# E-T-A High Performance Thermal-Magnetic Circuit Breaker 452-...

## Description

Single pole high performance thermal-magnetic circuit breaker, with tease-free, trip-free, snap action mechanism and push/pull on/off actuation (M-type TM CBE to EN 60934). An indicator band on the push button clearly shows the tripped/off position. Threadneck panel mounted in tracked vehicle and aircraft/general purpose versions.

## Typical applications

Extra low voltage wiring systems on all types of vehicle for land, sea and air; defence equipment; battery powered machines.

## Ordering information

**Type No.**
**452** standard delay curve
**Terminal design**
**K34** screw terminals M6, reinforced
**Version**
**FN2** vehicle application
**LN2** aircraft/general application
**Current ratings**
**50...100 A**

**452 - K34 - LN2 - 80 A** ordering example

**Please be informed that we have minimum ordering quantities to be observed.**

## Standard current ratings and typical volt drop values

| Current rating (A) | Volt drop (mV)* | Current rating (A) | Volt drop (mV)* |
|---|---|---|---|
| 50 | 90 | 80 | 92 |
| 60 | 85 | 90 | 100 |
| 70 | 85 | 100 | 100 |
| 75 | 90 | | |

* Max. values are within the relevant standards.

## Approvals (without auxiliary contacts)

| Authority | Standard | Rated voltage | Current ratings |
|---|---|---|---|
| UL | UL 1077 | DC 28 V<br>DC 72 V | 50 A...125 A<br>50 A...125 A |
| CSA | C22.2 No 235 | DC 28 V<br>DC 72 V | 50 A...100 A<br>50 A...125 A |
| Bw | VG 95345, part 17 | DC 28 V | 60 A...100 A |
| Bw | LN 29808 | AC 115 V, 400 Hz<br>DC 28 V | 80 A, 100 A<br>80 A, 100 A |
| QPL Canada Dep. of National Defence | VG 95345, part 17 | DC 28 V | 60 A...100 A |
| QPL Sweden Defence Material Admin. | TL 5925-001 | DC 28 V | 60 A...100 A |




**452-...**

## Technical data

**For further details please see: www.e-t-a.de/ti_e**

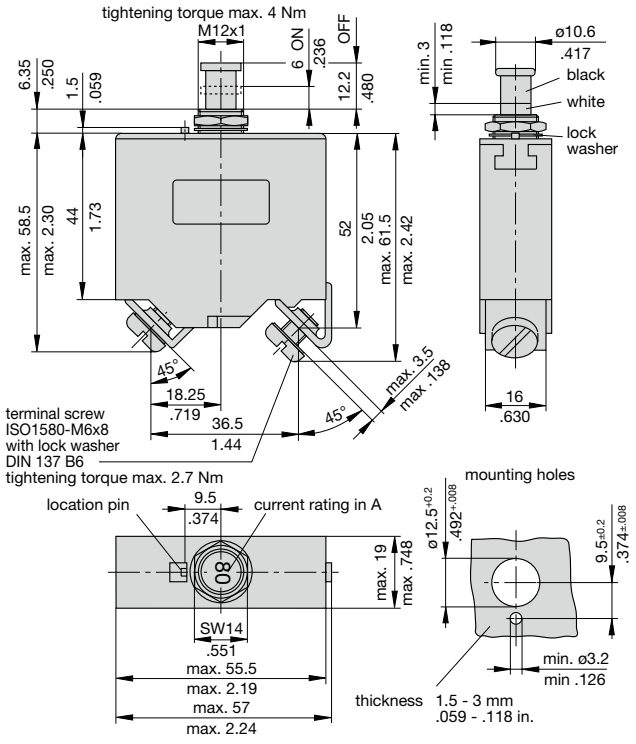
| | | |
|---|---|---|
| Voltage rating | DC 28 V | |
| Current rating range | 50...100 A | |
| Auxiliary circuit | 0.5 A, DC 28 V | |
| Typical life | 2,500 operations at $I_N$ | |
| Ambient temperature | -55...+75 °C (-67...+167 °F) | |
| Insulation co-ordination (IEC 60664 and 60664A) | rated impulse withstand voltage 1.5 kV | pollution degree 3 |
| Dielectric strength (IEC 60664 and 60664A) operating area | test voltage AC 1,500 V | |
| Insulation resistance | > 100 MΩ (DC 500 V) | |
| Interrupting capacity $I_{cn}$ | 6,000 A | |
| Degree of protection (IEC 60529/DIN 40050) | operating area IP40<br>terminal area IP00 | |
| Vibration | 10 g (55-2000 Hz), ± 0.76 mm (10-55 Hz) to VG 95210, sheet 19, IEC 60068-2-6, test Fc | |
| Shock | 50 g (11 ms) to VG 95210, sheet 28, IEC 60068-2-27, test Ea | |
| Corrosion | 96 hours at 5 % salt mist to VG 95210, sheet 2, IEC 60068-2-11, test Ka | |
| Humidity | 240 hours at 95 % RH to VG 95210, sheet 7, IEC 60068-2-3, test C | |
| Explosion | to VG 95210, sheet 10, MIL-STD-202, meth. 109 | |
| Mass | approx. 122 g | |

