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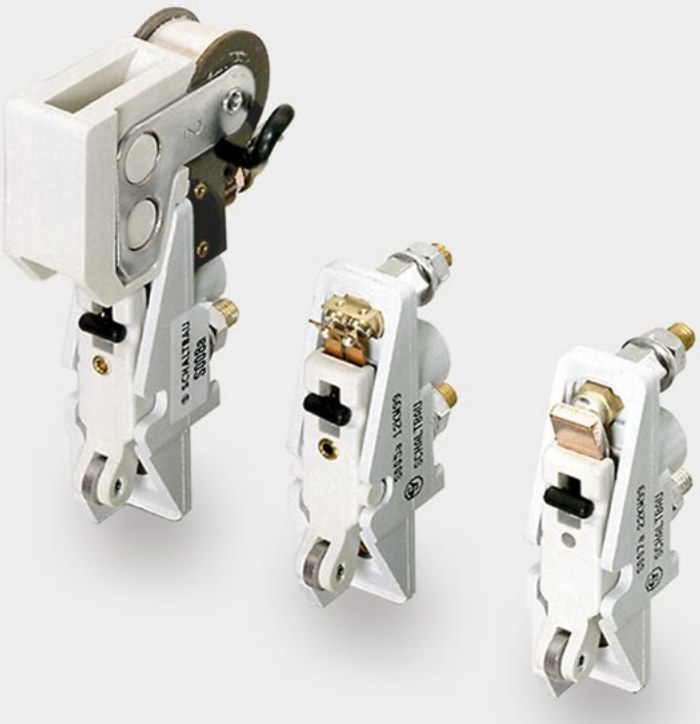
Contactors

S005, S007, S008 series

Cam-switch elements

Catalogue B42.en



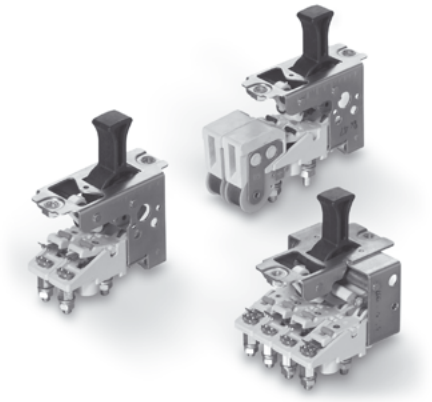
More information
schaltbau.com

S005 / S007 / S008 – Cam-operated switching elements

Cam-operated switching elements from Schaltbau continue the success of our S800, S826 and S847 Series snap-action switches allowing for the direct switching of high currents up to 60 A.

Cam switching elements are operated by cam disks, so both the operating position and the operating sequence can be determined arbitrarily. There are three different series available to meet the requirements of various AC and DC applications.

Cam-operated switching elements are typically used as auxiliary switches of contactors, and as constituents in camshaft gear, toggle switch devices, key switches, and applications with special requirements as to switching capacity.



Example: Toggle switch devices with cam-operated switching elements

Features

- Suitable for DC and AC applications
- Current carrying capacity up to 60 A
- Operated by cams or cam disks (maximum diameter 100 mm)
- Actuating forces dependent on corresponding contact pressure
- Fastening with only one screw
- Easy mounting and replacement
- Rated impulse withstand voltage 400 V at PD3 in accordance with IEC 60947-1
- Special designs to suit customer requirements

Maximum breaking capacity

The value of the maximum breaking capacity of a cam-operated switching element is shown in the curves assigned to the Specifications of its series.

The curves represent the maximum breaking capacity at which arc extinction is just about possible. Breaking capacity is a physical value which cannot be universally determined. It depends on various interactive factors such as type of current, voltage, amperage, switching rate, or mounting position (e.g. contacts of toggle switches pointing downwards). So, if the maximum is required of one of these factors, almost all the other conditions must be reduced correspondingly.

