TA35 Rotary Switch 3Pol

Circuit Breaker for Equipment thermal, Rotary knob actuation, 3 poles

Thermal circuit breaker
Rotary Switch, 3-pole
Standard version

See below:
Approvals and Compliances

Description

- Thermal circuit breaker ,
- 3-pole
- Supplementary protector for general industrial use
- Positively trip-free release
- Method of operation acc. to IEC: S-type
- Bezel / knob snap-on

Applications

- Power tools
- Industrial appliances
- Equipment for construction
- Cleaning equipment
- Commercial and household kitchen appliances

References

Available without bezel/knob for customized front panel design

Weblinks

pdf data sheet, html datasheet, General Product Information, Distributor-Stock-Check, Detailed request for product, Product News

Approvals and Compliances

Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in Details about Approvals

SCHURTER products are designed for use in industrial environments. They have approvals from independent testing bodies according to national and international standards. Products with specific characteristics and requirements such as required in the automotive sector according to IATF 16949, medical technology according to ISO 13485 or in the aerospace industry can be offered exclusively with customer-specific, individual agreements by SCHURTER.

Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in Details about Approvals

SCHURTER products are designed for use in industrial environments. They have approvals from independent testing bodies according to national and international standards. Products with specific characteristics and requirements such as required in the automotive sector according to IATF 16949, medical technology according to ISO 13485 or in the aerospace industry can be offered exclusively with customer-specific, individual agreements by SCHURTER.

Approvals

The approval mark is used by the testing authorities to certify compliance with the safety requirements placed on electronic products.

Approval Reference Type: TA35

Approval Logo	Certificates	Certification Body	Description
	VDE Approvals	VDE	VDE Certificate Number: 40019754
	UL Approvals	UL	UL File Number: E71572
	CCC Approvals	CCC	CCC Certificate Number: 2013010307598660

Product standards

Product standards that are referenced

Organization	Design	Standard	Description
IEC	Designed according to	IEC 60934	Circuit-breakers for equipment (CBE)
UL	Designed according to	UL 1077	Standard for Supplementary Protectors for Use in Electrical Equipment
CSA Group	Designed according to	CSA C22.2 No. 235	Supplementary Protectors
CCC	Designed according to	GB 17701	Circuit-breaker for equipment

Compliances

The product complies with following Guide Lines

Identification	Details	Initiator	Description
CE	CE declaration of conformity	SCHURTER AG	The CE marking declares that the product complies with the applicable requirements laid down in the harmonisation of Community legislation on its affixing in accordance with EU Regulation 765/2008.
RoHS COMPLIANT	RoHS	SCHURTER AG	Directive RoHS 2011/65/EU, Amendment (EU) 2015/863
50	China RoHS	SCHURTER AG	The law SJ / T 11363-2006 (China RoHS) has been in force since 1 March 2007. It is similar to the EU directive RoHS.
REACH	REACH	SCHURTER AG	On 1 June 2007, Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals 1 (abbreviated as "REACH") entered into force.

Thermal Circuit Breaker, rotary knob actuation, 1-, 2- or 3-pole

NEW

2-pole standard version

3-pole type without front bezel/knob

standard front bezel/knob

Description

- Thermal circuit breaker 1-, 2- or 3-pole
- Supplementary protector for general industrial use
- Positively trip-free release
- Bezel/knob snap-on
- Easy actuation with gloves
- Available without bezel/knob for customized front panel design

Standards

- IEC 60934
- UL 1077
- CSA C22.2 235
- GB 17701

Applications

- Floor cleaning equipment
- Power tools
- Wood and stone working machines
- Equipment for building construction
- Industrial equipment

