E-T-A High Performance Thermal-Magnetic Circuit Breaker 437-...

Description

Single pole high performance thermal-magnetic circuit breaker with tease-free, trip-free, snap action mechanism and toggle actuation (S-type TM CBE to EN 60934). Options include auxiliary contacts, a moulded flame retardant enclosure for added environmental protection, and remote operation - disconnection only, or disconnection and re-connection. Also available in an IP65 housing (see type E-1032).

Typical applications

Battery and cable protection for all types of vehicles (including rail vehicles and boats), battery powered systems.

Ordering information

Type No.
437 single pole, toggle actuator
Terminal design
K12 flat screw terminals M10
K60 flat screw terminals DIN 46206, sheet 2, form 1, thread M10
Mounting
1 lugs
5 brackets
Characteristic curve
06 fast trip
07 delayed trip
Auxiliary contacts (blade terminals 6.3x08)
Si one each N/O and N/C
Si01 one N/C (11/12), two N/O (13/14 + 23/24)
Si2 one N/O (13/14)
Remote trip (optional)
FA electrical remote disconnection
FC electrical remote disconnection (FA) and re-connection (FE)
Coil voltage
12 DC 12 V
24 DC 24 V
Current ratings
40...240 A

437 - K60 - 5 - 06 - Si01-FA 24 - 50A ordering example

The exact part number required can be built up from the table of choices shown above. Ordering references for optional features should be omitted if not required.

Standard current ratings and typical internal resistance values

Current rating (A)	Internal resistance (Ω)	Current rating (A)	Internal resistance (Ω)
40	< 0.003	120	≤ 0.002
50	< 0.002	160	≤ 0.001
63	≤ 0.002	200	≤ 0.001
80	≤ 0.002	240	≤ 0.001
100	≤ 0.002		

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Technical data

Voltage rating		DC 110 V (higher voltage ratings upon request)
Current rating range		40...240 A (higher current ratings upon request)
Auxiliary contact rating		6 A max. at DC 28 V
Electrical remote disconnection (-FA)		
operating voltage		DC 12 V or DC 24 V
operating current		approx. 18 A or 12 A
max. pulse time		10 ms < t_{ON} < 20 ms / t_{OFF} > 10 s
switching time		< 20 ms
Electrical remote re-connection (-FC)		
operating voltage		DC 12 V or DC 24 V
operating current		approx. 30 A or 15 A
max. pulse time		0.1 s < t_{ON} < 1.2 s / t_{OFF} > 60 s
switching time		< 100 ms
Typical life		10,000 cycles at electrical remote control 10,000 operations at 240 A, DC 28 V 20,000 operations mechanical
Ambient temperature		-40...+60 °C (-40...+140 °F)
Insulation co-ordination (IEC 60664 and 60664 A)	rated impulse withstand voltage 6 kV	pollution degree 3
Dielectric strength (IEC 60664 and 60664 A)	test voltage	
operating area	AC 3,300 V	
main to aux. circuit	AC 2,200 V	
aux. circuits 11-12 to 13-14	AC 1,000 V	
Insulation resistance		> 100 MΩ (DC 500 V)
Interrupting capacity I_{cn}		10,000 A at DC 28 V; L/R = 0 ms 7,500 A at DC 28 V; L/R = 13 ms
Degree of protection (IEC 60529/DIN 40050)		operating area IP40, terminal area IP00 with enclusure B IP54 with enclosure C IP65
Vibration	curve 06: curve 07:	3 g (60-500 Hz), ± 0.23 mm (10-60 Hz) 4 g (60-500 Hz), ± 0.30 mm (10-60 Hz) to IEC 60068-2-6, test Fc, 10 frequency cycles/axis
Shock	curve 06: curve 07:	20 g (11 ms), to IEC 60068-2-27, test Ea 25 g (11 ms), to IEC 60068-2-27, test Ea 15 (11 ms) for -FA/-FC in shock direction 6 to IEC 60068-2-27 test Ea
Corrosion		48 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. 900 g base unit + approx. 400 g remote re-connection + approx. 100 g remote disconnection