In practice it is not recommended to use a cam-operated switching element at its maximum breaking capacity if a meaningful lifetime is expected. Usage at 20% ... 60% of maximum breaking capacity should give a satisfactory electrical life.

S005 series

Features:

- Reliable contact by way of bifurcated flexible contact reeds
- Self-cleaning contacts:
  The tips of the flexible contact reeds wipe across the fixed contacts before full contact pressure is reached. This results in a very effective cleaning of the contact points.
- Suitable for switching low voltages and currents

Ordering code

Example: **S005 A**

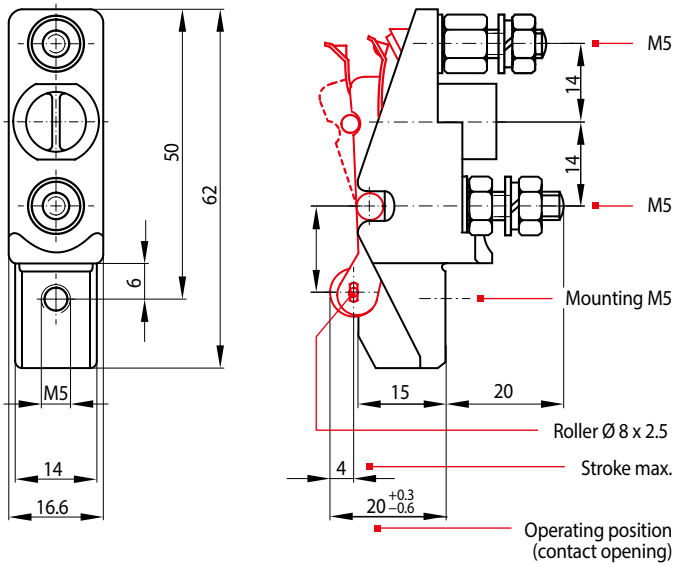
Series

S005	Cam-switching element

Index

A	Conventional thermal current I_{th} = 15 A

Dimension diagram



Specifications

Series	S005 A
Conventional thermal current I_{th}	15 A
Rated insulation voltage U_i Overvoltage category Polution degree	600 V * OV3 PD3
Contact type	1 NC
Protection degree	IP00
Mechanical switching rate	60 operating cycles/min.
Electrical switching rate	10 ... 60 oper. cycles/min depending on load
Mechanical life	> 1 million operations
Actuating force	4 N
Actuator travel	max. 4 mm
Temperature range	-25°C ... +70°C
Terminal screws »d«	M5
Weight	approx. 35 g

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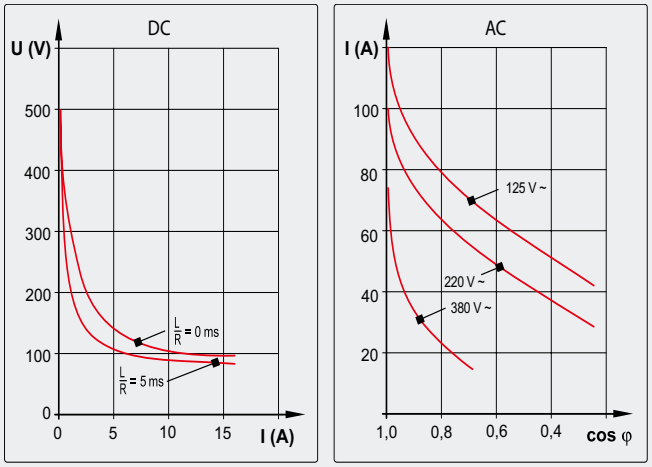
* *only if switching cam/cam disk is mad of insulated material and the mechanical fastening is also insulated, otherwise* ***U_i = 600 V, OV2, PD3*** *or* ***U_i = 300 V, OV3, PD3*** *.*

Subject to change

Maximum breaking capacity Series S005



S007 series

Features:

