

Thermal Circuit Breaker, rocker actuated, 1-, 2- or 3-pole

NEW



TA35 1-pole



TA35 2-pole with CZM25
IP 65, antibacterial cover according
ISO 22196



TA35 3-pole



(pending)

Description

- Thermal circuit breaker 1-, 2- or 3-pole
- Supplementary protector for general industrial use
- Positively trip-free release
- Snap-in mounting
- Version with illuminated rocker
- Different rocker colours
- Antibacterial cover IP65 CZM25
- «Dead-Man»-version (Momentary switch)

Standards

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

Applications

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

Weblinks

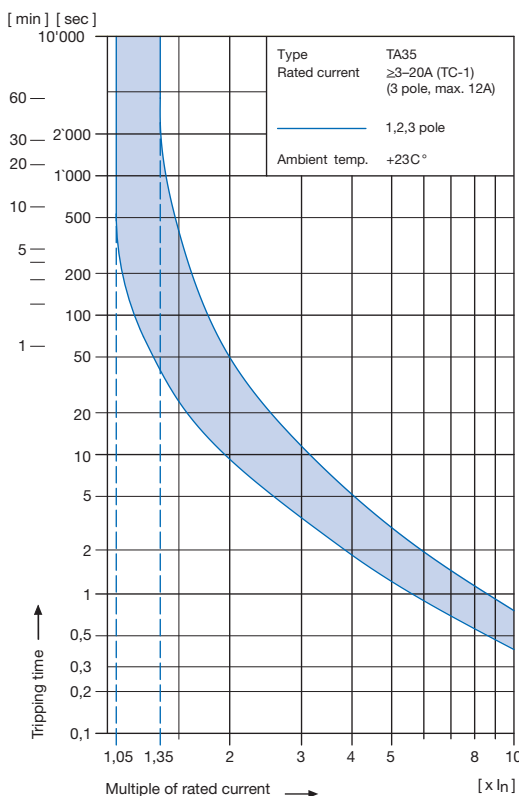
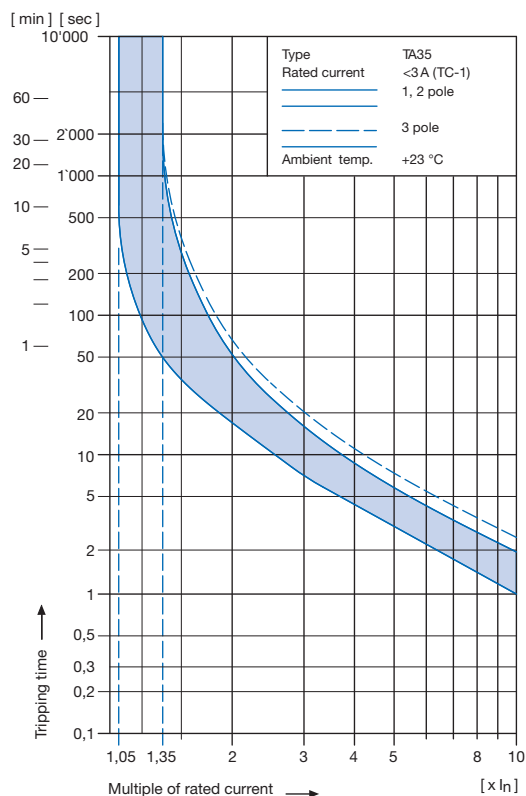
Approvals: <http://www.schurter.com/approvals>
RoHS: <http://www.schurter.com/rohs>