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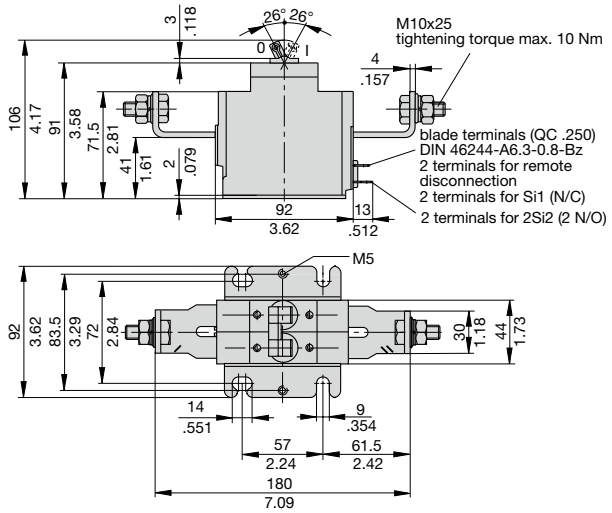
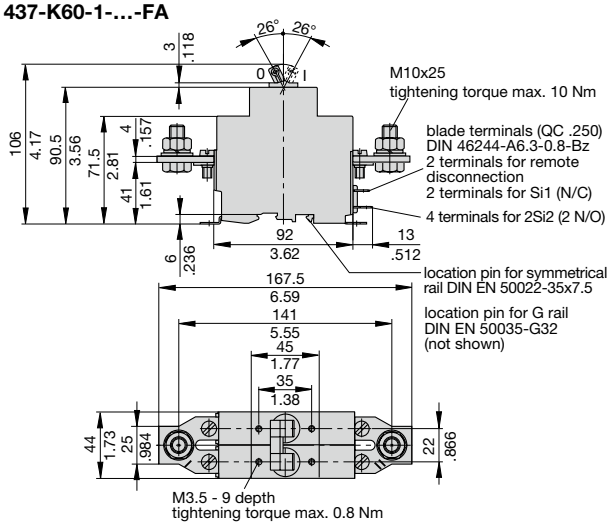
Dimensions

