

Product description

The 2 pole, rocker actuated version of the TA45 line of thermal CBE's can be used for various purposes. Basically it is a CBE for automatic interruption of overloads with facilities for regular manual ON/OFF switching operations under normal load conditions. It is capable of interrupting moderate short circuit currents without the aid of back-up protection.

A special version is available as a «CBE-switch», in which the means for automatic overcurrent interruption (the bimetal releases), are omitted.

Another available version of this line utilizes an undervoltage release to protect persons against injuries caused by unexpected events like the automatic restarting of motors after a power failure. This release can be combined with the thermal release required for overcurrent protection. Protection against injuries is also provided by another CBE of this line, which prevents the starting of a machine should a protective cover be removed from dangerous parts of the machine.

Available options

- CBE for overcurrent protection
1 or 2 protected poles (thermal)
- CBE with undervoltage release:
The CBE will open automatically when the voltage drops below the trip level. Only when the supply voltage has reached the reset level, the CBE can be reclosed manually.
- CBE switch with mechanical lock-out latch:
A spring loaded pin will trip the CBE if a protective cover of the equipment is removed. The CBE can not be switched ON until the protective cover is refitted.
- CBE with remote trip release:
The remote trip release permits the CBE to be tripped by an external contact (sensor) energizing the trip coil.
- CBE with auxiliary contact:
All types of the line can be outfitted with an auxiliary contact (changeover contact).

TA45 is positively trip-free. The rated current range is 0,05 to 20 A at AC 240 V / DC 60 V . The CBE comes with snap-in mounting. The rocker is available in various colours and also with illumination. It is approved in all major industrial countries and complies with the CBE-standard EN60934. In conjunction with its accessories the TA45 product line of Schurter paves the way for new unconventional applications.

Applications

- Motors
- Power supplies
- Processing machines
- Etc.

Effect of ambient temperature

The unit is calibrated for an ambient temperature of +23°C. To determine the rated current for a lower or higher ambient temperature, use a correction factor from the table below:

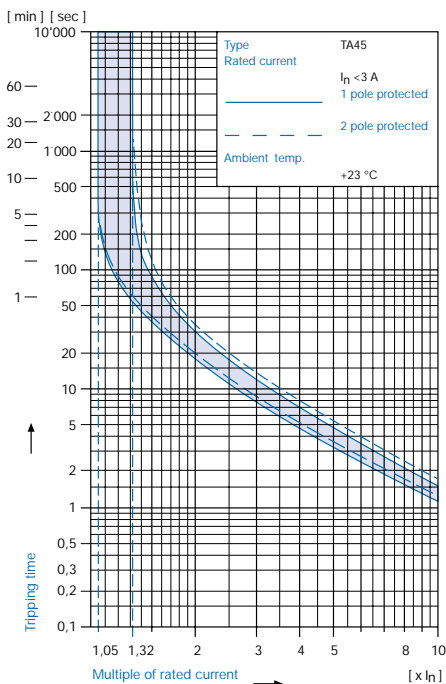
*Ambient temperature [°C]	Correction factor
-10	0,89
-5	0,91
0	0,92
+23	1,00
+30	1,03
+40	1,08
+55	1,16

Example

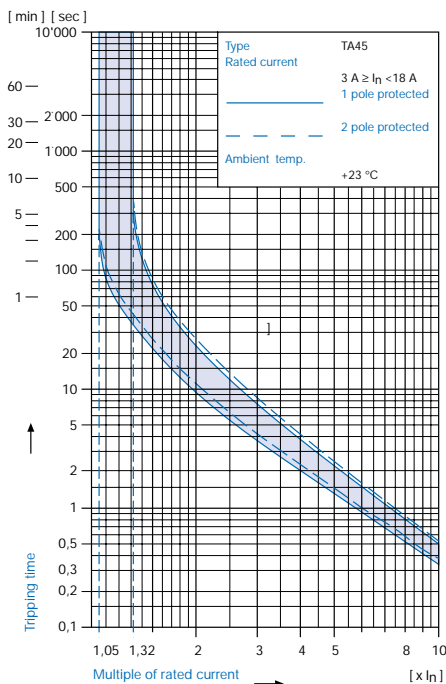
Rated current at +23°C 5,0 A
 Ambient temperature +40°C
 Correction factor 1,08
 Chosen rated current at
 +40°C ambient temperature
5 A x 1,08 = 5,5 A

*Temperature must be measured at the rear of the breaker next to the terminals after equipment operating temperature has been reached.