TECHNICAL DATA

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

| | | |
|---|-------------------------|--|
| Overload | IEC 60934 | min. 40 cycles @ 6 x I_n , cos phi 0.6 |
| | UL 1077 | min. 50 cycles @ 1.5 x I_n , cos phi 0.75 (OL \emptyset) |
| Admissible ambient air temperature | | -30 °C to +60 °C |
| Resistance to vibration | IEC 60068-2-6, Test Tc | 10...60 Hz: \pm 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 | 19 g |
| | 2-pole | 32 g |
| | 3-pole | 45 g |
| Max. switching capacity for switch only types (without bimetal) | 1-, 2-pole | 20 A |
| | 3-pole | 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 | Ri [Ohm] |
|------|------|----------|
| J01 | 0.1 | 70.000 |
| 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 |
|--|-----|---------------|------------|----------------|------------------|------------------|
|  | 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 | — |

* Approvals pending

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 |
| | | | | | | | | |
| Switch | without illumination | CFC | CFT | CBC | CBT | CBD | CKC | CKD |
| Switch | illuminated | 415 V 240 V 120 V 24 V 12 V 5 V | CF2 CF4 CF7 CF8 CF9 | C2F C4F C7F C8F C9F | C02 C04 C07 C08 C09 | C12 C14 C17 C18 C19 | C32 C34 C37 C38 C39 | CK1 CD1 |
| Momentary | without illumination | CGC | CGT | CEC | CET | CED | CLC | CLD |

Other versions on request

TA35- **CBD** **W** **F** **120** **C0** - **CZM21**

Colours

| | Switch front | Rocker non-illuminated | illuminated |
|----------|--------------|------------------------|--------------------|
| W | black | white | - |
| B | black | black | - |
| R | black | red | - |
| G | black | green | - |
| Y | black | yellow | - |
| X | black | orange | - |
| 1 | black | - | clear transparent |
| 3 | black | - | red transparent |
| 4 | black | - | green transparent |
| 6 | black | - | orange transparent |
| 7 | black | - | blue transparent |

Other colours on request

Accessories, factory mounted (optional)

| | | |
|--|--------------|---|
| | CZM21 | Transparent cover, 2-pole, IP65 |
| | CZM23 | Raised collar with transparent cover, 2-pole, IP65 |
| | CZM24 | Raised collar without cover, 2-pole, IP40 |
| | CZM25 | Transparent cover antibacterial, 2-pole, IP65 antibacterial according ISO 22196 |

Only factory mounted accessories are integrated in the Order Code.

Rocker legend

| | Surface | Illustration | Colour of print |
|----------|----------|--------------|-----------------|
| F | embossed | - 0 | |
| H | printed | ON OFF | white |
| K | printed | ON OFF | black |
| L | printed | - 0 | white |
| M | printed | - 0 | black |

Other legends on request

Without thermal overload protection: code C00

With thermal overload protection: rated current I_n (A)