- Both fixed contact and contact bridge hardsilver-plated
- Long operating life
- Mechanically rigid contacts
- Rugged design

Ordering code

Example: **S007 A**

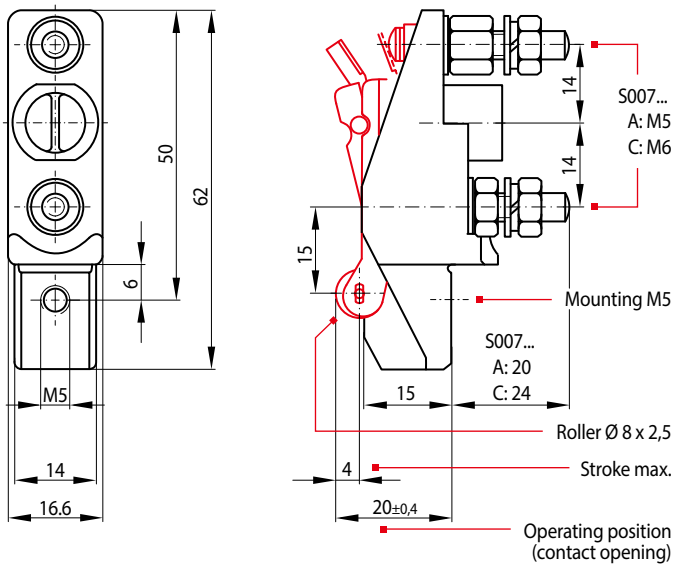
Series

S007	Cam-switching element

Index

A	Conventional thermal current I_{th} = 25 A
C	Conventional thermal current I_{th} = 60 A

Dimension diagram



Specifications

Series	S007 A	S007 C
Conventional thermal current I_{th}	25 A	60 A
Rated insulation voltage U_i Overvoltage category Polution degree	600 V * OV3 PD3	
Contact type	1 NC	
Protection degree	IP00	
Mechanical switching rate	120 operating cycles/min.	
Electrical switching rate	10 ... 60 oper. cycles/min depending on load	
Mechanical life	> 3 million operations	
Actuating force	4 N	
Actuator travel	max. 4 mm	
Temperature range	-25°C ... +70°C	
Terminal screws »d«	M5	M6
Weight	approx. 40 g	

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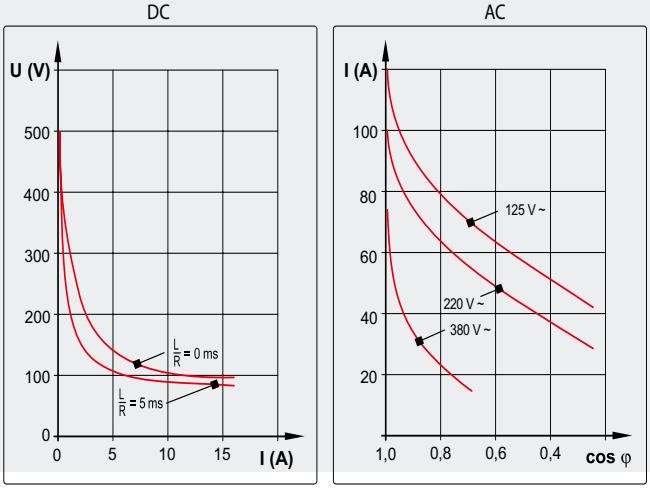
* *only if switching cam/cam disk is mad of insulated material and the mechanical fastening is also insulated, otherwise* ***U_i = 600 V, OV2, PD3 or U_i = 300 V, OV3, PD3*** .

