

PERFORMANCE SPECIFICATION SHEET

CIRCUIT BREAKERS, MAGNETIC, LOW-POWER, SEALED, TRIP-FREE  
THREE-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](#).

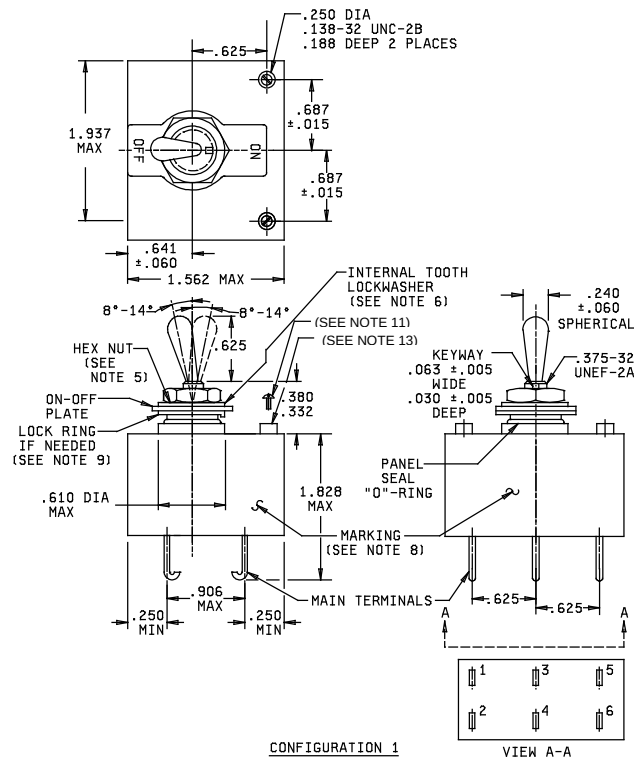


FIGURE 1. Circuit breaker configuration.

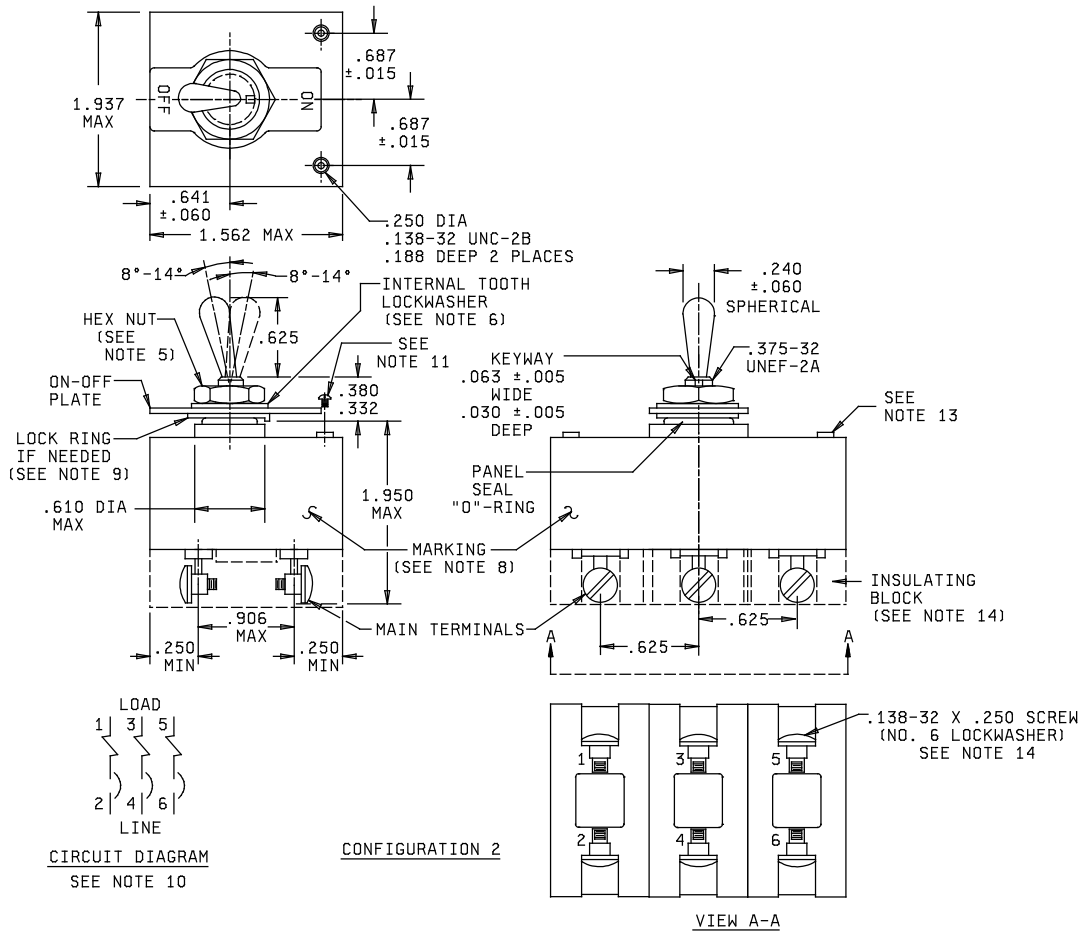
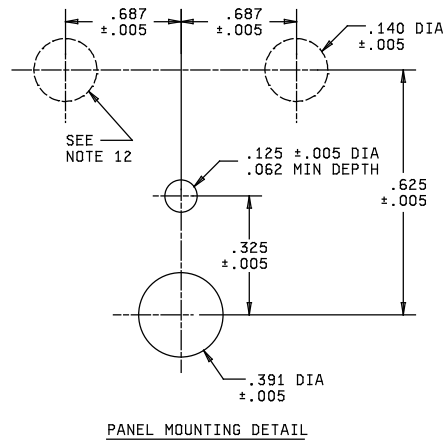