Weblinks

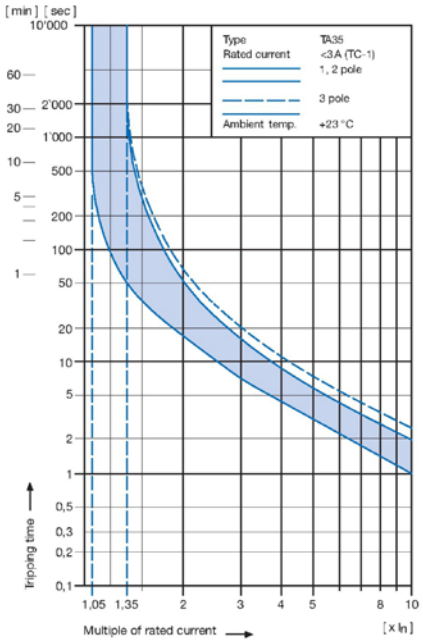
Approvals: http://www.schurter.com/approvals
RoHS: http://www.schurter.com/rohs

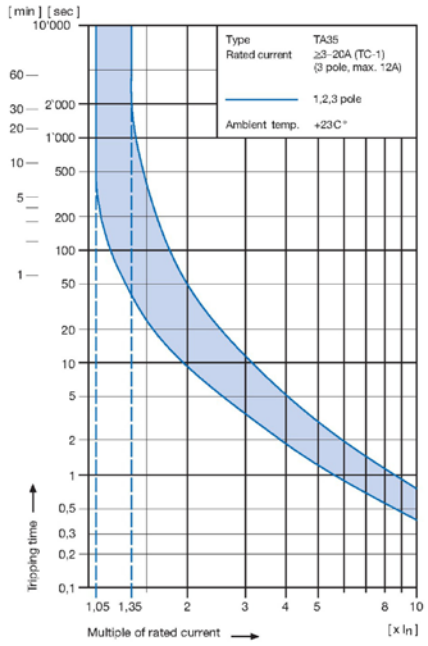
Technical Data

Rated voltage U_e	1-pole 2-pole 3-pole	AC 240 V / 50/60 Hz DC 32 V AC 240 V / 50/60 Hz DC 60 V AC 415 Y/240 V / 50/60 Hz
Rated current I_n	1- / 2-pole 3-pole	0.05 – 20 A 0.05 – 12 A
Conditional short circuit I_{nc}	1- / 2-pole, AC 240 V 3-pole, AC 415 V	0.05…20 A: 2000 A, SC (C1) 0.05…12 A: 2000 A
Degree of protection	Accessible range Terminal side	IP 40 IP 00
Dielectric strength	50 Hz Impulse 1.2/50 µs	> 2500 V > 4000 V
Insulation resistance	DC 500 V	> 100 MOhm
Endurance (typical)	Mechanical AC: 1 x I_n, cos phi 0.6 DC: 1 x I_n, L/R = 2…3ms	50'000 cycles 50'000 cycles 50'000 cycles

Overload	IEC 60934 UL 1077	min. 40 cycles @ 6 x I_n, cos phi 0.6 min. 50 cycles @ 1.5 x I_n, cos phi 0.75 (OLØ)
Admissible ambient air temperature		–30 °C to +60 °C
Resistance to vibration	IEC 60068-2-6, Test Tc	10…60 Hz: ±0.75 mm 60…500 Hz: 10 G
Shock resistance	IEC 60068-2-27, Test Ea	30 G / 18 ms
Type of tripping		Thermal positively trip free
Weight	1-pole 2-pole 3-pole	45 g 60 g 75 g
Max. switching capacity for switch only types (without bimetal)	1-, 2-pole 3-pole	20 A 12 A

Tripping Characteristics





The above tripping characteristics apply to symmetrical overloads on all poles on the TA35 only.

At asymmetric overloads on multi-pole types, the tripping characteristic will change.
- If a 2-pole type TA35 is loaded at one pole only, the tripping current will be shifted by factor **1.05** (TC-2).
- If a 3-pole type TA35 is loaded at one pole only, the tripping current will be shifted by factor **1.10** (TC-2).

To meet the above tripping characteristic at asymmetric overloads on multi-pole types, the value of the rated current of the CBE has to be multiplied by the factor mentioned above.