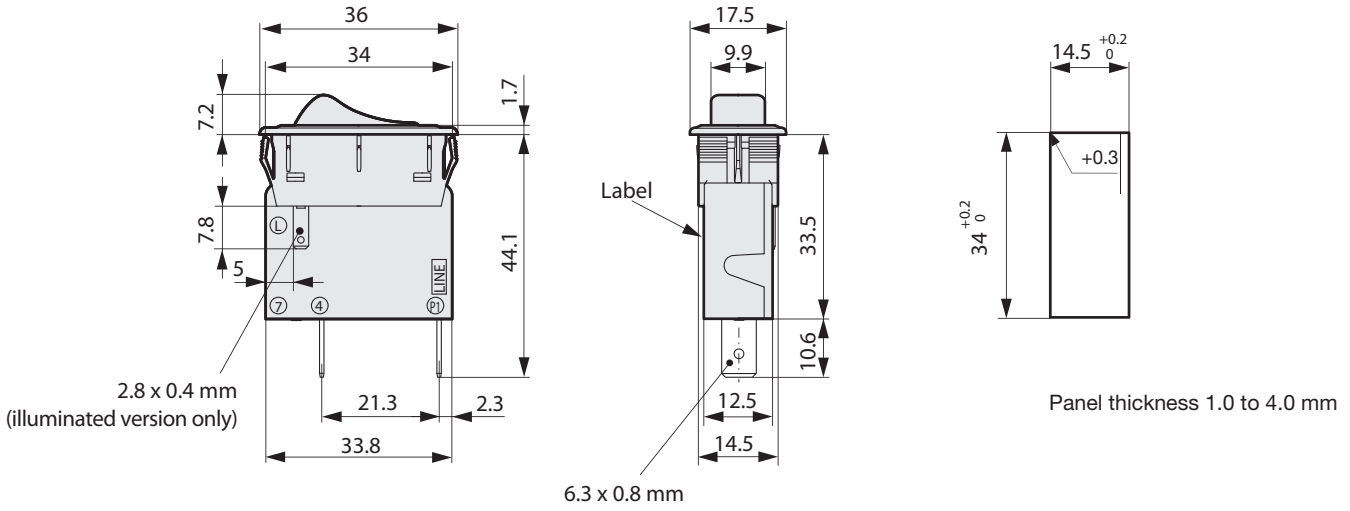
| I _n | Code | I _n | Code | I _n | Code | I _n | Code |
|----------------|------------|----------------|------------|----------------|------------|----------------|--------------|
| 0.05 | Z05 | 1.0 | J10 | 4.0 | 040 | 14.0 | 140 * |
| 0.1 | J01 | 1.2 | J12 | 5.0 | 050 | 15.0 | 150 * |
| 0.2 | J02 | 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

