

PRODUCT CATALOG SWITCHES & SENSORS

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BECAUSE CUTTING-EDGE TECHNOLOGY IS BASED ON KNOWLEDGE AND INGENUITY.

The Marquardt Group was established in 1925 and, in spite of becoming a Global Player, has remained an independent family enterprise. With its two business units – Automotive and Switches, Sensors & Controls, the Marquardt Group with its 12 international locations, is present world-wide in all important markets with more than 6,000 employees in all.

Every year, we invest more than seven percent of our turnover in research and development – not to mention the use of modern development tools, simultaneous engineering and an efficient testing system. Moreover, our corporate culture offers ample scope for unfolding the inventive genius of our employees. As a result, new ideas come up time and again, which are materialized into marketable cutting-edge technologies.

The Switches, Sensors & Controls division develops, produces and sells its products in a number of industries and applications. Apart from industrial applications, our products are used in power tools, household appliances, cleaning systems, drive technology, heating and air-conditioning technology as well as Off-Road vehicles. We have the necessary technical knowhow, innovative strength, long-term experience and comprehensive manufacturing expertise required in these fields.

This yields innovative and reliable products that feature promising designs tuned to individual requirements. Our products range from the standard switch to complex customer-specific systems. They are suitable for small-scale and large-scale production. With distinct production engineering, worldwide manufacturing options, high quality standards and durability of our products, we achieve customer satisfaction and thereby ensure our competitive ability.

These customer- and market-specific solutions have made Marquardt a strong partner of the power tool and electrical industry as well as a technology leader. We are at your service in all the international markets.

Marquardt standard switches are used in a wide range of industrial and electrical applications. Factors such as reliability, safety, design, innovative solutions and cost-efficiency are of utmost importance.

Marquardt offers a very broad and technically sophisticated product portfolio based on many years of experience. Our standard switches are longlasting and preferred because of their high performance. For us, demanding customer requirements are a welcome challenge.

You can order various switches by selecting them directly from our up-to-date online product catalog. Whether mains or signal voltage, manual or mechanical actuation, with or without lighting – we help you to find the right solution.



BECAUSE PRODUCT VARIETY ALLOWS TAILOR-MADE DESIGNS.

MARQUARDT SWITCHES AND SENSORS – FOR A WIDE RANGE OF APPLICATIONS



Medical and laboratory technology



Office communication



Industrial applications



Small household appliances



Large household appliances



Cleaning & drive applications



Building technology



Heating-, ventilation- and
air conditioning technology



Power tools



Construction and
agricultural machinery



Leisure vehicles



Automobiles

Find out more at www.marquardt.com

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE



ABOUT THE CATALOG

This catalog provides 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, key switches, 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 and durable switches from Marquardt are used in many different applications. We are constantly working on new developments and customized versions. Please ask for further information.

The current Marquardt product program can be found in 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 according to the most up to date automotive quality norm ISO TS 16949:2002 as well as the ISO 9001 naturally. The ISO 9001 is integral part of the ISO TS 16949. The latest valid documents for it are downloadable from our webpage. 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. The end device approval requirements for the target market China changed by middle of 2010. Switches must not be CCC certified generally, but the freely CQC approval simplifies the end device approval. CQC approvals are available for some standard switches. 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
	CQC	–	freely Chinese approval mark

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



CE MARK / DECLARATION OF INSTALLATION

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.

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 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 2011/65/EU (Edition 1.7.2011).

REACH (EG/1907/2006)

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

Marquardt is 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 conform 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.



GOLD-PLATED CONTACTS

For applications with a rating of $< 300 \text{ mW}$ or $< 12 \text{ V}$ 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 $> 1.5 \text{ mm}$, the Household Appliances Standard EN60335 $< 3 \text{ mm}$ depending on the application for full mains disconnection. In switch variants with $< 3 \text{ mm}$ 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 $< 10 \text{ ms}$. 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 have to be developed and constructed in a way that they work safely for conventional use. To work in a safe way an adequate isolation is needed in order to protect against the danger of current.

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

This target can be achieved

- by so called "Basis Insulation" and the connection of all metal parts, which can have dangerous touch voltage in case of failure, with the protective conductor of the passed conduct, of the building installation like they are made in appliances with protection class I.
- by Basis Insulation and additional insulation (double insulation) in appliances with protection class II
- Enforced insulation likewise in appliances with protection class II

Most Marquardt switches are constructed for appliances with protection class II, which means that they can be used without additional safety measures for all other 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 in regard of the over voltage category II and a pollution degree II is defined in IEC 60664.

- Basis Insulation 1500 V
- Additional Insulation 1500 V
- Enforced Insulation 3000 V

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

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 to check the processing results of the solder terminals in case of different storage conditions or when 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.

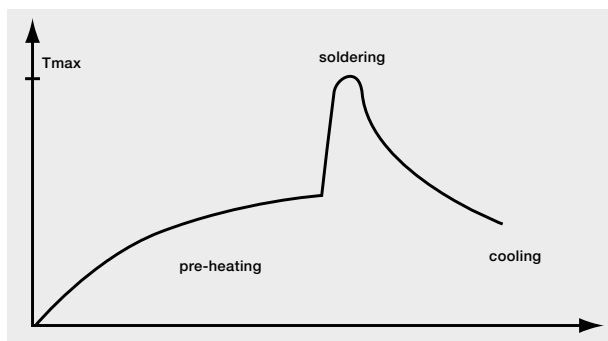
Typical and maximum values:

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 PROTECTION

The IP protection according to DIN EN 61058-1 and IEC 60529 specified in our documents refers 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 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.

TERMINAL SYMBOLS

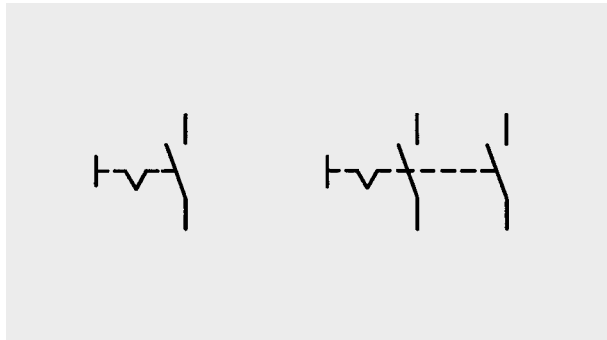
	Quick-connect terminal
	Solder terminal
	Short solder terminal
	PCB terminal
	PCB terminal angled to left
	PCB terminal angled to right
	Socket terminal
	Cable
	Terminal strip
	Push-in terminal
	Snap-in terminal
	Cut terminal
	Screw terminal

CONTACT RESISTANCE

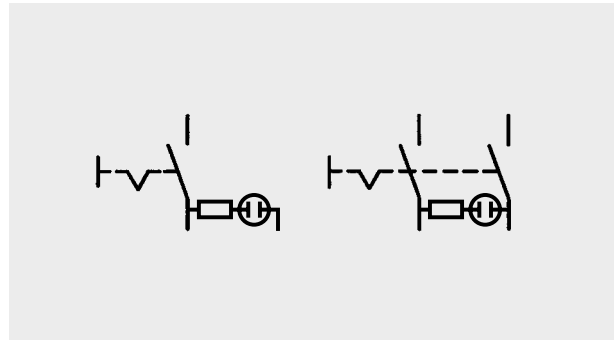
The contact resistance is the electrical resistance which can be measured at the switch terminals with closed contacts. The data refers to unwired contacts in new condition with a typical measuring current of greater than 100 mA. For silver-based contact materials this value is below 100 mΩ (measuring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



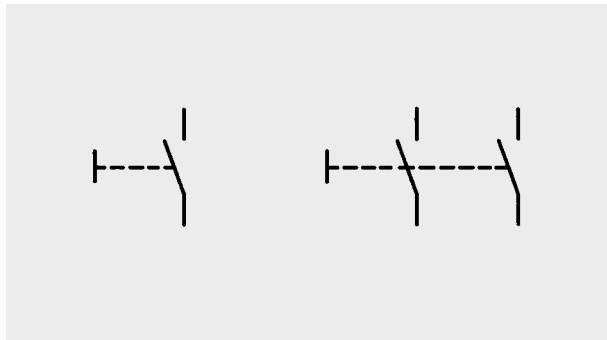
SWITCHING FUNCTIONS



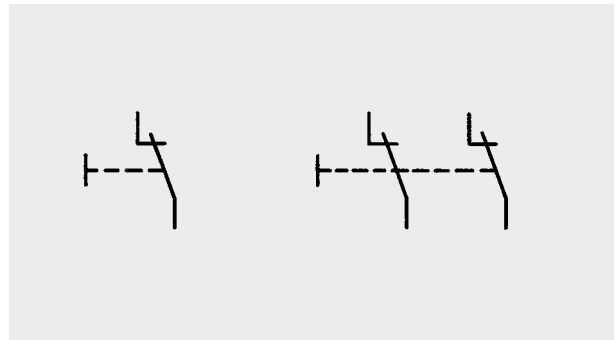
ON/OFF switch
(SPST, DPST)



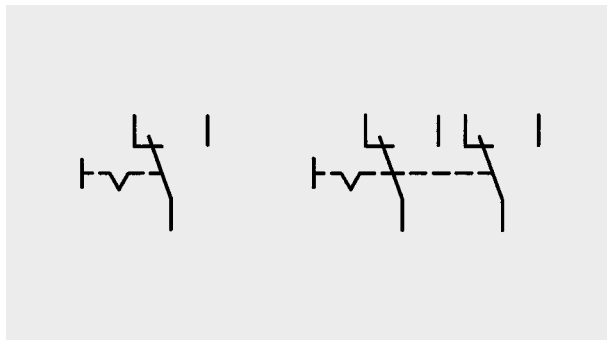
ON/OFF switch with signal lamp
(SPST-Illuminated, DPST-Illuminated)



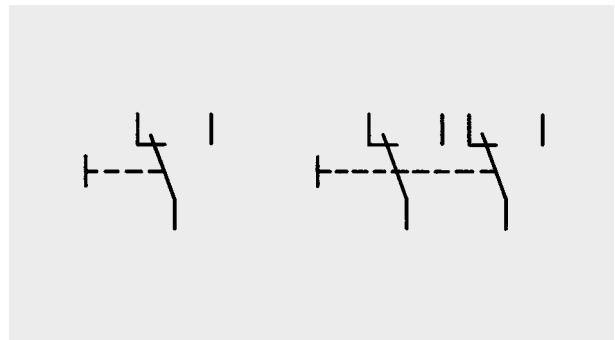
Normally open contact / pushbutton
(SPNO, DPNO)



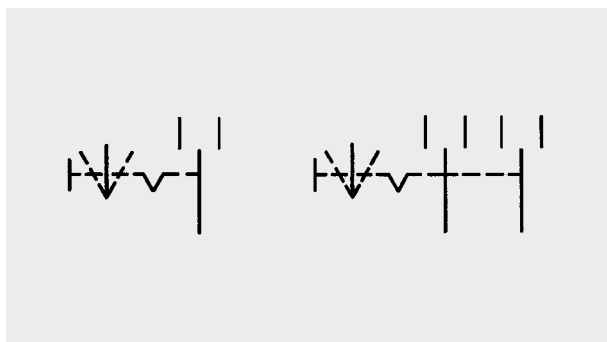
Normally closed contact / pushbutton
(SPNC, DPNC)



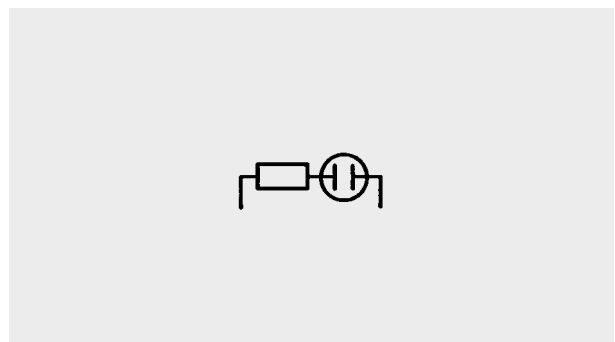
Changeover switch
(SPDT, DPDT)



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

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

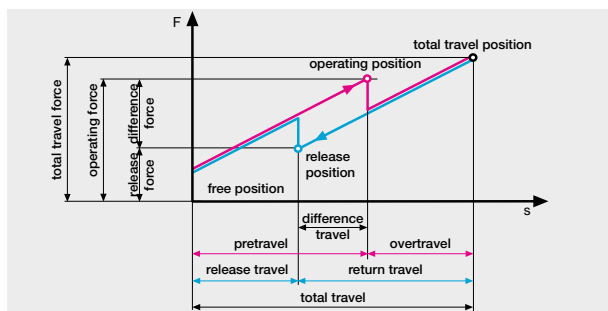
BOUNCE TIME

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.

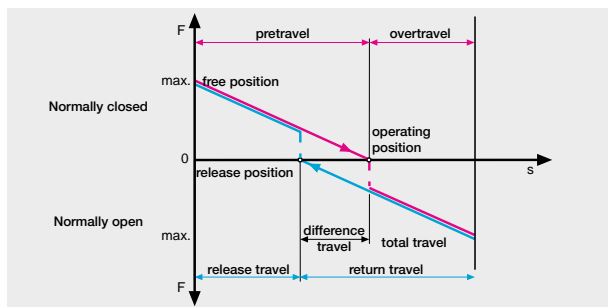
SWITCHING TIME / SWITCHING TRAVEL

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.



ORDER NUMBERS

The standard products in every series are shown in a 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 253. 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

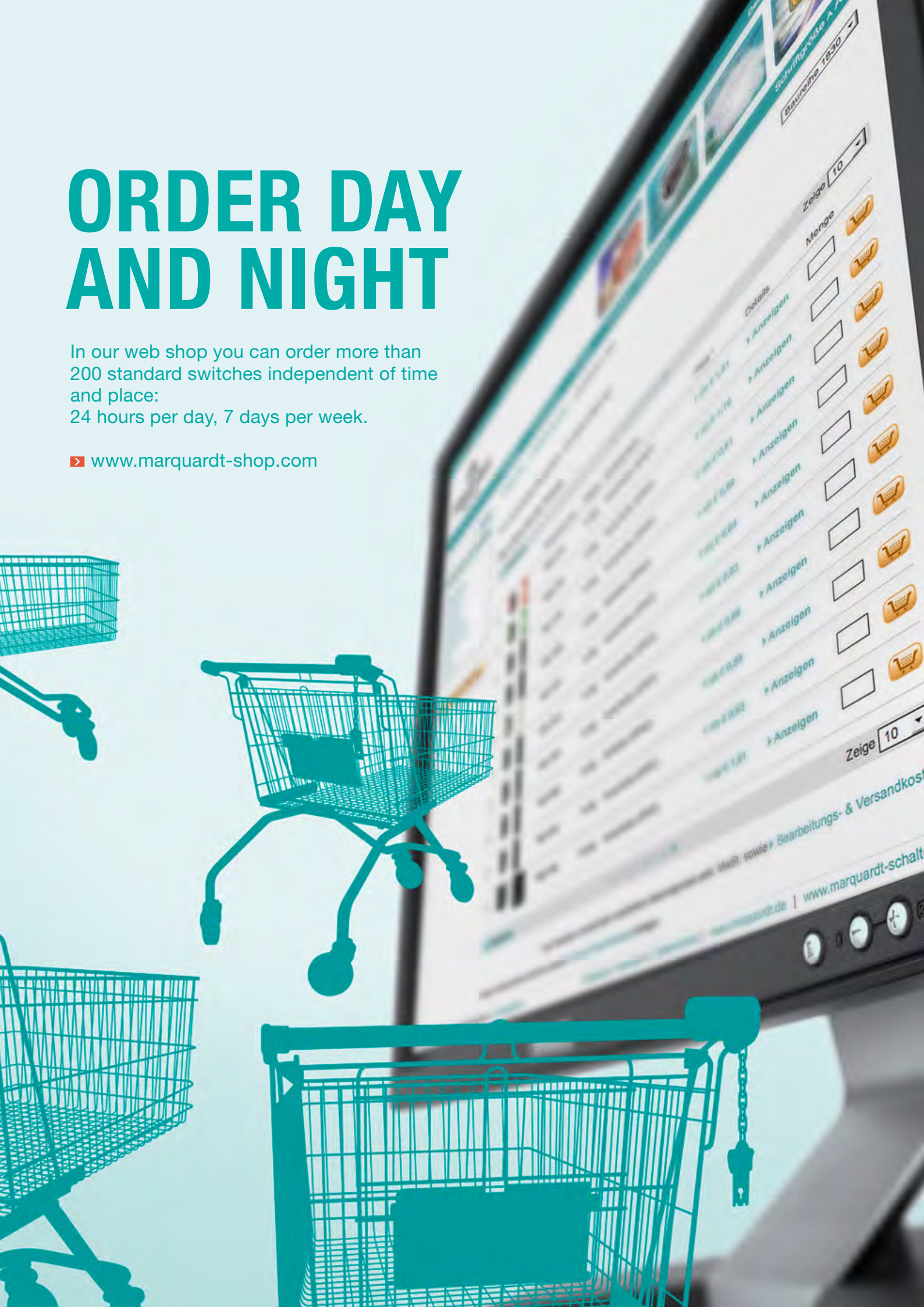
Since all the data in this catalog refers exclusively to the products delivered by us, you must check whether our products are suitable for your intended application yourselves. We will be glad to help you with advice and information.

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SWITCHES AND SENSORS TAB OVERVIEW

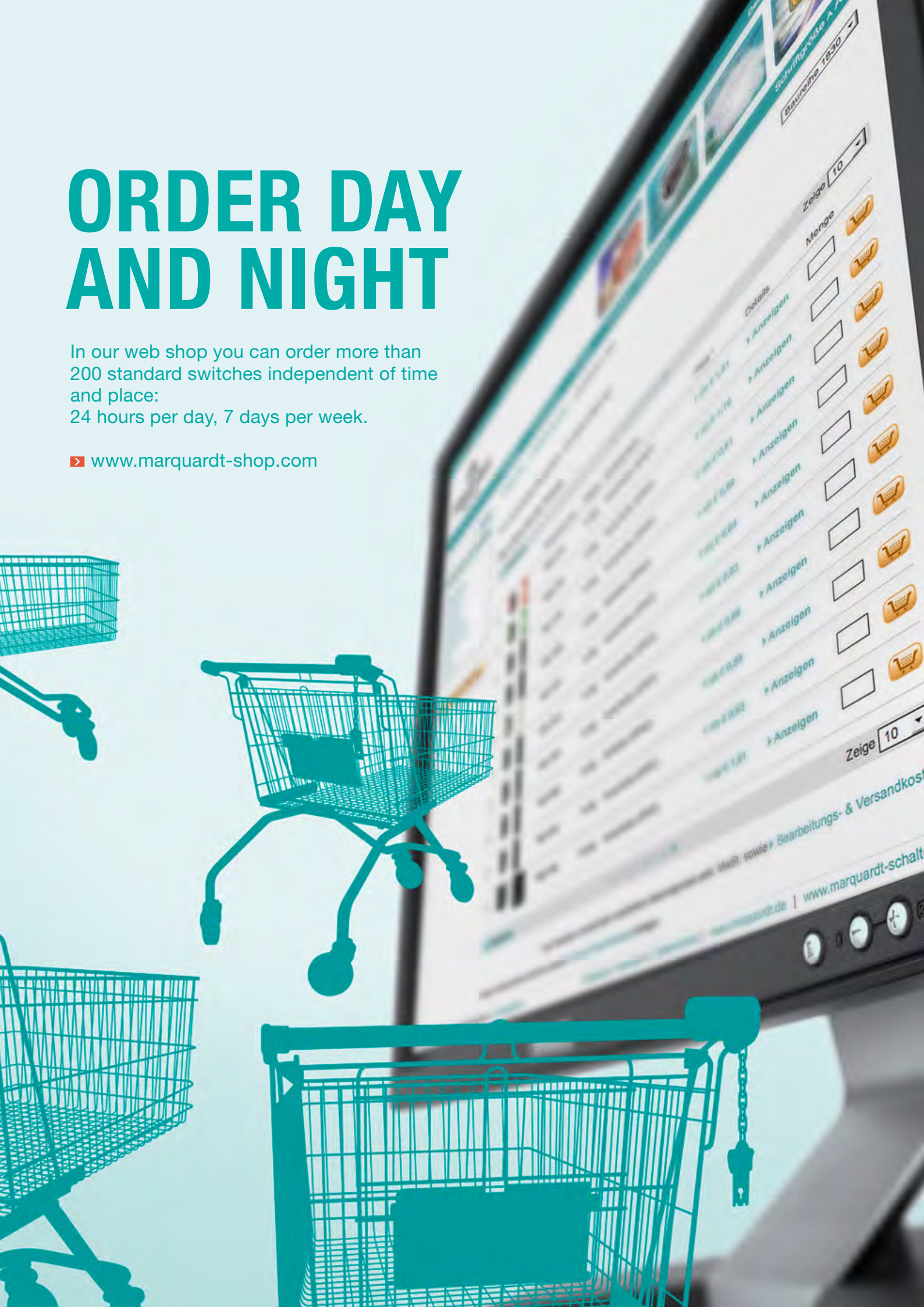
ROCKER SWITCHES		ROCKER SWITCHES
PUSHBUTTON SWITCHES		PUSHBUTTON SWITCHES
TOGGLE SWITCHES		TOGGLE SWITCHES
SLIDE SWITCHES		SLIDE SWITCHES
ROTARY SWITCHES		ROTARY SWITCHES
FOOT SWITCHES		FOOT SWITCHES
TACT AND KEY SWITCHES		TACT AND KEY SWITCHES
SNAP-ACTION SWITCHES		SNAP-ACTION SWITCHES
MICRO-SIGNAL SWITCHES		MICRO-SIGNAL SWITCHES
SENSORS		SENSORS
ECO		ECO
PUSH'N'DRIVE		PUSH'N'DRIVE

ROCKER SWITCHES
PUSHBUTTON SWITCHES
TOGGLE SWITCHES
SLIDE SWITCHES
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ROCKER SWITCHES

ROCKER SWITCHES				
PUSHBUTTON SWITCHES				
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FOOT SWITCHES				
TACT AND KEY SWITCHES				
SNAP-ACTION SWITCHES				
MICRO-SIGNAL SWITCHES				
SENSORS				
ECO				
PUSH'N'DRIVE				

ROCKER SWITCHES

PUSHBUTTON SWITCHES

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SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE



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
18 – 20

SERIES 1800

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

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



➤ PAGE
21 – 35

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
36 – 37

SERIES 1881

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

Appliance cut-out: Ø 20.3 mm
Ø 21.2 mm



➤ PAGE
38 – 41

SERIES 1855

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

Appliance cut-out: 19.2 x 12.9 mm



➤ PAGE
42 – 44

SERIES 1858

Miniature double-pole
rocker switches
to 10 (4) A 250 V AC 1E4

Appliance cut-out: 19.2 x 12.9 mm



➤ PAGE
45 – 47

SERIES 1941

Single-pole rocker switches IP 50
to 12 (8) A 250 V AC 1E4

Appliance cut-out: 19.2 x 12.9 mm



➤ PAGE
48 – 49



SERIES 1550

Single-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
50 – 55

SERIES 1830

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

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



➤ PAGE
56 – 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
to 10 (5) A 12 and 24 V DC



➤ PAGE
77 – 82

SERIES 3250

Single and double-pole rocker
switches IP 66/IP 68
to 20 (10) A 12 and 24 V DC 1E5



➤ PAGE
83 – 93

SERIES 0344

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



➤ PAGE
94



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 housing terminals	PA PA silver plated
Plug force of the terminals	≤ 80 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



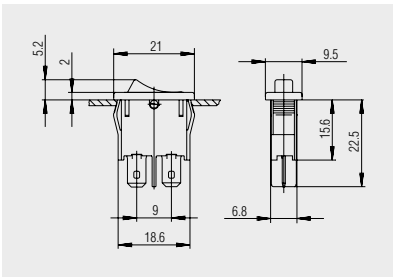
SERIES 1900 - SMALLEST SINGLE-POLE ROCKER SWITCHES


TO 6 (2) A 250 V AC

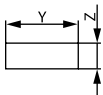
 single-pole	Actuator color / printing	Housing color	6 (2) A 250 V AC 1E4	4 (1) A 250 V AC 5E4	30 mA 12 V DC 5E4	6 A 125 - 250 V AC 1/8 HP	Terminal type	Terminal description	Contact distance (mm)	Contact material	Miscellaneous	Stock version
ON / OFF switch (SPST)												
1901.1102								4.8 soldering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



Basic type 1901
single-pole



 Quick-connect terminal 4.8 x 0.8
soldering by hand



X = Wall thickness

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

ECO

PUSH 'N' DRIVE

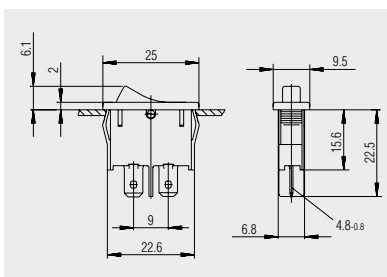



SERIES 1900 - SMALLEST SINGLE-POLE ROCKER SWITCHES

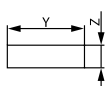
TO 6 (2) A 250 V AC



Basic type 1911
single-pole



 Quick-connect terminal 4.8 x 0.8
soldering by hand

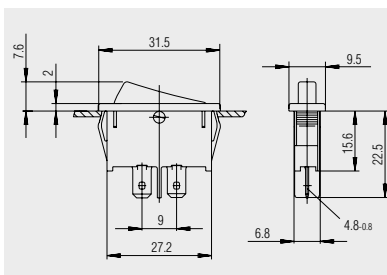



X = Wall thickness

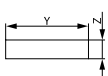
x	y	z
0.75 ... 1.25	23.2 ^{-0.1}	6.8 ^{+0.1}
1.25 ... 2	23.4 ^{-0.1}	6.8 ^{+0.1}
2 ... 3	23.8 ^{-0.1}	6.8 ^{+0.1}



Basic type 1921
single-pole



 Quick-connect terminal 4.8 x 0.8
soldering by hand



X = Wall thickness

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

T0 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 housing terminals	PA / PC PA silver plated / tinned / gold plated
Plug force of the terminals	≤ 80 N
Approval marks	 /  /  / 
Suitable for appliances of protection class II	



SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

<div>single-pole</div> 	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
		230	230	230	230	230										
Lighting voltage (V)																
Actuator color / printing																
Housing color																
12 (4) A 250 V AC 1E4							o	o	o	o	o	o	o			
10 (4) A 250 V AC 1E4		o	o	o	o	o								o	o	o
8 (8) A 250 V AC 5E4							o	o	o	o	o	o	o			
6 (4) A 250 V AC 5E4		o	o	o	o	o								o	o	o
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							o	o	o	o	o	o	o			
15 A 125 V AC 3/4 HP							o	o	o	o	o	o	o			
10 A 250 V AC 1/2 HP																
10 A 125 V AC 1/3 HP																
6 A 250 V AC 1/2 HP		o	o	o	o	o								o	o	o
6 A 125 V AC 1/4 HP														o	o	o
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
Inrush current (capacitive) (A)							70	70	70	70	70	70	70		50	50
Contact distance (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"											o	o				
Miscellaneous		sealing plate	sealing plate						snap-on rocker							
Stock version				o		o	o			o		o		o	o	o

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MIKRO-SIGNALSCHALTER

SENSORS










































ECO

PUSH'N'DRIVE



SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

<div>single-pole</div> <div></div>	ON / OFF switch (SPST)										Normally closed contact (SPNC)										Normally open contact (SPNO)									
Lighting voltage (V)		1801.1146		1801.1403		1801.2106		1801.2402		1801.2702		1801.5102		1801.6101		1801.6102		1801.6115		1801.1151			1801.1302		1801.1303				1801.6222	
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) (A)		50		50		50		50		50		50		50		50		50												
Contact distance (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				with dust cap black				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



ECO

PUSH 'N' DRIVE



SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

 																				
	Normally open contact (SPNO)		Changeover switch (SPDT)		Changeover switch with OFF position in the center (SPDT - Center OFF)															
Lighting voltage (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) (A)																				
Contact distance (mm)																				
Contact material																				
EN 60335 cap. 30 conform "G"																				
Miscellaneous																				
Stock version																				

momentary function one side

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MIKRO-SIGNALSCHALTER

SENSORS













































































ECO

PUSH'N'DRIVE



SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

<div>single-pole</div> <div></div>		Changeover switch with OFF position in the center (SPDT - Center OFF)										1808.1302	1808.2102	1808.2302	1808.2704	1808.6102	1808.6103	1808.6202	1808.6302	1808.1152	1808.1353	Changeover switch (SPDT momentary)										1803.6222	1803.1202	1803.1252	
Lighting voltage (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	
Inrush current (capacitive) (A)																																			
Contact distance (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	Au											Ag	Ag	Au
EN 60335 cap. 30 conform “G”																																			
Miscellaneous												momentary function both sides	PCB tinned	PCB tinned 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


































ECO

PUSH 'N' DRIVE



SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

T0 12 (4) A 250 V AC

<div>double-pole</div> 	ON / OFF switch (DPST)															
	1805.6102	1805.6108	1805.7104	1805.7109	1805.7110	1805.7112	1805.7118	1802.1121	1802.1123	1802.2504	1802.3311	1802.6123	1802.1101	1802.1102	1802.1108	
Lighting voltage (V)	230	230	230	230	230	110 - 230	110 - 230									
Actuator color / printing																
Housing color	Black	Black	Black	Black	Black	Black	Black	Black	Black	Black	Black	Black	White	Black	Black	Black
12 (4) A 250 V AC 1E4						o	o	o	o	o	o	o				
10 (4) A 250 V AC 1E4	o	o	o	o	o								o	o	o	
8 (8) A 250 V AC 5E4						o	o	o	o	o	o	o				
6 (4) A 250 V AC 5E4	o	o	o	o	o								o	o	o	
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						o	o	o	o	o	o	o				
15 A 125 V AC 3/4 HP						o	o	o	o	o	o	o				
10 A 250 V AC 1/2 HP																
10 A 125 V AC 1/3 HP																
6 A 250 V AC 1/2 HP	o	o	o	o	o								o	o	o	
6 A 125 V AC 1/4 HP													o	o	o	
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	4.3 lang	4.8 75° angled M3		4.8	4.8	4.8	
Inrush current (capacitive) (A)	50	50	50	50	50	70	70	70	70	70	70	70	50	50	50	
Contact distance (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"						o										
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			o	o	o		o	o	o			o	o	o	o	

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MIKRO-SIGNALSCHALTER

SENSORS


ECO

PUSH'N'DRIVE



SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

<div>double-pole</div> 		ON / OFF switch (DPST)					Normally open contact (DPNO)					Changeover switch (DPDT)					Changeover switch with OFF position in the center (DPDT - Center OFF)				
Lighting voltage (V)		1802.2102					1802.1221					1804.1102					1809.1102				
Actuator color / printing		1802.2104					1802.1221					1804.1125					1809.1202				
Housing color		1802.3102					1802.6152					1804.2102					1804.6121				
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) (A)																					
Contact distance (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


ECO

PUSH N DRIVE



SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

 double-pole		1809.1302		1809.2102	1804.1225	
Lighting voltage (V)		1809.1302		1809.2102	1804.1225	
Actuator color / printing		1809.1302		1809.2102	1804.1225	
Housing color		1809.1302		1809.2102	1804.1225	
12 (4) A 250 V AC 1E4		1809.1302		1809.2102	1804.1225	
10 (4) A 250 V AC 1E4		1809.1302		1809.2102	1804.1225	
8 (8) A 250 V AC 5E4		1809.1302		1809.2102	1804.1225	
6 (4) A 250 V AC 5E4		1809.1302		1809.2102	1804.1225	
6 (2) A 250 V AC 1E4		1809.1302		1809.2102	1804.1225	
4 (3) A 250 V AC 6E3		1809.1302		1809.2102	1804.1225	
4 (2) A 250 V AC 1E4		1809.1302		1809.2102	1804.1225	
30 mA 12 V DC 5E4		1809.1302		1809.2102	1804.1225	
15 A 250 V AC 1 1/2 HP		1809.1302		1809.2102	1804.1225	
15 A 125 V AC 3/4 HP		1809.1302		1809.2102	1804.1225	
10 A 250 V AC 1/2 HP		1809.1302		1809.2102	1804.1225	
10 A 125 V AC 1/3 HP		1809.1302		1809.2102	1804.1225	
6 A 250 V AC 1/2 HP		1809.1302		1809.2102	1804.1225	
6 A 125 V AC 1/4 HP		1809.1302		1809.2102	1804.1225	
6 A 125 - 250 V AC 1/8 HP		1809.1302		1809.2102	1804.1225	
6 A 125 V AC 1/10 HP		1809.1302		1809.2102	1804.1225	
4 A 250 V AC 1/10 HP		1809.1302		1809.2102	1804.1225	
Terminal type		1809.1302		1809.2102	1804.1225	
Terminal description		1809.1302		1809.2102	1804.1225	
Inrush current (capacitive) (A)		1809.1302		1809.2102	1804.1225	
Contact distance (mm)		1809.1302		1809.2102	1804.1225	
Contact material		1809.1302		1809.2102	1804.1225	
EN 60335 cap. 30 conform "G"		1809.1302		1809.2102	1804.1225	
Miscellaneous		1809.1302		1809.2102	1804.1225	
Stock version		1809.1302		1809.2102	1804.1225	

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MIKRO-SIGNALSCHALTER

SENSORS











ECO

PUSH'N'DRIVE



SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

<div>Combination</div> 	ON / OFF switch (SPST)		1806.1102	1806.6108	Changeover switch with OFF position in the center (SPDT - Center OFF)		1806.1602
Lighting voltage (V)							
Actuator color / printing							
Housing color							
12 (4) A 250 V AC 1E4							
10 (4) A 250 V AC 1E4		o	o				
8 (8) A 250 V AC 5E4							
6 (4) A 250 V AC 5E4		o	o				
6 (2) A 250 V AC 1E4						o	
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		o	o				
6 A 125 V AC 1/4 HP		o	o				
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	
Inrush current (capacitive) (A)							
Contact distance (mm)		≥ 3	≥ 3			< 3	
Contact material		Ag	Ag			Ag	
EN 60335 cap. 30 conform "G"							
Miscellaneous			without separating gate			life endurance 50 000 cycles	
Stock version		o					

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS












ECO

PUSH 'N' DRIVE



SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

T0 12 (4) A 250 V AC

	Lamp	1806.1508	1807.1102	1807.1108	1807.1126	1807.6103
		230 230	230	230	230	230
Lighting voltage (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
Inrush current (capacitive) (A)						
Contact distance (mm)						
Contact material						
EN 60335 cap. 30 conform "G"						
Miscellaneous			VDE	VDE	VDE	size basic type 1805 VDE
Stock version			o	o		

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MIKRO-SIGNALSCHALTER

SENSORS

ECO

PUSH'N'DRIVE

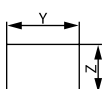


SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

T0 12 (4) A 250 V AC

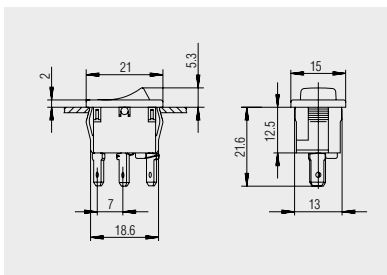


Basic types 1801
single-pole
illuminated / non-illuminated

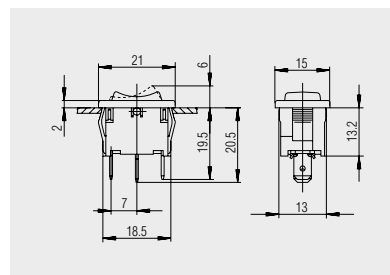


X = Wall thickness

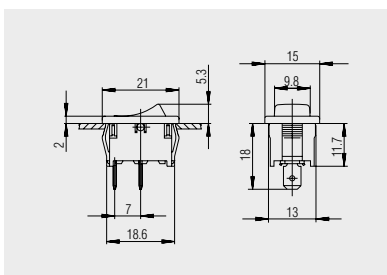
x	y	z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	12.9 ^{+0.1}



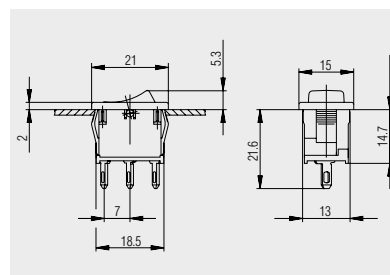
Quick-connect terminal 4.8 x 0.8
basic type 1800



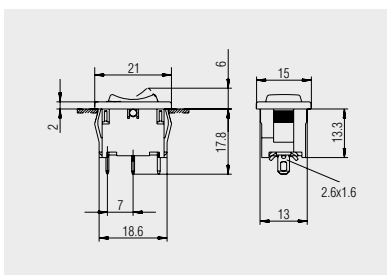
Quick-connect terminal 4.8 x 0.8
basic type 1808



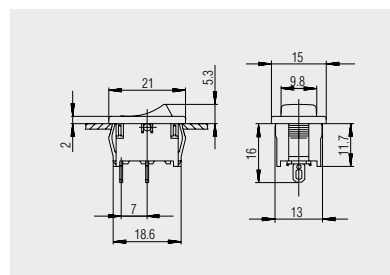
Quick-connect terminal 4.8 x 0.8
basic types 1801 and 1803



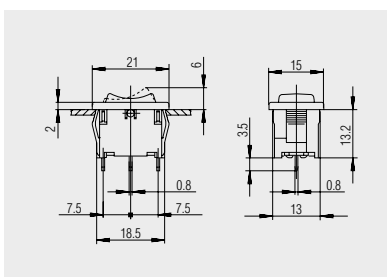
Solder terminal
basic type 1800



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

ECO

PUSH 'N' DRIVE

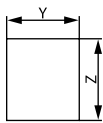


SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

T0 12 (4) A 250 V AC

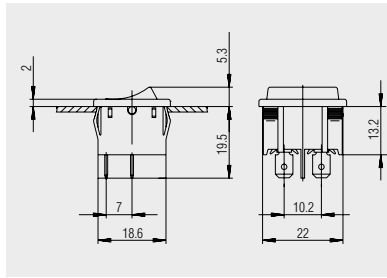


Basic types 1802, 1804 and 1805
double-pole
illuminated / non-illuminated

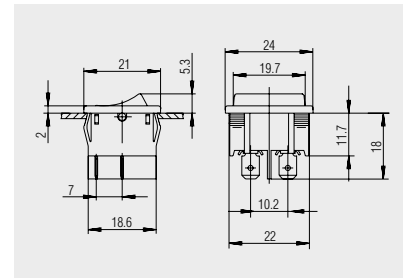


X = Wall thickness

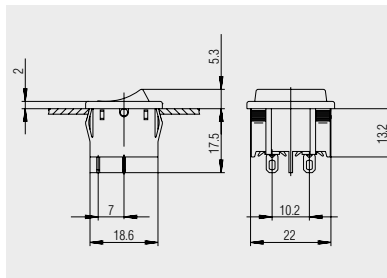
x	y	z
0.75 ... 1.25	19.2 ^{-0.1}	21.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	21.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	21.9 ^{+0.1}



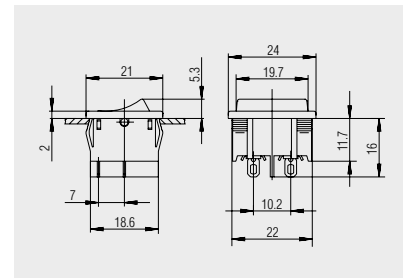
Quick-connect terminal 4.8 x 0.8
basic type 1805



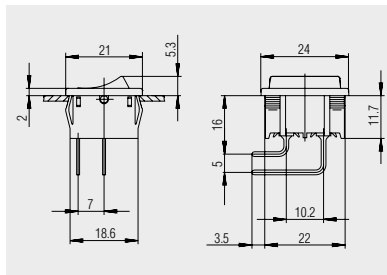
Quick-connect terminal 4.8 x 0.8
basic types 1802 and 1804



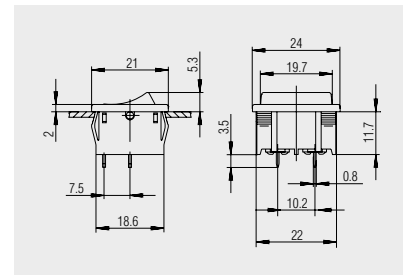
Solder terminal
basic type 1805



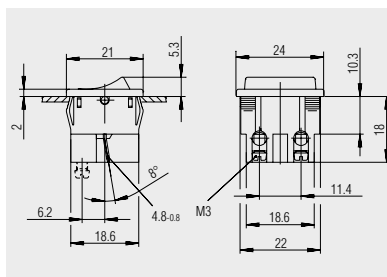
Solder terminal
basic types 1802 and 1804



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

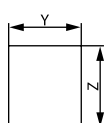


SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC

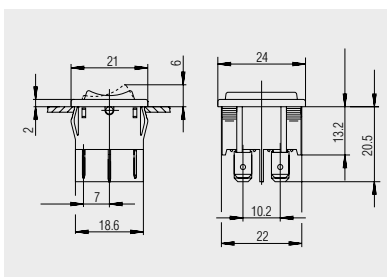


Basic type 1809
double-pole
non-illuminated

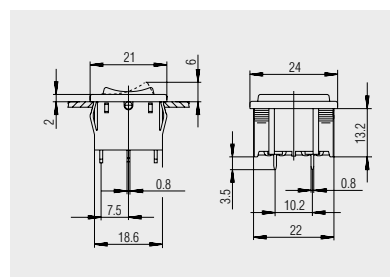


X = Wall thickness

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}



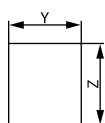
Quick-connect terminal 4.8 x 0.8



PCB terminal

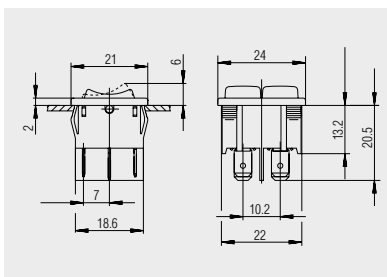


Basic type 1806
combination

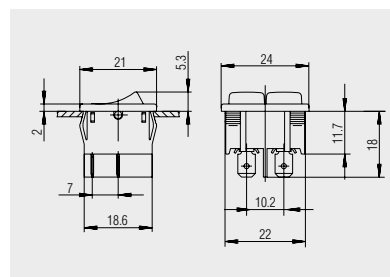


X = Wall thickness

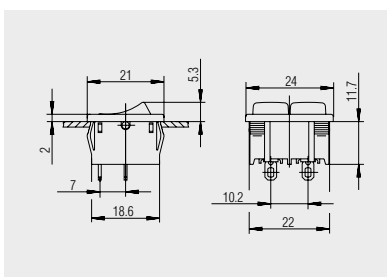
x	y	z
0.75 ... 1.25	19.2 ^{-0.1}	21.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	21.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	21.9 ^{+0.1}



Quick-connect terminal 4.8 x 0.8
1806.1102



Quick-connect terminal 4.8 x 0.8
1806.1602



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

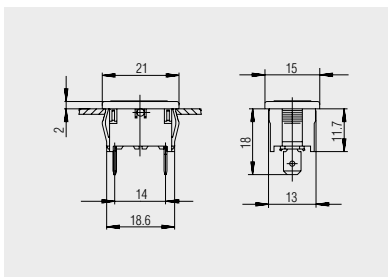
ECO

PUSH 'N' DRIVE




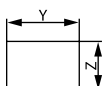
SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

T0 12 (4) A 250 V AC



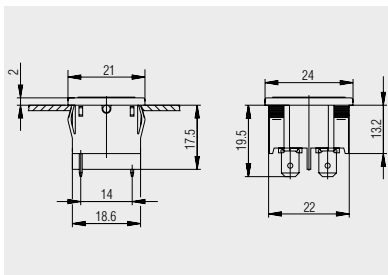
Basic type 1807
lamp

 Quick-connect terminal 4.8 x 0.8




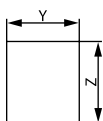
X = Wall thickness

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}

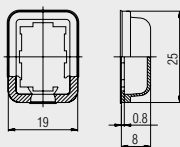


SERIES 1800 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 12 (4) A 250 V AC



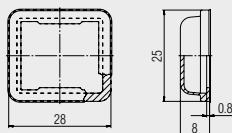
Protection cap
203.089.011



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.