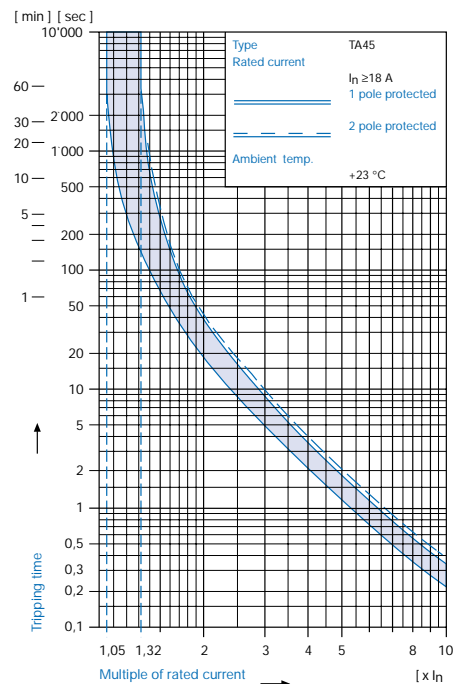
Tripping characteristics
 $I_n < 3 A$



Tripping characteristics
 $3 A \geq I_n < 18 A$



Tripping characteristics
 $I_n \geq 18 A$



Technical data		
Rated voltage U_e	See approvals page 59	AC 240 V; DC 60 V
Rated current I_n	See approvals page 59	AC/DC 0,05 A – 20 A
Conditional short circuit current I_{nc}	EN 60934, PC1, AC 240 V	1000 A
Short circuit capacity I_{cn}	AC 240 V with $I_n < 3$ A (number of cycles: 3) AC 240 V with $I_n \geq 3$ A (number of cycles: 3) DC 60 V with $I_n < 3$ A (number of cycles: 3) DC 48 V with $I_n \geq 3$ A (number of cycles: 3)	$10 I_n$ 300 A $10 I_n$ 120 A
Degree of protection	Accessible range With accessoris Terminal side With accessoires	IP40 IP54, IP65 IP00 IP40
Dielectric strength	Accessible range	AC 4000 V
Insulation resistance	DC 500 V	>100 M Ω
Endurance	Number of cycles at I_n (AC 240 V; DC 60 V) Number of cycles at $6 \times I_n$ (AC 240 V) Number of cycles at $4 \times I_n$ (DC 60 V)	50'000 x 40 x 40 x
Permissible ambient temperature		-10°C to +55°C
Resistance to vibration	IEC 60068-2-6, test Fc, 0.75 mm amplitude 5-60 Hz, 60-500 Hz	10 g
Shock resistance	IEC 60068-2-27, test Ea	30 g
Type of tripping	<ul style="list-style-type: none"> • Thermal positively trip-free • Undervoltage release (Zero-voltage release) • Remote trip • Mechanical lock-out latch 	
Weight		approx. 35 g

Technical data (continued)
Auxiliary contact (changeover)

Rated voltage	DC 28 V	DC 60 V	AC 240 V
Rated current	Max. 10 A resistive load	max. 2 A resistive load	max. 2 A cos φ 0,7

Undervoltage release

Max. operating voltage							1,1 U _e
Rated operating voltage U _e	5 V	12 V	24 V	48 V	120 V	240 V	
Current consumption (±10%)	10,5 mA	16,5 mA	17,0 mA	3,2 mA	3,7 mA	3,1 mA	
Highest reset level							0,85 U _e
Lowest trip level							0,20 U _e
Trip delay							20 ms – 50 ms
Impuls withstand voltage (1,2 / 50 μs)							≥4 kV

Remote trip

Permissible impuls duration of the make contact (no)	(Between terminal C and P1)	unlimited
Electrical load of the make contact (no)	Current max. 12 mA / power max. 1,1 W	