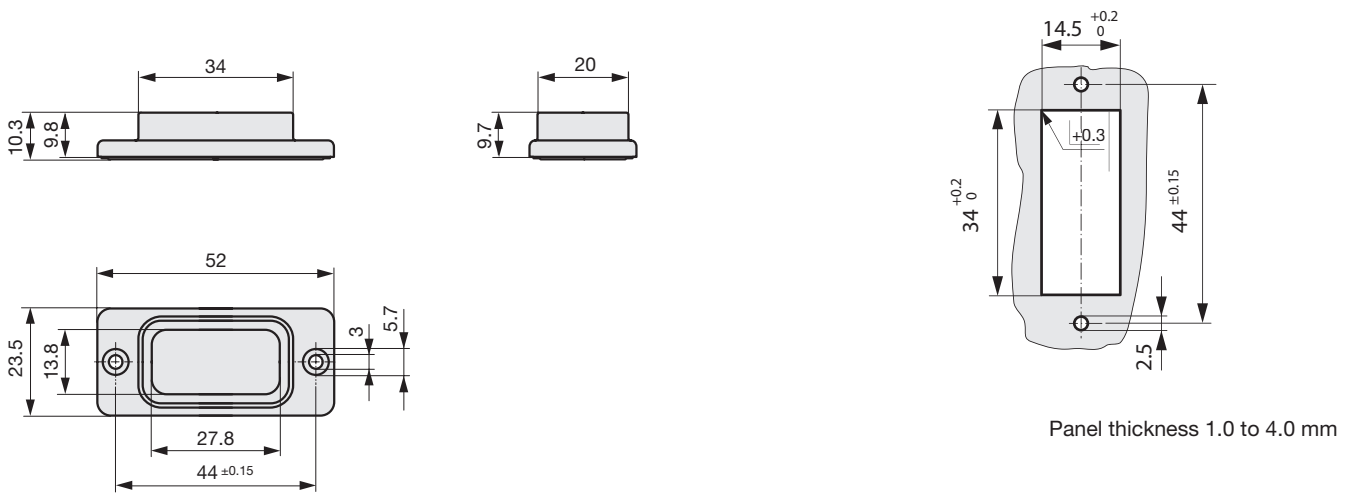
DIMENSIONS

TA35, 1-Pole

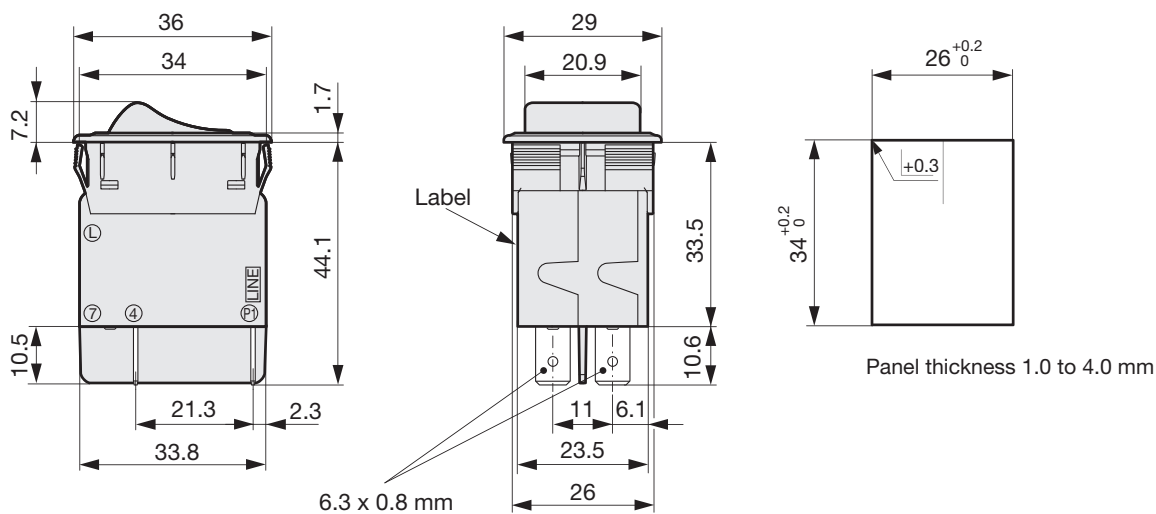


TA35, 1-Pole, Accessories

