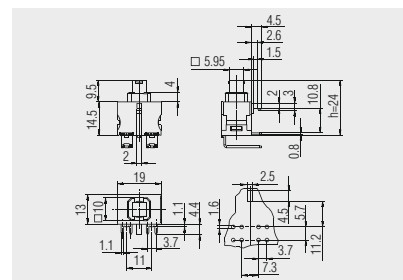
Quick-connect terminal 4.8 x 0.8
horizontal
(shortened actuator without cut-out)



Quick-connect terminal 6.3 vertical
(actuator with holder for different caps)



PCB terminal 180° angled
(shortened actuator)



PCB terminal horizontal
(shortened actuator without cut-out)

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1683 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 A 250 V AC



PRODUCT FEATURES

- ◆ Million times proven, double lifting contact system
- ◆ High electrical rating up to 16 A
- ◆ High rating with 100 000 mechanical switching cycles
- ◆ Illuminated and non-illuminated variants
- ◆ Variant with dust and water protection IP 65/IP 67

ON REQUEST

- ◆ Other colors
- ◆ Printing
- ◆ Other lamp variants
- ◆ Snap-on customized actuators
- ◆ Other terminal variants (e.g. 6.3 x 0.8 mm)
- ◆ Cable assembly

Mechanical life endurance	10E4
Operating force	ca. 12 N ca. 8 N (basic type 1683)
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40 (IP 65/IP 67 product-dependent on request)
Ambient temperature	terminal side -20 °C ... +100 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 (actuator: V-0, socket: V-1, housing: V-2)
Glow wire test temperature	850 °C
Material	actuator: PC housing: PA / PA glasfaserverstärkt terminals: silver plated / copper bare (product-dependent)
Plug force of the terminals	≤ 80 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



SERIES 1683 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 A 250 V AC

 single-pole	Lighting voltage in V	Actuator color / printing	16 (4) A 250 V AC 1E4	12 (8) A 250 V AC 1E4	10 (8) A 250 V AC 5E4	12 A 125 - 250 V AC 1/2 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Free position (FP) max. in mm	Operating position (OP) in mm	Permissible total travel position (TP) in mm	Miscellaneous	Actuator description	Stock version
ON / OFF switch (SPST)																
1686.1101	230		●	●	●	●		4.8	≈ 3	Ag	23.9	20.85	19.7			
1686.8104	230		●	●	●	●		4.8	≈ 3	Ag	23.9	20.85	19.7	IP 65/IP 67		
1683.1101			●	●	●	●		4.8	≈ 3	Ag	23.9	20.85	19.7			
1683.3101			●	●	●	●		4.8 horizontal	≈ 3	Ag	23.5	20.45	19.3			
1683.8101			●	●	●	●		4.8	≈ 3	Ag	23.9	20.85	19.7	IP 65/IP 67		
Normally open contact (SPNO)																
1686.6155	24							4.8 / 2 x 2.8	≈ 3	Au	23.9	20.85	19.7	lamp terminal (2.8) external		
1683.1201			●	●	●	●		4.8	≈ 3	Ag	23.9	20.85	19.7			●
1683.1802			●	●	●	●		4.8	≈ 3	Ag	23.5	20.45	19.3			
1683.3601			●	●	●	●		4.8 horizontal	≈ 3	Ag	23.5	20.45	19.3	snap-on actuator		
 double-pole	Lighting voltage in V	Actuator color / printing	16 (4) A 250 V AC 1E4	12 (8) A 250 V AC 1E4	10 (8) A 250 V AC 5E4	12 A 125 - 250 V AC 1/2 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Free position (FP) max. in mm	Operating position (OP) in mm	Permissible total travel position (TP) in mm	Miscellaneous	Actuator description	Stock version
ON / OFF switch (DPST)																
1687.1104	230		●	●	●	●		4.8	≈ 3	Ag	23.9	20.85	19.7			●
1684.1101			●	●	●	●		4.8	≈ 3	Ag	23.9	20.85	19.7			
1684.1104			●	●	●	●		4.8	≈ 3	Ag	23.9	20.85	19.7			
1684.1701			●	●	●	●		4.8	≈ 3	Ag	23.5	20.45	19.3	snap-on actuator		
1684.1801			●	●	●	●		4.8	≈ 3	Ag	23.5	20.45	19.3			
1684.2701			●	●	●	●		vertical	≈ 3	Ag	23.5	20.45	19.3	snap-on actuator		
Normally open contact (DPNO)																
1684.1201			●	●	●	●		4.8	≈ 3	Ag	23.9	20.85	19.7			

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1683 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 A 250 V AC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

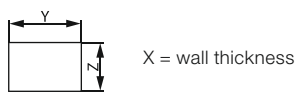
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

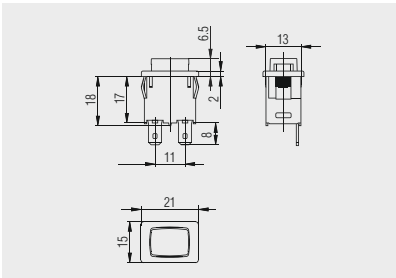
SENSORS



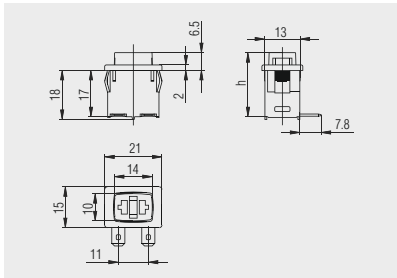
Basic type 1683
single-pole
non-illuminated



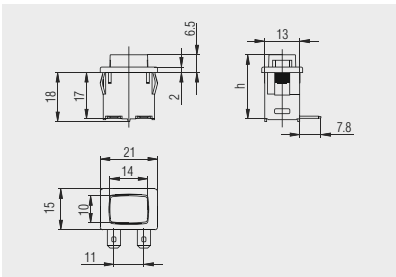
X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	12.9 ^{+0.1}



Quick-connect terminal 4.8 x 0.8



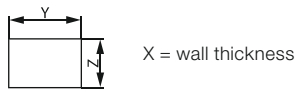
Quick-connect terminal 4.8 x 0.8
horizontal



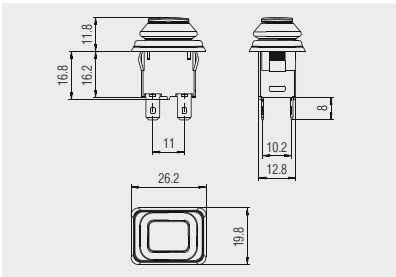
Quick-connect terminal 4.8 x 0.8
horizontal



Basic types 1683, 1684, 1686
and 1687
single and double-pole
illuminated / non-illuminated



X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	12.9 ^{+0.1}



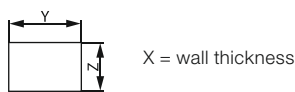
Quick-connect terminal 4.8 x 0.8
1686.8101 and 1683.8104
with bellows for IP 65/IP 67

SERIES 1683 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

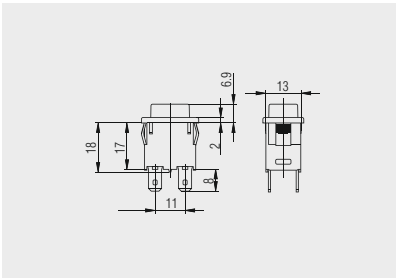
TO 16 A 250 V AC



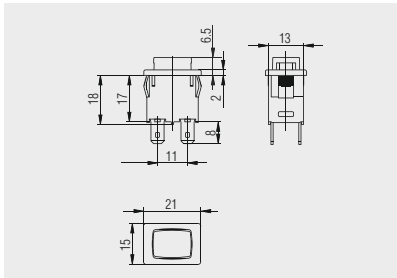
Basic types 1684, 1686 and 1687
single and double-pole
illuminated / non-illuminated



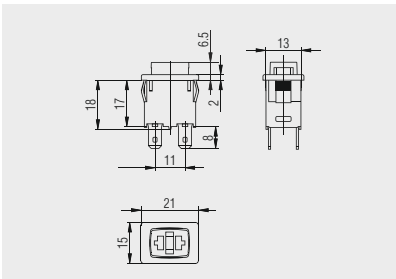
X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	12.9 ^{+0.1}



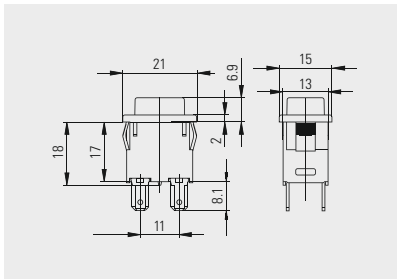
Quick-connect terminal 4.8 x 0.8
1684.1101, 1684.1104, 1684.1201,
basic types 1687 and 1686



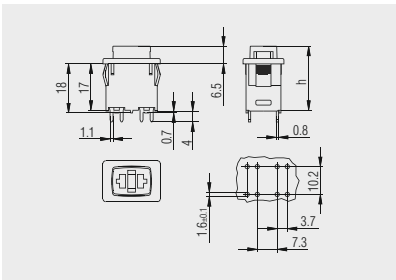
Quick-connect terminal 4.8 x 0.8
basic type 1684



Quick-connect terminal 4.8 x 0.8
basic type 1684



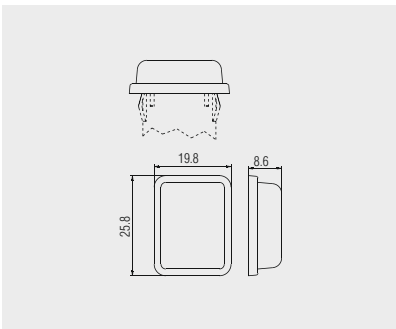
Quick-connect terminal 4.8 x 0.8 /
2 x 2.8 x 0.8 with external lamp
terminal
1686.6155



PCB terminal vertical
1684.2701



Protection cap
203.701.011



Transparent PVC - protection cap for
dust and water protection from the
actuation side

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1691 - SMALLEST SINGLE-POLE PUSHBUTTON SWITCHES

FOR LOW VOLTAGES

PRODUCT FEATURES

- ◆ Small compact pushbutton switch for indirect actuation
- ◆ High rating with 100 000 mechanical cycles
- ◆ Pushbutton snapping on customized actuators

ON REQUEST

- ◆ For mains applications
- ◆ Customized actuators
- ◆ Different operating force

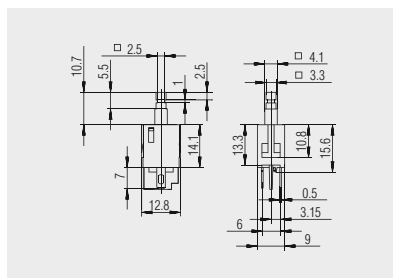
Mechanical life endurance	10E4
Operating force	6.0 ±1.0 N
Ambient temperature	terminal side -25 °C ... +70 °C
Material	actuator housing terminals
	PA PA silver plated



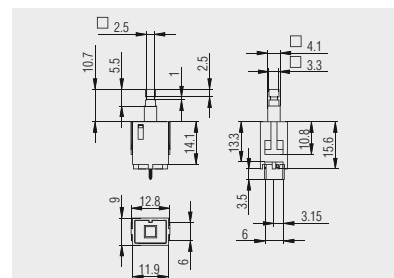
	Actuator color / printing	Housing color	5 mA 30 V	Terminal type	Terminal description	Contact distance in mm	Contact material	Free position (FP) max. in mm	Operating position (OP) in mm	Permissible total travel position (TP) in mm	Miscellaneous	Stock version
ON / OFF switch (SPST)												
1691.2101	■	■	●	⌋		< 3	Au	26.3	≤ 23.9	22.5		
Normally open contact (SPNO)												
1691.3201	■	■	●	⌋	2.8 x 0.5	< 3	Au	24.8	≤ 22.4	21		



Basic type 1691



Quick-connect terminal
2.8 x 0.5



PCB terminal

SERIES 1247 - DOUBLE-POLE PUSHBUTTON SWITCHES

TO 7 (7) A 250 V AC



PRODUCT FEATURES

- ◆ Powerful single and double-pole pushbutton switch up to 10 A 125 V AC
- ◆ Optionally with fastening strip and interference suppression capacitor
- ◆ Support point terminal (single-pole normally open contact)
- ◆ Dust-protected

ON REQUEST

- ◆ Other terminal types

Mechanical life endurance	1E5	
Actuator	IP 40	
Material	actuator housing	PA glass fiber-reinforced Desmopan / PA glass fiber-reinforced
Approval marks	 /  / 	
Suitable for appliances of protection class II		



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

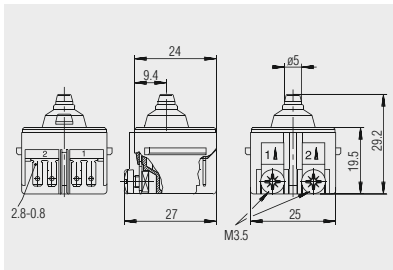
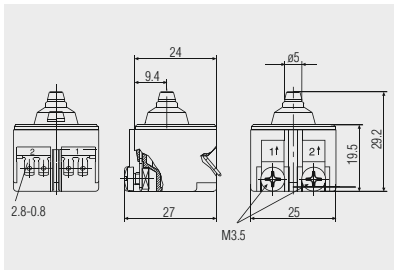
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1247 - DOUBLE-POLE PUSHBUTTON SWITCHES

TO 7 (7) A 250 V AC

	7 (7) A 250 V AC 5E4				Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
10 A 125 V AC										
5 A 250 V AC										
Normally open contact (SPNO)										
1247.0102	●	●	●			2 x M3.5 2 x 2.8 angled 2 x 2.8 angled	≈ 3	Ag	without strip	
1247.0301	●	●	●			2 x M3.5 2 x 2.8 x 0.8 2 x 2.8 x 0.8	≈ 3	Ag	with strip	
	7 (7) A 250 V AC 5E4				Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
10 A 125 V AC										
5 A 250 V AC										
Normally open contact (DPNO)										
1247.2102	●	●	●			2 x M3.5 2 x 2.8 angled 2 x 2.8 angled	≈ 3	Ag	without strip without support terminal	
1247.2301	●	●	●			2 x M3.5 2 x 2.8 x 0.8 2 x 2.8 x 0.8	≈ 3	Ag	with strip without support terminal	
	  Screw terminal mains side, Quick-connect terminal motor side, Quick-connect terminal additional connection with strip 1247.0301 and 1247.2301									
	  Screw terminal mains side, Quick-connect terminal motor side, Quick-connect terminal additional connection without strip 1247.2102 and 1247.0102									

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 5000 - ROUND PUSHBUTTON SWITCHES

FOR AT LEAST 200 000 MECHANICAL SWITCHING CYCLES



PRODUCT FEATURES

- ◆ Attractive, round pushbutton switch
- ◆ Efficient contact system at least 200 000 mechanical switching cycles
- ◆ Variants with sealing cap for IP 54 dust and water protection
- ◆ Appliance cut-out with diameter 16 mm, alternatively with fixing pin

ON REQUEST

- ◆ Other colors
- ◆ Actuator printing
- ◆ Snap-on for greater wall thickness
- ◆ Cable assembly

Mechanical life endurance	20E4
Proof tracking	250 PTI
Protection type	IP 40 IP 54 (in variants with sealing cap)
Ambient temperature	terminal side -20 °C ... +85 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator PA glass fiber-reinforced housing PA glass fiber-reinforced terminals silver plated
Plug force of the terminals	≤ 64 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

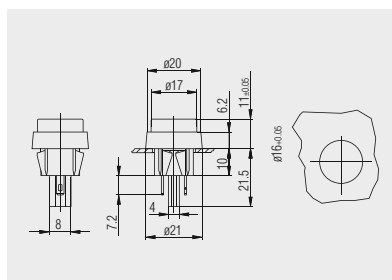
SERIES 5000 - ROUND PUSHBUTTON SWITCHES

FOR AT LEAST 200 000 MECHANICAL SWITCHING CYCLES

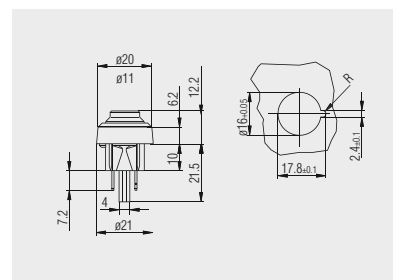
	Actuator color / printing	Housing color	4 (2) A 250 V AC 5E4	4 A 125 V AC 1/10 HP	2 A 250 V AC 1/10 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Pretravel max. in mm	Total travel / stroke in mm	Miscellaneous	Stock version
Normally open contact (SPNO)													
5000.0101			●	●	●		2.8	≈ 3	Ag	2.0 ± 0.4	4.0		●
5000.0103			●	●	●		2.8	≈ 3	Ag	2.0 ± 0.4	4.0		●
5000.0104			●	●	●		2.8	≈ 3	Ag	2.0 ± 0.4	4.0		●
5000.0211			●	●	●		2.8	≈ 3	Ag	2.0 ± 0.4	4.0	fixing pin	●
5000.0212			●	●	●		2.8	≈ 3	Ag	2.0 ± 0.4	4.0	fixing pin	
5000.0501			●	●	●		2.8	≈ 3	Ag	2.0 ± 0.4	4.0	fixing pin with IP 54 sealing cap	



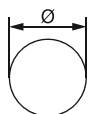
Basic type 5000



Quick-connect terminal 2.8 x 0.8

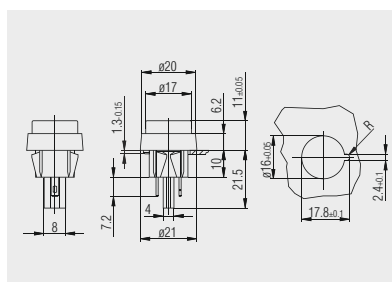


Quick-connect terminal 2.8 x 0.8
(with fixing pin and IP 54 sealing cap)
5000.0501



X = wall thickness

X	Ø
1.4 ... 1-7	16.0 +0.05



Quick-connect terminal 2.8 x 0.8
(with fixing pin)
5000.0211 and 5000.0212

SERIES 1846 - SINGLE-POLE PUSHBUTTON SWITCHES

TO 2 (1) A 250 V AC



PRODUCT FEATURES

- ◆ Small, compact pushbutton switch
- ◆ Long life endurance with 500 000 mechanical switching cycles
- ◆ Special design for dust and water protection

ON REQUEST

- ◆ Other colors
- ◆ With printing
- ◆ Other terminal variants
- ◆ Cable assembly

Mechanical life endurance	50E4
Operating force	approx. 1 N ≤ 4.0 N (1846.0204)
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +85 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator PA housing PA terminals silver plated / tinned
Bearing terminal	silver plated tinned
Plug force of the terminals	≤ 80 N
Approval marks	
Suitable for appliances of protection class II	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

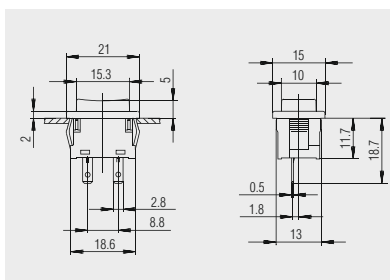
SERIES 1846 - SINGLE-POLE PUSHBUTTON SWITCHES

TO 2 (1) A 250 V AC

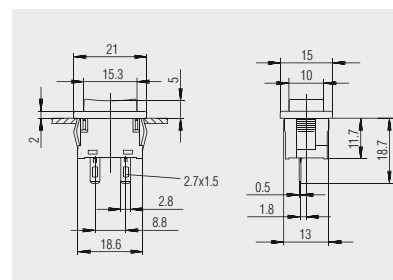
 single-pole	Actuator color / printing	Housing color	2 (1) A 250 V AC 5E4	30 mA 12 V DC 5E4	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
Normally open contact (SPNO)										
1846.0201			●				< 3	Ag		●
1846.2201			●				< 3	Ag		
1846.3201			●			2.8 x 0.5	< 3	Ag		●
1846.3204			●			2.8 x 0.5	< 3	Ag		
1846.2251				●			< 3	Au	electrical life endurance: 500 000	
1846.0204							< 3	Ag	switch actuating force 4 N	



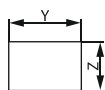
Basic type 1846



Quick-connect terminal
2.8 x 0.5

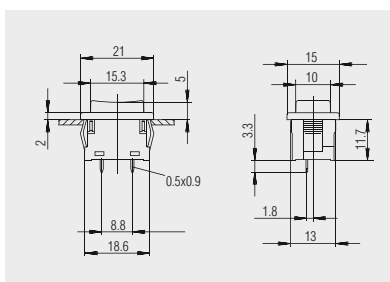


Solder terminal



X = wall thickness

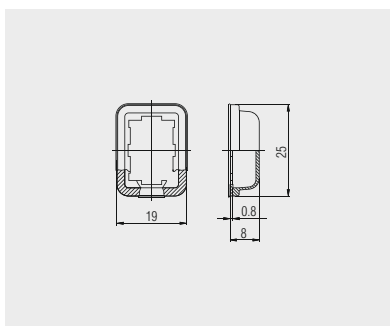
X	Y	Z
0.75 ... 1.25	19.2 -0.1	12.9 +0.1
1.25 ... 2	19.4 -0.1	12.9 +0.1
2 ... 3	19.8 -0.1	12.9 +0.1



PCB terminal



Protection cap
203.089.011



Transparent PVC - protection cap.
Serves as dust and water protection
of the actuation side.

SERIES 1840 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 6 (4) A 250 V AC



PRODUCT FEATURES

- ◆ 100 million times proven switching principle with longer life endurance with 100 000 mechanical switching cycles
- ◆ Fastening by round nut M12
- ◆ Excellent actuating characteristic
- ◆ Variant for snapping on customized pushbuttons

ON REQUEST

- ◆ Higher power with 6 (6) A 250 V AC
- ◆ Other terminal types
- ◆ Cable assembly

Mechanical life endurance	10E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +100 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator PA housing PA glass fiber-reinforced / PA terminals silver plated
Plug force of the terminals	≤ 80 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1840 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 6 (4) A 250 V AC

 single-pole	Actuator color / printing	Housing color	6 (4) A 250 V AC 5E4	6 (2) A 250 V AC 5E4	6 A 250 V AC 1/2 HP	6 A 125 V AC 1/4 HP	6 A 125 - 250 V AC 1/8 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
ON / OFF switch (SPST)													
1841.1101			•		•	•			4.8	≥ 3	Ag		•
1841.6101			•		•	•			4.8	≥ 3	Ag	snap-on actuator caps see page 105	
Normally closed contact (SPNC)													
1841.1301				•			•		4.8	≥ 3	Ag		•
Normally open contact (SPNO)													
1841.1201				•			•		4.8	≥ 3	Ag		•
Changeover switch (SPDT)													
1843.1101			•		•	•			4.8	≥ 3	Ag		
Changeover switch (SPDT momentary)													
1843.1201				•			•		4.8	≥ 3	Ag		•
 double-pole	Actuator color / printing	Housing color	6 (4) A 250 V AC 5E4	6 (2) A 250 V AC 5E4	6 A 250 V AC 1/2 HP	6 A 125 V AC 1/4 HP	6 A 125 - 250 V AC 1/8 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
ON / OFF switch (DPST)													
1842.1101			•		•	•			4.8	≥ 3	Ag		
1842.6101			•		•	•			4.8	≥ 3	Ag	snap-on actuator caps see page 105	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

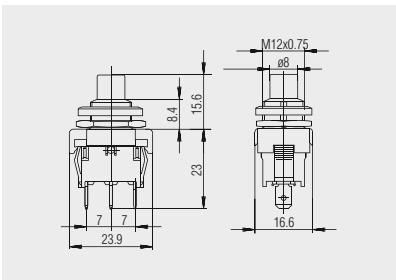
SENSORS

SERIES 1840 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 6 (4) A 250 V AC



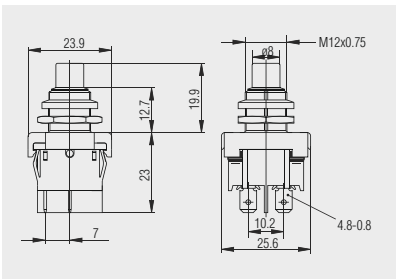
Basic types 1841 and 1843
single-pole



Quick-connect terminal
4.8 x 0.8



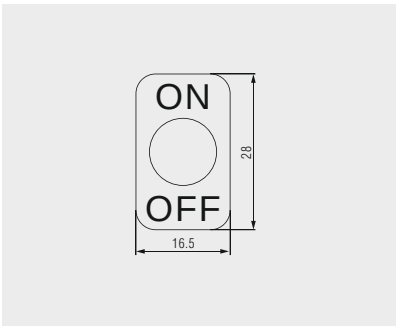
Basic type 1842
double-pole



Quick-connect terminal
4.8 x 0.8



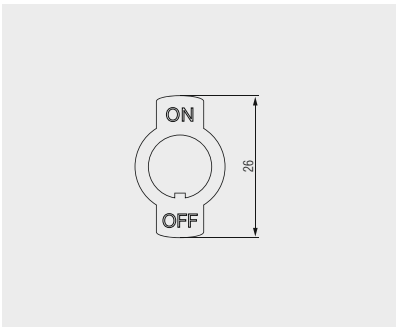
Identification plate
240.001.011



Identification plate of aluminum for plugging on with black inscription "ON" and "OFF"



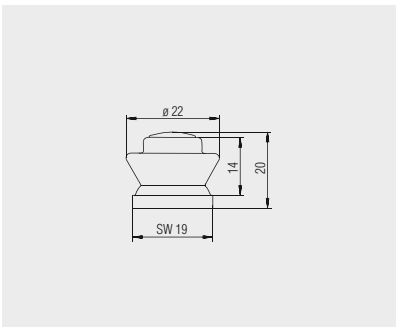
Identification plate
240.002.011



Identification plate of CuZn nickel-plated for plugging on as well as with twist protection and stamped inscription "ON" and "OFF"



Protection cap
343.002.023



Neopren® - cap for pushbutton (M12 x 0.75) basic type 1840 as dust and water protection. Pushbutton plate on top of cap is CuZn nickel plated.

