E-T-A Remote Control Circuit Breaker 4930 (RCCB)

Description

Single pole remote control circuit breaker (RCCB), temperature compensated, either with or without auxiliary contacts, and featuring a bimetal actuator which trips the circuit breaker mechanism within a specified time under overcurrent conditions. The switching contact latching system is operated by a bi-stable linear motor controlled by electronic circuitry incorporated within the device. Remote control is achieved through the use of a conventional single pole manually operated aircraft style thermal circuit breaker which connects the control input of the RCCB to ground.
With the control circuit breaker in the ON position, the RCCB will switch on. When the control circuit breaker is switched off, the RCCB will change to the OFF condition. If power is applied to a previously de-energised RCCB, the device will adopt the same switching status as the control circuit breaker. The integral electronic circuitry will prevent the switching contacts of the RCCB from cycling on and off in the event of a short circuit.
If the RCCB trips thermally in the event of a load circuit fault, the electronic circuitry will also cause the control circuit breaker to trip, thereby providing a visual indication through the position of the circuit breaker actuator.
Approved to MIL-PRF-83383.

Typical applications

Aircraft electrical systems and equipment, and other high performance applications.

Ordering information

Type No.	
4930	single pole remote control circuit breaker (RCCB)
Variation	
01	standard, with auxiliary contacts
02	with modified terminal barrier and auxiliary contacts
03	standard, without auxiliary contacts
04	with modified terminal barrier but without auxiliary contacts
Current ratings	
5...100 A	

4930 - 01 - 5 A ordering example

Standard current ratings and typical voltage drop values

Current ratings (A)	Voltage drop at rated current(mV)	Current ratings (A)	Voltage drop at rated current(mV)
5	450	40	225
7.5	360	50	225
10	347	60	225
15	225	75	225
20	225	80	225
25	225	100	225
35	225		

Approvals

MIL-PRF-83383

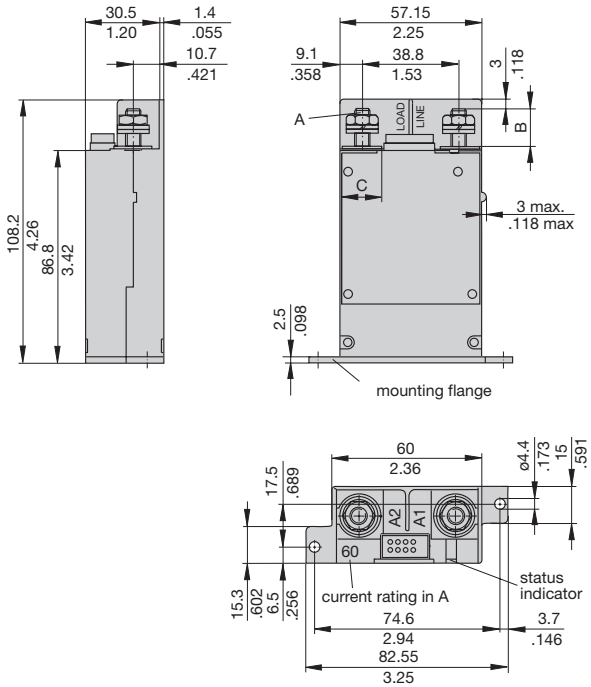
4930 (RCCB)