CZZ11, Screw-on Collar with Cover, IP65
Part. No. 4435.0052

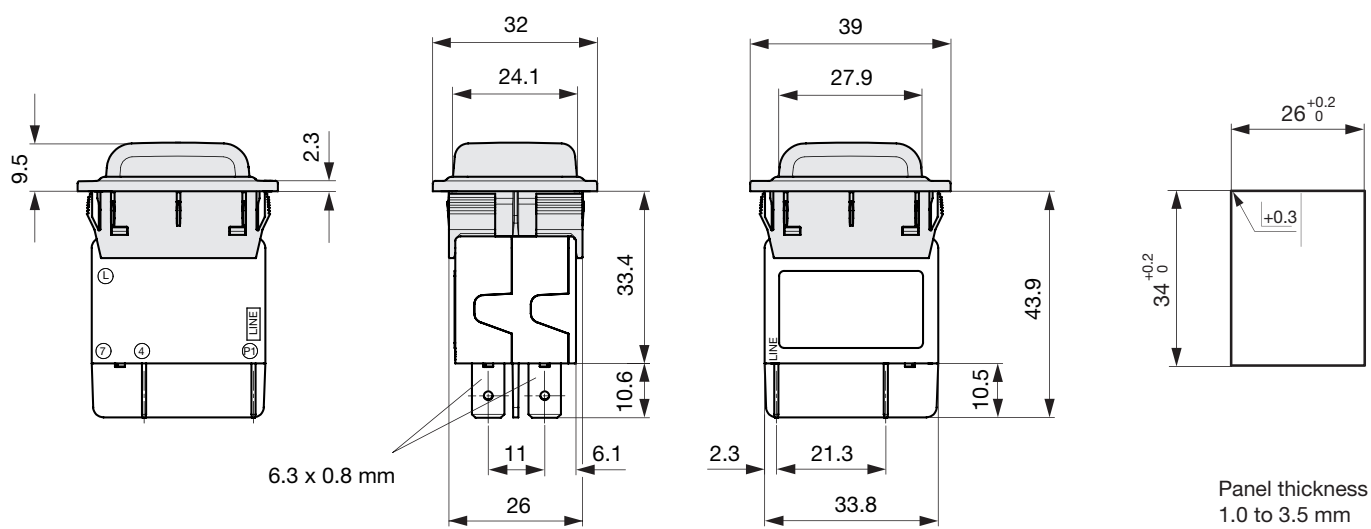


TA35, 2-Pole

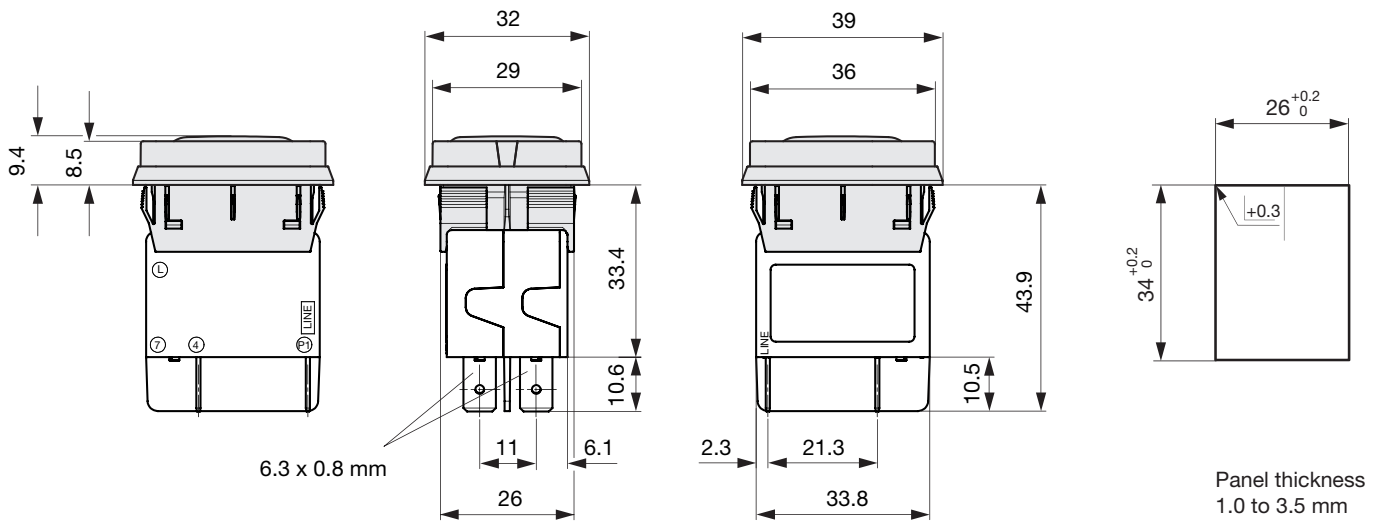