Effect of ambient temperature

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

Ambient temperature [°C]	Correction factor 1-pole	2-pole	3-pole
–30	0.77	0.76	0.76
–20	0.81	0.81	0.81
0	0.90	0.90	0.90
+23	1.00	1.00	1.00
+40	1.03	1.03	1.06
+50	1.04	1.04	1.10
+60	1.06	1.06	1.14

Example for 2-pole type:

Rated current at +23 °C	5.0 A
Ambient temperature	+50 °C
Correction factor	1.04
Chosen rated current at +40 °C ambient temperature:	**5 A x 1.04 = 5.2 A**

Standard rated currents and typical internal resistance

Code	In [A]	Ri [Ω]
Z05	0.05	200.0
J01	0.1	70.0
J05	0.5	2.750
J10	1.0	0.720
J15	1.5	0.340
J20	2.0	0.187
J25	2.5	0.115
J28	2.8	0.089
030	3.0	0.059
040	4.0	0.059
050	5.0	0.044
060	6.0	0.028
070	7.0	0.0142
080	8.0	0.0142
100	10.0	0.0109
120	12.0	0.0086
140	14.0	0.0072
150	15.0	0.0056
160	16.0	0.0056
180	18.0	0.0052
200	20.0	0.0052

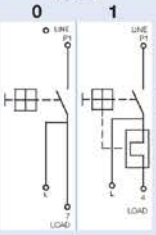
unprotected poles (without bimetal) 2.2 mΩ

Approvals

			# of poles	Rated currents	Rated voltage AC	Rated voltage DC
c UL us	UL	UL 1077	1	0.05…20 A	240 V	32 V
			2	0.05…20 A	240 V	60 V
			3	0.05…12 A	415 Y/240 V	—
	UL	CSA C22.2 235	1	0.05…20 A	240 V	32 V
			2	0.05…20 A	240 V	60 V
			3	0.05…12 A	415 Y/240 V	—
	VDE	IEC 60934	1	0.05…20 A	240 V	32 V
			2	0.05…20 A	240 V	60 V
			3	0.05…12 A	415 Y/240 V	—
	CQC	GB 17701	1	0.05…20 A	240 V	32 V
			2	0.05…20 A	240 V	60 V
			3	0.05…12 A	415 Y/240 V	—

Actual information about approvals can be found on: www.schurter.com/approvals.

Order Code

Number of switched poles	1-pole		2-pole			3-pole	
Number of protected poles	0	1	0	1	2	0	3
							
Basic type	EFC	EFT	EBC	EBT	EBD	EKC	EKD

Other versions on request

TA35- | EBT | T | F | 120 | C0

C0: No other features

Frontbezel and actuation knob

	Bezel	Knob
T	black	black
N	without bezel	without knob

Bezel marking

	Surface	Symbol
F	relief recessed	I 0
N	no marking	no marking

Without thermal overload protection: code C00

With thermal overload protection: rated current I_n (A)

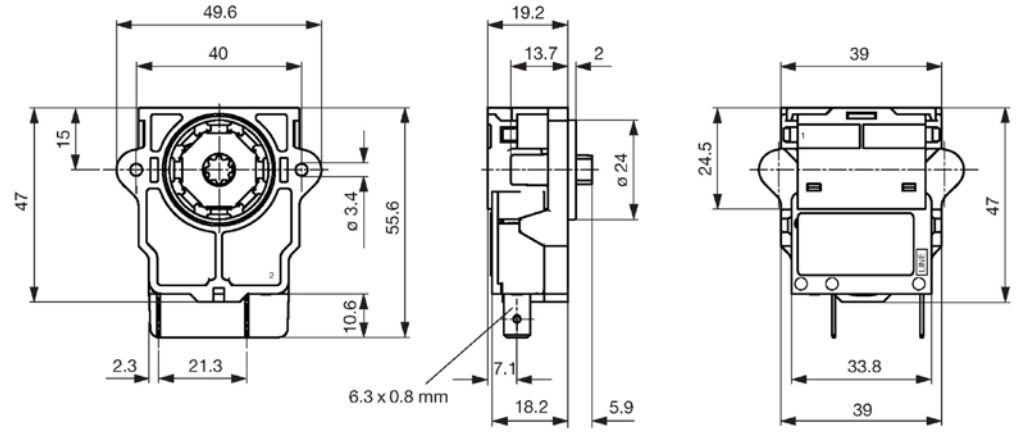
I_n	Code	I_n	Code	I_n	Code	I_n	Code
0.05	Z05	1.0	J10	4.0	040	14.0	140 *
0.1	J01	1.2	J12	5.0	050	15.0	150 *
0.2	J02	1.5	J15	6.0	060	16.0	160 *
0.3	J03	2.0	J20	7.0	070	18.0	180 *
0.4	J04	2.5	J25	8.0	080	20.0	200 *
0.5	J05	3.0	030	10.0	100		
0.8	J08	3.5	035	12.0	120		