Approvals

			Rated current range	Rated voltage	Rated voltage
			AC	AC	DC
	UL	UL 1077	0,05 – 20 A	240 V	60 V
	CSA	CSA C22.2 235	0,05 – 20 A	240 V	60 V
	VDE	EN 60934	0,05 – 20 A	240 V	60 V
	SEMKO	EN 60934	0,05 – 20 A	250 V	60 V
	SEV	EN 60934	0,05 – 20 A	240 V	60 V

Order code 2 pole, rocker actuated

Basic type			Without thermal overload protection			
Auxiliary contact (changeover) Shunt terminal						
Terminal type	Quick connect terminal Screw type terminal (lineside P1, P2)		•	•	•	•
Snap-in type	Dimensions	Page	63	64	66	67
ON/OFF switch	Without illumination		ABC	AHC	APC	ASC
	With illumination	220 V...240 V	A02	A52	AK2	A2K
		110 V...120 V	A04	A54	AK4	A4K
		20 V...26 V	A07	A57	AK7	A7K
		10 V...13 V	A08	A58	AK8	A8K
4 V...7 V	A09	A59	AK9	A9K		
Impulse switch	Without illumination		AEC	AJC	ARC	AUC

Colours	
Switch front	Rocker
W black 1 black B black R black 3 black G black 4 black Y black X black 6 black	 white - clear transp. black red - red transp. green - green transp. yellow orange - orange transp.



Rocker legend		
Surface	Illustration	Colour of print
F embossed	I 0	
H printed	ON OFF	white
K printed	ON OFF	black
L printed	I 0	white
M printed	I 0	black
P printed	I 0	white
R printed	I 0	black
S printed	ON OFF	white
T printed	ON OFF	black

Without thermal overload protection: code C00

With thermal overload protection: rated current I_n (A)

I_n	Code	I_n	Code	I_n	Code	I_n	Code
0,05	Z05	1,2	J12	2,5	J25	9,0	090
0,1	J01	1,3	J13	2,8	J28	10,0	100
0,2	J02	1,4	J14	3,0	030	11,0	110
0,3	J03	1,5	J15	3,5	035	12,0	120
0,4	J04	1,6	J16	4,0	040	13,0	130
0,5	J05	1,7	J17	4,5	045	14,0	140
0,6	J06	1,8	J18	5,0	050	15,0	150
0,7	J07	1,9	J19	6,0	060	16,0	160
0,8	J08	2,0	J20	6,5	065	17,0	170
0,9	J09	2,1	J21	7,0	070	18,0	180
1,0	J10	2,2	J22	7,5	075	19,0	190
1,1	J11	2,3	J23	8,0	080	20,0	200

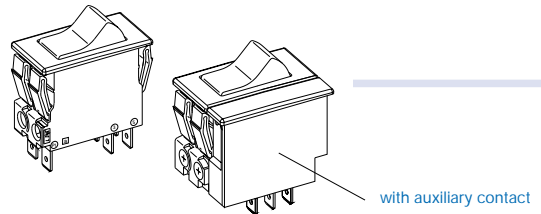
other rated currents on request / andere Stromwerte auf Anfrage

1 pole thermal overload protection

2 pole thermal overload protection

63 64	63 64	66 67	66 67	63 64	63 64	66 67	66 67
ABT AHT	ABF AHF	APT AST	APF ASF	ABD AHD	ABG AHG	APD ASD	APG ASG
A12 A62	A22 A72	AL2 A2L	AM2 A2M	A32 A82	A42 A92	AN2 A2N	AP2 A2P
A14 A64	A24 A74	AL4 A4L	AM4 A4M	A34 A84	A44 A94	AN4 A4N	AP4 A4P
A17 A67	A27 A77	AL7 A7L	AM7 A7M	A37 A87	A47 A97	AN7 A7N	AP7 A7P
A18 A68	A28 A78	AL8 A8L	AM8 A8M	A38 A88	A48 A98	AN8 A8N	AP8 A8P
A19 A69	A29 A79	AL9 A9L	AM9 A9M	A39 A89	A49 A99	AN9 A9N	AP9 A9P
AET AJT	AEF AJF	ART AUT	ARF AUF	AED AJD	AEG AJG	ARD AUD	ARG AUG