TA35, 2-Pole, Accessories

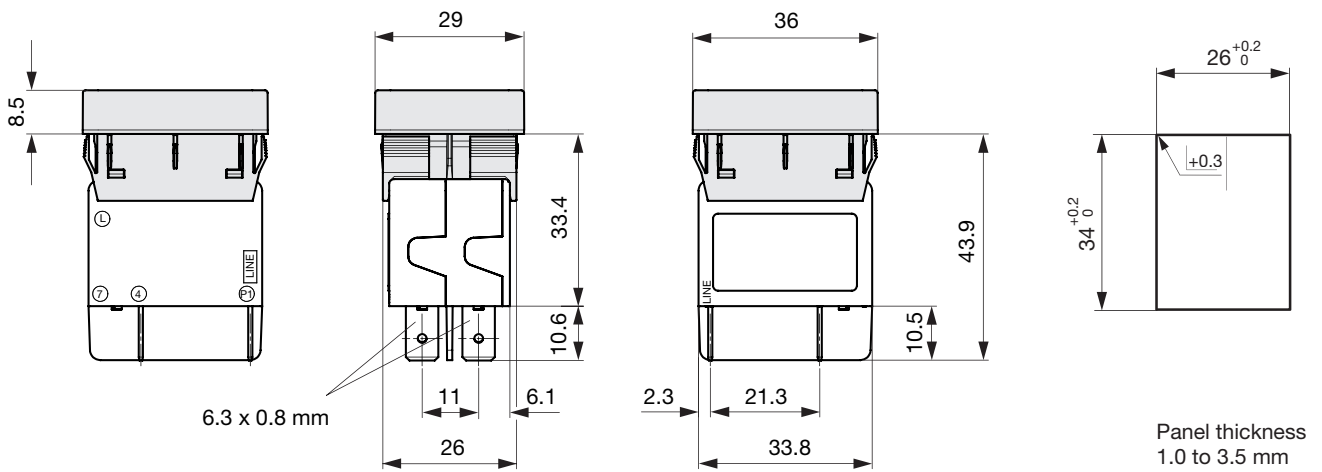
CZM21 / CZM25, Factory Mounted Transparent Cover, IP65



