

**Cooper Bussmann**

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## MDL-20-R

Time Delay, 1/4 X 1-1/4 Inch, Glass Tube Fuse

**Product Information**

|                 |                 |
|-----------------|-----------------|
| Product Type:   | Fuse            |
| Product Family: | Electronic      |
| Brand:          | Cooper Bussmann |

**Recommended Products**

|                               |                               |
|-------------------------------|-------------------------------|
| Rec. Fuse Block:              | <a href="#">S-8000 Series</a> |
| Rec. Inline Fuse Holder:      | <a href="#">HHB Series</a>    |
| Rec. Panel-mount Fuse Holder: | <a href="#">HTB Series</a>    |
| Rec. Fuse Clips:              | <a href="#">1A1907 Series</a> |

**Physical Properties**

|             |                                   |
|-------------|-----------------------------------|
| Dimensions: | 1.25in.(L) × 0.25in.(W) × 0in.(H) |
|-------------|-----------------------------------|

**Certifications**

[UL Recognized](#)

**Electrical Properties**

|                          |                                                               |
|--------------------------|---------------------------------------------------------------|
| Maximum AC Voltage:      | 32                                                            |
| Amperage Rating:         | 20                                                            |
| AC Interrupting Ratings: | <ul style="list-style-type: none"><li>• 1000 at 32V</li></ul> |
| Time Delay:              | Yes                                                           |

### Description

- Time delay, glass tube
- Optional axial leads available
- 1/4 x 1-1/4 (6.3mm x 32mm) physical size
- Glass tube, nickel-plated brass endcap construction
- UL Listed product meets standard 248-14



| ELECTRICAL CHARACTERISTICS |            |                  |
|----------------------------|------------|------------------|
| Rated Current              | Amp Rating | Opening Time     |
| 1/16 - 30A                 | 100%       | None             |
|                            | 135%       | 60 minutes max.  |
|                            | 200%       | 120 seconds max. |
| 1/16 - 3A                  | 200%       | 5 seconds min.   |
| 3-2/10 - 8A                | 200%       | 12 seconds min.  |

### Agency Information

- UL Listed Card: MDL 1/16 - 8A (Guide JDYX, File E19180)
- UL Recognized Card: MDL 9 - 30A (Guide JDYX2, File E19180)
- CSA Certification Card: MDL 1/16 - 8A (Class No. 1422-01)
- CSA Component Acceptance: MDL 9-30A (Class No. 1422-30)

### Environmental Data

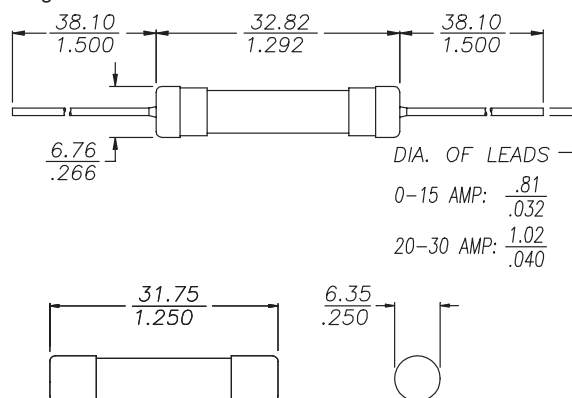
- Shock: 1/100A and 8/10A – MIL-STD-202, Method 213, Test Condition I; 1A thru 30A – MIL-STD-202, Method 207, (HI Shock)
- Vibration: 1/100A and 8/10A – MIL-STD-202, Method 201; 1/4A thru 30A – MIL-STD-202, Method 204, Test Condition C (Except 5g, 500HZ)