Maximum breaking capacity Series S005



Subject to change

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S008 series with electromagnetic blowout

Features:

- Electromagnetic blowout with tape-wound coil for extension of breaking capacity
- Suitable for switching DC and AC voltages
- Termination irrespective of polarity
- Both fixed contact and contact bridge hardsilver-plated
- Long operating life
- Mechanically rigid contacts
- Rugged design

Ordering code

Example: **S008 G**

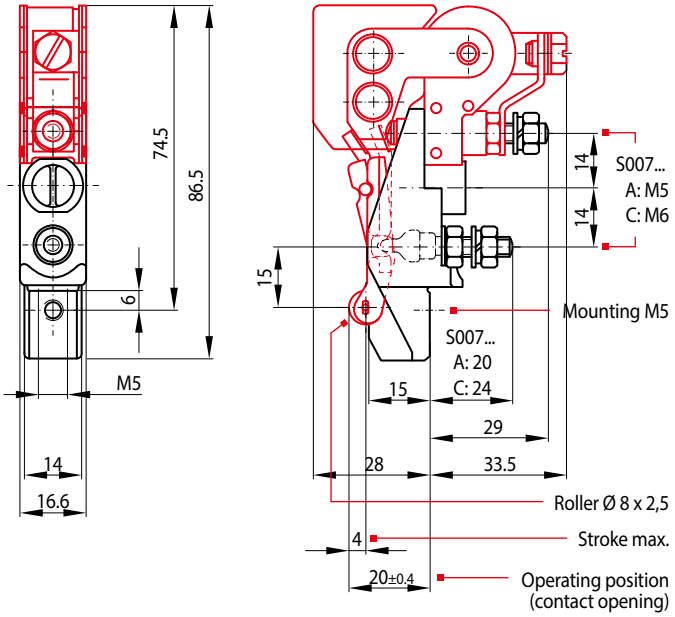
Series

S008	Cam-switching element

Index

G	Conventional thermal current I_{th} = 25 A
K	Conventional thermal current I_{th} = 60 A

Dimension diagram



Specifications

Series	S008 G	S008 K
Conventional thermal current I_{th}	25 A	60 A
Rated insulation voltage U_i Overvoltage category Polution degree	600 V * OV3 PD3	
Contact type	1 NC	
Protection degree	IP00	
Mechanical switching rate	120 operating cycles/min.	
Electrical switching rate	10 ... 60 oper. cycles/min depending on load	
Mechanical life	> 3 million operations	
Actuating force	4 N	
Actuator travel	max. 4 mm	
Temperature range	-25°C ... +70°C	
Terminal screws »d«	M5	M6
Weight	approx. 100 g	

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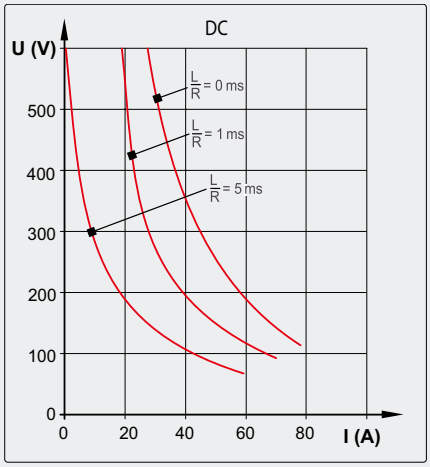
* *only if switching cam/cam disk is mad of insulated material and the mechanical fastening is also insulated, otherwise* ***U_i = 600 V, OV2, PD3*** *or* ***U_i = 300 V, OV3, PD3*** *.*

Subject to change

Maximum breaking capacity Series S008



S008 series with permanent-magnetic blowout

Features:

- Permanent-magnetic blowout for increased breaking capacity in DC applications
- Polarity is important with permanent-magnetic blow-out. Positve terminal bolt clearly marked „+“.
- Arc chamber is hinged for inspection of contacts
- Both fixed contact and contact bridge are hardsilver-plated
- Amperages are embossed in blowout assembly
- Long operating life
- Mechanically rigid contacts
- Rugged design

