



Standard

Sub-Miniature Size — High Performance

Qualified

To MS3320 of Mil-C-5809. Meets performance specification of MS14105 of MIL-C-5809

High Interrupting Capacity

Interrupts 6,000A fault at 28V, DC; up to 3,500A fault at 120V, 400 Hz., AC (ampere rating dependent).

Vibration Resistance

Vibration resistance and mechanical life exceed MIL Specs — including random vibration.

Temperature-Compensated

Ambient-temperature-compensated from -55°C to +121°C.

Performance Rated Circuit Breaker

The lightweight, single-phase circuit breaker, Series 4310, allows high density packaging for all aircraft and aerospace needs.

The 4310 series reflects the latest advancements in circuit breaker design — plus other proven features (e.g., self-wiping contacts).

Tight tolerances in design and stringent manufacturing standards are key factors in the reliable operation of the 4310 under severe environmental conditions of high temperature, high humidity, extreme vibration, and shock. It is also fungus- and corrosion-proof.

Calibration integrity is maintained through wide variations in ambient temperature and altitude, making this circuit breaker ideal for applications where temperature is not controlled.

Multiple Options

This series is available in many optional configurations.

It is presently being manufactured with 7/16, 15/32 and metric mounting sleeves. Many versions of different terminals, barriers, and hardware are current production items. Several different actuator options provide our customers with additional flexibility.

PERFORMANCE DATA

| | |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interrupting Capacity* | 1 to 25A: 6,000A at 28V, DC. 1A: 3,500A at 120V, 400 Hz., AC 1 1/2 to 2 1/2A: 2,800A at 120V, 400 Hz., AC; 3 TO 15: 2,500A AT 120V, 400 Hz., AC; 20 to 25A: 2,000A at 120V, 400 Hz., AC |
| Endurance* | At 120V, 400 Hz., AC or at 28V, DC: inductive load — 2,500 cycles; resistive load — 5,000 cycles; mechanical cycling, no load — 10,000 cycles |
| Overload Cycling | Minimum of 100 cycles at 200% rated current |
| Dielectric Strength | At sea level, 25°C 1,500V, AC. At 70,000 ft. 121°C 500V, AC |
| Insulation Resistance | Not less than 100 megohms at 500V, DC |
| Voltage Drop | Varies with rating (see "Ordering Information") |
| Vibration* | Meets specification MIL-STD-202, Method 204, Condition A-10G, 10-500 Hz. MS "V" type,(4310-019) meets Condition B, 15G, 10-2,000 Hz. and Condition C 10G, 10-2,000 Hz. |
| Shock* | Exceeds 50G's, 11 Milli-sec (half-sine pulse) MIL-STD-202, Method 213 Test A |
| Acceleration | Exceeds 10G's |
| Weight | 25 grams (.055 lbs.) |

* Variations of these circuit breakers are capable of exceeding the standard Mil specification for endurance vibration, shock, and interrupting capacity. Consult the Business Unit for more information.

OVERLOAD CALIBRATION DATA

| Specification Table | @ 25°C | | @ +121°C | | @ -55°C | | Test Time Parameters |
|---------------------|--------|-------|----------|-------|---------|-------|----------------------|
| | MIN | MAX | MIN | MAX | MIN | MAX | |
| Must Hold | 115 | — | 100 | — | 115 | — | % For 1 Hour |
| Must Trip | — | 138 | — | 138 | — | 160 | % Within 1 Hour |
| 200% Overload | 5.00 | 20.00 | 1.500 | 13.00 | 7.00 | 40.00 | Seconds |
| 500% Overload | 0.50 | 2.00 | 0.150 | 1.10 | 0.50 | 3.00 | Seconds |
| 1000% Overload | 0.12 | 0.53 | 0.035 | 0.30 | 0.16 | 0.80 | Seconds |

Trip curves available.

