

INCH-POUND

MIL-PRF-39019/1H  
14 May 2010  
SUPERSEDING  
MIL-PRF-39019/1G  
27 August 1997

## PERFORMANCE SPECIFICATION SHEET

### CIRCUIT BREAKERS, MAGNETIC, LOW-POWER, SEALED, TRIP-FREE ONE-POLE

This specification is approved for use by all Departments  
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of  
this specification sheet and [MIL-PRF-39019](#).

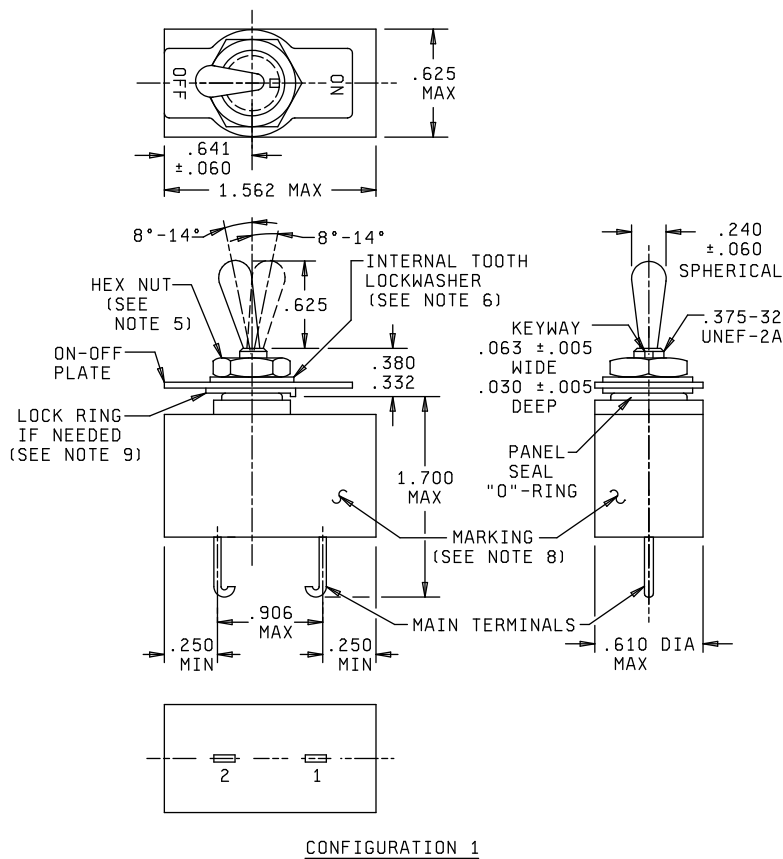


FIGURE 1. Circuit breaker configuration.