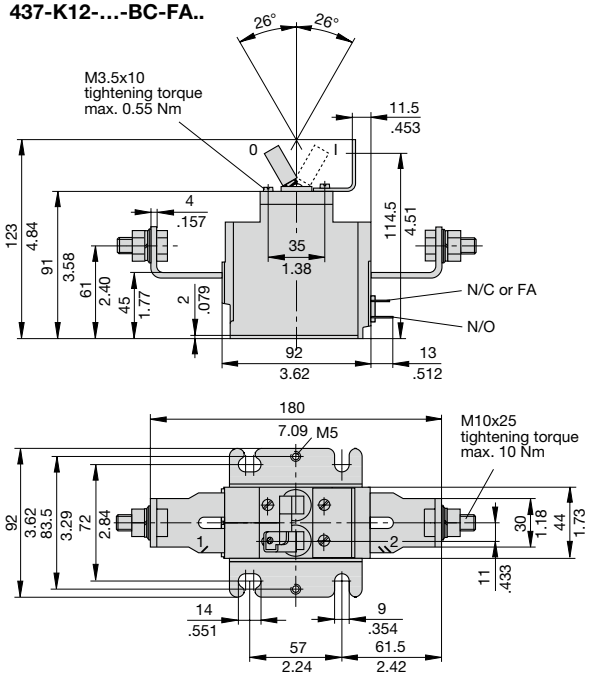
437-K12-5-Si-...-FA



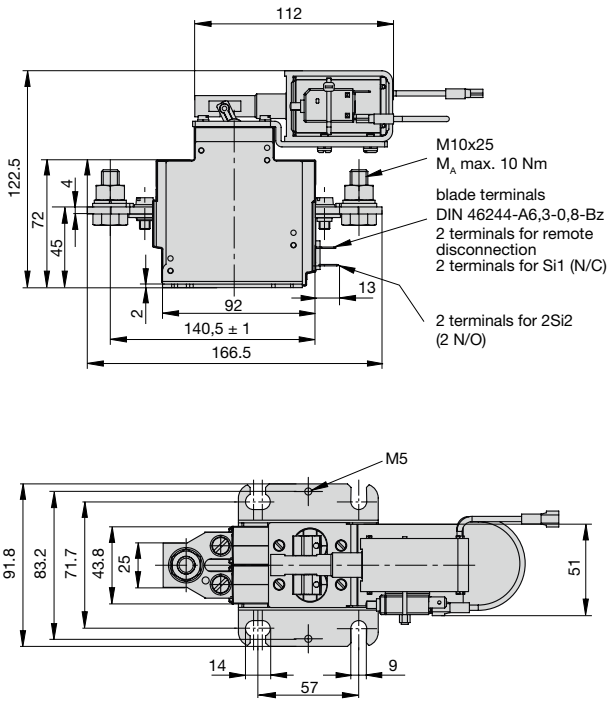
437-K60-1-...-FA



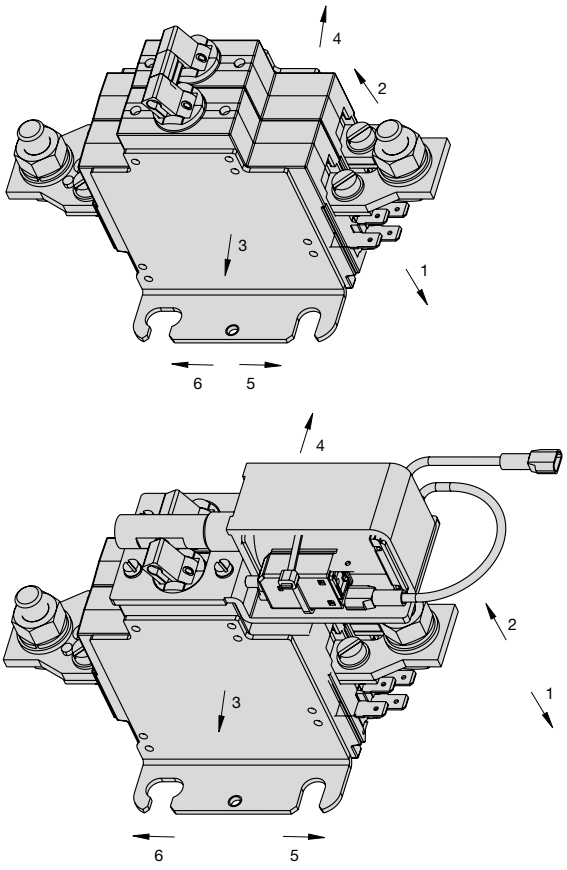
437-K12-...-BC-FA..



437-K60-5-...-FC

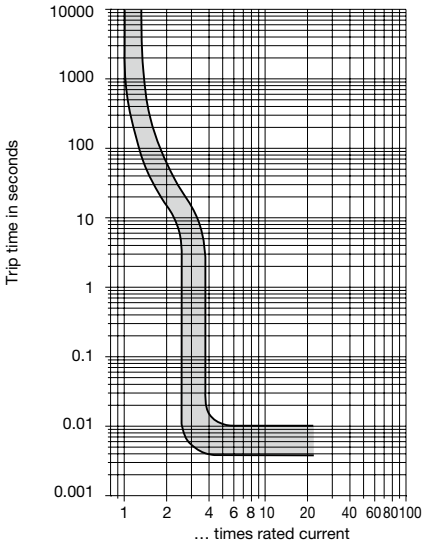


Shock direction

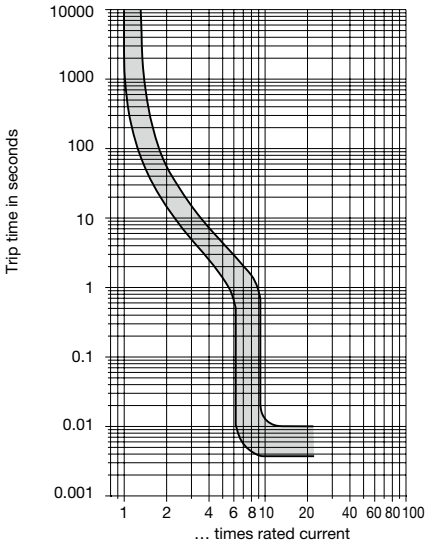


Typical time/current characteristics at +23 °C/+73.4 °F

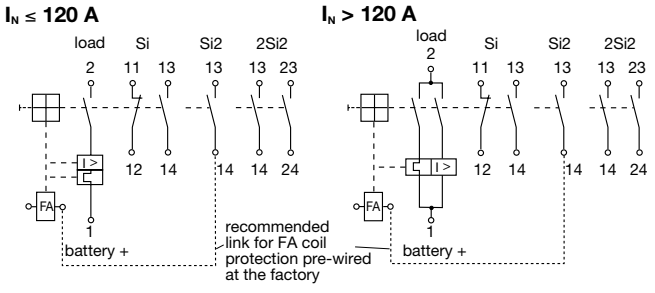
Curve 06 (fast trip) **DC**



Curve 07 (delayed trip) **DC**



Internal connection diagram



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

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.