Other rated currents on request.

* 3-pole max. 12A

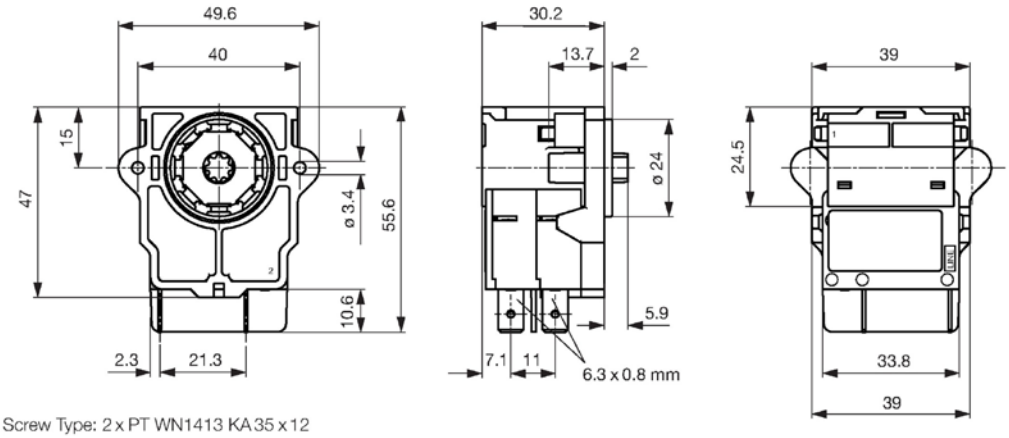
Dimensions

TA35 1-pole



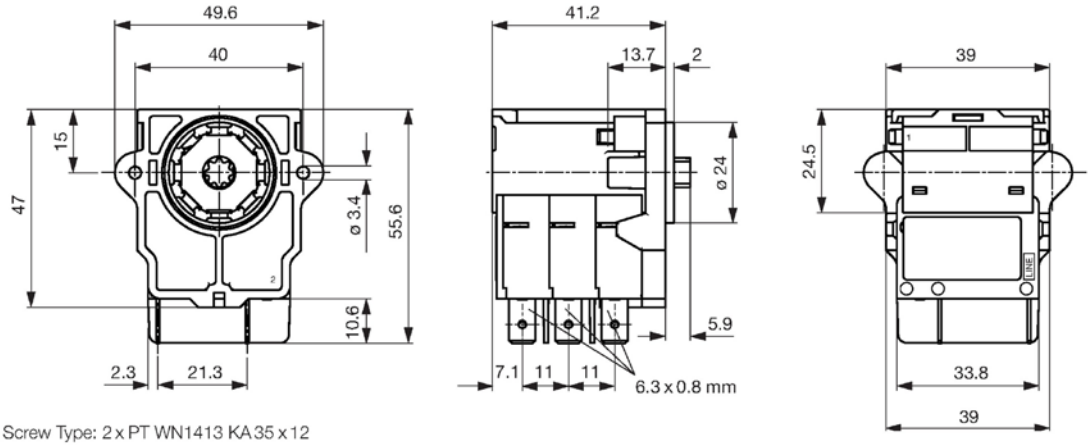
Screw Type: 2 x PT WN1413 KA35 x 12

TA35 2-pole



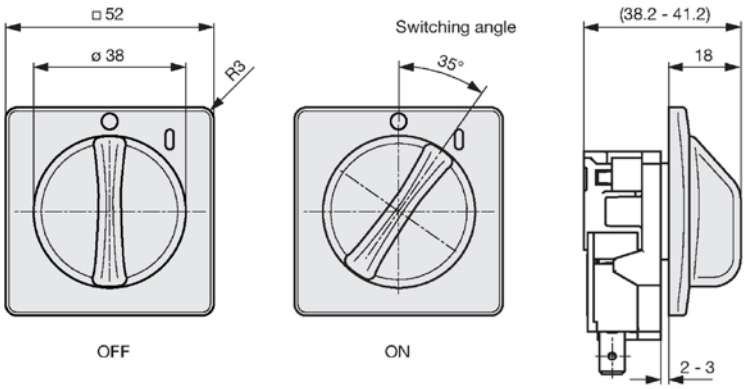
Screw Type: 2 x PT WN1413 KA35 x 12

TA35 3-pole

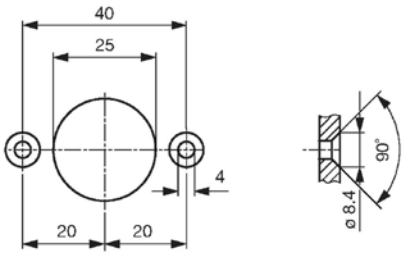


Screw Type: 2 x PT WN1413 KA35 x 12

Front bezel/knob



Cut-out



Mounting instructions

Customer specific bezels/actuator designs possible

Thermal Circuit Breaker, rotary knob actuation, 1-, 2- or 3-pole

NEW

2-pole standard version

3-pole type without front bezel/knob