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved.Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

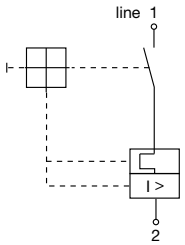
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## Dimensions 452-K...-...

**452-K34-FN2** (VG 95345 T17)

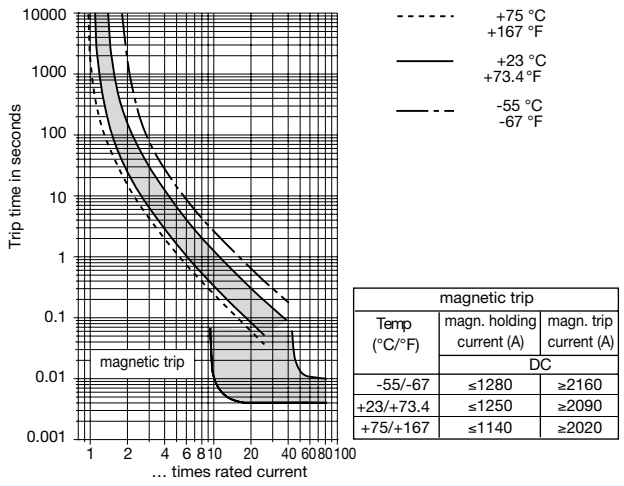



## Internal connection diagram




## Typical time/current characteristics

**452-...** (standard delay)

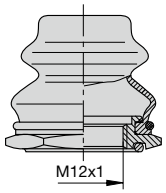



| magnetic trip | | |
|---|---|---|
| Temp (°C/°F) | magn. holding current (A) | magn. trip current (A) |
| | DC | |
| -55/-67 | ≤1280 | ≥2160 |
| +23/+73.4 | ≤1250 | ≥2090 |
| +75/+167 | ≤1140 | ≥2020 |

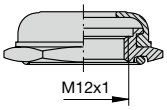
This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

## Accessories (approved to VG 95345, part 23)

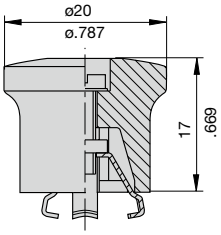
**Splash cover/hex nut assembly with O ring** (IP66 and IP67)
**X 200 801 08** nickel plated nut, transparent cover
**X 200 801 03** matt black finish nut, black cover
**X 200 801 12** with blackened nut and transparent cover




**Splash cover/hex nut assembly with O ring** (IP54)
**X 200 802 01** nickel plated nut
**X 200 802 02** matt black finish nut

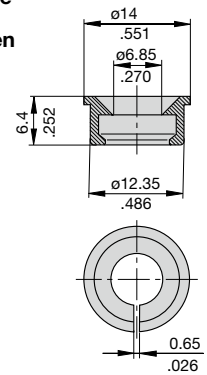



**Actuator extension** (black)
to be fitted on the push button
**X 200 803 01**




## Accessories

**Identification collar** to be snapped on the push button
**Y 307 004 01** black
**Y 307 004 02** white
**Y 307 004 03** red
**Y 307 004 04** green
**Y 307 004 05** blue




**Lock out ring** to block the push button in OFF position
**Y 307 005 01** red
**Y 307 005 02** black