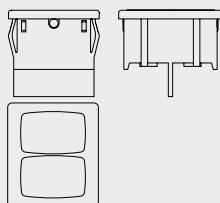
Protection cap
203.090.011



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.



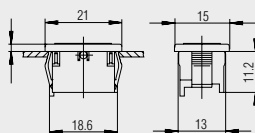
Dummy piece
203.086.013



Dummy piece for size of basic type 1802, 1804, 1805, 1806, 1807 and 1809 made of PA with window and housing in black



Dummy piece
203.007.013
203.007.023 - V0 material



Dummy piece for size of basic type 1800, 1801, 1803, 1807, 1808, 1811, 1813, 1818, 1846, 1850 and 1858 made of PA with window and housing in black

➤ SERIES 1890 - SINGLE-POLE ROCKER SWITCHES ILLUMINATED WITH LED

T0 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


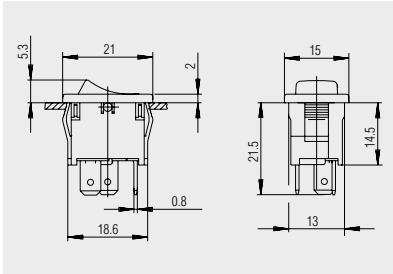
Mechanical life endurance	75E3
Operating force	3 N
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	terminal side -20 °C ... +100 °C actuating side -20 °C ... +55 °C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

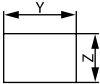
TO 6 A 24 V DC

single-pole	Lighting voltage (V)	Actuator color / printing	Housing color	6 A 24 V DC	Terminal type	Terminal description	Contact distance (mm)	Contact material	Miscellaneous	Stock version
ON / OFF switch (SPST)										
1890.1104	24					4.8	≥ 3	Ag		


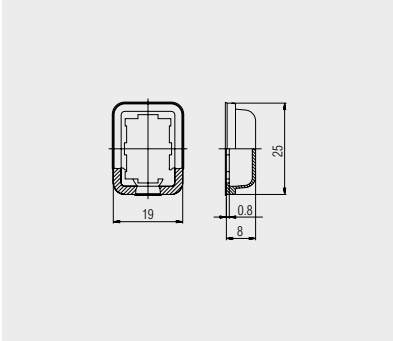
Basic type 1890

 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}

Protection cap
203.089.011

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



SERIES 1881 - SINGLE-POLE ROUND ROCKER SWITCHES

T0 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

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 housing terminals	PA PA 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

T0 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 (mm)	Contact material	Actuator	Miscellaneous	Stock version
															EN 60335 cap. 30 conform "G"		
ON / OFF switch (SPST)																	
1881.1103			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		4.8	≥ 3	Ag	IP 40		<input type="radio"/>
1881.1104			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		4.8	≥ 3	Ag	IP 40		<input type="radio"/>
1881.1105			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		4.8	≥ 3	Ag	IP 40		<input type="radio"/>
1881.1106			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		4.8	≥ 3	Ag	IP 40	<input checked="" type="radio"/>	
1881.1108			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		4.8	≥ 3	Ag	IP 51	<input checked="" type="radio"/>	with swtiching system cover
1881.1109			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		4.8	≥ 3	Ag	IP 40		
1881.1111			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		4.8	≥ 3	Ag	IP 40		
1881.1112			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		1 mm longer 4.8	≥ 3	Ag	IP 51	<input checked="" type="radio"/>	with swtiching system cover
Normally open contact (SPNO)																	
1881.1209			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		4.8	≥ 3	Ag	IP 51		with swtiching system cover opening terminal 1b closed
Changeover switch (SPDT)																	
1883.1105			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		4.8	≥ 3	Ag	IP 40		
1883.1106			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		4.8	≥ 3	Ag	IP 40	<input checked="" type="radio"/>	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

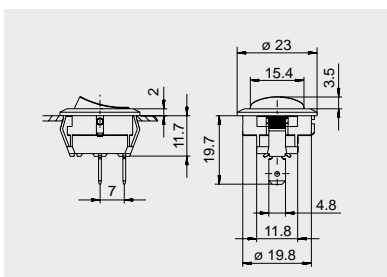


SERIES 1881 - SINGLE-POLE ROUND ROCKER SWITCHES

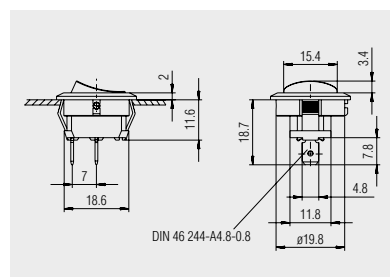
T0 12 (4) A 250 V AC



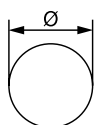
Basic type 1881



Quick-connect terminal
1 mm longer 4.8 x 0.8



Quick-connect terminal 4.8 x 0.8

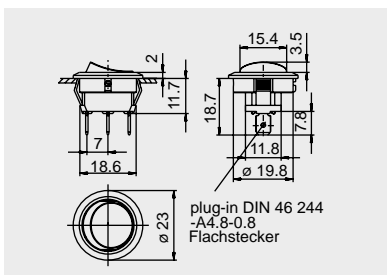


X = Wall thickness

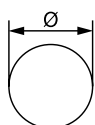
x	Ø
0.75 ... 1.25	20.3
1.25 ... 2	20.8
2 ... 3	21.1



Basic type 1883



Quick-connect terminal 4.8 x 0.8



X = Wall thickness

x	Ø
0.75 ... 1.25	21.2 ^{+0.1}
1.25 ... 2	21.4 ^{+0.1}
2 ... 3	21.8 ^{+0.1}

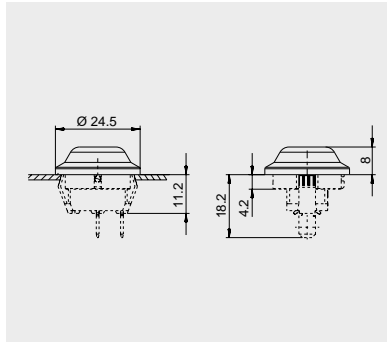


SERIES 1881 - SINGLE-POLE ROUND ROCKER SWITCHES

T0 12 (4) A 250 V AC



Protection cap
207.122.011



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

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

ECO

PUSH 'N' DRIVE



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 housing terminals	PA PA silver plated
Plug force of the terminals	≤ 80 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



SERIES 1855 - MINIATURE DOUBLE-POLE ROCKER SWITCHES

TO 4 (1) A 250 V AC

 double-pole	Lighting voltage (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 (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		

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

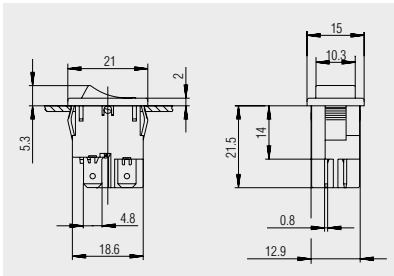


SERIES 1855 - MINIATURE DOUBLE-POLE ROCKER SWITCHES

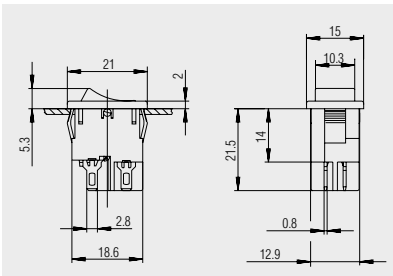
TO 4 (1) A 250 V AC



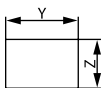
Basic type 1855



Quick-connect terminal 4.8 x 0.8



Solder terminal

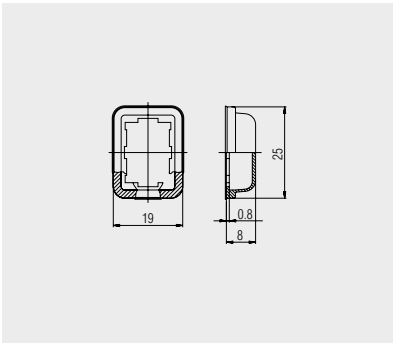


X = Wall thickness

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.

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE



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 housing terminals	PA PA 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 (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	

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE

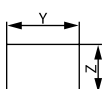


SERIES 1858 - MINIATURE DOUBLE-POLE ROCKER SWITCHES

TO 10 (4) A 250 V AC 1E4

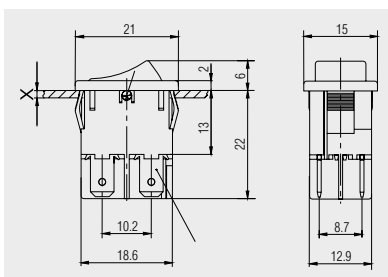


Basic type 1858
double-pole

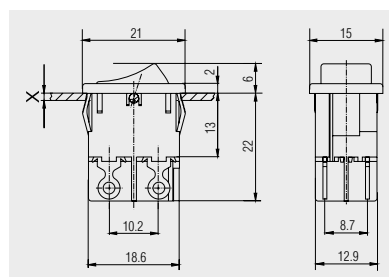


X = Wall thickness

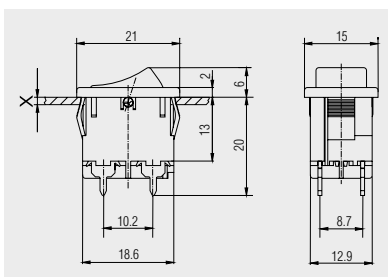
x	y	z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	12.9 ^{+0.1}



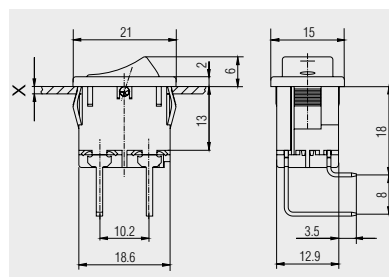
Quick-connect terminal 4.8 x 0.8



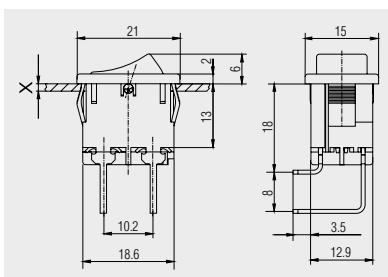
Solder terminal



PCB terminal



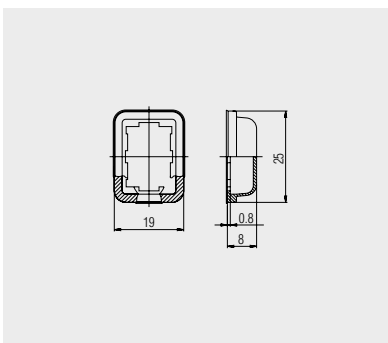
PCB terminal angled to
terminal side 1



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

MICRO-SIGNAL SWITCHES

SNAP-ACTION SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE



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
- With approval mark

Mechanical life endurance	1E5 5E4 (normally open contact)
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 (product-dependent) actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature	850 °C
Material actuator housing	PA PA / PA glass fiber-reinforced
Plug force of the terminals	≤ 80 N
Suitable for appliances of protection class II	



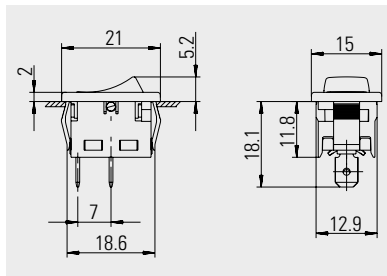
SERIES 1941 - SINGLE-POLE ROCKER SWITCHES IP 50

TO 12 (8) A 250 V AC 1E4

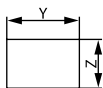
single-pole	Actuator color / printing	12 (8) A 250 V AC 1E4	8 (8) A 250 V AC 5E4	6 (4) A 250 V AC 5E4	6 (2) A 250 V AC 5E4	Terminal type	Terminal description	Contact distance (mm)	Contact material	Inrush current (capacitive) (A)	Miscellaneous	Stock version
	ON / OFF switch (SPST)											
	1941.1102		○	○			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



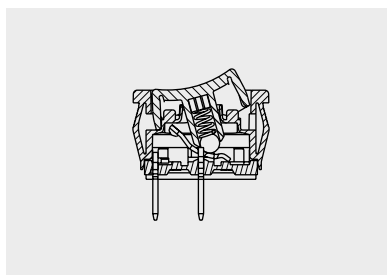
Quick-connect terminal 4.8 x 0.8



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

T0 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 housing	PA PA
Plug force of the terminals	≤ 80 N
Approval marks	 /  /  / 
Suitable for appliances of protection class II	



SERIES 1550 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 16 (4) A 250 V AC

 single-pole 	Lighting voltage (V)	Actuator color / printing	Housing color	7 A 250 V AC 5E4	16 (4) A 250 V AC 5E4	16 (4) A 250 V AC 1E4	10 (4) A 250 V AC 5E4	10 (4) A 250 V AC 25E3	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			
1550.3609	12							○								6.3	Ag		lower lying flange	
1551.3102						○	○						○	○		6.3	Ag	○		○
1551.3103						○	○						○	○		6.3	Ag			
1551.3106						○	○						○	○		6.3	Ag			
1551.2654									○								Au		approvals KEMA lower lying flange	
Normally closed contact (SPNC)																				
1581.1303					○								○	○		6.3	Ag	○	increased life endurance at a 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































































ECO

PUSH 'N' DRIVE



SERIES 1550 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 16 (4) A 250 V AC

<div></div> <div>double-pole</div> <div></div>		Lighting voltage (V)	Actuator color / printing	Housing color	7 A 250 V AC 5E4	16 (4) A 250 V AC 5E4	16 (4) A 250 V AC 1E4	10 (4) A 250 V AC 5E4	10 (4) A 250 V AC 25E3	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	○		
1555.3109	110														○		6.3	Ag			
1555.3120	110														○		6.3	Ag			
1555.3111	12									○							6.3	Ag			
1552.0102							○	○						○	○			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	○	conformant with EN 60065 par. 14.6	○
1552.3117							○	○				○	○	○	○		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	

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

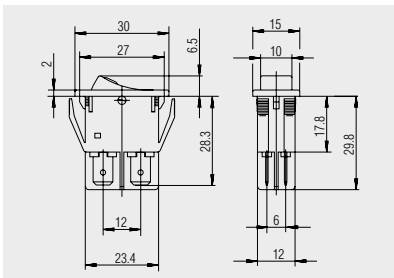
ECO

PUSH'N'DRIVE



SERIES 1550 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

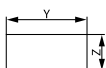
T0 16 (4) A 250 V AC



Basic types 1550 and 1555
single and double-pole

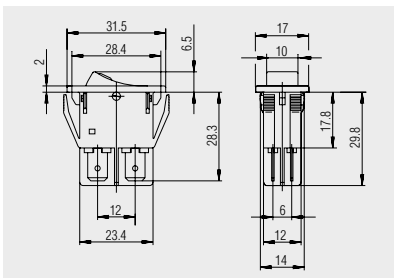


Quick-connect terminal 6.3 x 0.8



X = Wall thickness

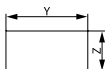
x	y	z
0.8 ... 5.0	27.2 +0.1	12.2 +0.2



1555.8104
double-pole



Quick-connect terminal 6.3 x 0.8
cover frame 31.5 x 17 mm



X = Wall thickness

x	y	z
0.8 ... 5.0	28.6 +0.1	14 +0.2

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

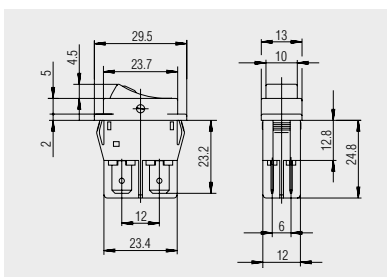


SERIES 1550 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

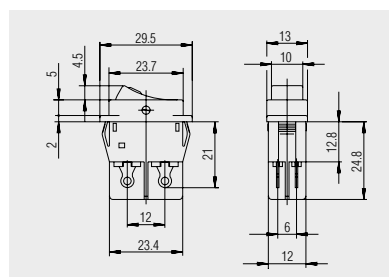
T0 16 (4) A 250 V AC



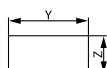
Basic types 1550 and 1555
lower lying flange
single and double-pole



 Quick-connect terminal 6.3 x 0.8



 Solder terminal

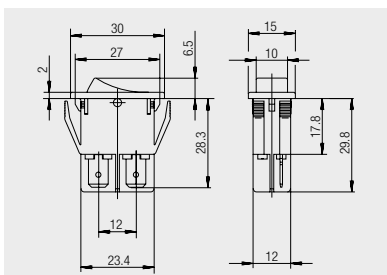



X = Wall thickness

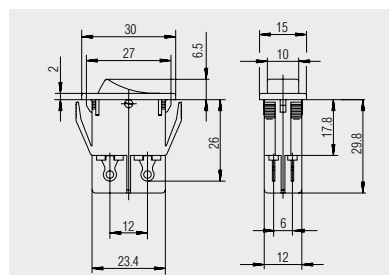
x	y	z
0.75 ... 1.25	26.2 ^{-0.1}	12.4 ^{+0.1}
2 ... 3	26.8 ^{-0.1}	12.4 ^{+0.1}
2 ... 3	26.8 ^{-0.1}	12.4 ^{+0.1}
1.25 ... 2	26.4 ^{-0.1}	12.4 ^{+0.1}



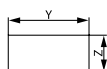
Basic type 1551 and 1552
single and double-pole



 Quick-connect terminal 6.3 x 0.8



 Solder terminal



X = Wall thickness

x	y	z
0.8 ... 5.0	27.2 ^{+0.1}	12.2 ^{+0.2}

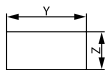


SERIES 1550 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 16 (4) A 250 V AC

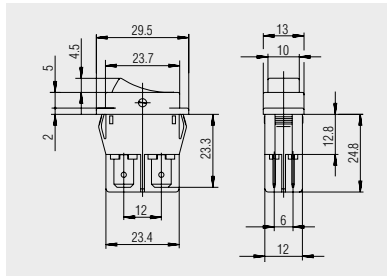


Basic types 1551 and 1552
lower lying flange
single and double-pole

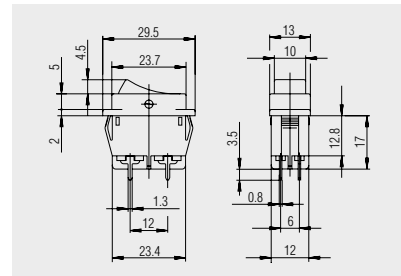


X = Wall thickness

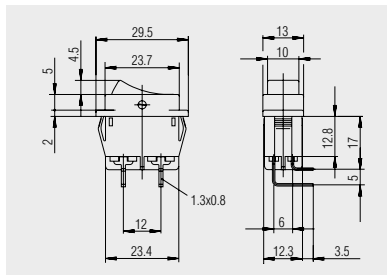
x	y	z
0.75 ... 1.25	26.2 ^{-0.1}	12.4 ^{+0.1}
1.25 ... 2	26.4 ^{-0.1}	12.4 ^{+0.1}
2 ... 3	26.8 ^{-0.1}	12.4 ^{+0.1}



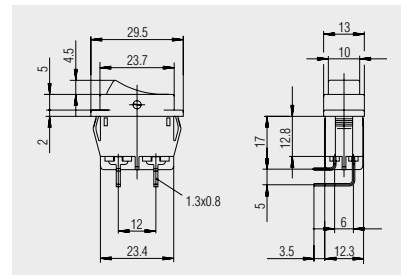
Quick-connect terminal 6.3 x 0.8



PCB terminal



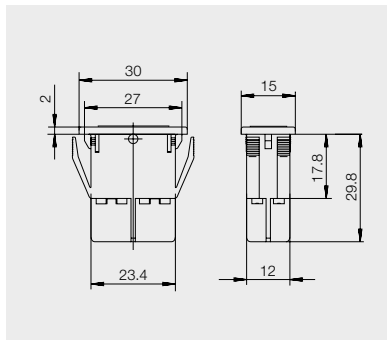
PCB terminal
angled



PCB terminal
angled mirror-inverted



Dummy piece
203.103.013



Dummy piece for series 1550 made of PA

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE



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
- Large 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 lamp 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 (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 housing terminals	PA / PC (product-dependent) PA silver plated / tinned (product-dependent)
Plug force of the terminals	≤ 80 N
Approval marks	 /  /  / 
Suitable for appliances of protection class II	



SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

<div>single-pole</div> 	ON / OFF switch (SPST)	1830.3112	1830.3118	1830.0102	1831.0114	1831.3312	1831.3313	1831.3606	1831.3607	1831.3815	1831.3816	1831.3933	1831.8112	1831.3311	1831.1107
		230	230	230											
Lighting voltage (V)															
Actuator color / printing															
Housing color															
20 (4) A 250 V AC 1E4		o	o		o	o	o	o	o	o	o	o	o		
20 (4) A 250 V AC														o	
16 (4) A 250 V AC 1E4															
10 (8) A 400 V AC 5E4															
10 (8) A 250 V AC 5E4		o	o		o	o	o	o	o	o	o	o	o	o	
10 (4) A 250 V AC 1E4				o											o
10 A 12 V DC															o
6 (4) A 250 V AC 5E4				o											o
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		o	o		o	o	o	o	o	o	o	o	o	o	
16 A 250 V AC 1/2 HP															
16 A 125 V AC 1/3 HP					o	o	o	o	o	o	o	o	o	o	
16 A 125 V AC 1/4 HP															
6 A 250 V AC 1/2 HP				o											o
6 A 125 V AC 1/4 HP															o
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	6.3	6.3	6.3	6.3	6.3	6.3	4.8
Contact distance (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"								o	o					o	
Miscellaneous								housing with 2 separating gates	housing with 2 separating gates	1E6 mechanical life endurance IP 67	1E6 mechanical life endurance IP 67		lower lying flange		
Stock version		o	o			o	o						o	o	o

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS











ECO

PUSH 'N' DRIVE



SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

<div>single-pole</div> <div></div>													
Lighting voltage (V)													
Actuator color / printing	<div></div>												
Housing color	<div></div>												
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	<div></div>												
30 mA 12 V DC	<div></div>												
16 A 250 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	<div></div>												
4 A 250 V AC 1/10 HP	<div></div>												
Terminal type	<div></div>												
Terminal description	4.8												
Contact distance (mm)	≥ 3												
Contact material	Ag												
EN 60335 cap. 30 conform “G”													
Miscellaneous	lower lying flange												
Stock version	<div></div>												

Normally open switch (SPNO)													
	1831.1202												
	1831.3402												
	1831.8202												
	1831.1253												
Changeover switch (SPDT)													
	1833.3312												
	1833.1102												
	1833.3307												
Changeover switch with OFF position in the center (SPDT - Center OFF)													
	1838.0305												
	1838.3901												
	1838.1402												
	1838.1502												
	1838.1509												
	1838.1602												

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MIKRO-SIGNALSCHALTER

SENSORS
















ECO

PUSH'N'DRIVE



SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

 <p>single-pole</p>	<p>Changeover switch with OFF position in the center (SPDT - Center OFF)</p>				<p>Changeover switch (SPDT momentary)</p>			
Lighting voltage (V)						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 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 (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







































































































ECO

PUSH 'N' DRIVE





























































































SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

<div>double-pole</div> <div></div>	ON / OFF switch (DPST)														
Lighting voltage (V)	400	230	230	230	230	230	230	230	230	230	115 - 230	12			
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 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		6.3	6.3	6.3	6.3	6.3	6.3	4.8	6.3	6.3
Contact distance (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					PCB holder 248.103.011 mounted lower lying flange						cover frame 33.2 long			
Stock version															




<div><div></div><div>double-pole</div></div>		ON / OFF switch (DPST)		Normally open contact (DPNO)		Changeover switch (DPDT)								
Lighting voltage (V)		1832.3602	1832.6112	1832.7103	1832.8112	1832.9103	1832.0113	1832.1102	1832.3307	1832.9101	1832.3407	1835.3802	1834.3311	1834.3312
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	 	 	 	 	 	 								



SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

<div>double-pole</div> 	Changeover switch (DPDT)									
	1834.1102	1834.3302	1834.3309	1834.3603	1834.6103	Changeover switch with OFF position in the center (DPDT - Center OFF)				
Lighting voltage (V)						1839.3512	1839.1402	1839.1407	1839.1410	1839.1502
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 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 (mm)										
Contact material										
EN 60335 cap. 30 conform "G"										
Miscellaneous										
Stock version										

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MIKRO-SIGNALSCHALTER

SENSORS


ECO

PUSH'N'DRIVE



SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

<div>double-pole</div> 								
Lighting voltage (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 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 (mm)								
Contact material								
EN 60335 cap. 30 conform "G"								
Miscellaneous								
Stock version								

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

Changeover switch (DPDT momentary)

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS














ECO

PUSH 'N' DRIVE



SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

 Lamp	Lamp	1837.1118	1837.3102	1837.8102	1837.8108
		230	230	230	230
Lighting voltage (V)		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 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 (mm)					
Contact material					
EN 60335 cap. 30 conform "G"					
Miscellaneous			size basic type 1835	size basic type 1835	size basic type 1835
Stock version					

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MIKRO-SIGNALSCHALTER

SENSORS

ECO

PUSH'N'DRIVE

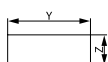


SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

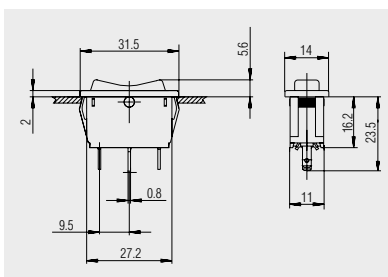


Basic types 1830, 1831,
1833 and 1838
single-pole
illuminated / non-illuminated

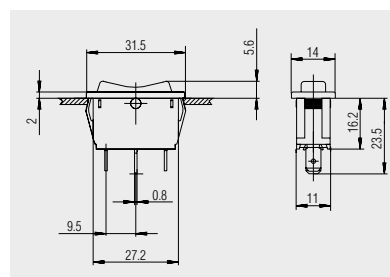


X = Wall thickness

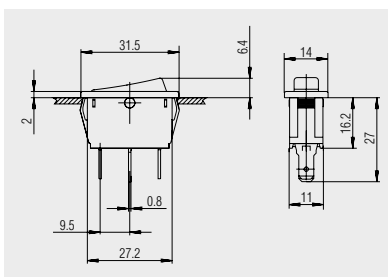
x	y	z
0.75 ... 1.25	30 ^{-0.1}	11 ^{+0.1}
1.25 ... 2	30.2 ^{-0.1}	11 ^{+0.1}
2 ... 3	30.6 ^{-0.1}	11 ^{+0.1}



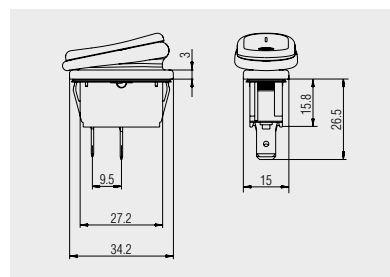
Quick-connect terminal 2.8 x 0.8
1838.4307



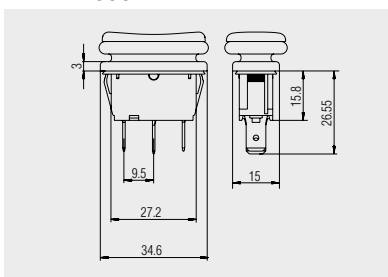
Quick-connect terminal 4.8 x 0.8
basic type 1838



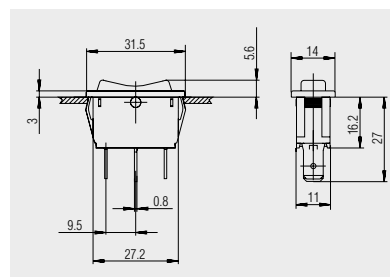
Quick-connect terminal 4.8 x 0.8
basic types 1830, 1831 and
1833



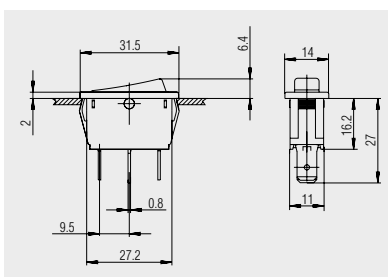
Quick-connect terminal 6.3 x 0.8
1831.3815



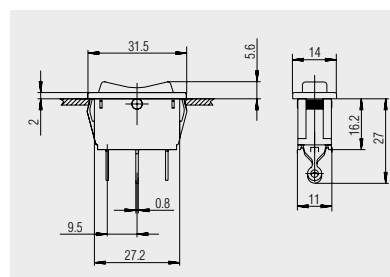
Quick-connect terminal 6.3 x 0.8
1838.3901



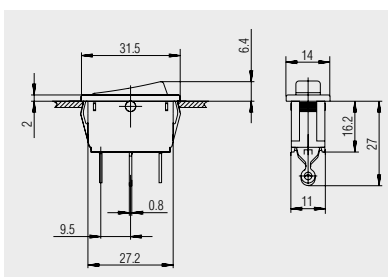
Quick-connect terminal 6.3 x 0.8
basic type 1838



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

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

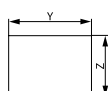


SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

T0 20 (4) A 250 V AC

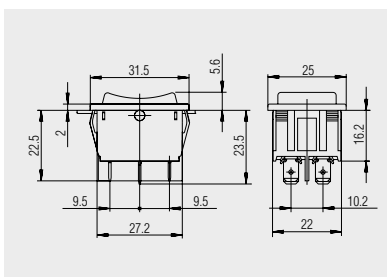


Basic types 1832, 1834,
1835 and 1839
double-pole
illuminated / non-illuminated

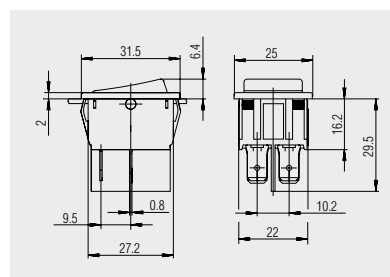


X = Wall thickness

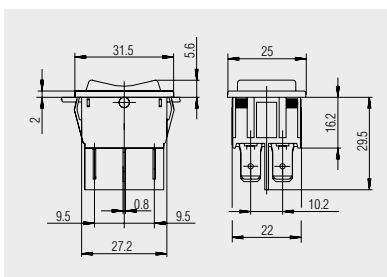
x	y	z
0.75 ... 1.25	30 ^{-0.1}	22 ^{+0.2}
1.25 ... 2	30.2 ^{-0.1}	22 ^{+0.2}
2 ... 3	30.6 ^{-0.1}	22 ^{+0.2}



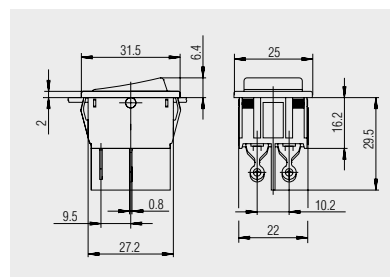
Quick-connect terminal 4.8 x 0.8



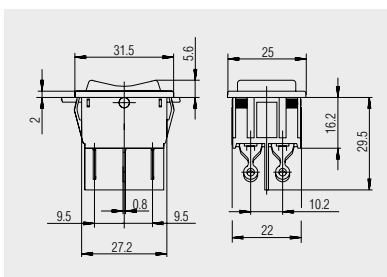
Quick-connect terminal 6.3 x 0.8 / 4.8
basic types 1832, 1834 and 1835



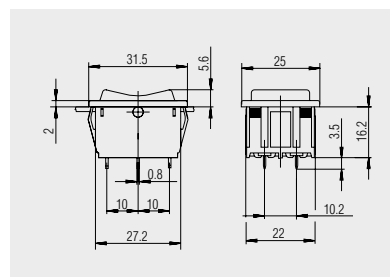
Quick-connect terminal 6.3 x 0.8
basic type 1839



Solder terminal
basic type 1832



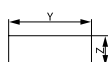
Solder terminal
basic type 1839



PCB terminal
basic type 1839

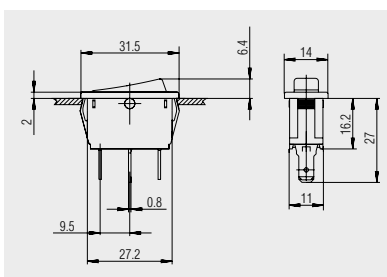


Basic types 1830, 1831 and 1833
single-pole, lower lying flange
illuminated / non-illuminated



X = Wall thickness

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

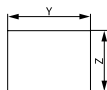


SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

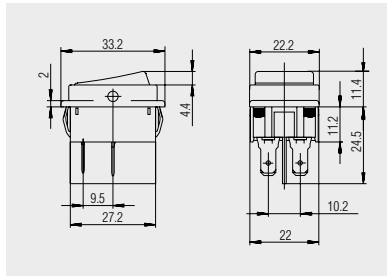


Basic types 1832, 1834,
1835 and 1839
double-pole, lower lying flange
illuminated / non-illuminated

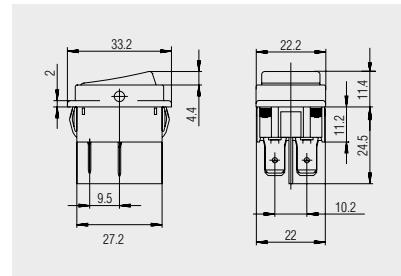


X = Wall thickness

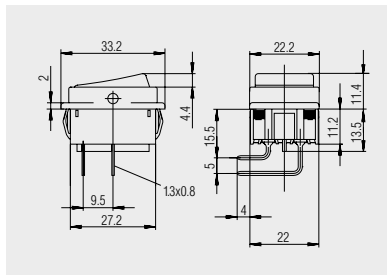
x	y	z
0.75 ... 1.25	30 ^{-0.1}	22 ^{+0.2}
1.25 ... 2	30.2 ^{-0.1}	22 ^{+0.2}
2 ... 3	30.6 ^{-0.1}	22 ^{+0.2}



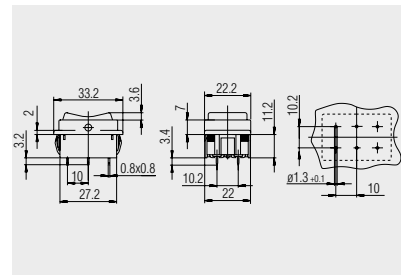
Quick-connect terminal 4.8 x 0.8
basic types 1832 and 1834



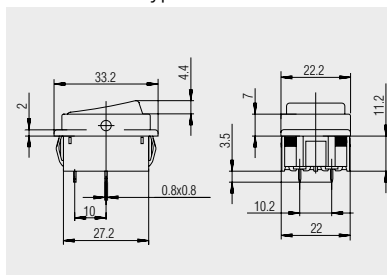
Quick-connect terminal 6.3 x 0.8
basic type 1832



PCB terminal
angled
basic types 1832 and 1835



PCB terminal
basic type 1839



PCB terminal
basic types 1832 and 1835

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

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TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

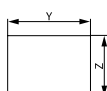


SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC

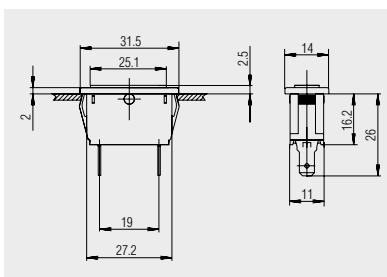


Basic type 1837 lamp
single and double-pole

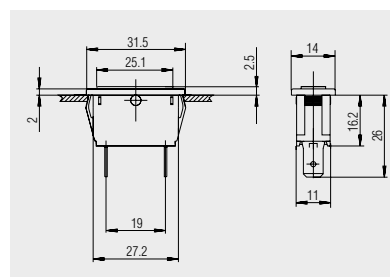


X = Wall thickness

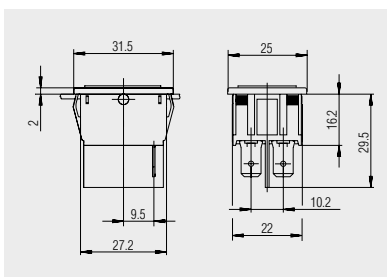
x	y	z
0.75 ... 1.25	30 ^{-0.1}	22 ^{+0.1}
1.25 ... 2	30.2 ^{-0.1}	22 ^{+0.1}
2 ... 3	30.6 ^{-0.1}	22 ^{+0.1}



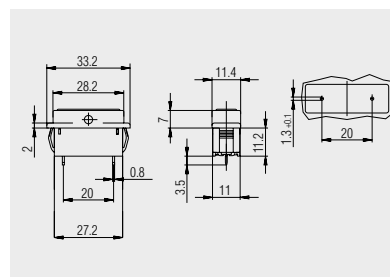
Quick-connect terminal 4.8 x 0.8
single-pole size



Quick-connect terminal 6.3 x 0.8
single-pole size



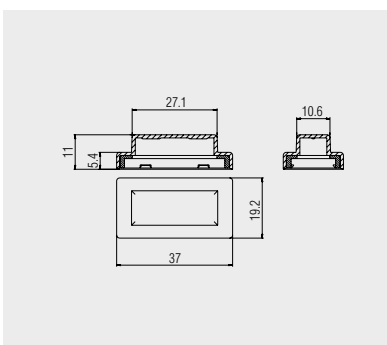
Quick-connect terminal 6.3 x 0.8
double-pole size



PCB terminal
lower lying flange
1837.2504



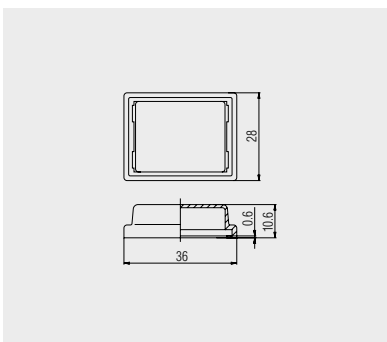
Protection cap
203.731.011



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.

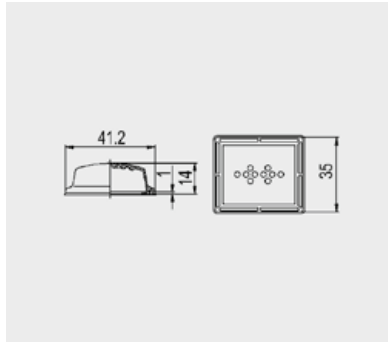


SERIES 1830 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 20 (4) A 250 V AC



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 made of PA black.

Housing and dummy cap must be assembled by the customer and make 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 made of PA black.

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



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
- 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 40 (terminal side), IP 65 (actuating side)
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 housing terminals	PC / TPU (bellows) PA 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

<div>double-pole</div> <div></div>		ON / OFF switch (DPST)		1935.3135	1935.3137	1935.3112	1935.3113	1935.3114	1935.3118	1935.3119	1935.3129	1935.3134	1935.3128	1935.3131	1935.3138	1932.1113	1932.3112	1932.3113
Lighting voltage (V)				400	400	250	250	250	250	250	250	125 - 250	125	125	12			
Actuator color / printing																		
Housing color																		
20 (4) A 250 V AC 1E4				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12 (4) A 250 V AC 1E4																		
10 (8) A 400 V AC 5E4				<input type="radio"/>	<input type="radio"/>													
10 (8) A 250 V AC 5E4				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10 A 12 V DC															<input type="radio"/>			
6 (4) A 250 V AC 5E4																		
16 A 250 V AC 1 HP				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16 A 125 V AC 3/4 HP				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16 A 125 V AC 1/3 HP														<input type="radio"/>				
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	6.3	6.3	6.3	6.3	6.3	6.3	4.8	6.3	6.3
Contact distance (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										belows anthracite								
Stock version						<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>								<input type="radio"/>	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS







































































ECO

PUSH 'N' DRIVE



SERIES 1930 - DOUBLE-POLE ROCKER SWITCHES IP 65

TO 20 (4) A 250 V AC

<div>double-pole</div> 	ON / OFF switch (DPST)									
	1932.3114	1932.3116	1932.3118	1932.3130	1932.3131	1932.3132	1932.3136	1932.3137	1932.3412	
Lighting voltage (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 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	6.3	6.3	6.3	
Contact distance (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					bellows white		bellows red		single-pole occupied	
Stock version										

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MIKRO-SIGNALSCHALTER

SENSORS




















































ECO

PUSH'N'DRIVE



SERIES 1930 - DOUBLE-POLE ROCKER SWITCHES IP 65

TO 20 (4) A 250 V AC

<div>double-pole</div> <div></div>	Changeover switch (DPDT)												Changeover switch with OFF position in the center (DPDT - Center OFF)																							
Lighting voltage (V)	1934.3112				1934.3114				1934.2114				1939.3119				1939.3125				1939.3312				1939.3314				1939.3318				1939.0454			
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 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				6.3							
Contact distance (mm)	≥ 3				≥ 3				≥ 3								≥ 3				≥ 3				< 3				< 3							
Contact material	Ag				Ag				Ag								Ag				Ag				Ag				Ag							
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

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SNAP-ACTION SWITCHES

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SENSORS

ECO

PUSH 'N' DRIVE

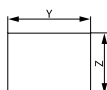


SERIES 1930 - DOUBLE-POLE ROCKER SWITCHES IP 65

TO 20 (4) A 250 V AC

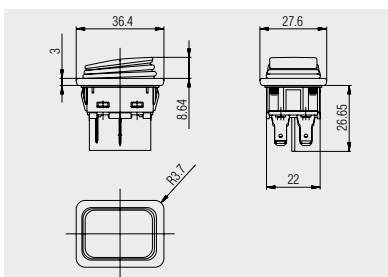


Basic types 1932, 1934, 1935 and 1939 double-pole

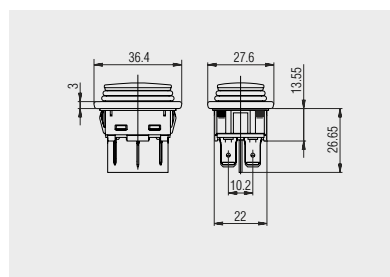


X = Wall thickness

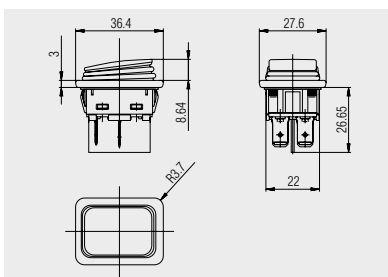
x	y	z
0.75 ... 1.25	30 ^{-0.1}	22 ^{+0.2}
1.25 ... 3	30.2 ^{-0.1}	22 ^{+0.2}



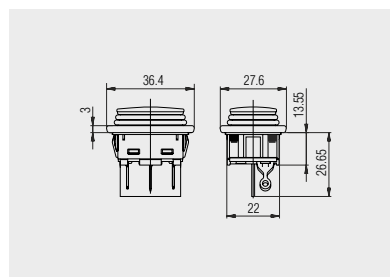
Quick-connect terminal 4.8 x 0.8
basic type 1932



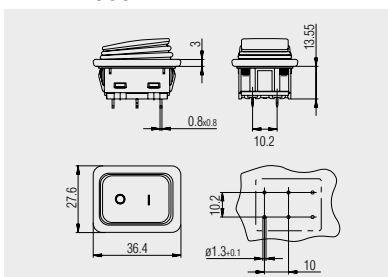
Quick-connect terminal 6.3 x 0.8
basic type 1939



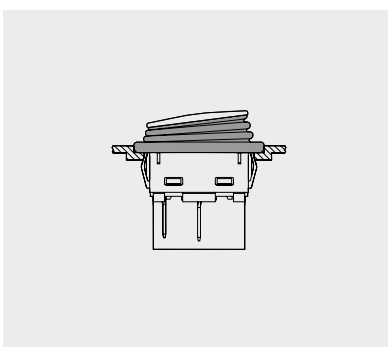
Quick-connect terminal 6.3 x 0.8
basic types 1932, 1934 and 1935



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 plate 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

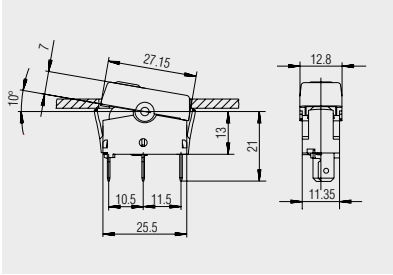
Mechanical life endurance	2E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Ambient temperature	terminal side -20 °C ... +100 °C actuating side -20 °C ... +55 °C
Flammability	UL 94 V-2
Glow wire test temperature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



SERIES 1656 - SINGLE-POLE ROCKER SWITCHES

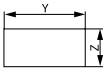
TO 10 A 250 V AC

single-pole	Lighting voltage (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 (mm)	Contact material	Miscellaneous	Stock version
ON / OFF switch (SPST)											
1656.1703	230						4.8	≥ 3	Ag		
1656.1723	90						4.8	≥ 3	Ag	glow lamp with ignition voltage < 90 V	



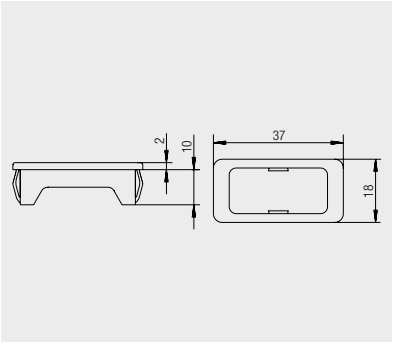
Basic type 1656

Quick-connect terminal 4.8 x 0.8



X = Wall thickness

x	y	z
> 2	28 ^{+0.1}	13 ^{+0.1}



Mounting frame made of polyamide

Mounting frame
217.313.011 - black
217.313.041 - anthracite metallic



SERIES 3230 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 10 (5) A 12 AND 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
- Block connector support

ON REQUEST








- Other colors
- Other rocker symbols (laser etched)
- Other switching functions
- Other lamp variants
- With assembled rocker



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



SERIES 3230 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 10 (5) A 12 AND 24 V DC

 single-pole (rocker separate)	Lighting voltage (V)	Housing color	10 (5) A 24 V DC 1E5	10 (5) A 12 V DC 1E5	Terminal type	Terminal description	Miscellaneous	Stock version
Normally open contact latching 1-step (SPST)								
3230.0102	24		○			3.0 x 0.8	with search lighting LED green circuit symbol: 3.01	
3230.0202	24		○			3.0 x 0.8	with function indicator LED red with search lighting LED green circuit symbol: 3.03	
3230.0101	12			○		3.0 x 0.8	with search lighting LED green circuit symbol: 3.01	
3230.0201	12			○		3.0 x 0.8	with function indicator LED red with search lighting LED green circuit symbol: 3.03	
Normally open contact momentary 1-step (SPNO)								
3230.0302	24		○			3.0 x 0.8	with search lighting LED green circuit symbol: 3.02	
3230.0301	12			○		3.0 x 0.8	with search lighting LED green circuit symbol: 3.02	

 double-pole (rocker separate)	Lighting voltage (V)	Housing color	10 (5) A 24 V DC 1E5	10 (5) A 12 V DC 1E5	Terminal type	Terminal description	Miscellaneous	Stock version
Changeover switch latching 1-step (DPDT)								
3230.1902	12		○			3.0 x 0.8	with search lighting LED green circuit symbol: 3.09	

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS








ECO






PUSH'N'DRIVE



SERIES 3230 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 10 (5) A 12 AND 24 V DC

 Combination (rocker separate)	Lighting voltage (V)	Housing color	10 (5) A 24 V DC 1E5	10 (5) A 12 V DC 1E5	Terminal type	Terminal description	Miscellaneous	Stock version
Changeover switch latching 2-step (SPDT)								
3230.0502	24		○			3.0 x 0.8	2 x single-pole changeover switch with search lighting LED green circuit symbol: 3.31	
3230.0602	24		○			3.0 x 0.8	2 x single-pole changeover switch with function indicator LED red with search lighting LED green circuit symbol: 3.33	
3230.0501	12			○		3.0 x 0.8	2 x single-pole changeover switch with search lighting LED green circuit symbol: 3.31	
3230.0601	12			○		3.0 x 0.8	2 x single-pole changeover switch with function indicator LED red with search lighting LED green circuit symbol: 3.33	
Changeover switch momentary 2-step (SPDT momentary)								
3230.0702	24		○			3.0 x 0.8	2 x single-pole changeover switch with search lighting LED green circuit symbol: 3.32	
3230.0701	12			○		3.0 x 0.8	2 x single-pole changeover switch with search lighting LED green circuit symbol: 3.32	

 Lamp (rocker separate)	Lighting voltage (V)	Housing color	10 (5) A 24 V DC 1E5	10 (5) A 12 V DC 1E5	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

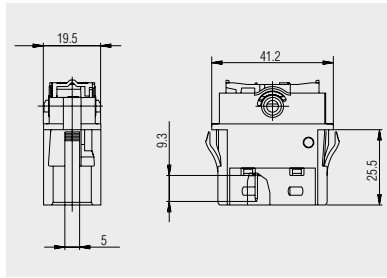
ECO


PUSH 'N' DRIVE



SERIES 3230 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 10 (5) A 12 AND 24 V DC



 Quick-connect terminal 3.0 x 0.8

Basic types 3230 and 3237



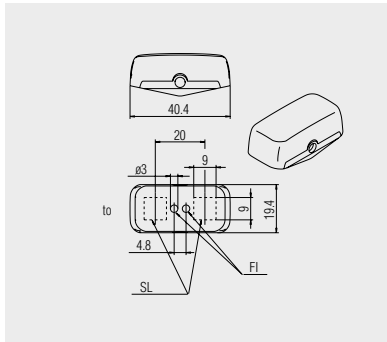
Rocker

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)



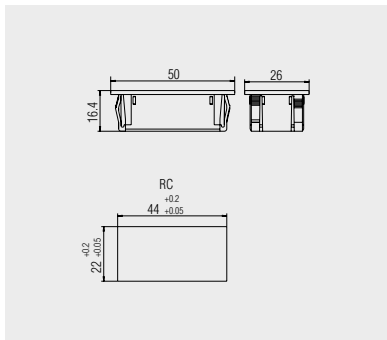
Snap-on rocker for basic type 3230 and cap for basic type 3237 (without switching function) painted black with or without stop for both or one-sided switching function. Laser etched by customer or on request.

