

## PICO® 305 Series - 277V Intrinsically Safe Fuse



### Agency Approvals

| Agency | Agency File Number  |
|--------|---------------------|
|        | DEMKO 13 ATEX 1200U |
|        | E358130             |
|        | IECEx UL 13.0077U   |

### Reference Standards

| Agency | Standards                                                                    |
|--------|------------------------------------------------------------------------------|
| ATEX   | EN 60079-0, EN 60079-11, EN 60079-26                                         |
| IECEx  | IEC 60079-0, IEC 60079-11, IEC 60079-26                                      |
| UL     | UL 913, UL 60079-0, UL 60079-11                                              |
| cUL    | CAN/CSA C22.2 No. 157, CAN/CSA C22.2 No. 60079-0, CAN/CSA C22.2 No. 60079-11 |

### Description

The PICO® 305 Series Fuse offers a range of encapsulated fuses certified under UL 913, the standard for intrinsically safe electrical equipment, to operate in hazardous locations. Ideal for use in oil, gas, mine, chemical, and pharmaceutical process industries, the PICO 305 Series fuse was designed to limit the energy and temperature generated during its operation. The fuse design and its encapsulant are suitable for use in an intrinsically safe apparatus and associated apparatus for peak voltage not exceeding 375V.

### Features

- High Interrupting Rating of 1500A
- Well suited for 277V applications
- RoHS Compliant
- Designed for operation in a range of hazardous environments
- Encapsulated and sealed (1mm minimum)
- Global hazardous location certifications

### Applications

- Testing, measuring or processing electronic and electrical equipment
- Motor controllers
- Communication handsets
- Process control and automation
- Sensors
- Lighting
- Flow/gas meters

### Electrical Characteristics for Series

| % of Ampere Rating | Opening Time           |
|--------------------|------------------------|
| 110%               | 4 Hours, Minimum       |
| 300%               | 10 Seconds, Maximum    |
| 1000%              | 0.002 Seconds, Maximum |

### Electrical Specifications by Items

| Ampere Rating (A) | Amp Code | Interrupting Rating | Nominal Melting I <sup>2</sup> t (A <sup>2</sup> Sec.) | Minimum Cold Resistance at -20°C (Ohms) | Minimum Cold Resistance at -40°C (Ohms) | Nominal Cold Resistance at 25°C (Ohms) | Agency Approvals |   |   |  |
|-------------------|----------|---------------------|--------------------------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|------------------|---|---|--|
|                   |          |                     |                                                        |                                         |                                         |                                        |                  |   |   |  |
| 0.050             | .050     | 1500A @ 277VAC/DC   | 0.00019                                                | 9.202                                   | 9.010                                   | 12.00                                  | x                | x | x |  |
| 0.080             | .080     |                     | 0.00035                                                | 6.031                                   | 5.963                                   | 8.19                                   | x                | x | x |  |
| 0.100             | .100     |                     | 0.00070                                                | 2.709                                   | 2.668                                   | 5.00                                   | x                | x | x |  |
| 0.160             | .160     |                     | 0.00202                                                | 2.297                                   | 2.292                                   | 3.00                                   | x                | x | x |  |
| 0.200             | .200     |                     | 0.00288                                                | 1.935                                   | 1.839                                   | 2.68                                   | x                | x | x |  |
| 0.250             | .250     |                     | 0.060050                                               | 1.268                                   | 1.105                                   | 1.60                                   | x                | x | x |  |
| 0.500             | .500     |                     | 0.127400                                               | 0.392                                   | 0.368                                   | 0.46                                   | x                | x | x |  |
| 0.750             | .750     |                     | 0.13448                                                | 0.219                                   | 0.196                                   | 0.27                                   | x                | x | x |  |

**Notes:**

- 1) The fuse must be mounted so that creepage and clearance distances aren't impaired in any way.
- 2) The fuse is suitable for use in intrinsically safe equipment and associated apparatus for voltage not exceeding 375V peak.
- 3) Maximum surface temperature rise at 170% rated current: ≤200mA=80°C, 250mA = 84°C, 500mA = 56°C, and 750mA = 84°C.