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1840 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 6 (4) A 250 V AC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

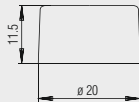
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS



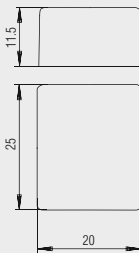
Pushbutton
205.008.011



Pushbutton of PA black, with diameter 20 mm for assembly by customer on 1841.6101 and 1842.6101



Pushbutton
203.106.011



Pushbutton of PA black, rectangular 20 x 25 mm for assembly by customer on 1841.6101 and 1842.6101

SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC



PRODUCT FEATURES

- ◆ Illuminated and non-illuminated pushbutton switches
- ◆ Proven jump contact switching system (double interrupting)
- ◆ Opening and closing speed independent of the actuating speed
- ◆ Product-dependent with external lamp terminal

ON REQUEST

- ◆ Other colors
- ◆ Other printing variants
- ◆ Other terminal types
- ◆ Other lamp variants
- ◆ Cable assembly

Mechanical life endurance	5E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +85 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator: PC (product-dependent) / PA housing: PA / PA glass fiber-reinforced (product-dependent) terminals: Cu
Plug force of the terminals	≤ 80 N
Approval marks	CE / UL (product-dependent) / ENEC / CCC
Suitable for appliances of protection class II	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC

 single-pole	Lighting voltage in V	Actuator color / printing	Housing color	16 (4) A 250 V AC 1E4	16 (4) A 250 V AC	12 (4) A 250 V AC 1E4	12 A 250 V AC 1/2 HP	12 A 125 V AC 1/6 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
Normally open contact (SPNO)														
1665.3102	230			●						6.3 / 2 x 4.8	≥ 3	Ag	external lamp terminal	
ON / OFF switch (SPST)														
1662.0201				●						6.3	≈ 3	Ag		
Normally open contact (SPNO)														
1662.0101				●						6.3	≈ 3	Ag		●
Changeover switch (SPDT momentary)														
1664.0101						●				4.8	< 3	Ag		
 double-pole	Lighting voltage in V	Actuator color / printing	Housing color	16 (4) A 250 V AC 1E4	16 (4) A 250 V AC	12 (4) A 250 V AC 1E4	12 A 250 V AC 1/2 HP	12 A 125 V AC 1/6 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
ON / OFF switch (DPST)														
1660.0201	230			●						6.3	≈ 3	Ag		●
1660.0202	230			●						6.3	≈ 3	Ag		●
1660.3202	230			●						6.3 / 2 x 4.8	≈ 3	Ag	external lamp terminal	
1660.0222	110						●			6.3	≈ 3	Ag		
1661.0220					●		●	●		6.3	≈ 3	Ag		
Normally open contact (DPNO)														
1661.0101				●						6.3	≈ 3	Ag		●
Changeover switch (DPDT)														
1663.0201						●				4.8	< 3	Ag		
Changeover switch (DPDT momentary)														
1663.0101						●				4.8	< 3	Ag		●

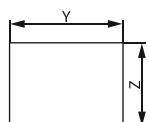
SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC

 Lamp	Lighting voltage in V	Actuator color / printing	Housing color	16 (4) A 250 V AC 1E4	16 (4) A 250 V AC	12 (4) A 250 V AC 1E4	12 A 250 V AC 1/2 HP	12 A 125 V AC 1/6 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
Lamp														
1667.0101	230									6.3				
1667.0102	230									6.3				
1667.0104	230									6.3				

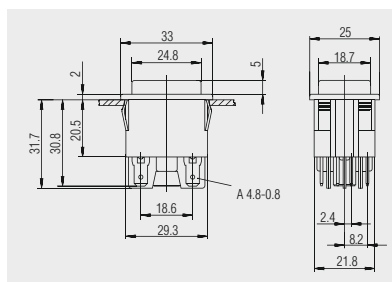


Basic types 1660, 1661 and 1663
double-pole
illuminated / non-illuminated

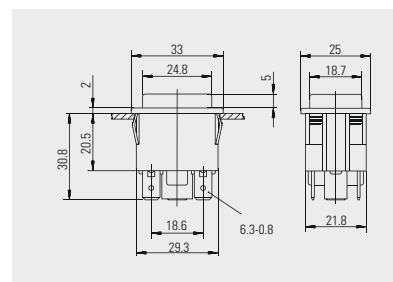


X = wall thickness

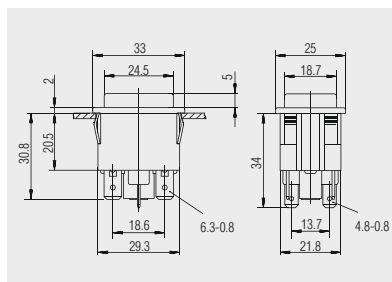
X	Y	Z
0.75 ... 1.0	30 ^{+0.1}	22.2 ^{+0.2}
1.0 ... 1.5	30.2 ^{+0.1}	22.2 ^{+0.2}
1.5 ... 3.0	30.4 ^{+0.1}	22.2 ^{+0.2}



Quick-connect terminal
4.8 x 0.8



Quick-connect terminal
6.3 x 0.8



Quick-connect terminal
6.3 x 0.8 / 2 x 4.8 x 0.8
with external lamp terminal

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

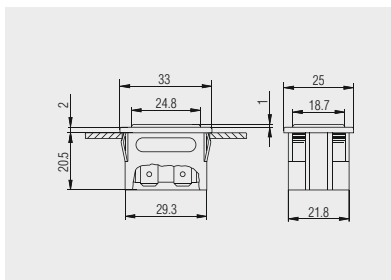
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

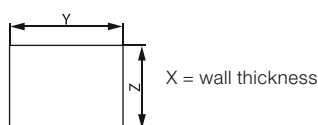
SENSORS



Basic type 1667
lamp



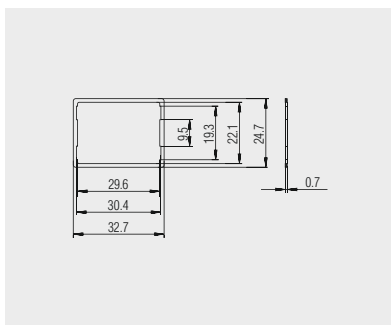
Quick-connect terminal
6.3 x 0.8



X	Y	Z
0.75 ... 1.0	30 +0.1	22.2 +0.2
1.0 ... 1.5	30.2 +0.1	22.2 +0.2
1.5 ... 3.0	30.4 +0.1	22.2 +0.2



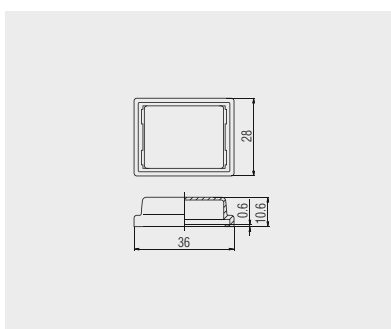
Gasket
340.040.011



Gasket of EPDM black for sealing
between switch and appliance for
increased dust and water protection.



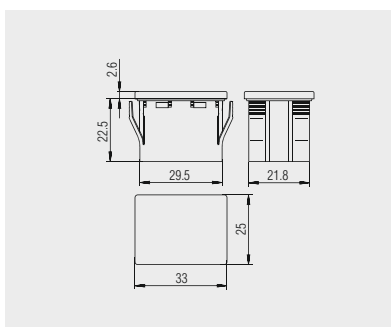
Protection cap
203.201.011



Transparent PVC - protection cap
for switches of the basic types 1660,
1662, 1663, 1664, 1665 and 1667.
Serves as dust and water protection
of the actuation side.



Dummy piece
203.028.013



Dummy piece for size of basic type
1667 of PA with housing and cover
in black and with mounted gasket
(340.040.011) for dust and water
protection.

SERIES 1670 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC



PRODUCT FEATURES

- ◆ Illuminated and non-illuminated pushbutton switch
- ◆ Internal gasket for IP 54
- ◆ Proven jump contact switching system (double interrupting)
- ◆ Opening and closing speed independent of the actuating speed
- ◆ Product-dependent with external lamp terminal

ON REQUEST

- ◆ Other colors
- ◆ Other printing variants
- ◆ Other terminal types
- ◆ Other lamp variants
- ◆ Cable assembly
- ◆ Approval mark UL

Mechanical life endurance	5E4 1E4
Operating force	approx. 8 N
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 54
Ambient temperature	terminal side -20 °C ... +85 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator housing terminals
	PC (product-dependent) / PA PA / PA glass fiber-reinforced (product-dependent) Cu
Plug force of the terminals	≤ 80 N
Approval marks	 / 
Suitable for appliances of protection class II	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1670 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC

 single-pole	Lighting voltage in V	Actuator color / printing	Housing color	16 (4) A 250 V AC 1E4	12 (4) A 250 V AC 1E4	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
Normally open contact (SPNO)											
1675.5315	230			●			6.3 / 2 x 4.8	≥ 3	Ag	external lamp terminal	
1672.5101				●			6.3	≥ 3	Ag		
Changeover switch (SPDT)											
1673.5501					●		4.8	< 3	Ag		
 double-pole	Lighting voltage in V	Actuator color / printing	Housing color	16 (4) A 250 V AC 1E4	12 (4) A 250 V AC 1E4	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
ON / OFF switch (DPST)											
1670.5201	230			●			6.3	≥ 3	Ag		
1670.5202	230			●			6.3	≥ 3	Ag		●
1670.5204	230			●			6.3	≥ 3	Ag		
1670.5203	115 - 230			●			6.3	≥ 3	Ag		
1671.5201				●			6.3	≥ 3	Ag		
1671.5203				●			6.3	≥ 3	Ag		
Normally open contact (DPNO)											
1671.5101				●			6.3	≥ 3	Ag		

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

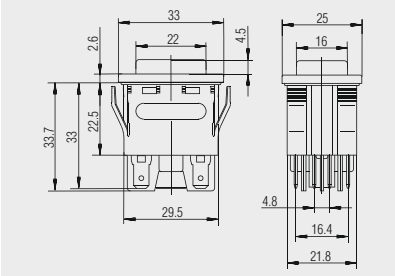
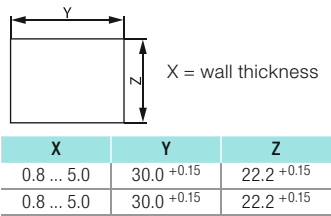
SERIES 1670 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC

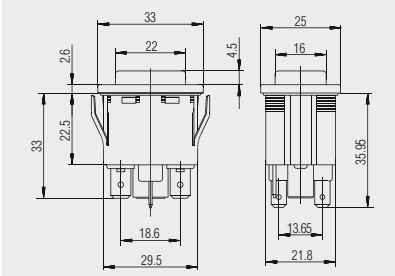
 Lamp	Lighting voltage in V	Actuator color / printing	Housing color	16 (4) A 250 V AC 1E4	12 (4) A 250 V AC 1E4	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
Lamp											
1677.5306	230						6.3				
1677.5308	115 - 230						6.3				



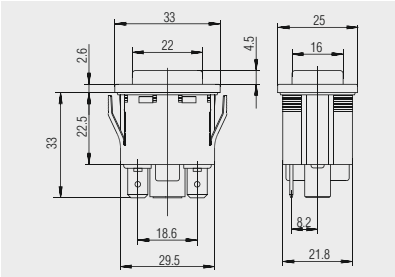
Basic types 1672, 1673 and 1675
single-pole
illuminated / non-illuminated



Quick-connect terminal 4.8 x 0.8
1673.5501



Quick-connect terminal
6.3 x 0.8 / 2 x 4.8 x 0.8
external lamp terminal
basic type 1675



Quick-connect terminal 6.3 x 0.8
basic type 1672

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1670 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

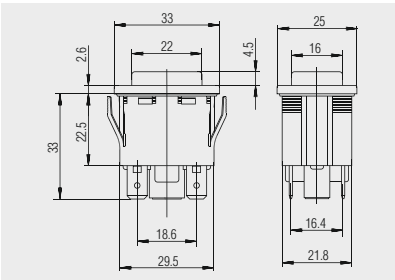
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

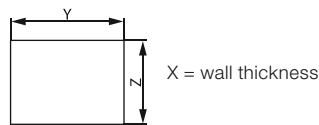
SENSORS



Basic types 1670 and 1671
double-pole
illuminated / non-illuminated



Quick-connect terminal 6.3 x 0.8

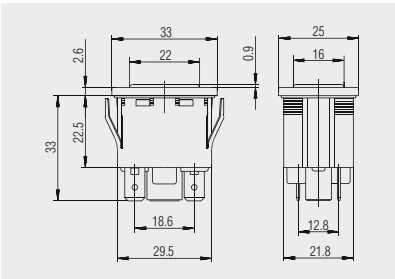


X = wall thickness

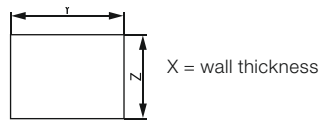
X	Y	Z
0.8 ... 5.0	30.0 +0.15	22.2 +0.15



Basic type 1677
lamp



Quick-connect terminal 6.3 x 0.8

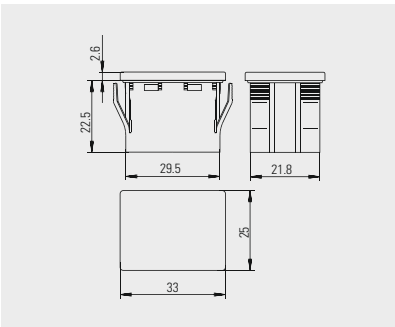


X = wall thickness

X	Y	Z
0.8 ... 5.0	30 +0.15	22.2 +0.15



Dummy piece
203.020.013



Dummy piece for size of basic type
1677 of PA with housing in black and
cover in blue

TOGGLE SWITCHES

ROCKER SWITCHES		ROCKER SWITCHES
PUSHBUTTON SWITCHES		PUSHBUTTON SWITCHES
TOGGLE SWITCHES		TOGGLE SWITCHES
SLIDE SWITCHES		SLIDE SWITCHES
ROTARY SWITCHES		ROTARY SWITCHES
FOOT SWITCHES		FOOT SWITCHES
BUTTON		TACT AND KEY SWITCHES
SNAP-ACTION SWITCHES		SNAP-ACTION SWITCHES
MICRO-SIGNAL SWITCHES		MICRO-SIGNAL SWITCHES
SENSORS		SENSORS

TOGGLE SWITCHES

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 0350

Three-pole toggle switches
to 10 (4) A 400 V AC



PAGE
117

SERIES 1810

Single and double-pole toggle
switches
to 10 (4) A 250 V AC

Appliance cut-out: 19.2 x 12.9 mm
19.2 x 21.9 mm



PAGE
118 - 120

SERIES 1820

Single and double-pole toggle
switches
to 6 (4) A 250 V AC

Appliance cut-out: Ø 12 mm bzw.



PAGE
121 - 124

SERIES 0100

Single-pole toggle switches
to 2 A 250 V AC

Appliance cut-out: Ø 12 mm



PAGE
125 - 126

Further information under

WWW.MARQUARDT-SWITCHES.COM

SERIES 0350 - THREE-POLE TOGGLE SWITCHES

TO 10 (4) A 400 V AC

PRODUCT FEATURES

- ◆ Robust and efficient rocket switch with 100 000 mechanical switching cycles
- ◆ With dust seal
- ◆ Approval for 400 V

ON REQUEST

- ◆ Other terminal types

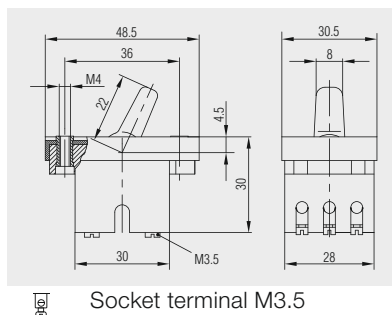
Mechanical life endurance		1E5
Material	actuator	Duroplast
	housing	Duroplast / PA glass fiber-reinforced
	terminals	chromated
Approval marks		
Suitable for appliances of protection class II		



three-pole	Actuator color / printing	Housing color	10 (4) A 400 V AC 5E4	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
ON / OFF switch (TPST)									
0350.0101			●		M3.5	≥ 3	Ag	lever with red dot	●
0350.2101			●		M3.5	≥ 3	Ag	3 auxiliary terminals lever with red dot	



Basic type 0350



Socket terminal M3.5

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1810 - SINGLE AND DOUBLE-POLE TOGGLE SWITCHES

TO 10 (4) A 250 V AC



PRODUCT FEATURES

- ◆ Attractive toggle switches
- ◆ 100 million times proven switching principle
- ◆ Long life endurance with 100 000 mechanical switching cycles
- ◆ Excellent actuating characteristic

ON REQUEST

- ◆ Other colors
- ◆ Other printing variants
- ◆ Other switching functions
- ◆ Other terminal variants
- ◆ Cable assembly

Mechanical life endurance	5E4 (changeover switch with OFF position in center) 10E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +100 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator PA housing PA terminals silver plated
Plug force of the terminals	≤ 80 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



SERIES 1810 - SINGLE AND DOUBLE-POLE TOGGLE SWITCHES

TO 10 (4) A 250 V AC

 single-pole	Actuator color / printing	Housing color	10 (4) A 250 V AC 1E4	6 (4) A 250 V AC 5E4	6 (2) A 250 V AC 1E4	4 (2) A 250 V AC 1E4	6 A 250 V AC 1/2 HP	6 A 125 V AC 1/4 HP	6 A 125 - 250 V AC 1/8 HP	6 A 125 V AC 1/10 HP	4 A 250 V AC 1/10 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
ON / OFF switch (SPST)																	
1811.1102			●	●			●	●					4.8	≥ 3	Ag		
Normally open contact (SPNO)																	
1811.1202						●				●	●		4.8	≥ 3	Ag		
Changeover switch (SPDT)																	
1813.1102			●	●			●	●					4.8	≥ 3	Ag		
Changeover switch with OFF position in the center (SPDT - Center OFF)																	
1818.1102					●				●				4.8	< 3	Ag		●
1818.1202					●				●				4.8	< 3	Ag	momentary function one side	●
1818.1302					●				●				4.8	< 3	Ag	momentary function one side	
1818.2302					●				●				< 3	Ag		momentary function one side	
 double-pole	Actuator color / printing	Housing color	10 (4) A 250 V AC 1E4	6 (4) A 250 V AC 5E4	6 (2) A 250 V AC 1E4	4 (2) A 250 V AC 1E4	6 A 250 V AC 1/2 HP	6 A 125 V AC 1/4 HP	6 A 125 - 250 V AC 1/8 HP	6 A 125 V AC 1/10 HP	4 A 250 V AC 1/10 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
ON / OFF switch (DPST)																	
1812.1102			●	●			●	●					4.8	≥ 3	Ag		
Changeover switch (DPDT)																	
1814.2102			●	●			●	●						≥ 3	Ag		
Changeover switch with OFF position in the center (DPDT - Center OFF)																	
1819.1102					●				●				4.8	< 3	Ag		
1819.1302					●				●				4.8	< 3	Ag	momentary function both sides	●

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1810 - SINGLE AND DOUBLE-POLE TOGGLE SWITCHES

TO 10 (4) A 250 V AC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

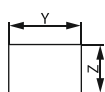
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

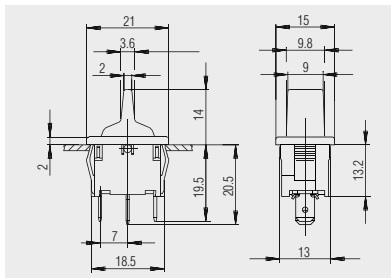


Basic types 1811, 1813 and 1818 single-pole

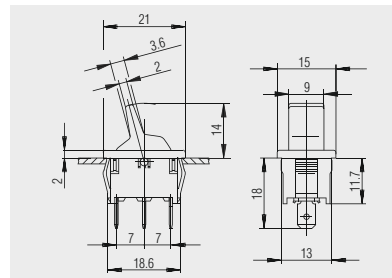


X = wall thickness

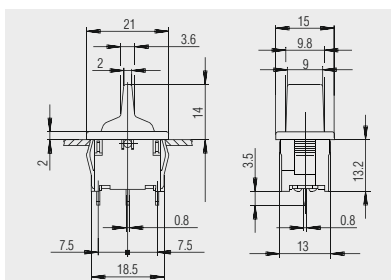
X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	12.9 ^{+0.1}



Quick-connect terminal 4.8 x 0.8 basic type 1818



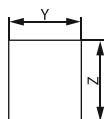
Quick-connect terminal 4.8 x 0.8 basic type 1813 and 1811 without third terminal



PCB terminal basic type 1818

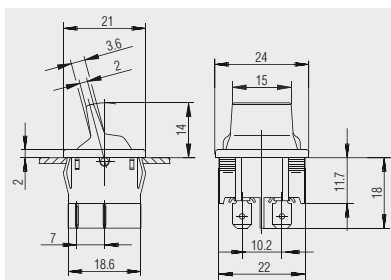


Basic types 1812, 1814 and 1819 double-pole

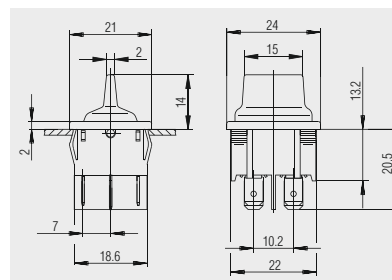


X = wall thickness

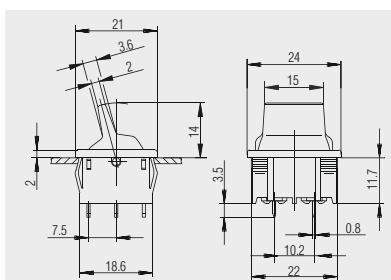
X	Y	Z
0.75 ... 1.25	19.2 ^{-0.1}	21.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	21.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	21.9 ^{+0.1}



Quick-connect terminal 4.8 x 0.8 basic type 1812



Quick-connect terminal 4.8 x 0.8 basic type 1819



PCB terminal basic type 1814

SERIES 1820 - SINGLE AND DOUBLE-POLE TOGGLE SWITCHES

TO 6 (4) A 250 V AC



PRODUCT FEATURES

- ◆ 100 million times proven switching principle
- ◆ Long life endurance with 50 000 mechanical switching cycles
- ◆ Excellent actuating characteristic
- ◆ Fastening with nut M12

ON REQUEST

- ◆ Other colors
- ◆ Other switching functions
- ◆ Other terminal variants
- ◆ Cable assembly

Mechanical life endurance	5E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +100 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator PA housing PA glass fiber-reinforced / PA terminals silver plated
Plug force of the terminals	≤ 80 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1820 - SINGLE AND DOUBLE-POLE TOGGLE SWITCHES

TO 6 (4) A 250 V AC

 single-pole	Actuator color / printing	Housing color	6 (4) A 250 V AC 5E4	6 (2) A 250 V AC 1E4	6 A 250 V AC 1/2 HP	6 A 125 V AC 1/4 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
	ON / OFF switch (SPST)											
1821.1101			●		●	●		4.8	≥ 3	Ag		●
1821.6101			●		●	●			≥ 3	Ag		●
Changeover switch (SPDT)												
1823.1101			●					4.8	≥ 3	Ag		●
1823.6101			●						≥ 3	Ag		
Changeover switch with OFF position in the center (SPDT - Center OFF)												
1828.1101				●				4.8	< 3	Ag		
1828.1201				●				4.8	< 3	Ag	momentary function one side	
1828.1301				●				4.8	< 3	Ag	momentary function both sides	
 double-pole	Actuator color / printing	Housing color	6 (4) A 250 V AC 5E4	6 (2) A 250 V AC 1E4	6 A 250 V AC 1/2 HP	6 A 125 V AC 1/4 HP	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
	ON / OFF switch (DPST)											
1822.1101			●		●	●		4.8	≥ 3	Ag		●
Changeover switch (DPDT)												
1824.1101			●					4.8	≥ 3	Ag		●
Changeover switch with OFF position in the center (DPDT - Center OFF)												
1829.1101				●				4.8	< 3	Ag		
1829.1301				●				4.8	< 3	Ag	momentary function both sides	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