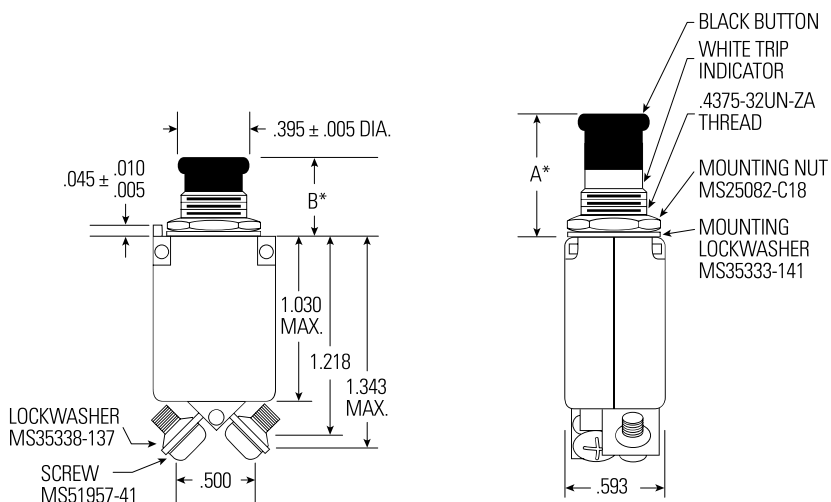
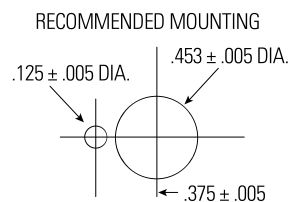
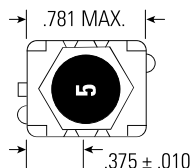
ORDERING INFORMATION

| MS Approval Status | AMPERE RATING | VOLTAGE DROP MAX.* | STANDARD | | LONG BUTTON | | HIGH VIBRATION | | LONG BUTTON VIBRATION | |
|--------------------|---------------|--------------------|--------------|---------------|---------------|---------------|----------------|---------------|-----------------------|---------------|
| | | | MS P/N | SAFRAN MP P/N | MS P/N | SAFRAN MP P/N | MS P/N | SAFRAN MP P/N | MS P/N | SAFRAN MP P/N |
| MS Approved | 1 | 1.10 | MS3320-1 | 4310-001-1 | MS3320-1L | 4310-005-1 | MS3320-1V | 4310-019-1 | MS3320-1VL | 4310-024-1 |
| Non MS Approved | 1 1/2 | 0.80 | | 4310-001-105 | | 4310-005-105 | | 4310-019-105 | | 4310-024-105 |
| MS Approved | 2 | 0.75 | MS3320-2 | 4310-001-2 | MS3320-2L | 4310-005-2 | MS3320-2V | 4310-019-2 | MS3320-2VL | 4310-024-2 |
| MS Approved | 2 1/2 | 0.70 | MS3320-2-1/2 | 4310-001-205 | MS3320-2 1/2L | 4310-005-205 | MS3320-2 1/2V | 4310-019-205 | MS3320-2 1/2VL | 4310-024-205 |
| MS Approved | 3 | 0.55 | MS3320-3 | 4310-001-3 | MS3320-3L | 4310-005-3 | MS3320-3V | 4310-019-3 | MS3320-3VL | 4310-024-3 |
| MS Approved | 4 | 0.45 | MS3320-4 | 4310-001-4 | MS3320-4L | 4310-005-4 | MS3320-4V | 4310-019-4 | MS3320-4VL | 4310-024-4 |
| MS Approved | 5 | 0.35 | MS3320-5 | 4310-001-5 | MS3320-5L | 4310-005-5 | MS3320-5V | 4310-019-5 | MS3320-5VL | 4310-024-5 |
| MS Approved | 7 1/2 | 0.30 | MS3320-7-1/2 | 4310-001-705 | MS3320-7 1/2L | 4310-005-705 | MS3320-7 1/2V | 4310-019-705 | MS3320-7 1/2VL | 4310-024-705 |
| MS Approved | 10 | 0.28 | MS3320-10 | 4310-001-10 | MS3320-10L | 4310-005-10 | MS3320-10V | 4310-019-10 | MS3320-10VL | 4310-024-10 |
| MS Approved | 15 | 0.25 | MS3320-15 | 4310-001-15 | MS3320-15L | 4310-005-15 | MS3320-15V | 4310-019-15 | MS3320-15VL | 4310-024-15 |
| MS Approved | 20 | 0.25 | MS3320-20 | 4310-001-20 | MS3320-20L | 4310-005-20 | MS3320-20V | 4310-019-20 | MS3320-20VL | 4310-024-20 |
| Non MS Approved | 25 | 0.20 | | 4310-001-25 | | 4310-005-25 | | 4310-019-25 | | 4310-024-25 |

DIMENSIONS

| MIL Spec | Part No. | A*Max. | B*Min. |
|----------|----------|--------|--------|
| MS3320 | 4310-001 | 0.750 | 0.470 |
| MS3320L | 4310-005 | 1.125 | 0.845 |
| MS3320V | 4310-019 | 0.750 | 0.470 |
| MS3320VL | 4310-024 | 1.125 | 0.845 |

Min. Panel Thickness .025
 Max. Panel Thickness .100



TRIP CURVE