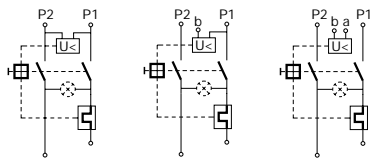
Accessories see page 62



Without release / lock-out latch: code C0

Detail see pages 52 – 54

Undervoltage release

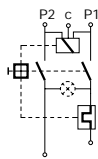


U*

E*

Z

Remote trip release



A*

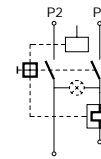
Code

	2
	3
	4
	6
	7
	8
	9

Rated voltage U_n
AC (V)

240
230
120
AC / DC (V)
48
24
12
5

Mechanical lock-out latch



S0

* Release U, E and A in combination with screw clamp terminals on request

Order code accessories 2 pole, rocker actuated

Factory mounted

	AZM01 Collar with cover, 2 pole, IP54 Preferred type: improved seal between cover and panel
	AZM02 Raised collar with cover, 2 pole IP54 Preferred type: improved seal between cover and panel
	AZM03 Raised collar, 2 pole, IP40
	AZM10 Collar with cover, narrow, 2 pole, IP54
	AZM11 Partially raised collar with cover, narrow, 2 pole, IP54
	AZM12 Partially raised collar without cover, narrow, 2 pole, IP40
	AZM13 Raised collar narrow, 2-pole, IP40
	AZM14 Raised collar, with cover narrow, 2-pole, IP54

Dimensions see page 65

For subsequent fitting

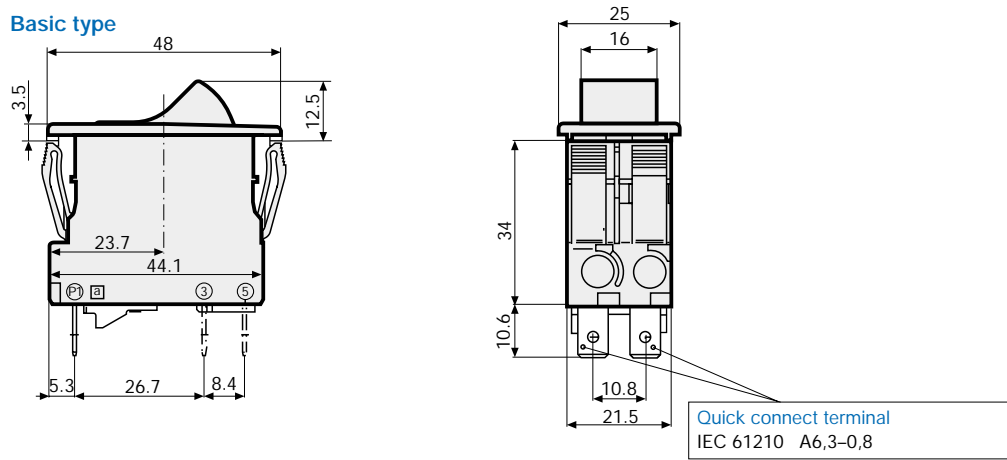
	AZZ04 Screw-on collar with cover, 2 pole, IP65
	AZZ51 Rear cover, 2 pole, IP40
	AZZ31 Flat gasket, 2 pole, IP54

