



## General Data

### Life Ratings:

- 50,000 operations except as noted below
- Units rated 60 Amps and higher have a motorload life of 25,000 cycles
- Units rated 35-50 Amps have a lampload life of 25,000 cycles, units rated above 50 Amps do not carry a lampload rating
- Units rated above 100 Amps are limited to 50% duty cycle with 3 min. on time

### Specifications:

- Magnetically-Latched Coil
- Meets MIL-C-83383
- Double break contact design
- High rupture capability (3600 Amperes)
- Bi-metal temperature compensated overload sensing
- Transient suppressor on coils
- Electronic controls and logic EMI/RFI protected
- Use with Indicator/Control Unit (I/CU) circuit breaker MS22073-1/2 or MS26574-1/2 or equivalent
- In line fusible link (bi-metel) – trip free operation
- Integrated wire termination (IWT) module (MIL-STD-1549 type)
- Three pole units weight: 32 ounces

### Notes:

- Auxiliary contacts (denoted by A1 part number suffix): 1PDT switch rated at 28 Vdc/115 V 400 Hz; Res. 3 Amp, Ind. 1.5 Amp, Lamp 0.5 Amp.
- Data bus capability/interface available

## Engineering Data

### Single Pole Single Throw (Double Break Contacts)

Catalog Number 1/	Rated Contact Load (Amperes)								MIL-C-83383 Part Number	Max. Weight Oz/gm
	28 Vdc				115/200 V 400 Hz					
	Res.	Ind.	Motor	Lamp	Res.	Ind.	Motor	Lamp		
SM600BA5A1 SM600BA5N1	5	5	5	5	5	5	5	5	M83383/02-01 M83383/01-01	11.75/332 11.25/318
SM600BA10A1 SM600BA10N1	10	10	10	10	10	10	10	10	M83383/02-03 M83383/01-03	11.75/332 11.25/318
SM600BA15A1 SM600BA15N1	15	15	15	15	15	15	15	15	M83383/02-04 M83383/01-04	11.75/332 11.25/318
SM600BA20A1 SM600BA20N1	20	20	20	20	20	20	20	20	M83383/02-05 M83383/01-05	11.75/332 11.25/318
SM600BA25A1 SM600BA25N1	25	25	25	25	25	25	25	25	M83383/02-06 M83383/01-06	11.75/332 11.25/318
SM600BA35A1 SM600BA35N1	35	35	35	35	35	35	35	35	M83383/02-07 M83383/01-07	12.00/339 11.50/325
SM600BA40A1 SM600BA40N1	40	40	40	40	40	40	40	40	M83383/02-08 M83383/01-08	12.00/339 11.50/325
SM600BA50A1 SM600BA50N1	50	50	50	50	50	50	50	50	M83383/02-09 M83383/01-09	12.00/339 11.50/325
SM600BA60A1 SM600BA60N1	60	60	60	---	60	60	60	---	M83383/02-10 M83383/01-10	12.25/346 11.75/332
SM600BA75A1 SM600BA75N1	75	75	75	---	75	75	75	---	M83383/02-11 M83383/01-11	12.25/346 11.75/332
SM600BA100A1 SM600BA100N1	100	100	100	---	100	100	100	---	M83383/02-13 M83383/01-13	12.25/346 11.75/332

### Three Pole Single Throw (Double Break Contacts)

Catalog Number 1/	Rated Contact Load (Amperes)				MIL-C-83383 Part Number
	115/200 V 400 Hz				
	Res.	Ind.	Motor	Lamp	
SM601BA10A1	10	10	10	10	M83383/04-03
SM601BA15A1	15	15	15	15	M83383/04-04
SM601BA20A1	20	20	20	20	M83383/04-05
SM601BA25A1	25	25	25	25	M83383/04-06
SM601BA35A1	35	35	35	35	M83383/04-07
SM601BA40A1	40	40	40	40	M83383/04-08
SM601BA50A1	50	50	50	50	M83383/04-09
SM601BA60A1	60	60	60	---	M83383/04-10

1/ Add suffix "2" after part number for units with PIN #5 not grounded to mounting bracket, i.e. SM600BA15N12, instead of SM600BA15N1

## Engineering Data

### Description

The remote Control Circuit Breakers (RCCB) concept, as load controllers in distributed-load applications, provides for a more efficient power distribution system with less line loss at a lower cost and with less weight than the conventional relay – flight deck circuit protector method.