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



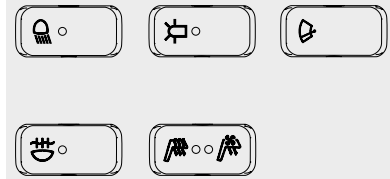
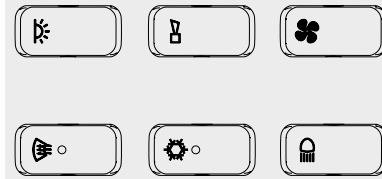
Dummy piece for the basic types 3230 and 3237 with mounted black cap



SERIES 3230 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 10 (5) A 12 AND 24 V DC

Lasered rocker symbols
(further symbols on request)



Tyco block connector for cable connection for basic switch 3230.
Black, Tyco no. 1418994

AK connector (AK 5820 03) on request.

Block connector
217.849.011



Tyco JPT (Junior Power Timer) female connectors for terminals of 3230 series.
Tyco No. 1355046.

Tyco MCP (Multiple Contact Point) on request.

Female connector
288.029.011

Further information under

WWW.MARQUARDT-SWITCHES.COM



SERIES 3230 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES

TO 10 (5) A 12 AND 24 V DC

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

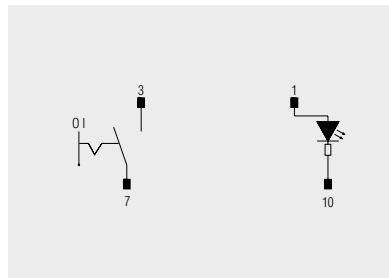
MICRO-SIGNAL SWITCHES

SENSORS

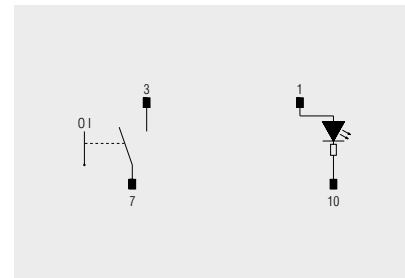
ECO

PUSH'N'DRIVE

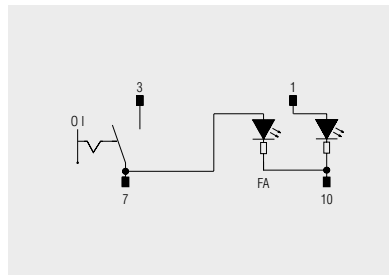
Circuit symbols



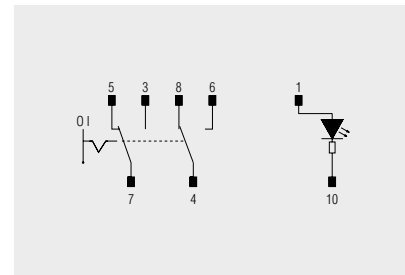
Circuit symbol: 3.01



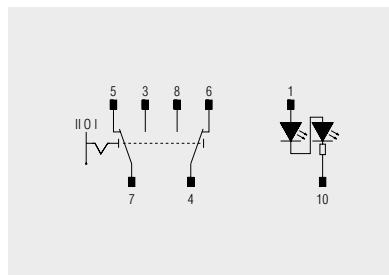
Circuit symbol: 3.02



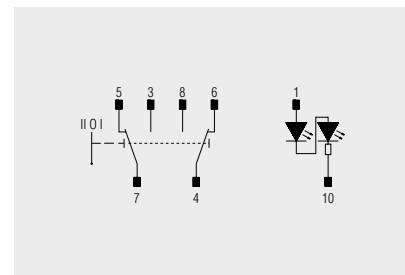
Circuit symbol: 3.03



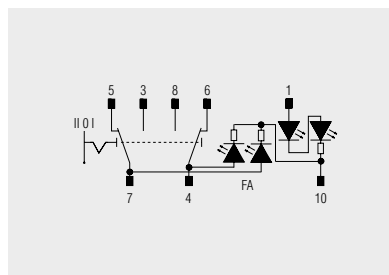
Circuit symbol: 3.09



Circuit symbol: 3.31



Circuit symbol: 3.32



Circuit symbol: 3.33

➤ SERIES 3250 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES IP 66/IP 68

TO 20 (10) A 12 AND 24 V DC 1E5



PRODUCT FEATURES

- ➔ High dust and water protection with IP 66 and IP 68
- ➔ Unique and millions of times proven snap-action switching system
- ➔ Self cleaning due to relative movement
- ➔ Up to 4 integrated LEDs for background and function illumination
- ➔ Mechanical life $\geq 500\,000$ cycles
- ➔ Wide range up to 20 A at 12 / 24 VDC
- ➔ Large variety of all required switching and circuit options
- ➔ Attractive design with various cap shapes and colors
- ➔ Large selection of laser etched symbols and accessories
- ➔ Individually configurable on www.marquardt-switches.com/configurator3250

























ON REQUEST

- ➔ Further cap symbols (laser etched)
- ➔ Further switching functions
- ➔ Further illumination variants
- ➔ Further cap colors
- ➔ Customer specific cap style

Mechanical life endurance	50E4
Operating force	7 N to 12 N +1,5 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
Actuator	IP 66 and IP 68 actuator side
Ambient temperature	terminal side -40 °C ... +85 °C actuating side -40 °C ... +85 °C
Material actuator housing terminals	PA glass fiber-reinforced / PC PA / PP silver plated
Terminal type	Quick-connect terminal
Lighting type	Symbol position 1 + 2 green; red function illumination red; yellow external function illumination red; yellow
Lighting voltage	24 V 12 V

➤ SERIES 3250 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES IP 66/IP 68

TO 20 (10) A 12 AND 24 V DC 1E5

<div></div> <div>single-pole</div>	Lighting voltage (V)	Housing color	20 (10) A 24 V DC 1E5	20 (10) A 12 V DC 1E5	10 (5) A 24 V DC 1E5	10 (5) A 12 - 24 V DC 1E5	10 (5) A 12 V DC 1E5	< 100 mA 24 V DC 5E5	< 100 mA 12 V DC 5E5	Terminal type	Terminal description	Product code	Miscellaneous	Stock version
ON / OFF switch (SPST)														
3250.0009	24		○								3.0 x 0.8	3250-1A-30-3-0	with search lighting LED green circuit symbol: 50.01	
3250.0033	24		○								3.0 x 0.8	3250-1A-40-3-0	with search lighting LED red circuit symbol: 50.01	
3250.0007	24				○						3.0 x 0.8	3250-1A-30-1-0	with search lighting LED green circuit symbol: 50.01	
3250.0013	24				○						3.0 x 0.8	3250-1A-31-1-0	with function indicator LED red with search lighting LED green circuit symbol: 50.13	
3251.0002	24				○						3.0 x 0.8	3250-1A-31-1-0-A0-bl-0719-0000-01	with function indicator LED red with search lighting LED green with pre assembled cap circuit symbol: 50.13	
3251.0005	24				○						3.0 x 0.8	3250-1A-31-1-0-A0-re-1360-0000-00	with search lighting LED green with pre assembled cap circuit symbol: 50.01	
3250.0006	12			○							3.0 x 0.8	3250-1A-10-3-0	with search lighting LED green circuit symbol: 50.01	
3250.0030	12			○							3.0 x 0.8	3250-1A-20-3-0	with search lighting LED red circuit symbol: 50.01	
3250.0001						○					3.0 x 0.8	3250-1A-00-1-0	circuit symbol: 50.43	
Normally open contact (SPNO)														
3250.0060	24		○								3.0 x 0.8	3250-1B-30-3-0	with search lighting LED green circuit symbol: 50.02	
3250.0072	24		○								3.0 x 0.8	3250-1B-40-3-0	with search lighting LED red circuit symbol: 50.02	
3250.0057	12			○							3.0 x 0.8	3250-1B-10-3-0	with search lighting LED green circuit symbol: 50.02	
3250.0069	12			○							3.0 x 0.8	3250-1B-20-3-0	with search lighting LED red circuit symbol: 50.02	
3250.0052						○					3.0 x 0.8	3250-1B-00-1-0	circuit symbol: 50.44	
Changeover switch (SPDT)														
3250.0118	24				○						3.0 x 0.8	3250-1E-31-1-0	with function indicator LED red with search lighting LED green circuit symbol: 50.17	
3250.0142	24				○						3.0 x 0.8	3250-1E-41-1-0	with function indicator LED yellow with search lighting LED red circuit symbol: 50.17	
3250.0115	12						○				3.0 x 0.8	3250-1E-11-1-0	with function indicator LED red with search lighting LED green circuit symbol: 50.17	
3250.0139	12						○				3.0 x 0.8	3250-1E-21-1-0	with function indicator LED yellow with search lighting LED red circuit symbol: 50.17	
3250.0106						○					3.0 x 0.8	3250-1E-00-1-0	circuit symbol: 50.47	
Changeover switch (SPDT momentary)														
3250.0163	24				○						3.0 x 0.8	3250-1F-30-1-0	with search lighting LED green circuit symbol: 50.06	
3250.0170	24							○			3.0 x 0.8	3250-1F-34-2-0	with function indicator LED red with search lighting LED green circuit symbol: 50.24	
3250.0160	12						○				3.0 x 0.8	3250-1F-10-1-0	with search lighting LED green circuit symbol: 50.06	
3250.0167	12								○		3.0 x 0.8	3250-1F-14-2-0	with function indicator LED red with search lighting LED green circuit symbol: 50.24	

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES














SENSORS

ECO

PUSH'N'DRIVE

➤ SERIES 3250 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES IP 66/IP 68

TO 20 (10) A 12 AND 24 V DC 1E5

 double-pole	Lighting voltage (V)	Housing color	20 (10) A 24 V DC 1E5	20 (10) A 12 V DC 1E5	10 (5) A 24 V DC 1E5	10 (5) A 12 - 24 V DC 1E5	10 (5) A 12 V DC 1E5	< 100 mA 24 V DC 5E5	< 100 mA 12 V DC 5E5	Terminal type	Terminal description	Product code	Miscellaneous	Stock version
ON / OFF switch (DPST)														
3250.0196	24						○				3.0 x 0.8	3250-2A-31-1-0	with function indicator LED red with search lighting LED green circuit symbol: 50.25	
3250.0184							○				3.0 x 0.8	3250-2A-00-1-0	circuit symbol: 50.49	
Changeover switch (DPDT)														
3250.0301	24				○						3.0 x 0.8	3250-2E-31-1-0	with function indicator LED red with search lighting LED green circuit symbol: 50.29	
3250.0325	24				○						3.0 x 0.8	3250-2E-41-1-0	with function indicator LED yellow with search lighting LED red circuit symbol: 50.29	
3250.0298	12						○				3.0 x 0.8	3250-2E-11-1-0	with function indicator LED red with search lighting LED green circuit symbol: 50.29	
3250.0322	12						○				3.0 x 0.8	3250-2E-21-1-0	with function indicator LED yellow with search lighting LED red circuit symbol: 50.29	
3251.0003	12						○				3.0 x 0.8	3250-2E-21-1-0-B0-bl-1370-0000-01	with function indicator LED yellow with search lighting LED red with pre assembled cap circuit symbol: 50.29	
3250.0289							○				3.0 x 0.8	3250-2E-00-1-0	circuit symbol: 50.53	
Changeover switch (DPDT momentary)														
3250.0346	24				○						3.0 x 0.8	3250-2F-30-1-0	with search lighting LED green circuit symbol: 50.42	
3250.0353	24							○			3.0 x 0.8	3250-2F-35-2-0	with function indicator LED red with search lighting LED green circuit symbol: 50.36	
3250.0343	12						○				3.0 x 0.8	3250-2F-10-1-0	with search lighting LED green circuit symbol: 50.42	
3250.0350	12								○		3.0 x 0.8	3250-2F-15-2-0	with function indicator LED red with search lighting LED green circuit symbol: 50.36	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES
























SENSORS

ECO

PUSH 'N' DRIVE

➤ SERIES 3250 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES IP 66/IP 68

TO 20 (10) A 12 AND 24 V DC 1E5

 Combination	Lighting voltage (V)	Housing color		20 (10) A 24 V DC 1E5	20 (10) A 12 V DC 1E5	10 (5) A 24 V DC 1E5	10 (5) A 12 - 24 V DC 1E5	10 (5) A 12 V DC 1E5	< 100 mA 24 V DC 5E5	< 100 mA 12 V DC 5E5	Terminal type	Terminal description	Product code	Miscellaneous	Stock version
3-step OFF-ON-ON switch (2xSPST)															
3250.0649						○						3.0 x 0.8	3250-5A-00-1-0	circuit symbol: 50.139	
Changeover switch with OFF-position in the center (2xSPST - Center OFF)															
3250.0379	24				○							3.0 x 0.8	3250-3A-34-1-0	with function indicator LED red with search lighting LED green circuit symbol: 50.113	
3250.0436	24				○							3.0 x 0.8	3250-3B-39-1-0	with search lighting LED green circuit symbol: 50.112 momentary function both sides	
3250.0431	24							○				3.0 x 0.8	3250-3B-48-2-0	with function indicator LED yellow with search lighting LED red circuit symbol: 50.128 momentary function both sides	
3250.0376	12						○					3.0 x 0.8	3250-3A-14-1-0	with function indicator LED red with search lighting LED green circuit symbol: 50.113	
3250.0433	12						○					3.0 x 0.8	3250-3B-19-1-0	mit Suchbeleuchtung LED grün Schaltzeichen: 50.108 Tastfunktion beidseitig	
3251.0004	12						○					3.0 x 0.8	3250-3B-19-1-0-B0-bl-1390-1380-00	mit Suchbeleuchtung LED grün Schaltzeichen: 50.108 Tastfunktion beidseitig	
3250.0428	12								○			3.0 x 0.8	3250-3B-28-2-0	mit Funktionsanzeige LED gelb mit Suchbeleuchtung LED rot Schaltzeichen: 50.128 Tastfunktion beidseitig	
3250.0367						○						3.0 x 0.8	3250-3A-00-1-0	Schaltzeichen: 50.121	
3250.0418						○						3.0 x 0.8	3250-3B-00-1-0	Schaltzeichen: 50.122 Tastfunktion beidseitig	
3-step changeover switch (2xSPDT)															
3250.0514	24				○							3.0 x 0.8	3250-4A-34-1-0	mit Funktionsanzeige LED rot mit Suchbeleuchtung LED grün Schaltzeichen: 50.117	
3250.0577	24				○							3.0 x 0.8	3250-4B-39-1-0	mit Suchbeleuchtung LED grün Schaltzeichen: 50.112 Tastfunktion beidseitig	
3250.0616	24				○							3.0 x 0.8	3250-4C-38-1-0	mit Funktionsanzeige LED rot mit Suchbeleuchtung LED grün Schaltzeichen: 50.137 Tastfunktion einseitig	
3250.0572	24							○				3.0 x 0.8	3250-4B-38-2-0	mit Funktionsanzeige LED rot mit Suchbeleuchtung LED grün Schaltzeichen: 50.132 Tastfunktion beidseitig	
3250.0590	24							○				3.0 x 0.8	3250-4B-48-2-0	mit Funktionsanzeige LED gelb mit Suchbeleuchtung LED rot Schaltzeichen: 50.132 Tastfunktion beidseitig	
3250.0511	12						○					3.0 x 0.8	3250-4A-14-1-0	mit Funktionsanzeige LED rot mit Suchbeleuchtung LED grün Schaltzeichen: 50.117	
3250.0574	12						○					3.0 x 0.8	3250-4B-19-1-0	mit Suchbeleuchtung LED grün Schaltzeichen: 50.112 Tastfunktion beidseitig	
3250.0613	12						○					3.0 x 0.8	3250-4C-18-1-0	mit Funktionsanzeige LED rot mit Suchbeleuchtung LED grün Schaltzeichen: 50.137 Tastfunktion einseitig	
3250.0569	12								○			3.0 x 0.8	3250-4B-18-2-0	mit Funktionsanzeige LED rot mit Suchbeleuchtung LED grün Schaltzeichen: 50.132 Tastfunktion beidseitig	
3250.0587	12								○			3.0 x 0.8	3250-4B-28-2-0		
3251.0001	12								○			3.0 x 0.8	3250-4B-28-2-0-B0-bl-1213-1223-02	mit Funktionsanzeige LED gelb mit Suchbeleuchtung LED rot Schaltzeichen: 50.132 Tastfunktion beidseitig	
3250.0496						○						3.0 x 0.8	3250-4A-00-K1-0	Schaltzeichen: 50.125	

ROCKERSWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

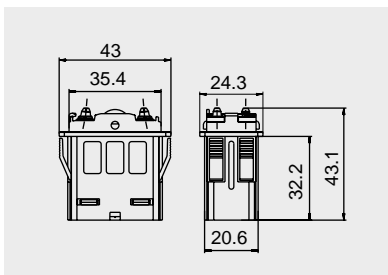
PUSH'N'DRIVE

➤ SERIES 3250 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES IP 66/IP 68

TO 20 (10) A 12 AND 24 V DC 1E5



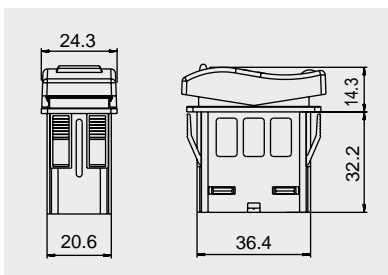
Series 3250



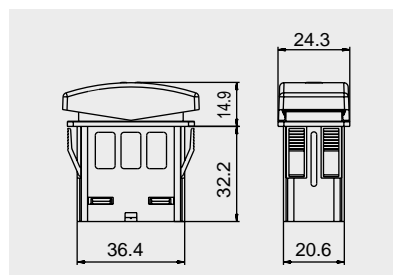
Quick-connect terminal 3.0 x 0.8



Series 3250



Quick-connect terminal 3.0 x 0.8



Quick-connect terminal 3.0 x 0.8



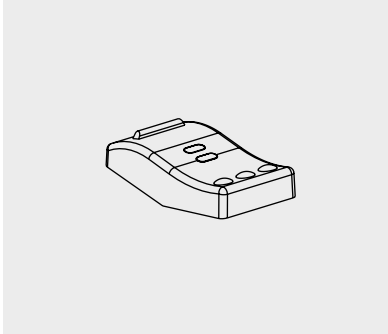
Cap design 1

black

203.990.015 - no light guide
203.105.016 - 1 light guide
203.105.026 - 2 light guide

red

203.990.045 - kein light guide
203.105.036 - 1 light guide
203.105.046 - 2 light guide



lock 1

203.107.016 - bl.; no light g.
203.107.046 - bl.; 1 light g.
203.107.076 - red; no light g.
203.107.106 - red.; 1 light g.

lock 2

203.107.026 - bl.; no light g.
203.107.056 - bl.; 1 light g.
203.107.086 - red.; no light g.
203.107.116 - red.; 1 light g.

Snap-on cap for basic type 3250. Painted black or red. With or without light guide for function illumination. Laser etched by customer or on request.

Versions with locking function:

- lock 1 in neutral position
- lock 2 in actuated position
- lock 3 in both positions

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

lock 3

203.107.036 - bl.; no light g.
203.107.066 - bl.; 1 light g.
203.107.096 - red.; no light g.
203.107.126 - red.; 1 light g.

➤ SERIES 3250 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES IP 66/IP 68

TO 20 (10) A 12 AND 24 V DC 1E5



Cap design 2

black

203.991.015 - no light guide

203.106.016 - 1 light guide

203.106.026 - 2 light guide

red

203.991.045 - kein light guide

203.106.036 - 1 light guide

203.106.046 - 2 light guide



lock 1

203.108.016 - bl.; no light g.

203.108.046 - bl.; 1 light g.

203.108.076 - red; no light g.

203.108.106 - red.; 1 light g.

lock 2

203.108.026 - bl.; no light g.

203.108.056 - bl.; 1 light g.

203.108.086 - red.; no light g.

203.108.116 - red.; 1 light g.

Snap-on cap for basic type 3250. Painted black or red. With or without light guide for function illumination. Laser etched by customer or on request.

Versions with locking function:

- lock 1 in neutral position

- lock 2 in actuated position

- lock 3 in both positions

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

lock 3

203.108.036 - bl.; no light g.

203.108.066 - bl.; 1 light g.

203.108.096 - red.; no light g.

203.108.126 - red.; 1 light g.

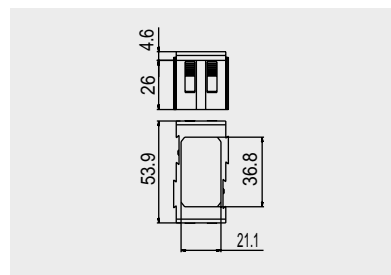
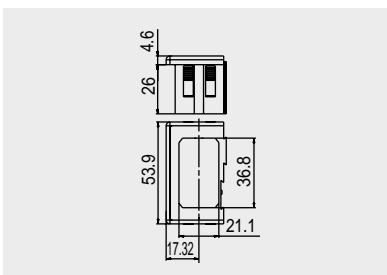


Assembly frame

Can be stringed together; black

217.887.011 (end piece)

217.887.021 (center piece)

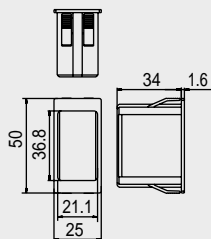


➤ SERIES 3250 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES IP 66/IP 68

TO 20 (10) A 12 AND 24 V DC 1E5



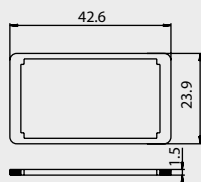
Adapter frame
217.879.011



Adapter frame for basic type 3250 in black. For cut-out 44 mm x 22 mm.



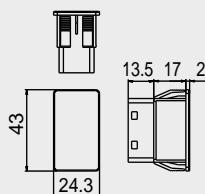
Panel seal
343.171.011
Seal for adapter frame
343.171.021



Panel seal for base switch 3250 / adapter frame 217.879.011. Dust- and water protection IP 67 from actuation side (correct customer assembly mandatory). Assembly on customers side or on demand. Thickness 1.5 mm; black.



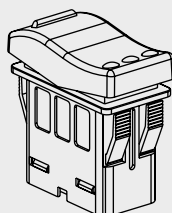
Hole plug
237.036.011



Hole plug for basic type 3250. With support for block connector.



Pilot light 3257



Pilot light 3257 in the same design as basic type 3250 without switching function. With 2 LEDs. Different colors available on demand. Each LED individually controllable. Laser inscription by customer or on request.

➤ SERIES 3250 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES IP 66/IP 68

TO 20 (10) A 12 AND 24 V DC 1E5



Tyco block connector for cable connection for basic switch 3250.
Black, Tyco no. 1418994

AK connector (AK 5820 03) on request.

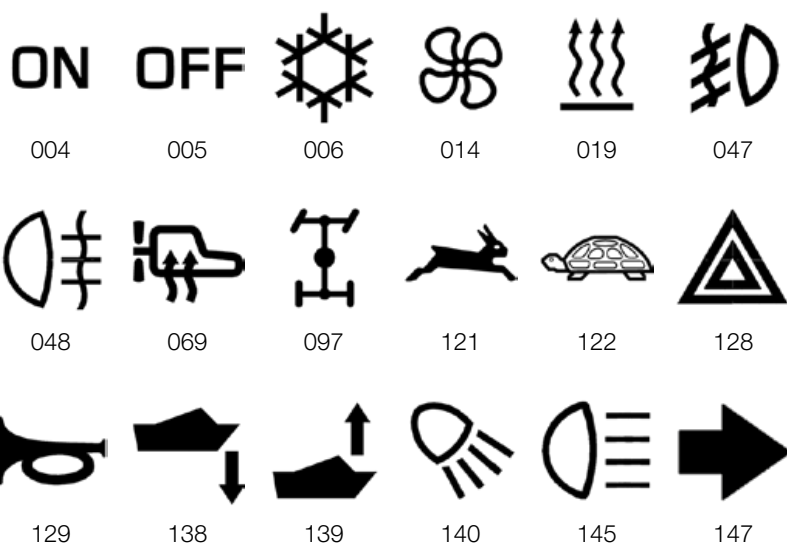
Block connector
217.849.011



Tyco JPT (Junior Power Timer) female connectors for terminals of 3250 series.
Tyco No. 1355046.

Tyco MCP (Multiple Contact Point) on request.

Female connector
288.029.011

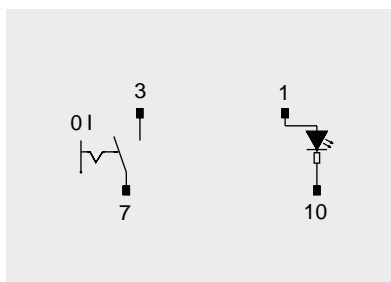


Lasered rocker symbols
(examples)
more on request

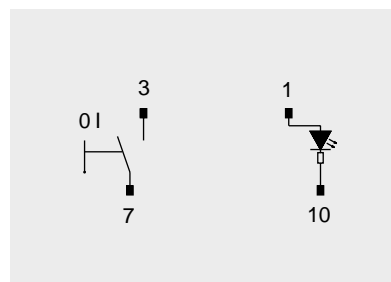
➤ SERIES 3250 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES IP 66/IP 68

TO 20 (10) A 12 AND 24 V DC 1E5

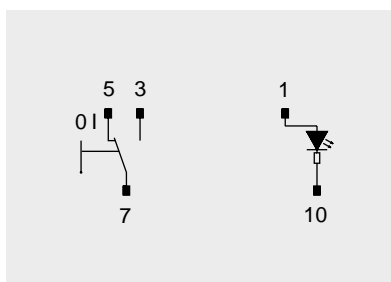
Circuit symbols



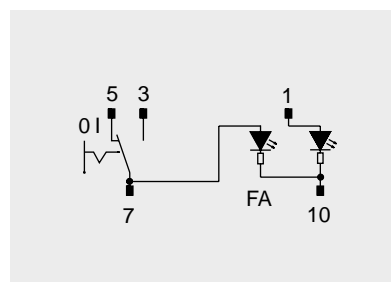
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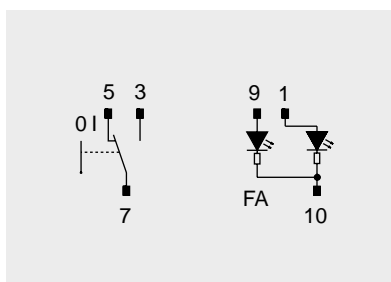
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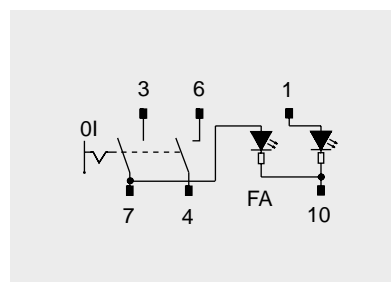
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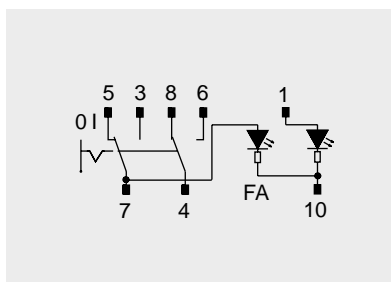
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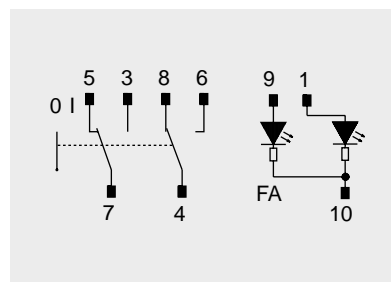
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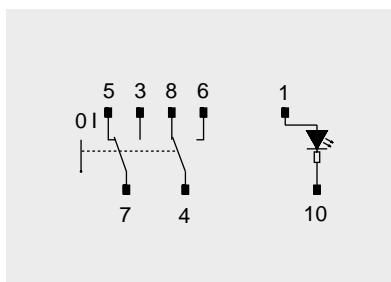
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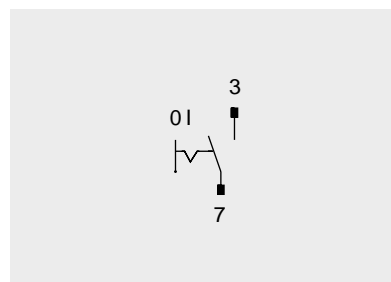
50.29



50.36



50.42



50.43

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

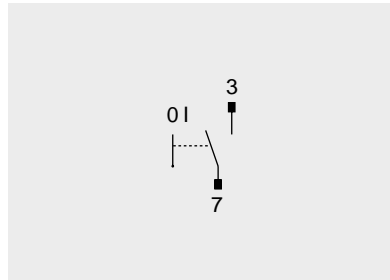
ECO

PUSH 'N' DRIVE

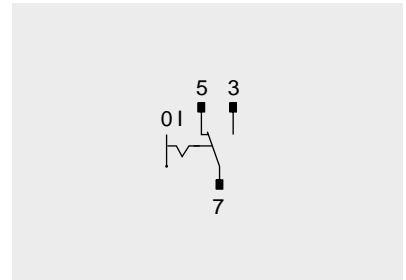
➤ SERIES 3250 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES IP 66/IP 68

TO 20 (10) A 12 AND 24 V DC 1E5

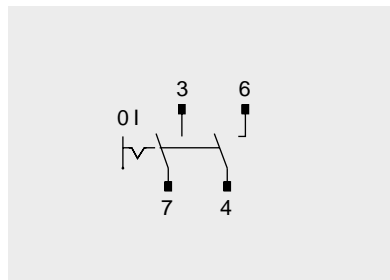
Circuit symbols
(continue from page 91)



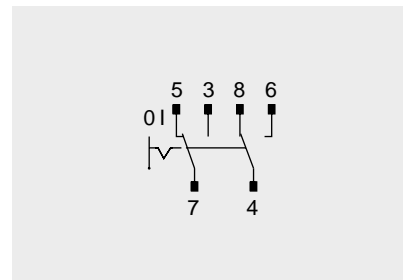
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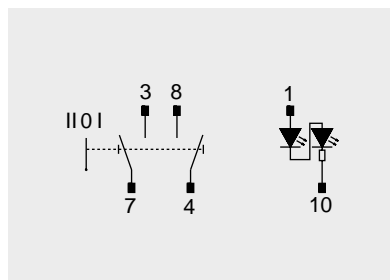
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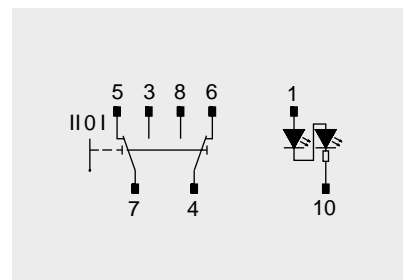
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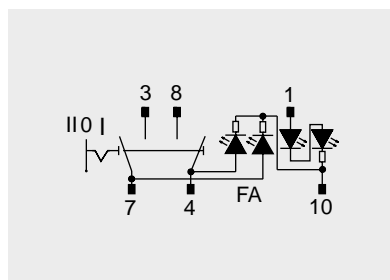
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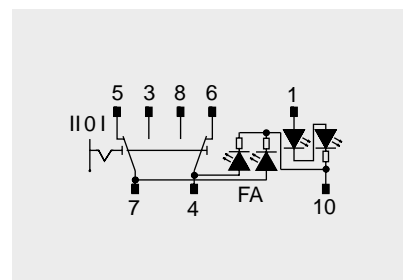
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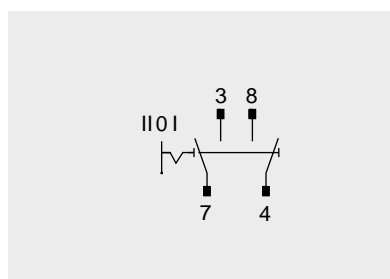
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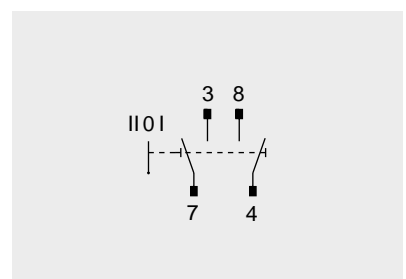
50.113



50.117



50.121

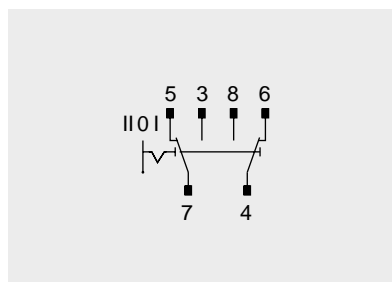


50.122

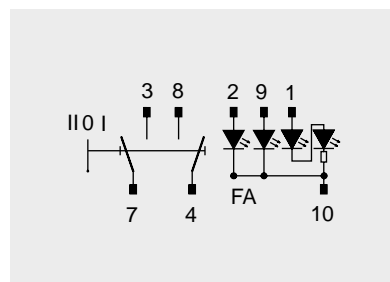
➤ SERIES 3250 - SINGLE AND DOUBLE-POLE ROCKER SWITCHES IP 66/IP 68

TO 20 (10) A 12 AND 24 V DC 1E5

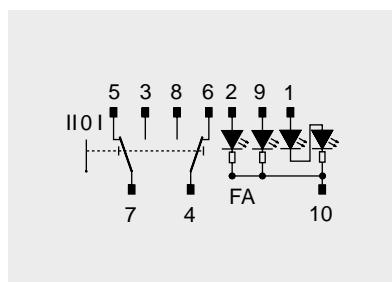
Circuit symbols
(continue from page 92)



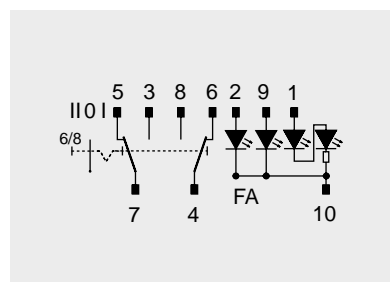
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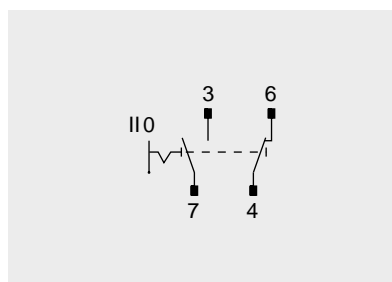
50.128



50.132



50.137



50.139



SERIES 0344 - THREE-POLE ROCKER SWITCHES

TO 16 (6) A 400 V AC

PRODUCT FEATURES

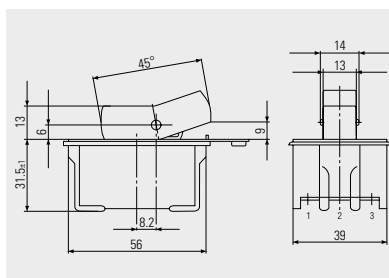
- Robust and powerful rocker switch
- Dust protected
- Approval for 400 V

ON REQUEST

- Other terminal variants

Material	actuator housing terminals	PA Duroplast / Duroplast (base) / chromated galvanized steel (bracket plate) chromatiert
Prüfzeichen		

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 (mm)	Contact material	Miscellaneous	Stock version
ON / OFF switch (TPST)										
0344.0102						M4	≥ 3	Ag		
0344.0201						M4	≥ 3	Ag		


























Screw terminal M4

Basic type 0344



PUSHBUTTON SWITCHES

ROCKER SWITCHES				
PUSHBUTTON SWITCHES				
TOGGLE SWITCHES				
SLIDE SWITCHES				
ROTARY SWITCHES				
FOOT SWITCHES				
TACT AND KEY SWITCHES				
SNAP-ACTION SWITCHES				
MICRO-SIGNAL SWITCHES				
SENSORS				
ECO				
PUSH'N'DRIVE				

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE



SERIES 1680

Single and double-pole pushbutton switches to 16 (4) A / 12 (12) A 250 V AC



► PAGE
98 – 104

SERIES 1683

Single and double-pole pushbutton switches to 16 A 250 V AC

Appliance cut-out: 19,2 x 12,9 mm



► PAGE
105 – 108

SERIES 1691

Smallest single-pole pushbutton switches for low voltages



► PAGE
109

SERIES 1247

Double-pole pushbutton switches to 7 (7) A 250 V AC



► PAGE
110 – 111

SERIES 5000

Round pushbutton switches for at least 200 000 mechanical switching cycles

Appliance cut-out: Ø 16.0 mm



► PAGE
112 – 113

SERIES 1846

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

Appliance cut-out: 19,2 x 12,9 mm



► PAGE
114 – 115

SERIES 1840

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

Appliance cut-out: Ø 12.0 mm



► PAGE
116 – 119



SERIES 1660

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

Appliance cut-out: 30.0 x 22.2 mm



➤ PAGE
120 – 123

SERIES 1670

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

Appliance cut-out: 30.0 x 22.2 mm



➤ PAGE
124 – 128



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 ... +105 °C ... +125 °C (product-dependent) 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 / 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	8 (8) A 250 V AC 1E4	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 (mm)	Contact material	Operating force (N)	Free position (FP) max. (mm)	Operating position (OP) (mm)	Permissible total travel position (TP) (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)																						
1681.1354					○	○		○			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

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS




























ECO

PUSH 'N' DRIVE



SERIES 1680 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

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

 double-pole	8 (8) A 250 V AC 1E4	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 (mm)	Contact material	Operating force (N)	Free position (FP) max. (mm)	Operating position (OP) (mm)	Permissible total travel position (TP) (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	○				
	1689.3803	○		○		○		○		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	○				
	1682.2701				○	○		○		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	24	23.8	22.2	○				
	1682.6101				○	○		○		180° angled	≥ 3	Ag	9.0 ± 3	24	21.3	19.8	○				
	1682.6401	○								180° angled	≥ 3	Ag	10 ± 3	0.4 ± 0.3	2.3 ± 0.3	3.9 ± 0.3	○				
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

ECO

PUSH'N'DRIVE

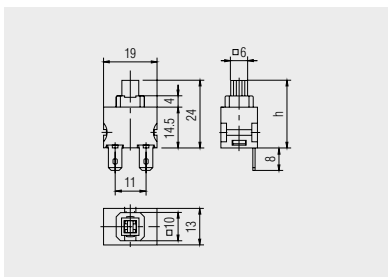


SERIES 1680 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

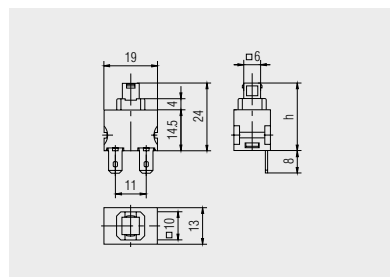
TO 16 (4) A / 12 (12) A 250 V AC



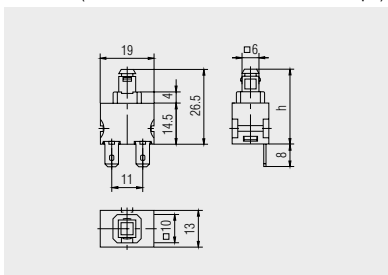
Basic type 1681
single-pole



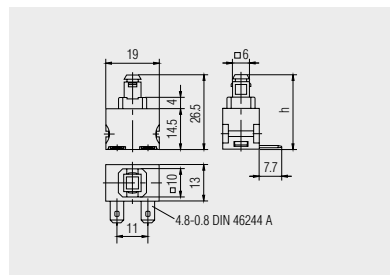
Quick-connect terminal 4.8 x 0.8
vertical
(actuator with holder for different caps)