AZZ04

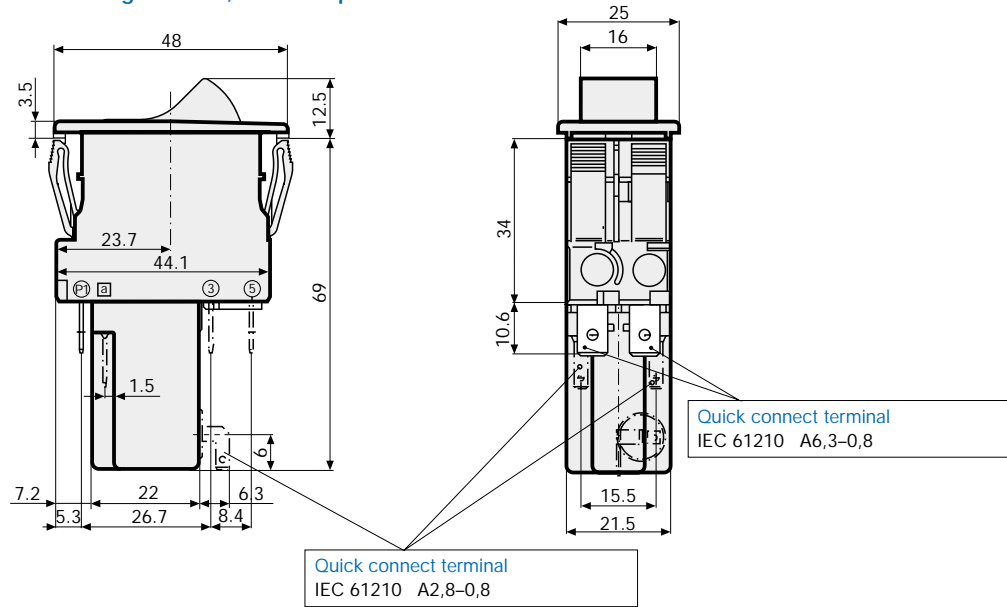
Order example

Quick connect terminals

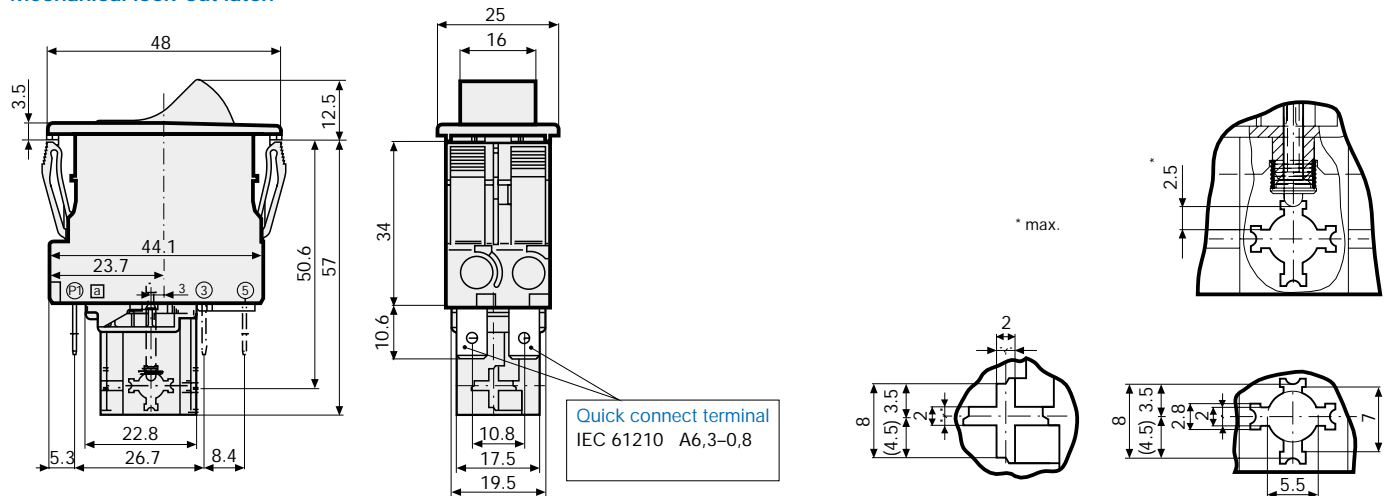
Basic type



Undervoltage release, remote trip release

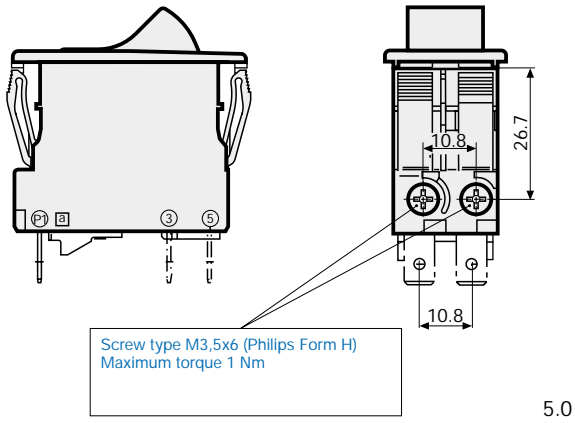


Mechanical lock-out latch



Screw clamp terminal

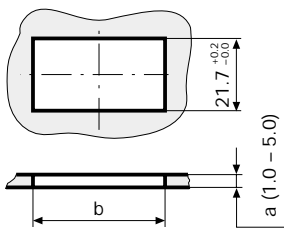