CZM23, Factory Mounted Raised Collar with Transparent Cover, IP65

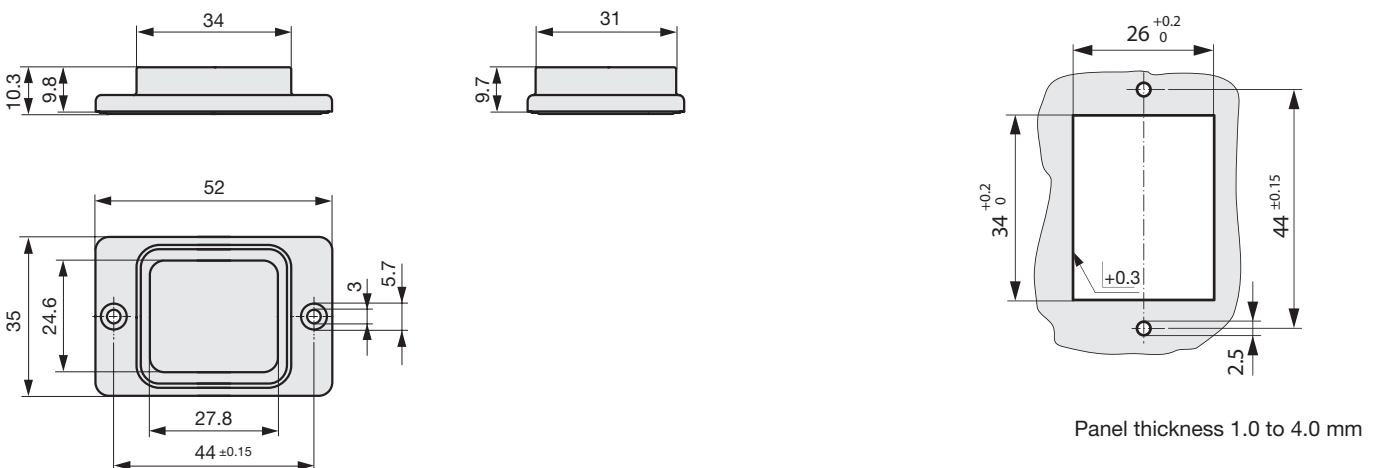


CZM24, Factory Mounted Raised Collar without Cover, IP40

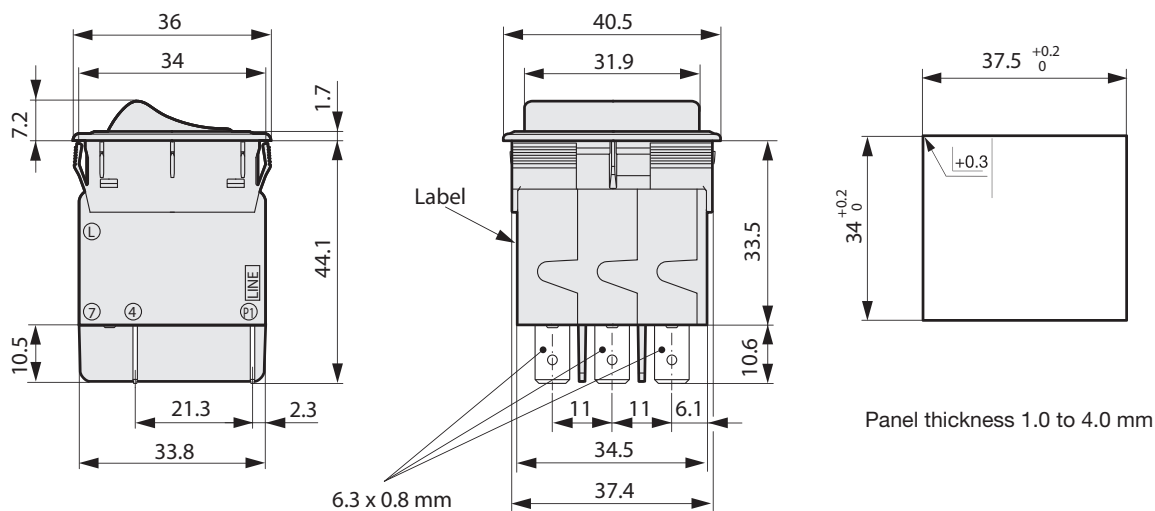


CZZ21, Screw-on Collar with Cover, IP65

Part. No. 4435.0053

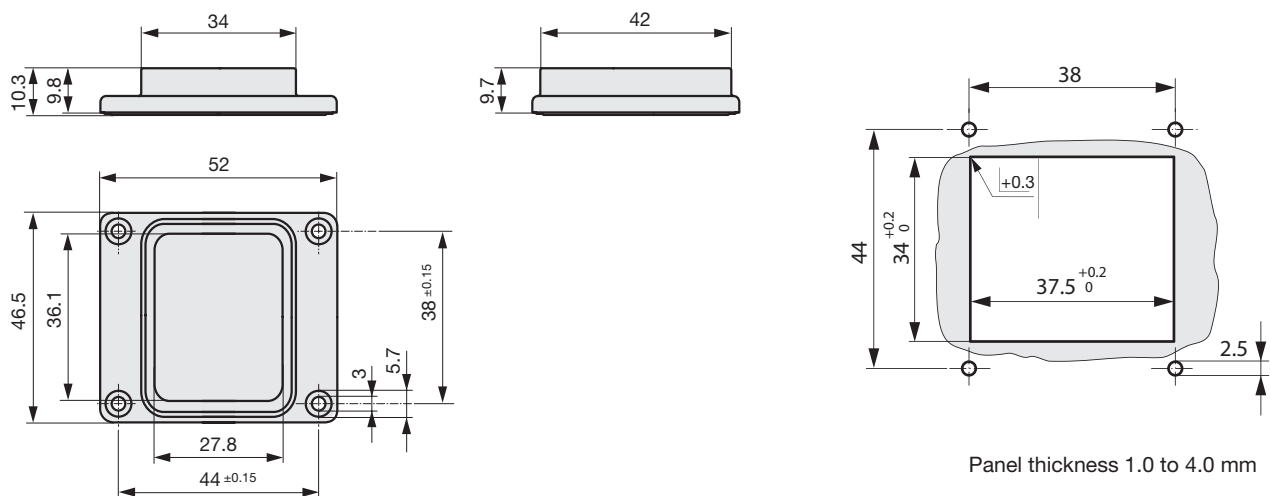


TA35, 3-Pole



TA35, 3-Pole, Accessories

CZZ31, Screw-on Collar with Cover, IP65
Part. No. 4435.0054



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