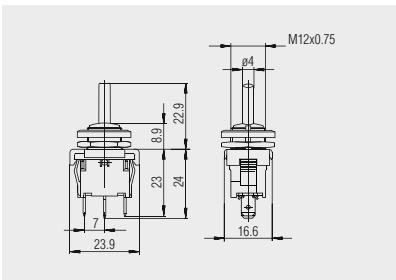
SENSORS

SERIES 1820 - SINGLE AND DOUBLE-POLE TOGGLE SWITCHES

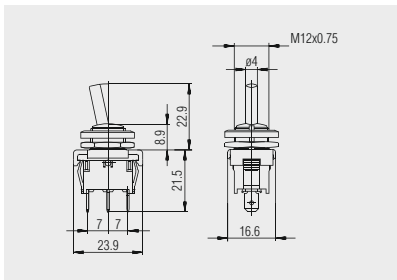
TO 6 (4) A 250 V AC



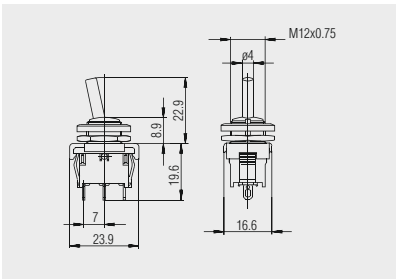
Basic types 1821, 1823 and 1828
single-pole



Quick-connect terminal 4.8 x 0.8
basic type 1828



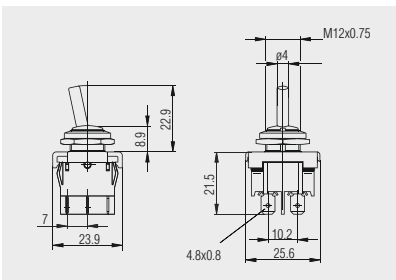
Quick-connect terminal 4.8 x 0.8
basic type 1821 and 1823



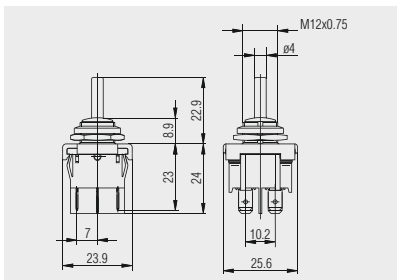
Solder terminal
1821.6101 and 1823.6101



Basic types 1822, 1824 and 1829
double-pole



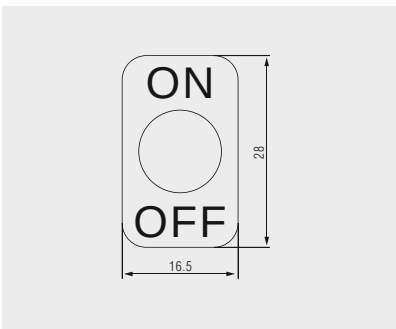
Quick-connect terminal 4.8 x 0.8
basic type 1822 and 1824



Quick-connect terminal 4.8 x 0.8
basic type 1829



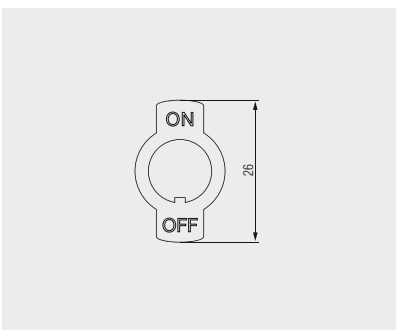
Identification plate
240.001.011



Aluminum identification plate to
plugging on and with black inscription
"ON" and "OFF"



Identification plate
240.002.011



Identification plate of Brass (CuZn)
nickel-plated for plugging on as well
as with twist protection and stamped
inscription "ON" and "OFF"

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1820 - SINGLE AND DOUBLE-POLE TOGGLE SWITCHES

TO 6 (4) A 250 V AC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

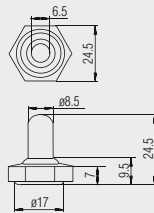
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS



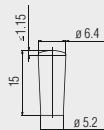
Protection cap
343.001.013 - green
343.001.023 - black
343.001.033 - red



Neopren® - cap for screwing on (M12 x 0.75) to levers of the series 1820 for dust and water protection of the actuator side



Lever receptacle
203.105.011 - black
203.105.021 - white
203.105.031 - red
203.105.041 - green



Lever receptacle in various colors for the plastic levers of the 1820 series for customer assembly. Serves as a design element and for distinguishing and marking.

SERIES 0100 - SINGLE-POLE TOGGLE SWITCHES

TO 2 A 250 V AC



PRODUCT FEATURES

- ◆ Robust and powerful toggle switch with 50 000 mechanical switching cycles
- ◆ Central fastening with nut M12
- ◆ Metal or plastic lever

ON REQUEST

- ◆ Other terminal variants

Mechanical life endurance	5E4	
Material	actuator	metal / PA (product-dependent)
	housing	CnZn nickel-plated / Duroplast (base) / chromated galvanized steel (bracket plate)
	terminals	silver plated



single-pole	Actuator color / printing	Housing color	2 A 250 V 1E3	Terminal type	Contact distance in mm	Contact material	Miscellaneous	Stock version
ON/OFF switch (SPST)								
0100.1201			●		≈ 3	CuZn silver plated	actuating torque 45.0 ±14.0 Nmm	●
0100.2901			●		≈ 3	CuZn silver plated	actuating torque 45.0 ±14.0 Nmm metal lever	●

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

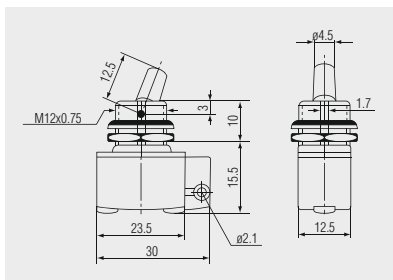
SENSORS

SERIES 0100 - SINGLE-POLE TOGGLE SWITCHES

TO 2 A 250 V AC



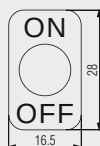
Basic type 0100



 Solder terminal



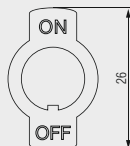
Identification plate
240.001.011



Identification plate of aluminum for plugging on with black inscription "ON" and "OFF"



Identification plate
240.002.011



Identification plate of CuZn nickel-plated for plugging on and with twist protection and stamped inscription "ON" and "OFF"

Further information under

WWW.MARQUARDT-SWITCHES.COM

SLIDE SWITCHES

ROCKER SWITCHES		ROCKER SWITCHES
PUSHBUTTON SWITCHES		PUSHBUTTON SWITCHES
TOGGLE SWITCHES		TOGGLE SWITCHES
SLIDE SWITCHES		SLIDE SWITCHES
ROTARY SWITCHES		ROTARY SWITCHES
FOOT SWITCHES		FOOT SWITCHES
TACT AND KEY SWITCHES		TACT AND KEY SWITCHES
SNAP-ACTION SWITCHES		SNAP-ACTION SWITCHES
MICRO-SIGNAL SWITCHES		MICRO-SIGNAL SWITCHES
SENSORS		SENSORS

SLIDE SWITCHES

SERIES 4021

Double and four-pole slide switches
to 10 A 125 V or 5 A 250 V AC
(as voltage selector switch)



PAGE
129 - 131

SERIES 1206

Single-pole slide switches
to 8 (8) A 250 V AC



PAGE
132 - 133

Further information under

WWW.MARQUARDT-SWITCHES.COM

SERIES 4021 - DOUBLE AND FOUR-POLE SLIDE SWITCHES

TO 10 A 125 V OR 5 A 250 V AC (AS VOLTAGE SELECTOR SWITCH)



PRODUCT FEATURES

- ◆ Different designs
- ◆ Various terminal types
- ◆ Suitable as voltage selector switch (for currentless switching)
- ◆ Sunken slide for protection against accidental actuation
- ◆ Simple assembly with screws

ON REQUEST

- ◆ Other colors
- ◆ Other labels
- ◆ Single to four-pole variants
- ◆ Other terminal variants (e.g. PCB side)

Mechanical life endurance	1E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +85 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator housing terminals
	PA PA / hard paper (baseplate) / PA glass fiber-reinforced (baseplate) silver plated / chromated
Plug force of the terminals	≤ 60 N
Approval marks	 /  / 



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

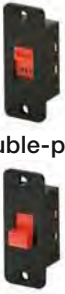
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 4021 - DOUBLE AND FOUR-POLE SLIDE SWITCHES

TO 10 A 125 V OR 5 A 250 V AC (AS VOLTAGE SELECTOR SWITCH)

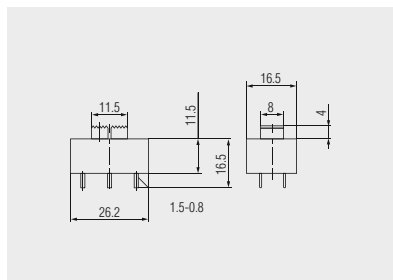
 double-pole	Actuator color / printing	Housing color	10 A 125 V AC 1E4	5 A 250 V AC 1E4	2 (0.5) A 250 V AC 1E4	2 A 42 V AC 1E4	10 A 125 V DC	5 A 250 V DC	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
Changeover switch (DPDT)														
4021.0203			●	●			●	●			≈ 3	CuSn silver plated	5 A or 10 A only as voltage selector switch	
4021.0512			●	●			●	●		2.8	≈ 3	CuSn silver plated	5 A or 10 A only as voltage selector switch slide with actuating slot	●
4021.4420			●	●			●	●			≈ 3	CuSn silver plated	5 A or 10 A only as voltage selector switch	●
4021.4620			●	●			●	●			≈ 3	CuSn silver plated	5 A or 10 A only as voltage selector switch slide with actuating slot	●
4021.4723			●	●			●	●			≈ 3	CuSn silver plated	5 A or 10 A only as voltage selector switch slide with actuating slot	●
4021.4920			●	●			●	●		side	≈ 3	CuSn silver plated	5 A or 10 A only as voltage selector switch	●
4021.0101					●						≈ 3	CuSn silver plated		●
4021.0801					●					2.8	≈ 3	CuSn silver plated		●
Changeover switch with OFF position in the center (DPDT - Center OFF)														
4021.1203						●				5 long	≈ 3	CuSn silver plated		
 four-pole	Actuator color / printing	Housing color	10 A 125 V AC 1E4	5 A 250 V AC 1E4	2 (0.5) A 250 V AC 1E4	2 A 42 V AC 1E4	10 A 125 V DC	5 A 250 V DC	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
Changeover switch (FPDT)														
4024.0501					●					2.8	≈ 3	CuSn silver plated	slide with actuating slot	
4024.4601					●						≈ 3	CuSn silver plated	slide with actuating slot	

SERIES 4021 - DOUBLE AND FOUR-POLE SLIDE SWITCHES

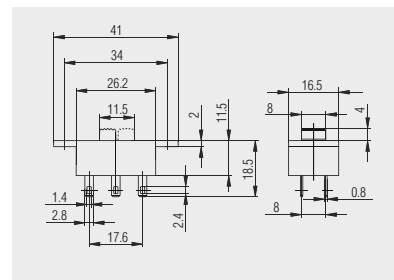
TO 10 A 125 V OR 5 A 250 V AC (AS VOLTAGE SELECTOR SWITCH)



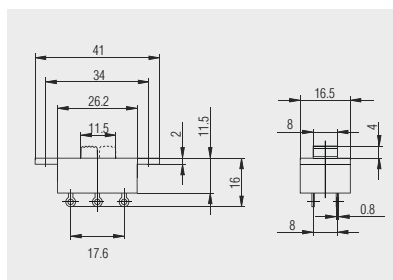
Basic type 4021
double-pole



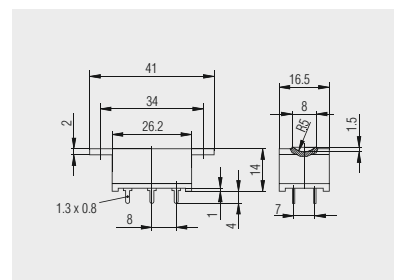
Wire-Wrap 5 long
4021.1203



Quick-connect terminal 2.8 x 0.8
4021.0512 und 4021.0801



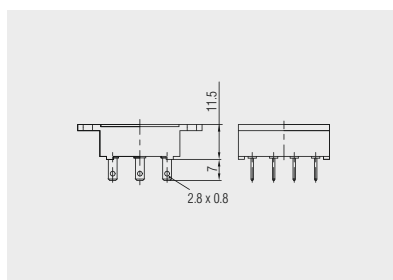
Solder terminal
4021.0203 and 4021.0101



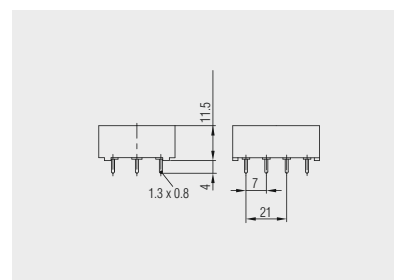
PCB terminal
Slide with actuating slot 4021.4420
and 4021.4620



Basic type 4024
four-pole

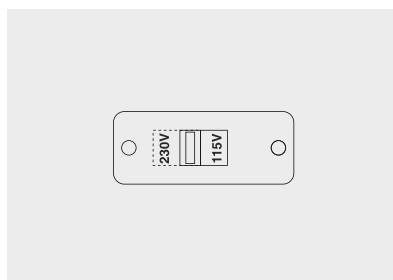


Quick-connect terminal 2.8 x 0.8
4024.0501

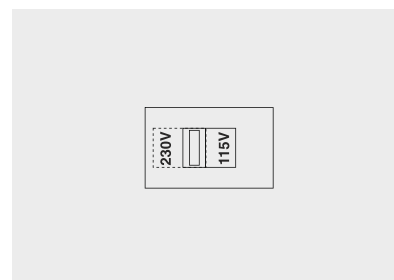


PCB terminal
4024.4601

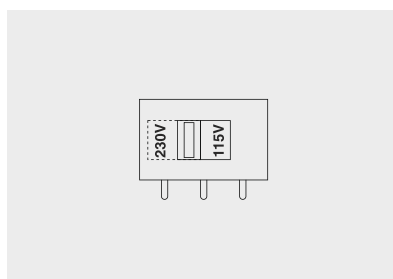
Inscription



4021.0203



4021.4620



4021.4723

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1206 - SINGLE-POLE SLIDE SWITCHES

TO 8 (8) A 250 V AC



PRODUCT FEATURES

- ◆ Powerful up to 25 A at 12 - 36 V DC
- ◆ Single-pole slide switch optionally with fastening strip
- ◆ For direct and indirect actuation
- ◆ Dust protected
- ◆ Castable

ON REQUEST

- ◆ Other colors
- ◆ Other terminal types
- ◆ For snapping on customized slides

Mechanical life endurance		1E5
Actuator		IP 40
Material	actuator housing terminals	PA glass fiber-reinforced PA glass fiber-reinforced silver plated
Approval marks		 /  / 
Suitable for appliances of protection class II		



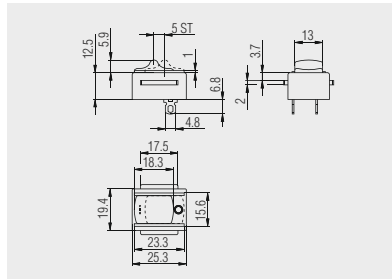
SERIES 1206 - SINGLE-POLE SLIDE SWITCHES

TO 8 (8) A 250 V AC

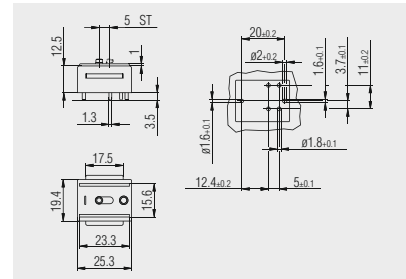
single-pole	Actuator color / printing	Housing color	8 (8) A 250 V AC 5E4	25 A 12 - 36 V DC	15 A 125 V AC	8 A 250 V AC	Terminal type	Contact distance in mm	Contact material	Miscellaneous	Stock version
ON / OFF switch (SPST)											
1206.0201			●	●	●	●		≥ 3	Ag	with slide for direct actuation	
1206.2503			●	●	●	●		≥ 3	Ag	with slide for direct actuation	



Basic type 1206



 Solder terminal
1206.0201



 PCB terminal
1206.2503

Further information under

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ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

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SNAP-ACTION SWITCHES

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ROCKER SWITCHES



ROCKER SWITCHES

PUSHBUTTON SWITCHES



PUSHBUTTON SWITCHES

TOGGLE SWITCHES



TOGGLE SWITCHES

SLIDE SWITCHES



SLIDE SWITCHES

ROTARY SWITCHES



ROTARY SWITCHES

FOOT SWITCHES



FOOT SWITCHES

TACT AND KEY SWITCHES



TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES



SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES



MICRO-SIGNAL SWITCHES

SENSORS



SENSORS

ROTARY SWITCHES

SERIES 1703

Powerful rotary switches
to 20 (4) A 400 V AC



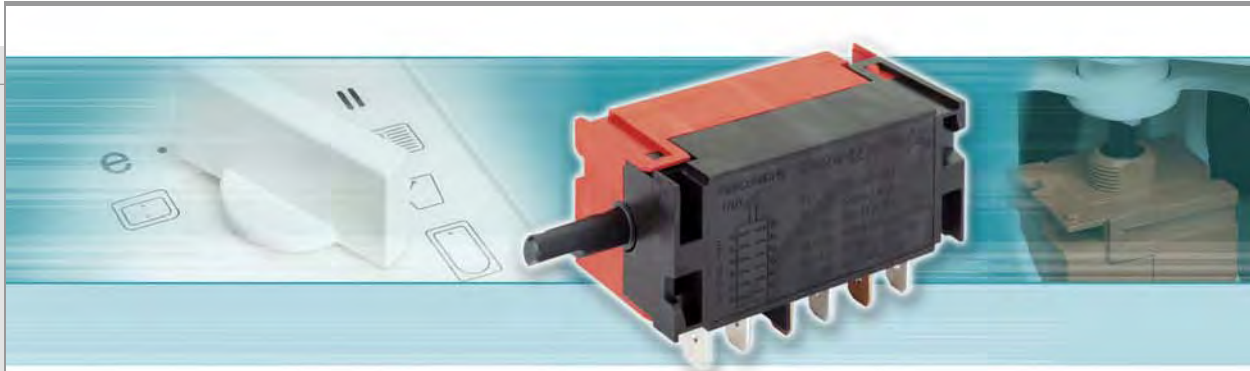
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Further information under

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SERIES 1703 - POWERFUL ROTARY SWITCHES

TO 20 (4) A 400 V AC



PRODUCT FEATURES

- ◆ Creep and air distances greater than 8 mm, therefore suitable for mains and low voltage
- ◆ 60° switching angle (1 - 6 switching steps)
- ◆ Fastening with thread M3 or bayonet connection
- ◆ With mechanical forced opening
- ◆ Approval for 400 V

ON REQUEST

- ◆ Single to six-pole variant
- ◆ Other switching functions and sequences
- ◆ Other terminal variants
- ◆ Cable assembly
- ◆ Customized actuators
- ◆ Gold contacts

Mechanical life endurance	3E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	400 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +100 °C ... +55 °C
Flammability	UL 94 (housing: V-0, spindle: V-2)
Glow wire test temperature	850 °C
Material	actuator housing terminals
	PA PA glass fiber-reinforced silver plated or bare
Plug force of the terminals	≤ 80 N
Approval marks	
Suitable for appliances of protection class II	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1703 - POWERFUL ROTARY SWITCHES

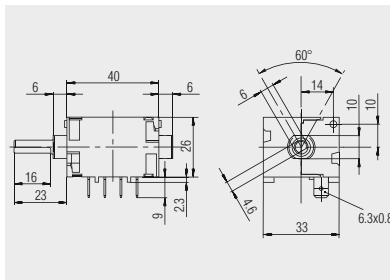
TO 20 (4) A 400 V AC

double-pole	Actuator color / printing	Housing color	20 (4) A 400 V AC 1E4	16 (16) A 250 V AC 5E4	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
ON / OFF switch (DPST)										
1703.3201	●		●			6.3	≥ 3	Ag	1 switching step (60°)	
1703.4001	●			●		6.3	≥ 3	Ag	1 switching step (60°)	

three-pole	Actuator color / printing	Housing color	20 (4) A 400 V AC 1E4	16 (16) A 250 V AC 5E4	Terminal type	Terminal description	Contact distance in mm	Contact material	Miscellaneous	Stock version
Step switch										
1703.4101	●			●		6.3	≥ 3	Ag	3 switching positions	



Basic type 1703



 Quick-connect terminal
6.3 x 0.8

FOOT SWITCHES

ROCKER SWITCHES		ROCKER SWITCHES
PUSHBUTTON SWITCHES		PUSHBUTTON SWITCHES
TOGGLE SWITCHES		TOGGLE SWITCHES
SLIDE SWITCHES		SLIDE SWITCHES
ROTARY SWITCHES		ROTARY SWITCHES
FOOT SWITCHES		FOOT SWITCHES
TACT AND KEY SWITCHES		TACT AND KEY SWITCHES
SNAP-ACTION SWITCHES		SNAP-ACTION SWITCHES
MICRO-SIGNAL SWITCHES		MICRO-SIGNAL SWITCHES
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FOOT SWITCHES

SERIES 2410
Ergonomic foot switches
to 6 (2.5) A 250 V AC



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Further information under

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SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 2410 - ERGONOMIC FOOT SWITCHES

TO 6 (2.5) A 250 V AC



PRODUCT FEATURES

- ◆ Long life endurance up to 300 000 mechanical switching cycles
- ◆ Robust design
- ◆ Cable can be retrofitted by customer
- ◆ Ergonomical dimensions with different operating forces
- ◆ With wall hanger

ON REQUEST

- ◆ Other colors
- ◆ Customized cable assembly
- ◆ Special switching functions
- ◆ Other terminal variants
- ◆ Dust and splash water protected version

Mechanical life endurance	30E4
Proof tracking	250 PTI
Material	actuator PA
	housing PA
Prüfzeichen	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

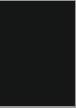
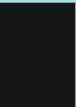
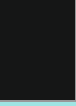
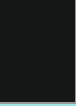
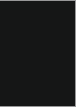
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 2410 - ERGONOMIC FOOT SWITCHES

TO 6 (2.5) A 250 V AC

 single-pole	Actuator color / printing	Housing color	6 (2.5) A 250 V AC 5E4	Terminal type	Terminal description	Contact distance in mm	Contact material	Operating force in N	Miscellaneous	Stock version
	Normally open contact (SPNO)									
	2410.0301			●	 2 terminals M3	< 3	Ag	31 ±5	with switch 1005.1801	●
	Changeover switch (SPDT momentary)									
	2410.0401			●	 3 terminals M3	< 3	Ag	31 ±5	with switch 1005.1407	●
 Combination	Actuator color / printing	Housing color	6 (2.5) A 250 V AC 5E4	Terminal type	Terminal description	Contact distance in mm	Contact material	Operating force in N	Miscellaneous	Stock version
	Normally open contact (SPNO) double-pole									
	2410.1001			●	 assembled	≥ 3	Ag	45 ±7 N	1 x PE connector (3 000 mm) / 1 x PE coupling (250 mm) 2 x 1005.1802	●
	Changeover switch (SPDT momentary) first step / Normally closed contact (SPNC) second step									
	2410.0101			●	 3 terminals M3	< 3	Ag	step 1: 25 ±5 N step 2: 85 ±15 N	with switch 1005.1407 with switch 1005.1501 switching in sequence	
	Changeover switch (SPDT momentary) first step / Normally open contact (SPNO) second step									
	2410.0501			●	 5 terminals M3	< 3	Ag	step 1: 22 ±4 N step 2: 31 ±5 N	with switch 1005.1407 with switch 1005.1801 switching in sequence Changeover switch and normally open contact can be connected separately	●

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

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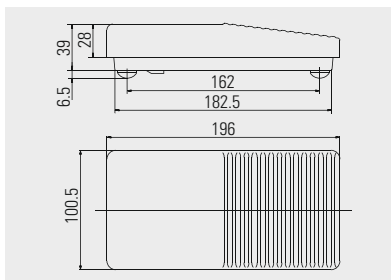
SENSORS

SERIES 2410 - ERGONOMIC FOOT SWITCHES

TO 6 (2.5) A 250 V AC



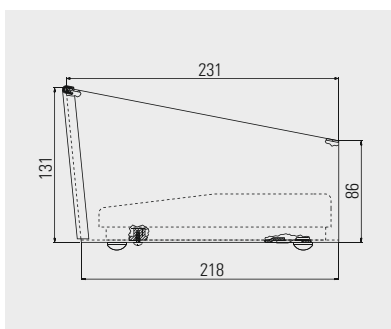
Basic type 2410



Socket terminal
2 terminals M3

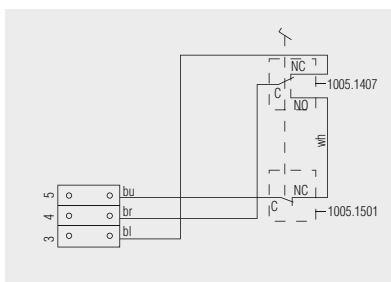


Protection hood
248.008.013

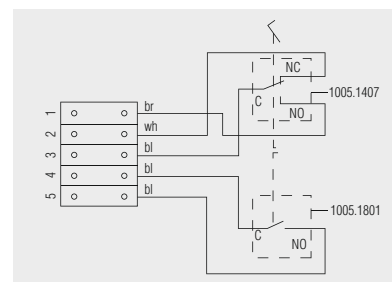


Steel plate protection hood in orange color similar to RAL 2004 with edge guard and rubber feet as well as fixation for foot switch of the basic type 2410

