

Beschreibung

Einpoliger, thermischer Schutzschalter mit Gewindehalsbefestigung, Druck/Zug-Betätigung und hohem Schaltvermögen. Zuverlässiges Schaltverhalten durch Sprungschaltmechanismus und unbeeinflussbare Freiauslösung.

Typische Anwendungsgebiete

Land-, Luft- und Wasserfahrzeuge

Bestellnummernschlüssel

Typennummer

413 einpoliger thermischer Leistungsschutzschalter

Anschlussart

K14 Klemmanschlüsse M6 (Luftfahrt-Ausführung)

K34 verstärkte Klemmanschlüsse M6 (Fahrzeug-Ausführung)

K54 verstärkte Klemmanschlüsse M6 und Gehäuseabdichtung (Fahrzeug-Ausführung)

Ausführung

FN2 Fahrzeugschutzschalter, Gewindehals vernickelt

LN2 Luftfahrtschutzschalter, Gewindehals geschwärzt

N2 Allgemeine Anwendung, Gewindehals vernickelt

Nennstrombereich

30...55 A (-FN2)

30...90 A (-LN2/N2)

413 - K14 - LN2 - 40 A Bestellbeispiel

Verpackungseinheit: 75 Stück

Nennströme und Spannungsfälle

Nennstrom (A)	Spannungsfall (mV)		Nennstrom (A)	Spannungsfall (mV)	
	-LN/N	-FN		-LN/N	-FN
30	≤ 250	≤ 250	55	-	≤ 200
35	≤ 250	≤ 250	60	≤ 200	-
40	≤ 200	≤ 200	70	≤ 200	-
45	≤ 200	≤ 200	80	≤ 200	-
50	≤ 200	≤ 200	90	≤ 200	-

Zulassungen

Prüfstelle	Nennspannung	Nennstrombereich
UL	DC 28 V	30...90 A
QPL Schweden	DC 28 V	30...50 A



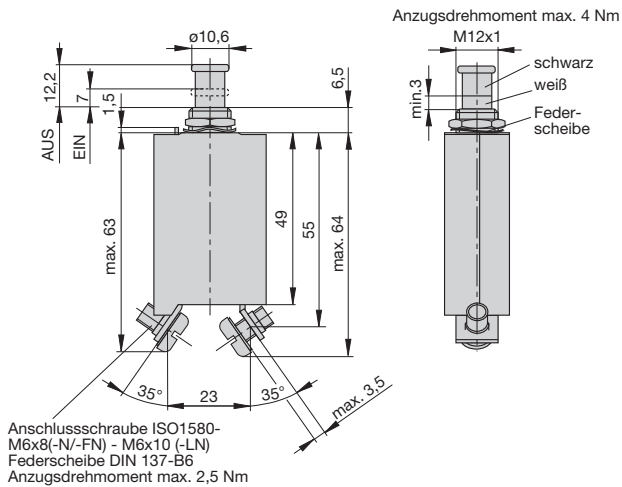
413-...

Technische Daten

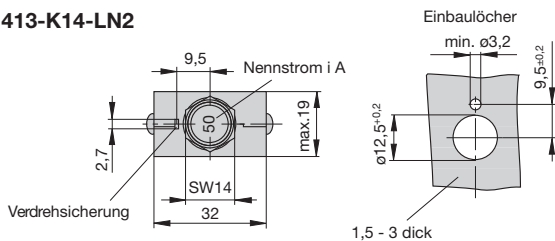
Nennspannung	DC 28 V AC 115 V (400 Hz) auf Anfrage
Nennstrombereich	30...55 A (-FN) 30...90 A (-LN/N)
Lebensdauer	2 000 Schaltspiele mit 1 x I _N
Umgebungstemperatur	-55...75 °C
Isolationskoordination (IEC 60664)	1,5 kV/3
Spannungsfestigkeit Betätigungsbereich	Prüfspannung AC 1 500 V
Isolationswiderstand	> 100 MΩ (DC 500 V)
Schaltvermögen I _{cn}	DC 28 V: 6 000 A
Schaltvermögen (UL 1077)	DC 28 V: 6 000 A
Schutzart (IEC 60529)	Betätigungsbereich IP40 Anschlussbereich IP00
Schwingungsfestigkeit	10 g (56-500 Hz), ± 0,76 mm Ampl. (10-55 Hz) Prüfung nach VG 95210, Bl. 19
Stoßfestigkeit	50 g (11 ms), Prüfung nach VG 95210, Bl. 28
Korrosionsfestigkeit	96 Std. in 5 % Salznebel, Prüfung nach VG 95210, Bl. 2
Feuchtigkeitsprüfung	240 Std. in 95 % rel. Feuchte, Prüfung nach VG 95210, Bl. 7
Masse	ca. 65 g