standard front bezel/knob

Description

- Thermal circuit breaker 1-, 2- or 3-pole
- Supplementary protector for general industrial use
- Positively trip-free release
- Bezel/knob snap-on
- Easy actuation with gloves
- Available without bezel/knob for customized front panel design

Standards

- IEC 60934
- UL 1077
- CSA C22.2 235
- GB 17701

Applications

- Floor cleaning equipment
- Power tools
- Wood and stone working machines
- Equipment for building construction
- Industrial equipment

Weblinks

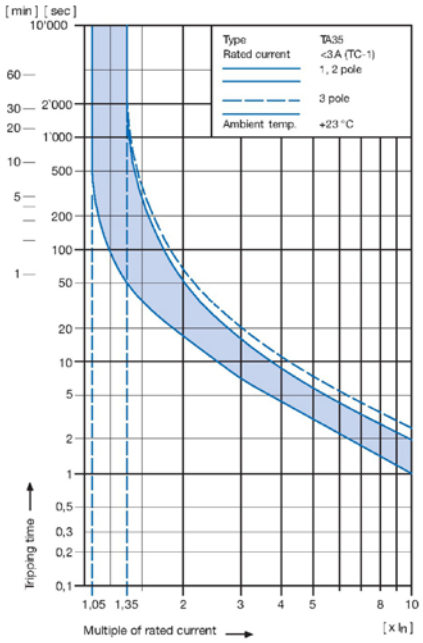
Approvals: http://www.schurter.com/approvals
RoHS: http://www.schurter.com/rohs