Technical data

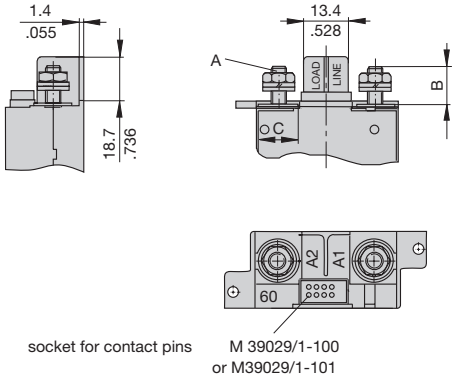
Voltage rating	AC 115 V 400 Hz (AC 104...125 V) DC 28 V (DC 18...36 V)
Current rating range	5...100 A
Auxiliary circuit	3 A, DC 28 V, AC 115 V (400 Hz)
Bias current	2.5 mA max at DC 20 mA max at AC
Switching current/ switching period	3.4 A / 25 ms at DC 2.8 A / 17 ms at AC
Trigger current for ICU ("TRIP FREE"-mode)/ duration	approx. 3.2 A /5 s max
Typical life	50,000 operations at I_N (inductive or resistive)
Ambient temperature	-54...+71 °C (-65...+160 °F)
Dielectric strength (IEC 60664 and 60664A) between main terminals main terminal to mounting area	test voltage AC 1,500 V AC 1,500 V
Insulation resistance	> 100 MΩ (DC 500 V)
Interrupting capacity	DC 28 V: 6,000 A
Vibration (sinusoidal)	10 g (55-2000 Hz), ±0.76 mm (10-55 Hz) to MIL-STD 202, method 204, condition C
Vibration (random)	10-2000 Hz 0.15 g^2/Hz, rms value 13.5 g; 5 h/axis loaded with 0.9 I_N
Shock	25 g (11 ms) to MIL-STD 202, method 213, condition J ISO 7137 (RTCA/DO-160 C, part 7)
Corrosion	48 hours at 5 % salt mist to MIL-STD 202, method101, condition B ISO 7137 (RTCA/DO-160 C, part 14, category S)
Humidity	240 hours at 95 % RH to MIL-STD 202, method 106/ISO 7137 (RTCA/DO-160 C, part 6, category B)
Altitude	≤ 15,000 m above sea level
Mass	5...25 A approx. 315 g 35...100 A approx. 319 g

Dimensions

Type 4930-01 (M 83383/02)
-03 (M 83383/01)



Type 4930-02/ -04

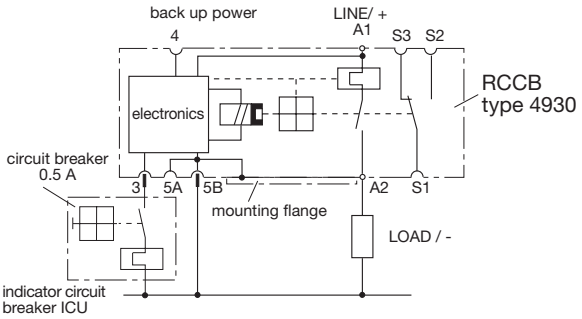


current rating (A)	5 … 25	35 … 100
thread A	0.190-32 UNF-2A	0.250-28 UNF-2A
mounting torque	2 Nm	4.1 Nm
B (mm/in.)	12.7/.500	15.5/.610
C (mm/in.)	12.7/.500	15.5/.610
nut	AN315-3R	AN315-4R
lock washer	MS 35338-43	MS 35338-44
washer	AN 960-10L	AN 960-416

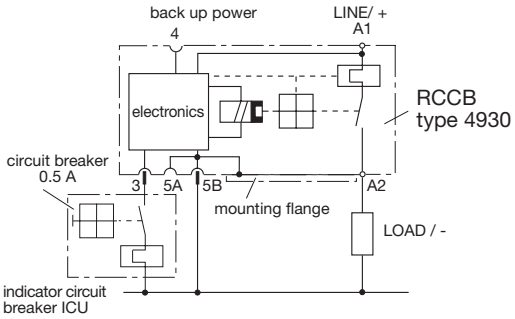
mounting flanges mate as shown

Internal Connection diagrams

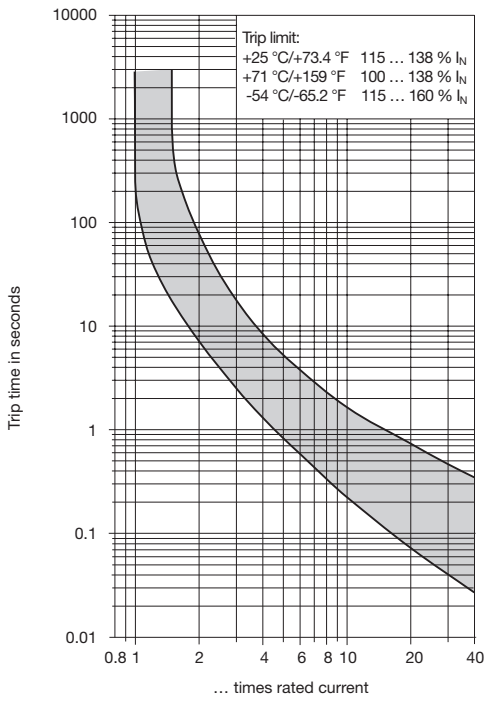
Type 4930-01/ -02 (with auxiliary contacts)



Type 4930-03/ -04 (without auxiliary contacts)



Typical time/current characteristics



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.