FIGURE 1. Circuit breaker configuration - Continued.

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| Inches | mm   | Inches | mm   | Inches | mm   | Inches | mm    | Inches | mm    |
|--------|------|--------|------|--------|------|--------|-------|--------|-------|
| .005   | 0.13 | .125   | 3.18 | .325   | 8.26 | .392   | 9.96  | .687   | 17.45 |
| .015   | 0.38 | .138   | 3.51 | .332   | 8.43 | .493   | 12.52 | .906   | 23.01 |
| .030   | 0.76 | .140   | 3.56 | .375   | 9.52 | .507   | 12.88 | 1.562  | 39.67 |
| .060   | 1.52 | .188   | 4.78 | .380   | 9.65 | .610   | 15.49 | 1.828  | 46.43 |
| .062   | 1.57 | .240   | 6.10 | .382   | 9.70 | .625   | 15.88 | 1.937  | 49.20 |
| .063   | 1.60 | .250   | 6.35 | .391   | 9.93 | .641   | 16.28 | 1.950  | 49.53 |

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is  $\pm .031$  (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,  $.093 \pm .005$  (2.36  $\pm$  0.13 mm) thick or equivalent MS25082-20, -B20.
6. Internal tooth lockwasher, .507/.493 O.D., .392/.382 I.D.,  $.025 \pm .005$  (0.64  $\pm$  0.13mm) 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. Sealscrew, .138-32 UNC-2A x .312 (7.92 mm) long, stainless steel number 18-8 (type 347) MS35265-25 or equivalent with appropriate O-rings. O-rings should be chosen to enable the circuit breaker to meet the performance requirements of this specification. Possible source: AMP Hexseal Corporation.
12. Use of panel screws will enhance circuit breaker shock and vibration characteristics.
13. Threaded inserts exceed height of bushing by .005 to .015 (0.13 mm to 0.38 mm).
14. For configuration 2 add "S" at end of the dash number for screw terminals with insulating blocks (see table I). When circuit breakers are subjected to the resistance to solvents test, the insulating blocks shall be removed and shall not be tested. Main terminal screw MS35265-26 or equivalent. Lockwasher, Flat-internal tooth, number 6 or MS35333-71.

FIGURE 1. Circuit breaker configuration - Continued.

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REQUIREMENTS:

Dimensions and configuration: See figure 1 and note 14.

Weight: For reference only, approximately 150 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 M39019/05-(dash number taken from table I) (e.g., M39019/06-200, M39019/05-200S).

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.

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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   |
| 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  |
| 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  |

See footnotes at end of table.

## MIL-PRF-39019/5H

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 |
| 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  |
| 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   |

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-39019/5B<br>part number<br>M39019/5- | New<br>part number<br>M39019/05- | Superseded<br>MIL-C-39019/5B<br>part number<br>M39019/5- | New<br>part number<br>M39019/05- | Superseded<br>MIL-C-39019/5B<br>part number<br>M39019/5- | New<br>part number<br>M39019/05- |
|----------------------------------------------------------|----------------------------------|----------------------------------------------------------|----------------------------------|----------------------------------------------------------|----------------------------------|
| 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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