Circuit diagram



2410.0101



2410.0501

bu - blue
br - brown
bl - black
wh - white
C - common terminal
NC - normally closed contact
NO - normally open contact

ROCKER SWITCHES

PUSHBUTTON SWITCHES

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PUSHBUTTON SWITCHES		PUSHBUTTON SWITCHES
TOGGLE SWITCHES		TOGGLE SWITCHES
SLIDE SWITCHES		SLIDE SWITCHES
ROTARY SWITCHES		ROTARY SWITCHES
FOOT SWITCHES		FOOT SWITCHES
TACT AND KEY SWITCHES		TACT AND KEY SWITCHES
SNAP-ACTION SWITCHES		SNAP-ACTION SWITCHES
MICRO-SIGNAL SWITCHES		MICRO-SIGNAL SWITCHES
SENSORS		SENSORS

TACT AND KEY SWITCHES

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SERIES 3006

Tact switches
to 50 mA 28 V



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SERIES 6425

Key switches
to 100 mA 28 V



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SERIES 6450

Key switches
to 100 mA 28 V



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SERIES 3000

Key switches
to 30 mA 28 V



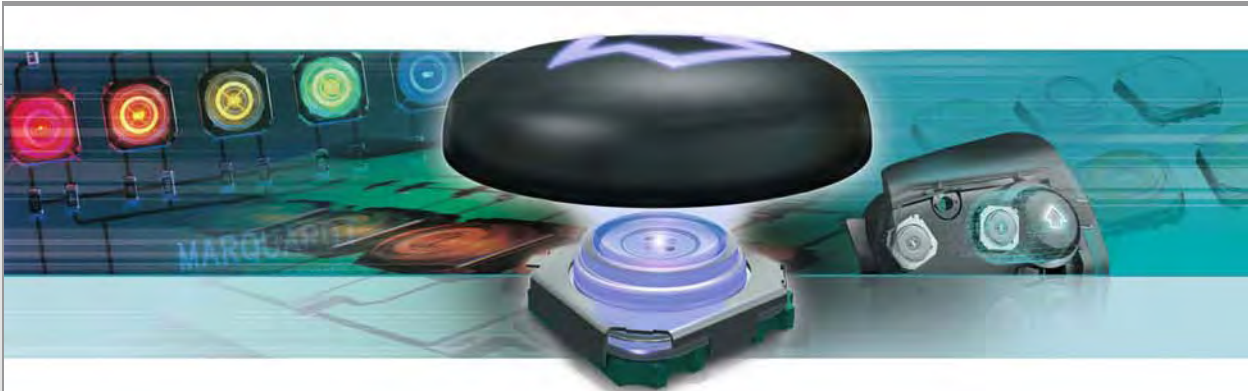
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Further information under

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SERIES 3006 - TACT SWITCHES

TO 50 mA 28 V



PRODUCT FEATURES

- ◆ Low height even with integrated LED
- ◆ SMD connection technique
- ◆ Pleasant actuating characteristic thanks to clearly tangible pressure point
- ◆ Extremely large actuator surface
- ◆ Six standard colors
- ◆ Two operating force variants
- ◆ Reflow lead-free solderable

ON REQUEST

- ◆ Other LED colors
- ◆ Different brightness groups

Mechanical life endurance	50E4
Contact resistance (new condition)	< 100 mOhm
Protection type	IP 50
Ambient temperature	-40 °C ... +95 °C (1 h bis +120 °C)
Material terminals	gold plated
Bounce time	< 5 ms
Packing unit	1 800 pieces in blister belt on a roller
Miscellaneous	rating max. 1 W voltage range 20 mV - 28 V current range 10 µA - 50 mA



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

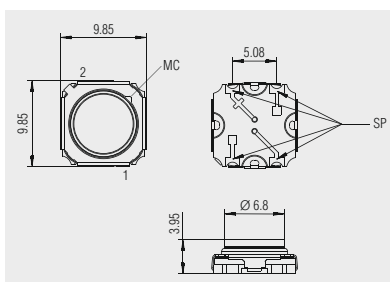
SERIES 3006 - TACT SWITCHES

TO 50 mA 28 V

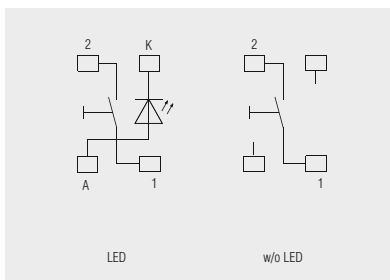
 single-pole	50 mA 28 V	Contact material	Operating force in N	Operating position (OP) in mm	Free position (FP) max. in mm	Permissible total travel position (TP) in mm	Color lamp	Miscellaneous	Stock version
Normally open contact (SPNO)									
3006.2100	●	Au	4 +1 -0.5	3.2 ±0.2	4.15	2.9		without LED	
3006.2101	●	Au	4 +1 -0.5	3.2 ±0.2	4.15	2.9			
3006.2102	●	Au	4 +1 -0.5	3.2 ±0.2	4.15	2.9			
3006.2104	●	Au	4 +1 -0.5	3.2 ±0.2	4.15	2.9			
3006.2105	●	Au	4 +1 -0.5	3.2 ±0.2	4.15	2.9			
3006.2106	●	Au	4 +1 -0.5	3.2 ±0.2	4.15	2.9		LED white	
3006.2107	●	Au	4 +1 -0.5	3.2 ±0.2	4.15	2.9			
3006.2151	●	Au	4 +1 -0.5	3.2 ±0.2	4.15	2.9		low current consumption reduced brightness	
3006.2300	●	Au	6 +1.5 -0.75	3.2 ±0.2	4.15	2.9		without LED	
3006.2301	●	Au	6 +1.5 -0.75	3.2 ±0.2	4.15	2.9			
3006.2306	●	Au	6 +1.5 -0.75	3.2 ±0.2	4.15	2.9		LED white	



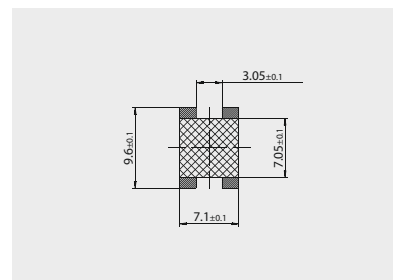
Basic type 3006



SMD connection technique



Circuit diagram with / without LED



Solder pad design

SERIES 6425 - KEY SWITCHES

TO 100 mA 28 V



PRODUCT FEATURES

- ◆ Single-pole normally open contact with and without LED
- ◆ Pleasant actuating characteristic and low actuation noise
- ◆ Low bounce time
- ◆ Standard with gold plated contacts
- ◆ Wide range of key caps for different design requirements

ON REQUEST

- ◆ Customized key caps
- ◆ Other key cap colors
- ◆ Other LED colors
- ◆ Bicolor LED

Contact resistance (new condition)	< 250 mOhm	
Insulation resistance (new condition)	> 100 MOhm	
Bounce time	< 5 ms	
Contact distance	< 3 mm	
Ambient temperature	-20 °C ... +70 °C	
Contact material	Au	
Material	actuator housing terminals	POM PBTP tinned
Terminal type	PCB terminal	
Mechanical life endurance	1E6 bei 10 mA 12 V	
Flammability	UL 94 HB	
Miscellaneous	The key base of the standard key can be snapped into a 1.2 mm thick frame with a cut-out of 13.55 x 13.55 mm. A current limiting to max. 20 mA must be provided for the integrated LED!	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 6425 - KEY SWITCHES

TO 100 mA 28 V

 	100 mA 28 V	Color lamp	Pitch in mm	Total travel / stroke in mm	Total travel / stroke in mm	Miscellaneous	Stock version
Normally open contact (SPNO)							
6425.0101	●		≥ 16	0.7	1.4 ±0.2	customer LED assembly possible	●
6425.1101	●		≥ 16	0.7	1.4 ±0.2	narrow base for parallel guide	●
6425.3111	●		19	0.7	1.4 ±0.2		●
6425.3121	●		19	0.7	1.4 ±0.2		●
6425.3131	●		19	0.7	1.4 ±0.2		●
6425.4111	●		16	0.7	1.4 ±0.2		●
6425.4121	●		16	0.7	1.4 ±0.2		●
6425.4131	●		16	0.7	1.4 ±0.2		●
6425.5111	●		16 + 19	0.7	1.4 ±0.2	LED lower for button 834 900 ... and 835 900 ...	●
6425.5131	●		16 + 19	0.7	1.4 ±0.2	LED lower for button 834 900 ... and 835 900 ...	●
6425.6111	●		≥ 15	0.7	1.4 ±0.2	LED higher for key cap 827 ... 011	
6425.6131	●		≥ 15	0.7	1.4 ±0.2	LED higher for key cap 827 ... 011	

Further information under

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ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

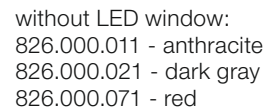
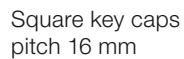
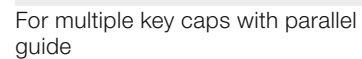
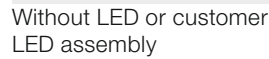
TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

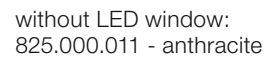
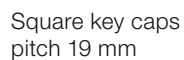
MICRO-SIGNAL SWITCHES

SENSORS

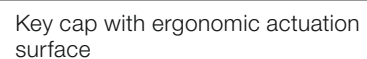
SERIES 6425 - KEY SWITCHES



with LED window:
829.000.011 - anthracite
829.000.021 - dark gray



with LED window:
828.000.011 - anthracite
828.000.021 - dark gray



840.000.011 - anthracite
840.000.021 - dark gray
840.000.071 - red

SERIES 6425 - KEY SWITCHES

TO 100 mA 28 V

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

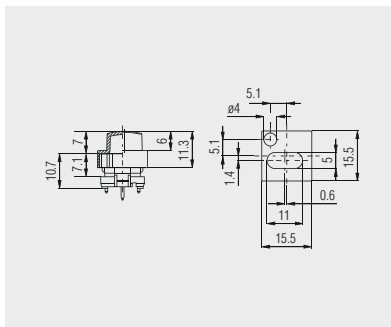
FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

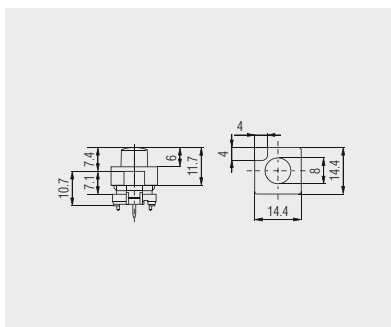
SENSORS



Key cap with oval actuation surface
pitch 16 mm

827.020.011 - anthracite
827.020.021 - dark gray
827.020.031 - gray

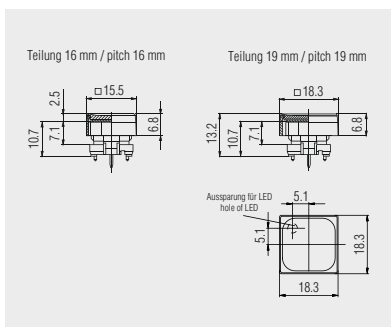
Design key caps



Key cap with round actuation surface
pitch ≥ 15 mm

827.100.011 - anthracite
827.100.021 - dark gray

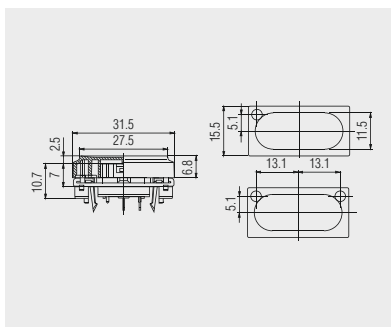
Design key caps



Key cap anthracite
Cap transparent, enclosed loose
834.900.013 pitch 19 mm
835.900.013 pitch 16 mm

Two-part key cap with snap-on
transparent caps, individual labeling
and color possibilities can be
implemented at low cost by a
customer inlay.
For keys 6425.51xx with LED and
6425.0101 without LED.

Key caps with transparent cap

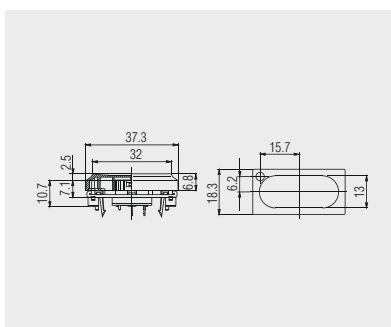


without LED window:
842.000.011 - anthracite
842.000.021 - dark gray

with one LED window:
842.500.011 - anthracite

with two LED windows:
842.800.011 - anthracite

Double key caps
16 mm pitch

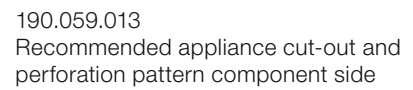
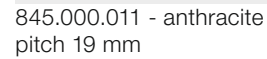
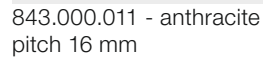


without LED window:
844.000.011 - anthracite

with one LED window:
844.500.011 - anthracite

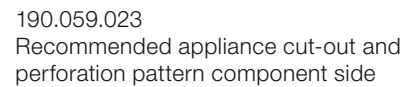
Double key caps
19 mm pitch

SERIES 6425 - KEY SWITCHES



parallel guide for:
double key caps, pitch 16 mm

The parallel guide guarantees an optimum function even in case of off-center actuation and can be equipped additionally with one or two LEDs.

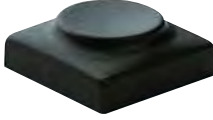


parallel guide for:
triple key caps, pitch 16 mm
double key caps, pitch 19 mm
triple key caps, pitch 19 mm

The parallel guide can be equipped additionally with a LED.

SERIES 6425 - KEY SWITCHES

TO 100 mA 28 V



Square key caps with white characters

Please complete the reference numbers by the three figures below the respective character.

Basic reference numbers for pitch 16 mm:
826 ... 011 - anthracite

Basic reference numbers for pitch 19 mm:
825 ... 011 - anthracite

Other key cap colors and characters on request.

					
051	052	053	054	055	056
					
057	058	059	060	061	062
					
063	064	065	066	067	068
					
069	070	071	072	073	074
					
075	076				
					
017	018	022	023	015	170
					
010	001	002	003	004	
					
005	006	007	008	009	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 6450 - KEY SWITCHES

TO 100 mA 28 V



PRODUCT FEATURES

- ◆ Single-pole normally open contact with key cap
- ◆ Narrow design with proven switching principle of series 6425
- ◆ Pleasant actuating characteristic and low actuation noise
- ◆ Low bounce time
- ◆ Long life endurance
- ◆ Standard with gold plated contacts

ON REQUEST

- ◆ Other key cap colors
- ◆ Labeled key caps

Contact resistance (new condition)	< 250 mOhm	
Insulation resistance (new condition)	> 100 MOhm	
Contact material	Au	
Contact distance	< 3 mm	
Bounce time	< 5 ms	
Ambient temperature	-20 °C ... +80 °C	
Flammability	UL 94 HB	
Material	actuator housing terminals	PA PBTP tinned
Terminal type	PCB terminal	
Mechanical life endurance	1E6 at 10 mA 12 V	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

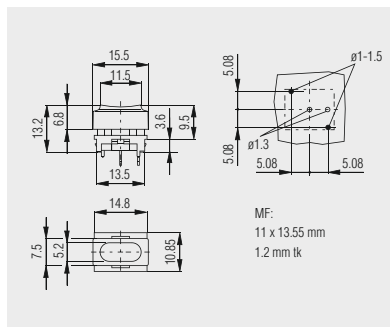
MICRO-SIGNAL SWITCHES

SENSORS

SERIES 6450 - KEY SWITCHES

TO 100 mA 28 V

	Actuator color / printing	100 mA 28 V	Operating force in N	Total travel / stroke in mm	Miscellaneous	Stock version
Normally open contact (SPNO)						
6450.0001		●	0.7	1.4 ±0.2	gray	●
6450.0003		●	0.7	1.4 ±0.2	dark gray	●
6450.0005		●	0.7	1.4 ±0.2	anthracite similar to RAL 9011	●
6450.0006		●	0.7	1.4 ±0.2	red similar to RAL 3013	●
6450.0007		●	0.7	1.4 ±0.2	yellow similar to RAL 1012	●
6450.0008		●	0.7	1.4 ±0.2	green similar to RAL 6001	
6450.0009		●	0.7	1.4 ±0.2	blue similar RAL 5019	



Basic type 6450

Narrow key switch with integrated key cap

The key base can be snapped into a 1.2 mm thick frame with a cut-out of 11 x 13.55 mm.

Further information under

WWW.MARQUARDT-SWITCHES.COM

SERIES 3000 - KEY SWITCHES

TO 30 mA 28 V

PRODUCT FEATURES

- ◆ With one or two normally open contacts switching in sequence
- ◆ By separating the mechanical and electrical components, a high contact reliability and excellent actuating characteristic are achieved
- ◆ Terminals sealed
- ◆ For direct or indirect actuation

ON REQUEST

- ◆ Available with centrally placed LED (only version with a pressure point)
- ◆ Different key caps

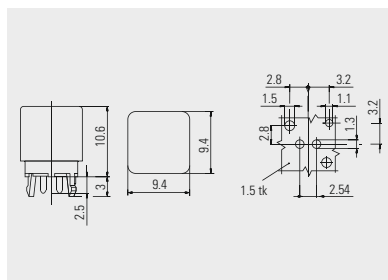
Mechanical life endurance	1E5 2E4 (basic type 3003 - two pressure points)
Ambient temperature	-40 °C ... +85 °C
Material	actuator housing terminals
	PC / POM PA glass fiber-reinforced tinned
Contact material	Au
Contact distance	< 3 mm



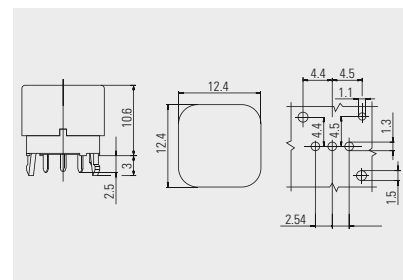
	30 mA 28 V	Terminal type	Operating force in N	Operating position (OP) in mm	Free position (FP) max. in mm	Permissible total travel position (TP) in mm	Miscellaneous	Stock version
Normally open contact with 1 pressure point								
3000.0452	●	⌋	5 - 7	9.8 +0.3 -0.2	10.9	9.2	with pressure point	
Double normally open contact with 2 pressure points								
3003.0452	●	⌋	5 - 7	9.8 +0.3 -0.2	10.9	8.6	operating force 2: 11 - 14 N operating position 2: 8.9 +0.3 -0.2	



Basic types 3000 and 3003



Normally open contact with one pressure point, 3000.0452



Double normally open contact with two pressure points, 3003.0452

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ORDER DAY AND NIGHT

In our new web shop you can order more than 200 standard switches independent of time and place: 24 hours per day, 7 days per week.



NEW MARQUARDT WEB SHOP
WWW.MARQUARDT-SHOP.COM

SNAP-ACTION SWITCHES

ROCKER SWITCHES		ROCKER SWITCHES
PUSHBUTTON SWITCHES		PUSHBUTTON SWITCHES
TOGGLE SWITCHES		TOGGLE SWITCHES
SLIDE SWITCHES		SLIDE SWITCHES
ROTARY SWITCHES		ROTARY SWITCHES
FOOT SWITCHES		FOOT SWITCHES
TACT AND KEY SWITCHES		TACT AND KEY SWITCHES
SNAP-ACTION SWITCHES		SNAP-ACTION SWITCHES
MICRO-SIGNAL SWITCHES		MICRO-SIGNAL SWITCHES
SENSORS		SENSORS

SNAP-ACTION SWITCHES

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1055

Subsubminiature snap-action switches IP 67
to 4 A 12 V bzw. 2 A 24 V DC



PAGE
162 - 166

SERIES 1050

Subminiature snap-action switches
to 10 (1.5) A 250 V AC



PAGE
167 - 171

SERIES 1080

Miniature snap-action switches
to 21 (8) A 250 V AC



PAGE
172 - 175

SERIES 1005

Miniature snap-action switches
to 21 (8) A 250 V AC



PAGE
176 - 182

SERIES 1040

Rotary shaft snap-action switches
to 4 (1) A 250 V AC



PAGE
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SERIES 1010

Open snap-action switches
to 10 (3) A 250 V AC



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SERIES 1019

Single-pole snap-action switches
to 6 (2) A 250 V AC



PAGE
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SNAP-ACTION SWITCHES

SERIES 1022

Snap-action switches IP 67
to 4 A 12 V DC



PAGE
192 - 193

SERIES 1117

Snap-action switches
to 16 (6) A 400 V AC



PAGE
194 - 195

SERIES 1115

Single-pole pushbutton
switches
to 16 (4) A 400 V AC



PAGE
196 - 197

Further information under

WWW.MARQUARDT-SWITCHES.COM

SERIES 1055 - SUBSUBMINIATURE SNAP-ACTION SWITCHES IP 67

TO 4 A 12 V OR 2 A 24 V DC



PRODUCT FEATURES

- ◆ Compact design with dust and water protected switching system acc. to IP 67 (basic types 1055 / 1058)
- ◆ Large overtravel of ≥ 1.2 mm for small size
- ◆ The specially designed pushbutton guide enables a start-up angle of 40°
- ◆ The modular principle offers a wide selection of terminals, auxiliary actuators and fastening types

ON REQUEST

- ◆ Rating 0.5 (0.5) A 250 V AC 25E3 and ENEC approval mark
- ◆ For higher ambient temperatures
- ◆ Customized cable assembly
- ◆ Basic type 1058 as double switch or with cable outlet in other directions

Mechanical life endurance	1E6 bei 10 mA 12 V
Contact resistance (new condition)	< 50 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Protection type	IP 00 terminal side basic types 1055 and 1056 IP 40 actuator side basic type 1056 IP 67 actuator side basic type 1055, terminal and actuator side basic type 1058
Ambient temperature	-40 °C ... +85 °C
Flammability	UL 94 HB
Material	actuator POM additional actuator stainless steel spring steel housing PBTP terminals tinned basic type 1058: wires FLRY 0.5 mm ² , tinned wire ends
Contact material	Ag gold plated
Approval marks	☞ on request
Shock resistance	50 g
Miscellaneous	terminal side sealed electrical life endurance at 12 V 2 A: 200E3 (ohmic load)



SERIES 1055 - SUBSUBMINIATURE SNAP-ACTION SWITCHES IP 67

TO 4 A 12 V OR 2 A 24 V DC

	4 A 12 V DC (ohmic load)	2 A 24 V DC (ohmic load)	0.5 (0.5) A 250 V AC 25E3	Terminal type	Terminal description	Operating force in N	Operating position (OP) in mm	Difference travel max. in mm	Free position (FP) max. in mm	Permissible total travel position (TP) in mm	Actuator description	Lever drawing	Miscellaneous	Stock version
Normally closed contact (SPNC)														
1058.0395	●	●			400 long crimped	≤ 1.8	9.4 ±0.3	0.4	10.4	7.9			pin right 1.5 long	
Normally open contact (SPNO)														
1058.0373	●	●			150 long	≤ 1.8	9.4 ±0.3	0.4	10.4	7.9			pin right 1.5 long	
1058.0593	●	●			300 long	≤ 1.8	9.4 ±0.3	0.4	10.4	7.9			pin both sides 5 long	
Changeover switch (SPDT momentary)														
1055.0351	●	●				≤ 1.8	9.4 ±0.3	0.4	10.4	7.9			pin right 1.5 long	●
1055.0552	●	●				≤ 1.8	9.4 ±0.3	0.4	10.4	7.9			pin left 5 long	
1055.2061	●	●			coded cranked	≤ 1.8	13.75 ±0.3	0.4	14.75	12.25			without pin	
1055.2351	●	●				≤ 1.8	9.4 ±0.3	0.4	10.4	7.9			pin right 1.5 long	
1055.3653	●	●				≤ 1.8	9.4 ±0.3	0.4	10.4	7.9			pin right 2.5 long	
1055.3654	●	●				≤ 1.8	9.4 ±0.3	0.4	10.4	7.9			pin left 2.5 long	
1055.5155	●	●				≤ 2.6	12.4 ±0.65	0.8	14.7	10.3		L21	pin both sides 2.5 long	
1055.5350	●	●				≤ 4.2	14.05 ±0.45	0.5	15.85	12.65		L02	without pin	
1055.8155	●	●				≤ 2.6	12.4 ±0.65	0.8	14.7	10.3		L21	pin right 2.5 long	
1056.0351	●	●				≤ 1.3	6.15 ±0.3	0.4	7.15	4.65			pin right 1.5 long	●
1056.2351	●	●				≤ 1.3	6.15 ±0.3	0.4	7.15	4.65			pin right 1.5 long	
1056.3060	●	●			coded cranked	≤ 1.3	10.5 ±0.3	0.4	11.5	9			without pin	
1056.3065	●	●	●		coded cranked	≤ 1.3	10.5 ±0.3	0.4	11.5	9			without pin	
1056.3351	●	●				≤ 1.3	6.15 ±0.3	0.4	7.15	4.65			pin right 1.5 long	
1056.3352	●	●				≤ 1.3	6.15 ±0.3	0.4	7.15	4.65			pin left 1.5 long	●
1058.0351	●	●			300 long	≤ 1.8	9.4 ±0.3	0.4	10.4	7.9			pin right 1.5 long	●
1058.0553	●	●			300 long	≤ 1.8	9.4 ±0.3	0.4	10.4	7.9			pin both sides 5 long	
1058.0653	●	●			300 long	≤ 1.8	9.4 ±0.3	0.4	10.4	7.9			pin both sides 2.5 long	●
1058.5253	●	●			300 long	≤ 4.2	9.7 ±0.45	0.5	11.6	8.25		L31	pin both sides 2.5 long	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1055 - SUBSUBMINIATURE SNAP-ACTION SWITCHES IP 67