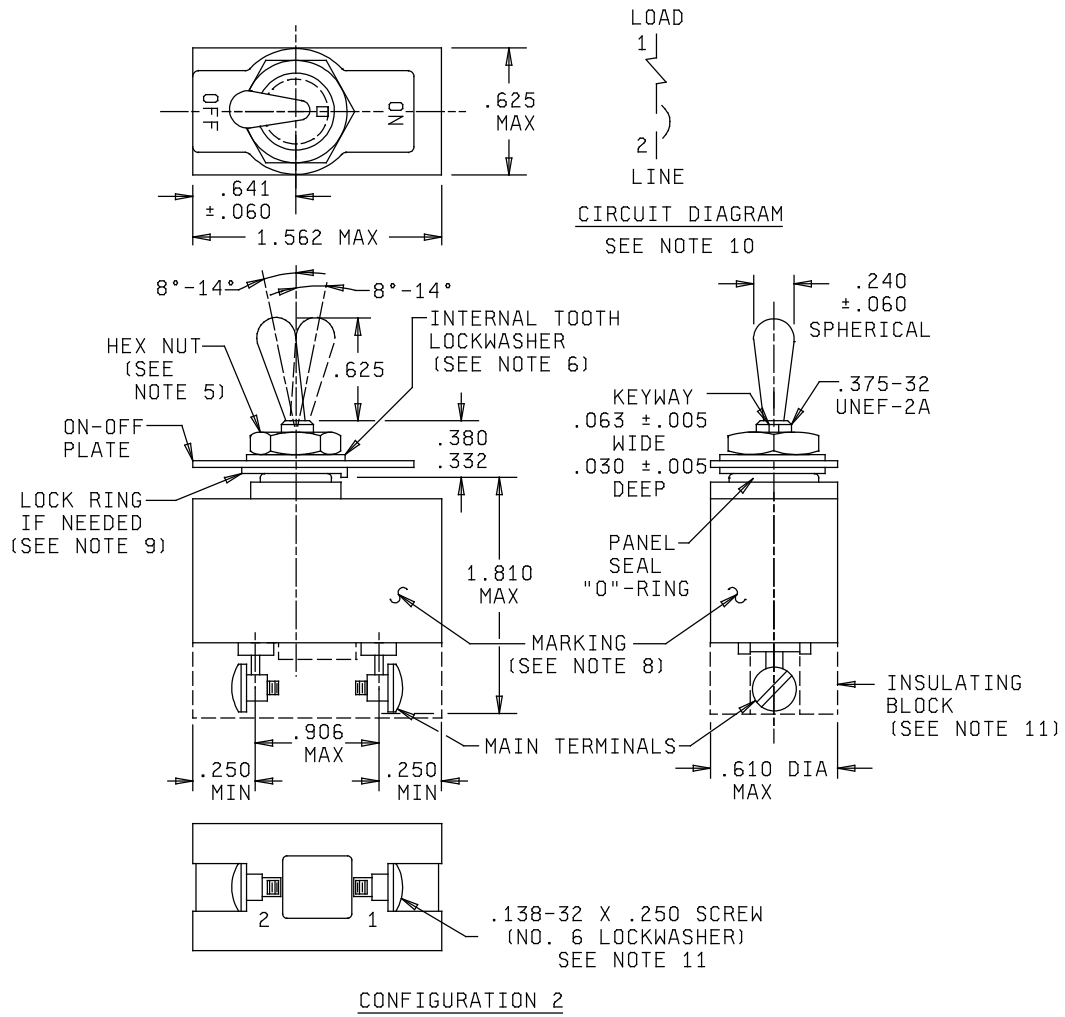
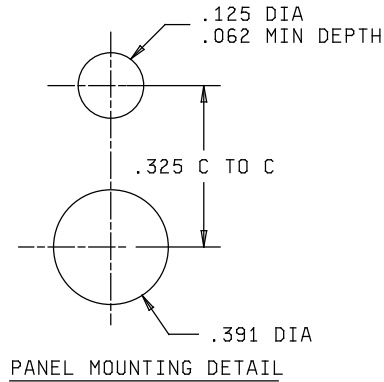


FIGURE 1. Circuit breaker configuration - Continued.

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| Inches | mm   | Inches | mm    |
|--------|------|--------|-------|
| .005   | 0.13 | .375   | 9.52  |
| .030   | 0.76 | .380   | 9.65  |
| .060   | 1.52 | .493   | 12.52 |
| .062   | 1.57 | .507   | 12.88 |
| .063   | 1.60 | .610   | 15.49 |
| .125   | 3.18 | .625   | 15.88 |
| .138   | 3.51 | .641   | 16.28 |
| .240   | 6.10 | .906   | 23.01 |
| .250   | 6.35 | 1.562  | 39.67 |
| .325   | 8.26 | 1.700  | 43.18 |
| .332   | 8.43 | 1.780  | 45.21 |

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is  $\pm 0.031$  (0.79 mm).
4. The shape of the circuit breaker is shown for information only. Slight deviations from this outline drawing, which do not alter the functional aspect of the device, are acceptable.
5. Hex mounting nut .375-32 UNEF-2B thread, .093  $\pm 0.005$  (2.36 mm  $\pm 0.13$  mm) thick or equivalent MS25082-20, -B20.
6. Internal tooth lockwasher, .507/.493 O.D., .392/.382 I.D., .025  $\pm 0.005$  (0.64 mm  $\pm 0.13$  mm) thick, stainless steel or equivalent MS35333-134.
7. The effective bushing thread length (not including mounting hardware) is .280 (7.11 mm) minimum.
8. Marking may appear on any surface except the mounting surface.
9. Lock ring not required if on-off plate has locking tab.
10. Numerical marking optional on circuit diagram.
11. For configuration 2 add "S" at end of dash number for screw terminals with insulating block (see table I). When circuit breakers are subjected to the resistance to solvents test, the insulating block shall be removed and shall not be tested. Main terminal screw MS35265-26 or equivalent.

FIGURE 1. Circuit breaker configuration - Continued.

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REQUIREMENTS:

Dimensions and configuration: See figure 1 and note 11.

Weight: For reference only, approximately 50 grams.

Mounting hardware: See figure 1.

