Description

Single pole high performance version of type 3200 (section 2) thermal-magnetic circuit breaker with tease-free, trip-free, snap action mechanism and additional manual release (M-type TM CBE to EN 60934). Designed for plug-in mounting with E-T-A sockets 10R or 16. Available with optional silver plated terminal pins for use in corrosive environments. Approved to CBE standard EN 60934 (IEC 60934).

428-...

Typical applications

Extra low voltage systems, control equipment.

Ordering information

Type No.	
428	plug-in
	Current ratings
	0.05...25 A
428 - 10 A	ordering example

Standard current ratings and typical internal resistance values

Current rating (A)	Internal resistance (Ω)	Current rating (A)	Internal resistance (Ω)
0.05	534	4	0.1407
0.1	149	5	0.1068
0.2	56	6	0.0627
0.3	24.2	7	0.0491
0.4	13.65	8	≤ 0.02
0.5	8.08	10	≤ 0.02
0.6	5.25	12	≤ 0.02
0.8	3.55	14	≤ 0.02
1	2.02	15	≤ 0.02
1.5	0.904	16	≤ 0.02
2	0.514	18	≤ 0.02
2.5	0.36	20	≤ 0.02
3	0.23	25	≤ 0.02

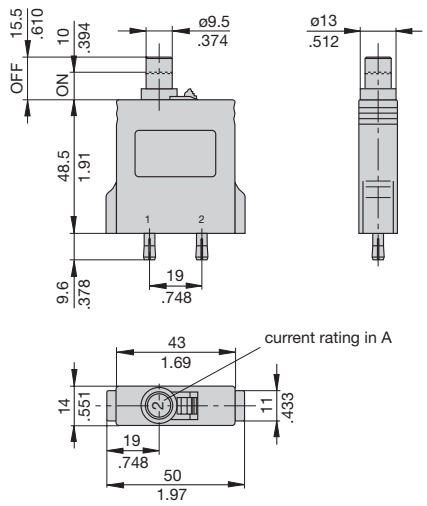
Technical data

For further details please see chapter: Technical Information	
Voltage rating	AC 250 V (50/60 Hz); DC 28 V
Current rating range	0.05...25 A
Typical life	2,000 operations at 1 x I_N, inductive 4,000 operations at 1 x I_N, resistive
Ambient temperature	-30...+60 °C (-22...+140 °F)
Insulation co-ordination (IEC 60664 and 60664A)	rated impulse withstand voltage 2.5 kV; pollution degree 2 reinforced insulation in operating area
Dielectric strength (IEC 60664 and 60664A) operating area	test voltage AC 3,000 V
Insulation resistance	> 100 MΩ (DC 500 V)
Interrupting capacity I_{cn}	0.05...5 A 400 A 5.5...7.5 A 750 A 8...25 A 1,500 A (with back-up fuse NH 40 A to IEC 60269/VDE 0636)
Degree of protection (IEC 60529/DIN 40050)	operating area IP40 terminal area IP00
Vibration	5 g (57-500 Hz), ± 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc 10 frequency cycles/axis
Shock	25 g (11 ms) to IEC 60068-2-27, test Ea
Corrosion	96 hours at 5 % salt mist to IEC 60068-2-11, test Ka
Humidity	240 hours at 95 % RH to IEC 60068-2-3, test Ca
Mass	approx. 50 g

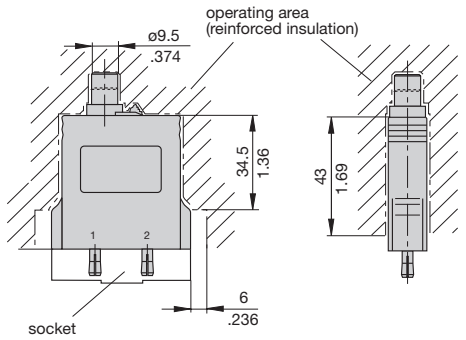
Approvals

Authority	Voltage ratings	Current ratings
VDE (EN 60934)	AC 240 V; DC 28 V	0.05...25 A

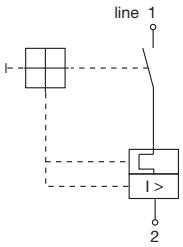
Dimensions



Installation drawing



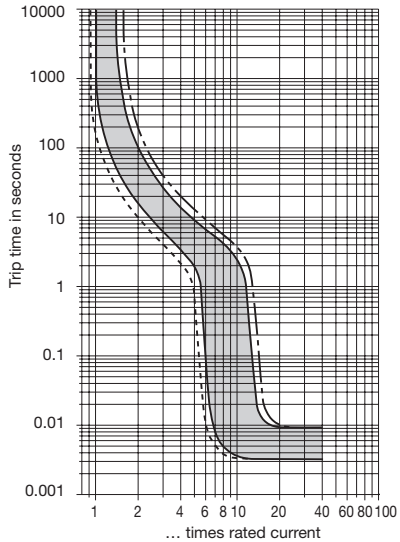
Internal connection diagram



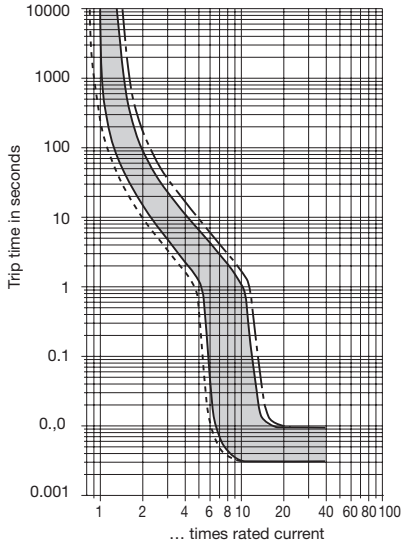
This is a metric design and millimeter dimensions take precedence (mm / inch)