TO 4 A 12 V OR 2 A 24 V DC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

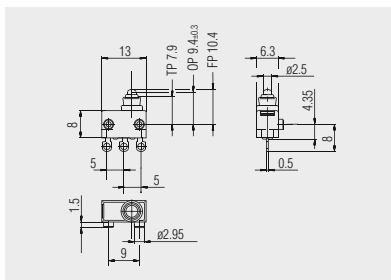
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

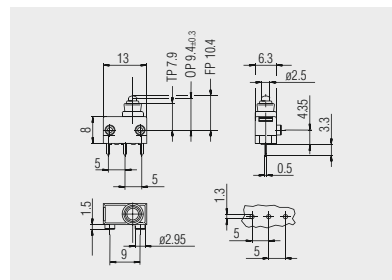
SENSORS



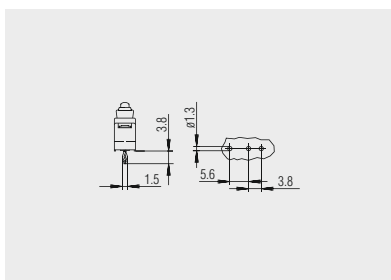
Basic type 1055



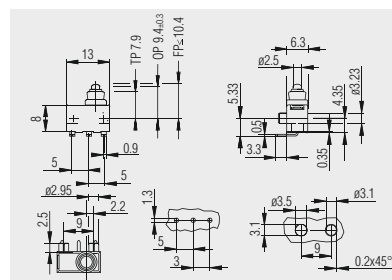
Solder terminal



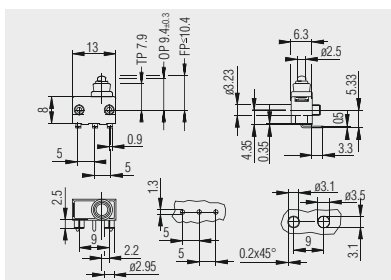
PCB terminal



PCB terminal coded cranked



PCB terminal left angled



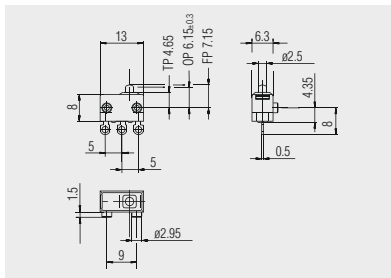
PCB terminal right angled

SERIES 1055 - SUBSUBMINIATURE SNAP-ACTION SWITCHES IP 67

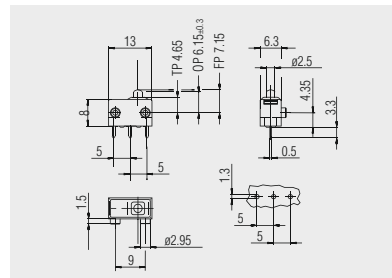
TO 4 A 12 V OR 2 A 24 V DC



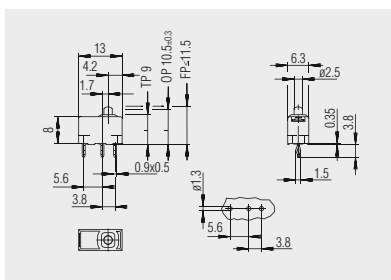
Basic type 1056



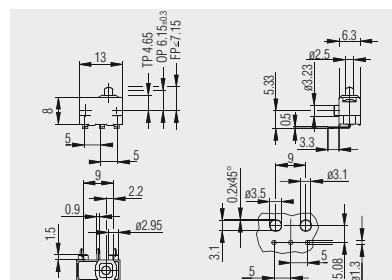
 Solder terminal



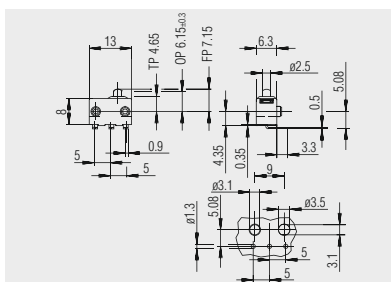
⌈ PCB terminal



PCB terminal coded cranked



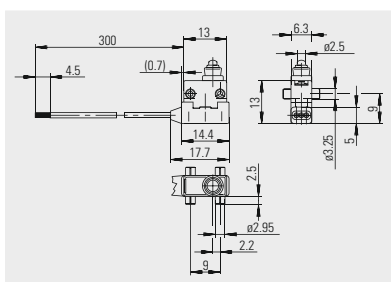
PCB terminal left angled



PCB terminal right angled



Basic type 1058



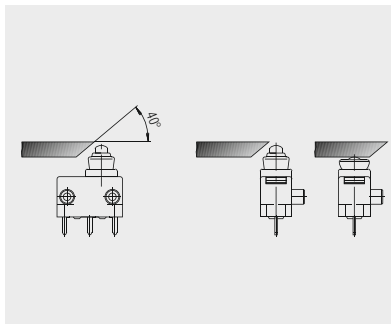
U Cable 300 long

SERIES 1055 - SUBSUBMINIATURE SNAP-ACTION SWITCHES IP 67

TO 4 A 12 V OR 2 A 24 V DC



Approach angle up to 40°



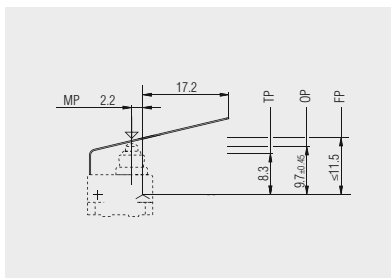
The robust pushbutton guide allows actuations by slides or camshafts with an approach angle of < 40° (depending on the friction partner).

The mechanical life endurance depends on the material and surface properties of the slide and the installation situation in the appliance. Under optimum conditions and longitudinal actuation, 200E3 cycles can be achieved.

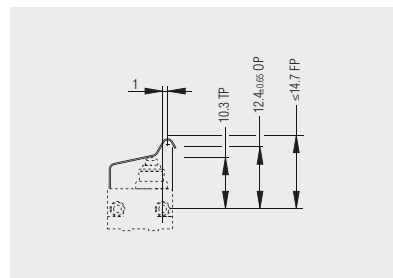
The above sketch can be transposed to the basic types 1056 and 1058.



Auxiliary actuators



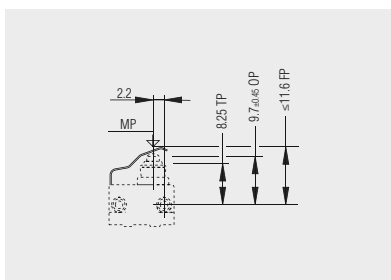
L02: straight lever
191.081.041



L21: simulated roller
191.081.031

The auxiliary actuators are available as additional parts for the basic types 1055 and 1058 for retrofitting or are already pre-assembled depending on the product.

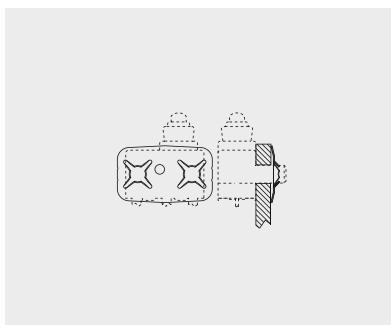
When assembling yourself, make sure that the lever is pushed into the housing slot right up to the stop.



L31: differential lever
191.081.011



Fastening disc



140.092.021
fastening disc for the basic types
1055, 1056 und 1058

The fastening disc offers a quick, reliable fastening possibility in combination with switches with 5 mm long pins to plates or plastic parts with a wall thickness up to 2.5 mm.

SERIES 1050 - SUBMINIATURE SNAP-ACTION SWITCHES

TO 10 (1.5) A 250 V AC



PRODUCT FEATURES

- ◆ Small, efficient snap-action switches up to 10 (1.5) A 250 V AC or 10.1 A 125 - 250 V AC 1/4 HP
- ◆ Lateral approach from both directions possible due to mushroom-shaped actuator
- ◆ Large selection of auxiliary actuators of chrome-nickel steel and plastic

ON REQUEST

- ◆ Extended overtravel
- ◆ Material conformant with the filament wire test acc. to IEC 60335-1:2001 chap. 30
- ◆ Increased or reduced difference travel
- ◆ Other operating forces and ratings
- ◆ Gold-plated contacts

Design	DIN 41635 B
Mechanical life endurance	10E6 1E6 (versions with auxiliary actuator)
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	175 PTI
Protection type	IP 40 (actuator side)
Ambient temperature	-40 °C ... +100 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator PA additional actuator PA glass fiber-reinforced / stainless steel spring steel housing PBTP terminals tinned / silver plated / blank (product-dependent)
Bounce time	< 5 ms
Approval marks	 /  / 
Suitable for appliances of protection class II under compliance with the installation conditions required on the equipment side	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1050 - SUBMINIATURE SNAP-ACTION SWITCHES

TO 10 (1.5) A 250 V AC

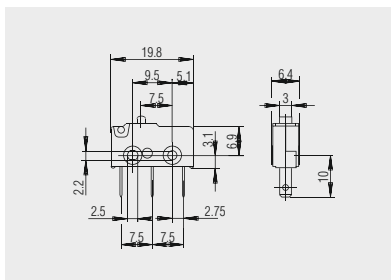
																										
	10 (1.5) A 250 V AC 1E4		5 A 250 V AC 5E4		2 (0.5) A 250 V AC 25E3		10.1 A 125 - 250 V AC 1/4 HP		5 A 125 - 250 V AC 1/10 HP		2 A 125 - 250 V AC			Terminal type	Terminal description	Contact material	Operating force in N	Operating position (OP) in mm	Difference travel max. in mm	Free position (FP) max. in mm	Permissible total travel position (TP) in mm	Actuator description	Lever drawing	Miscellaneous	Stock version	
	Normally closed contact (SPNC)																									
	1050.1142		●			●				2.8 x 0.5	Ag	≤ 1.5	8.4 ±0.3	0.2	9.3	7.5										
	Normally open contact (SPNO)																									
	1050.0122		●			●					Ag	≤ 1.5	8.4 ±0.3	0.2	9.3	7.5									●	
1050.1122		●			●				2.8 x 0.5	Ag	≤ 1.5	8.4 ±0.3	0.2	9.3	7.5									●		
1050.2122		●			●				sealed	Ag	≤ 1.5	8.4 ±0.3	0.2	9.3	7.5											
1050.1426									2.8 x 0.5	Ag	≤ 1.5	9.9 ±0.3	0.2	10.8	8.6			greater overtravel without approval mark								
Changeover switch (SPDT momentary)																										
1050.0103	●				●					Ag	≤ 2.2	8.4 ±0.3	0.2	9.3	7.5									●		
1050.2403	●				●				sealed	Ag	≤ 2.2	8.4 ±0.3	0.1	9.3	7			greater overtravel								
1050.0102		●			●				sealed	Ag	≤ 1.5	8.4 ±0.3	0.2	9.3	7.5									●		
1050.0202		●			●					Ag	≤ 1.5	9.9 ±0.3	0.2	10.8	9.1									●		
1050.0802		●			●					Ag	≤ 5	9.9 ±0.3	0.2	10.8	9.3			foam sealing ring around pushbutton								
1050.1102		●			●				2.8 x 0.5	Ag	≤ 1.5	8.4 ±0.3	0.2	9.3	7.5									●		
1050.1202		●			●				2.8 x 0.5	Ag	≤ 1.5	9.9 ±0.3	0.2	10.8	9.1									●		
1050.2102		●			●				sealed	Ag	≤ 1.5	8.4 ±0.3	0.2	9.3	7.5									●		
1050.2202		●			●				sealed	Ag	≤ 1.5	9.9 ±0.3	0.2	10.8	9.1									●		
1050.3102		●			●					Ag	≤ 1.5	8.4 ±0.3	0.2	9.3	7.5			fixing pin						●		
1050.4102		●			●					Ag	≤ 1.5	8.4 ±0.3	0.2	9.3	7.5			fixing pin						●		
1050.5202		●			●				sealed	Ag	≤ 0.5	11.1 ±1.5	1.0	15	7.4		L02							●		
1050.5702		●			●				sealed	Ag	≤ 0.6	16.2 ±1.5	1.0	20	13		L12							●		
1050.6702		●			●				2.8 x 0.5	Ag	≤ 0.6	16.2 ±1.5	1.0	20	13		L12							●		
1050.7202		●			●				sealed	Ag	≤ 0.5	11.1 ±1.5	1.0	15	7.4		L02							●		
1050.7702		●			●				sealed	Ag	≤ 0.6	16.2 ±1.5	1.0	20	13		L12									
1050.0151			●			●			sealed	Au	≤ 1.5	8.4 ±0.3	0.2	9.3	7.5									●		
1050.1151			●			●			2.8 x 0.5	Au	≤ 1.5	8.4 ±0.3	0.2	9.3	7.5									●		
1050.2151			●			●			sealed	Au	≤ 1.5	8.4 ±0.3	0.2	9.3	7.5									●		
1050.5251			●			●			sealed	Au	≤ 0.5	11.1 ±1.5	1.0	15	7.4		L02									
1050.5305			●			●			sealed	Au	≤ 0.6	16.6 ±0.2	1.0	20	13.6		L43							●		

SERIES 1050 - SUBMINIATURE SNAP-ACTION SWITCHES

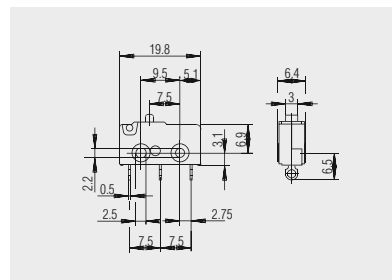
TO 10 (1.5) A 250 V AC



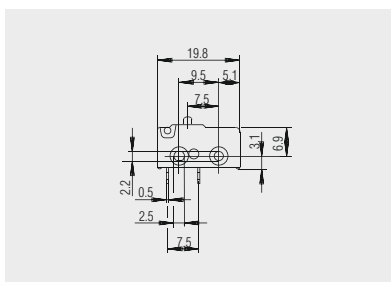
Terminal variants



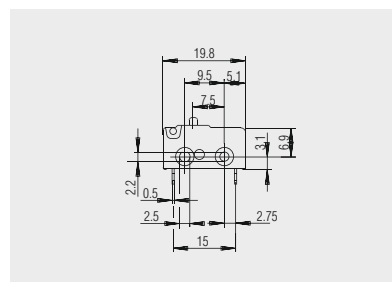
Quick-connect terminal
2.8 x 0.5



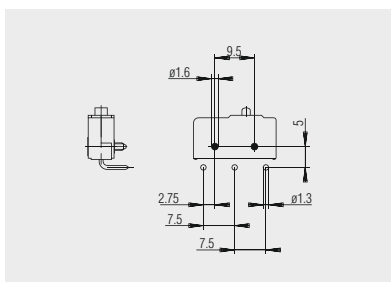
Solder terminal



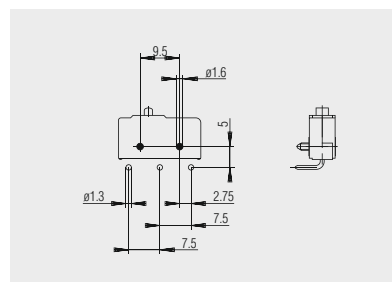
Solder terminal
normally open contact version



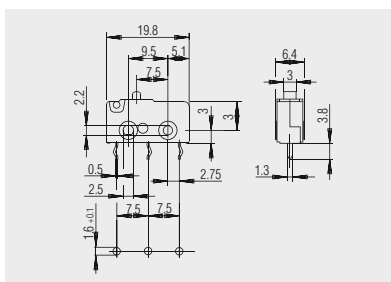
Solder terminal
normally closed contact version



PCB terminal (cover side)
right angled



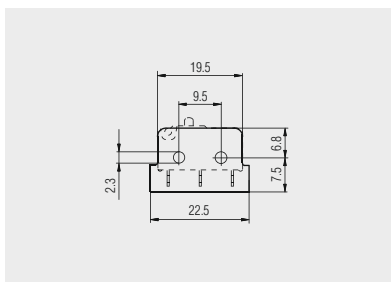
PCB terminal (base side)
left angled



PCB terminal
sealed



Additional parts



Insulating plate for solder terminal
0.5 mm: 231.005.021

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

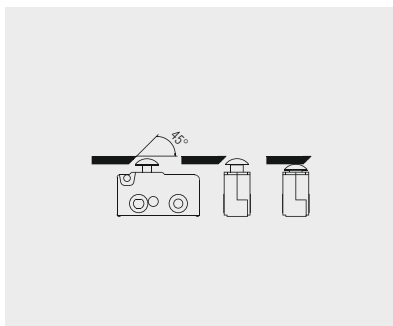
SENSORS

SERIES 1050 - SUBMINIATURE SNAP-ACTION SWITCHES

TO 10 (1.5) A 250 V AC



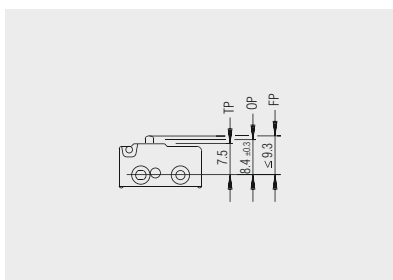
Mushroom-shaped actuator



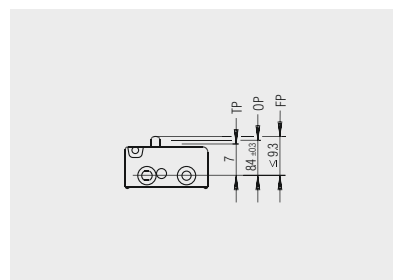
The mushroom-shaped actuator allows, in addition to the vertical actuation from above, lateral approach from any direction. In such application cases, an angle of $< 45^\circ$ is necessary on the actuating element (angle for versions with extended overtravel on request). To keep the friction here to a minimum, we recommend the use of materials with a low friction coefficient in relation to the material PA. In addition, the surface of the actuating element should be free from valleys. The mechanical life endurance depends on the material and surface properties as well as on the form of the slide.



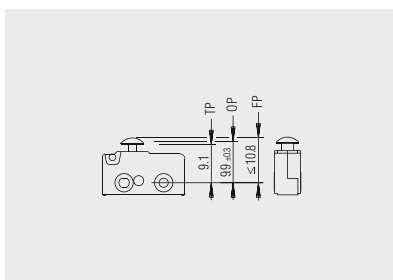
Switching positions



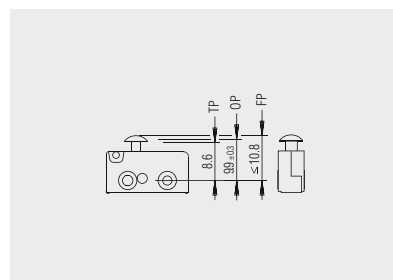
Standard actuator



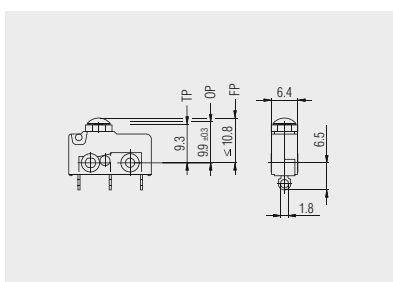
Standard actuator and extended overtravel



Mushroom-shaped actuator



Mushroom-shaped actuator and extended overtravel



Mushroom-shaped actuator with foam sealing ring

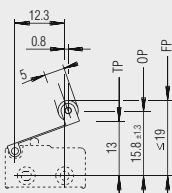
SERIES 1050 - SUBMINIATURE SNAP-ACTION SWITCHES

TO 10 (1.5) A 250 V AC

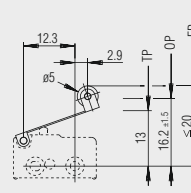


Auxiliary actuators

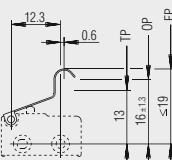
The auxiliary actuators are available as additional parts for later assembly or are already pre-assembled depending on the product. In the adjustable versions the operating position can be set application-specifically by the set screw.



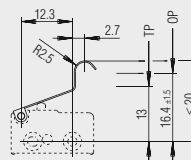
L11: roller lever
191.078.013



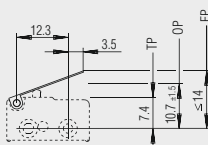
L12: roller lever
191.078.023



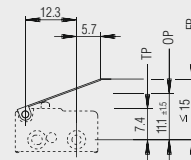
L21: simulated roller
191.071.041



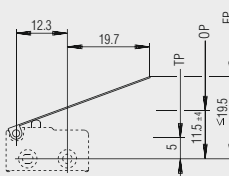
L22: simulated roller
191.071.051



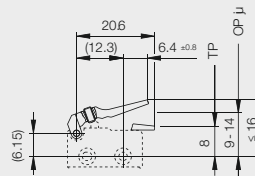
L01: straight lever
191.071.011



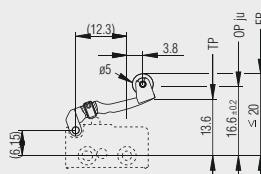
L02: straight lever
191.071.021



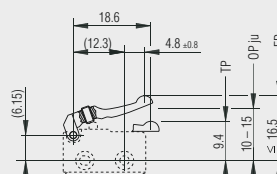
L03: straight lever
191.071.101



L41: adjustable plastic lever
190.075.013



L43: adjustable roller lever
190.072.013



L45: adjustable simulated roller
190.074.013

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1080 - MINIATURE SNAP-ACTION SWITCH

T0 21 (8) A 250 V AC



PRODUCT FEATURES

- ◆ The precise mounting of the moving contact part (milled bearing blade) offers optimum snap-action even with slow actuation
- ◆ Wide range of ratings from 3 (1) A 250 V AC to 21 (8) A 250 V AC
- ◆ Versions with gold plated contacts for signal current applications
- ◆ Various auxiliary actuators, two suspension points

ON REQUEST

- ◆ Low operating forces (≤ 0.15 N)
- ◆ Customized additional actuators
- ◆ Plug terminal 4.8 x 0.5

Design	DIN 41635 A
Mechanical life endurance	2E6 (basic type 1080) 20E4 (basic type 1085)
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40 (actuator side)
Ambient temperature	-40 °C ... +125 °C
Flammability	UL 94 V-0
Glow wire test temperature	850 °C
Material	actuator: PETP glass fiber-reinforced additional actuator: stainless steel housing: PA glass fiber-reinforced / PETP glass fiber-reinforced terminals: silver plated / CuZn
Bounce time	< 10 ms
Approval marks	  
Suitable for appliances of protection class II under compliance with the installation conditions required on the equipment side	



SERIES 1080 - MINIATURE SNAP-ACTION SWITCH

TO 21 (8) A 250 V AC

		Normally closed contact (SPNC)		Normally open contact (SPNO)		Changeover switch (SPDT momentary)	
		1080.0464		1080.0440		1080.0103	
21 (8) A 250 V AC 1E4							
16 (8) A 250 V AC 1E4		●		●		●	
16 (4) A 250 V AC 5E4				●		●	
16 (4) A 250 V AC 25E3						●	
10 (4) A 250 V AC 25E3							
6 (2) A 250 V AC 5E4							
4 (4) A 250 V AC 5E4							
3 (1) A 250 V AC 5E4							
3 (1) A 250 V AC 25E3							
21 A 250 V AC 2 HP				●			
21 A 125 V AC 1 HP				●			
16 A 250 V AC 1/2 HP		●		●			
16 A 125 - 250 V AC 1/2 HP						●	
16 A 125 V AC 1/3 HP		●		●			
10 A 250 V AC 1/3 HP							
10 A 125 V AC 1/8 HP							
3 A 125 - 250 V AC				●		●	
Terminal type							
Terminal description		6.3		6.3 straight		6.3	
Contact material		Ag		Ag		Ag	
Operating force in N		≤ 1.0		≤ 1.5		≤ 1.0	
Operating position (OP) in mm		14.7 ± 0.5		14.7 ± 0.5		14.7 ± 0.5	
Difference travel max. in mm		0.3		0.3		0.3	
Free position (FP) max. in mm		16.2		16.2		16.2	
Permissible total travel position (TP) in mm		13.2		13.2		13.2	
Actuator description		□		□		□	
Lever drawing						L02	
Contact distance in mm		< 3		< 3		< 3	
EN 60335 cap. 30 conform "G"		●		●			
Stock version						●	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

FACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

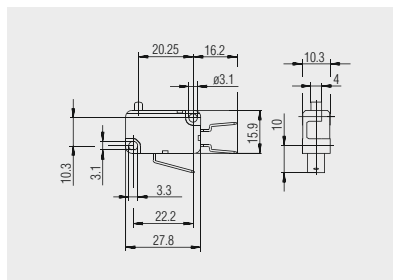
SENSORS

SERIES 1080 - MINIATURE SNAP-ACTION SWITCH

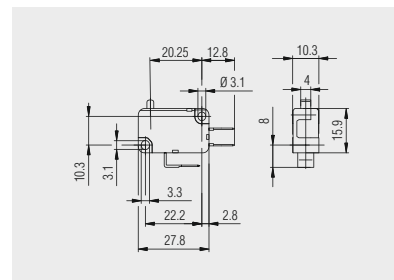
TO 21 (8) A 250 V AC



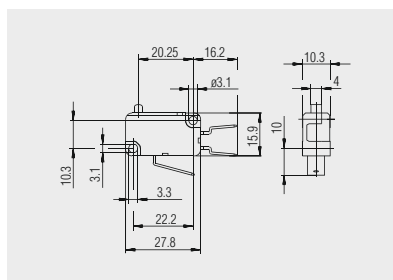
Terminal variants



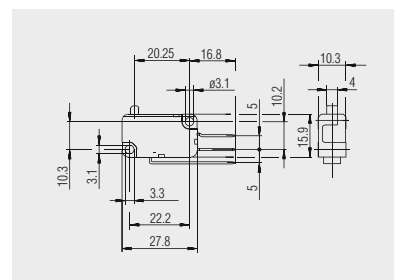
Quick-connect terminal 4.8 x 0.8



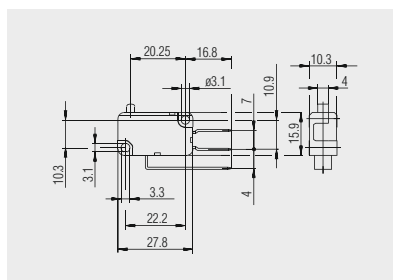
Quick-connect terminal 4.8 x 0.8 straight



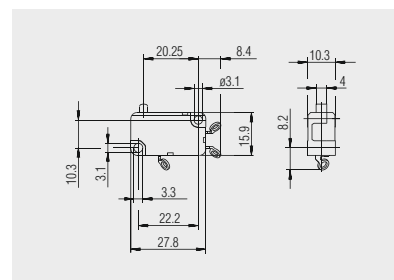
Quick-connect terminal 6.3 x 0.8



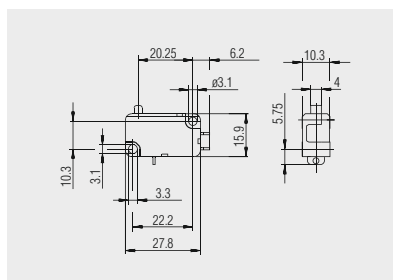
Quick-connect terminal 6.3 x 0.8 PITCH 5



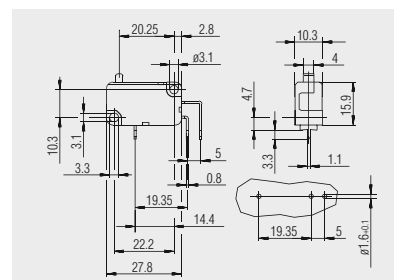
Quick-connect terminal 6.3 x 0.8 PITCH 7



Solder terminal



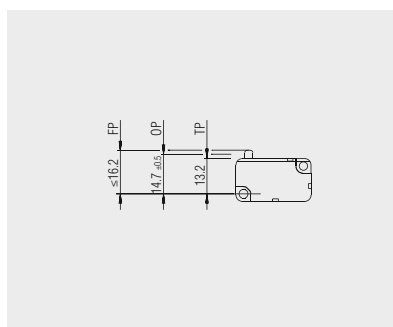
Short solder terminal



PCB terminal standing



Switching positions



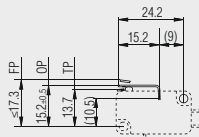
FP: free position
OP: operating position
TP: permissible total travel position

SERIES 1080 - MINIATURE SNAP-ACTION SWITCH

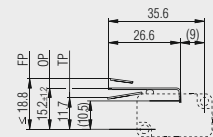
TO 21 (8) A 250 V AC



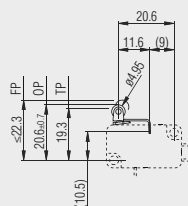
Auxiliary actuators



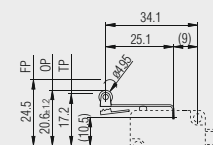
L01: straight lever
191.080.091



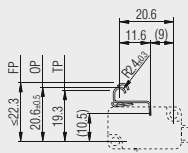
L02: straight lever
191.080.101



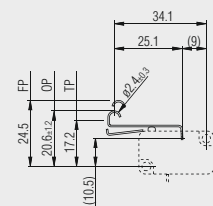
L11: roller lever
191.079.013



L12: roller lever
191.079.023



L21: simulated roller
191.080.451



L22: simulated roller
191.080.471

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

TO 21 (8) A 250 V AC



PRODUCT FEATURES

- ◆ Friction contact system whose shearing movement can loosen weldings
- ◆ Very high inrush currents (capacitive)
- ◆ Contact distances less and greater than 3 mm
- ◆ Operating forces from 0.2 to 4.2 N

ON REQUEST

- ◆ Material conform with the filament wire test acc. to IEC 60335-1:2001 chap. 30
- ◆ Side bearing terminal
- ◆ Electrical rating 16 (16) A 250 V 5E4 for normally closed and normally open version

Design	DIN 41635 A
Mechanical life endurance	5E6 version with lever or contact spacing > 3 mm 10E6 standard version 5E4 version with curved spring steel lever
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Ambient temperature	-40 °C ... +100 °C on request ... +125 °C ... +85 °C
Flammability	UL 94 (housing: V-0, actuator: V-2) UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator PA additional actuator galvanized steel / spring steel / stainless steel housing Duroplast type 182 / PA glass fiber-reinforced terminals silver plated / chromated
Bounce time	< 10 ms
Approval marks	CE / UL / C
Suitable for appliances of protection class II under compliance with the installation conditions required on the equipment side	



SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

TO 21 (8) A 250 V AC

		Normally closed contact (SPNC)			Normally open contact (SPNO)			Changeover switch (SPDT momentary)		
		1005.1105			1005.1101			1006.3402		
21 (8) A 250 V AC 25E3										
20 (4) A 400 V AC 1E4										
16 (16) A 250 V AC 5E4										
16 (4) A 400 V AC 5E4										
16 (4) A 250 V AC 5E4										
16 (4) A 250 V AC 25E3										
12 (12) A 250 V AC 5E4										
10 (6) A 250 V AC 5E4										
10 (4) A 400 V AC 1E4										
10 (4) A 250 V AC 5E4										
8 (8) A 250 V AC 5E4										
6 (2.5) A 400 V AC 5E4										
6 (2.5) A 250 V AC 5E4										
21 A 250 V AC 2 HP										
21 A 125 V AC 1 HP										
16 A 250 V AC 2 HP										
16 A 125 V AC 1 HP										
16 A 125 - 250 V AC 1/2 HP										
10 A 125 - 250 V AC 1/2 HP										
10 A 125 - 250 V AC 1/4 HP										
8 A 125 - 250 V AC 1/3 HP										
4 A 125 - 250 V AC 1/6 HP										
Terminal type										
Terminal description										
Contact distance in mm										
Contact material										
Operating force in N										
Operating position (OP) in mm										
Difference travel max. in mm										
Free position (FP) max. in mm										
Permissible total travel position (TP) in mm										
Actuator description										
Lever drawing										
Miscellaneous										
Stock version										

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

TO 21 (8) A 250 V AC

	Changeover switch (SPDT momentary)															
	1005.0507	1005.1010	1004.0509	1005.0101	1005.0401	1005.1001	1005.3501	1006.0701	1006.0901	1006.1101	1006.1201	1006.1301	1006.1401	1006.1511	1006.1801	1006.4103
21 (8) A 250 V AC 25E3																
20 (4) A 400 V AC 1E4																
16 (16) A 250 V AC 5E4																
16 (4) A 400 V AC 5E4																
16 (4) A 250 V AC 5E4	●	●														
16 (4) A 250 V AC 25E3			●													
12 (12) A 250 V AC 5E4	●															
10 (6) A 250 V AC 5E4																
10 (4) A 400 V AC 1E4				●	●	●	●	●	●	●	●	●	●	●	●	●
10 (4) A 250 V AC 5E4			●													
8 (8) A 250 V AC 5E4		●														
6 (2.5) A 400 V AC 5E4				●	●	●	●	●	●	●	●	●	●	●	●	●
6 (2.5) A 250 V AC 5E4																
21 A 250 V AC 2 HP																
21 A 125 V AC 1 HP																
16 A 250 V AC 2 HP																
16 A 125 V AC 1 HP																
16 A 125 - 250 V AC 1/2 HP	●		●													
10 A 125 - 250 V AC 1/2 HP		●														
10 A 125 - 250 V AC 1/4 HP				●	●	●	●	●	●	●	●	●	●	●	●	●
8 A 125 - 250 V AC 1/3 HP																
4 A 125 - 250 V AC 1/6 HP																
Terminal type																
Terminal description		6.3		M3		6.3				6.3	6.3	6.3	6.3	6.3	6.3	
Contact distance in mm	< 3	> 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Contact material	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag
Operating force in N	2.4 - 3.8	2.4 - 3.8	0.8 - 1.8	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	0.8 - 1.4	1.5 - 2.5	1.5 - 2.5	0.3 - 0.55	0.8 - 1.4	0.7 - 1.25	1.5 - 2.5	1.5 - 2.5
Operating position (OP) in mm	14.7 ± 0.5	14.4 ± 0.3	14.7 ± 0.5	14.7 ± 0.5	14.7 ± 0.5	14.7 ± 0.5	14.7 ± 0.5	20.8 ± 0.5	15.4 ± 1.2	15.3 ± 0.5	20.8 ± 0.5	15.7 ± 2.7	15.4 ± 1.2	20.8 ± 1.2	22 ± 1	20.8 ± 0.5
Difference travel max. in mm	0.3	1.2	0.1 - 0.25	0.3	0.3	0.3	0.3	0.3	0.7	0.3	0.3	1.8	0.7	0.9	0.6	0.3
Free position (FP) max. in mm	13.4 16	13.4 16	13.4 16	13.4 16	13.4 16	13.4 16	13.4 16	19.5 22.1	12.6 18.2	14 16.6	19.5 22.1	9.8 21.5	12.6 18.2	18 23.5	18.5 24.5	19.5 22.1
Permissible total travel position (TP) in mm	13.4 16	13.4 16	13.4 16	13.4 16	13.4 16	13.4 16	13.4 16	19.5 22.1	12.6 18.2	14 16.6	19.5 22.1	9.8 21.5	12.6 18.2	18 23.5	18.5 24.5	19.5 22.1
Actuator description	□	□	□	□	□	□	□									
Lever drawing								L11	L02	L01	L11	L04	L02	L12	L31	L11
Miscellaneous			milled bearing blade													
Stock version				●	●	●		●			●	●	●	●	●	

SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

TO 21 (8) A 250 V AC

	Changeover switch (SPDT momentary)	1006.4203	1004.4601	1004.0402	1004.1002
21 (8) A 250 V AC 25E3					
20 (4) A 400 V AC 1E4					
16 (16) A 250 V AC 5E4					
16 (4) A 400 V AC 5E4					
16 (4) A 250 V AC 5E4					
16 (4) A 250 V AC 25E3					
12 (12) A 250 V AC 5E4					
10 (6) A 250 V AC 5E4					
10 (4) A 400 V AC 1E4		●			
10 (4) A 250 V AC 5E4			●		
8 (8) A 250 V AC 5E4		●			
6 (2.5) A 400 V AC 5E4				●	●
6 (2.5) A 250 V AC 5E4					
21 A 250 V AC 2 HP					
21 A 125 V AC 1 HP					
16 A 250 V AC 2 HP					
16 A 125 V AC 1 HP					
16 A 125 - 250 V AC 1/2 HP					
10 A 125 - 250 V AC 1/2 HP					
10 A 125 - 250 V AC 1/4 HP		●			
8 A 125 - 250 V AC 1/3 HP			●		
4 A 125 - 250 V AC 1/6 HP				●	●
Terminal type					
Terminal description			6.3		6.3
Contact distance in mm		< 3	< 3	< 3	< 3
Contact material		Ag	Ag	Ag	Ag
Operating force in N		1.5 - 2.5	0.5 - 1.1	0.2 - 0.6	0.2 - 0.6
Operating position (OP) in mm		20.8 ± 0.5	20.8 ± 0.5	14.7 ± 0.5	14.7 ± 0.5
Difference travel max. in mm		0.3	0.3	0.3	0.3
Free position (FP) max. in mm		19.5 22.1	19.5 22.1	13.4 16	13.4 16
Permissible total travel position (TP) in mm		19.5 22.1	19.5 22.1	13.4 16	13.4 16
Actuator description					
Lever drawing		L11	L11		
Miscellaneous			milled bearing blade	milled bearing blade	milled bearing blade
Stock version				●	●

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

TO 21 (8) A 250 V AC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

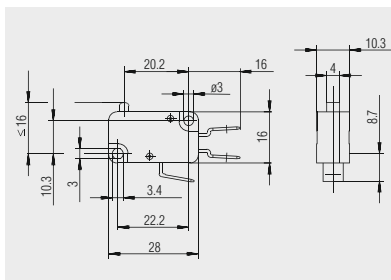
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

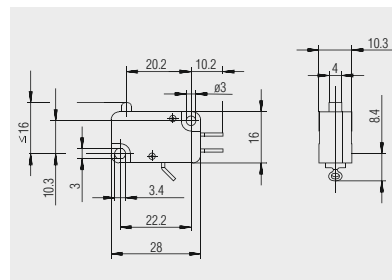
SENSORS



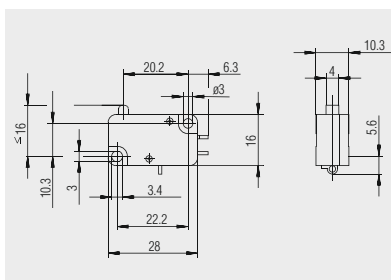
Basic type 1005



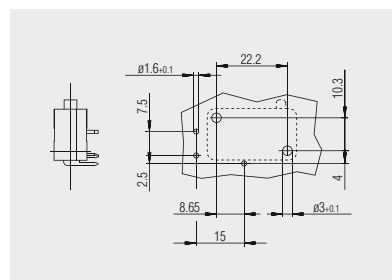
Quick-connect terminal 6.3 x 0.8



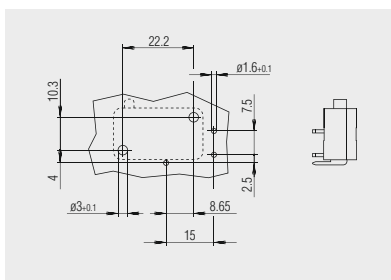
Solder terminal



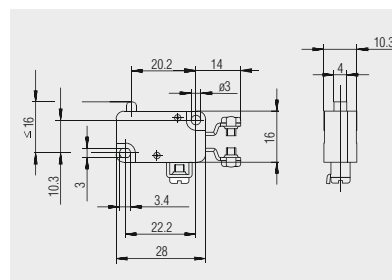
Short solder terminal



PCB terminal (cover side)
right angled



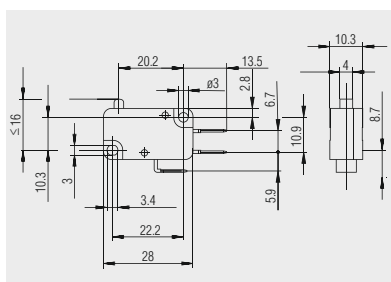
PCB terminal (base side)
left angled



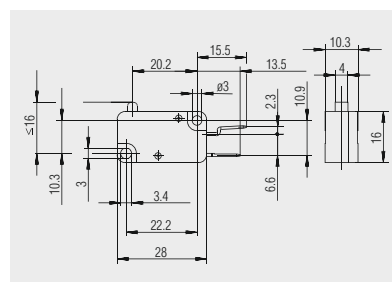
Screw terminal M3



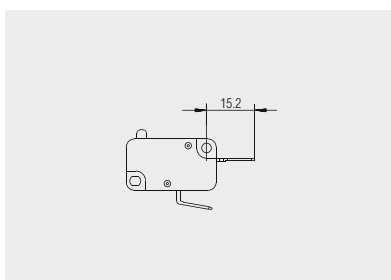
Basic type 1005



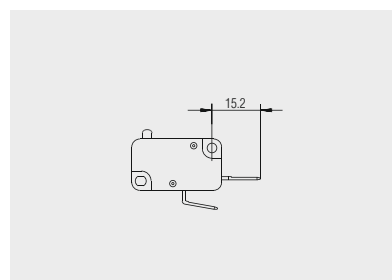
Quick-connect terminal 4.8 x 0.8
straight



Quick-connect terminal 4.8 x 0.8
top side



Quick-connect terminal 6.3 x 0.8
normally open contact version



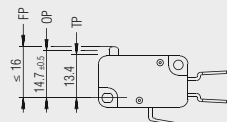
Quick-connect terminal 6.3 x 0.8
normally closed contact version

SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

TO 21 (8) A 250 V AC



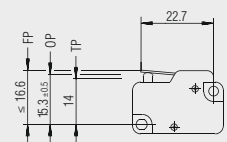
Basic types 1004 and 1005
switching positions



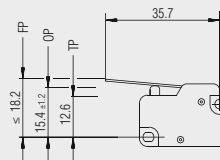
FP: free position
OP: operating position
TP: permissible total travel position



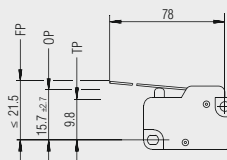
Basic type 1006
auxiliary actuator



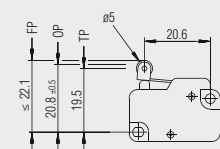
L01: straight lever



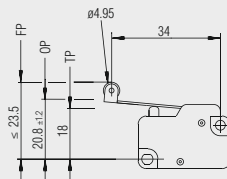
L02: straight lever



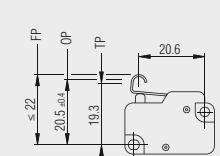
L04: straight lever



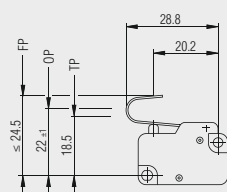
L11: roller lever



L12: roller lever



L21: simulated roller



L31: spring lever

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

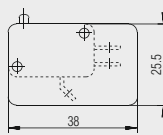
SENSORS

SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

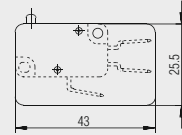
TO 21 (8) A 250 V AC



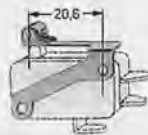
Additional parts



Insulating plate for solder terminal
0.5 mm: 231.009.011



Insulating plate for quick-connect terminal
0.5 mm: 231.010.011
0.8 mm: 231.010.021



Stainless spring steel

lever 20.6 long with roller diameter 5
out of PA yellow (to be mounted lateral
with the switch using screws)

191.013.013

Further information under

WWW.MARQUARDT-SWITCHES.COM

SERIES 1040 - ROTARY SHAFT SNAP-ACTION SWITCHES

TO 4 (1) A 250 V AC



PRODUCT FEATURES

- ◆ Extremely low switching torques
- ◆ Spring steel auxiliary actuators which are easily adaptable to customer-specific installation conditions

ON REQUEST

- ◆ Other auxiliary actuators
- ◆ Normally open contact version

Mechanical life endurance	5E6
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40 actuator side IP 00 terminal side
Ambient temperature	-35 °C ... +85 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material	actuator PA glass fiber-reinforced additional actuator stainless steel spring steel housing PA glass fiber-reinforced / PETP terminals silver plated
Contact distance	< 3 mm
Approval marks	
Suitable for appliances of protection class II under compliance with the installation conditions required on the equipment side	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

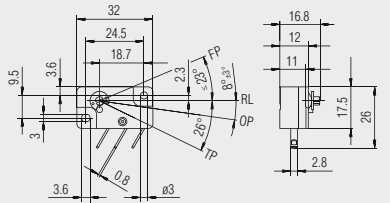
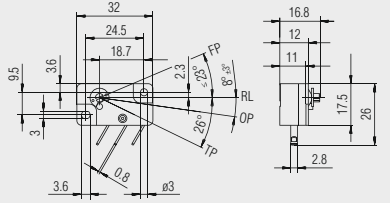
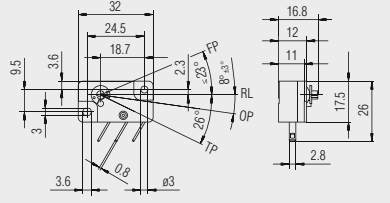
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1040 - ROTARY SHAFT SNAP-ACTION SWITCHES

TO 4 (1) A 250 V AC

	4 (1) A 250 V AC 5E4	Terminal type	Terminal description	Contact material	Stock version
Changeover switch (SPDT momentary)					
1040.0111	●		2.8	Ag	●
1040.0114	●		2.8	Ag	●
1040.0301	●		2.8	Au	
 1040.0111			Enclosed loose: actuating lever 80 long, diameter 0.6 mm made of stainless spring steel and fastening disc FP: free position $\leq 23^\circ$ OP: operating position $8^\circ \pm 3^\circ$ TP: permissible total travel position 26° Pretravel angle max. 34° Overtravel angle min. 15° Difference angle $5^\circ - 15^\circ$ Switch actuating torque 0.6 - 0.9 Nmm End actuating torque min. 0.2 Nmm Reset torque min. 0.15 Nmm		
 1040.0114			Enclosed loose: actuating lever 80 long, diameter 0.6 mm made of stainless spring steel and fastening disc FP: free position $\leq 23^\circ$ OP: operating position $8^\circ \pm 3^\circ$ TP: permissible total travel position 26° Pretravel angle max. 34° Overtravel angle min. 15° Difference angle $5^\circ - 15^\circ$ Switch actuating torque 0.9 - 1.7 Nmm End actuating torque min. 0.2 Nmm Reset torque min. 0.15 Nmm		
 1040.0301			Without lever and fastening disc FP: free position $\leq 23^\circ$ OP: operating position $8^\circ \pm 3^\circ$ TP: permissible total travel position 46° Pretravel angle max. 34° Overtravel angle min. 35° Difference angle $5^\circ - 15^\circ$ Switch actuating torque 0.6 - 0.9 Nmm End actuating torque ≥ 0 Nmm Reset torque ≥ 0 Nmm		

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1010 - OPEN SNAP-ACTION SWITCHES

TO 6 (2) A 250 V AC



PRODUCT FEATURES

- ◆ Powerful snap-action switch with C-spring contact system according to design DIN 41635C
- ◆ High switching reliability due to large contact forces directly after switching
- ◆ Small size, large travel and difference travel
- ◆ Short bounce time
- ◆ Contact system insensitive to vibrations

ON REQUEST

- ◆ Extended overtravel
- ◆ Special base forms
- ◆ Special actuating cams
- ◆ In addition to a wide range of normally closed contacts, normally open contacts and changeover switches and spring sets without snap function (basic type 1017) are available

Design	DIN 41635 C
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 00
Ambient temperature	-20 °C ... +85 °C ... +120 °C (basic type 1014 brief)
Flammability	UL 94 V-2 UL 94 HB
Glow wire test temperature	850 °C
Material	actuator: spring steel / PA glass fiber-reinforced / PA / metal (only 1017.0153) housing: PA glass fiber-reinforced / PA terminals: silver plated
Bounce time	< 5 ms
Approval marks	
Suitable for appliances of protection class II under compliance with the installation conditions required on the equipment side	



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1010 - OPEN SNAP-ACTION SWITCHES

