

Type: 412



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

Voltage rating:

- DC 28 V
- AC 115 V (400 Hz) upon request

Current ratings:

from 6 A to 25 A (-FN)
 from 7,5 A to 35 A (-LN/-N)
 lower current ratings to special order

Number of poles:

single pole

Mounting method:

threadneck
 socket

Terminal design:

screw terminals

Actuation:

manual release
 push button

Auxiliary contacts:

without auxiliary contacts

Water splash protection:

with water splash protection
 without water splash protection

Illumination:

without illumination

Typical life:

4,000 operations at $2 \times I_N$

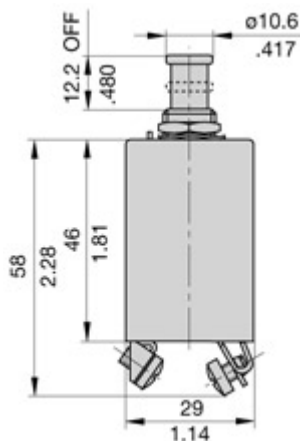
Interrupting capacity I_{cn} :

DC 28 V: 6,000 A

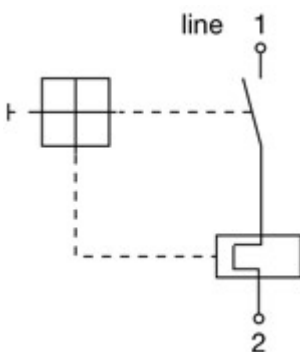
Approvals:

UL

Dimensions



Internal connection diagrams



Description

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

Typical applications

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

Ordering information

Type No.	
412	threadneck panel mounting
Terminal design	
K14	screw terminals M4 (to aircraft specs.)
K54	screw terminals M4 sealed housing (to vehicle specs.)
Version	
FN2	vehicle application, nickel-plated
LN2	aircraft application, black finish
N2	general application, nickel-plated
Current ratings	
6...25 A	(-FN2)
7.5...35 A	(-LN2/N2)
412 - K14 - LN2 - 10 A ordering example	

Standard current ratings and typical voltage drop values

Current rating (A)	Voltage drop (mV)		Current rating (A)	Voltage drop (mV)	
	-LN/N	-FN		-LN/N	-FN
6	-	≤ 300	15	≤ 200	≤ 200
7.5	≤ 300	≤ 250	20	≤ 200	≤ 200
8	≤ 250	≤ 200	25	≤ 200	≤ 200
10	≤ 200	≤ 200	30	≤ 200	-
12	≤ 200	≤ 200	35	≤ 200	-
13	≤ 200	≤ 200			

Approvals

Test authority	Voltage ratings	Current ratings
UL	DC 28 V	0.1...35 A



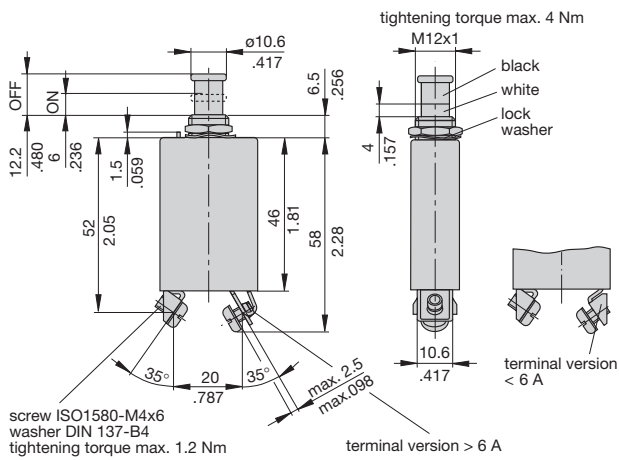
412-...