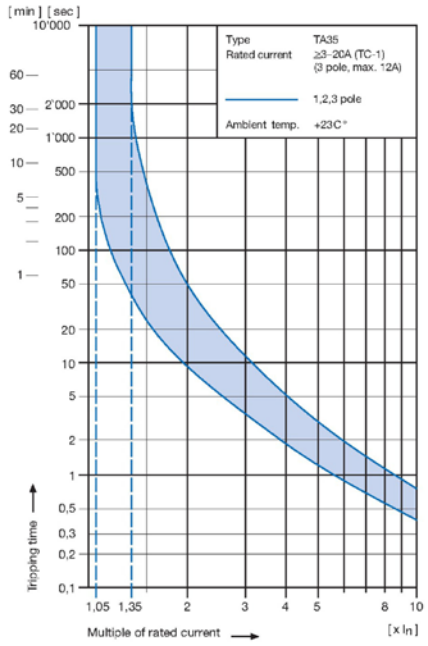
Technical Data

Rated voltage U_e	1-pole 2-pole 3-pole	AC 240 V / 50/60 Hz DC 32 V AC 240 V / 50/60 Hz DC 60 V AC 415 Y/240 V / 50/60 Hz
Rated current I_n	1- / 2-pole 3-pole	0.05 – 20 A 0.05 – 12 A
Conditional short circuit I_{nc}	1- / 2-pole, AC 240 V 3-pole, AC 415 V	0.05…20 A: 2000 A, SC (C1) 0.05…12 A: 2000 A
Degree of protection	Accessible range Terminal side	IP 40 IP 00
Dielectric strength	50 Hz Impulse 1.2/50 µs	> 2500 V > 4000 V
Insulation resistance	DC 500 V	> 100 MOhm
Endurance (typical)	Mechanical AC: 1 x I_n, cos phi 0.6 DC: 1 x I_n, L/R = 2…3ms	50'000 cycles 50'000 cycles 50'000 cycles

Overload	IEC 60934 UL 1077	min. 40 cycles @ 6 x I_n, cos phi 0.6 min. 50 cycles @ 1.5 x I_n, cos phi 0.75 (OLØ)
Admissible ambient air temperature		–30 °C to +60 °C
Resistance to vibration	IEC 60068-2-6, Test Tc	10…60 Hz: ±0.75 mm 60…500 Hz: 10 G
Shock resistance	IEC 60068-2-27, Test Ea	30 G / 18 ms
Type of tripping		Thermal positively trip free
Weight	1-pole 2-pole 3-pole	45 g 60 g 75 g
Max. switching capacity for switch only types (without bimetal)	1-, 2-pole 3-pole	20 A 12 A

Tripping Characteristics





The above tripping characteristics apply to symmetrical overloads on all poles on the TA35 only.

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- If a 3-pole type TA35 is loaded at one pole only, the tripping current will be shifted by factor **1.10** (TC-2).

To meet the above tripping characteristic at asymmetric overloads on multi-pole types, the value of the rated current of the CBE has to be multiplied by the factor mentioned above.

Effect of ambient temperature

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

Ambient temperature [°C]	Correction factor 1-pole	2-pole	3-pole
–30	0.77	0.76	0.76
–20	0.81	0.81	0.81
0	0.90	0.90	0.90
+23	1.00	1.00	1.00
+40	1.03	1.03	1.06
+50	1.04	1.04	1.10
+60	1.06	1.06	1.14

Example for 2-pole type:

Rated current at +23 °C	5.0 A
Ambient temperature	+50 °C
Correction factor	1.04
Chosen rated current at +40 °C ambient temperature:	**5 A x 1.04 = 5.2 A**

Standard rated currents and typical internal resistance

Code	In [A]	Ri [Ω]
Z05	0.05	200.0
J01	0.1	70.0
J05	0.5	2.750
J10	1.0	0.720
J15	1.5	0.340
J20	2.0	0.187
J25	2.5	0.115
J28	2.8	0.089
030	3.0	0.059
040	4.0	0.059
050	5.0	0.044
060	6.0	0.028
070	7.0	0.0142
080	8.0	0.0142
100	10.0	0.0109
120	12.0	0.0086
140	14.0	0.0072
150	15.0	0.0056
160	16.0	0.0056
180	18.0	0.0052
200	20.0	0.0052

unprotected poles (without bimetal) 2.2 mΩ

Approvals

			# of poles	Rated currents	Rated voltage AC	Rated voltage DC
c UL us	UL	UL 1077	1	0.05…20 A	240 V	32 V
			2	0.05…20 A	240 V	60 V
			3	0.05…12 A	415 Y/240 V	—
	UL	CSA C22.2 235	1	0.05…20 A	240 V	32 V
			2	0.05…20 A	240 V	60 V
			3	0.05…12 A	415 Y/240 V	—
	VDE	IEC 60934	1	0.05…20 A	240 V	32 V
			2	0.05…20 A	240 V	60 V
			3	0.05…12 A	415 Y/240 V	—
	CQC	GB 17701	1	0.05…20 A	240 V	32 V
			2	0.05…20 A	240 V	60 V
			3	0.05…12 A	415 Y/240 V	—

Actual information about approvals can be found on: www.schurter.com/approvals.

