

#### Materials

1. Insulator, PBT + 15% glass fiber, black
2. Shell, C2700 brass, 2  $\mu$ m nickel plated
3. Spring contact, C5191 phosphor bronze, 2  $\mu$ m nickel plated

#### Electrical requirements

Dielectric strength: 1 min @ 500 Vac  
Insulation resistance: 100 M $\Omega$  @ 500 Vdc  
Contact resistance: 30 m $\Omega$  or less

#### Mechanical requirements

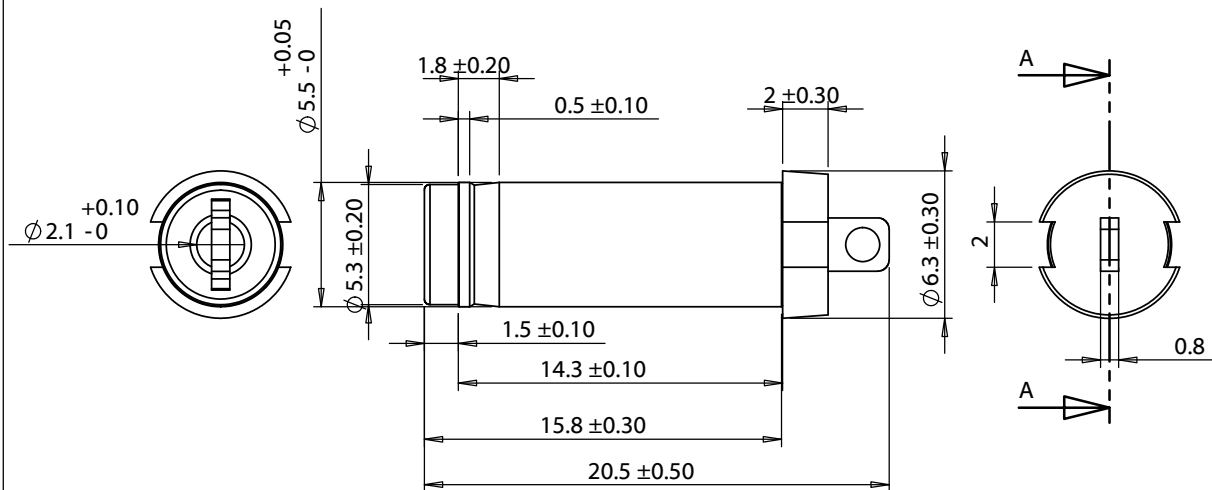
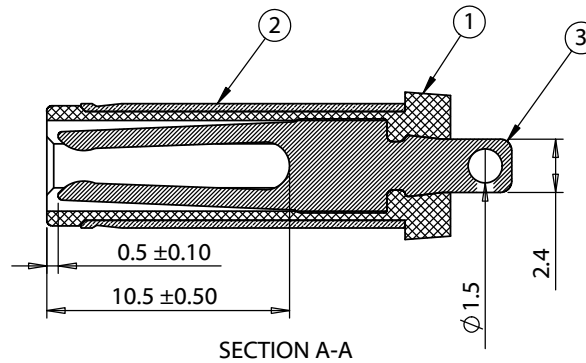
Insertion force: 0.3-3 kgf  
Withdrawal force: 0.3-3 kgf  
Durability: 5000 mating cycles while maintaining; 0.3-2 kgf insertion force, 0.2-1.5 kgf withdrawal force and a less than 100 m $\Omega$  contact resistance.

#### Environmental requirements

Damp test: 40 °C, RH 90-100% for 96 hrs. Cool to ambient and recover for 2 hours. Maintain dielectric strength of 500 Vac for 1 min, insulation resistance of 50 M $\Omega$  @ 500 Vdc minimum and a contact resistance of 100 m $\Omega$  or less.

Dry test: 70 °C, RH 70-85% for 96 hrs. Cool to ambient and recover for 2 hours. Maintain insulation resistance of 50 M $\Omega$  @ 500 Vdc minimum and a contact resistance of 100 m $\Omega$  or less.