## Product Characteristics

| Operating Temperature |                     |
|-----------------------|---------------------|
| Current Rating        | Ambient Temperature |
| ≤ 0.200 A             | - 40°C to +50°C     |
| 0.250 A               | - 40°C to +46°C     |
| 0.500 A               | - 40°C to +74°C     |
| 0.750 A               | - 40°C to +46°C     |

### Notes:

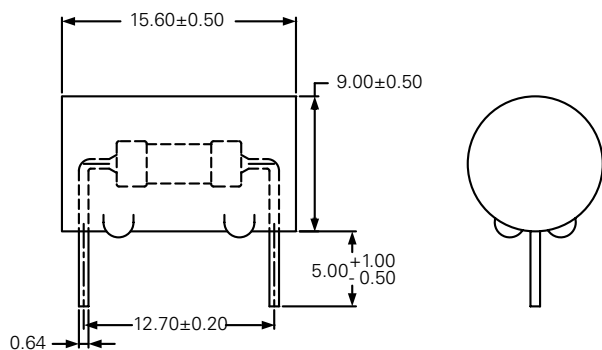
- 1) Any use of the 305 Series fuse outside of the ambient temperature ranges specified in the table is subject to additional investigation.
- 2) Specified ambient temperature range is for intrinsic safety certification.

|                                              |                                                                                 |
|----------------------------------------------|---------------------------------------------------------------------------------|
| <b>Molding Material</b>                      | Polyamide 6<br>CTI 175 volts minimum<br>Continuous Operating Temperature: 130°C |
| <b>Thermal Shock</b>                         | Withstands 5 cycles of -55°C to 125°C                                           |
| <b>Vibration</b>                             | Per MIL-STD-202                                                                 |
| <b>Insulation Resistance (After Opening)</b> | Greater than 10,000 ohms<br>(at twice rated DC voltage)                         |

## Soldering Parameters

|                       |                        |
|-----------------------|------------------------|
| <b>Wave Soldering</b> | 260°C, 10 seconds max. |
|-----------------------|------------------------|

## Dimensions



## Part Numbering System

**0305 .050 M**

**SERIES**

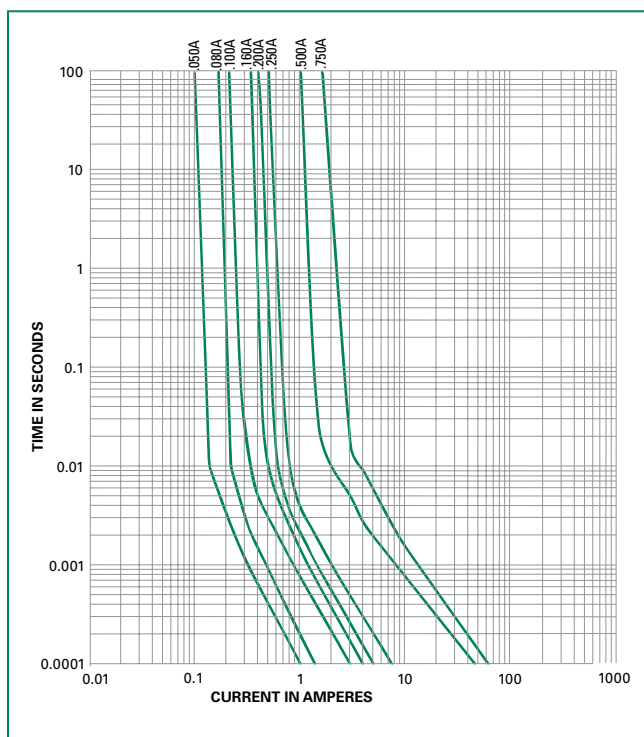
**AMP CODE**

Refer to Amp Code column in the Electrical Specifications table.

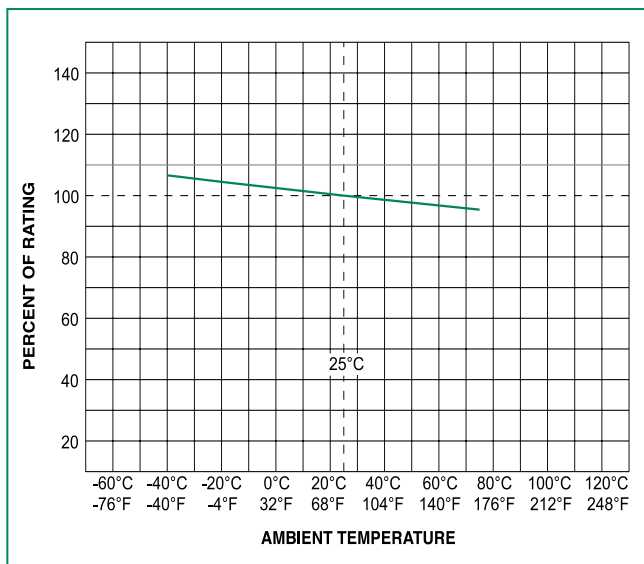
**QUANTITY & PACKAGING CODE**

- M = Bulk pack, 1000 pcs
- H = Bulk pack, 100 pcs
- V = Bulk pack, 5 pcs

## Average Time Current Curves



## Temperature Derating Curve



### Notes:

- 1) Derating depicted in this curve is in addition to the standard derating of 25% for continuous operation.
- 2) The temperature derating curve represents the nominal conditions. For questions about temperature derating curve, please consult Littelfuse technical support for assistance.