TA35

www.schurter.com/pg17_18_19

Order Code

Number of switched poles	1-pole		2-pole			3-pole	
Number of protected poles	0	1	0	1	2	0	3
Basic type	EFC	EFT	EBC	EBT	EBD	EKC	EKD

Other versions on request

TA35- | EBT | T | F | 120 | C0

No other features

Frontbezel and actuation knob

	Bezel	Knob
T	black	black
N	without bezel	without knob

Bezel marking

	Surface	Symbol
F	relief recessed	I 0
N	no marking	no marking

Without thermal overload protection: code C00

With thermal overload protection: rated current I_n (A)

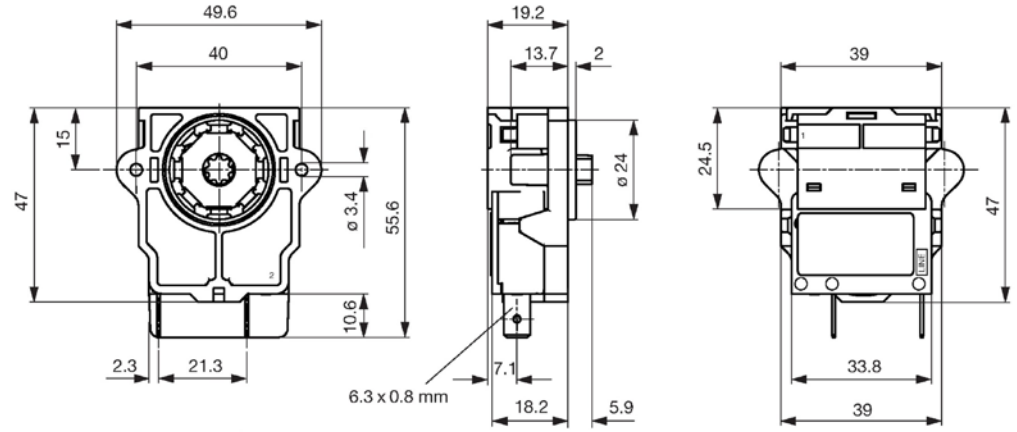
I_n	Code	I_n	Code	I_n	Code	I_n	Code
0.05	Z05	1.0	J10	4.0	040	14.0	140 *
0.1	J01	1.2	J12	5.0	050	15.0	150 *
0.2	J02	1.5	J15	6.0	060	16.0	160 *
0.3	J03	2.0	J20	7.0	070	18.0	180 *
0.4	J04	2.5	J25	8.0	080	20.0	200 *
0.5	J05	3.0	030	10.0	100		
0.8	J08	3.5	035	12.0	120		

Other rated currents on request.