Terminals: See figure 1.

Voltage and frequency rating: 50 V dc, maximum and 240 V ac, maximum at 60 Hz and 400 Hz.

High inrush: 800 percent at 60 Hz and dc, 1,400 percent at 400 Hz (see table I).

Current rating: See table I.

Circuit diagram: See figure 1.

Time delay: See table I.

Resistance or impedance: See table I.

Part or Identifying Number (PIN): The PIN shall be M39019/01-(dash number taken from table I) (e.g., M39019/01-200, M39019/01-200S).

Cross reference: See table II.

TABLE I. Circuit breaker dash numbers and applicable characteristics.

| Dash number <u>1</u> / |             | Current rating (amps) | Time delay | Resistance or impedance (ohms - max) <u>2</u> / |       |        |
|------------------------|-------------|-----------------------|------------|-------------------------------------------------|-------|--------|
| Standard delay         | High inrush |                       |            | DC                                              | 60 Hz | 400 Hz |
| 200                    | 300         | 0.05                  | A          | 680.0                                           | 690.0 | 710.0  |
| 201                    | 301         | 0.05                  | B          | 680.0                                           | 690.0 | 710.0  |
| 202                    | ---         | 0.05                  | C          | 680.0                                           | 690.0 | 710.0  |
| 203                    | 302         | 0.1                   | A          | 150.0                                           | 170.0 | 180.0  |
| 204                    | 303         | 0.1                   | B          | 150.0                                           | 170.0 | 180.0  |
| 205                    | ---         | 0.1                   | C          | 150.0                                           | 170.0 | 180.0  |
| 206                    | 304         | 0.25                  | A          | 20.0                                            | 26.0  | 27.0   |
| 207                    | 305         | 0.25                  | B          | 20.0                                            | 26.0  | 27.0   |
| 208                    | ---         | 0.25                  | C          | 20.0                                            | 26.0  | 27.0   |
| 209                    | 306         | 0.5                   | A          | 5.4                                             | 6.0   | 6.6    |
| 210                    | 307         | 0.5                   | B          | 5.4                                             | 6.0   | 6.6    |
| 211                    | ---         | 0.5                   | C          | 5.4                                             | 6.0   | 6.6    |
| 212                    | 308         | 0.75                  | A          | 2.5                                             | 2.7   | 2.8    |
| 213                    | 309         | 0.75                  | B          | 2.5                                             | 2.7   | 2.8    |
| 214                    | ---         | 0.75                  | C          | 2.5                                             | 2.7   | 2.8    |
| 215                    | 310         | 1.0                   | A          | 1.35                                            | 1.5   | 1.61   |

See footnotes at end of table.

TABLE I. Circuit breaker dash numbers and applicable characteristics - Continued.