Maßbilder

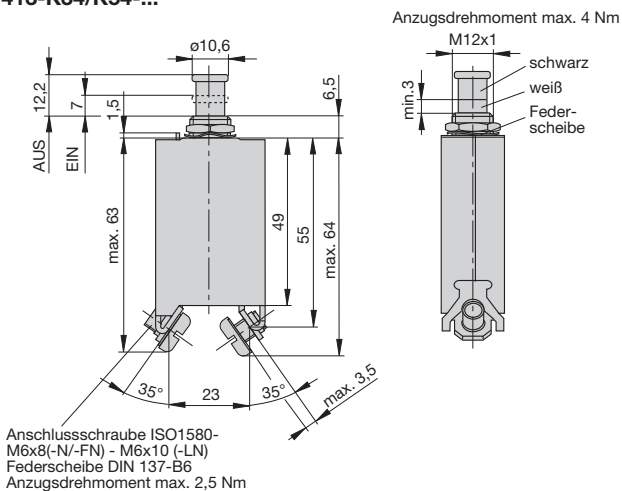
413-K14-...



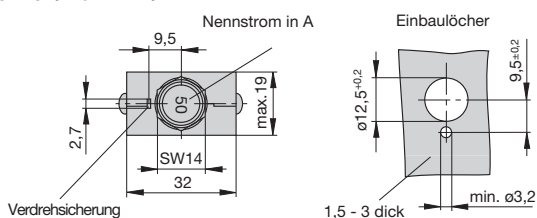
413-K14-LN2



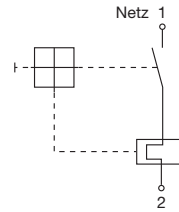
413-K34/K54-...



413-K34/K54-FN2/-N2



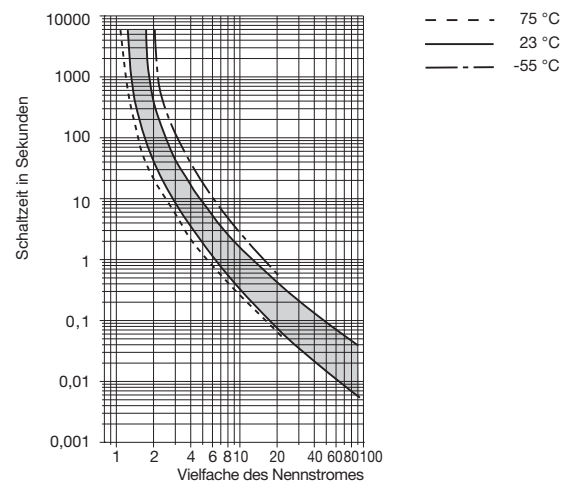
Schaltbild



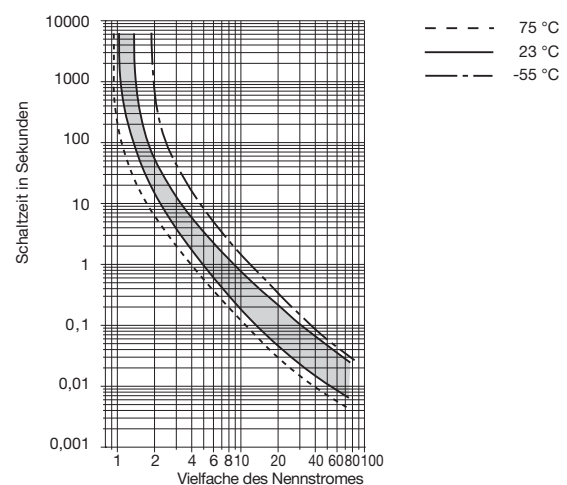
Zeit/Strom-Kennlinien

(Gesamtabschaltzeit bei Nennspannung)

413-...-FN2 30...55 A



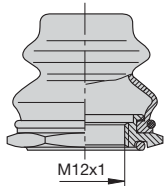
413-...-LN2/-N2 30...90 A



Zubehör (zugelassen nach VG 95345, Teil 23)

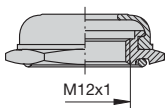
Schutzkappe mit Sechskantmutter und O-Ring (IP66 und IP67)

Best.-Nr. X 200 801 08 (Mutter M12x1 vernickelt,
Schutzkappe transparent)
Best.-Nr. X 200 801 03 (Mutter M12x1 geschwärzt,
Schutzkappe schwarz)



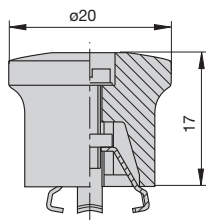
Schutzkappe mit Sechskantmutter (IP54)