* 3-pole max. 12A

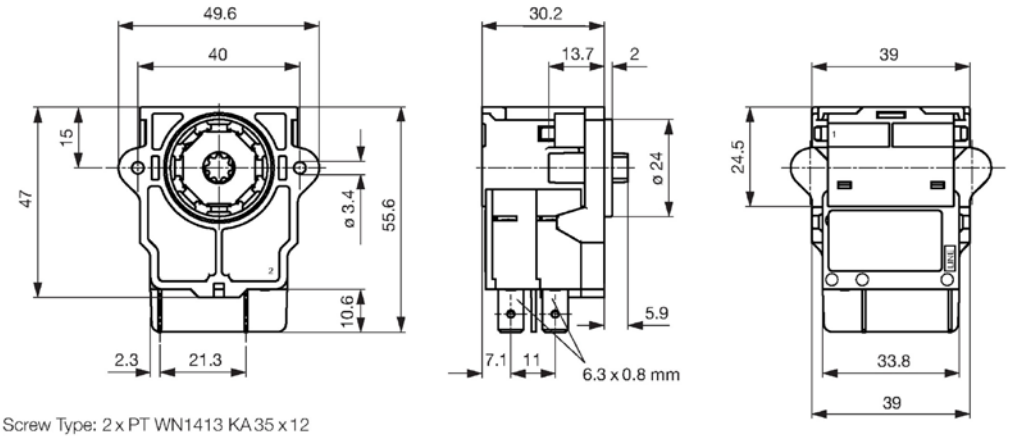
Dimensions

TA35 1-pole



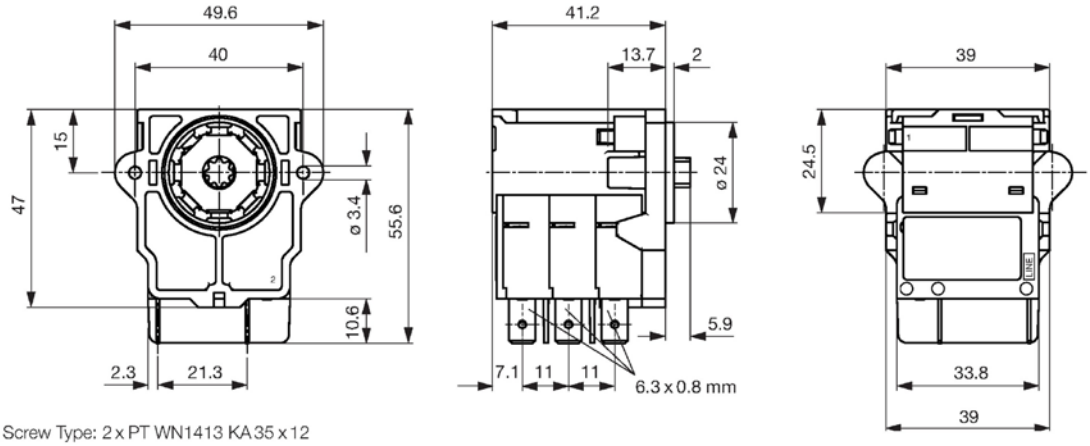
Screw Type: 2 x PT WN1413 KA35 x 12

TA35 2-pole



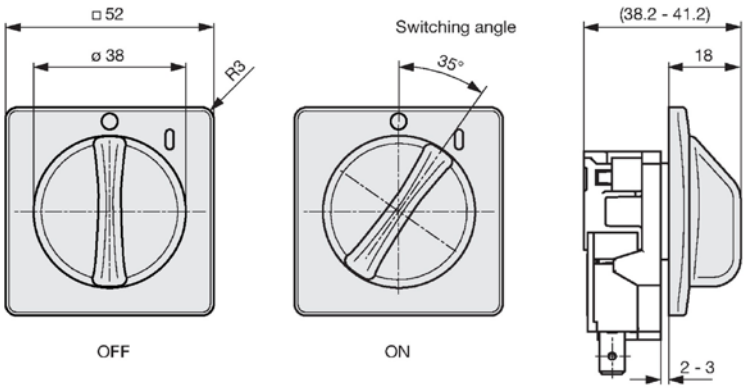
Screw Type: 2 x PT WN1413 KA35 x 12

TA35 3-pole

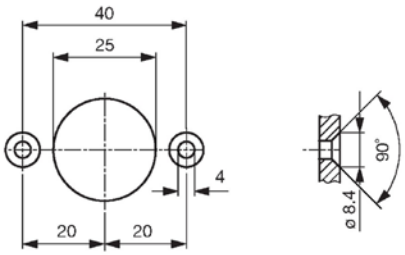


Screw Type: 2 x PT WN1413 KA35 x 12

Front bezel/knob



Cut-out



Mounting instructions

Customer specific bezels/actuator designs possible