### Ordering

- Specify packaging, product, and option code

### Dimensions (mm/in)

Drawing Not to Scale



### SPECIFICATIONS

| Product Code | Voltage Rating AC | AC Interrupting Rating* |        |       | Typical DC Cold Resistance** (ohms) | Typical Melting I <sup>2</sup> t† | Typical Voltage Drop‡ |
|--------------|-------------------|-------------------------|--------|-------|-------------------------------------|-----------------------------------|-----------------------|
|              |                   | 250V                    | 125V   | 32V   |                                     |                                   |                       |
| MDL-1/16     | 250V              | 35A                     | 10000A | -     | 38.000                              | 0.0046                            | 2.79                  |
| MDL-1/10     | 250V              | 35A                     | 10000A | -     | 15.900                              | 0.0420                            | 1.95                  |
| MDL-1/8      | 250V              | 35A                     | 10000A | -     | 9.850                               | 0.0422                            | 1.52                  |
| MDL-3/16     | 250V              | 35A                     | 10000A | -     | 4.680                               | 0.116                             | 1.05                  |
| MDL-2/10     | 250V              | 35A                     | 10000A | -     | 4.115                               | 0.314                             | 0.972                 |
| MDL-1/4      | 250V              | 35A                     | 10000A | -     | 3.200                               | 0.447                             | 0.965                 |
| MDL-3/10     | 250V              | 35A                     | 10000A | -     | 2.300                               | 0.412                             | 0.808                 |
| MDL-3/8      | 250V              | 35A                     | 10000A | -     | 2.800                               | 0.982                             | 1.46                  |
| MDL-1/2      | 250V              | 35A                     | 10000A | -     | 1.725                               | 1.656                             | 1.27                  |
| MDL-3/4      | 250V              | 35A                     | 10000A | -     | 0.822                               | 4.343                             | 1.01                  |
| MDL-1        | 250V              | 35A                     | 10000A | -     | 0.525                               | 11.498                            | 0.995                 |
| MDL-1-1/4    | 250V              | 100A                    | 10000A | -     | 0.320                               | 86.2                              | 0.722                 |
| MDL-1-1/2    | 250V              | 100A                    | 10000A | -     | 0.250                               | 22.7                              | 0.721                 |
| MDL-2        | 250V              | 100A                    | 10000A | -     | 0.173                               | 62.3                              | 0.644                 |
| MDL-2-1/4    | 250V              | 100A                    | 10000A | -     | 0.068                               | 49.6                              | 0.535                 |
| MDL-2-1/2    | 250V              | 100A                    | 10000A | -     | 0.096                               | 63.1                              | 0.410                 |
| MDL-3        | 250V              | 100A                    | 10000A | -     | 0.067                               | 67.5                              | 0.345                 |
| MDL-4        | 250V              | 200A                    | 10000A | -     | 0.035                               | 19.3                              | 0.187                 |
| MDL-5        | 250V              | 200A                    | 10000A | -     | 0.023                               | 32.0                              | 0.160                 |
| MDL-6        | 250V              | 200A                    | 10000A | -     | 0.018                               | 37.4                              | 0.155                 |
| MDL-6-1/4    | 250V              | 200A                    | 10000A | -     | 0.018                               | 38.7                              | 0.152                 |
| MDL-7        | 250V              | 200A                    | 10000A | -     | 0.018                               | 42.7                              | 0.140                 |
| MDL-8        | 250V              | 200A                    | 10000A | -     | 0.011                               | 47.8                              | 0.119                 |
| MDL-9        | 32V               | -                       | -      | 1000A | 0.009                               | 51.5                              | 0.124                 |
| MDL-10       | 32V               | -                       | -      | 1000A | 0.008                               | 64.4                              | 0.114                 |
| MDL-15       | 32V               | -                       | -      | 1000A | 0.006                               | 354.0                             | 0.130                 |
| MDL-20       | 32V               | -                       | -      | 1000A | 0.002                               | 2914.0                            | 0.530                 |
| MDL-25       | 32V               | -                       | -      | 1000A | 0.001                               | 15221.0                           | 0.30                  |
| MDL-30       | 32V               | -                       | -      | 1000A | 0.001                               | 15581.0                           | 0.40                  |

