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

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

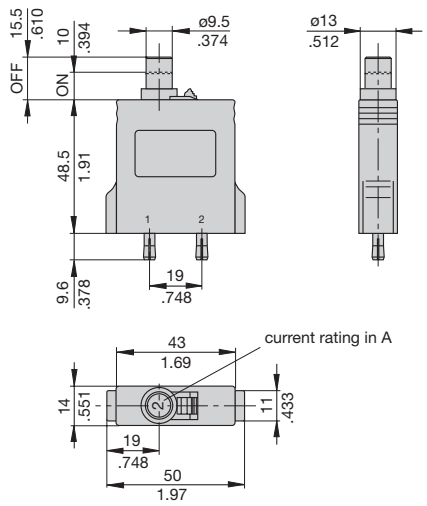
Standard current ratings and typical internal resistance values

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

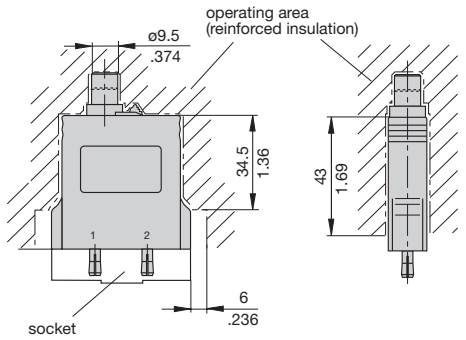
Approvals

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

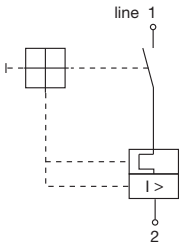
Dimensions



Installation drawing



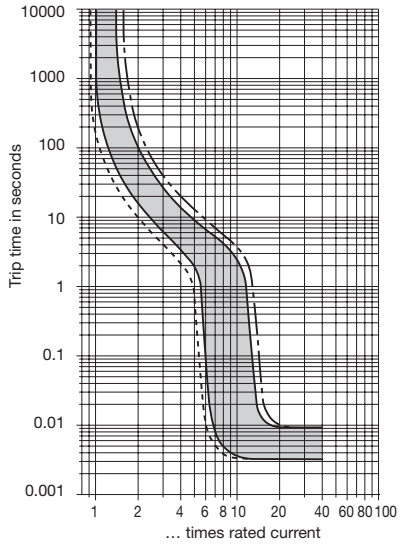
Internal connection diagram



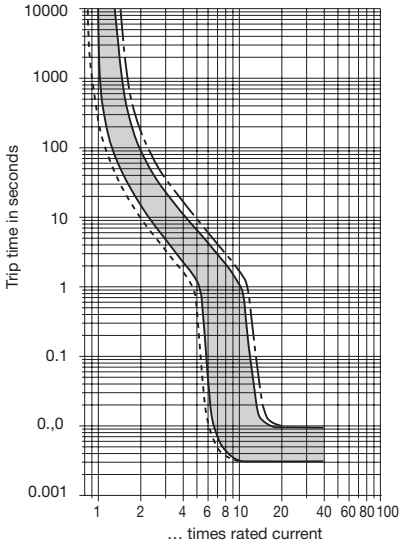
This is a metric design and millimeter dimensions take precedence (mm / inch)

Typical time/current characteristics

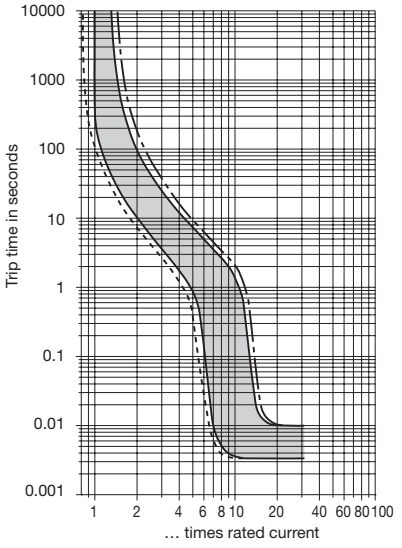
0.05 ... 7 A **AC/DC** [1]



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.