Basic type



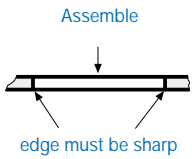
5.0

Cut-out and pin-out

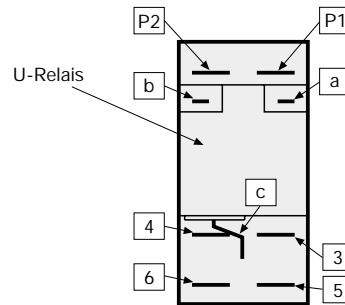
Cut-out



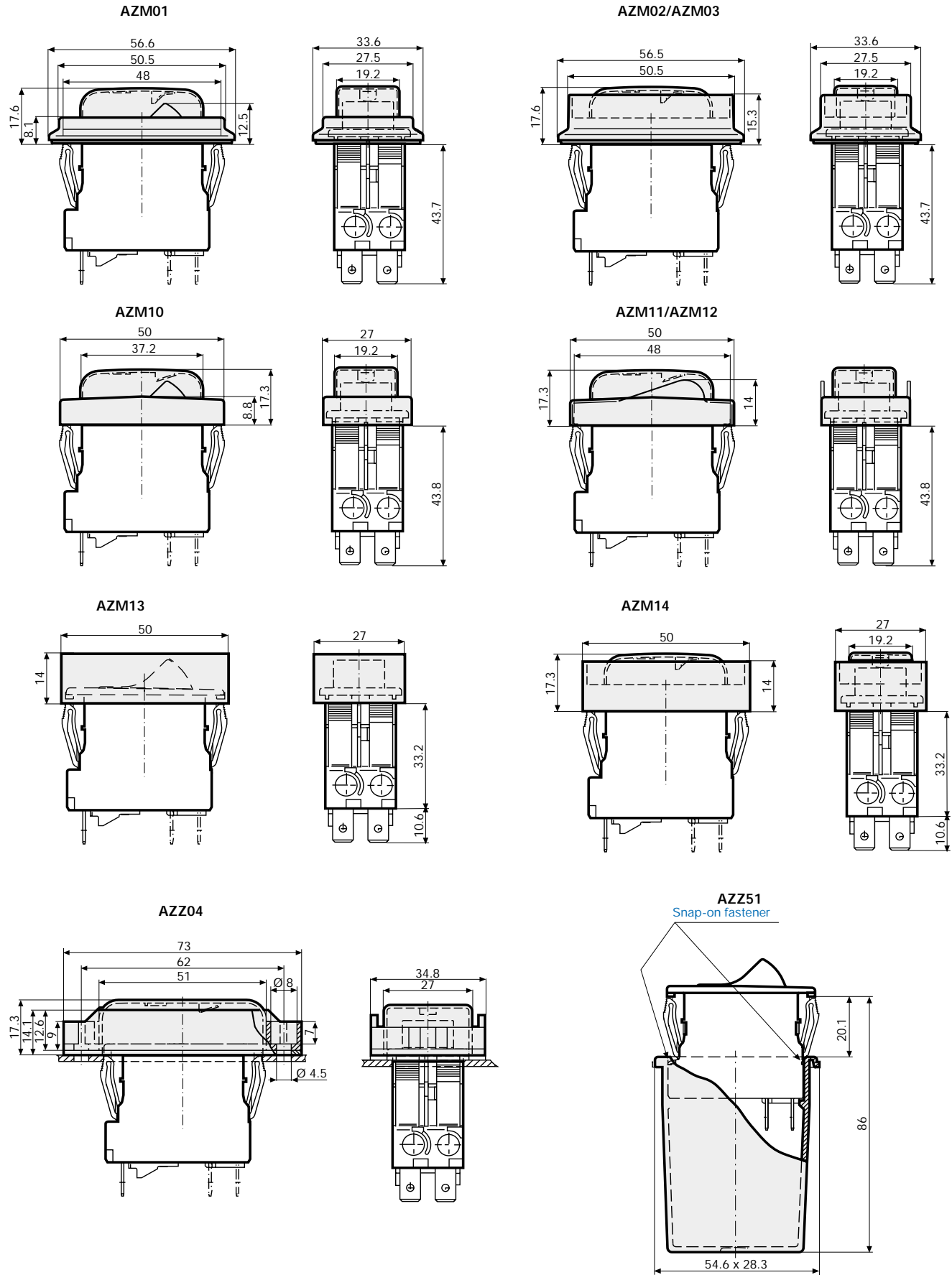
a	b
1.0	44,5...45,0
1.5	44,5...45,0
2.0	44,7...45,2
2.5	44,7...45,2
3.0	44,8...45,3
4.0	44,9...45,4
	45,0...45,5