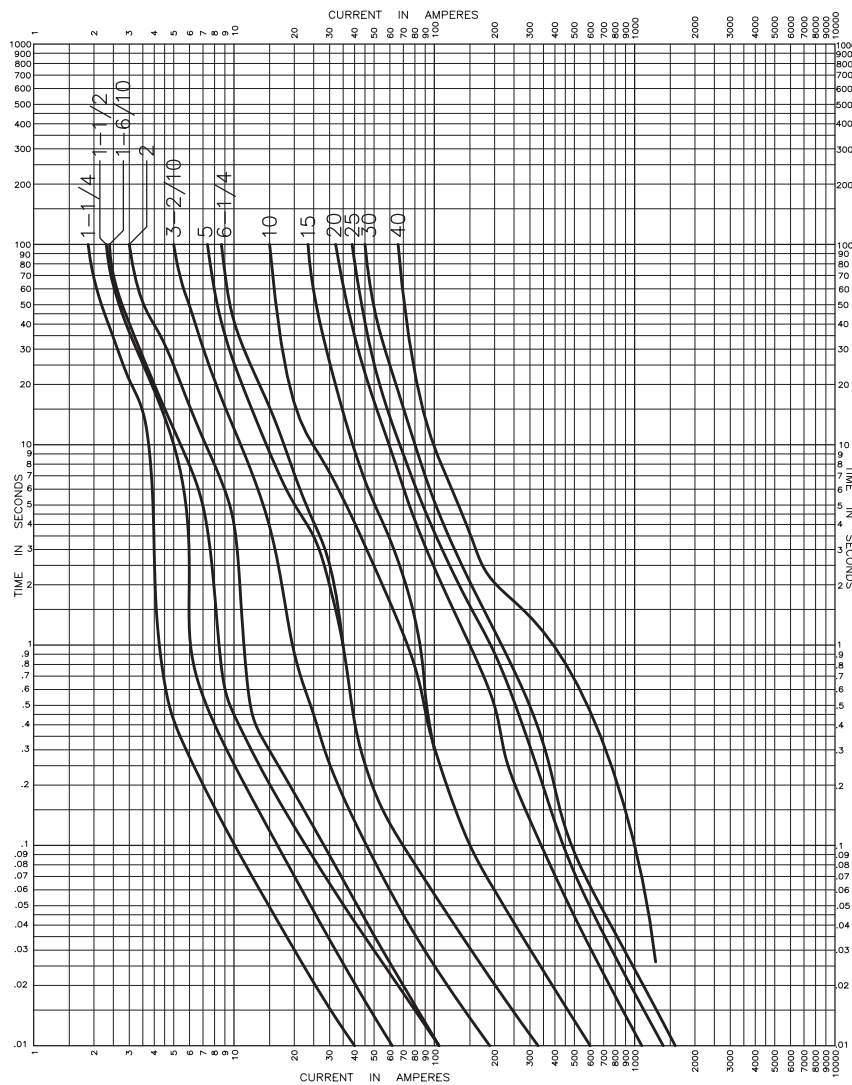
\* Interrupting Ratings (Interrupting ratings were measured at 70% - 80% power factor on AC)

\*\* DC Cold Resistance (Measured at ≤10% of rated current)

† Typical Melting I<sup>2</sup>t (A<sup>2</sup>Sec) (I<sup>2</sup>t was measured at listed interrupting rating and rated voltage.)

‡ Typical Voltage Drop (Voltage drop was measured at 25°C±3°C ambient temperature at rated current)

**TIME CURRENT CURVE**



**PACKAGING CODE**

| Packaging Code | Description                                          |
|----------------|------------------------------------------------------|
| <b>BK</b>      | 100 pieces of fuses packed into a cardboard carton   |
| <b>BK1</b>     | 1,000 pieces of fuses packed into a cardboard carton |
| <b>BK8</b>     | 8,000 pieces of fuses packed into a cardboard carton |

**OPTION CODE**

| Option Code | Description                                                        |
|-------------|--------------------------------------------------------------------|
| <b>B</b>    | Board Washable - Hermetically sealed to withstand aqueous cleaning |
| <b>V</b>    | Axial leads - copper tinned wire with nickel plated brass overcaps |
| <b>-R</b>   | RoHS compliant version                                             |