TO 6 (2) A 250 V AC

	6 (2) A 250 V AC 25E3	2 (0.5) A 250 V AC 20E4	2 (0.5) A 250 V AC 5E4	2 A 12 V DC 10E4	1 A 24 V DC 10 E4	0.5 A 15 V 5E4	0.1 A 24 V DC 5E4	30 mA 12 V 5E4	Terminal type	Terminal description	Contact material	Operating force in N	Operating position (OP) in mm	Difference travel max. in mm	Free position (FP) max. in mm	Permissible total travel position (TP) in mm	Actuator description	Mechanical life endurance	Miscellaneous	Stock version
Normally closed contact (SPNC)																				
1010.7601			●							9.5 long	Ag	0.25 - 0.6	2.2 ±0.6	0.9	0.4	3.5		1E6		
Normally open contact (SPNO)																				
1010.7401			●							9.5 long	Ag	0.25 - 0.6	2.2 ±0.6	0.9	0.4	3.5		1E6		
1010.7402			●							9.5 long	Ag	0.45 - 1.05	2.2 ±0.6	0.9	0.4	3.5		1E6		
1017.0801							●			9.2 long	CuBe silver plated	0.15 - 0.5	2.2 ±0.6		0	3.2		1E6	without approval mark	●
1017.5701							●				CuBe silver plated	0.15 - 0.5	1.4 ±0.6		3.6	0.4		1E6	without approval mark	
1017.0851							●			9.2 long	Au	0.15 - 0.5	2.2 ±0.6		0	3.2		1E6	without approval mark	
Changeover switch (SPDT momentary)																				
1010.9705	●		●								Au	0.45 - 1.05	3.8 ±0.6	0.9	6.6	2		10E4		
1010.9752	●		●								Ag	0.45 - 1.05	6.9 ±0.6	0.9	9.7	5.1		10E4		
1010.9802	●		●								Ag	0.45 - 1.05	3.8 ±0.6	0.9	6.6	2		10E4		
1010.9852	●		●								Ag	0.45 - 1.05	6.9 ±0.6	0.9	9.7	5.1		10E4		●
1010.0101		●								6.5 long	Ag	0.25 - 0.6	2.2 ±0.6	0.9	0.4	3.5		1E6	without approval mark	●
1010.3001		●								6.5 long	Ag	0.25 - 0.6	0.9 ±0.6	0.9	3.6	0.2		1E6		●
1010.4402		●								straight	Ag	0.25 - 0.6	1.3 ±0.6	0.9	4.1	0		1E6	small base without approval mark	●
1010.0304			●							9.5 long	Ag	0.25 - 0.6	2.2 ±0.6	0.9	0.4	3.5		1E6		
1010.2003			●							9.5 long	Au	0.45 - 1.05	2.2 ±0.6	0.9	0.4	3.5		1E6		
1010.4103			●							straight	Au	0.25 - 0.6	2.2 ±0.6	0.9	0.4	3.5		1E6	without approval mark	
1010.6002			●							standing	Au	0.45 - 1.05	11.2 ±0.6	0.9	13.8	9.9		1E6		●
1010.6003			●							standing	Ag	0.25 - 0.6	11.2 ±0.6	0.9	13.8	9.9		1E6		●
1010.7102			●							6.5 long	Ag	0.45 - 1.05	2.2 ±0.6	0.9	0.4	3.5		1E6	without approval mark	
1010.7172			●							6.5 long	Au	0.45 - 1.05	0.9 ±0.6	0.9	3.6	0.2		1E6	without approval mark	
1010.7352			●							9.5 long	Ag	0.45 - 1.05	0.9 ±0.6	0.9	3.6	0.2		1E6		
1010.8102			●							straight	Ag	0.45 - 1.05	2.2 ±0.6	0.9	0.4	3.5		1E6	without approval mark	
1014.6151				●	●					standing	Au	0.3 - 0.8	6.6 ±0.5	0.6	8.6	5.3		50E4	without approval mark	
Changeover switch with OFF position in the center (SPDT Momentary - Center OFF)																				
1017.0153						●				9.2 long	Au		≤ 2.1		0	0.5		1E6	without approval mark operating range max. 4.2	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

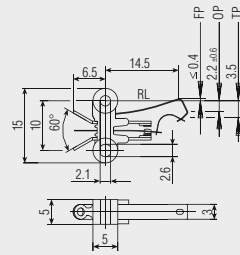
SENSORS

SERIES 1010 - OPEN SNAP-ACTION SWITCHES

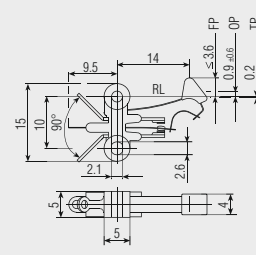
TO 6 (2) A 250 V AC



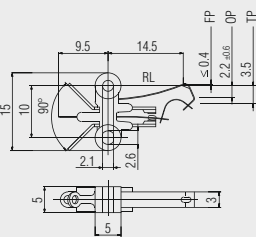
Basic type 1010



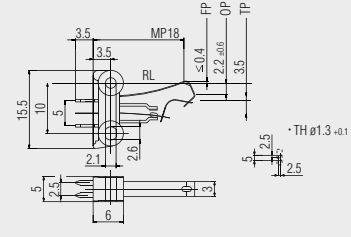
 Solder terminal 30° angled



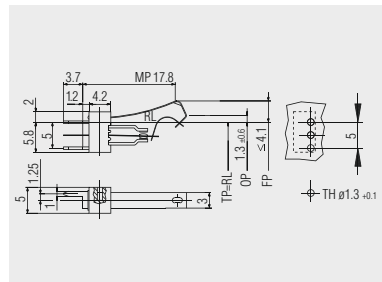
 Solder terminal 45° angled



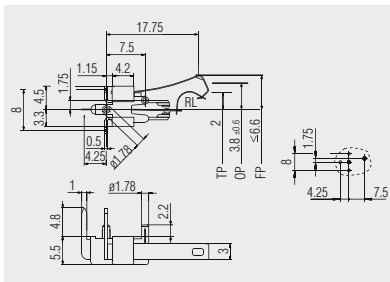
 Solder terminal 45° angled



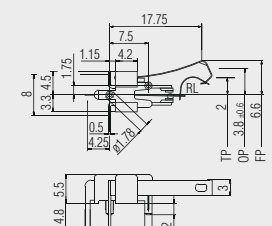
⌋ PCB terminal straight



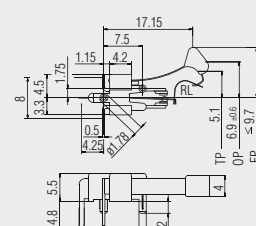
PCB terminal straight



PCB terminal left angled



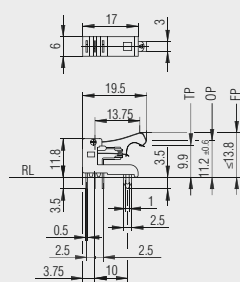
PCB terminal right angled
1010.9802



PCB terminal right angled
1010.9852



Basic type 1010



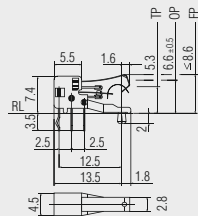
PCB terminal vertical:

A switch actuation vertical to the PCB can be implemented in a confined space with this version.

ROCKER SWITCHES

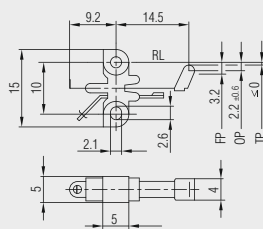
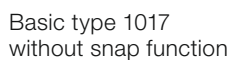
SNAP-ACTION SWITCHES

TO 6 (2) A 250 V AC

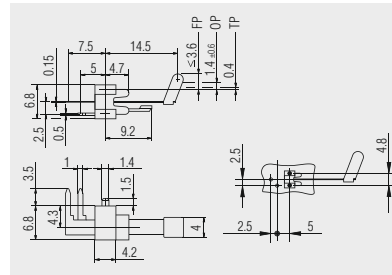


According to the same functional principle as basic type 1010, but in smaller size.

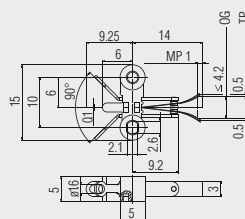
This basic type is designed for low voltages and has no approval mark.



Solder terminal
normally open contact version



PCB terminal left angled



Changeover switch with OFF position in the center

SERIES 1019 - SINGLE-POLE SNAP-ACTION SWITCHES

TO 6 (2) A 250 V AC



PRODUCT FEATURES

- ◆ Snap-action switches with and without housing
- ◆ Contact distance > 3 mm
- ◆ Normally open contact and normally closed contact version

ON REQUEST

- ◆ Gold-plated contacts
- ◆ Customized lever variants

Mechanical life endurance	20E4	
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)	
Insulation resistance (new condition)	> 100 MOhm (500 V DC)	
Proof tracking	250 PTI	
Ambient temperature	-40 °C ... +85 °C	
Flammability	UL 94 (socket, lever: V-0, actuator: V-2)	
Glow wire test temperature	850 °C	
Material	actuator housing terminals	PA glass fiber-reinforced / PA PA glass fiber-reinforced silver plated
Contact distance	> 3 mm	
Approval marks	 /  (housing variants) / 	
Suitable for appliances of protection class II under compliance with the installation conditions required on the equipment side		



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1019 - SINGLE-POLE SNAP-ACTION SWITCHES

TO 6 (2) A 250 V AC

	6 (2) A 250 V AC 1E4	5 A 125 - 250 V AC	Terminal type	Terminal description	Contact material	Operating force in N	Operating position (OP) in mm	Difference travel max. in mm	Free position (FP) max. in mm	Permissible total travel position (TP) in mm	Actuator description	Miscellaneous	Stock version
	Normally closed contact (SPNC)												
1019.3101	●		 2.8	Ag	0.9 - 1.7	6.3 ±0.8	2.4	1	10.5				
1019.5501	●	●	 2.8	Ag	0.9 - 1.7	6.3 ±0.8	2.4	1	10.5			with housing	
1019.5601	●	●	 2.8	Ag	1.5 - 3	2.4 ±0.6	1.2	4.7	0			with housing	●
Normally open contact (SPNO)													
1019.0101	●		 2.8	Ag	1.5 - 3	2.4 ±0.6	1.2	4.7	0.5				
1019.0201	●		 2.8	Ag	1.5 - 3	2.4 ±0.6	1.2	4.7	0.5				
1019.0301	●		 2.8	Ag	1.5 - 3	2.4 ±0.6	1.2	4.7	0.5				
1019.2101	●		 2.8	Ag	0.9 - 1.7	6.3 ±0.8	2.4	1	10.5				●
1019.5101	●	●	 2.8	Ag	1.5 - 3	2.4 ±0.6	1.2	4.7	0			with housing	●
1019.5401	●	●	 2.8	Ag	0.9 - 1.7	6.3 ±0.8	2.4	1	10.5			with housing	

Further information under

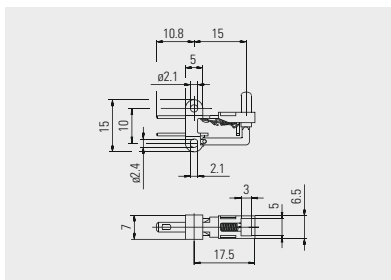
WWW.MARQUARDT-SWITCHES.COM

SERIES 1019 - SINGLE-POLE SNAP-ACTION SWITCHES

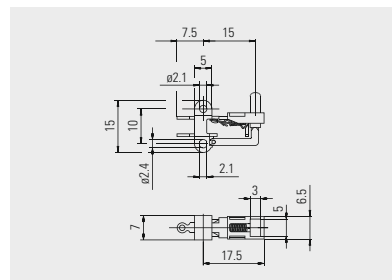
TO 6 (2) A 250 V AC



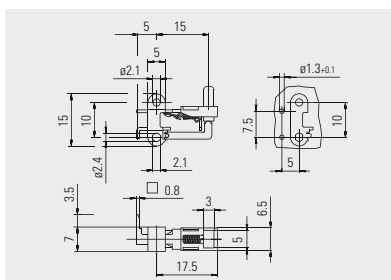
Open design with pushbutton



Quick-connect terminal
2.8 x 0.8



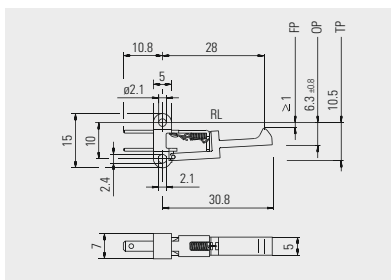
Solder terminal



PCB terminal left angled



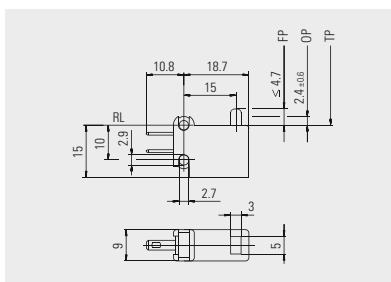
Open design with lever



Quick-connect terminal
2.8 x 0.8



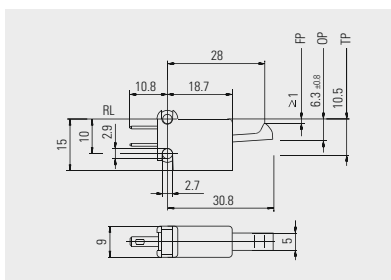
Closed design with pushbutton



Quick-connect terminal
2.8 x 0.8



Closed design with lever



Quick-connect terminal
2.8 x 0.8

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1022 - SNAP-ACTION SWITCHES IP 67

TO 4 A 12 V DC



PRODUCT FEATURES

- ◆ Dust and water protection on actuator and terminal side
- ◆ Ice-proof lever bearing
- ◆ Small size, large travels
- ◆ High switching reliability due to great contact forces directly after switching
- ◆ Series with different fastening possibilities

ON REQUEST

- ◆ Customized assembly with connecting plugs
- ◆ Other auxiliary actuators

Mechanical life endurance	10E4	
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)	
Insulation resistance (new condition)	> 100 MOhm (500 V DC)	
Proof tracking	250 PTI	
Protection type	IP 67	
Ambient temperature	-40 °C ... +85 °C	
Flammability	UL 94 V-2	
Material	actuator additional actuator housing terminals	POM stainless steel spring steel PBTP cast
Bounce time	< 5 ms	
Contact distance	< 3 mm	
Contact material	gold plated	
Terminal description	500 mm long (terminal wires 0.5 mm² molded with switch, tinned wire ends)	



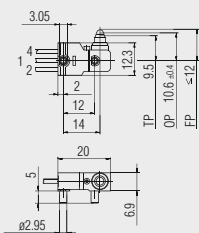
SERIES 1022 - SNAP-ACTION SWITCHES IP 67

TO 4 A 12 V DC

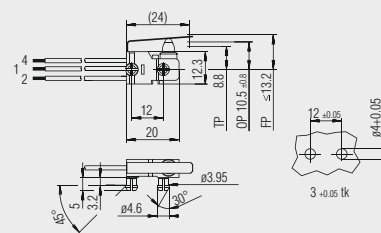
													
	4 A 12 V DC 10E4	2 A 24 V DC 10E4	Terminal type	Contact material	Operating force in N	Operating position (OP) in mm	Difference travel max. in mm	Free position (FP) max. in mm	Permissible total travel position (TP) in mm	Actuator description	Lever drawing	Miscellaneous	Stock version
Changeover switch (SPDT momentary)													
1022.0101	●	●		Au	< 2.5	10.6 ± 0.4	0.6	12	9.5			pin right 5 long	
1022.2201	●	●		Au	< 2.5	10.5 ± 0.8	1.0	13.2	8.8		L01	rest pin right	
1022.4501	●	●		Au	< 2.5	13.4 ± 0.9	1.0	15.5	11.6		L21	adjustable operating position by top side metal eye ± 2 1 pin right side	
1022.4502	●	●		Au	< 2.5	13.4 ± 0.9	1.0	15.5	11.6		L21	adjustable operating position by top side metal eye ± 2 1 pin left side	



Basic type 1022



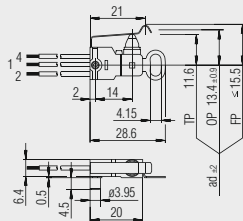
with pushbutton



L01: straight lever and snap pin

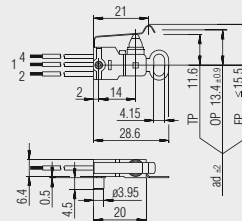


Basic type 1022



L21: simulated roller lever, on centering pin and a metal eye.

With the elongated hole fastening the switch can be swiveled around the pin and then fixed with a screw. This makes the operating position adjustable by ± 2 mm.



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1117 - SNAP-ACTION SWITCHES

TO 16 (6) A 400 V AC



PRODUCT FEATURES

- ◆ Double interrupting jump contact switching system
- ◆ Contact distance > 3 mm
- ◆ Material conformant with the filament wire test acc. to IEC 60 335-1:2001 chap. 30 and UL 94 V-0
- ◆ Large overtravel
- ◆ Actuator can be approached from all directions
- ◆ Normally open contact and normally closed contact versions

ON REQUEST

- ◆ Customized versions
- ◆ Changeover basic type 1116

Mechanical life endurance	10E4	
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)	
Insulation resistance (new condition)	> 100 MOhm (500 V DC)	
Proof tracking	250 PTI	
Protection type	IP 40	
Ambient temperature	-40 °C ... +85 °C	
Flammability	UL 94 V-0	
Glow wire test temperature	850 °C	
Material	actuator housing terminals	PA glass fiber-reinforced PA glass fiber-reinforced silver plated
Contact material	Ag	
Contact distance	≥ 3 mm	
Approval marks	 /  / 	
Suitable for appliances of protection class II under compliance with the installation conditions required on the equipment side		



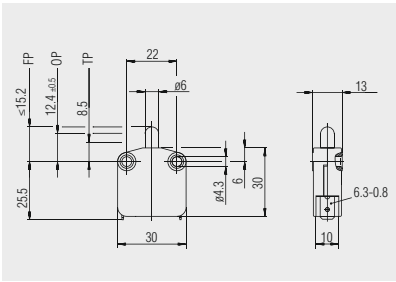
SERIES 1117 - SNAP-ACTION SWITCHES

TO 16 (6) A 400 V AC

	16 (6) A 400 V AC 1E4	12 A 250 V AC 1/2 HP	12 A 125 V AC 1/6 HP	Terminal type	Terminal description	Contact distance in mm	Operating force in N	Operating position (OP) in mm	Difference travel max. in mm	Free position (FP) max. in mm	Permissible total travel position (TP) in mm	Stock version
Normally closed contact (SPNC)												
1117.0206	●	●	●		6.3	≥ 3	3.5 ± 0.5	12.4 ± 0.5	2.6	15.2	8.5	●
Normally open contact (SPNO)												
1117.0106	●	●	●		6.3	≥ 3	3.5 ± 0.5	12.4 ± 0.5	2.6	15.2	8.5	●



Basic type 1117



 Quick-connect terminal
6.3 x 0.8

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1115 - SINGLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 400 V AC



PRODUCT FEATURES

- ◆ Double lifting contact system
- ◆ Contact distance > 3 mm
- ◆ Actuator can be approached from all directions
- ◆ Normally open-, Normally closed- and combined version (changeover)

ON REQUEST

- ◆ Customized versions
- ◆ G-conform according IEC 60335-1:2001 cap. 30

Mechanical life endurance	10E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	-40 °C ... +85 °C
Flammability	UL 94 V-0
Glow wire test temperature	850 °C
Material	actuator housing terminals
	PA glass fiber-reinforced PA glass ball reinforced, black, ultrasonic welded silver plated
Contact material	Ag
Contact distance	> 3 mm < 3 mm
Approval marks	 /  (product-dependend) / 
Suitable for appliances of protection class II under compliance with the installation conditions required on the equipment side	



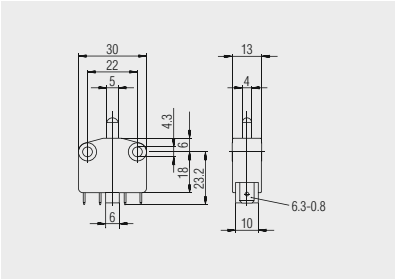
SERIES 1115 - SINGLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 400 V AC

	16 (4) A 400 V AC 1E4	16 (2) A 380 V AC 1E4	12 A 125 V AC 1/6 HP	6 A 250 V AC 1/6 HP	Terminal type	Terminal description	Contact distance in mm	Operating force in N	Operating position (OP) in mm	Difference travel max. in mm	Free position (FP) max. in mm	Permissible total travel position (TP) in mm	Stock version
Normally closed contact (SPNC)													
1115.2101	●		●	●		6.3	> 3	6.0 ±0.5			15	10.5	●
Normally open contact (SPNO)													
1115.4101	●		●	●		6.3	> 3	6.0 ±0.5	13.15 ±0.35		16.25	10.5	●
Changeover switch (SPDT momentary)													
1115.0101		●				6.3	< 3	6.5 ±1.0	13.5 ±0.5		15	10.5	●



Basic type 1115



 Quick-connect terminal
6.3 x 0.8

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

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MIKRO-SIGNALSCHALTER

ROCKER SWITCHES		ROCKER SWITCHES
PUSHBUTTON SWITCHES		PUSHBUTTON SWITCHES
TOGGLE SWITCHES		TOGGLE SWITCHES
SLIDE SWITCHES		SLIDE SWITCHES
ROTARY SWITCHES		ROTARY SWITCHES
FOOT SWITCHES		FOOT SWITCHES
TACT AND KEY SWITCHES		TACT AND KEY SWITCHES
SNAP-ACTION SWITCHES		SNAP-ACTION SWITCHES
MICRO-SIGNAL SWITCHES		MICRO-SIGNAL SWITCHES
SENSORS		SENSORS

MICRO-SIGNAL SWITCHES

SERIES 1065
Micro-signal switches
to 100 mA 30 V DC



PAGE
201 - 204

Further information under

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SERIES 1065 - MICRO-SIGNAL SWITCHES

TO 100 mA 30 V DC



PRODUCT FEATURES

- ◆ Redundant contact system for high switching reliability by double contacting
- ◆ Self-cleaning contact system due to wiping contacting
- ◆ Center-zero version (basic type 1075) for detecting 3 switching positions
- ◆ Noiseless switching system
- ◆ Large overtravel

ON REQUEST

- ◆ Other fastening pins
- ◆ Other lever forms
- ◆ Customized cable assembly
- ◆ Diagnosis capable versions

Mechanical life endurance	200E3
Contact resistance (new condition)	< 500 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Protection type	IP 00 terminal side basic types 1065 and 1075 IP 67 actuator side all basic types, terminal side basic type 1068
Ambient temperature	-40 °C ... +85 °C
Flammability	UL 94 HB
Material	actuator POM / silicone rubber additional actuator stainless steel spring steel housing PBTP terminals tinned
Contact material	AuCo
Shock resistance	50 g
Miscellaneous	terminal side sealed



ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1065 - MICRO-SIGNAL SWITCHES

TO 100 mA 30 V DC

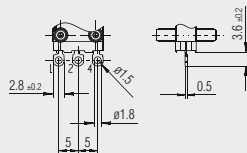
 	100 mA 30 V DC 200E3	Terminal type	Terminal description	Operating force in N	Switching point NCC (OP NC) in mm	Minimum OFF range in mm	Switching point (OP NO) in mm	Rest position (FP) max. in mm	Permissible end position (TP) in mm	Actuator description	Lever drawing	Miscellaneous	Stock version
Normally open contact (SPNO)													
1068.0541	●	 300 long	1 ±0.4				8.95 ±0.3	10.15	6.85			pin right 5 long	
Changeover switch (SPDT momentary)													
1065.0503	●		1 ±0.4	9.45 ±0.3			8.95 ±0.3	10.15	6.85			pin both sides 5 long	●
1065.0603	●		1 ±0.4	9.45 ±0.3			8.95 ±0.3	10.15	6.85			pin both sides 2.5 long	
1065.2000	●	 coded cranked	1 ±0.4	13.8 ±0.3			13.3 ±0.3	14.5	11.2			without pin	●
1065.3603	●		1 ±0.4	9.45 ±0.3			8.95 ±0.3	10.15	6.85			pin both sides 2.5 long	
1065.3653	●		1 ±0.4	9.45 ±0.3			8.95 ±0.3	10.15	6.85			pin both sides 2.5 long	
1065.5000	●		≤ 2.2	9.65 ±0.45			9.15 ±0.45	11.35	7.35	 L02		pin both sides 5 long	
1065.5103	●		≤ 2.2	12.75 ±0.65			12.05 ±0.65	14.7	9	 L21		pin both sides 2.5 long	●
1065.7100	●	 coded cranked	≤ 2.2	17.1 ±0.65			16.4 ±0.65	19.05	13.35	 L21		without pin	●
1068.0503	●	 300 long	1 ±0.4	9.45 ±0.3			8.95 ±0.3	10.15	6.85			pin both sides 5 long	●
1068.0601	●	 300 long	1 ±0.4	9.45 ±0.3			8.95 ±0.3	10.15	6.85			pin right 2.5 long	
Changeover switch with OFF position in the center (SPDT momentary - Center OFF)													
1075.0603	●		1 ±0.4	9.45 ±0.3	8.3 - 9.15	8 ±0.3	10.15	6.85				pin both sides 2.5 long	●
1075.2000	●	 coded cranked	1 ±0.4	13.8 ±0.3	12.65 - 13.5	12.35 ±0.3	14.5	11.2				without pin	●
1075.3603	●		1 ±0.4	9.45 ±0.3	8.3 - 9.15	8 ±0.3	10.15	6.85				pin right 2.5 long	
1075.3653	●		1 ±0.4	9.45 ±0.3	8.3 - 9.15	8 ±0.3	10.15	6.85				pin left 2.5 long	
Changeover switch (SPDT momentary) can be diagnosed													
1060.2601	●		1 ±0.4	9.45 ±0.3			8.95 ±0.3	10.15	6.85			pin right 2.5 long with resistance circuit	

SERIES 1065 - MICRO-SIGNAL SWITCHES

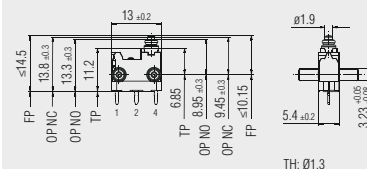
TO 100 mA 30 V DC



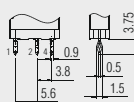
Basic type 1065



Solder terminal

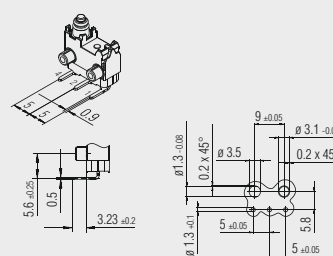


PCB terminal

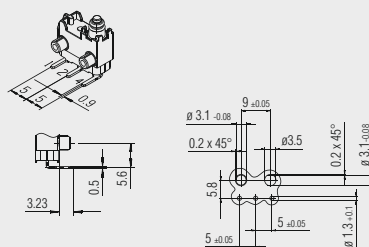


TH: 01.3

PCB terminal coded and cranked



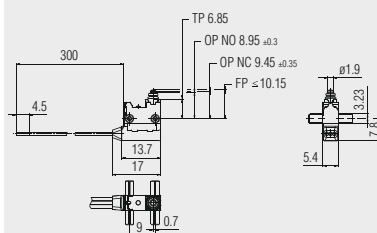
PCB terminal left angled



PCB terminal right angled



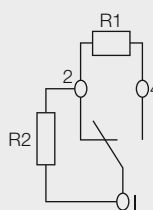
Basic type 1068



Cable 300 long, tinned wire ends



Basic type 1060/1070



Switch diagnostics capability

Integrated resistors feature a circuit monitoring (short circuit, cable break, bad plug contacts)

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

SERIES 1065 - MICRO-SIGNAL SWITCHES

TO 100 mA 30 V DC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

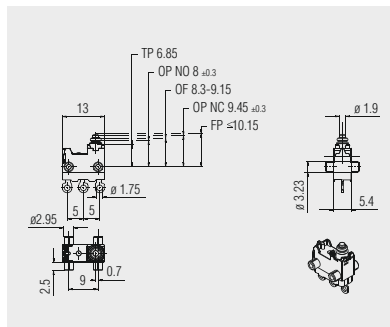
SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS



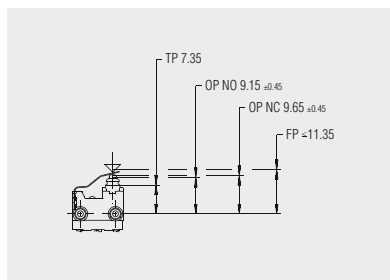
Basic type 1075



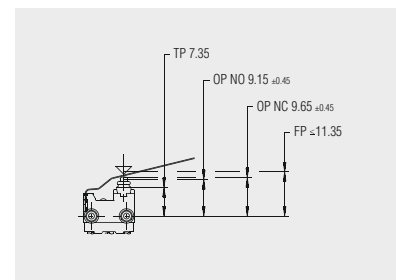
Due to the OFF range between the normally closed contact and the normally open contact increased in relation to basic type 1065 the switch can be used for determining three switching positions. As a result two conventional switches can be replaced by one of these new switch versions in many applications.