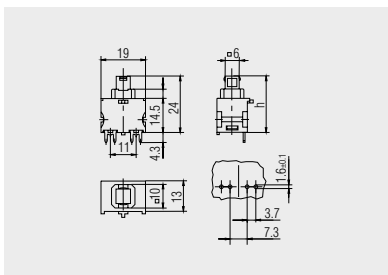
Quick-connect terminal 4.8 x 0.8
vertical (shortened actuator)



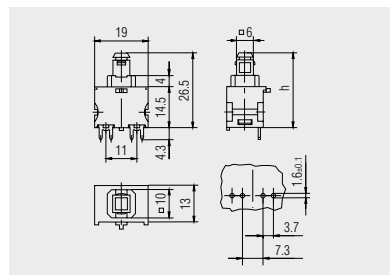
Quick-connect terminal 4.8 x 0.8
vertical (standard actuator)



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



PCB terminal vertical



PCB terminal vertical
(standard actuator)

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

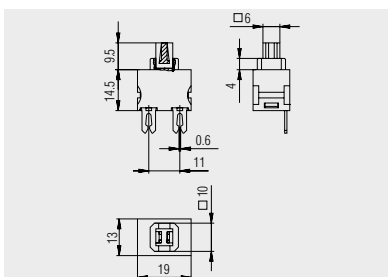


SERIES 1680 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

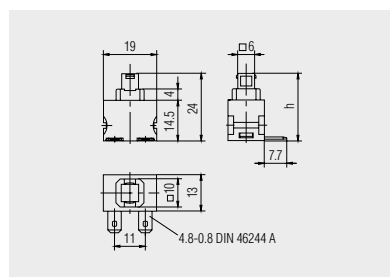
TO 16 (4) A / 12 (12) A 250 V AC



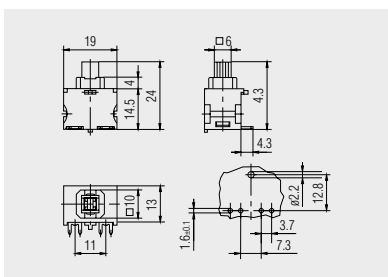
Basic type 1681
single-pole



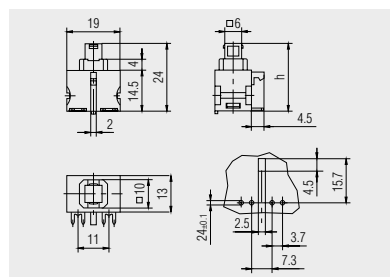
Cut terminal
(actuator with holder for different caps)



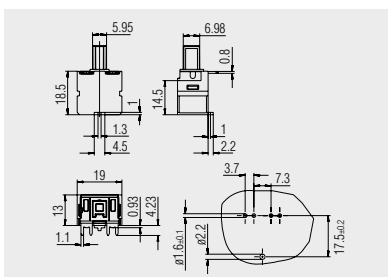
Quick-connect terminal 4.8 x 0.8
horizontal (shortened actuator)



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)

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE

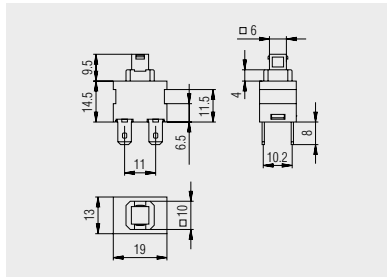


SERIES 1680 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

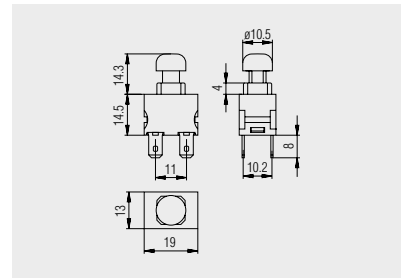
T0 16 (4) A / 12 (12) A 250 V AC



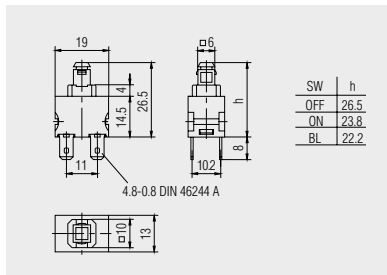
Basic types 1682 and 1689
double-pole



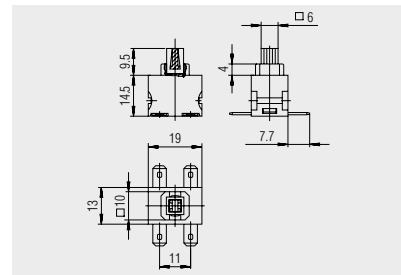
Quick-connect terminal 4.8 x 0.8
vertical (shortened actuator)



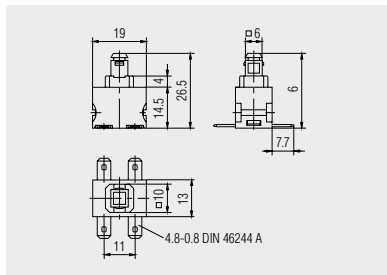
Quick-connect terminal 4.8 x 0.8
vertical (with mounted cap)



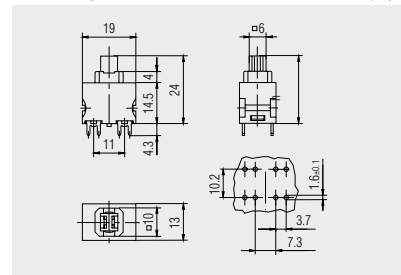
Quick-connect terminal 4.8 x 0.8
vertical (standard actuator)



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)

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

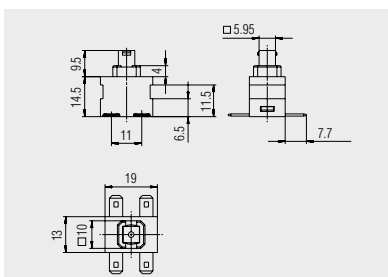


SERIES 1680 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

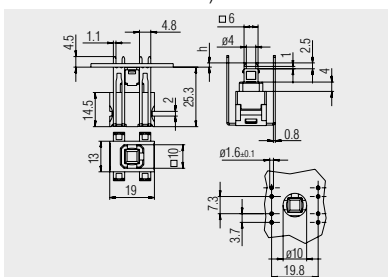
TO 16 (4) A / 12 (12) A 250 V AC



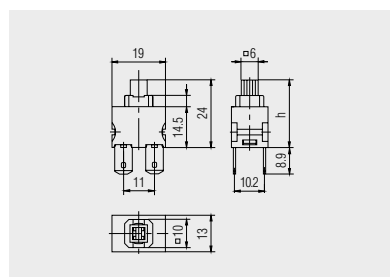
Basic types 1682 and 1689
double-pole



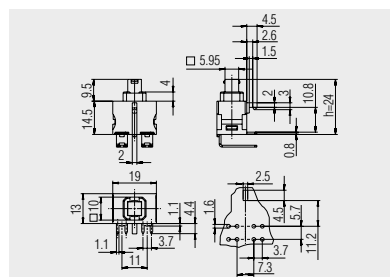
Quick-connect terminal 4.8 x 0.8
horizontal (shortened actuator
without cut-out)



PCB terminal 180° angled
(shortened actuator)



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



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

ECO

PUSH'N'DRIVE



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

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
- Variant with dust and water protection






































Mechanical life endurance	10E4
Operating force	approx. 8 N (basic type 1683) approx. 12 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
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) UL 94 V-0
Glow wire test temperature	850 °C
Actuator	IP 40 IP 65 and IP 67 (product- dependent)
Material actuator housing	PC / EPDM / PA Latamid PA / PA glass fiber-reinforced / PA C3U / PA Latamid glass fiber-reinforced
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 (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 (mm)	Contact material	Free position (FP) max. (mm)	Operating position (OP) (mm)	Permissible total travel position (TP) (mm)	Actuator	Miscellaneous	Stock version
ON / OFF switch (SPST)																	
1686.1101	230								4.8	≥ 3	Ag	23.9	20.85	19.7	IP 40		
1686.8104	230								4.8	≥ 3	Ag	28	25	23.8	IP 65 and IP 67		
1683.1101									4.8	≥ 3	Ag	23.9	20.85	19.7	IP 40		
1683.8101									4.8	≥ 3	Ag	28	25	23.8	IP 65 and IP 67		
Normally open contact (SPNO)																	
1686.6155	24								4.8 / 2 x 2.8	≥ 3	Au	23.9	20.85	19.7	IP 40	lamp terminal (2.8) external	
1683.1201									4.8	≥ 3	Ag	23.9	20.85	19.7	IP 40		
1683.1802									4.8	≥ 3	Ag	23.5	20.45	19.3	IP 40		

 double-pole		Lighting voltage (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 (mm)	Contact material	Free position (FP) max. (mm)	Operating position (OP) (mm)	Permissible total travel position (TP) (mm)	Actuator	Miscellaneous	Stock version
ON / OFF switch (DPST)																	
1687.1104	230								4.8	≥ 3	Ag	23.9	20.85	19.7	IP 40		
1684.1101									4.8	≥ 3	Ag	23.9	20.85	19.7	IP 40		
1684.1701									4.8	≥ 3	Ag	23.5	20.45	19.3	IP 40	snap-on actuator	
1684.1801									4.8	≥ 3	Ag	23.5	20.45	19.3	IP 40		
Normally open contact (SPNO)																	
1684.8202									4.8	≥ 3	Ag	28	25	23.8	IP 65 and IP 67		

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE

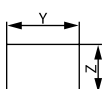


SERIES 1683 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 A 250 V AC

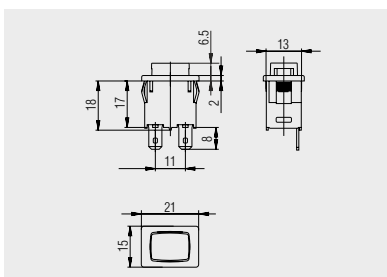


Basic type 1683
single-pole
non-illuminated

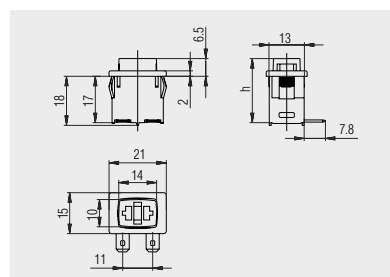


X = Wall thickness

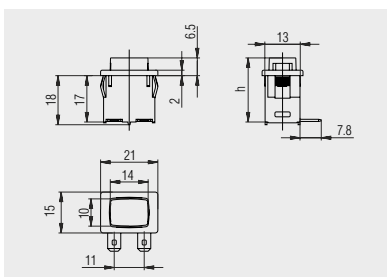
x	y	z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	12.9 ^{+0.1}



Quick-connect terminal 4.8 x 0.8



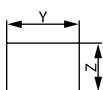
Quick-connect terminal 4.8 x 0.8
horizontal



Quick-connect terminal 4.8 x 0.8
horizontal

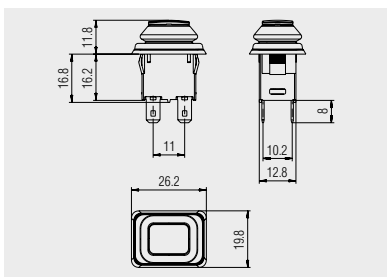


Basic types 1683, 1684,
1686 and 1687
single and double-pole
illuminated / non-illuminated



X = Wall thickness

x	y	z
1.0 ... 2.0	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

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

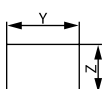


SERIES 1683 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 A 250 V AC

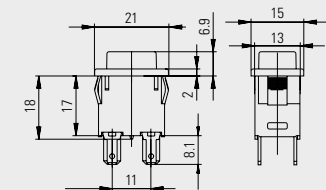


Basic types 1683, 1684,
1686 and 1687
single and double-pole
illuminated / non-illuminated

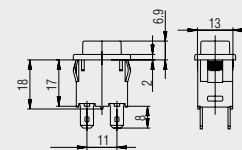


X = Wall thickness

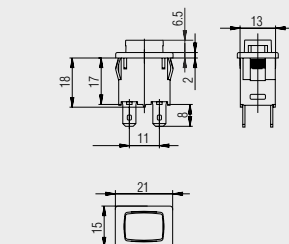
x	y	z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	12.9 ^{+0.1}



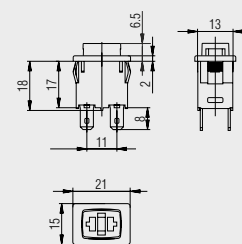
Quick-connect terminal 4.8 x 0.8
/ 2 x 2.8 x 0.8 with external lamp
1686.6155



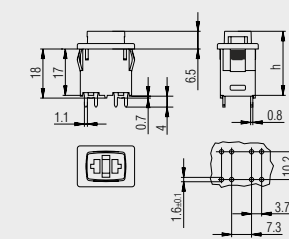
Quick-connect terminal 4.8 x 0.8
1684.1101, 1684.1104, 1684.1201,
basic types 1687 and 1686



Quick-connect terminal 4.8 x 0.8
basic type 1684



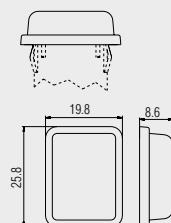
Quick-connect terminal 4.8 x 0.8
basic type 1684



PCB terminal vertical
1684.2701



Protection cap
203.701.011



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



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

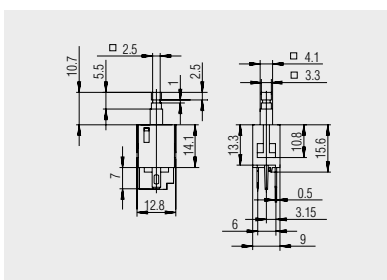
- For mains applications
- Customized actuators
- Different operating force

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

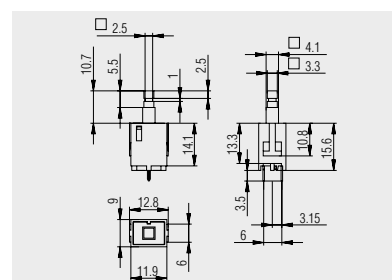
	Actuator color / printing	Housing color	5 mA 30 V	Terminal type	Terminal description	Contact distance (mm)	Contact material	Free position (FP) max. (mm)	Operating position (OP) (mm)	Permissible total travel position (TP) (mm)	Miscellaneous	Stock version
ON / OFF switch (SPST)												
1691.2101	■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

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

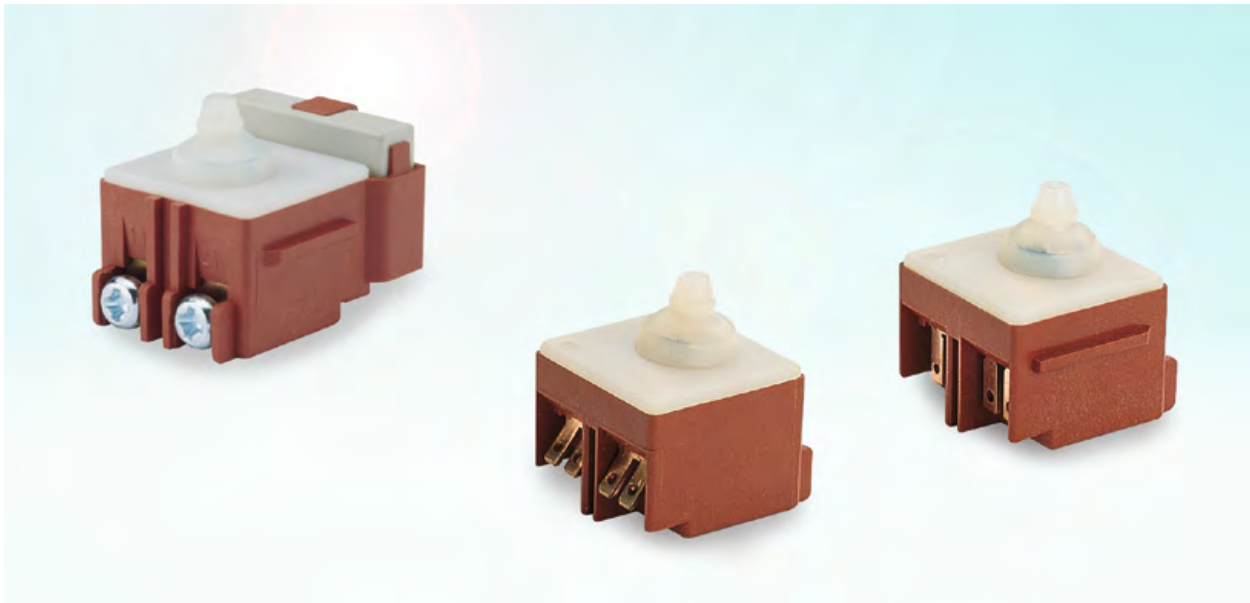
ECO

PUSH 'N' DRIVE



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	



SERIES 1247 - DOUBLE-POLE PUSHBUTTON SWITCHES

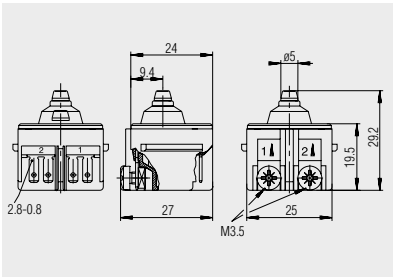
TO 7 (7) A 250 V AC


 single-pole	10 (10) A 127 V AC 5E4	7 (7) A 250 V AC 5E4	10 A 125 V AC	5 A 250 V AC	Terminal type	Terminal description	Contact distance (mm)		Contact material	Miscellaneous	Stock version
	Normally open contact (SPNO)										
1247.0102	○	○	○	○		2 x M3.5 2 x St 2.8 angled 2 x St 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	

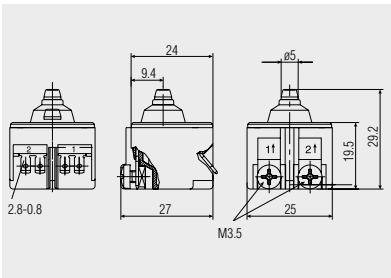
 double-pole	10 (10) A 127 V AC 5E4	7 (7) A 250 V AC 5E4	10 A 125 V AC	5 A 250 V AC	Terminal type	Terminal description	Contact distance (mm)		Contact material	Miscellaneous	Stock version
Normally open contact (DPNO)											
1247.2102	○	○	○	○		2 x M3.5 2 x St 2.8 angled 2 x St 2.8 angled	≥ 3	Ag		without 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	




Basic type 1247



 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

ECO

PUSH 'N' DRIVE



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 housing terminals	PA glass fiber-reinforced PA glass fiber-reinforced silver plated
Type of fastening	Snap fastening
Plug force of the terminals	≤ 64 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



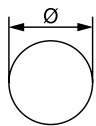
SERIES 5000 - ROUND PUSHBUTTON SWITCHES

FOR AT LEAST 200 000 MECHANICAL SWITCHING CYCLES

 single-pole	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 (mm)	Contact material	Pretravel max. (mm)	Total travel / stroke (mm)	Miscellaneous	Stock version
Normally open contact (SPNO)													
5000.0101							2.8	≥ 3	Ag	2.0 \pm 0.4	4.0		
5000.0103							2.8	≥ 3	Ag	2.0 \pm 0.4	4.0		
5000.0104							2.8	≥ 3	Ag	2.0 \pm 0.4	4.0		
5000.0211							2.8	≥ 3	Ag	2.0 \pm 0.4	4.0	fixing pin	
5000.0212							2.8	≥ 3	Ag	2.0 \pm 0.4	4.0	fixing pin	
5000.0501							2.8	≥ 3	Ag	2.0 \pm 0.4	4.0	fixing pin with IP 54 sealing cap	

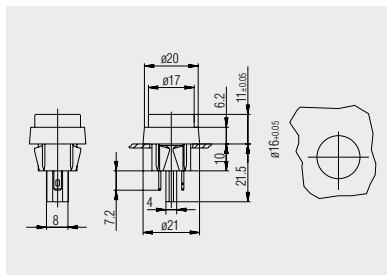


Basic type 5000

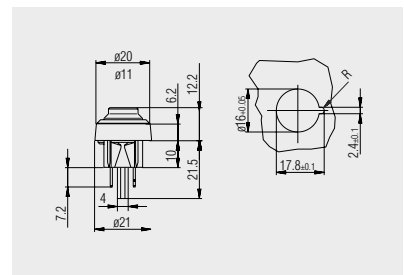


X = Wall thickness

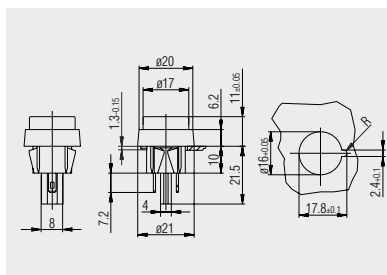
x	Ø
1.4 ... 1-7	16.0 $^{+0.05}$



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



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

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE



SERIES 1846 - SINGLE-POLE PUSHBUTTON SWITCHES

T0 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 housing terminals	PA PA silver plated / tinned
Bearing terminal	silver plated tinned
Plug force of the terminals	≤ 80 N
Approval marks	
Suitable for appliances of protection class II	



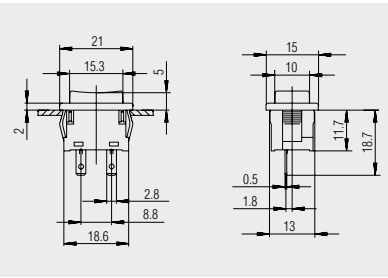
SERIES 1846 - SINGLE-POLE PUSHBUTTON SWITCHES


TO 2 (1) A 250 V AC

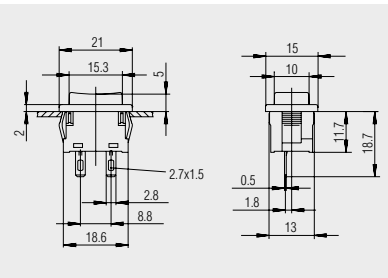
 single-pole	Actuator color / printing	Housing color	2 (1) A 250 V AC 5E4 30 mA 12 V DC 5E4	Terminal type	Terminal description	Contact distance (mm)	Contact material	Miscellaneous	Stock version
Normally open contact (SPNO)									
1846.0201			○			< 3	Ag		○
1846.2201			○			< 3	Ag		
1846.3201			○		2.8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




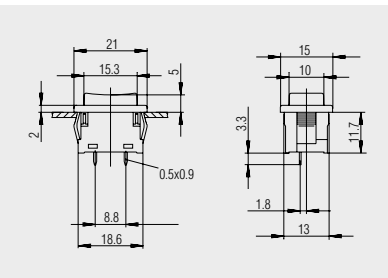
Basic type 1846




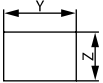
 Quick-connect terminal 2.8 x 0.5



 Solder terminal




 PCB terminal

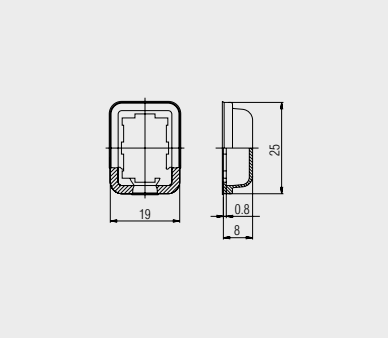


X = Wall thickness

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.



SERIES 1840 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 6 (4) A 250 V AC






PRODUCT FEATURES

- 100 million times proven switching principle with long 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 housing terminals	PA PA glass fiber-reinforced / PA silver plated
Plug force of the terminals	≤ 80 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



SERIES 1840 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 6 (4) A 250 V AC

<div></div> <div>single-pole</div>	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 125V AC 1/4 HP	6 A 125 - 250 V AC 1/8 HP	Terminal type	Terminal description	Contact distance (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 119		
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			

<div></div> <div>double-pole</div>	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 (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 119		

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

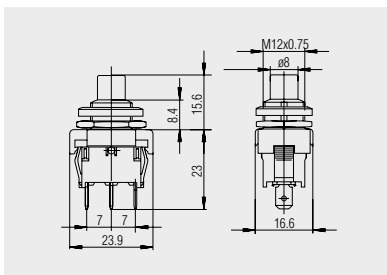


SERIES 1840 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 6 (4) A 250 V AC



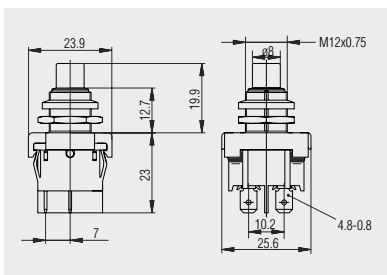
Basic types 1841 and 1843
single-pole



Quick-connect terminal 4.8 x 0.8



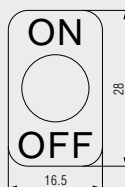
Basic type 1842
double-pole



Quick-connect terminal 4.8 x 0.8



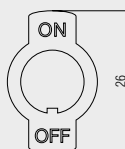
Identification plate
240.001.011



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



Identification plate
240.002.011



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

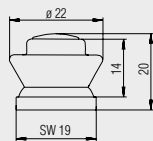


SERIES 1840 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 6 (4) A 250 V AC



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.



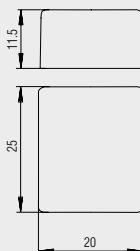
Pushbutton
205.008.011



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



Pushbutton
203.106.011



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

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

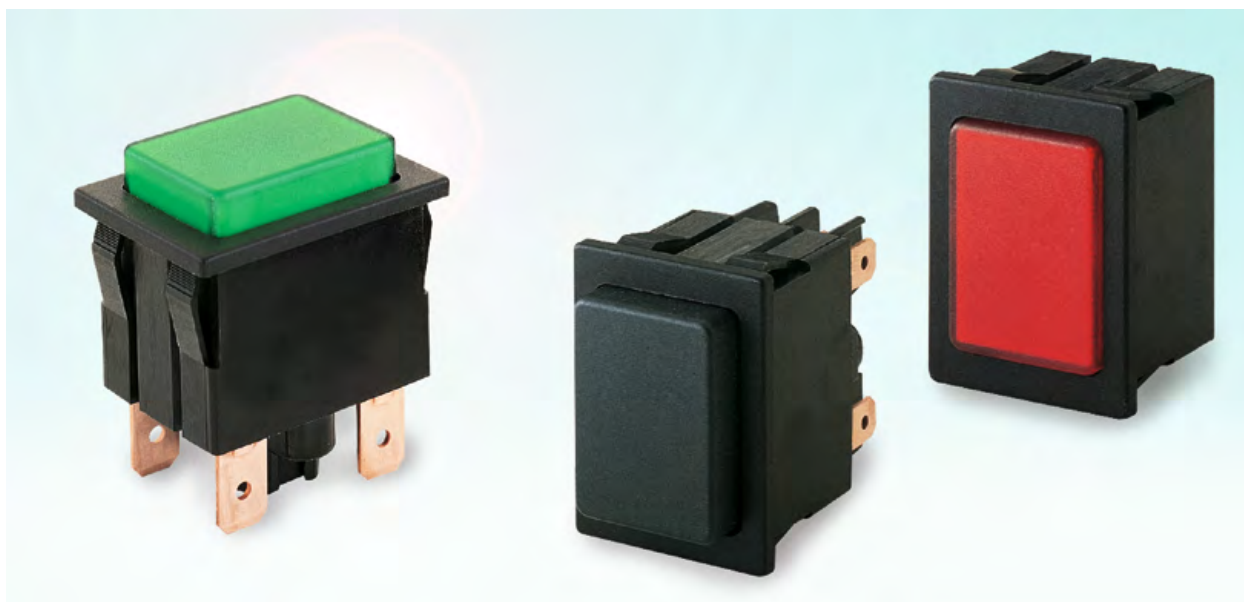
ECO

PUSH 'N' DRIVE



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 housing terminals	PC (product-dependent) / PA PA / PA glass fiber-reinforced (product-dependent) Cu
Plug force of the terminals	≤ 80 N
Approval marks	 /  /  (product-dependent) / 
Suitable for appliances of protection class II	



SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC

 single-pole	Lighting voltage (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 (mm)	Contact material	Miscellaneous	Stock version
ON / OFF switch (SPST)														
1662.0201				o						6.3	≥ 3	Ag		
Normally open contact (SPNO)														
1665.3102	230			o						6.3 / 2 x 4.8	≥ 3	Ag	external lamp terminal	
1662.0101				o						6.3	≥ 3	Ag		o
Changeover switch (SPDT momentary)														
1664.0101					o					4.8	< 3	Ag		

 double-pole	Lighting voltage (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 (mm)	Contact material	Miscellaneous	Stock version
ON / OFF switch (DPST)														
1660.0201	230			o						6.3	≥ 3	Ag		o
1660.0202	230			o						6.3	≥ 3	Ag		o
1660.3202	230			o						6.3 / 2 x 4.8	≥ 3	Ag	external lamp terminal	
1660.0222	110							o		6.3	≥ 3	Ag		
1661.0220					o		o	o		6.3	≥ 3	Ag		
Normally open contact (DPNO)														
1661.0101				o						6.3	≥ 3	Ag		o
Changeover switch (DPDT momentary)														
1663.0101					o					4.8	< 3	Ag		o

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS






ECO

PUSH 'N' DRIVE



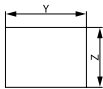
SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC

 Lamp	Lighting voltage (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 (mm)	Contact material	Miscellaneous	Stock version
Lamp														
1667.0101	230									6.3				
1667.0102	230									6.3				

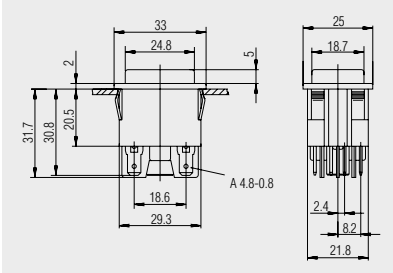


Basic types 1660, 1661 and 1663 double-pole illuminated / non-illuminated

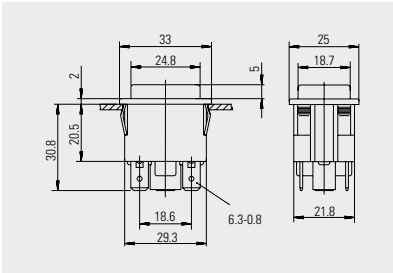


X = Wall thickness

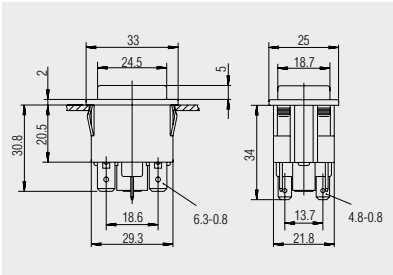
x	y	z
0.75 ... 1.0	30 ^{+0.1}	22.2 ^{+0.2}
1.0 ... 1.5	30.2 ^{+0.1}	22.2 ^{+0.2}
1.5 ... 3.0	30.4 ^{+0.1}	22.2 ^{+0.2}



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

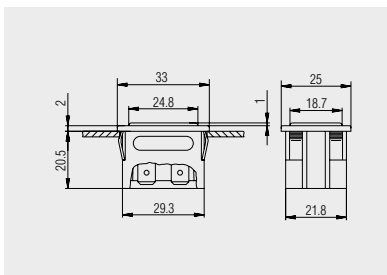


SERIES 1660 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

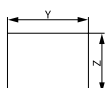
TO 16 (4) A 250 V AC



Basic type 1667
lamp



Quick-connect terminal 6.3 x 0.8

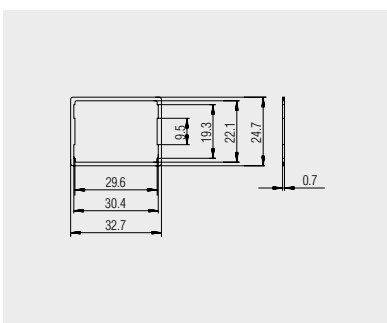


X = Wall thickness

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}



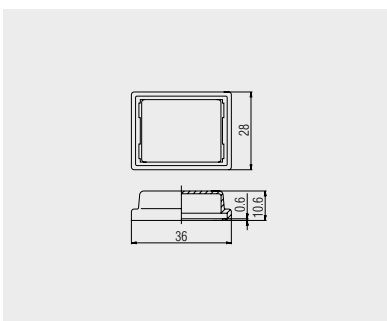
Gasket
340.040.011



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



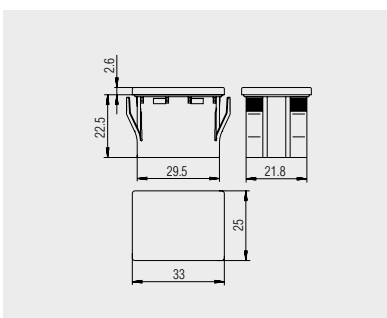
Protection cap
203.201.011



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 made of PA with housing and cover in black and with mounted gasket (340.040.011) for dust and water protection.

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE



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	



SERIES 1670 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC

 single-pole	Lighting voltage (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 (mm)	Contact material	Miscellaneous	Stock version
											
Normally open contact (SPNO)											
1675.5315	230						6.3 / 2 x 4.8	≥ 3	Ag	external lamp terminals	
1672.5101							6.3	≥ 3	Ag		
Changeover switch (SPDT)											
1673.5501							4.8	< 3	Ag		

 double-pole	Lighting voltage (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 (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








ECO

PUSH 'N' DRIVE



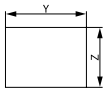
SERIES 1670 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

TO 16 (4) A 250 V AC

 Lamp	Lighting voltage (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 (mm)	Contact material	Miscellaneous	Stock version
Lamp											
1677.5306	230						6.3				
1677.5308	115 - 230						6.3				

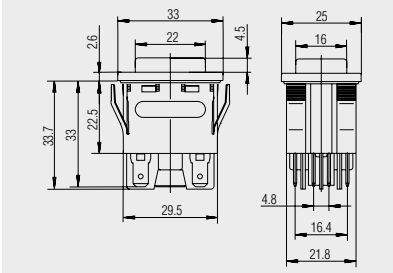


Basic types 1672, 1673 and 1675
single-pole
illuminated / non-illuminated

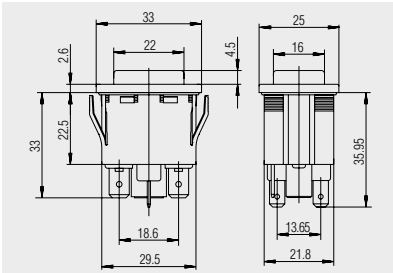


X = Wall thickness

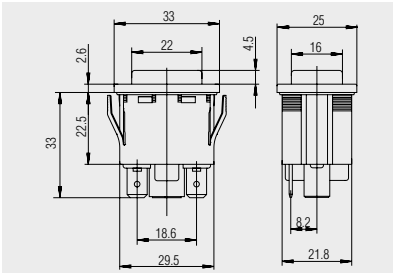
x	y	z
0.8 ... 5.0	30 ^{+0.15}	22.2 ^{+0.15}
0.8 ... 5.0	30 ^{+0.15}	22.2 ^{+0.15}



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

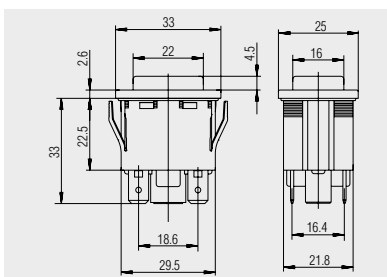


SERIES 1670 - SINGLE AND DOUBLE-POLE PUSHBUTTON SWITCHES

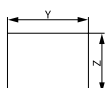
TO 16 (4) A 250 V AC



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



Quick-connect terminal 6.3 x 0.8

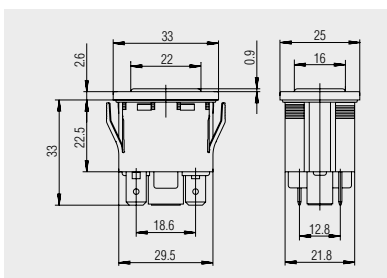


X = Wall thickness

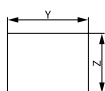
x	y	z
0.8 ... 5.0	30 ^{+0.15}	22.2 ^{+0.15}



Basic type 1677
lamp



Quick-connect terminal 6.3 x 0.8

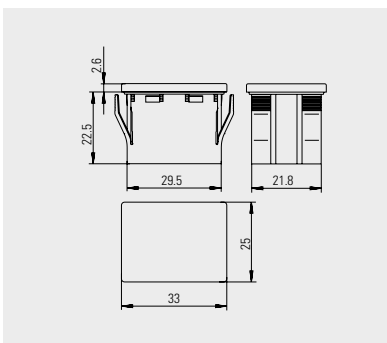


X = Wall thickness

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 made of PA with housing in
black and cover in blue

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

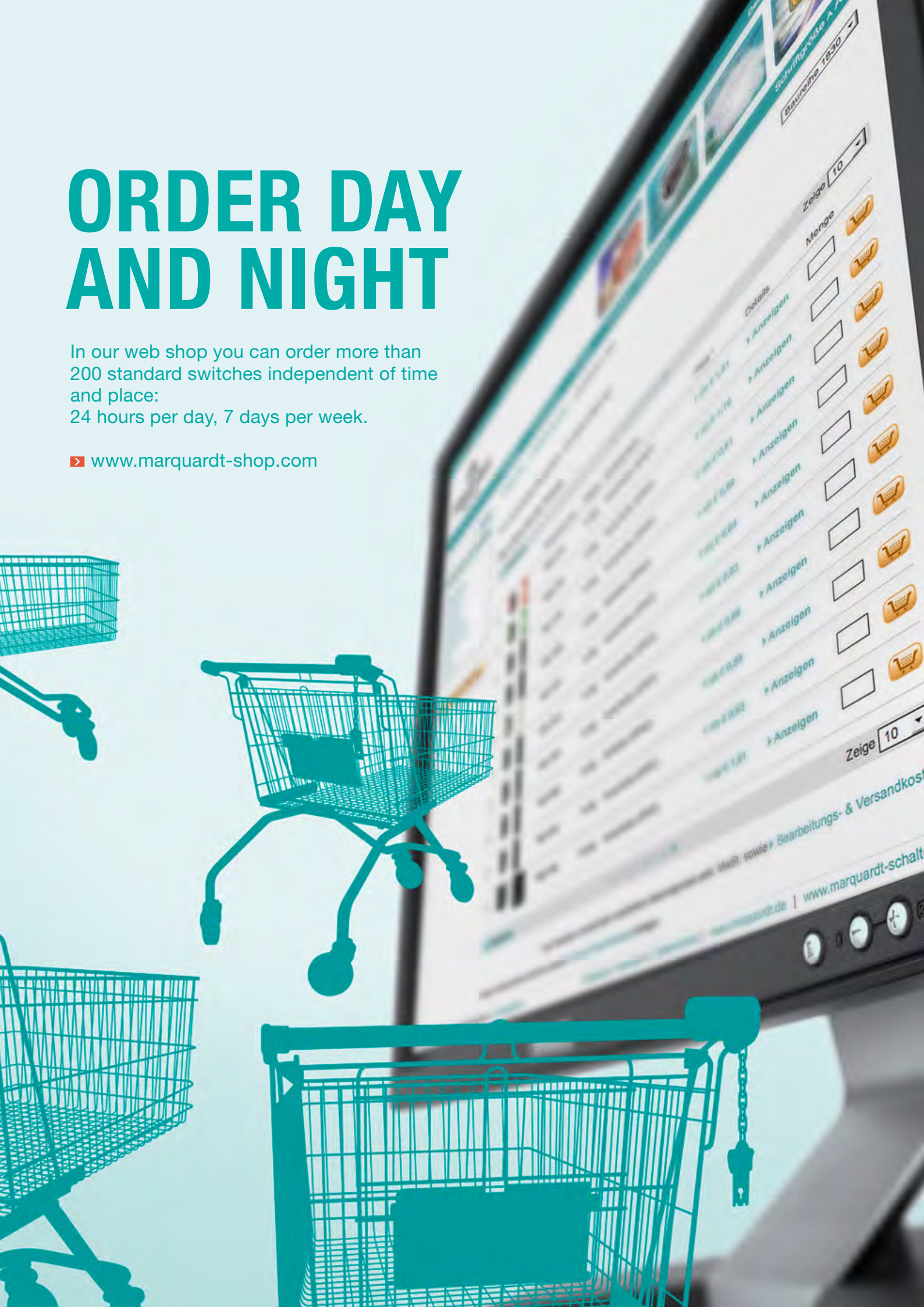
ECO

PUSH 'N' DRIVE

ORDER DAY AND NIGHT
































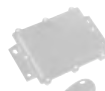
In our web shop you can order more than
200 standard switches independent of time
and place:
24 hours per day, 7 days per week.