| Dash number <u>1/</u> |             | Current rating (amps) | Time delay | Resistance or impedance (ohms - max) <u>2/</u> |       |        |
|-----------------------|-------------|-----------------------|------------|------------------------------------------------|-------|--------|
| Standard delay        | High inrush |                       |            | DC                                             | 60 Hz | 400 Hz |
| 216                   | 311         | 1.0                   | B          | 1.35                                           | 1.5   | 1.61   |
| 217                   | ---         | 1.0                   | C          | 1.35                                           | 1.5   | 1.61   |
| 260                   | 340         | 1.25                  | A          | 0.9                                            | 1.0   | 1.1    |
| 261                   | 341         | 1.25                  | B          | 0.9                                            | 1.0   | 1.1    |
| 262                   | ---         | 1.25                  | C          | 0.9                                            | 1.0   | 1.1    |
| 263                   | 342         | 1.5                   | A          | 0.65                                           | 0.70  | 0.75   |
| 264                   | 343         | 1.5                   | B          | 0.65                                           | 0.70  | 0.75   |
| 265                   | ---         | 1.5                   | C          | 0.65                                           | 0.70  | 0.75   |
| 218                   | 312         | 2.0                   | A          | 0.40                                           | 0.40  | 0.50   |
| 219                   | 313         | 2.0                   | B          | 0.40                                           | 0.40  | 0.50   |
| 220                   | ---         | 2.0                   | C          | 0.40                                           | 0.40  | 0.50   |
| 221                   | 314         | 2.5                   | A          | 0.25                                           | 0.25  | 0.27   |
| 222                   | 315         | 2.5                   | B          | 0.25                                           | 0.25  | 0.27   |
| 223                   | ---         | 2.5                   | C          | 0.25                                           | 0.25  | 0.27   |
| 224                   | 316         | 3.0                   | A          | 0.15                                           | 0.15  | 0.17   |
| 225                   | 317         | 3.0                   | B          | 0.15                                           | 0.15  | 0.17   |
| 226                   | ---         | 3.0                   | C          | 0.15                                           | 0.15  | 0.17   |
| 227                   | 318         | 4.0                   | A          | 0.10                                           | 0.10  | 0.12   |
| 228                   | 319         | 4.0                   | B          | 0.10                                           | 0.10  | 0.12   |
| 229                   | ---         | 4.0                   | C          | 0.10                                           | 0.10  | 0.12   |
| 230                   | 320         | 5.0                   | A          | 0.061                                          | 0.063 | 0.072  |
| 231                   | 321         | 5.0                   | B          | 0.061                                          | 0.063 | 0.072  |
| 232                   | ---         | 5.0                   | C          | 0.061                                          | 0.063 | 0.072  |
| 233                   | 322         | 6.0                   | A          | 0.042                                          | 0.043 | 0.050  |
| 234                   | 323         | 6.0                   | B          | 0.042                                          | 0.043 | 0.050  |
| 235                   | ---         | 6.0                   | C          | 0.042                                          | 0.043 | 0.050  |
| 236                   | 324         | 7.0                   | A          | 0.036                                          | 0.036 | 0.040  |
| 237                   | 325         | 7.0                   | B          | 0.036                                          | 0.036 | 0.040  |
| 238                   | ---         | 7.0                   | C          | 0.036                                          | 0.036 | 0.040  |
| 239                   | 326         | 7.5                   | A          | 0.031                                          | 0.031 | 0.038  |
| 240                   | 327         | 7.5                   | B          | 0.031                                          | 0.031 | 0.038  |
| 241                   | ---         | 7.5                   | C          | 0.031                                          | 0.031 | 0.038  |
| 242                   | 328         | 8.0                   | A          | 0.027                                          | 0.028 | 0.035  |
| 243                   | 329         | 8.0                   | B          | 0.027                                          | 0.028 | 0.035  |
| 244                   | ---         | 8.0                   | C          | 0.027                                          | 0.028 | 0.035  |

See footnotes at end of table.

TABLE I. Circuit breaker dash numbers and applicable characteristics - Continued.

| Dash number <u>1/</u> |             | Current rating (amps) | Time delay | Resistance or impedance (ohms - max) <u>2/</u> |       |        |
|-----------------------|-------------|-----------------------|------------|------------------------------------------------|-------|--------|
| Standard delay        | High inrush |                       |            | DC                                             | 60 Hz | 400 Hz |
| 245                   | 330         | 9.0                   | A          | 0.022                                          | 0.022 | 0.028  |
| 246                   | 331         | 9.0                   | B          | 0.022                                          | 0.022 | 0.028  |
| 247                   | ---         | 9.0                   | C          | 0.022                                          | 0.022 | 0.028  |
| 248                   | 332         | 10.0                  | A          | 0.018                                          | 0.021 | 0.024  |
| 249                   | 333         | 10.0                  | B          | 0.018                                          | 0.021 | 0.024  |
| 250                   | ---         | 10.0                  | C          | 0.018                                          | 0.021 | 0.024  |
| 251                   | 334         | 12.5                  | A          | 0.012                                          | 0.013 | 0.015  |
| 252                   | 335         | 12.5                  | B          | 0.012                                          | 0.013 | 0.015  |
| 253                   | ---         | 12.5                  | C          | 0.012                                          | 0.013 | 0.015  |
| 254                   | 336         | 15.0                  | A          | 0.009                                          | 0.009 | 0.010  |
| 255                   | 337         | 15.0                  | B          | 0.009                                          | 0.009 | 0.010  |
| 256                   | ---         | 15.0                  | C          | 0.009                                          | 0.009 | 0.010  |
| 257                   | 338         | 20.0                  | A          | 0.006                                          | 0.006 | 0.007  |
| 258                   | 339         | 20.0                  | B          | 0.006                                          | 0.006 | 0.007  |
| 259                   | ---         | 20.0                  | C          | 0.006                                          | 0.006 | 0.007  |

1/ For configuration 2, add "S" at end of dash number.

2/ The corresponding maximum wattage losses, which in no case shall exceed 3.0 watts, may be calculated as  $I^2R$  or  $I^2Z$ .