Best.-Nr. X 200 802 01 (Mutter M12x1, vernickelt)
Best.-Nr. X 200 802 02 (Mutter M12x1, geschwärzt)



Aufsatzbetätigungsknopf (schwarz) zum Aufkleben auf den Druckknopf

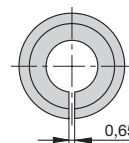
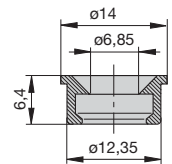
Best.-Nr. X 200 803 01



Zubehör

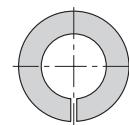
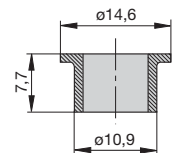
Kennzeichnungsring zum Aufsnappen auf den Druckknopf

Best.-Nr. Y 307 004 01 schwarz
Y 307 004 02 weiß
Y 307 004 03 rot
Y 307 004 04 grün
Y 307 004 05 blau



Sperrring zum Blockieren des Druckknopfes in AUS-Stellung

Best.-Nr. Y 307 005 01 rot
Best.-Nr. Y 307 005 02 schwarz



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.	
413	threadneck panel mounting
Terminal design	
K14	screw terminals M6 (to aircraft specs.)
K34	reinforced screw terminals M6 (to vehicle specs.)
K54	as K34, but housing sealed
Version	
FN2	vehicle application, nickel-plated
LN2	aircraft application, black finish
N2	general application, nickel-plated
Current ratings	
30...55 A (-FN2)	
30...90 A (-LN2/N2)	
413 - K14 - LN2 - 40 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
30	≤ 250	≤ 250	55	-	≤ 200
35	≤ 250	≤ 250	60	≤ 200	-
40	≤ 200	≤ 200	70	≤ 200	-
45	≤ 200	≤ 200	80	≤ 200	-
50	≤ 200	≤ 200	90	≤ 200	-

Approvals

Test authority	Voltage ratings	Current ratings
UL	DC 28 V	30...90 A
QPL Sweden	DC 28 V	30...50 A



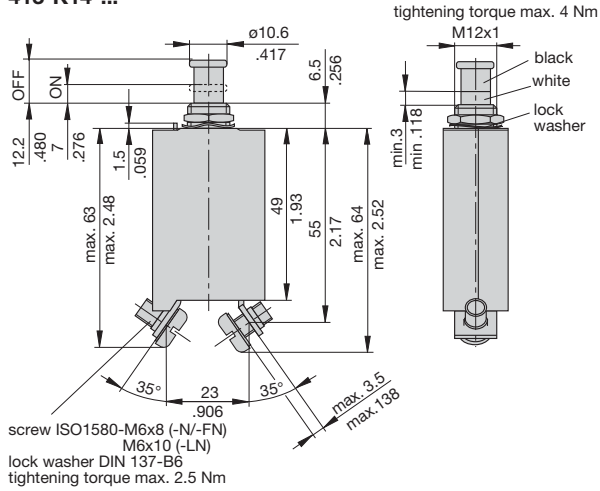
413-...

Technical data

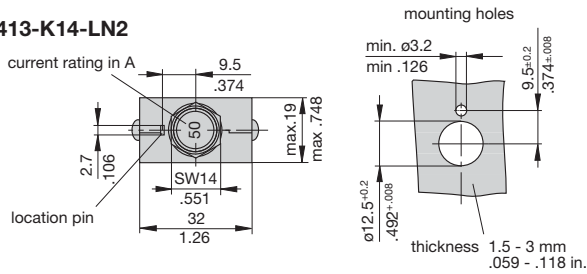
Voltage rating	DC 28 V AC 115 V (400 Hz) upon request
Current rating range	30...55 A (-FN2) 30...90 A (-LN2/-N2)
Typical life	2,000 operations at 1 x I _N
Ambient temperature	-55...+75 °C (-67...+167 °F)
Insulation co-ordination (IEC 60664 and 60664A)	rated impulse withstand voltage 1.5 kV pollution degree 3
Dielectric strength (IEC 60664 and 60664A) operating area	test voltage AC 1,500 V
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	50 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. 65 g

Dimensions

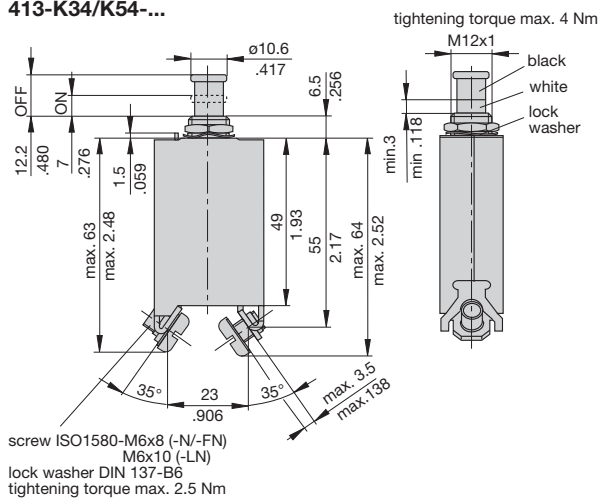
413-K14-...