➤ www.marquardt-shop.com





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				
ECO				
PUSH'N'DRIVE				

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE



SERIES 0350

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



► PAGE
131

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
132 – 134

SERIES 1820

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

Appliance cut-out: Ø 12 mm



► PAGE
135 – 138

SERIES 0100

Single-pole toggle switches
to 2 A 250 V AC

Appliance cut-out: Ø 12 mm



► PAGE
139 – 140



SERIES 0350 - THREE-POLE TOGGLE SWITCHES

TO 10 (4) A 400 V AC

PRODUCT FEATURES

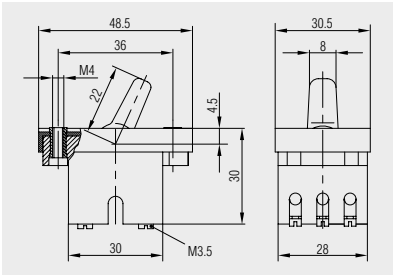
- Robust and efficient rocker switch with 100 000 mechanical switching cycles
- With dust seal
- Approval for 400 V

ON REQUEST

- Other terminal types

Mechanical life endurance	1E5
Material actuator housing terminals	Duroplast Duroplast / PA glass fiber-reinforced 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 (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	



Socket terminal M3.5

Basic type 0350

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

MICRO-SIGNAL SWITCHES

SNAP-ACTION SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE



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 housing terminals	PA PA 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 (mm)	Contact material	Miscellaneous	Stock version
ON / OFF switch (SPST)																	
1811.1102			o	o			o	o					4.8	≥ 3	Ag		o
Normally open contact (SPNO)																	
1811.1202						o				o	o		4.8	≥ 3	Ag		
Changeover switch (SPDT)																	
1813.1102			o	o			o	o					4.8	≥ 3	Ag		o
Changeover switch with OFF position in the center (SPDT - Center OFF)																	
1818.1102					o				o				4.8	< 3	Ag		o
1818.1202					o				o				4.8	< 3	Ag	momentary function one side	o
1818.1302					o				o				4.8	< 3	Ag	momentary function one side	o
1818.2302					o				o					< 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 (mm)	Contact material	Miscellaneous	Stock version
ON / OFF switch (DPST)																	
1812.1102			o	o			o	o					4.8	≥ 3	Ag		
Changeover switch (DPDT)																	
1814.2102			o	o			o	o						≥ 3	Ag		
Changeover switch with OFF position in the center (DPDT - Center OFF)																	
1819.1102					o				o				4.8	< 3	Ag		
1819.1302					o				o				4.8	< 3	Ag	momentary function both sides	o

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

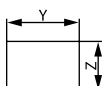


SERIES 1810 - SINGLE AND DOUBLE-POLE TOGGLE SWITCHES

TO 10 (4) A 250 V AC

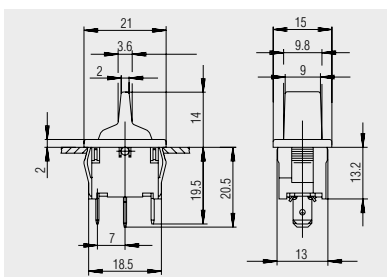


Basic types 1811, 1813 and 1818
single-pole

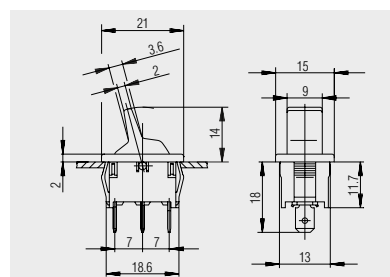


X = Wall thickness

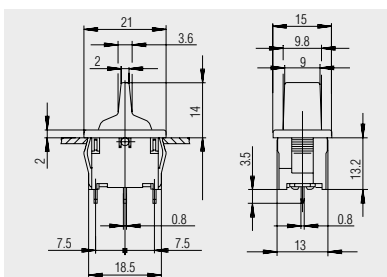
x	y	z
0.75 ... 1.25	19.2 ^{-0.1}	12.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	12.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	12.9 ^{+0.1}



Quick-connect terminal 4.8 x 0.8
basic type 1818



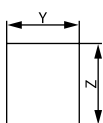
Quick-connect terminal 4.8 x 0.8
basic types 1813 and 1811
without third terminal



PCB terminal
basic type 1818

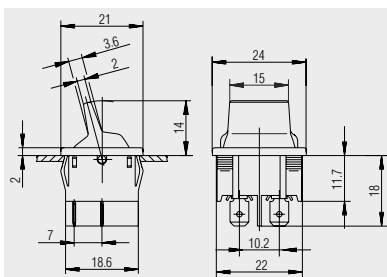


Basic types 1812, 1814 and 1819
double-pole

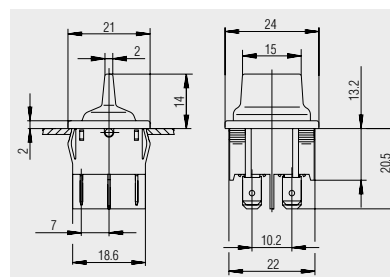


X = Wall thickness

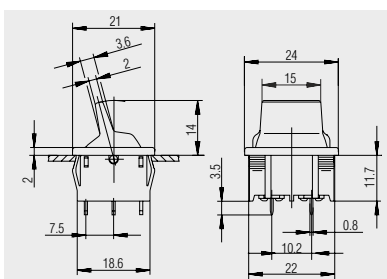
x	y	z
0.75 ... 1.25	19.2 ^{-0.1}	21.9 ^{+0.1}
1.25 ... 2	19.4 ^{-0.1}	21.9 ^{+0.1}
2 ... 3	19.8 ^{-0.1}	21.9 ^{+0.1}



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

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE



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 housing terminals	PA PA glass fiber-reinforced / PA silver plated
Plug force of the terminals	≤ 80 N
Approval marks	 /  / 
Suitable for appliances of protection class II	



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 (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 (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

ECO

PUSH'N'DRIVE

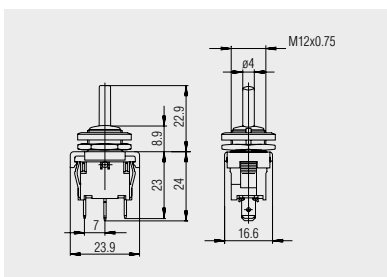


SERIES 1820 - SINGLE AND DOUBLE-POLE TOGGLE SWITCHES

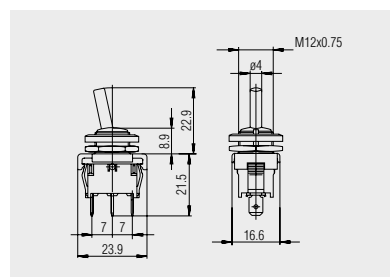
TO 6 (4) A 250 V AC



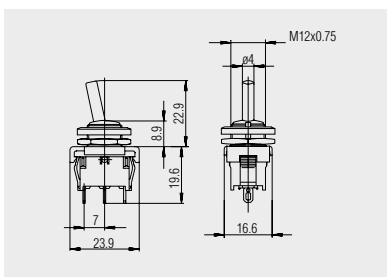
Basic types 1821, 1823 and 1828
single-pole



Quick-connect terminal 4.8 x 0.8
basic type 1828



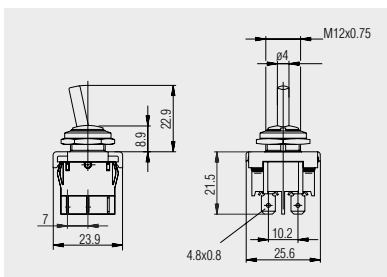
Quick-connect terminal 4.8 x 0.8
basic types 1821 and 1823



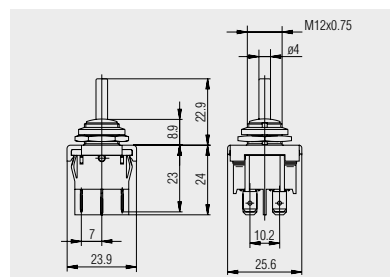
Solder terminal
1821.6101 and 1823.6101



Basic types 1822, 1824 and 1829
double-pole



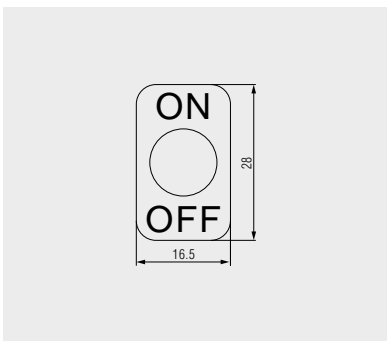
Quick-connect terminal 4.8 x 0.8
basic type 1822 and 1824



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"

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

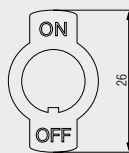


SERIES 1820 - SINGLE AND DOUBLE-POLE TOGGLE SWITCHES

TO 6 (4) A 250 V AC



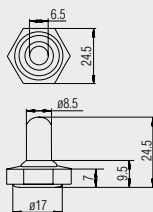
Identification plate
240.002.011



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



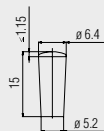
Protection cap
343.001.013 - green
343.001.023 - black
343.001.033 - red



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 (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

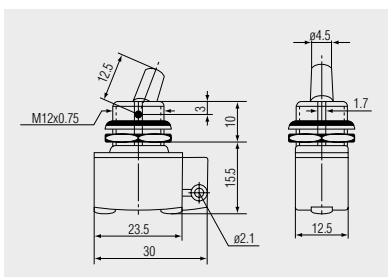
ECO

PUSH 'N' DRIVE



SERIES 0100 - SINGLE-POLE TOGGLE SWITCHES

TO 2 A 250 V AC

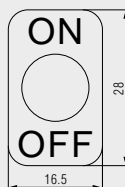


 Solder terminal

Basic type 0100



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



SLIDE SWITCHES

ROCKER SWITCHES	   
PUSHBUTTON SWITCHES	   
TOGGLE SWITCHES	   
SLIDE SWITCHES	 
ROTARY SWITCHES	
FOOT SWITCHES	 
TACT AND KEY SWITCHES	   
SNAP-ACTION SWITCHES	    
MICRO-SIGNAL SWITCHES	
SENSORS	  
ECO	 
PUSH'N'DRIVE	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE



SERIES 4021

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



➤ PAGE
143 – 145

SERIES 1206

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



➤ PAGE
146 – 147



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	 /  / 



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 AC	5 A 250 V AC	Terminal type	Terminal description	Contact distance (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 AC	5 A 250 V AC	Terminal type	Terminal description	Contact distance (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	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE

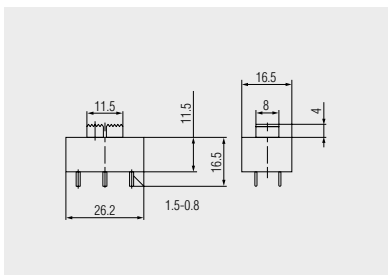


SERIES 4021 - DOUBLE AND FOUR-POLE SLIDE SWITCHES

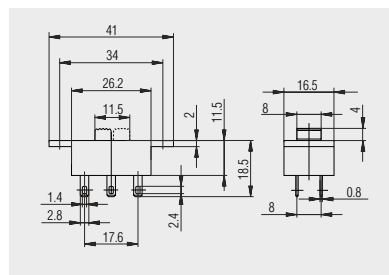
TO 10 A 125 V OR 5 A 250 V AC (AS VOLTAGE SELECTOR SWITCH)



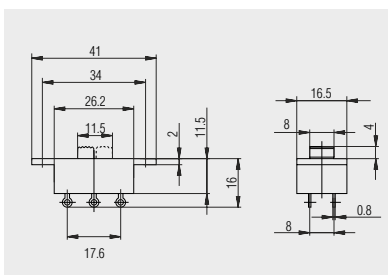
Basic type 4021
double-pole



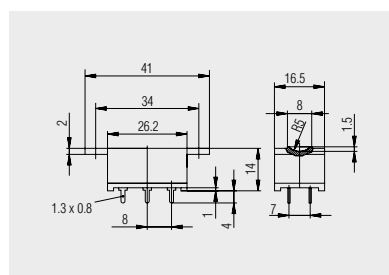
Wire-Wrap 5 long
4021.1203



Quick-connect terminal 2.8 x 0.8
4021.0512 and 4021.0801



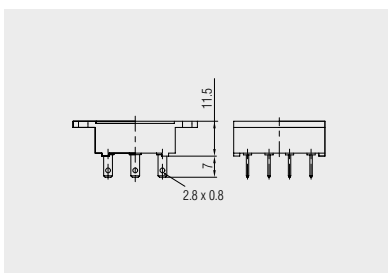
Solder terminal
4021.0203 and 4021.0101



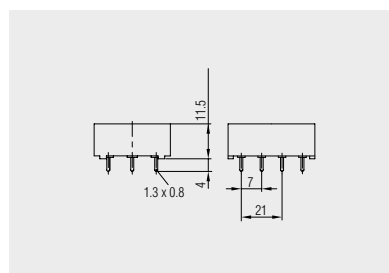
PCB terminal
Slide with actuating slot
4021.4420 and 4021.4620



Basic type 4024
four-pole



Quick-connect terminal 2.8 x 0.8
4024.0501



PCB terminal
4024.4601

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

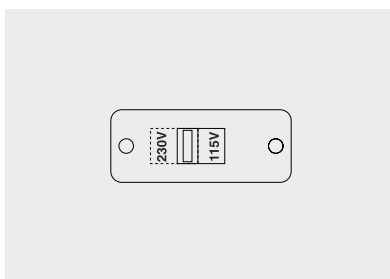
PUSH 'N' DRIVE



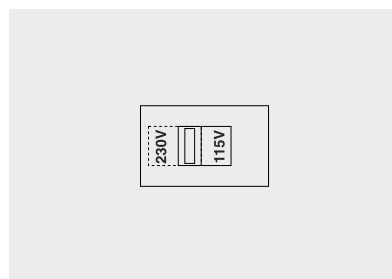
SERIES 4021 - DOUBLE AND FOUR-POLE SLIDE SWITCHES

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

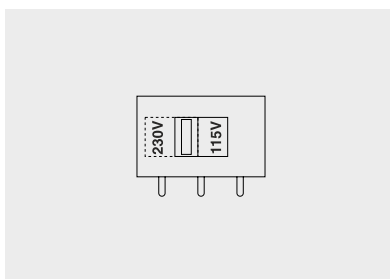
Inscription



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

ECO

PUSH'N'DRIVE



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	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

















ECO


PUSH 'N' DRIVE



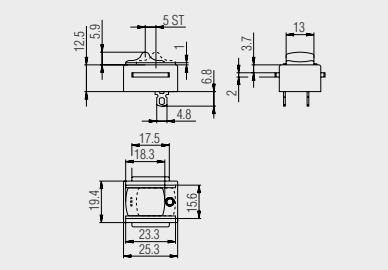
SERIES 1206 - SINGLE-POLE SLIDE SWITCHES


TO 8 (8) A 250 V AC

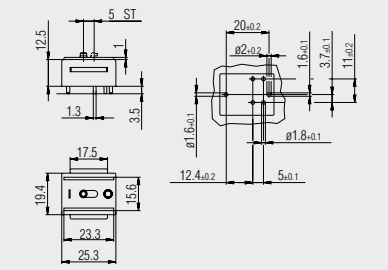
single-pole	Actuator color / printing	Housing color	8 (8) A 250 V AC 5E4		25 A 12 - 36 V DC		15 A 125 V AC		8 A 250 V AC		Terminal type	Contact distance (mm)	Contact material	Miscellaneous	Stock version
ON / OFF switch (SPST)															
1206.0201									≥ 3	Ag	with slide for direct actuation			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




Basic type 1206



 Solder terminal
1206.0201






















 PCB terminal
1206.2503

Further information under
WWW.MARQUARDT-SWITCHES.COM



ROTARY SWITCHES

ROCKER SWITCHES	   
PUSHBUTTON SWITCHES	   
TOGGLE SWITCHES	   
SLIDE SWITCHES	 
ROTARY SWITCHES	
FOOT SWITCHES	 
TACT AND KEY SWITCHES	   
SNAP-ACTION SWITCHES	    
MICRO-SIGNAL SWITCHES	
SENSORS	  
ECO	 
PUSH'N'DRIVE	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE



SERIES 1703

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



► PAGE
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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

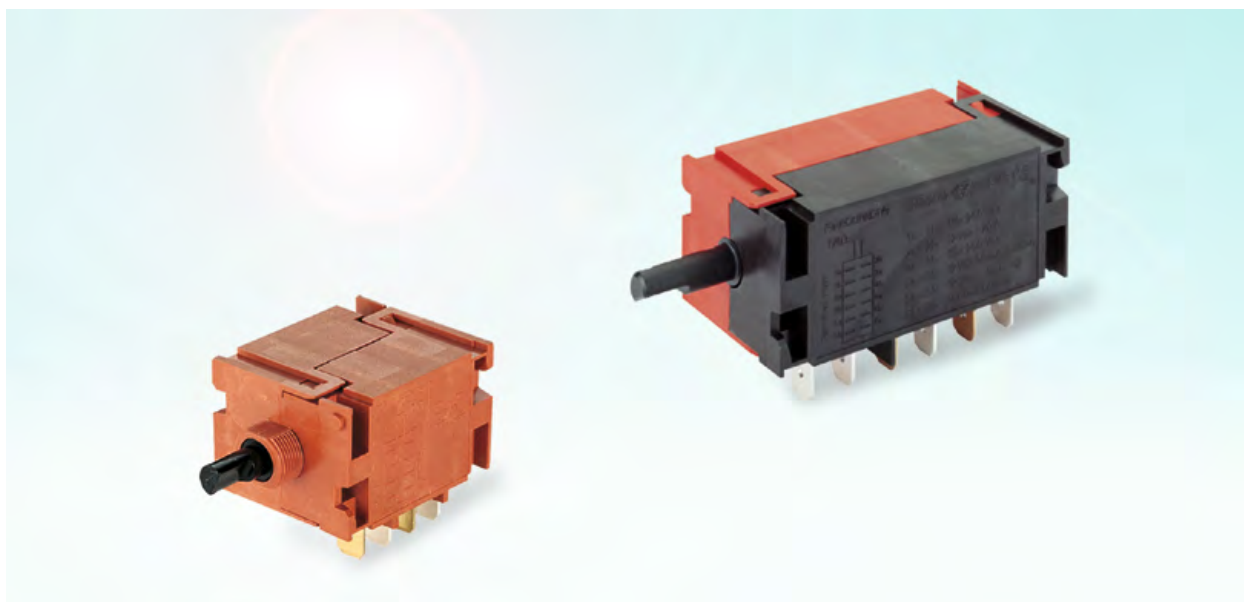
ECO

PUSH'N'DRIVE



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 touchable 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 respectively 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

ECO

PUSH 'N' DRIVE




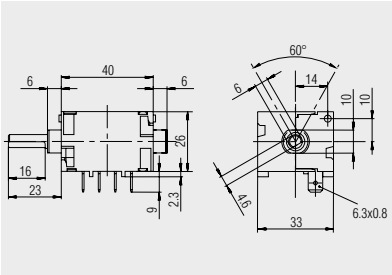
SERIES 1703 - POWERFUL ROTARY SWITCHES


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 (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 (mm)	Contact material	Miscellaneous	Stock version
Step switch										
1703.4101	●			○		6.3	≥ 3	Ag	3 switching positions	













 Quick-connect terminal 6.3 x 0.8

Basic type 1703



FOOT SWITCHES

ROCKER SWITCHES				
PUSHBUTTON SWITCHES				
TOGGLE SWITCHES				
SLIDE SWITCHES				
ROTARY SWITCHES				
FOOT SWITCHES				
TACT AND KEY SWITCHES				
SNAP-ACTION SWITCHES				
MICRO-SIGNAL SWITCHES				
SENSORS				
ECO				
PUSH'N'DRIVE				

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE



SERIES 2410

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



➤ PAGE
155 – 157

SERIES 2420

IP 65 / 67 protected foot switch
to 16 (4) A 250 V AC 25E3



➤ PAGE
158 – 160



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

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












ECO







PUSH 'N' DRIVE













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 (mm)	Contact material	Operating force (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					M3 3 terminals	< 3	Ag	31 ± 5	with switch 1005.1407	

 double-pole	Actuator color / printing	Housing color	6 (2.5) A 250 V AC 5E4	Terminal type	Terminal description	Contact distance (mm)	Contact material	Operating force (N)	Miscellaneous	Stock version
Normally open contact (DPNO)										
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	

 Combination	Actuator color / printing	Housing color	6 (2.5) A 250 V AC 5E4	Terminal type	Terminal description	Contact distance (mm)	Contact material	Operating force (N)	Miscellaneous	Stock version
Normally closed contact (SPNC) / Changeover switch (SPDT momentary)										
2410.0101					M3 3 terminals	< 3	Ag	step 1: 25 ± 5 N / step 2: 85 ± 15 N	with switch 1005.1407 with switch 1005.1501 switching in sequence	
Normally open contact (SPNO) / Changeover switch (SPDT momentary)										
2410.0501					M3 5 terminals	< 3	Ag	step 1: 22 N ± 4 / 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	

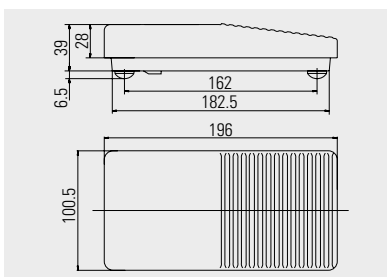


SERIES 2410 - ERGONOMIC FOOT SWITCHES

TO 6 (2.5) A 250 V AC



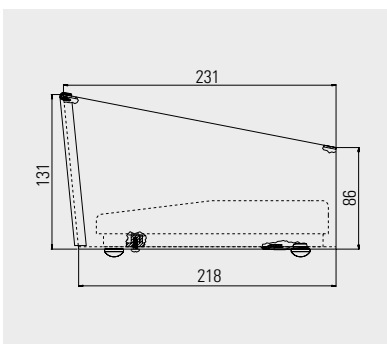
Basic type 2410



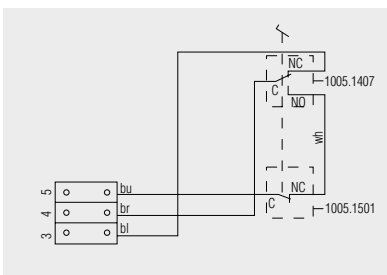
Socket terminal
2 terminals M3



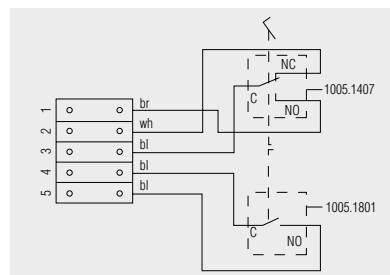
Protection hood
248.008.013



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



2410.0101



2410.0501

Circuit diagram

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

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TORQUE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE



SERIES 2420 - IP 65 / 67 PROTECTED FOOT SWITCH

TO 16 (4) A 250 V AC 25E3



PRODUCT FEATURES

- Protected against dust and water (IP 65 / IP 67)
- Snap-action switching system proved millions of times
- Compact design with clearly discernable tactile feedback, robust and anti-slip, screw holes for fixing to the floor (optional)
- Versions for low DC signal currents, up to ratings of 16 A 250 V AC
- Wide range of switching functions, with and without cables
- Modern switch design, rocker available in different colors, can be printed to customer specifications
- Cable assembly on customer side

ON REQUEST














- Special switching functions
- Other colors
- Customer logo
- Customized cable assembly





Mechanical life endurance	2E6
Proof tracking	250 PTI
Protection type	IP 65 and IP 67
Ambient temperature	terminal side -20 °C ... +85 °C actuating side -20 °C ... +85 °C
Material actuator housing terminals	PA glass fiber-reinforced PA glass fiber-reinforced nickel-plated
Approval marks	
Suitable for appliances of protection class II	







SERIES 2420 - IP 65 / 67 PROTECTED FOOT SWITCH

TO 16 (4) A 250 V AC 25E3

 single-pole	Actuator color / printing	Housing color	14 (4) A 250 V AC 5E4	Terminal type	Terminal description	Contact distance (mm)	Contact material	Operating force (N)	Miscellaneous	Stock version
ON / OFF switch (SPST)										
2420.0301			○		M3	< 3	Ag	35 ±10	with strain relief	○
Normally open contact (SPNO)										
2420.0101			○		M3	< 3	Ag	35 ±10	with strain relief	○
2420.0102			○		M3	< 3	Ag	35 ±10	with strain relief	○
2420.4101			○		assembled with wire end ferrule	< 3	Ag	35 ±10	with strain relief two-wire connecting cable	○

 double-pole	Actuator color / printing	Housing color	14 (4) A 250 V AC 5E4	Terminal type	Terminal description	Contact distance (mm)	Contact material	Operating force (N)	Miscellaneous	Stock version
Normally open contact (DPNO)										
2420.5201			○		assembled with wire end ferrule	< 3	Ag	35 ±10	1 x PE connector (3 000 mm) / 1 x PE coupling (250 mm) with strain relief	

 Combination	Actuator color / printing	Housing color	14 (4) A 250 V AC 5E4	Terminal type	Terminal description	Contact distance (mm)	Contact material	Operating force (N)	Miscellaneous	Stock version
Normally open contact (SPNO)										
2420.0501			○		M3	< 3	Ag	step 1: 29 ± 10N / step 2: 51 ± 35N	with strain relief	○

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TWIST SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

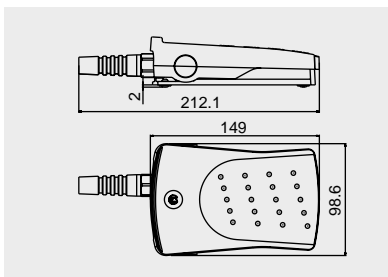
ECO

PUSH-IN DRIVE



SERIES 2420 - IP 65 / 67 PROTECTED FOOT SWITCH

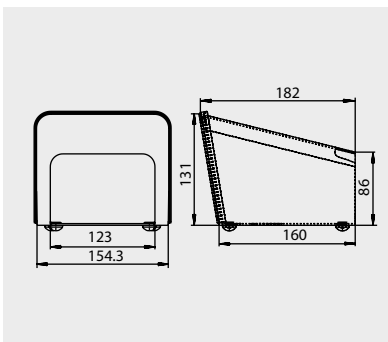
TO 16 (4) A 250 V AC 25E3



Socket terminal M3

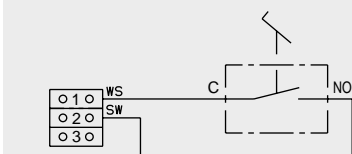


Protection hood
248.011.013

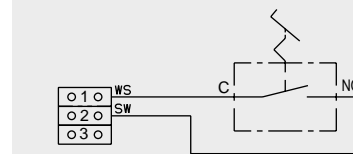


Steel plate protection hood in orange color similar to RAL 2004 with edge guard and rubber feet as well as fixation for foot switch of the basic type 2420

Circuit diagram

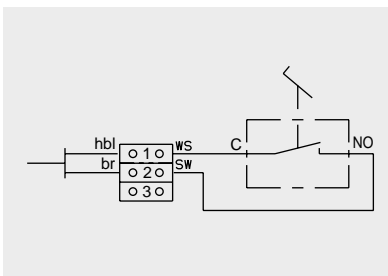


2420.0101

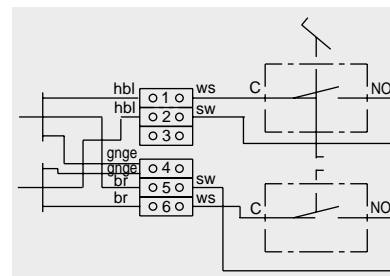


2420.0301

br - brown
hbl - bright blue
ws - white
sw - black
gnge - green/yellow



2420.4101



2420.5201



TACT AND KEY SWITCHES

ROCKER SWITCHES	   
PUSHBUTTON SWITCHES	   
TOGGLE SWITCHES	   
SLIDE SWITCHES	 
ROTARY SWITCHES	
FOOT SWITCHES	 
TACT AND KEY SWITCHES	   
SNAP-ACTION SWITCHES	    
MICRO-SIGNAL SWITCHES	
SENSORS	  
ECO	 
PUSH'N'DRIVE	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE



TACT AND KEY SWITCHES

SERIES 3006

Tact switches
to 50 mA 28 V

► PAGE
163 – 164



SERIES 6425

Key switches
to 100 mA 28 V

► PAGE
165 – 170



SERIES 6450

Key switches
to 100 mA 28 V

► PAGE
171 – 172



SERIES 3000

Key switches
to 30 mA 28 V

► PAGE
173





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 4N version, 20E4 6N version
Contact resistance (new condition)	< 100 mOhm
Ambient temperature	-40 °C ... +95 °C (1 h to +120 °C)
Material terminals	gold plated
Bounce time	< 5 ms
Packing unit	1 800 pieces in blister belt on a roller
Miscellaneous	rating max. 1W voltage range 20 mV - 28 V current range 10 µA - 50 mA electrical life endurance: 4 N: 14V DC 10 mA 50E4 6 N: 14V DC 10 mA 20E4

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS













ECO

PUSH 'N' DRIVE



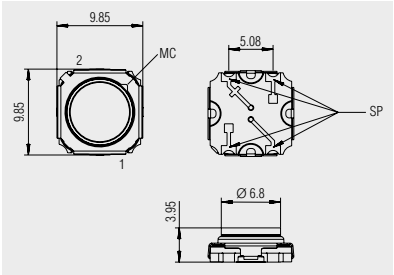
SERIES 3006 - TACT SWITCHES

TO 50 mA 28 V

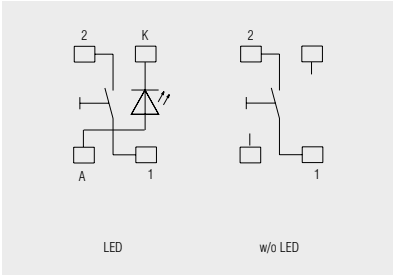
 single-pole	max 1 Watt	Contact material	Operating force (N)	Operating position (OP) (mm)	Free position (FP) max. (mm)	Permissible total travel position (TP) (mm)	Color lamp	Miscellaneous	Stock version
Normally open contact (SPNO)									
3006.2100	○	Au	4 +1 -0.5	3.2 ±0.2	4.15	2.9		without LED	
3006.2101	○	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	



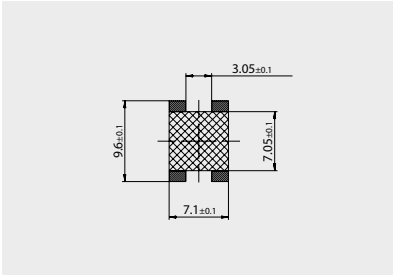
Basic type 3006



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 LEDs
- 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 mΩ
Insulation resistance (new condition)	> 100 MΩ
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 at 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

MICRO-SIGNAL SWITCHES

SNAP-ACTION SWITCHES

SENSORS


ECO

PUSH 'N' DRIVE



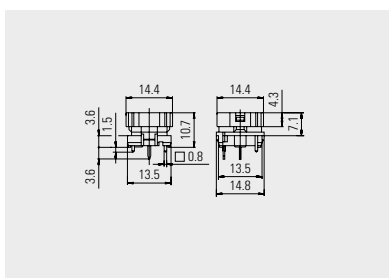
SERIES 6425 - KEY SWITCHES

TO 100 mA 28 V

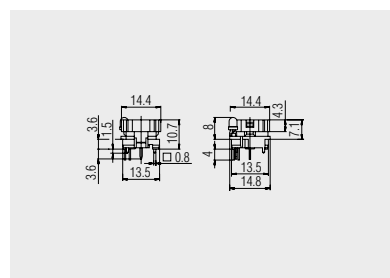
	100 mA 28 V	Color lamp	Pitch (mm)	Operating force (N)	Total travel / stroke (mm)	Miscellaneous	Stock version
Normally open contact (SPNO)							
6425.0101	○		> 16	0.7	1.4 ± 0.2	customer LED assembly possible	○
6425.1101	○		> 16	0.7	1.4 ± 0.2	narrow base for parallel guide	○
6425.3111	○		19	0.7	1.4 ± 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	



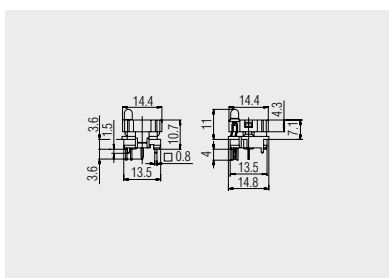
Basic type 6425



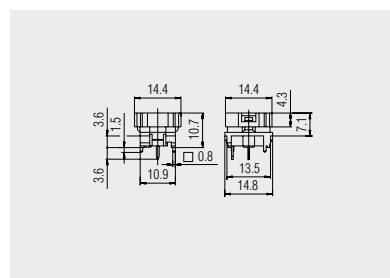
Without LED or customer LED assembly



With LED



With LED for design key caps



For multiple key caps with parallel guide

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE

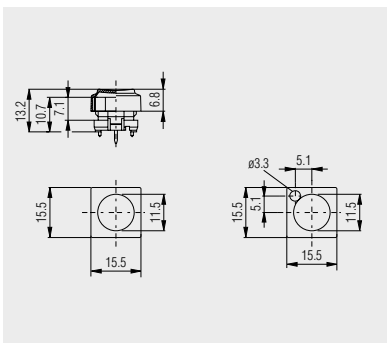


SERIES 6425 - KEY SWITCHES

TO 100 mA 28 V



Square key caps
pitch 16 mm

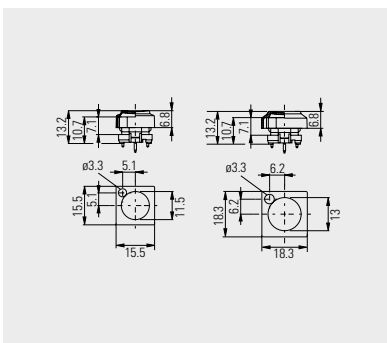


without LED window:
826.000.011 - anthracite
826.000.021 - dark gray
826.000.071 - red

with LED window:
829.000.011 - anthracite
829.000.021 - dark gray



Square key caps
pitch 19 mm

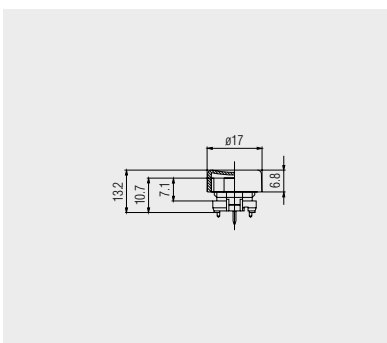


without LED window:
825.000.011 - anthracite

with LED window:
828.000.011 - anthracite
828.000.021 - dark gray



Round key caps

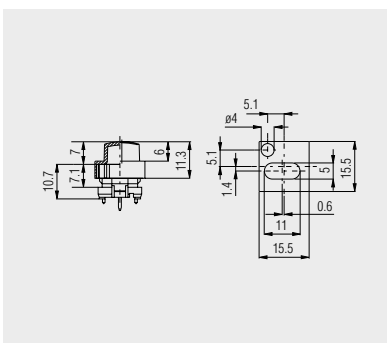


Key cap with ergonomic
actuation surface

840.000.011 - anthracite
840.000.021 - dark gray
840.000.071 - red



Design key caps



Key cap with oval actuation surface
pitch 16 mm

827.020.011 - anthracite
827.020.021 - dark gray

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

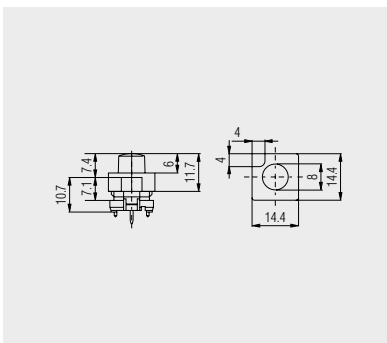


SERIES 6425 - KEY SWITCHES

TO 100 mA 28 V



Design key caps



Key cap with round actuation surface
pitch ≥ 15 mm

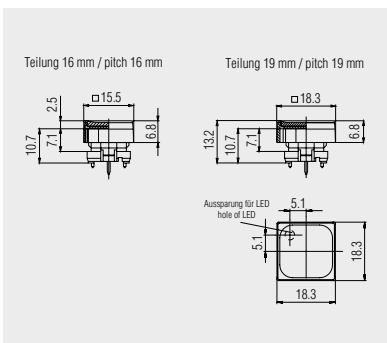
827.100.011 - anthracite

827.100.021 - dark gray

827.100.031 - gray



Key caps with transparent cap



Key cap anthracite

Cap transparent, enclosed loose

834.900.013 pitch 19 mm

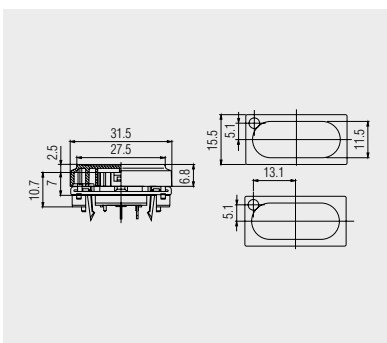
835.900.013 pitch 16 mm

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.



Double key caps
16 mm pitch



without LED window:

842.000.011 - anthracite

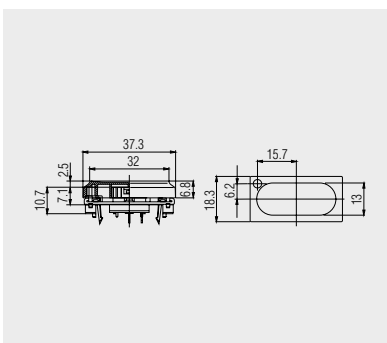
842.000.021 - dark gray

with one LED window:

842.500.011 - anthracite



Double key caps
19 mm pitch



without LED window:

844.000.011 - anthracite

with one LED window:

844.500.011 - anthracite

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE

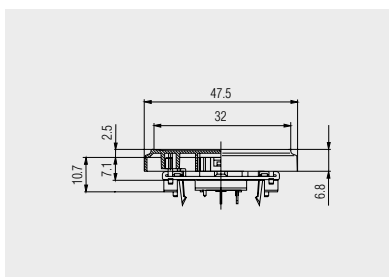


SERIES 6425 - KEY SWITCHES

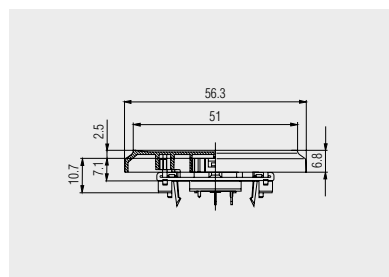
TO 100 mA 28 V



Triple key caps



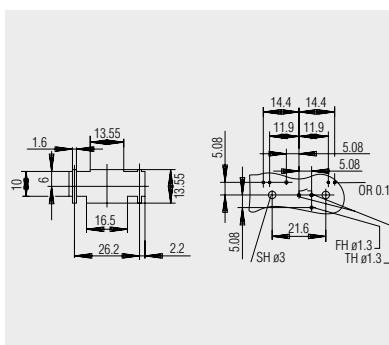
843.000.011 - anthracite
pitch 16 mm



845.000.011 - anthracite
pitch 19 mm



Parallel guide

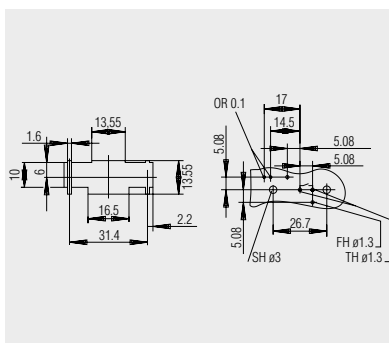


190.059.013
Recommended appliance cut-out and
perforation pattern component side
parallel guide for:
double key caps, pitch 16 mm

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



190.059.023
Recommended appliance cut-out and
perforation pattern component side
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.

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

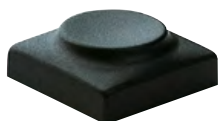
ECO

PUSH 'N' DRIVE



SERIES 6425 - KEY SWITCHES

TO 100 mA 28 V

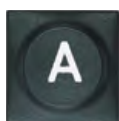












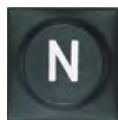




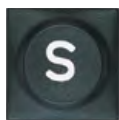
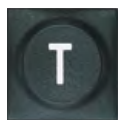




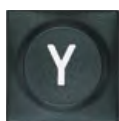









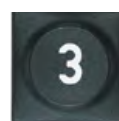
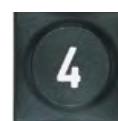

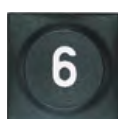
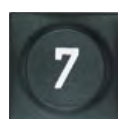

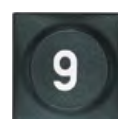


Square key caps with white characters

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

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

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	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

ECO

PUSH'N'DRIVE



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
Material actuator housing terminals	PA PBTP tinned
Terminal type	PCB terminal
Mechanical life endurance	1E6 bei 10mA 12V

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS








ECO

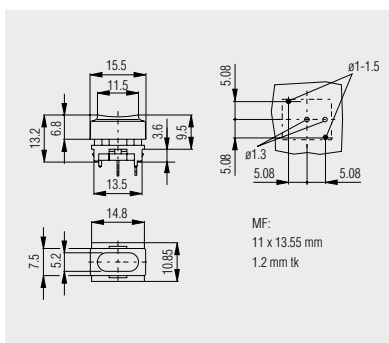
PUSH 'N' DRIVE



SERIES 6450 - KEY SWITCHES

TO 100 mA 28 V

	Actuator color / printing	100 mA 28 V	Operating force (N)	Total travel / stroke (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	



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.

Basic type 6450

Further information under

WWW.MARQUARDT-SWITCHES.COM



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

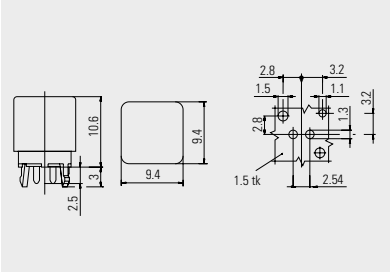
- Available with centrally placed LED (only version with a pressure point)
- Different key caps

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 CuSn gold-plated
Contact distance	< 3 mm

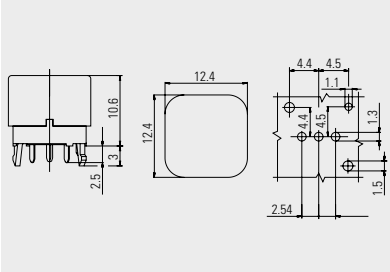
	30 mA 28 V	Terminal type	Operating force (N)	Operating position (OP) (mm)	Free position (FP) max. (mm)	Permissible total travel position (TP) (mm)	Miscellaneous	Stock version
Normally open contact (SPNO)								
3000.0452	○	U	5 - 7	9.8 +0.3 -0.2	10.9	9.2		
Double normally open contact (SPNO)								
3003.0452	○	U	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

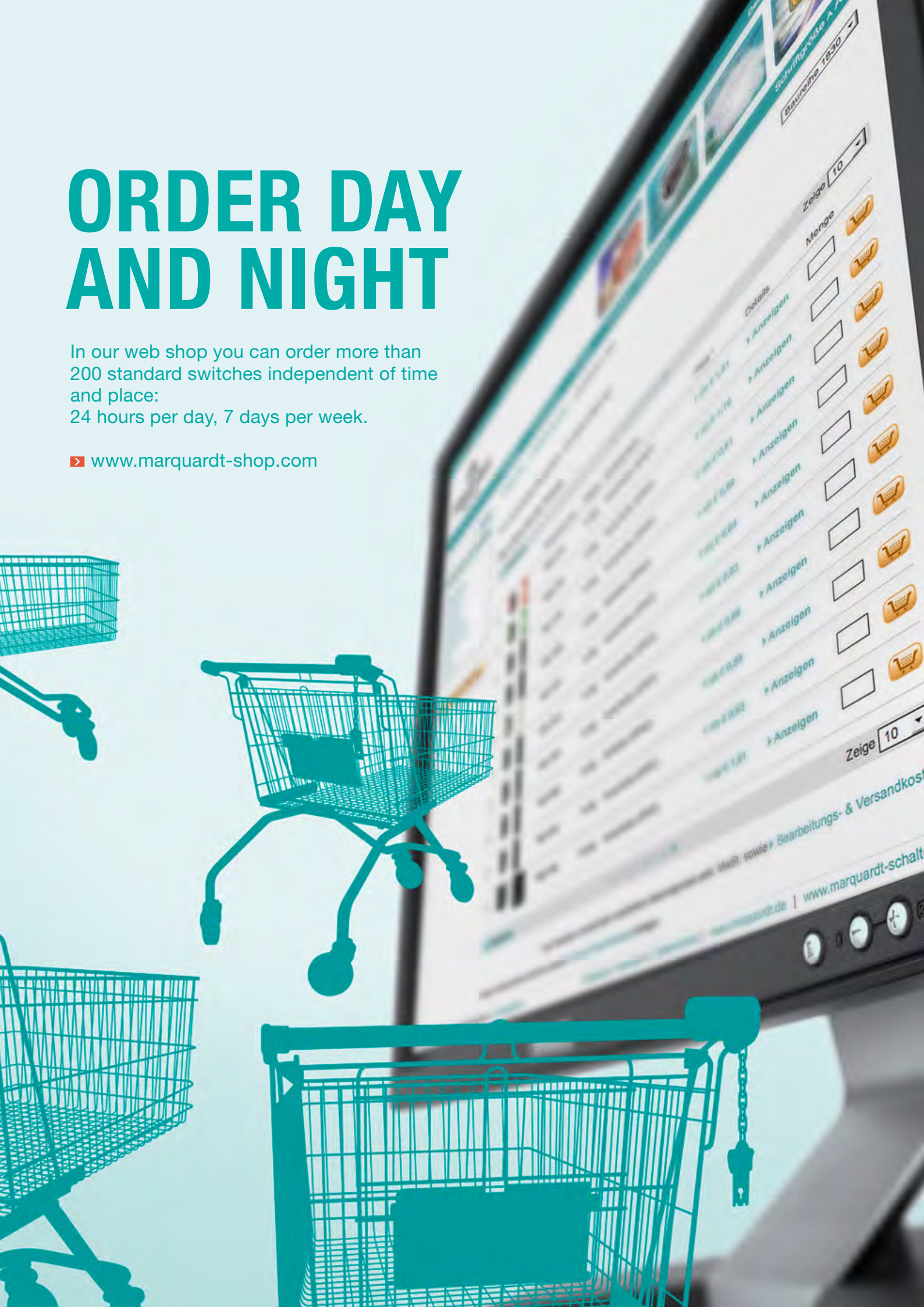


Double normally open contact with two pressure points
3003.0452

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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	  
ECO	 
PUSH'N'DRIVE	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

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ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

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PUSH'N'DRIVE



SERIES 1055

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

► PAGE
178 – 182



SERIES 1050

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

► PAGE
183 – 188



SERIES 1045

Subminiature snap-action switches
IP 67
to 10(3) A 250 V AC 1E4

► PAGE
189 – 196



SERIES 1080

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

► PAGE
197 – 200



SERIES 1005

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

► PAGE
201 – 208



SERIES 1040

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

► PAGE
209 – 210



SERIES 1010

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

► PAGE
211 – 214





SERIES 1019

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



► PAGE
215 – 217

SERIES 1022

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



► PAGE
218 – 219

SERIES 1117

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



► PAGE
220 – 221

SERIES 1115

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



► PAGE
222 – 223



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	5E5
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 additional actuator housing terminals	POM / LCP / silicone rubber stainless steel spring steel PBTP 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 24 V DC 2 A (ohmic load): 100E3, at 24 V DC 10 mA: 500E3



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 (N)	Operating position (OP) (mm)	Difference travel max. (mm)	Free position (FP) max. (mm)	Permissible total travel position (TP) (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

ECO

PUSH 'N' DRIVE

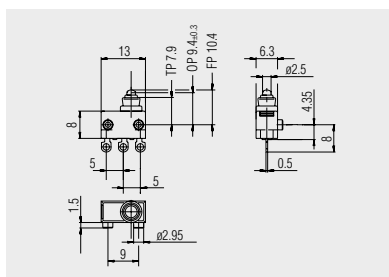


SERIES 1055 - SUBSUBMINIATURE SNAP-ACTION SWITCHES IP 67

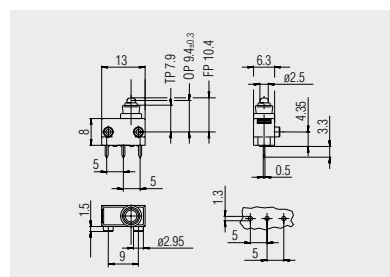
TO 4 A 12 V OR 2 A 24 V DC



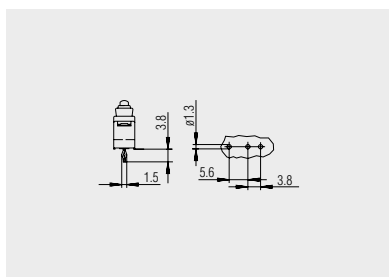
Basic type 1055




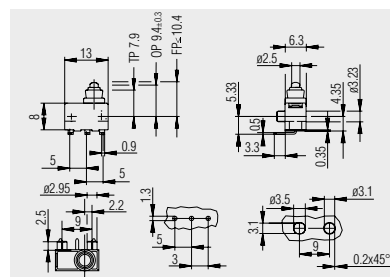
 Solder terminal




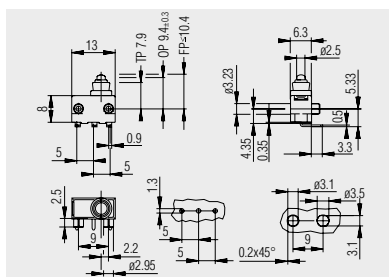
 PCB terminal




 PCB terminal
coded cranked



 PCB terminal
left angled



 PCB terminal
right angled

[illegible][illegible][illegible]

Technical drawing of a mechanical assembly showing a side view and a top view. The side view shows a shaft with a pulley and a gear. The top view shows a circular component with a central hole and four mounting holes. Dimensions are given in millimeters.