Designed to meet the requirements of MIL-C-83383, the RCCB's capability and advantages include:

- Fusible link fail safe
- Remote on/off operation from the flight deck
- Visual indicators for open (green) and closed (red) on top surface
- Substantial reduction in weight and size
- Most direct route from power source to load
- Single wire control line from I/CU to RCCB
- Double-break power contact assembly
- Indication of trip or set by position of the ½ ampere circuit breaker on the flight deck
- Elimination of long runs of heavy and costly cables
- Magnetically latched coils (low power consumption)
- Use as a relay or circuit breaker or both
- Flanges mate for in-line or side-by-side mounting
- 1PST FOR DC OR SINGLE PHASE AC
- 3PST FOR THREE PHASE AC ONLY

### Application

The Remote Control Circuit Breaker (RCCB) is a combination relay and circuit breaker which can be released or set by applying a release or set coil current electronically controlled by a command from the Indicator/Control Unit (I/CU) (A one half-ampere fast trip, thermal circuit breaker).

With power available to terminal #4 and/or terminal A1 (28 Vdc or 115 V 400 Hz) on 1PST RCCB: to terminal #4 (28 Vdc) and/or both terminals B1 and C1 (115 V 400 Hz) on 3PST RCCB, the RCCB will assume the state requested/indicated by the I/CU. If power is removed from terminal #4 and A1 on 1PST or from terminal #4 and both B1 and C1 on 3PST, the RCCB will remain in the state it was in prior to power removal. When power is reapplied to the terminals, the RCCB will assume the state indicated by the I/CU.

With the RCCB closed, an overload or fault current on any line or lines will cause the RCCB to trip and in turn will cause a controlled overload of the I/CU, causing it to trip also. A fault or overload on any power contact will cause the RCCB to trip open within the time limits specified regardless of the availability of coil power. To reclose the RCCB, the I/CU line (line 3 to ground) must be opened by the I/CU or series switch and reconnected to ground.

**FOR ONE-POLE UNITS ONLY:** To reset the RCCB after trip, the coil voltage must be 21 Vdc or 104 Vac minimum.

**Other Performance Parameters for MIL-C-83383:**

- Coordination. An overload applied to two devices in series with a 2 to 1 current rating will result in only the lower rated device opening.
- Rupture capability to 3600A (115 Vac rms or 28 Vdc for SM600BA and 115 Vac rms for SM601BA series).
- Dielectric. 1500 V, 60 Hz, MIL-STD-202, Test Method 301, 0.5 MA maximum.
- Explosion-proof. MIL-STD-202, Test Method 109.
- Thermal Temperature Range. -54°C to 71°C (-65°F to 160°F). MIL-STD-202, Test Method 107.
- Insulation Resistance. MIL-STD-202, Test Method 302, 100 Meg-ohms minimum.
- Aircraft Electrical Power, MIL-STD-704.
- Vibration. 10 g's to 2000 Hz. MIL-STD-202, Test Method 204, Condition C (-54°C, 25°C, and 71°C). Maximum duration of contact transfer to uncommanded state: 10 X 10<sup>-6</sup> seconds.
- Shock. 25 g's. MIL-STD-202, Test Method 213. Maximum duration of contact transfer to uncommanded state: 10 X 10<sup>-6</sup> seconds.
- Altitude. 50,000 feet.
- EMI. MIL-STD-461, Class 1D, 14 kHz to 400 kHz. Transient susceptibility (Stability) to 600 Vdc. DO-160C, Section 20, Category Y (200 Volts/meter) 10 kHz to 400 MHz. MIL-STD-462 Method CS01, CS02 & RS06 (Chattering Relay).
- Moisture resistance. MIL-STD-202, Test Method 106.
- Fungus resistance. MIL-STD-454, Req. 4.
- Sand and Dust Resistance. MIL-STD-202, Test Method 110, Test Condition A.
- Salt Spray Resistance. MIL-STD-202, Test Method 101, Test Condition B.