Technical data

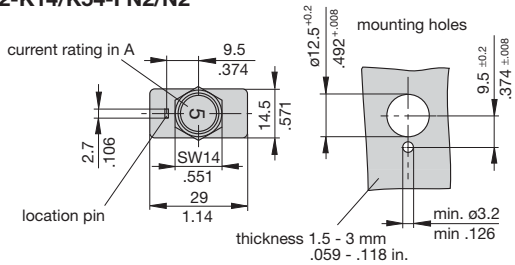
Voltage rating	DC 28 V AC 115 V (400 Hz) upon request
Current rating range	6...25 A (-FN2) 7.5...35 A (-LN2/-N2), lower current ratings to special order
Typical life	4,000 operations at 2 x I _N
Ambient temperature	-55...+75 °C (-67...+167 °F)
Insulation co-ordination (IEC 60664 and 60664A)	rated impulse withstand voltage 1.5 kV pollution degree 3
Dielectric strength (IEC 60664 and 60664A)	test voltage AC 1,500 V operating area
Insulation resistance	> 100 MΩ (DC 500 V)
Interrupting capacity I _{cn}	6,000 A
Interrupting capacity (UL 1077)	6,000 A
Degree of protection (IEC 60529/DIN 40050)	operating area IP40 terminal area IP00
Vibration	10 g (56-500 Hz), ± 0.76 mm (10-55 Hz) to VG 95210, sheet 19, MIL-STD-202, meth. 204, IEC 60068-2-6, test Fc
Shock	25 g (11 ms) to VG 95210, sheet 28, MIL-STD-202, meth. 213, IEC 60068-2-27, test Ea
Corrosion	96 hours at 5 % salt mist, to VG 95210, sheet 2, MIL-STD-202, meth. 101, IEC 60068-2-11, test Ka
Humidity	240 hours at 95 % RH to VG 95210, sheet 7, MIL-STD-202, meth. 106, IEC 60068-2-3, test Ca
Mass	approx. 40 g

Dimensions

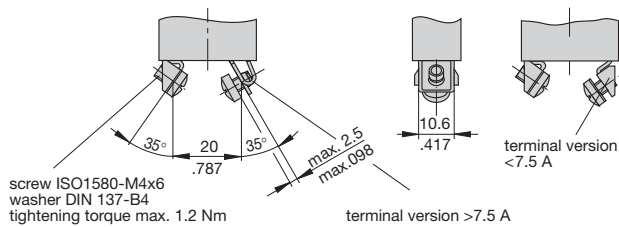
412-K54-FN2/N2



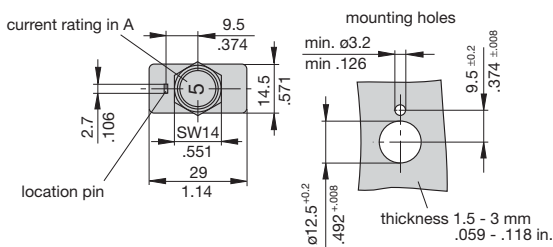
412-K14/K54-FN2/N2



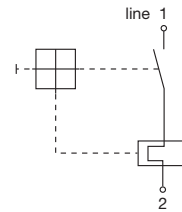
412-K14-LN2



412-K14/K54-LN2

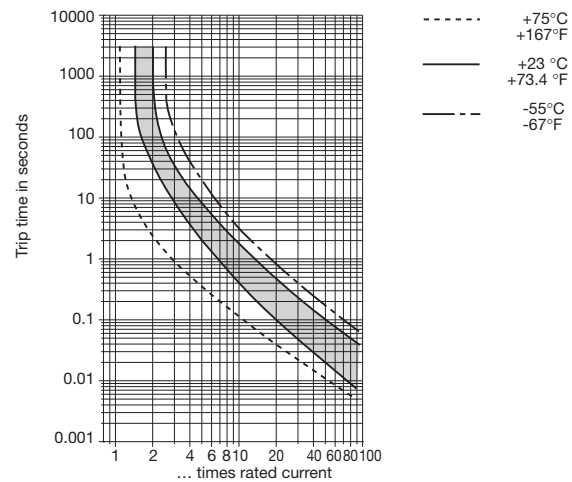


Internal connection diagram



Typical time/current characteristics

412-...-FN2 6...25 A



412-...-LN2/-N2 7.5...35 A