Dimensions and labels:

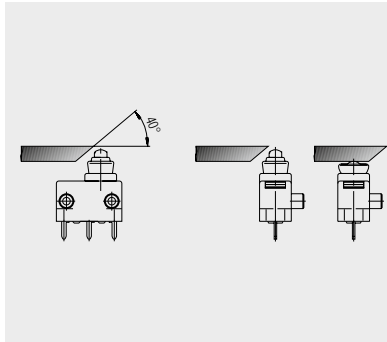
- 13
- TP 4.65
- OP 6,15±0,3
- FP 7,15
- 6.3
- ø2.5
- 5.08
- 0.5
- 3.3
- 5
- 0.9
- 4.35
- 0.35
- 9
- ø1.3
- 5.08
- ø3.5
- 5
- 3.1

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SERIES 1055 - SUBSUBMINIATURE SNAP-ACTION SWITCHES IP 67

TO 4 A 12 V OR 2 A 24 V DC

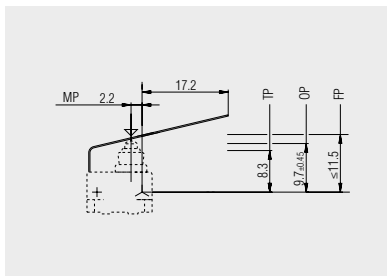


Approach angle up to 40°

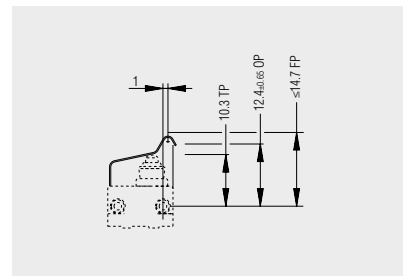
The robust pushbutton guide allows actuations by slides or camshafts with an approach angle of < 40° (depending on the friction partner).

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.



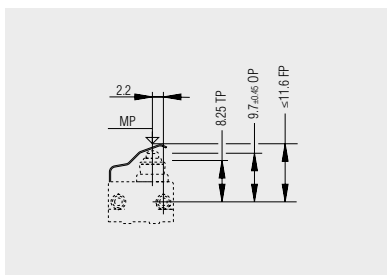
L02: straight lever
191.081.041



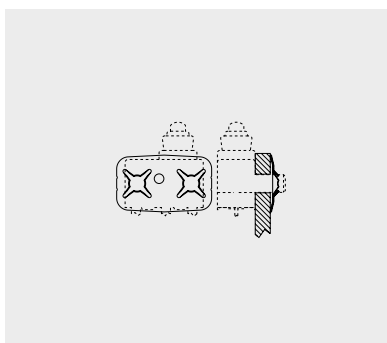
L21: simulated roller
191.081.031

Auxiliary actuators

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

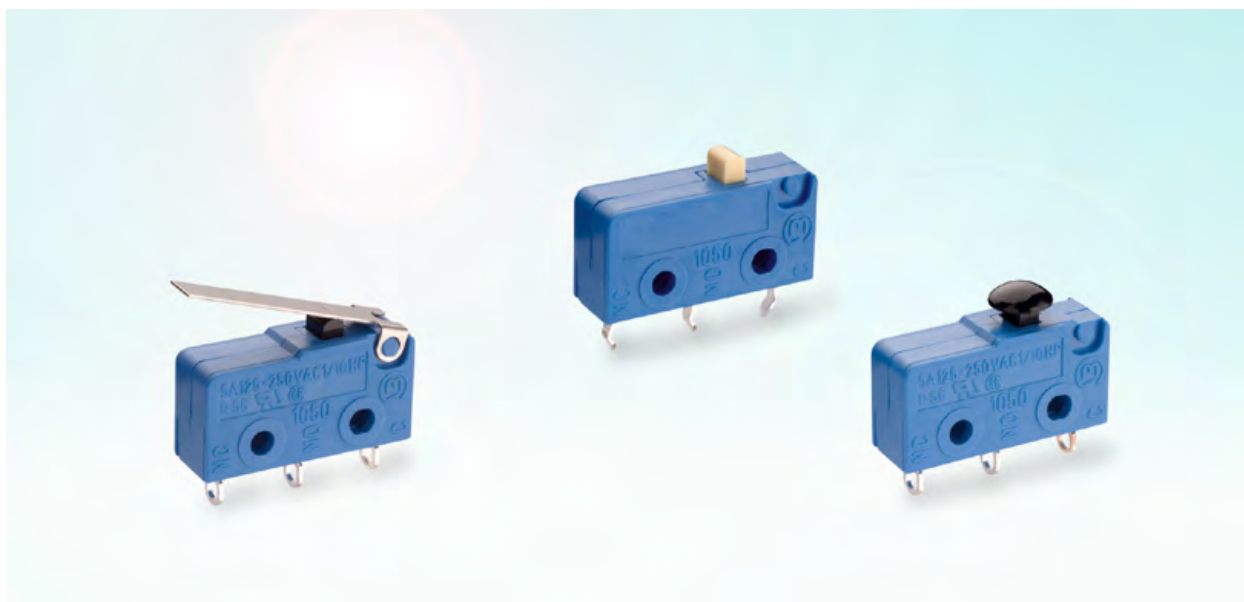
140.092.021
fastening disc for the basic types
1055, 1056 und 1058

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 additional actuator housing terminals	PA glass fiber-reinforced / stainless steel spring steel PBTP 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








































ECO

PUSH 'N' DRIVE



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 (N)	Operating position (OP) (mm)	Difference travel max. (mm)	Free position (FP) max. (mm)	Permissible total travel position (TP) (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	○		○				2.8 x 0.5 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	○		○				2.8 x 0.5 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	○		○				2.8 x 0.5 Ag	≤ 1.5	9.9 ± 0.3	0.2	10.8	9.1					○
	1050.0802	○		○				2.8 x 0.5 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	○		○				2.8 x 0.5 Ag	≤ 1.5	8.4 ± 0.3	0.2	9.3	7.5	□			fixing pin	○
	1050.4102	○		○				2.8 x 0.5 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			○

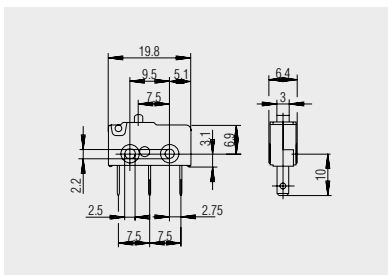


SERIES 1050 - SUBMINIATURE SNAP-ACTION SWITCHES

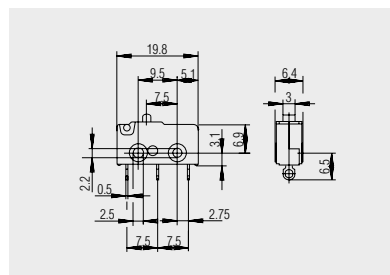
TO 10 (1.5) A 250 V AC



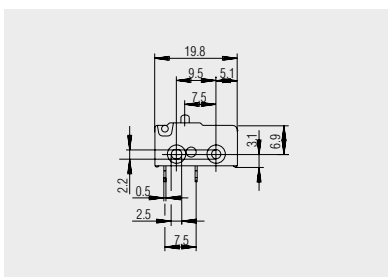
Terminal variants



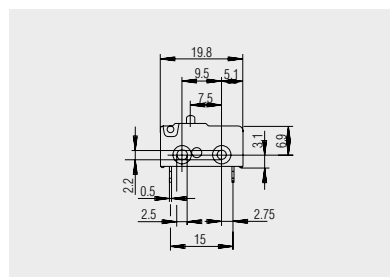
Quick-connect terminal 2.8 x 0.5



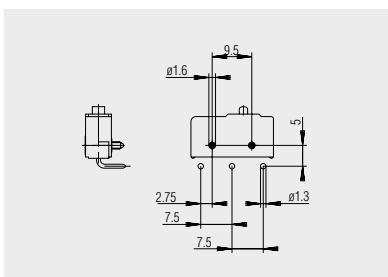
Solder terminal



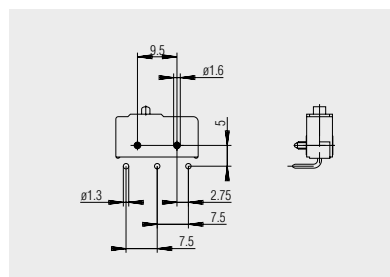
Solder terminal
normally open contact version



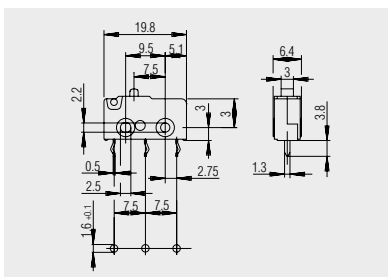
Solder terminal
normally closed contact version



PCB terminal (cover side)
right angled



PCB terminal (base side)
left angled



PCB terminal
sealed

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

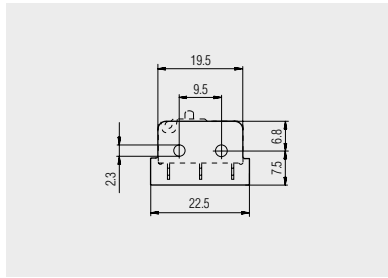


SERIES 1050 - SUBMINIATURE SNAP-ACTION SWITCHES

TO 10 (1.5) A 250 V AC



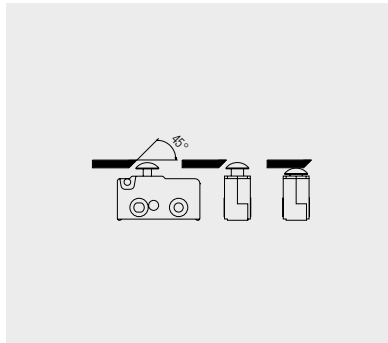
Additional parts



Insulating plate for solder terminal
0.5 mm: 231.005.021



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° 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.

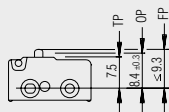


SERIES 1050 - SUBMINIATURE SNAP-ACTION SWITCHES

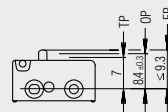
TO 10 (1.5) A 250 V AC



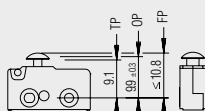
Switching positions



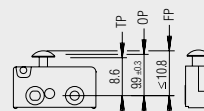
Standard actuator



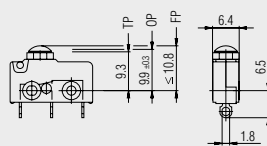
Standard actuator and extended overtravel



Mushroom-shaped actuator



Mushroom-shaped actuator and extended overtravel



Mushroom-shaped actuator with foam sealing ring

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE



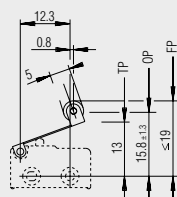
SERIES 1050 - SUBMINIATURE SNAP-ACTION SWITCHES

TO 10 (1.5) A 250 V AC

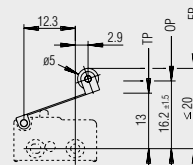


Auxiliary actuators

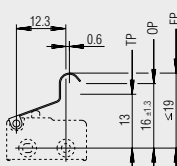
The auxiliary actuators are available as additional parts for later assembly or are already pre-assembled depending on the product. In the adjustable versions the operating position can be set application-specifically by the set screw.



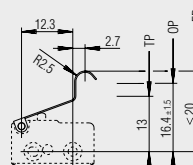
L11: roller lever
191.078.013



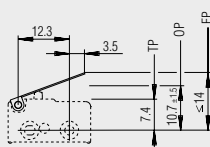
L12: roller lever
191.078.023



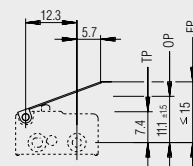
L21: simulated roller
191.071.041



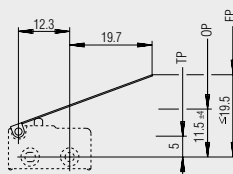
L22: simulated roller
191.071.051



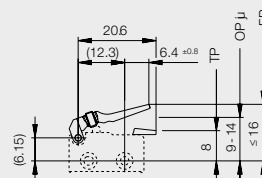
L01: straight lever
191.071.011



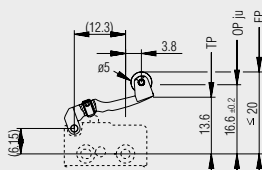
L02: straight lever
191.071.021



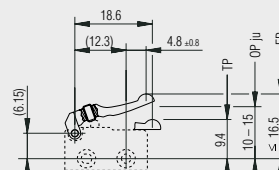
L03: straight lever
191.071.101



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

ECO

PUSH'N' DRIVE



SERIES 1045 - SUBMINIATURE SNAP-ACTION SWITCH IP 67

TO 10(3) A 250 V AC 1E4




PRODUCT FEATURES

- Dust and water protected switching system according IP 67
- Rating from low DC signal currents to ratings of 10 (3)A 250 VAC
- Versions for high motor rating up to 6 (6) A 250 VAC
- Versions with integrated mechanism for breaking contact weldings
- IEC 60335 Chapter 30 approved for household appliances
- More than 10 million switching cycles

ON REQUEST

- Versions with reduced difference travel
- Versions with mounting pegs to the side
- With asymmetric pinning
- With customized wiring

Design	DIN 41635 B
Mechanical life endurance	10E6, tightness up to 1.5E6 cycles 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	250 PTI
Protection type	IP 00 terminal side basic types 1045 and 1046 IP 40 actuator side basic type 1046 IP 67 actuator side basic type 1045, terminal and actuator side basic type 1048
Ambient temperature	-40 °C ... +100 °C
Flammability	UL 94 V-0
Glow wire test temperature	850 °C
Material additional actuator housing terminals	stainless steel spring steel PA Latamid glass fiber-reinforced tinned / faston terminals blank
Bounce time	< 5 ms
Approval marks	 (61058)
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


ECO

PUSH 'N' DRIVE



SERIES 1045 - SUBMINIATURE SNAP-ACTION SWITCH IP 67

TO 10(3) A 250 V AC 1E4

	5 (5) A 250 V AC 10E3	Normally closed contact (SPNC)					Normally open contact (SPNO)					Changeover switch (SPDT momentary)				
	1 A 250 V AC 100E3															
	3 (3) A 250 V AC 30E3															
	6 (1) A 250 V AC 30E3															
	2 (1) A 250 V AC 100E3															
	3 A 250 V AC 100E3															
	10 (3) A 250 V AC 10E3															
	6 (6) A 250 V AC 30E3															
	Terminal type															
Terminal description																
Contact material																
Operating force (N)																
Operating position (OP) (mm)																
Difference travel max. (mm)																
Free position (FP) max. (mm)																
Permissible total travel position (TP) (mm)																
Actuator																
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

MIKRO-SIGNALSCHALTER

SENSORS




























ECO

PUSH'N'DRIVE



SERIES 1045 - SUBMINIATURE SNAP-ACTION SWITCH IP 67

TO 10(3) A 250 V AC 1E4

	Changeover switch (SPDT momentary)													
5 (5) A 250 V AC 10E3														1045.3151
1 A 250 V AC 100E3	o													1045.4102
3 (3) A 250 V AC 30E3														1045.4151
6 (1) A 250 V AC 30E3														1045.5102
2 (1) A 250 V AC 100E3														1045.5112
3 A 250 V AC 100E3														1045.5502
10 (3) A 250 V AC 10E3														1045.5512
6 (6) A 250 V AC 30E3														1045.6102
Terminal type														1045.6502
Terminal description	sealed	sealed	sealed	sealed	sealed	sealed	sealed	sealed	2.8 x 0.5 sealed	2.8 x 0.5 sealed	sealed cranked	sealed cranked	sealed	1045.7102
Contact material	Au	Ag	Au	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	1045.7502
Operating force (N)	≤ 1.9	≤ 2.6	≤ 1.9	≤ 0.7	≤ 2.0	≤ 0.7	≤ 2.0	≤ 0.9	≤ 0.9	≤ 0.9	≤ 0.9	≤ 0.9	≤ 2.8	1046.0104
Operating position (OP) (mm)	8.4 ±0.3	8.4 ±0.3	8.4 ±0.3	11.1 ±1.5	9.5 ± 1.0	16.2 ±1.5	15 ±1	11.1 ±1.5	16.2 ±1.5	11.1 ±1.5	16.2 ±1.5	8.4 ±0.3	8.4 ±0.3	1046.1103
Difference travel max. (mm)	0.2	0.2	0.2	0.8	0.7	0.7	0.7	1.0	1.0	1.0	1.0	0.2	0.2	1046.2904
Free position (FP) max. (mm)	9.3	9.3	9.3	15	12	20	17	15	20	15	20	9.3	9.3	1048.0151
Permissible total travel position (TP) (mm)	7.6	7.6	7.6	7.6	8	13	13.6	7.6	13	7.6	13	7.6	7.6	
Actuator	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 40	IP 40	
Actuator description														
Lever drawing				L02	L02	L22	L22	L02	L22	L02	L22			
Miscellaneous					lever on NC side mounted		lever on NC side mounted						with positive action on NC side	
Stock version	o	o	o	o	o	o	o	o	o	o	o	o	o	o

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS



ECO

PUSH IN DRIVE



SERIES 1045 - SUBMINIATURE SNAP-ACTION SWITCH IP 67

TO 10(3) A 250 V AC 1E4

		Changeover switch (SPDT momentary)		
5 (5) A 250 V AC 10E3			1048.1102	
1 A 250 V AC 100E3			1048.2151	
3 (3) A 250 V AC 30E3		o		
6 (1) A 250 V AC 30E3				
2 (1) A 250 V AC 100E3				
3 A 250 V AC 100E3				
10 (3) A 250 V AC 10E3				o
6 (6) A 250 V AC 30E3				
Terminal type		⇄	⇄	⇄
Terminal description				
Contact material		Ag	Au	Ag
Operating force (N)		≤ 2.6	≤ 1.9	≤ 2.0
Operating position (OP) (mm)		8.4 ±0.3	8.4 ±0.3	15 ±1
Difference travel max. (mm)		0.2	0.2	0.7
Free position (FP) max. (mm)		9.3	9.3	17
Permissible total travel position (TP) (mm)		7.6	7.6	13.6
Actuator		IP 67	IP 67	IP 67
Actuator description		□	□	
Lever drawing				L22
Miscellaneous		cable outlet on actuator side	cable outlet down	lever on NC side mounted
Stock version		o	o	o

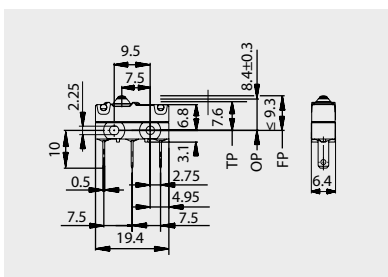


SERIES 1045 - SUBMINIATURE SNAP-ACTION SWITCH IP 67

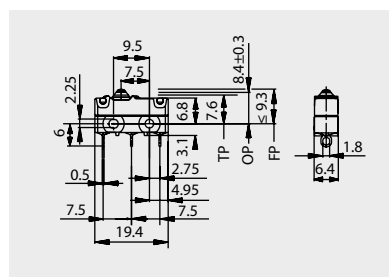
TO 10(3) A 250 V AC 1E4



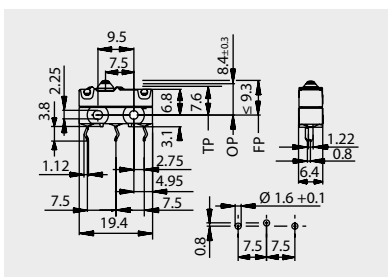
Basic type 1045



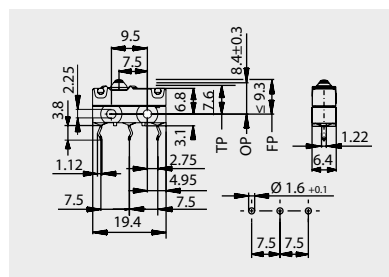
Quick-connect terminal 2.8 x 0.5 sealed



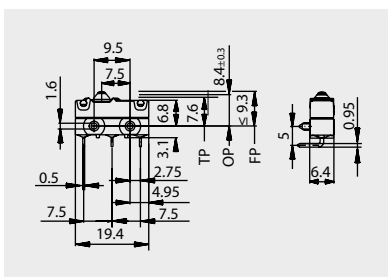
Solder terminal sealed



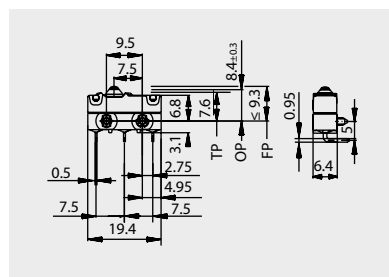
PCB terminal sealed, coded, cranked



PCB terminal sealed, cranked



PCB terminal sealed, left angled



PCB terminal sealed, right angled

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

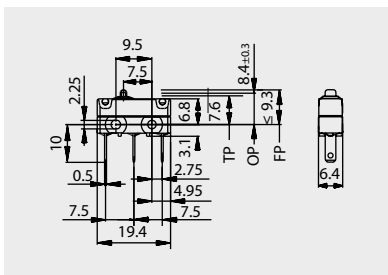


SERIES 1045 - SUBMINIATURE SNAP-ACTION SWITCH IP 67

TO 10(3) A 250 V AC 1E4



Basic type 1046

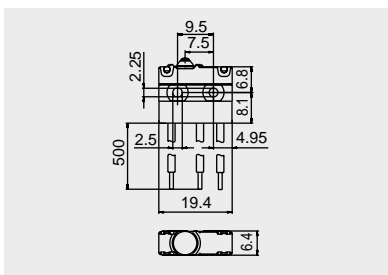


Quick-connect terminal 2.8 x 0.5 sealed

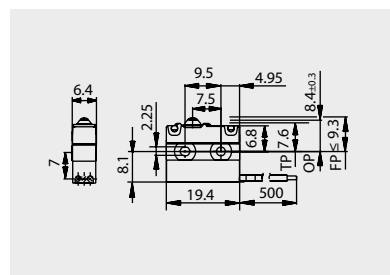


Basic type 1048

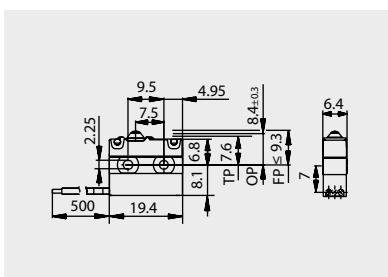
Wires potted with switch,
wire ends tinned



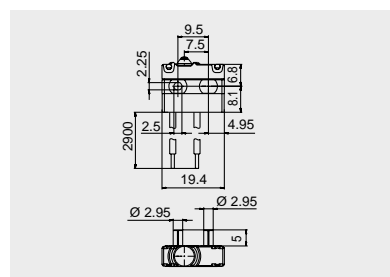
Cable, outlet down



Cable, outlet NC side



Cable, outlet C side



Cable, outlet down, normally open contact, mounting pegs



SERIES 1045 - SUBMINIATURE SNAP-ACTION SWITCH IP 67

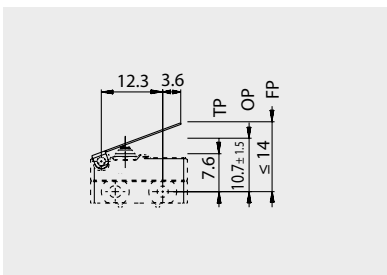
TO 10(3) A 250 V AC 1E4



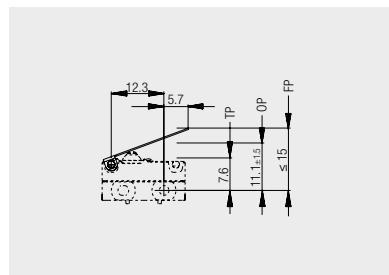
Auxiliary actuators

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.

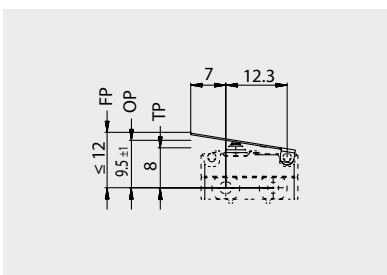
Switch versions without positive action feature a lever mounting point on the C and NC side, those with positive action only on the C side.



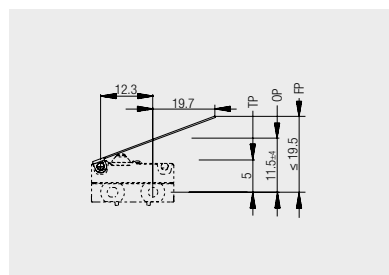
L01: straight lever
191.071.011



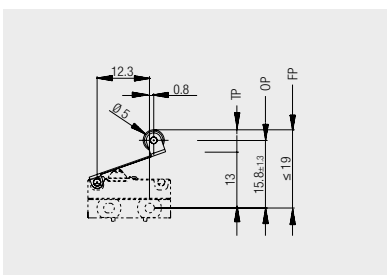
L02: straight lever
191.071.021



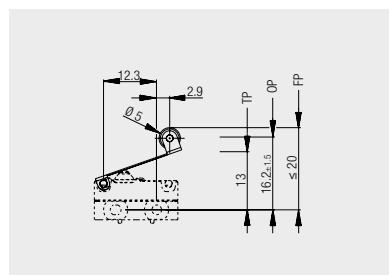
L02: straight lever, mounted on NC side
191.071.021



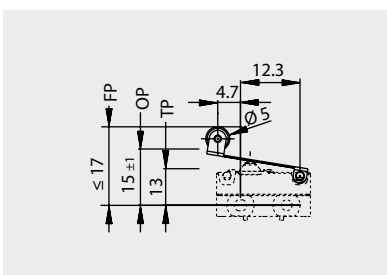
L03: straight lever
191.071.101



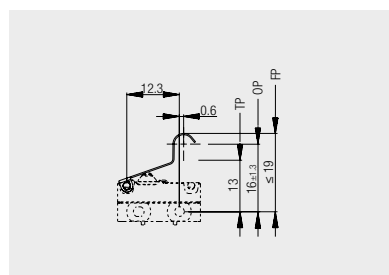
L11: roller lever
191.078.023



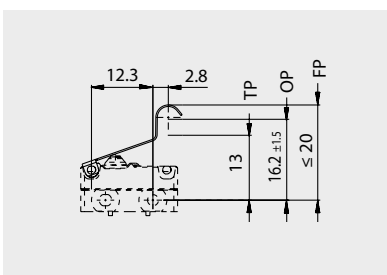
L12: roller lever
191.078.023



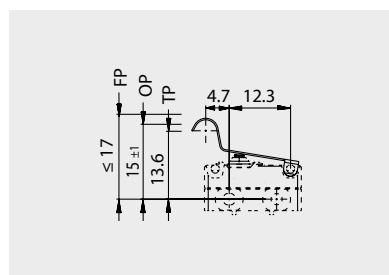
L12: roller lever, mounted on NC side
191.078.023



L21: simulated roller
191.071.041



L22: simulated roller
191.071.051



L22: simulated roller, mounted on NC side
191.071.051

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

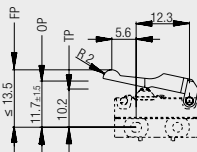
SENSORS

ECO

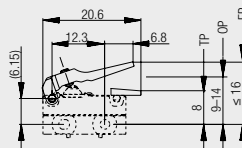
PUSH 'N' DRIVE



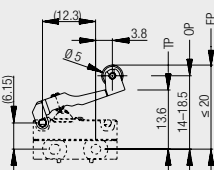
Auxiliary actuators
(continue from page 195)



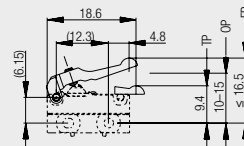
L32: simulated roller, mounted on NC side
190.372.041



L41: adjustable plastic lever
190.075.013



L43: adjustable roller lever
190.072.013



L45: adjustable simulated roller
190.074.013

Further information under

WWW.MARQUARDT-SWITCHES.COM



SERIES 1080 - MINIATURE SNAP-ACTION SWITCHES

TO 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 mm

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 additional actuator housing terminals	PETP glass fiber-reinforced stainless steel PA glass fiber-reinforced / PETP glass fiber-reinforced 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	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS








ECO

PUSH 'N' DRIVE



SERIES 1080 - MINIATURE SNAP-ACTION SWITCHES

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			
Contact material	Ag		Ag		Ag	
Operating force (N)	≤ 1.0		≤ 1.5		≤ 1.0	
Operating position (OP) (mm)	14.7 ± 0.5		14.7 ± 0.5		14.7 ± 0.5	
Difference travel max. (mm)	0.3		0.3		0.3	
Free position (FP) max. (mm)	16.2		16.2		16.2	
Permissible total travel position (TP) (mm)	13.2		13.2		13.2	
Actuator description						
Lever drawing						
Contact distance (mm)	< 3		< 3		< 3	
EN 60335 cap. 30 conform "G"	○		○			
Stock version					○	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MIKRO-SIGNALSCHALTER

SENSORS

ECO

PUSH'N'DRIVE

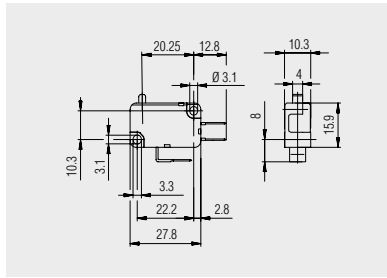


SERIES 1080 - MINIATURE SNAP-ACTION SWITCHES

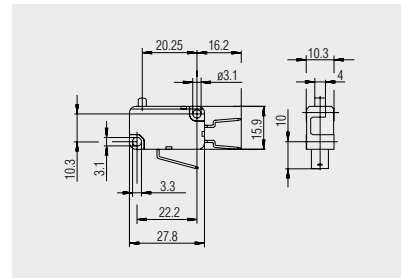
TO 21 (8) A 250 V AC



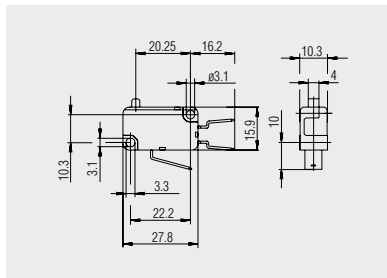
Terminal variants



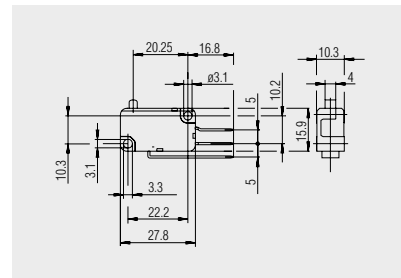
Quick-connect terminal 4.8 x 0.5 special version straight



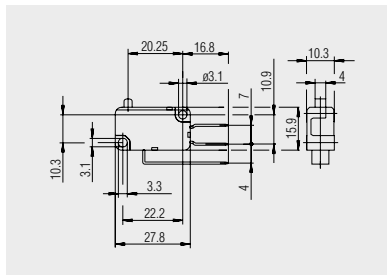
Quick-connect terminal 4.8 x 0.8



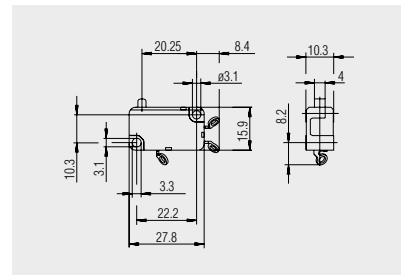
Quick-connect terminal 6.3 x 0.8



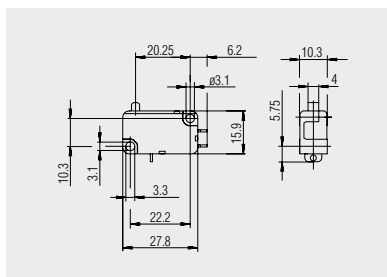
Quick-connect terminal 6.3 x 0.8 PITCH 5



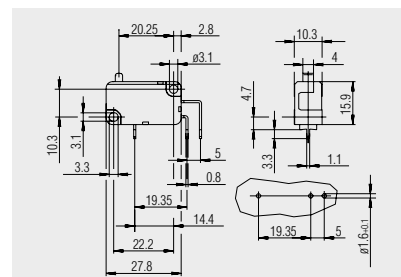
Quick-connect terminal 6.3 x 0.8 PITCH 7



Solder terminal



Short solder terminal



PCB terminal standing

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

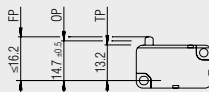


SERIES 1080 - MINIATURE SNAP-ACTION SWITCHES

T0 21 (8) A 250 V AC



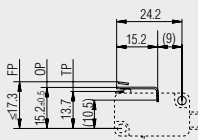
Switching positions



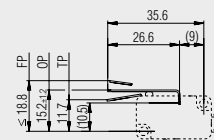
FP: free position
OP: operating position
TP: permissible total travel position



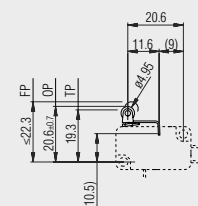
Auxiliary actuators



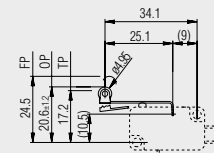
L01: straight lever
191.080.091



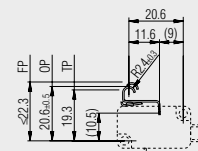
L02: straight lever
191.080.101



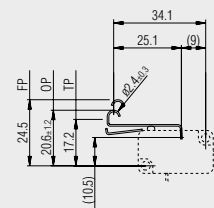
L11: roller lever
191.079.013



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

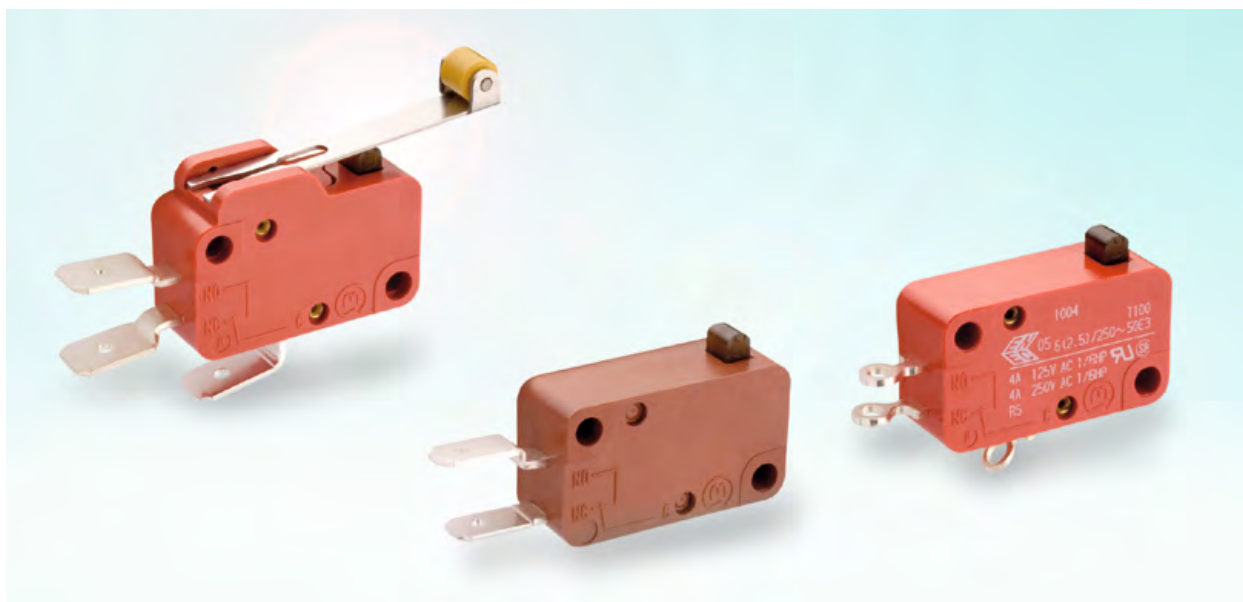
ECO

PUSH'N'DRIVE



SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

TO 21 (8) A 250 V AC






PRODUCT FEATURES

- Friction contact system whose shearing movement can loosen welding
- 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 conformant 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 additional actuator housing terminals	galvanized steel / spring steel / stainless steel Duroplast type 182 / PA glass fiber-reinforced / PA Latamid silver plated / chromated
Bounce time	< 10 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


ECO

PUSH 'N' DRIVE



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)		
21 (8) A 250 V AC 25E3				1005.1105			1005.2809			1005.0404
20 (4) A 400 V AC 1E4				1005.1101			1005.1207			1005.1004
16 (16) A 250 V AC 5E4							1005.1226			
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 (mm)										
Contact material										
Operating force (N)										
Operating position (OP) (mm)										
Difference travel max. (mm)										
Free position (FP) max. (mm)										
Permissible total travel position (TP) (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

MIKRO-SIGNALSCHALTER

SENSORS




































ECO

PUSH'N'DRIVE



SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

TO 21 (8) A 250 V AC

	Changeover switch (SPDT momentary)													1006.1514	1005.0507	1005.1010	1004.0509	1005.0101	1005.0401	1005.1001	1005.3501	1006.0701	1006.0901	1006.1011	1006.1101	1006.1201	1006.1301	1006.1401	
21 (8) A 250 V AC 25E3																													
20 (4) A 400 V AC 1E4	o																												
16 (16) A 250 V AC 5E4																													
16 (4) A 400 V AC 5E4	o																												
16 (4) A 250 V AC 5E4			o		o																								
16 (4) A 250 V AC 25E3						o																							
12 (12) A 250 V AC 5E4																													
10 (6) A 250 V AC 5E4	o	o																											
10 (4) A 400 V AC 1E4									o	o									o	o	o	o	o	o	o	o	o	o	o
10 (4) A 250 V AC 5E4						o																							
8 (8) A 250 V AC 5E4				o																									
6 (2.5) A 400 V AC 5E4									o	o									o	o	o	o	o	o	o	o	o	o	o
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	o	o			o																								
10 A 125 - 250 V AC 1/2 HP				o																									
10 A 125 - 250 V AC 1/4 HP									o	o									o	o	o	o	o	o	o	o	o	o	o
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				M3			6.3													6.3		6.3		6.3	
Contact distance (mm)	< 3	< 3	< 3	> 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 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	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag
Operating force (N)	1.2 - 2.1	2.4 - 3.8	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	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	
Operating position (OP) (mm)	20.8±1.2	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	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	14.7±0.5	
Difference travel max. (mm)	0.9	0.3	1.2	0.1 - 0.25	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
Free position (FP) max. (mm)	23.5	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	
Permissible total travel position (TP) (mm)	18	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	
Actuator description																													
Lever drawing	L12																												
Miscellaneous				milled bearing blade																									
Stock version								o	o	o								o	o	o				o	o	o	o	o	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS
















ECO

PUSH IN DRIVE



SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

TO 21 (8) A 250 V AC

	Changeover switch (SPDT momentary)						
21 (8) A 250 V AC 25E3		1006.1511		1006.1801		1006.4103	
20 (4) A 400 V AC 1E4						1006.4203	
16 (16) A 250 V AC 5E4						1004.4601	
16 (4) A 400 V AC 5E4						1004.0402	
16 (4) A 250 V AC 5E4							1004.1002
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			6.3		6.3
Contact distance (mm)	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Contact material	Ag	Ag	Ag	Ag	Ag	Ag	Ag
Operating force (N)	0.7 - 1.25	1.5 - 2.5	1.5 - 2.5	1.5 - 2.5	0.5 - 1.1	0.2 - 0.6	0.2 - 0.6
Operating position (OP) (mm)	20.8 ± 1.2	22 ± 1	20.8 ± 0.5	20.8 ± 0.5	20.8 ± 0.5	14.7 ± 0.5	14.7 ± 0.5
Difference travel max. (mm)	0.9	0.6	0.3	0.3	0.3	0.3	0.3
Free position (FP) max. (mm)	23.5	24.5	22.1	22.1	22.1	16	16
Permissible total travel position (TP) (mm)	18	18.5	19.5	19.5	19.5	13.4	13.4
Actuator description							
Lever drawing	L12	L31	L11	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