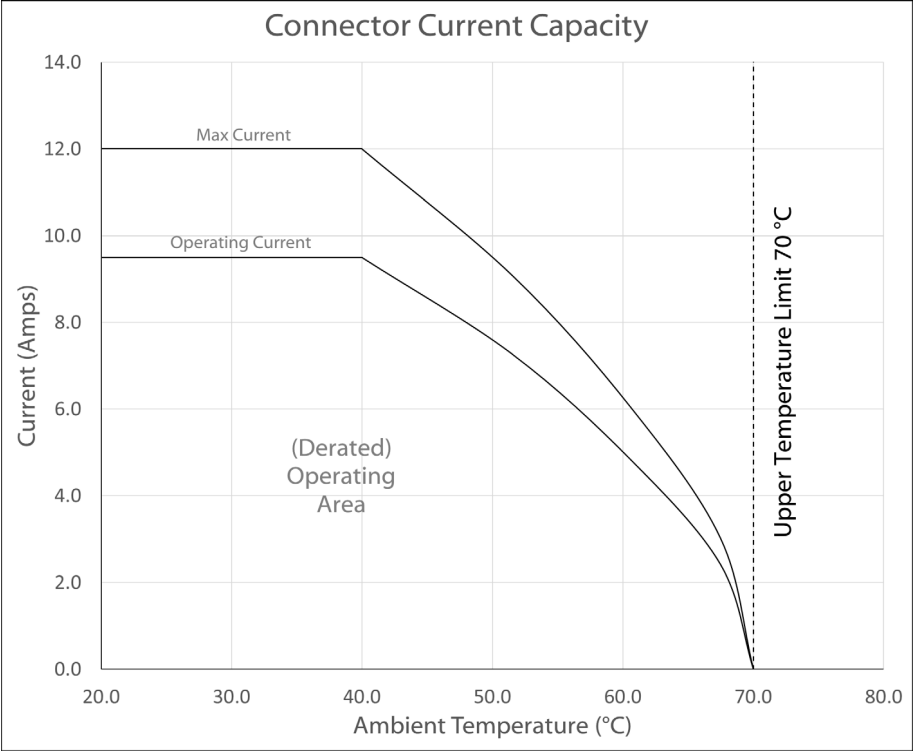
Salt spray test: 35 °C, RH 90-95%, 5% NaCl mist for 24 hrs. Wash parts after test. Maintain mechanical requirements and a contact resistance of less than 80 m $\Omega$ .




|           |            |                                  |  |  |   |            |              |
|-----------|------------|----------------------------------|--|--|---|------------|--------------|
| Revision: | Date:      | Description:                     | Prepared:  | Notes:   | <b>TENSILITY</b><br>tel 1.541.323.3228 800 877.670.7118<br>fax 1.541.323.4202 web tensility.com |            |              |
| A         | 11/28/2011 | Initial release                  | Verified:  | RoHS compliant   |   |            |              |
| A1        | 8/17/2012  | Updated dimensions and materials | Dimensions are in millimeters.<br>Tolerances:<br>X: $\pm$ 0.3 mm<br>X.X: $\pm$ 0.1 mm<br>X.XX: $\pm$ 0.05 mm | Function test: no open, no short circuit, no intermittent                            | Part number:<br><b>50-00186</b>   |            |              |
| A2        | 11/9/2012  | Added test data                  |  | Description:<br>Connector, dc plug, 5.5x2.1xL20.5 mm, molding style, spring contacts | Size:<br>A  | Scale: 3:1 |              |
|           |            |                                  |  |  |   |            | Sheet 1 of 2 |

**Ratings**  
Maximum Operating Voltage: 48 Vdc  
Maximum Operating Current: 9.5 A

**Operating Temperature Range**  
-25 to 70 °C, relative humidity of 85% or less



Testing based on IEC 60512-5-2. Max current curve generated with isolated test article under controlled environmental conditions, and does not take into account external factors such as housings, mating cables, or other circuitry. Operating current curve (derated by 20% of maximum values) accounts for external factors, and manufacturing variation.

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