Typical time/current characteristics

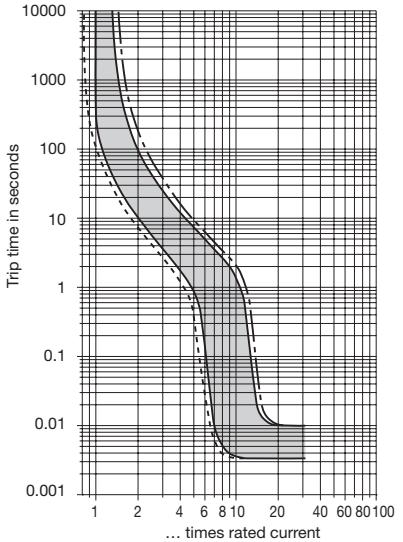
0.05 ... 7 A **AC/DC** [1]



8 ... 16 A **AC/DC** [1]



18 ... 25 A (for I_N ≥20 A 50% ON duty/30 minutes) **AC/DC** [1]



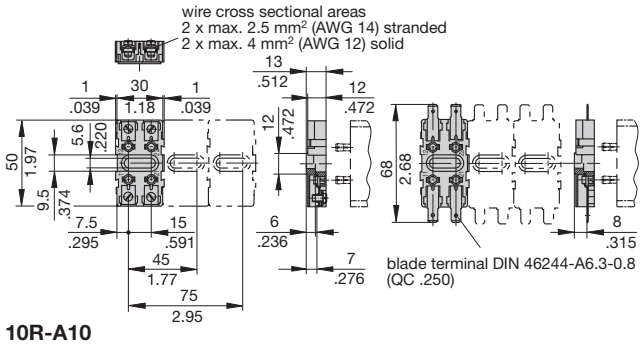
+60 °C +140 °F — +23 °C +73.4 °F — -30 °C -22 °F

[1] Magnetic tripping currents are increased by 20% on DC supplies.

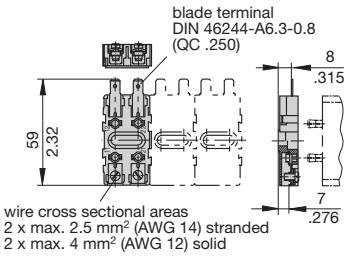
Accessories

Sockets 10R-K10
(continuous load up to 20 A)

10R-P10
(continuous load up to 16 A)

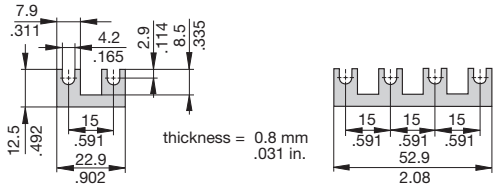


10R-A10
(continuous load up to 16 A)

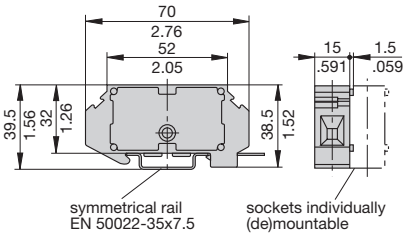


Bus bars for sockets 10.-...:
(continuous load up to 20 A)
Y 301 166 02 (2-way)

Y 301 166 01 (4-way)

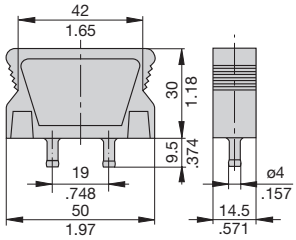


Socket 16
(continuous load up to 16 A)

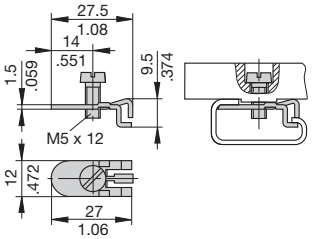


Adapter
X 200 409 01
for EN rail 50035-G32
(specified as a separate item)
for socket 16
available on request

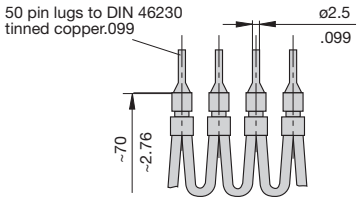
Blanking plug
Y 301 477 01
for sockets 10R-P10/K10/A10



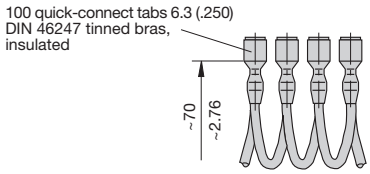
Terminal for mounting rack
X 200 800 01
for socket 10R, 10F
on EN rail 50 035-G32



Connector bus links -K10
X 210 589 01/ 2.5 mm² (AWG 14), black (up to 20 A max. load)
X 210 589 02/ 1.5 mm² (AWG 16), brown (up to 13 A max. load)
for sockets 10R-P10, 10R-A10 and Nr. 16



Connector bus links -P10
X 210 588 01/ 1.5 mm² (AWG 16), brown (up to 13 A max. load)
X 210 588 02/ 2.5 mm² (AWG 14), black (up to 20 A max. load)
X 210 588 03/ 2.5 mm² (AWG 14), red (up to 20 A max. load)
X 210 588 04/ 2.5 mm² (AWG 14), blue (up to 20 A max. load)



This is a metric design and millimeter dimensions take precedence (mm/inch)

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.