MIKRO-SIGNALSCHALTER

SENSORS

ECO

PUSH'N'DRIVE

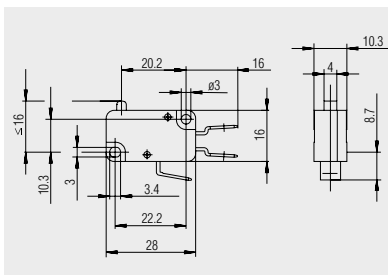


SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

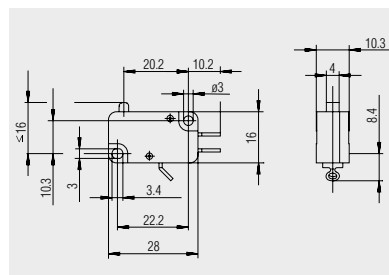
TO 21 (8) A 250 V AC



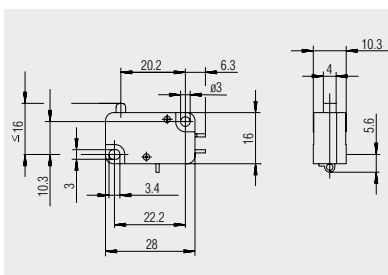
Basic type 1005



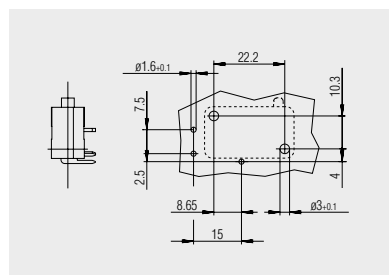
Quick-connect terminal 6.3 x 0.8



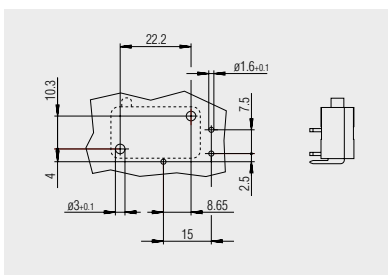
Solder terminal



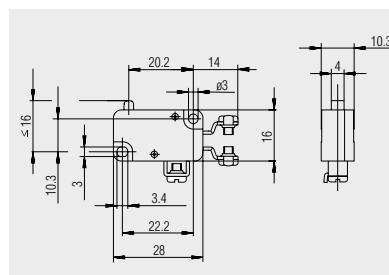
Short solder terminal



PCB terminal (cover side)
right angled



PCB terminal (base side)
left angled



Screw terminal M3

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

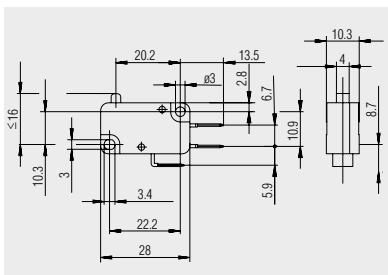


SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

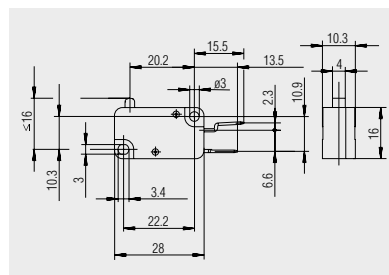
T0 21 (8) A 250 V AC



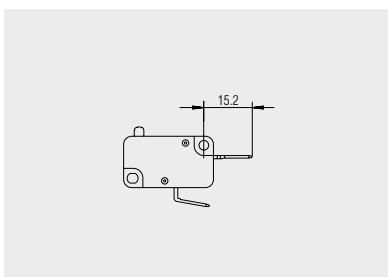
Basic type 1005



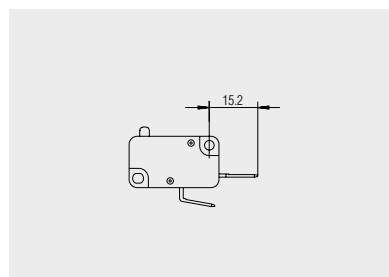
Quick-connect terminal 4.8 x 0.8 straight



Quick-connect terminal 4.8 x 0.8 top side



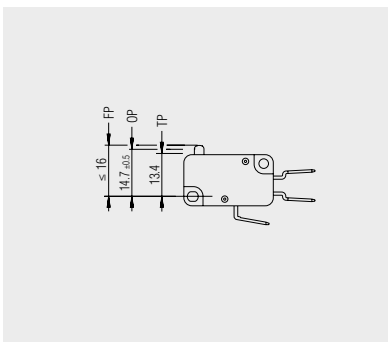
Quick-connect terminal 6.3 x 0.8 normally open contact version



Quick-connect terminal 6.3 x 0.8 normally closed contact version



Basic types 1004 and 1005 switching positions



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

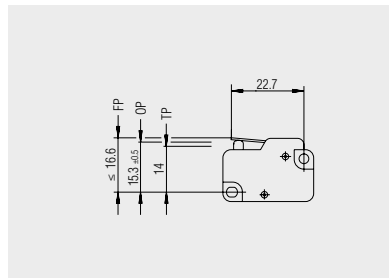


SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

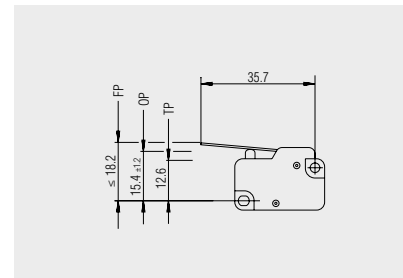
TO 21 (8) A 250 V AC



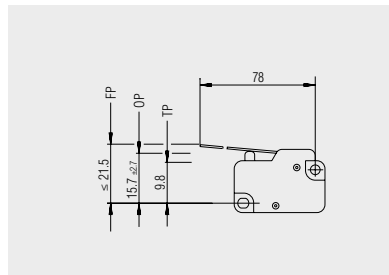
Basic type 1006
auxiliary actuator



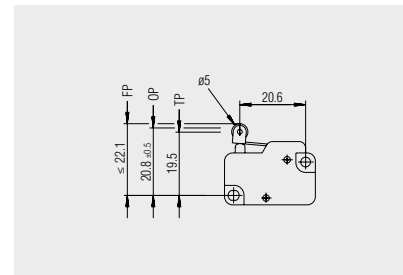
L01: straight lever



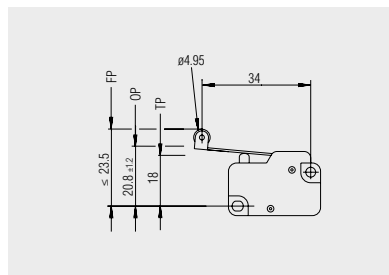
L02: straight lever



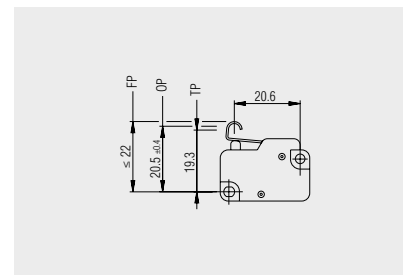
L04: straight lever



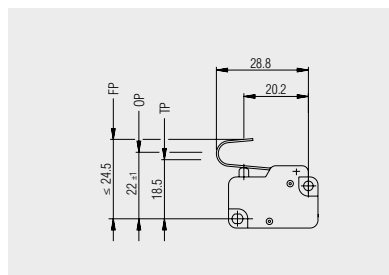
L11: roller lever



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

ECO

PUSH 'N' DRIVE

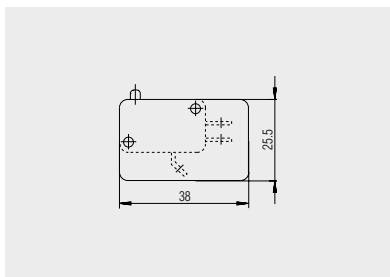


SERIES 1005 - MINIATURE SNAP-ACTION SWITCHES

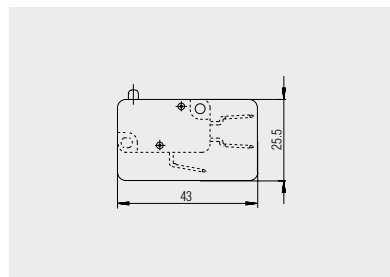
TO 21 (8) A 250 V AC



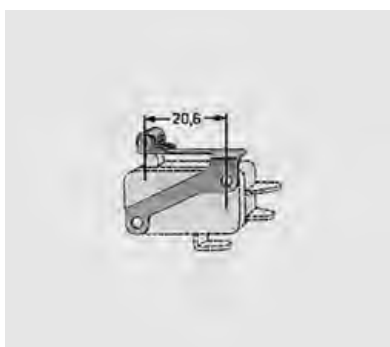
Additional parts



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



191.013.013

Stainless spring steel

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

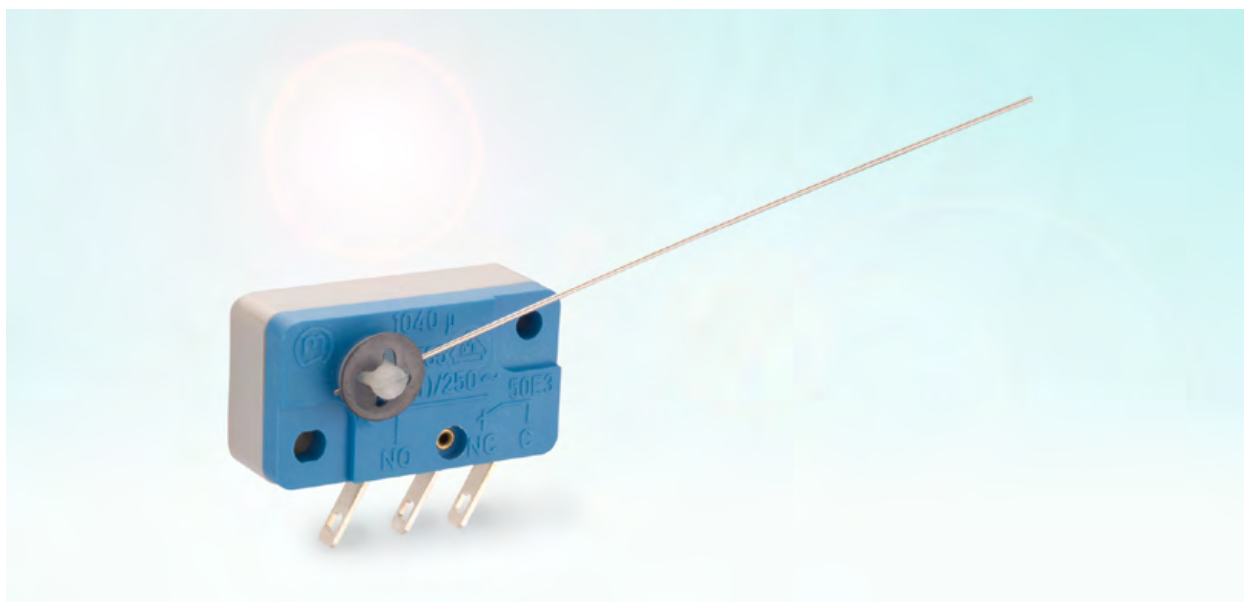
Further information under

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 additional actuator housing terminals
	PA glass fiber-reinforced stainless steel spring steel PA glass fiber-reinforced / PETP 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

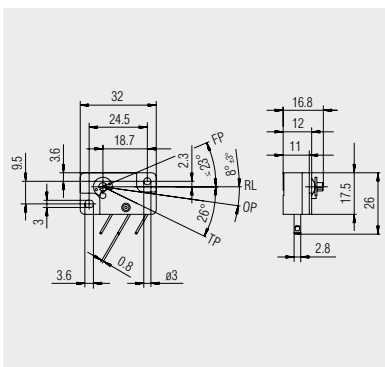
SENSORS

ECO

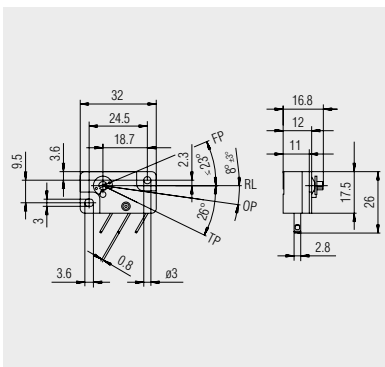
PUSH 'N' DRIVE



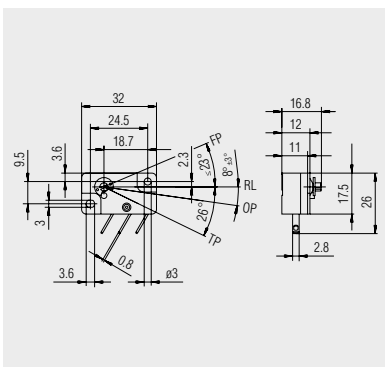
	4 (1) A 250 V AC 5E4	Terminal type	Terminal description	Contact material	Stock version
Changeover switch (SPDT momentary)					
1040.0111	○		2.8	Ag	○
1040.0114	○		2.8	Ag	○
1040.0301	○		2.8	Au	



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° - 15°
Switch actuating torque 0.6-0.9 Nmm
End actuating torque min. 0.2 Nmm
Reset torque min 0.15 Nmm



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° - 15°
Switch actuating torque 0.9-1.7 Nmm
End actuating torque min. 0.2 Nmm
Reset torque min. 0.15 Nmm



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 $5^\circ\text{--}15^\circ$
 Switch actuating torque $0.6\text{--}0.9\text{ Nmm}$
 End actuating torque $\geq 0\text{ Nmm}$
 Reset torque $\geq 0\text{ Nmm}$



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)
Flammability	UL 94 V-2 or UL 94 HB
Glow wire test temperature	850 °C
Material actuator housing terminals	spring steel / PA glass fiber-reinforced / PA / metal (only 1017.0153) PA glass fiber-reinforced / PA 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

ECO

PUSH 'N' DRIVE



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 10E4	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 (N)	Operating position (OP) (mm)	Difference travel max. (mm)	Free position (FP) max. (mm)	Permissible total travel position (TP) (mm)	Actuator description	Mechanical life endurance	Miscellaneous	Stock version
Normally closed contact (SPNC)																				
1010.7601		o								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		o								9.5 long	Ag	0.25 - 0.6	2.2 ±0.6	0.9	0.4	3.5		1E6		
1010.7402		o								9.5 long	Ag	0.45 - 1.05	2.2 ±0.6	0.9	0.4	3.5		1E6		
1017.0801						o				9.2 long	CuBe silver plated	0.15 - 0.5	2.2 ±0.6		0	3.2		1E6	without approval mark	o
1017.5701						o					CuSn silver plated	0.15 - 0.5	1.4 ±0.6		3.6	0.4		1E6	without approval mark	
1017.0851						o				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	o	o									Au	0.45 - 1.05	3.8 ±0.6	0.9	6.6	2		10E4		
1010.9752	o	o									Ag	0.45 - 1.05	6.9 ±0.6	0.9	9.7	5.1		10E4		
1010.9802	o	o									Ag	0.45 - 1.05	3.8 ±0.6	0.9	6.6	2		10E4		
1010.9852	o	o									Ag	0.45 - 1.05	6.9 ±0.6	0.9	9.7	5.1		10E4		o
1010.0101		o								6.5 long	Ag	0.25 - 0.6	2.2 ±0.6	0.9	0.4	3.5		1E6	without approval mark	o
1010.3001		o								6.5 long	Ag	0.25 - 0.6	0.9 ±0.6	0.9	3.6	0.2		1E6		
1010.4402		o								straight	Ag	0.25 - 0.6	1.3 ±0.6	0.9	4.1	0		1E6	small base without approval mark	
1010.0304		o								9.5 long	Ag	0.25 - 0.6	2.2 ±0.6	0.9	0.4	3.5		1E6		
1010.2003		o								9.5 long	Au	0.45 - 1.05	2.2 ±0.6	0.9	0.4	3.5		1E6		
1010.4103		o								straight	Au	0.25 - 0.6	2.2 ±0.6	0.9	0.4	3.5		1E6	without approval mark	o
1010.6002		o								standing	Au	0.45 - 1.05	11.2 ±0.6	0.9	13.8	9.9		1E6		o
1010.6003		o								standing	Ag	0.25 - 0.6	11.2 ±0.6	0.9	13.8	9.9		1E6		o
1010.7102		o								6.5 long	Ag	0.45 - 1.05	2.2 ±0.6	0.9	0.4	3.5		1E6	without approval mark	
1010.7172		o								6.5 long	Au	0.45 - 1.05	0.9 ±0.6	0.9	3.6	0.2		1E6	without approval mark	
1010.7352		o								9.5 long	Ag	0.45 - 1.05	0.9 ±0.6	0.9	3.6	0.2		1E6		
1010.8102		o								straight	Ag	0.45 - 1.05	2.2 ±0.6	0.9	0.4	3.5		1E6	without approval mark	
1014.6151			o	o						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						o				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

ECO

PUSH'N'DRIVE



Technical drawing of a mechanical part, likely a valve or actuator component, showing three views: a front view (top), a side view (middle), and a cross-sectional view (bottom). The drawing includes the following dimensions and labels:

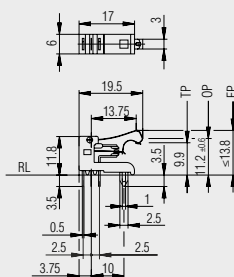
- Front View (Top):**
 - Overall width: 14.5
 - Overall height: 15
 - Internal width: 9.5
 - Internal height: 9.0
 - Bottom flange width: 2.6
 - Bottom flange thickness: 2.1
 - Label "RL" is present near the top right.
- Side View (Middle):**
 - Overall width: 14.5
 - Overall height: 15
 - Internal width: 9.5
 - Internal height: 9.0
 - Bottom flange width: 2.6
 - Bottom flange thickness: 2.1
- Cross-sectional View (Bottom):**
 - Overall width: 14.5
 - Overall height: 15
 - Internal width: 9.5
 - Internal height: 9.0
 - Bottom flange width: 2.6
 - Bottom flange thickness: 2.1
- Labels and Dimensions:**
 - FP (Front Panel)
 - OP (Outer Panel)
 - TP (Top Panel)
 - ≤ 0.4 (Dimension across the top flange)
 - 2.2 ± 0.06 (Dimension across the top flange)
 - 3.5 (Dimension across the top flange)

[illegible]

PCB terminal
right angled
1010.9852



Basic type 1010

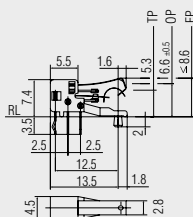


PCB terminal vertical:

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



Basic type 1014



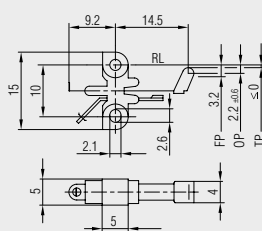
Vertical PCB terminal:

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

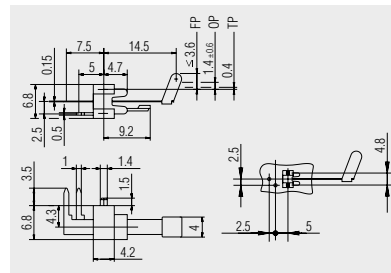
This basic type is designed for low voltages and has no approval mark.



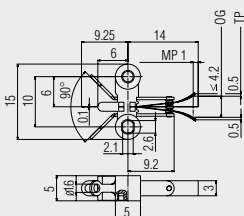
Basic type 1017
without snap function



Solder terminal
normally open contact version



PCB terminal left angled

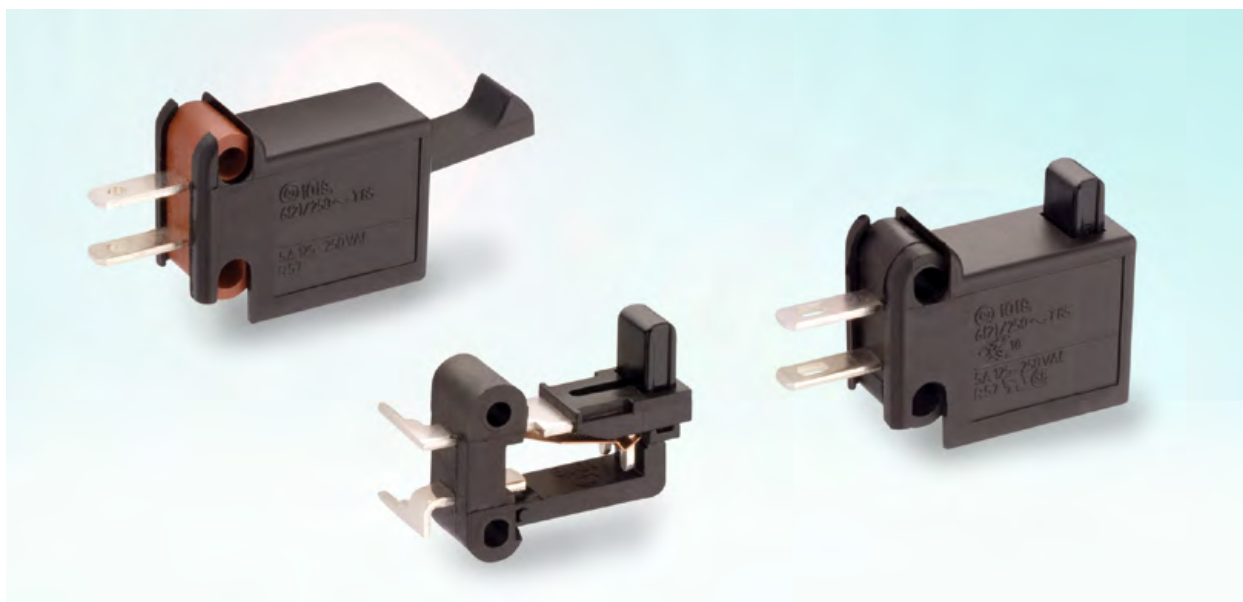


Changeover switch with OFF position
in the center



SERIES 1019 - SINGLE-POLE SNAP-ACTION SWITCHES

T0 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




















ECO

PUSH 'N' DRIVE



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 (N)	Operating position (OP) (mm)	Difference travel max. (mm)	Free position (FP) max. (mm)	Permissible total travel position (TP) (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	○				Ag	1.5 - 3	2.4 ± 0.6	1.2	4.7	0.5			
1019.0301	○				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

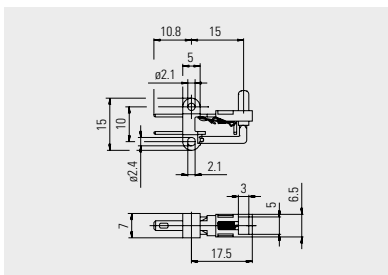


SERIES 1019 - SINGLE-POLE SNAP-ACTION SWITCHES

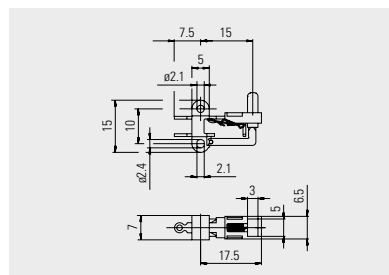
T0 6 (2) A 250 V AC



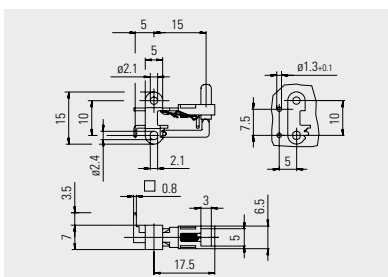
Open design with pushbutton



Quick-connect terminal 2.8 x 0.8



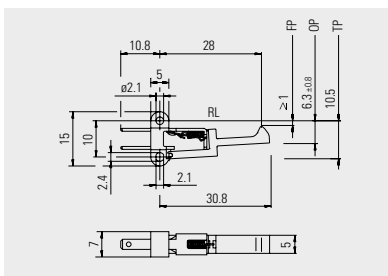
Solder terminal



PCB terminal
left angled



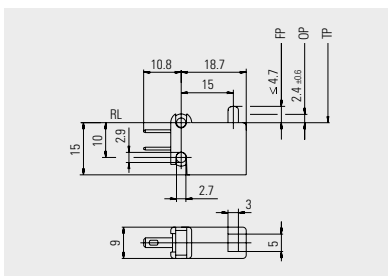
Open form with lever



Quick-connect terminal 2.8 x 0.8



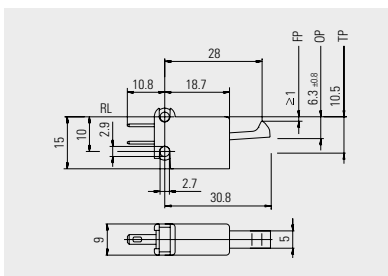
Closed design with pushbutton



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

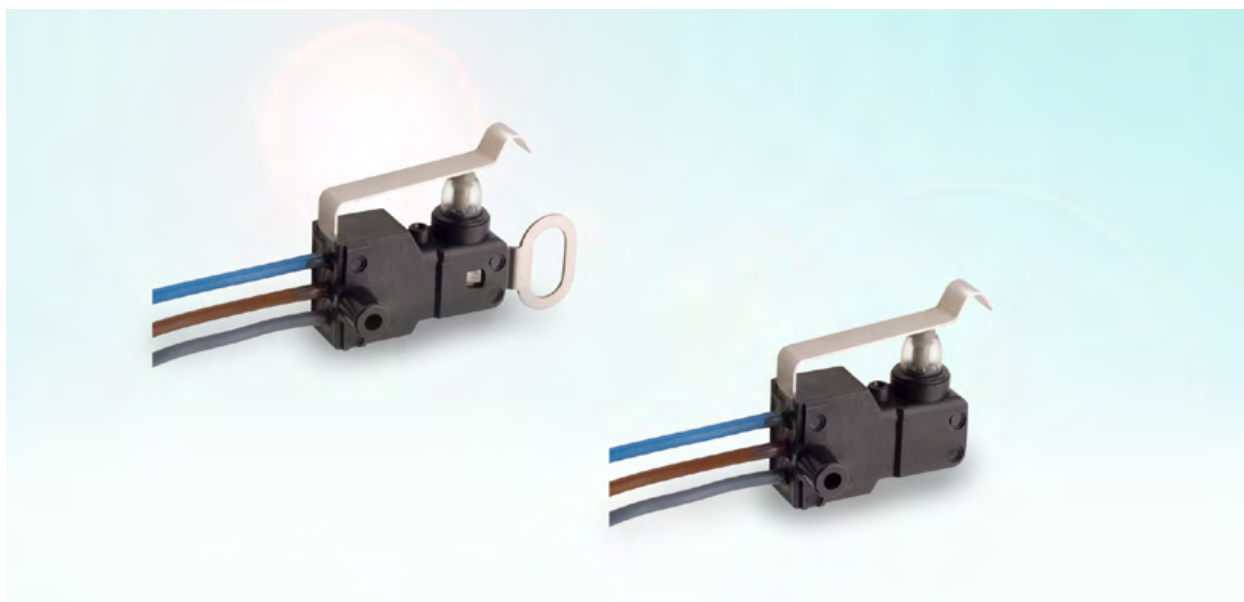
ECO

PUSH 'N' DRIVE



SERIES 1022 - SNAP-ACTION SWITCHES IP 67

TO 4 A 12 V DC



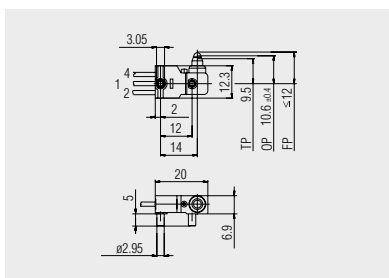
PRODUCT FEATURES

- Dust and water protection 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

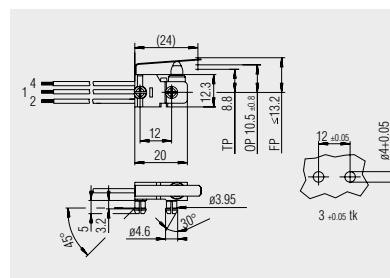
ON REQUEST

- Customized assembly with connecting plugs
- Other auxiliary actuators

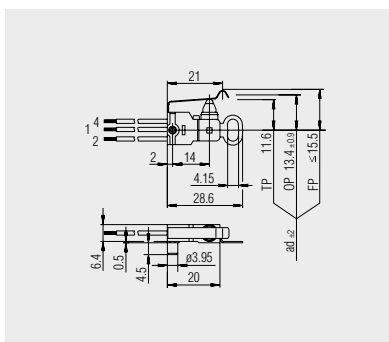
Mechanical life endurance	10E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 67
Ambient temperature	-40 °C ... +85 °C
Flammability	UL 94 V-2
Material actuator additional actuator housing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

[illegible]

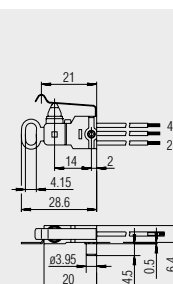
with pushbutton



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.



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 1115 and 1116

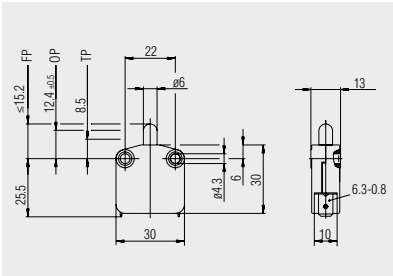
Mechanical life endurance	10E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	-40 °C ... +85 °C
Flammability	UL 94 V-0
Glow wire test temperature	850 °C
Material actuator 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 (mm)	Operating force (N)	Operating position (OP) (mm)	Difference travel max. (mm)	Free position (FP) max. (mm)	Permissible total travel position (TP) (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	○



 Quick-connect terminal 6.3 x 0.8

Basic type 1117

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE



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 (changeover) version

ON REQUEST

- Customized versions
- G-conform according IEC 60335-1:2001 chap. 30 UL 94 V-0

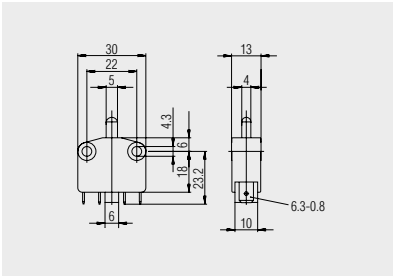
Mechanical life endurance	10E4
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 40
Ambient temperature	-40 °C ... +85 °C
Flammability	UL 94 V-0
Glow wire test temperature	850 °C
Material actuator 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 (mm)	Operating force (N)	Operating position (OP) (mm)	Difference travel max. (mm)	Free position (FP) max. (mm)	Permissible total travel position (TP) (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	○



Quick-connect terminal 6.3 x 0.8

Basic type 1115

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

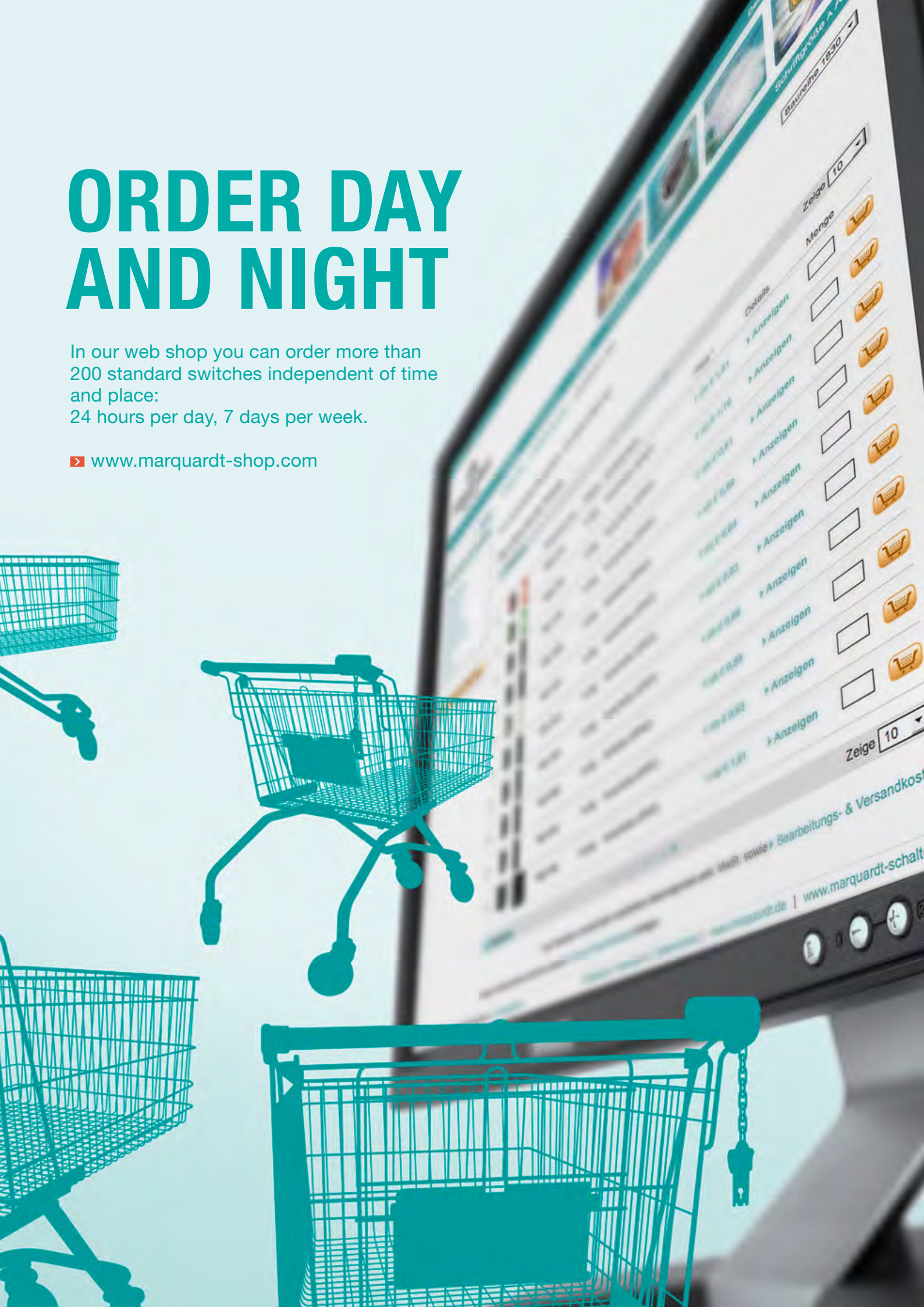
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MICRO-SIGNAL SWITCHES

ROCKER SWITCHES	   
PUSHBUTTON SWITCHES	   
TOGGLE SWITCHES	   
SLIDE SWITCHES	 
ROTARY SWITCHES	
FOOT SWITCHES	 
TACT AND KEY SWITCHES	   
SNAP-ACTION SWITCHES	    
MICRO-SIGNAL SWITCHES	
SENSORS	  
ECO	 
PUSH'N'DRIVE	

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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PUSH'N'DRIVE



SERIES 1065

Micro-signal switches
to 100 mA 30 V DC

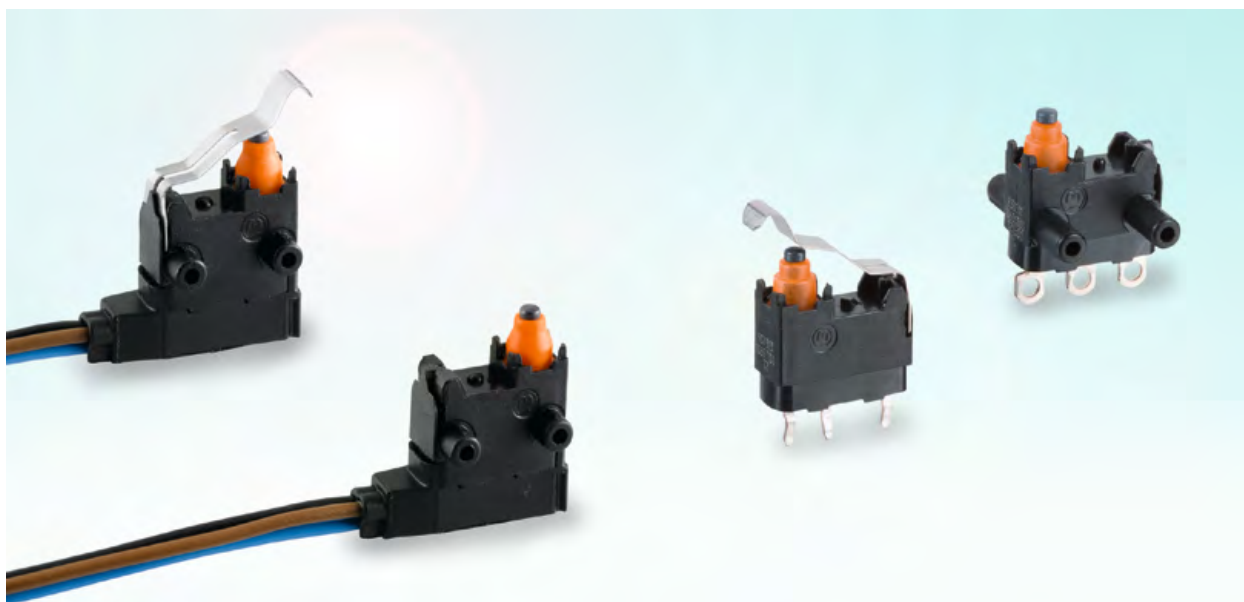
► PAGE
227 – 231





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 electrical life endurance at 14 V DC 10 mA ≥ 200E3, at 30V DC 100 mA ≥ 40E3

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS




































ECO

PUSH 'N' DRIVE



SERIES 1065 - MICRO-SIGNAL SWITCHES

TO 100 mA 30 V DC

	≤25 V DC	100 mA 30 V DC 40E3	Terminal type	Terminal description	Operating force (N)	Switching point NCC (mm)	Minimum OFF range (mm)	Switching point NOC (mm)	Rest position (FP) max. (mm)	Permissible end position (TP) (mm)	Actuator description	Lever drawing	Miscellaneous	Stock version
Changeover switch (SPDT momentary) can be diagnosed														
1060.2601	○				≤ 1.6			8.95 ±0.3	10.15	6.85			with resistor circuit pin right 2.5 long	
Normally open contact (SPNO)														
1068.0541		○		300 long 300 long	≤ 1.6			8.95 ±0.3	10.15	6.85			pin right 5 long	
Changeover switch (SPDT momentary)														
1065.0503		○			≤ 1.6	9.45 ±0.3		8.95 ±0.3	10.15	6.85			pin both sides 5 long	
1065.0603		○			≤ 1.6	9.45 ±0.3		8.95 ±0.3	10.15	6.85			pin both sides 2.5 long	
1065.2000		○		coded cranked	≤ 1.6	13.8 ±0.3		13.3 ±0.3	14.5	11.2			without pin	
1065.3603		○			≤ 1.6	9.45 ±0.3		8.95 ±0.3	10.15	6.85			pin both sides 2.5 long	
1065.3653		○			≤ 1.6	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	
1065.5203		○			≤ 2.8	9.65 ±0.45		9.15 ±0.45	11.35	7.35		L31	pin right 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 300 long	≤ 1.6	9.45 ±0.3		8.95 ±0.3	10.15	6.85			pin both sides 5 long	
1068.0601		○		300 long	≤ 1.6	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		○			≤ 1.6	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	≤ 1.6	13.8 ±0.3	12.65 - 13.5	12.35 ±0.3	14.5	11.2			without pin	
1075.3603		○			≤ 1.6	9.45 ±0.3	8.3 - 9.15	8 ±0.3	10.15	6.85			pin right 2.5 long	
1075.3653		○			≤ 1.6	9.45 ±0.3	8.3 - 9.15	8 ±0.3	10.15	6.85			pin left 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

ECO

PUSH'N'DRIVE



Technical drawing of the TH 01.3 valve assembly. The drawing shows a side view of the valve with dimensions in millimeters. The main body has a total length of 14.5 mm. The valve is mounted on a base with a width of 13.0 mm. The valve stem has a diameter of 1.9 mm. The valve is labeled with 'TH 01.3'.

TH: Ø1.3

Technical drawing of a mechanical part, showing a perspective view and a cross-sectional view with dimensions.

Perspective View Dimensions:

- Top surface width: 25
- Top surface depth: 25
- Top surface thickness: 0.9
- Bottom surface width: 3.23
- Bottom surface depth: 0.5
- Bottom surface thickness: 5.6

Cross-sectional View Dimensions:

- Top surface width: $\varnothing 3.1_{-0.08}^{+0.05}$
- Top surface depth: $0.2 \times 45^\circ$
- Top surface thickness: $9_{+0.05}^{+0.05}$
- Bottom surface width: $\varnothing 3.5$
- Bottom surface depth: $0.2 \times 45^\circ$
- Bottom surface thickness: $5_{+0.05}^{+0.05}$
- Bottom surface width: $5_{+0.05}^{+0.05}$
- Bottom surface depth: $1.3_{+0.1}^{+0.1}$

Technical drawing of the 600 Series Ball Valve showing three views: top, side, and front. Dimensions are provided in millimeters.

- Top View:** Shows a rectangular body with a total width of 300 mm. The distance from the left edge to the centerline is 4.5 mm. The mounting flange has a height of 17.3 mm and a base thickness of 19.3 mm.
- Side View:** Shows the valve handle with a diameter of $\varnothing 1.9$ mm at the top and a mounting hole diameter of $\varnothing 3$ mm. The distance from the bottom of the body to the center of the handle is 5.4 mm.
- Front View:** Shows the ball valve mechanism with a total length of 2.95 mm. The distance from the left edge to the center of the ball is 9 mm. The ball has a diameter of 0.7 mm. The mounting flange has a height of 5 mm.

SWITCHES SNA

MICRO-SIG

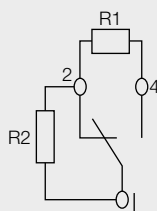


SERIES 1065 - MICRO-SIGNAL SWITCHES

TO 100 mA 30 V DC



Basic type 1060/1070

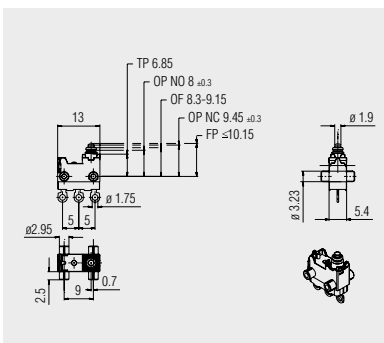


Switch diagnostics capability

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



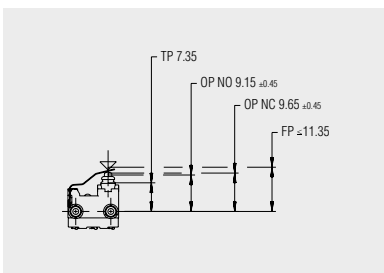
Basic type 1075



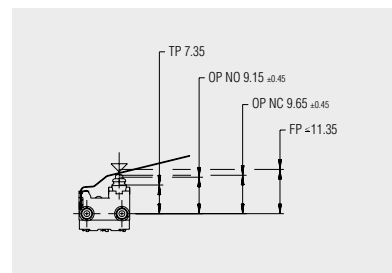
Due to the OFF range between the normally closed contact and the normally open contact increased in relation to basic type 1065 the switch can be used for determining three switching positions. As a result two conventional switches can be replaced by one of these new switch versions in many applications.



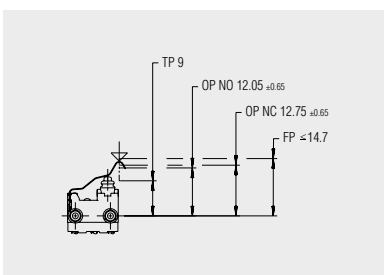
Auxiliary actuators



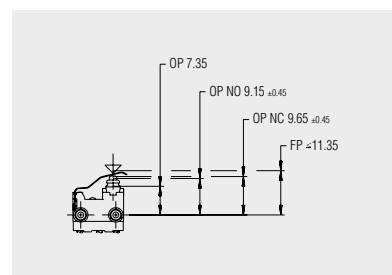
L01: straight lever



L02: straight lever



L21: simulated roller lever



L31: differential levers

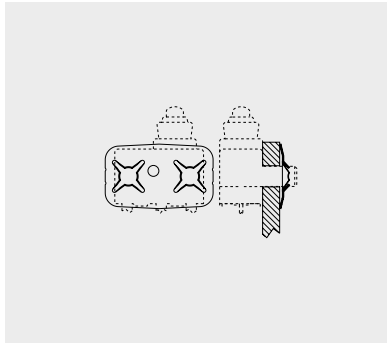


SERIES 1065 - MICRO-SIGNAL SWITCHES

TO 100 mA 30 V DC



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.