Ordering code

Example: **S008 P5**

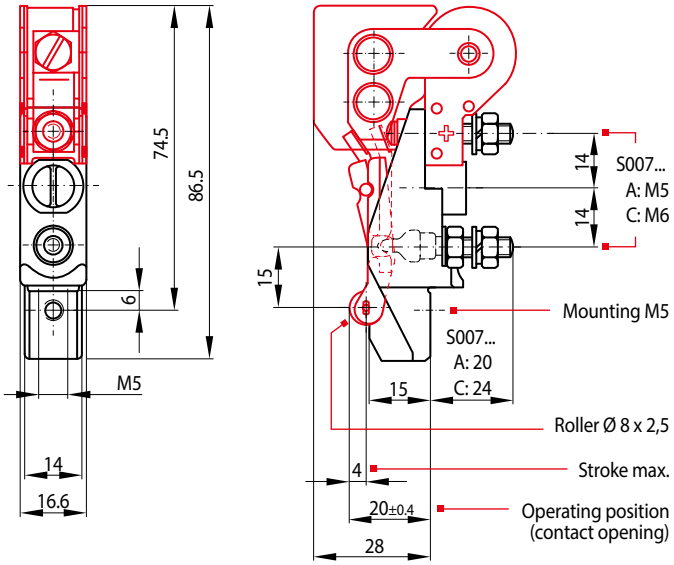
Baureihe

S008	Cam-switching element

Montage

P5	Conventional thermal current I_{th} = 25 A
P6	Conventional thermal current I_{th} = 60 A

Dimension diagram



Specifications

Series	S008 P5	S008 P6
Conventional thermal current I_{th}	25 A	60 A
Rated insulation voltage U_i Overvoltage category Polution degree	600 V * OV3 PD3	
Contact type	1 NC	
Protection degree	IP00	
Mechanical switching rate	120 operating cycles/min.	
Electrical switching rate	10 ... 60 oper. cycles/min depending on load	
Mechanical life	> 3 million operations	
Actuating force	4 N	
Actuator travel	max. 4 mm	
Temperature range	-25°C ... +70°C	
Terminal screws »d«	M5	M6
Weight	approx. 100 g	

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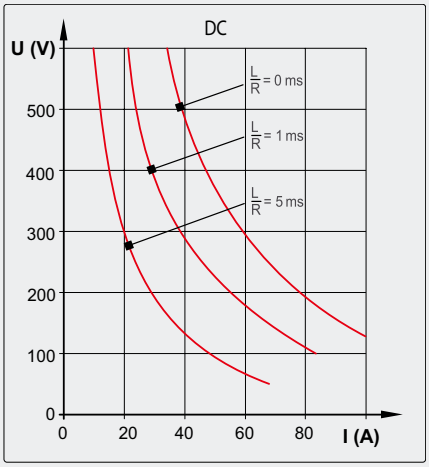
* *only if switching cam/cam disk is mad of insulated material and the mechanical fastening is also insulated, otherwise* ***U_i = 600 V, OV2, PD3*** *or* ***U_i = 300 V, OV3, PD3*** .

Maximum breaking capacity Series S008



Dimensions in mm / Subject to change

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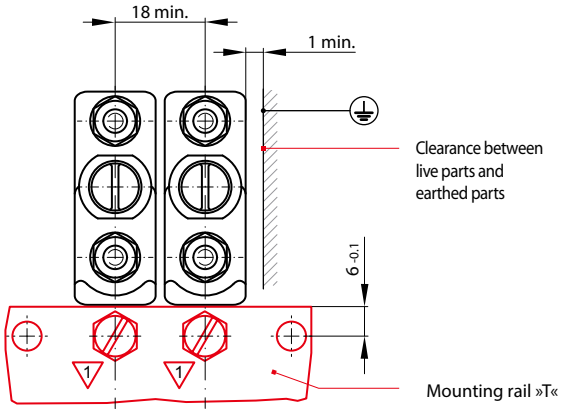
Mounting instructions