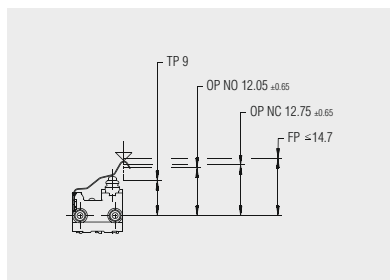
Auxiliary actuators



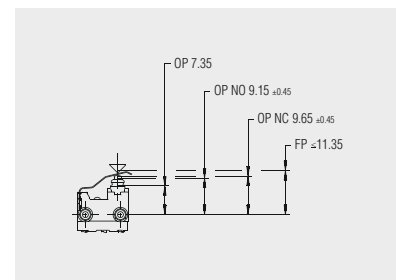
L01: straight lever



L02: straight lever



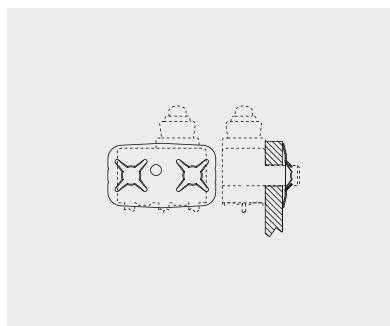
L21: simulated roller lever



L31: differential levers



Additional parts



140.092.021

Fastening disc for the basic types 1065, 1068 and 1075

The fastening disc offers a fast, reliable fastening possibility in combination with switches with 5 mm long pins on plates or plastic parts with a wall thickness of up to 2.5 mm.

SENSORS

ROCKER SWITCHES



ROCKER SWITCHES

PUSHBUTTON SWITCHES



PUSHBUTTON SWITCHES

TOGGLE SWITCHES



TOGGLE SWITCHES

SLIDE SWITCHES



SLIDE SWITCHES

ROTARY SWITCHES



ROTARY SWITCHES

FOOT SWITCHES



FOOT SWITCHES

TACT AND KEY SWITCHES



TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES



SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES



MICRO-SIGNAL SWITCHES

SENSORS



SENSORS

SENSORS

SERIES 2061

Flow sensors

For water volumes up to 15 l/min



PAGE
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SERIES 2066

Analogue pressure sensors

For water and air pressure
measurement



PAGE
208 - 209

Further information under

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SERIES 2061 - FLOW SENSORS

FOR WATER VOLUMES UP TO 15 L/MIN

PRODUCT FEATURES

- ◆ Robust flywheel flow meter for water with electrical pulse output
- ◆ Wide measuring range with 2 - 15 l/min
- ◆ Scanning by magnetic field sensor
- ◆ Enables hot/cold, water and energy saving as well as quality improvement
- ◆ Excellent linearity
- ◆ EMC protected

ON REQUEST

- ◆ Hall or reed contact
- ◆ Optimized measuring ranges for different application areas
- ◆ Optional: different pulse/liter ratios
- ◆ Increased life endurance
- ◆ Spray water protection for electronics

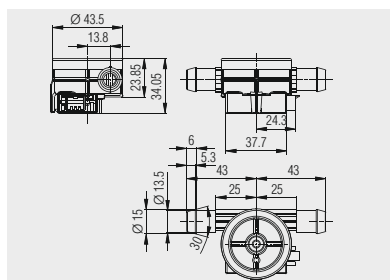
Medium	water
Measuring range	2 ... 15 l/min
Life endurance	200 m³
Bursting pressure	8 bar
Accuracy / tolerance	2 ... 4 l/min ±5 %, 4 ... 15 l/min ±3 %
Material housing	POM
Ambient temperature	+5 °C ... +70 °C
Sensor description	pressure drop at 10 l/min: < 0.4 bar
Power supply	3.8 ... 24 V DC (for Hall sensors variants)
Output current	0 ... 20 mA
Output signal	200 ±3 % pulses / liter
Pulse	min. pulse width 1 ms break ratio (Hall sensor) symmetrical
Approval marks	 / 



	Power supply	Terminal type	Terminal description	Miscellaneous	Stock version
2061.1201	12 V DC		SNAP 2.5 hose nozzle		
2061.1202	12 V DC		SNAP 2.5 hose nozzle		



Basic type 2061



 Snap fastening SNAP 2.5
hose nozzle

SERIES 2066 - ANALOGUE PRESSURE SENSORS

FOR WATER AND AIR PRESSURE MEASUREMENT



PRODUCT FEATURES

- ◆ Magnetic pressure sensor with analogue output
- ◆ Robust and simple structure
- ◆ Linear measuring range
- ◆ Fully automatic 100 % test and adjustment

ON REQUEST

- ◆ Different measuring ranges
- ◆ Adaptation of the output voltage

Medium	heating water air water
Measuring range	0 ... 450 kPa, 4.5 bar, 65 psi
Bursting pressure	> 0.9 MPa, 9 bar, 130 psi
Characteristic curve (nominal)	$U_{out} [V] = 0.55 [V/bar] * \text{applied pressure [bar]} + 1.125 [V]$
Material housing	EPDM with fabric reinforcement (diaphragms) / Grivory HTV 5
Medium temperature	+2 °C ... +90 °C
Storage temperature	-20 °C ... +70 °C
Ambient temperature	-10 °C ... +70 °C
Sensor description	maximum current consumption < 10 mA (8 mA typ.)
Output signal	proportional: 1.125 V at 0 bar, 3.6 V at 4.5 bar
Approval marks	



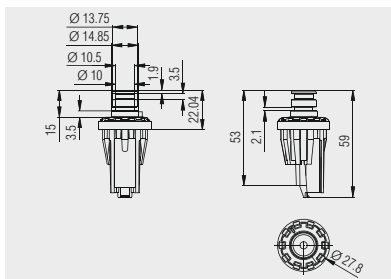
SERIES 2066 - ANALOGUE PRESSURE SENSORS

FOR WATER AND AIR PRESSURE MEASUREMENT

	Power supply	Terminal type	Terminal description	Miscellaneous	Stock version
Pressure sensor					
2066.2102	5 V DC ± 0.25 V		4-pole SNAP 2.5 plug	plugging flange	
2066.2103	5 V DC ± 0.25 V		4-pole SNAP 2.5 plug	thread flange / external thread G 3/8	
2066.2104	5 V DC ± 0.25 V		4-pole SNAP 2.5 plug	plugging flange $U_{out} = 0.5 \text{ V} \cdot p + 0.6 \text{ V}$	
2066.2105	5 V DC ± 0.25 V		4-pole SNAP 2.5 plug	thread flange / external thread G 3/8 $U_{out} = 0.5 \text{ V} \cdot p + 0.6 \text{ V}$	
2066.2106	6 - 30 V DC		4-pole SNAP 2.5 plug	controlled voltage supply plugging flange $U_{out} = 0.72 \text{ V} \cdot p + 0.625 \text{ V}$	
2066.2107	6 - 30 V DC		4-pole SNAP 2.5 plug	controlled voltage supply thread flange / external thread G 3/8 $U_{out} = 0.72 \text{ V} \cdot p + 0.625 \text{ V}$	



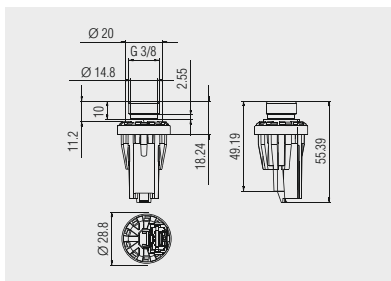
Basic type 2066



 SNAP 2.5 plug (4-pole)
plugging flange



Basic type 2066



 SNAP 2.5 plug (4-pole)
thread flange

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0100.2901	•	250	125	1019.2101	•	200	190	1065.5000			202
0344.0102			82	1019.3101			190	1065.5103	•	2000	202
0344.0201			82	1019.5101	•	400	190	1065.7100	•	2000	202
0350.0101	•	50	117	1019.5401			190	1068.0503	•	200	202
0350.2101			117	1019.5501			190	1068.0541			202
1004.0402	•	500	179	1019.5601	•	400	190	1068.0601			202
1004.0509			178	1022.0101			193	1075.0603	•	2000	202
1004.1002	•	400	179	1022.2201			193	1075.2000	•	2000	202
1004.4601			179	1022.4501			193	1075.3603		2000	202
1005.0101	•	400	178	1022.4502			193	1075.3653			202
1005.0401	•	500	178	1040.0111	•	250	184	1080.0103			173
1005.0404	•	500	177	1040.0114	•	250	184	1080.0203			173
1005.0507			178	1040.0301			184	1080.0304			173
1005.0904			177	1050.0102	•	500	168	1080.0403			173
1005.1001	•	400	178	1050.0103	•	500	168	1080.0440			173
1005.1004	•	400	177	1050.0122	•	500	168	1080.0464		400	173
1005.1010			178	1050.0151	•	500	168	1080.0539		400	173
1005.1101	•	400	177	1050.0202	•	500	168	1080.0585		400	173
1005.1105	•	400	177	1050.0802			168	1080.0903			173
1005.1201			177	1050.1102	•	500	168	1080.5906			173
1005.1204	•	400	177	1050.1122	•	500	168	1085.0103			173
1005.1207	•	400	177	1050.1142			168	1085.0342			173
1005.1226			177	1050.1151	•	500	168	1085.0375			173
1005.2505			177	1050.1202	•	500	168	1085.0403	•	400	173
1005.2809			177	1050.1426			168	1115.0101	•	200	197
1005.3501			178	1050.2102	•	500	168	1115.2101	•	200	197
1005.4001			177	1050.2122			168	1115.4101	•	200	197
1006.0701	•	400	178	1050.2151	•	500	168	1117.0106	•	500	195
1006.0901			178	1050.2202	•	500	168	1117.0206	•	500	195
1006.1101			178	1050.2403			168	1206.0201			133
1006.1201	•	400	178	1050.3102	•	500	168	1206.2503			133
1006.1301	•	250	178	1050.4102	•	500	168	1247.0102			98
1006.1401	•	200	178	1050.5202	•	400	168	1247.0301			98
1006.1511	•	200	178	1050.5251			168	1247.2102			98
1006.1514			177	1050.5305	•	400	168	1247.2301			98
1006.1801	•	200	178	1050.5702	•	400	168	1550.3102			52
1006.3402			177	1050.6702	•	400	168	1550.3105			52
1006.4103			178	1050.7202	•	400	168	1550.3609			52
1006.4203			179	1050.7702			168	1551.1303			52
1010.0101	•	500	186	1055.0351	•	1500	163	1551.2602			52
1010.0304	•	500	186	1055.0552			163	1551.2654			52
1010.2003			186	1055.2061			163	1551.3102	•	100	52
1010.3001	•	400	186	1055.2351			163	1551.3103			52
1010.4103			186	1055.3653			163	1551.3105			52
1010.4402	•	500	186	1055.3654			163	1551.3106			52
1010.6002	•	270	186	1055.5155			163	1551.3202			52
1010.6003	•	270	186	1055.5350			163	1551.3702			52
1010.7102			186	1055.8155			163	1551.4803			52
1010.7172			186	1056.0351	•	2000	163	1552.0102	•	100	52
1010.7352			186	1056.2351			163	1552.2601			53
1010.7401			186	1056.3060			163	1552.2602	•	100	53
1010.7402			186	1056.3065			163	1552.3102	•	100	53
1010.7601			186	1056.3351			163	1552.3104			53
1010.8102			186	1056.3352	•	1500	163	1552.3112	•	100	53
1010.9705			186	1058.0351	•	500	163	1552.3117			53
1010.9752			186	1058.0373			163	1552.3120			53
1010.9802			186	1058.0395			163	1552.3602	•	100	53
1010.9852	•	400	186	1058.0553			163	1552.4602	•	210	53
1014.6151			186	1058.0593			163	1552.4702			53
1017.0153			186	1058.0653	•	500	163	1552.4802			53
1017.0801	•	250	186	1058.5253			163	1555.3102	•	200	53
1017.0851			186	1065.0503	•	2000	202	1555.3104	•	200	53
1017.5701			186	1065.0603			202	1555.3108	•	200	53
1019.0101			190	1065.2000	•	2000	202	1555.3109			53
1019.0201			190	1065.3603			202	1555.3111			53

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1555.3125			53	1684.1201			93	1803.2102	•	500	26
1555.3604			53	1684.1701			93	1803.5102			26
1555.4608			53	1684.1801			93	1803.6102	•	500	26
1555.4628			53	1684.2701			93	1803.6152			26
1555.8104			53	1686.1101			93	1803.6222	•	500	27
1581.1303			52	1686.6155			93	1804.1102	•	250	29
1656.1702			76	1686.8104			93	1804.1125			29
1656.1703			76	1687.1104	•	250	93	1804.1225			30
1656.1723			76	1689.1302			88	1804.2102	•	250	29
1660.0201	•	100	108	1689.3803			88	1804.2202			30
1660.0202	•	100	108	1689.4202			88	1804.6121			29
1660.0222			108	1691.2101			96	1805.6102			28
1660.3202			108	1691.3201			96	1805.6108			28
1661.0101	•	100	108	1703.3201			138	1805.7104	•	250	28
1661.0220			108	1703.4001			138	1805.7109	•	250	28
1662.0101	•	100	108	1703.4101			138	1805.7110	•	250	28
1662.0201			108	1800.0102	•	500	24	1805.7112			28
1663.0101	•	100	108	1800.0108			24	1805.7118	•	500	28
1663.0201			108	1800.1102			24	1806.1102	•	250	31
1664.0101			108	1800.1104			24	1806.1402			31
1665.3102			108	1800.1108	•	500	24	1806.1602			31
1670.5201			112	1801.1101	•	500	24	1806.1909			31
1670.5202	•	100	112	1801.1102	•	500	24	1806.2054			31
1670.5203			112	1801.1119	•	500	24	1806.6108			31
1670.5204			112	1801.1121	•	500	24	1808.1101			26
1671.5101			112	1801.1146	•	500	24	1808.1102	•	500	26
1671.5201			112	1801.1148	•	500	24	1808.1103	•	500	26
1671.5203			112	1801.1151	•	250	25	1808.1112			26
1672.5101			112	1801.1202	•	500	25	1808.1113			26
1673.5501			112	1801.1302			25	1808.1152			27
1675.5315			112	1801.1303	•	300	25	1808.1202	•	500	26
1681.1101	•	1000	87	1801.1403	•	400	25	1808.1302	•	500	26
1681.1202			87	1801.1520			24	1808.1353			27
1681.1304			87	1801.1601			25	1808.2102	•	500	27
1681.1354			87	1801.1908	•	500	24	1808.2302		500	27
1681.1702			87	1801.1926	•	500	24	1808.2704			27
1681.2102			87	1801.2106	•	500	25	1808.6102	•	500	27
1681.3101			87	1801.2202			26	1808.6103	•	500	27
1681.3104			87	1801.2402			25	1808.6202			27
1681.3501			87	1801.2702			25	1808.6302	•	500	27
1681.3701			87	1801.5102	•	150	25	1809.1102	•	250	29
1681.4402	•	1000	87	1801.6101	•	500	25	1809.1202	•	250	29
1681.4403			87	1801.6102	•	500	25	1809.1302	•	250	29
1681.4431			87	1801.6115	•	500	25	1809.2101			30
1681.4701			87	1801.6122	•	500	24	1809.2102			30
1681.5701			87	1801.6130			24	1811.1102			119
1681.9408			87	1801.6222	•	500	25	1811.1202			119
1682.1101	•	1000	88	1802.1101	•	250	28	1812.1102			119
1682.1201			88	1802.1102	•	250	28	1813.1102			119
1682.1702			88	1802.1108	•	250	28	1814.2102			119
1682.1802			88	1802.1121	•	250	28	1818.1102	•	400	119
1682.1902			88	1802.1123	•	250	28	1818.1202	•	400	119
1682.2701			88	1802.1136			28	1818.1302			119
1682.3101	•	1000	88	1802.1221	•	250	29	1818.2302			119
1682.3201			88	1802.2102	•	250	29	1819.1102			119
1682.3702			88	1802.2104	•	250	29	1819.1302	•	200	119
1682.6101			88	1802.2504			28	1821.1101	•	250	122
1682.7704			88	1802.3102	•	250	29	1821.6101	•	250	122
1683.1101			93	1802.3311			28	1822.1101	•	125	122
1683.1201	•	250	93	1802.5103			29	1823.1101	•	250	122
1683.1802			93	1802.6123	•	500	28	1823.6101			122
1683.3101			93	1802.6152			29	1824.1101	•	250	122
1683.3601			93	1803.1102	•	500	26	1828.1101			122
1683.8101			93	1803.1121	•	500	26	1828.1201			122
1684.1101			93	1803.1202	•	500	27	1828.1301			122

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1830.0102			58	1835.9413			61	1881.1108			41
1830.3111			58	1838.0305			60	1881.1109			41
1830.3112	•	200	58	1838.1402	•	250	60	1881.1111			41
1830.3118	•	200	58	1838.1502	•	250	60	1881.1112			41
1830.3119			58	1838.1509			60	1881.1209			41
1830.6103			58	1838.1602	•	250	60	1883.1105			41
1830.8112			58	1838.3402	•	250	60	1883.1106			41
1831.0114			58	1838.3502			60	1890.1104			39
1831.1107	•	200	59	1838.3901			60	1901.1102	•	300	21
1831.1202	•	200	59	1838.4307			60	1901.1103	•	300	21
1831.1253			59	1838.8302			60	1901.1106			21
1831.3311	•	200	59	1839.0105			64	1901.1152			21
1831.3312	•	200	58	1839.1402	•	150	63	1911.1102	•	300	21
1831.3313	•	200	58	1839.1407	•	150	63	1911.1104			21
1831.3317			58	1839.1410			63	1921.1101			21
1831.3402	•	200	59	1839.1502			63	1921.1102	•	300	21
1831.3606			58	1839.1507	•	150	63	1932.1113			72
1831.3607			58	1839.1509			63	1932.3112			72
1831.3815			59	1839.1518			63	1932.3113			72
1831.3933			59	1839.1602			64	1932.3114			72
1831.8112	•	200	59	1839.2203			64	1932.3116			72
1831.8202			59	1839.3352			64	1932.3118	•	100	72
1832.0113			62	1839.3402	•	150	64	1932.3130			72
1832.1102	•	100	62	1839.3502			64	1932.3131			72
1832.1612			61	1839.3503			64	1932.3132			72
1832.3307	•	100	62	1839.3512			63	1932.3312			72
1832.3311	•	100	62	1839.3602			64	1932.3314			72
1832.3312	•	100	62	1839.7304			64	1932.3412			72
1832.3313			62	1841.1101	•	250	104	1932.3413	•	100	72
1832.3407			62	1841.1201	•	250	104	1934.2114			73
1832.3508			59	1841.1301	•	250	104	1934.3112			73
1832.3602	•	100	62	1841.6101			104	1934.3114			73
1832.6112			62	1842.1101			104	1935.3112	•	100	71
1832.7103			62	1842.6101			104	1935.3113	•	100	71
1832.8112			62	1843.1101			104	1935.3114	•	100	71
1832.8204			62	1843.1201	•	250	104	1935.3118	•	100	71
1832.9101			62	1846.0201	•	500	102	1935.3119			71
1832.9103			62	1846.0204			102	1935.3128			71
1833.1102			59	1846.2201			102	1935.3129			71
1833.1202			60	1846.2251			102	1935.3131			71
1833.3307			59	1846.3201	•	400	102	1935.3133			71
1833.3312			59	1846.3204			102	1935.3134			71
1833.3402			60	1855.0102			44	1935.3135			71
1833.6202			60	1855.0108	•	400	44	1935.3137			71
1833.7102			59	1855.1102	•	400	44	1935.3138			71
1834.1102			63	1855.1104	•	400	44	1935.3218			71
1834.3302	•	100	63	1855.1108	•	400	44	1939.0454			73
1834.3309			63	1855.1115			44	1939.3119			73
1834.3311			63	1855.1118			44	1939.3312			73
1834.3312			63	1855.1122			44	1939.3314			73
1834.3402			64	1855.1124			44	1939.3318			73
1834.3603			63	1858.0103			47	1941.1102			50
1834.6103			63	1858.0104			47	1941.1103			50
1835.3102	•	150	61	1858.1102			47	1941.1105			50
1835.3105	•	150	61	1858.1103			47	1941.1203			50
1835.3107			61	1858.1104			47	2061.1201			207
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1835.3111			61	1858.2202	•	300	47	2066.2102			209
1835.3112	•	150	61	1858.2204			47	2066.2103			209
1835.3114	•	150	61	1858.4202	•	200	47	2066.2104			209
1835.3116			61	1858.4205	•	200	47	2066.2105			209
1835.3118	•	150	61	1858.9202			47	2066.2106			209
1835.3419			61	1881.1103	•	500	41	2066.2107			209
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3006.2105			148
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3006.2151			148
3006.2300			148
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3230.0302			78
3230.0501			79
3230.0502			79
3230.0601			79
3230.0602			79
3230.0701			79
3230.0702			79
3230.1902			78
4021.0101	•	250	130
4021.0203			130
4021.0512	•	250	130
4021.0801	•	250	130
4021.1203			130
4021.4420	•	300	130
4021.4620	•	300	130
4021.4723	•	200	130
4021.4920	•	250	130
4024.0501			130
4024.4601			130
5000.0101	•	250	100
5000.0103	•	250	100
5000.0104	•	250	100
5000.0211	•	250	100
5000.0212			100
5000.0501			100
6425.0101	•	400	150
6425.1101	•	400	150
6425.3111	•	400	150
6425.3121	•	400	150
6425.3131	•	400	150
6425.4111	•	400	150
6425.4121	•	400	150
6425.4131	•	400	150
6425.5111	•	400	150
6425.5131	•	400	150
6425.6111			150
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6450.0003	•	400	156
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1807.1102	• 500 32
1807.1108	• 500 32
1807.1111	32
1807.1115	32
1807.1126	32
1807.6103	32
1837.1118	65
1837.2504	65
1837.3102	65
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