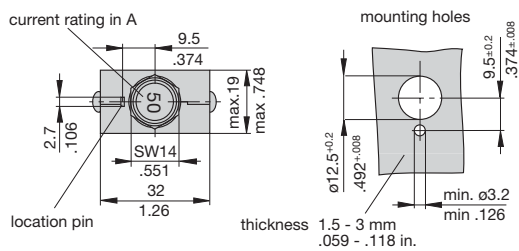
413-K14-LN2



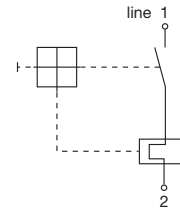
413-K34/K54-...



413-K34/K54-FN2/-N2

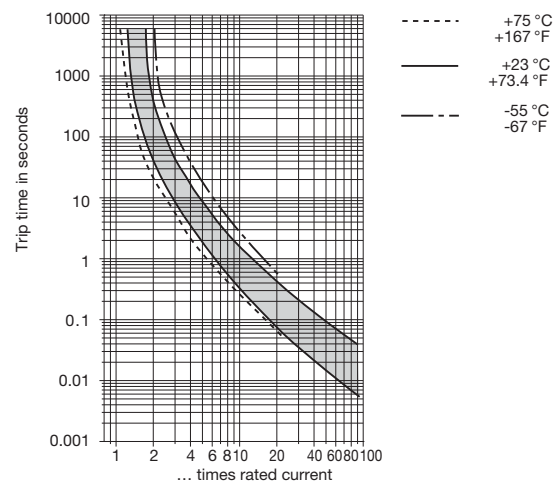


Internal connection diagram

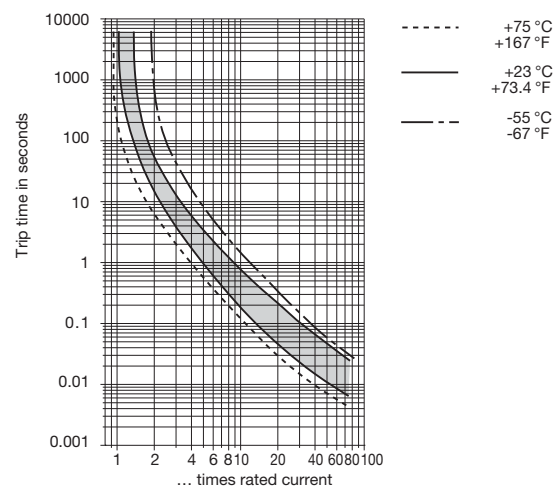


Typical time/current characteristics

413-...-FN2 30...55 A



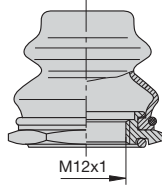
413-...-LN2/-N2 30...90 A



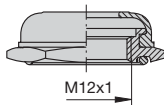
This is a metric design and millimeter dimensions take precedence ($\frac{\text{mm}}{\text{inch}}$)

Accessories (approved to VG 95345, part 23)

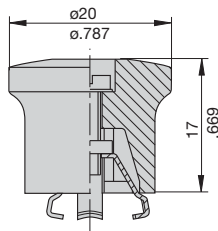
Splash cover /hex nut assembly with O ring (IP66 and IP67)
X 200 801 08 nickel plated nut M12x1, transparent cover
X 200 801 03 matt black finish nut M12x1, black cover



Splash cover black /hex nut assembly with O ring (IP54)
X 200 802 01 nickel plated nut M12x1
X 200 802 02 matt black finish nut M12x1



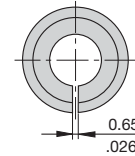
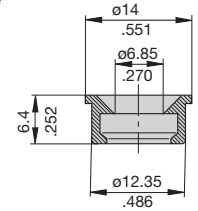
Actuator extension (black)
 to be fitted on the push button
X 200 803 01



Accessories

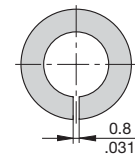
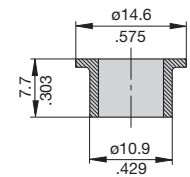
Identification collar to be snapped on the push button

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



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

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.