Mechanical fastening

- Ganging of cam-operated switching elements of all series by fixing to a mounting rail



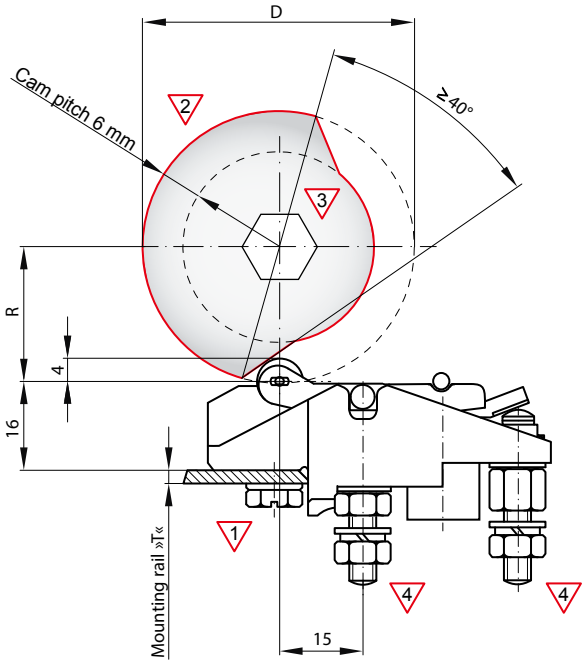
Assembly and installation tips:

1. M5 screw for fastening the switching element to the mounting rail must be 6 mm min. up to 7 mm longer than dimension »T«.
2. Cam pitch of cam disk must be at least 6 mm min.
3. Diameter of cam disk 40 mm min. up to 100 mm max.
4. Max. tightening torque 2 Nm for both terminal nuts / max. tightening torque 3 Nm for screw M5

Note:
Ensure that the wiring has adequate strain relief!

Actuation

- Schaltbau S005, S007 and S008 Series switching elements are designed to be operated by cams or cam disks. For this type of actuation the recommended minimal angle of actuation is 40 degrees, which should be strictly observed (see dimension diagram below). In addition to that, the actuating speed is of no less importance – too slow a speed can lead to increased loss of contact material. When planning new projects it is, therefore, highly advisable to do tests beforehand.
- The minimal width of cams and cam disks respectively should be 4 mm.



Disk diameter D (mm)	Distance R (mm)
40	20
40	30
100 (max.)	50

Schaltbau GmbH

For detailed information on our products and services visit our website – or give us a call!

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with compliments:

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Certified to DIN EN ISO 14001 since 2002. For the most recent certificate visit our website.

Schaltbau GmbH ISO 9001 certified since 1994

Certified to DIN EN ISO 9001 since 1994. For the most recent certificate visit our website.

Electrical Components and Systems for Railway Engineering and Industrial Applications

Connectors

- Connectors manufactured to industry standards
- Connectors to suit the special requirements of communications engineering (MIL connectors)
- Charging connectors for battery-powered machines and systems
- Connectors for railway engineering, including UIC connectors
- Special connectors to suit customer requirements

Snap-action switches

- Snap-action switches with positive opening operation
- Snap-action switches with self-cleaning contacts
- Snap-action switch made of robust polyetherimide (PEI)
- Snap-action switch with two galvanically isolated contact bridges
- Special switches to suit customer requirements

Contactors
Emergency disconnect switches

- Single and multi-pole DC contactors
- High-voltage AC/DC contactors
- Contactors for battery powered vehicles and power supplies
- Contactors for railway applications
- Terminal bolts and fuse holders
- DC emergency disconnect switches
- Special contactors to suit customer requirements

Electrics for rolling stock

- Equipment for driver's cab
- Equipment for passenger use
- High-voltage switchgear
- High-voltage heaters
- High-voltage roof equipment
- Equipment for electric brakes
- Design and engineering of train electrics to customer requirements

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