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

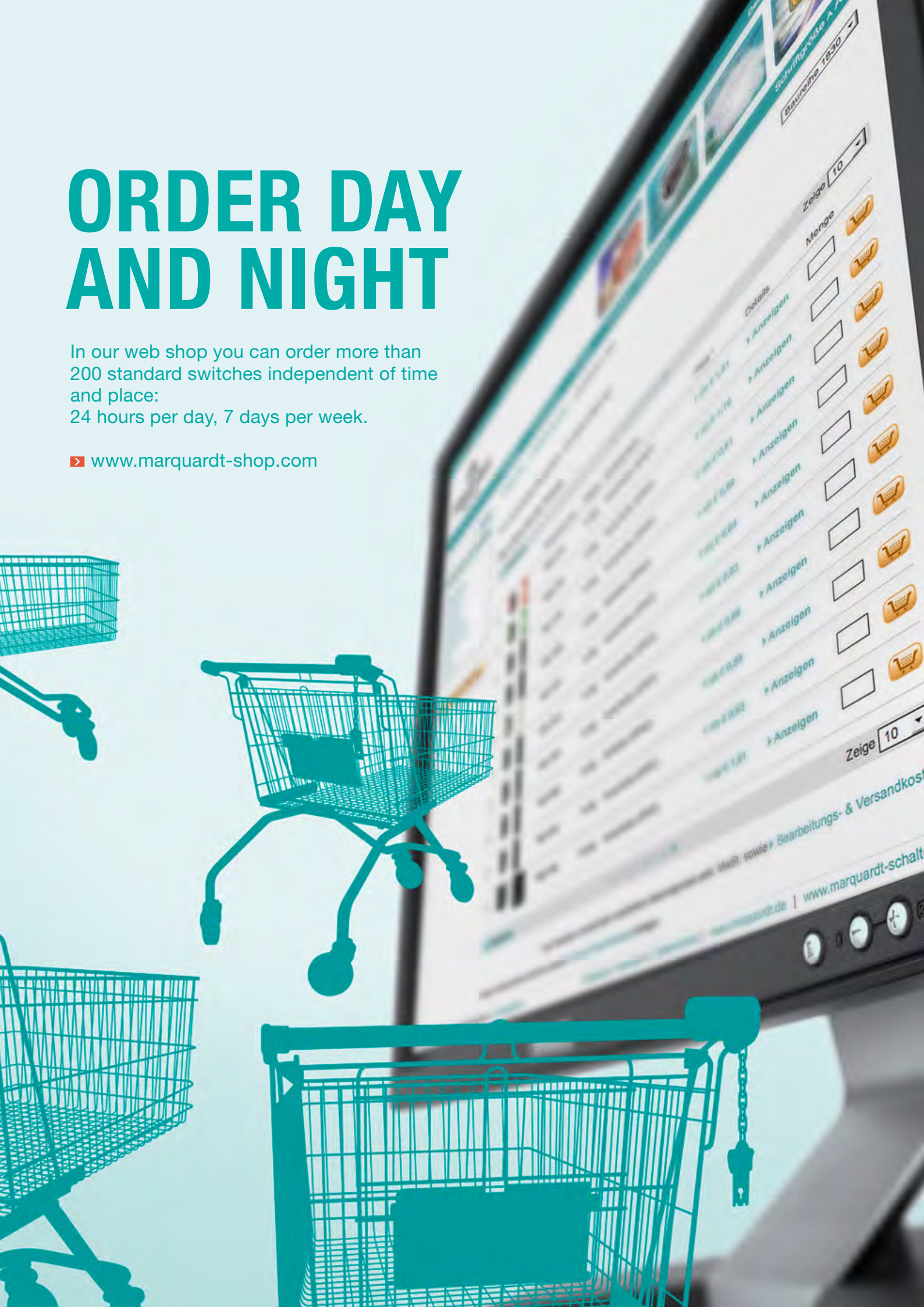
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FOOT SWITCHES				
TACT AND KEY SWITCHES				
SNAP-ACTION SWITCHES				
MICRO-SIGNAL SWITCHES				
SENSORS				
ECO				
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ROCKER SWITCHES

PUSHBUTTON SWITCHES

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SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

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SERIES 2061

Flow sensors
for water volumes up to 15 l/min



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SERIES 2066

Analogue pressure sensors
for water and air pressure measure-
ment up to 10 bar

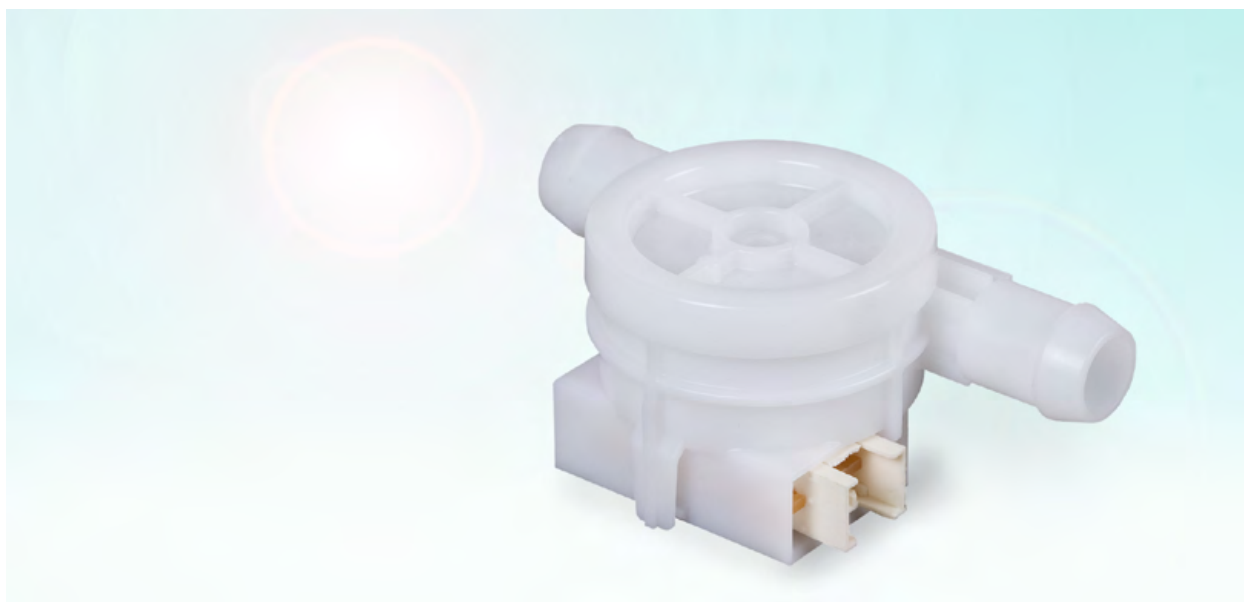


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SERIES 2061 - FLOW SENSORS

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	 / 

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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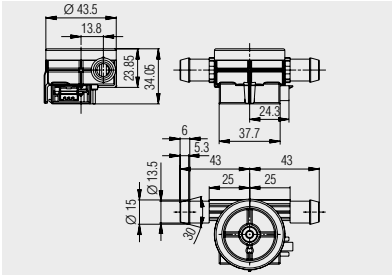



SERIES 2061 - FLOW SENSORS

FOR WATER VOLUMES UP TO 15 L/MIN

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





 Snap fastening SNAP 2.5 hose nozzle

Basic type 2061

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE



SERIES 2066 - ANALOGUE PRESSURE SENSORS

FOR WATER AND AIR PRESSURE MEASUREMENT UP TO 10 BAR



PRODUCT FEATURES

- Magnetic pressure sensor with analogue output
- Long life endurance
- Robust and simple structure
- Linear measuring range
- Fully automatic 100 % test and adjustment
- Versions can be used for drinking water

ON REQUEST

- Different measuring ranges
- Adaptation of the output voltage
- Supply voltage variants
- Integrated digital switching output
- Other electrical / mechanical adaptation

Medium	heating water air water
Measuring range	0-4.5 bar / 0-65 psi / 0-450 kPa 0-10 bar / 0-145 psi / 0-1 MPa
Bursting pressure	> 9 bar / 130 psi / 0.9 MPa > 42 bar / 609 psi / 4.2 MPa (10 bar version)
Medium	+2 °C ... +90 °C
Storage	-40 °C ... +90 °C
Ambient temperature	-10 °C ... +70 °C
Sensor description	maximum current consumption < 14 mA (12 mA typ.)

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE



SERIES 2066 - ANALOGUE PRESSURE SENSORS

FOR WATER AND AIR PRESSURE MEASUREMENT UP TO 10 BAR

	Power supply	Terminal description	Measuring range	Output signal	Miscellaneous	Stock version
Pressure sensor						
2066.2102	5 V DC (ratiometric)	4-pole with plug SNAP 2.5	0-4.5 bar / 0-65 psi / 0-450 kPa	proportional: 1.125 V at 0 bar, 3.6 V at 4.5 bar	plugging flange	
2066.2103	5 V DC (ratiometric)	4-pole with plug SNAP 2.5	0-4.5 bar / 0-65 psi / 0-450 kPa	proportional: 1.125 V at 0 bar, 3.6 V at 4.5 bar	thread flange / external thread G 3/8	
2066.2104	5 V DC (ratiometric)	4-pole with plug SNAP 2.5	0-4.5 bar / 0-65 psi / 0-450 kPa	proportional: 0.5 V at 0 bar, 2.7 V at 4.5 bar	plugging flange	
2066.2105	5 V DC (ratiometric)	4-pole with plug SNAP 2.5	0-4.5 bar / 0-65 psi / 0-450 kPa	proportional: 0.5 V at 0 bar, 2.7 V at 4.5 bar	thread flange / external thread G 3/8	
2066.2106	6 - 30 V DC	3-pole with plug SNAP 2.5	0-4.5 bar / 0-65 psi / 0-450 kPa	proportional: 0.5 V at 0 bar, 3.8 V at 4.5 bar	controlled voltage supply plugging flange	
2066.2107	6 - 30 V DC	3-pole with plug SNAP 2.5	0-4.5 bar / 0-65 psi / 0-450 kPa	proportional: 0.5 V at 0 bar, 3.8 V at 4.5 bar	controlled voltage supply thread flange / external thread G 3/8	
2066.2112	5 V DC (ratiometric)	4-pole with plug SNAP 2.5	0-4.5 bar / 0-65 psi / 0-450 kPa	proportional: 1.125 V at 0 bar, 3.6 V at 4.5 bar	plugging flange	
2066.3101	5 V DC (ratiometric)	3-pole with plug SNAP 2.5	0-10 bar / 0-145 psi / 0-1 MPa	proportional: 0.5 V at 0 bar, 3.5 V at 10 bar	thread flange / external thread G 3/8	
2066.3102	5 V DC (ratiometric)	3-pole with plug SNAP 2.5	0-10 bar / 0-145 psi / 0-1 MPa	proportional: 0.5 V at 0 bar, 3.5 V at 10 bar	plugging flange	

Further information under

WWW.MARQUARDT-SWITCHES.COM

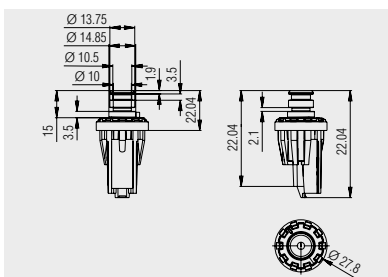


SERIES 2066 - ANALOGUE PRESSURE SENSORS

FOR WATER AND AIR PRESSURE MEASUREMENT UP TO 10 BAR



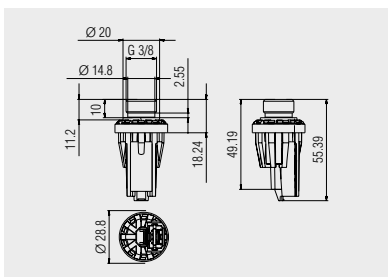
Basic type 2066 (plugging flange)
4.5 bar version



☐ Snap fastening 4-pole with
plug SNAP 2.5



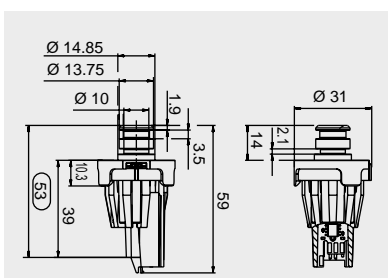
Basic type 2066 (thread flange)
4.5 bar version



☐ Snap fastening 4-pole with
plug SNAP 2.5



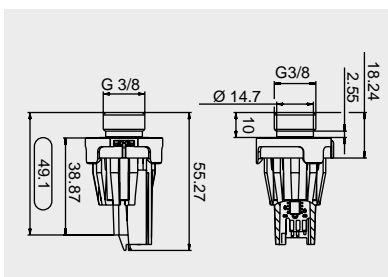
Basic type 2066 (plugging flange)
10 bar version



☐ Snap fastening 3-pole with
plug SNAP 2.5



Basic type 2066 (thread flange)
10 bar version



☐ Snap fastening 3-pole with
plug SNAP 2.5

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

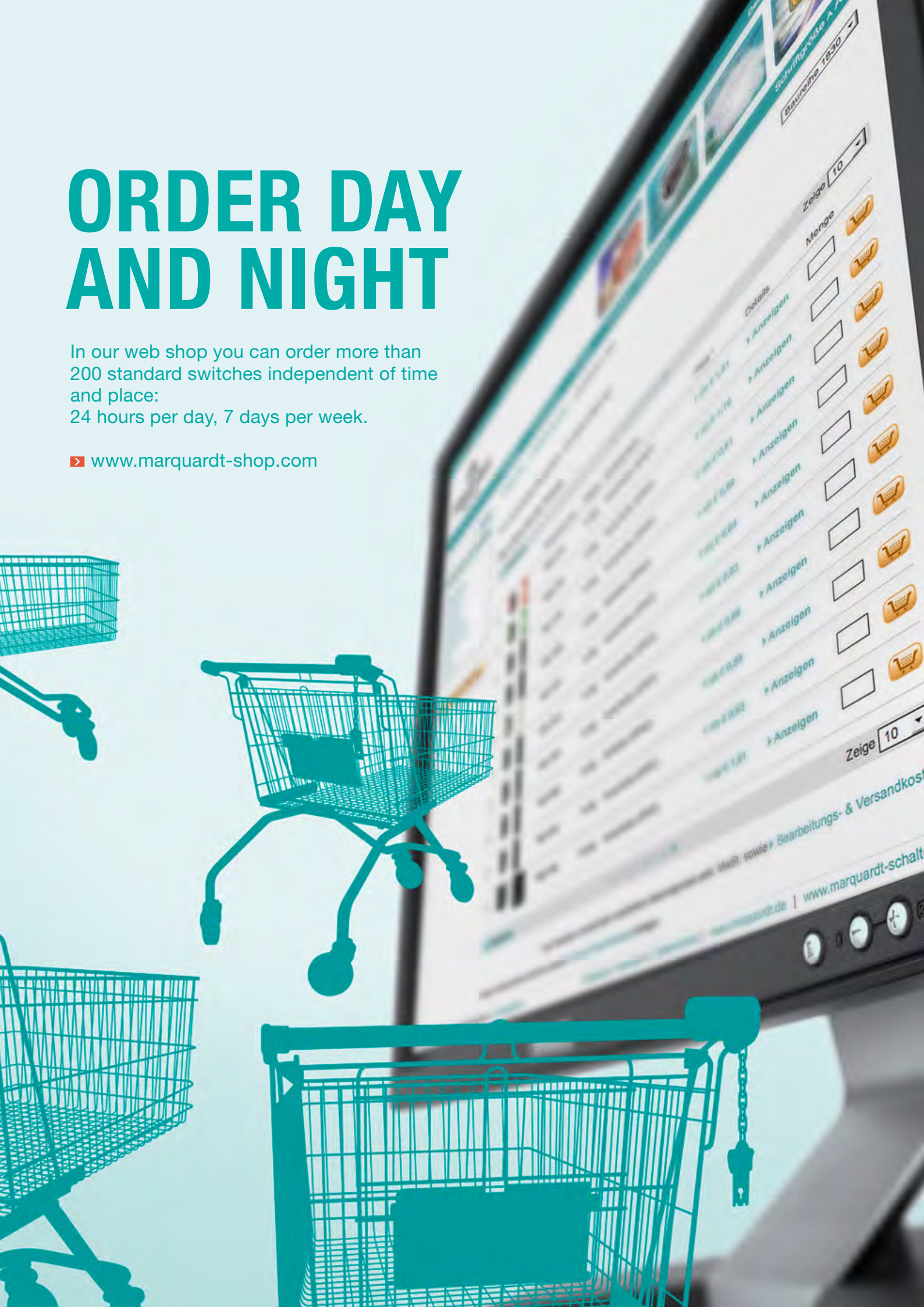
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**SERIES 1550 ECO**

Single-pole rocker switches
to 10 (4) A 250 V AC 1E4



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SERIES 1086 ECO

Single-pole pushbutton switches
to 10 (3) A 250 V AC 1E4



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SERIES 1550 ECO - SINGLE-POLE ROCKER SWITCHES

TO 10 (4) A 250 V AC 1E4





PRODUCT FEATURES

- Automatic switching off with flexible timer
4s - 71 h (auto-off)
- Automatic switching off with signal from
the end device (remote-off)
- 100 million times proven switching principle
- Symmetric actuation characteristic
- Compact, one piece solution
- High design variety
- Auto-off version with intelligent current detection
- Energy neutral through total single-pole galvanic
separation - "Zero-Watt"
- Stable, automatic snap-in from the back

ON REQUEST




















































- Other colors
- Other printing variants
- Other shut off times
- Other lamp variants
- Other installation method
- Other terminal types
- Other trigger types
- Higher electrical rating

Mechanical life endurance	5E4
Contact distance	≥ 3 mm
Contact resistance (new condition)	< 100 mΩ (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MΩ (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	PA PA
Plug force of the terminals	≤ 80 N
Approval marks	 / 
Suitable for appliances of protection class II	



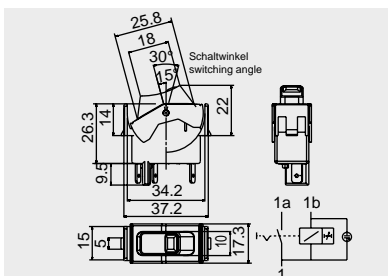
SERIES 1550 ECO - SINGLE-POLE ROCKER SWITCHES


TO 10 (4) A 250 V AC 1E4

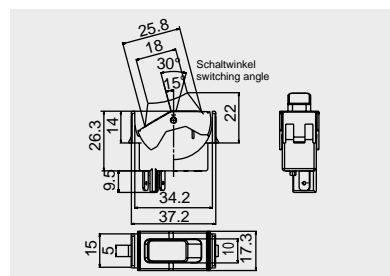
 single-pole	Lighting voltage in V	Actuator color / printing	Housing color	7 A 250 V AC 5E4	10 (4) A 250 V AC 25E3	Terminal type	Terminal description	Contact material	EN 60335 cap. 30 conform "G"	Miscellaneous	Stock version
ON / OFF switch (SPST)											
1550.1940	230						4.8	Ag		auto-off-function auto-off time: t = 30 min.	
1550.1942	230						4.8	Ag		auto-off-function auto-off time: t = 1h with current detection	
1550.1943	230						4.8	Ag		auto-off-function auto-off time: t = 15 min.	
1550.1944	230						4.8	Ag		auto-off-function auto-off time: t = 15 min.	
1550.1950	230						4.8	Ag		remote-off function	
1550.1902	230						4.8	Ag		standard switch without ECO function	
1551.1950							4.8	Ag		remote-off function	
1551.1902							4.8	Ag		standard switch without ECO function	




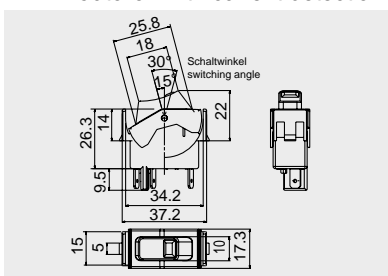
Basic type 1550 ECO




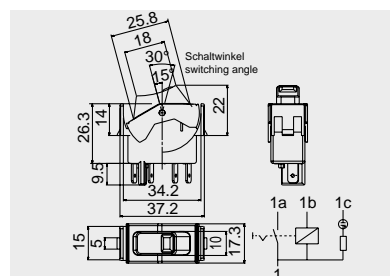
 Quick-connect terminal 4.8 x 0.8
auto-off
auto-off with current detection



 Quick-connect terminal 4.8 x 0.8
ON / OFF standard version



 Quick-connect terminal 4.8 x 0.8
ON / OFF standard version
illuminated



 Quick-connect terminal 4.8 x 0.8
Remote-OFF

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

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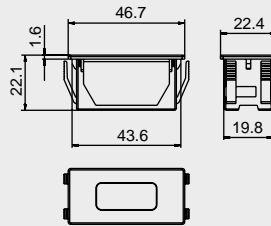


SERIES 1550 ECO - SINGLE-POLE ROCKER SWITCHES

TO 10 (4) A 250 V AC 1E4



Installation frame
217.xxx.xxx



Installation frame with flange and latching from the front side



Holder clamp
on request



Holder clamp made of metall as installation alternative. Switch is delivered with attached clamps.

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

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SENSORS

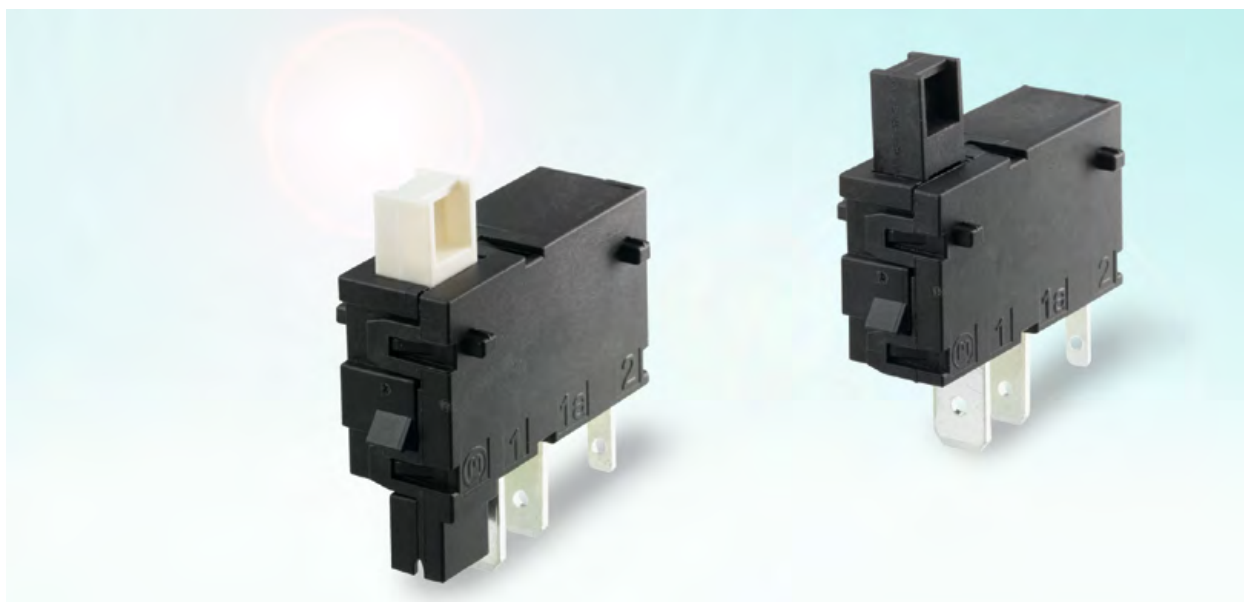
ECO

PUSH 'N' DRIVE



SERIES 1086 ECO - SINGLE-POLE PUSHBUTTON SWITCHES

TO 10 (3) A 250 V AC 1E4





PRODUCT FEATURES

- Automatic switching off with signal from the end device (remote-off)
- Version with auxiliary contact for a delayed shut-off by the end device
- 100 million times proven 1080 snap-action switching system
- Compact, one piece solution
- Variable actuator design with holder
- Energy neutral through total single-pole galvanic separation - "Zero-Watt"

ON REQUEST



- Other terminal variants
- Customized actuators
- Cable assembly
- Higher electrical ratings

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
Protection type	IP 40
Ambient temperature	-40 °C ... +85 °C
Flammability	UL 94 V-0
Glow wire test temperature	850 °C
Material actuator	PA
additional actuator	stainless steel
housing	PA
terminals	silver plated
Approval marks	 / 
Operating force	≤ 2.5 N



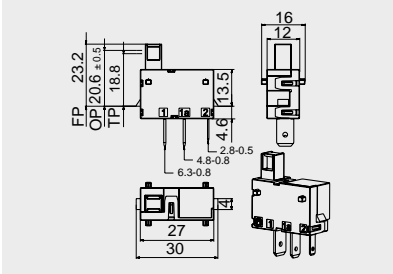
SERIES 1086 ECO - SINGLE-POLE PUSHBUTTON SWITCHES


TO 10 (3) A 250 V AC 1E4

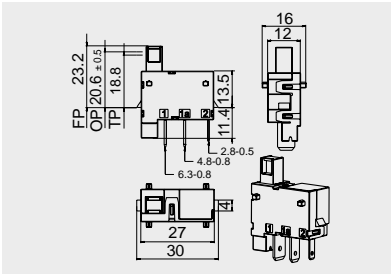
 single-pole	10 (3) A 250 V AC 1E4	Terminal type	Terminal description	Contact distance (mm)	Contact material	Operating force (N)	Free position (FP) max. (mm)	Operating position (OP) (mm)	Permissible total travel position (mm)	EN 60335 cap. 30 conform „G“	Miscellaneous	Stock version
ON / OFF switch (SPST)												
1086.3101	○		2.8 x 0.5 4.8 6.3	> 3	Ag	≤ 2.5	23.2	20.6 ± 0.5	18.8	○		
1086.3201	○		2.8 x 0.5 4.8 6.3	> 3	Ag	≤ 2.5	23.2	20.6 ± 0.5	18.8	○	Remote-off with auxiliary contactor	




Basic type 1086



 Quick-connect terminal
2.8 x 0.5, 4.8 x 0.8, 6.3 x 0.8
1086.3101



 Quick-connect terminal
2.8 x 0.5, 4.8 x 0.8, 6.3 x 0.8
Socket (2.0 mm) for auxiliary contact
1086.3201

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

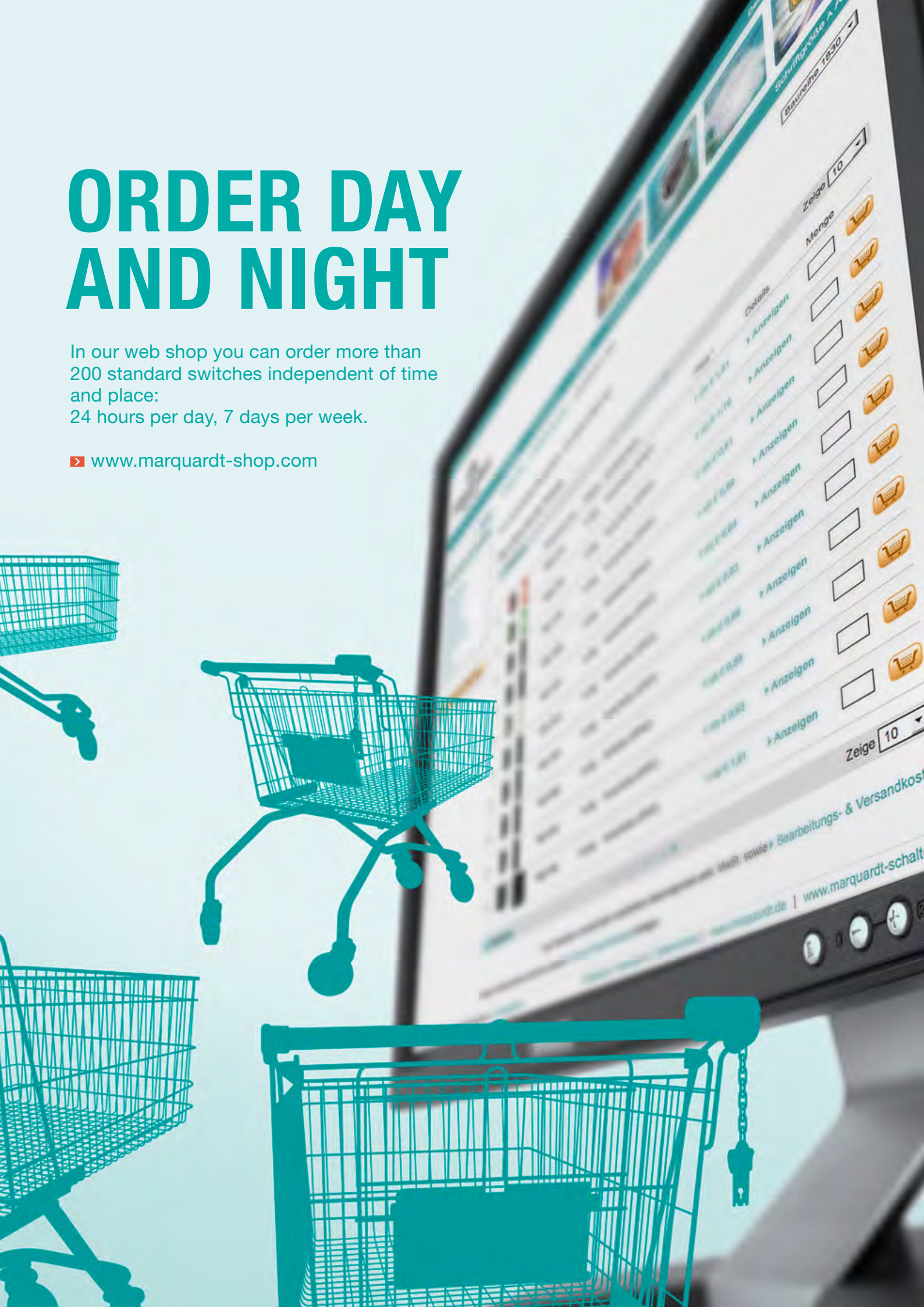
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TOGGLE SWITCHES				
SLIDE SWITCHES				
ROTARY SWITCHES				
FOOT SWITCHES				
TACT AND KEY SWITCHES				
SNAP-ACTION SWITCHES				
MICRO-SIGNAL SWITCHES				
SENSORS				
ECO				
PUSH'N'DRIVE				

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE



SERIES 3450

Push'n'Drive Keyless-Go-System
Universal Keyless-Go-System for
Off-Road Vehicles



➤ PAGE
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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

ECO

PUSH'N'DRIVE



SERIES 3450 – PUSH'N'DRIVE KEYLESS-GO-SYSTEM

UNIVERSAL KEYLESS-GO-SYSTEM FOR OFF-ROAD VEHICLES



PRODUCT FEATURES

- Keyless start of vehicles (keyless) – Push'n'Drive
- Generally available off-the-shelf system
System outputs configurable over CAN-Bus
- Simple adaption with hardwired outputs
- Push'n'Drive using HITAG2 encryption for information exchange between key and ECU
- Simple integration with no additional tooling and development costs
- Good price-performance ratio
- Proven Marquardt technology with numerous premium car companies

ON REQUEST

- With keyless-entry-function
- 24 V-version
- Customer specific key fob
- Solution for fleet management
- Remote keyless-entry-function

Operating voltage	8 – 16 V DC
Sleep current	< 100 µA
Operating temperature	-40 °C ... +85 °C
Frequencies	LF 21.85 KHz (ECU to key) RF 433.92 MHz (key to ECU)
Mechanical life endurance	MTBF 15 years; Key battery life: 5 years (battery changeable)
Mating connector ECU	Tyco 638518–5 sealed 12 pins
Range	Adjustable up to 4 meters
Interfaces	CAN
Security	HITAG 2
Outputs	High-side Driver 0.4 A continuous 2 Relays (NO and NC): - 25 A max. carrying current for 10 minutes - 30 A max. switching current
Inputs	CAN – 2 Wire Hardwire – Momentary switch (start/stop input)
Package	Standard Optional
Protection Type	IP 65 and IP 67

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

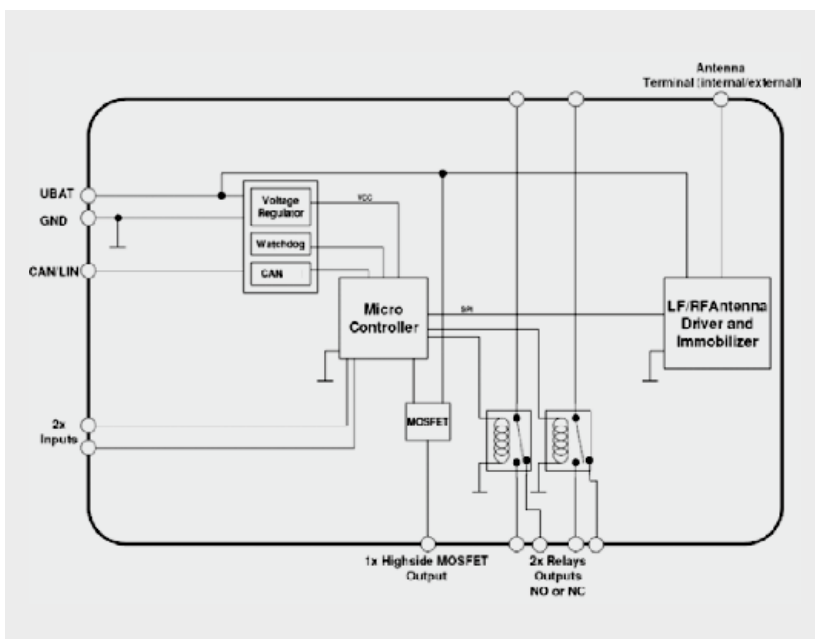
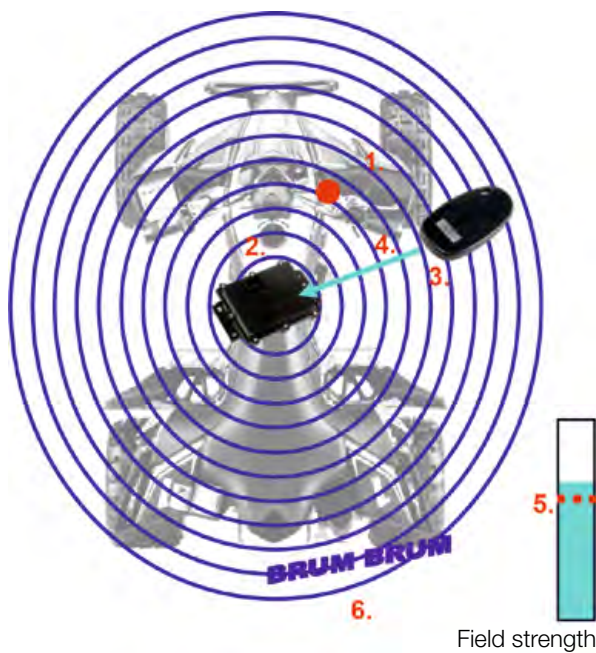
ECO

PUSH'N'DRIVE

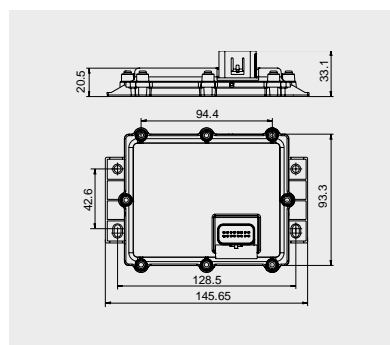
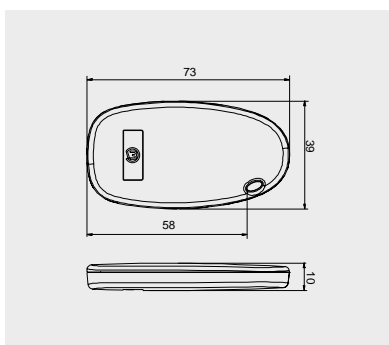
Example system operation:

1. Start/Stop button gets pressed, system wakes up.
2. ECU sends location field to search key.
3. Key picks up field strength.
4. Key sends strength to ECU.
5. ECU compares strength with a predefined threshold.
6. ECU enables functionality when key is in range.

- If valid key is not in range, ECU will search two more times before going back to sleep mode.
- Start/Stop button gets pressed second time, all outputs turn off, ECU goes to sleep mode.



Circuit



Drawings
(dimensions in mm)



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1005.0404	•	500	202
1005.0507			203
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1005.1001	•	500	203
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1005.1101	•	400	202
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1005.1201			202
1005.1204	•	400	202
1005.1207	•	400	202
1005.1226			202
1005.2505			202
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1006.0701	•	400	203
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1045.0122			190
1045.0142			190
1045.0151	•	1000	190
1045.0903	•	1000	190
1045.1103	•	1000	190
1045.1151	•	1000	190
1045.1943			190
1045.2101			190
1045.2251	•	1000	190
1045.2702	•	1000	190
1045.3102	•	1000	190
1045.3151	•	1000	191
1045.4102	•	1000	191
1045.4151	•	1000	191
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1045.5112	•	1000	191
1045.5502	•	1000	191
1045.5512	•	1000	191
1045.6102	•	1000	191
1045.6502	•	1000	191
1045.7102	•	1000	191
1045.7502	•	1000	191
1046.0104	•	1000	191
1046.1103	•	1000	191
1046.2904	•	1000	191
1048.0151	•	1000	191
1048.1102	•	1000	192
1048.1132	•	1000	190
1048.2151	•	1000	192
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1050.0102	•	500	184
1050.0103	•	500	184
1050.0122	•	500	184
1050.0151	•	500	184
1050.0202	•	500	184
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1050.1102	•	500	184
1050.1122	•	500	184
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1050.1151	•	500	184
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1055.8155			179
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1058.0653	•	500	179
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1115.4101	•	200	223
1117.0106	•	500	221
1117.0206	•	500	221
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1247.0102			111
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1247.2102			111
1247.2301			111
1550.1902	•	120	244
1550.1940			244
1550.1942			244
1550.1943			244
1550.1944			244
1550.1950			244
1550.3102			51
1550.3609			51
1551.1303			51
1551.1902	•	120	244
1551.1950			244
1551.2654			51
1551.3102	•	100	51
1551.3103			51
1551.3106			51
1551.3202	•	100	51
1551.3702			51
1552.0102	•	100	52
1552.2601			52
1552.2602	•	100	52
1552.3102	•	100	52
1552.3104			52
1552.3112	•	100	52
1552.3117			52
1552.3602	•	100	52
1552.4602	•	100	52
1552.4702			52
1552.4802			52
1555.3102	•	200	52
1555.3104	•	200	52
1555.3108	•	200	52
1555.3109			52
1555.3111			52
1555.3120			52
1555.3125			52
1555.3604			52
1555.4608			52
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1671.5201			125
1671.5203			125
1672.5101			125
1673.5501			125
1675.5315			125
1681.1101	•	1000	99
1681.1354			99
1681.1702			99
1681.2102			99
1681.3101			99
1681.3104			99
1681.3501			99
1681.3701			99
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1681.4403			99
1681.4431			99
1681.4701			99
1681.5701			99
1681.9408			99
1682.1101			100
1682.1201			100
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1682.3101			100
1682.3201			100
1682.3702			100
1682.6101			100
1682.6401			100
1682.7704			100
1683.1101			106
1683.1201	•	250	106
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1684.1101			106
1684.1701			106
1684.1801			106
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1686.1101			106
1686.6155			106
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1689.4202			100
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1691.3201			109
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1801.1146	•	500	23
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1801.1202	•	500	24
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1801.2106	•	500	23
1801.2202			24
1801.2402			23
1801.2702			23
1801.5102	•	150	23
1801.6101	•	500	23
1801.6102	•	500	23
1801.6115	•	500	23
1801.6122	•	500	22
1801.6130			22
1801.6222	•	500	23
1802.1101	•	250	26
1802.1102	•	250	26
1802.1108	•	250	26
1802.1121	•	250	26
1802.1123	•	250	26
1802.1221	•	250	27
1802.2102	•	250	27
1802.2104	•	250	27
1802.2504			26
1802.3102	•	250	27
1802.3311			26
1802.5103	•	200	27
1802.6123	•	500	26
1802.6152			27
1803.1102	•	500	24
1803.1121			24
1803.1202	•	500	25
1803.1252			25
1803.2102	•	500	24
1803.5102			24
1803.6102	•	500	24
1803.6152			24
1803.6222	•	500	25
1804.1102	•	250	27
1804.1125			27
1804.1225			28
1804.2102	•	250	27
1804.6121	•	250	27
1805.6102			26
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1805.7109	•	250	26
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1808.2102	•	500	25
1808.2302	•	500	25
1808.2704			25
1808.6102	•	500	25
1808.6103	•	500	25
1808.6202			25
1808.6302	•	500	25
1809.1102	•	250	27
1809.1202			27
1809.1302	•	250	28
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1811.1102	•	400	133
1811.1202			133
1812.1102			133
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1819.1302	•	200	133
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1821.6101	•	250	136
1822.1101	•	125	136
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1824.1101	•	125	136
1828.1101	•	250	136
1828.1201			136
1828.1301	•	250	136
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1830.3118	•	200	57
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1831.1107	•	200	57
1831.1202	•	200	58
1831.1253			58
1831.3311	•	200	57
1831.3312	•	200	57
1831.3313	•	200	57
1831.3402	•	200	58
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1831.3607			57
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1831.3933			57
1831.8112	•	200	57
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1834.3309	•	100	62
1834.3311			61
1834.3312	•	100	61
1834.3402	•	100	63
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1835.3105	•	150	60
1835.3107			60
1835.3108	•	150	60
1835.3111			60
1835.3112	•	150	60
1835.3114	•	150	60
1835.3116			60
1835.3118	•	150	60
1835.3419			60
1835.3802			61
1835.3902			59
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1838.1502	•	250	58
1838.1509	•	250	58
1838.1602	•	250	58
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1838.3502	•	250	59
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1839.1407	•	150	62
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1846.3201	•	400	115
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1855.0108	•	400	43
1855.1102	•	400	43
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1855.1108	•	400	43
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1858.1102	•	300	46
1858.1103	•	800	46
1858.1104			46
1858.1105			46
1858.2202	•	300	46
1858.2204			46
1858.4202	•	200	46
1858.4205	•	200	46
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1881.1103	•	500	39
1881.1104	•	500	39
1881.1105	•	500	39
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1939.3314	•	100	73
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2410.0501	•	10	156
2410.1001	•	10	156
2420.0101	•	12	159
2420.0102	•	12	159
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ROCKER SWITCHES

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TOGGLE SWITCHES

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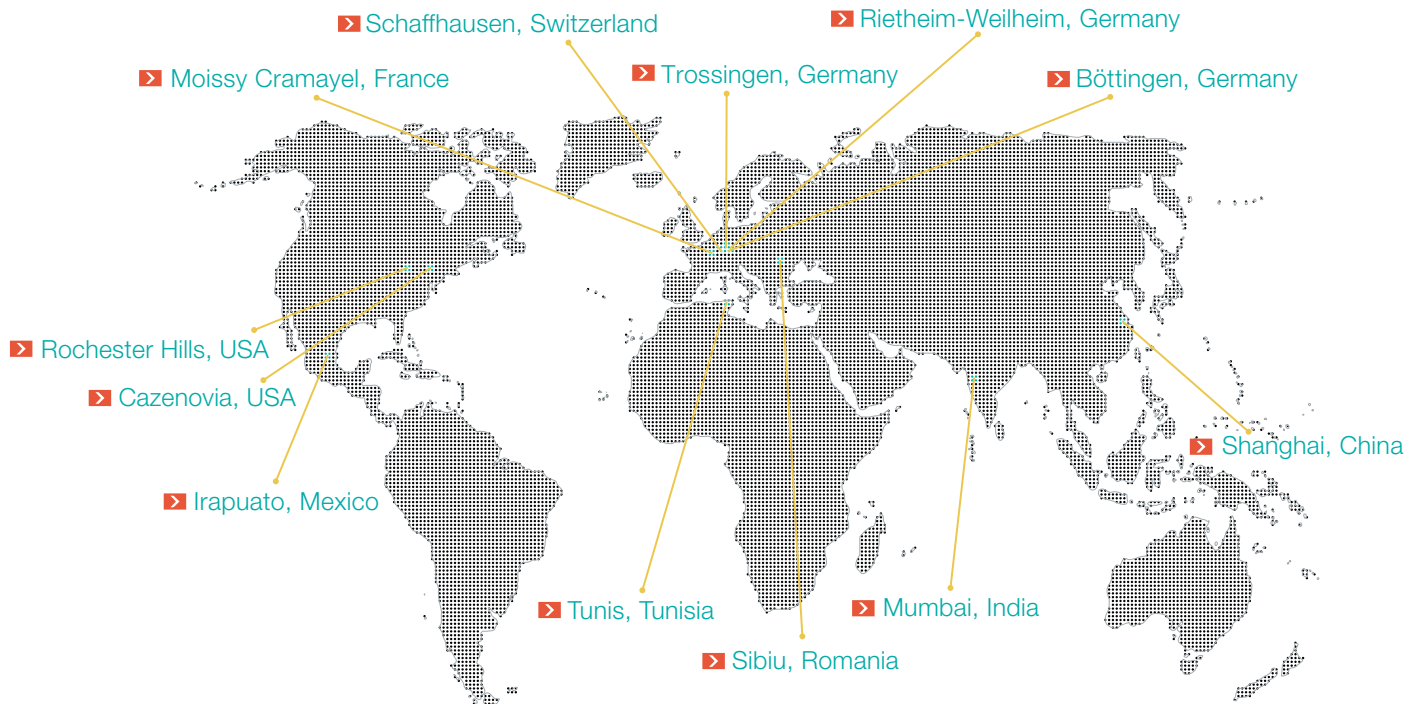
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