Pin-out

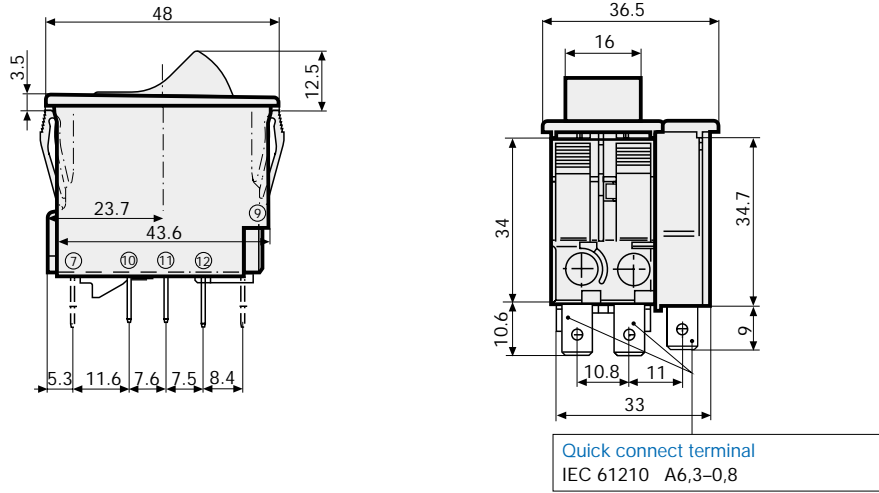


Accessories

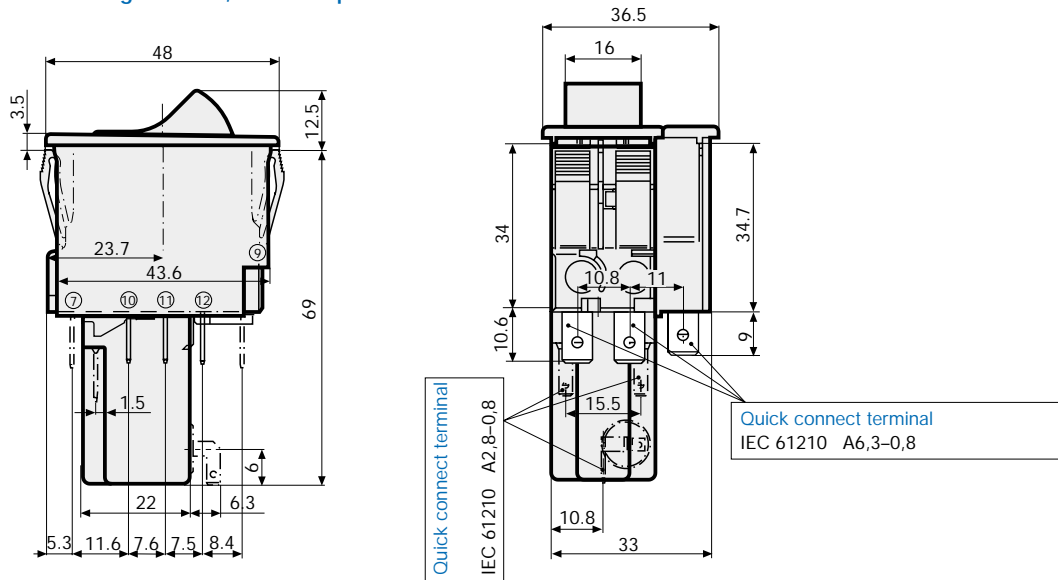


Quick connect terminals

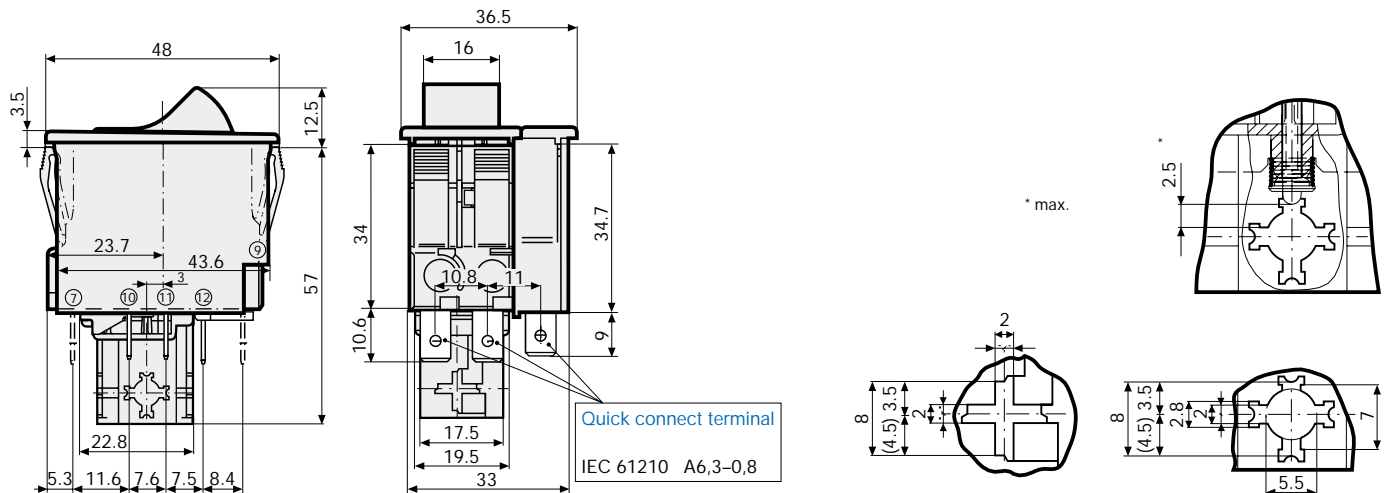
Basic type with auxiliary contact



Undervoltage release, remote trip release

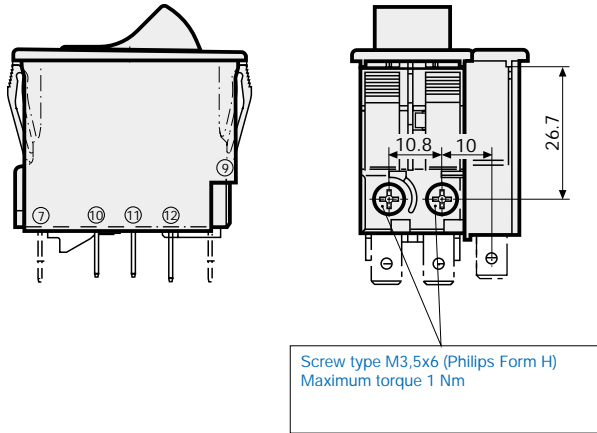


Mechanical lock-out latch



Screw clamp terminal

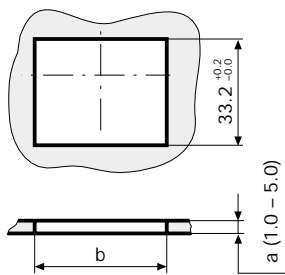
Basic type with auxiliary contact



3

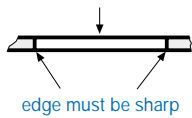
Cut-out and pin-out

Cut-out



a	b
1.0	44,5...45,0
1.5	44,5...45,0
2.0	44,7...45,2
2.5	44,7...45,2
3.0	44,8...45,3
4.0	44,9...45,4
5.0	45,0...45,5

Assemble



Pin-out