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TABLE II. Cross reference of superseded part numbers.

| Superseded<br>MIL-C-39019/1B<br>part number<br>M39019/1- | New<br>part number<br>M39019/01- | Superseded<br>MIL-C-39019/1B<br>part number<br>M39019/1- | New<br>part number<br>M39019/01- | Superseded<br>MIL-C-39019/1B<br>part number<br>M39019/1- | New<br>part number<br>M39019/01- |
|----------------------------------------------------------|----------------------------------|----------------------------------------------------------|----------------------------------|----------------------------------------------------------|----------------------------------|
| 1                                                        | 200                              | 41                                                       | 230                              | 81                                                       | 218                              |
| 2                                                        | 201                              | 42                                                       | 231                              | 82                                                       | 219                              |
| 3                                                        | 200                              | 43                                                       | 230                              | 83                                                       | 218                              |
| 4                                                        | 201                              | 44                                                       | 231                              | 84                                                       | 219                              |
| 5                                                        | 200                              | 45                                                       | 230                              | 85                                                       | 218                              |
| 6                                                        | 201                              | 46                                                       | 231                              | 86                                                       | 219                              |
| 7                                                        | 200                              | 47                                                       | 230                              | 87                                                       | 227                              |
| 8                                                        | 201                              | 48                                                       | 231                              | 88                                                       | 228                              |
| 9                                                        | 200                              | 49                                                       | 230                              | 89                                                       | 227                              |
| 10                                                       | 201                              | 50                                                       | 231                              | 90                                                       | 228                              |
| 11                                                       | 209                              | 51                                                       | 248                              | 91                                                       | 227                              |
| 12                                                       | 210                              | 52                                                       | 249                              | 92                                                       | 228                              |
| 13                                                       | 209                              | 53                                                       | 248                              | 93                                                       | 233                              |
| 14                                                       | 210                              | 54                                                       | 249                              | 94                                                       | 234                              |
| 15                                                       | 209                              | 55                                                       | 248                              | 95                                                       | 233                              |
| 16                                                       | 210                              | 56                                                       | 249                              | 96                                                       | 234                              |
| 17                                                       | 209                              | 57                                                       | 248                              | 97                                                       | 233                              |
| 18                                                       | 210                              | 58                                                       | 249                              | 98                                                       | 234                              |
| 19                                                       | 209                              | 59                                                       | 248                              | 99                                                       | 236                              |
| 20                                                       | 210                              | 60                                                       | 249                              | 100                                                      | 237                              |
| 21                                                       | 215                              | 61                                                       | 254                              | 101                                                      | 236                              |
| 22                                                       | 216                              | 62                                                       | 255                              | 102                                                      | 237                              |
| 23                                                       | 215                              | 63                                                       | 254                              | 103                                                      | 236                              |
| 24                                                       | 216                              | 64                                                       | 255                              | 104                                                      | 237                              |
| 25                                                       | 215                              | 65                                                       | 254                              | 105                                                      | 242                              |
| 26                                                       | 216                              | 66                                                       | 255                              | 106                                                      | 243                              |
| 27                                                       | 215                              | 67                                                       | 254                              | 107                                                      | 242                              |
| 28                                                       | 216                              | 68                                                       | 255                              | 108                                                      | 243                              |
| 29                                                       | 215                              | 69                                                       | 254                              | 109                                                      | 242                              |
| 30                                                       | 216                              | 70                                                       | 255                              | 110                                                      | 243                              |
| 31                                                       | 224                              | 71                                                       | 257                              | 111                                                      | 245                              |
| 32                                                       | 225                              | 72                                                       | 258                              | 112                                                      | 246                              |
| 33                                                       | 224                              | 73                                                       | 257                              | 113                                                      | 245                              |
| 34                                                       | 225                              | 74                                                       | 258                              | 114                                                      | 246                              |
| 35                                                       | 224                              | 75                                                       | 257                              | 115                                                      | 245                              |
| 36                                                       | 225                              | 76                                                       | 258                              | 116                                                      | 246                              |
| 37                                                       | 224                              | 77                                                       | 257                              | 117                                                      | 251                              |
| 38                                                       | 225                              | 78                                                       | 258                              | 118                                                      | 252                              |
| 39                                                       | 224                              | 79                                                       | 257                              | 119                                                      | 251                              |
| 40                                                       | 225                              | 80                                                       | 258                              | 120                                                      | 252                              |
|                                                          |                                  |                                                          |                                  | 121                                                      | 251                              |
|                                                          |                                  |                                                          |                                  | 122                                                      | 252                              |

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