

500 Series

Packaged Temperature Probes



DESCRIPTION

The 500 Series is broad portfolio of air/gas, liquid and surface temperature probes that use Honeywell's NTC (Negative Temperature Coefficient) thermistors.

Thermistors can be very effective in sensing temperatures of gases, liquids or solids because of their enhanced sensitivity. These small, easy to install probe assemblies support and position the thermistor elements within the media to be monitored as well as protect the thermistors against damage in use or handling. The assemblies also help direct thermal or fluid flow evenly across the thermistors for accurate temperature sensing.

The enhanced reliability, precision and stability of the 500 Series products allow the customer greater flexibility in temperature monitoring and control. The wide operating temperature range is -60 °C to 300 °C [-76 °F to 572 °F] provides application flexibility.

FEATURES

- Air/gas, surface, immersion and liquid level
- NTC type output
- Enhanced sensitivity
- Small package size
- Easy to install
- Enhanced reliability
- Enhanced accuracy
- Enhanced stability/low drift
- Wide operating temperature range
- Wide variety of probe assembly styles
- Custom configurations available
- RTD linear output available

The 500 Series is available in a wide variety of housing styles and materials, R-T (Resistance-Temperature) curves, mounting methods, mechanical interface, electrical interface and connector types to meet most applications.

In addition to custom configurations, a variety of existing designs is available.

Honeywell also offers RTD (Resistance Temperature Detector) technology that may be packaged into probe assemblies for similar applications that may require an RTD linear output instead of an NTC thermistor output.

POTENTIAL APPLICATIONS

- Industrial: HVAC, refrigeration, office automation, air compressors, industrial ovens and ranges, hydraulic systems, processing and packaging, power generation
- Transportation: heavy duty or sport vehicle engine oil, air inlet, fuel, coolant or surface temperature sensing
- Aviation: engine bleed air or environmental control systems
- Weather stations

500 Series

Table 1. General Specifications

| Characteristic | Parameter | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|----------------------------------|--------------------|----------------------|----------------|--------------------|---------------------|----------------|--------------------|------------------------|----------------------|--------------------|------------------|-----------------------|------|---------------------------|-------------|----------------|----------------------------------|-----------------------|--------------------|------------------|----------|-------|--------------|------------|--|-------------------------|--------------------------|--|--|
| Temperature sensing type | air/gas, surface, immersion and liquid level | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermistor type | NTC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nominal resistance at 25 °C [77 °F] | 100 Ohm to 1,000,000 Ohm (inclusive) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating temperature range | -60 °C to 300 °C [-76 °F to 572 °F] (inclusive) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tolerance | ±0.5% to ±20% (catalog listing specific) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Accuracy | single point or curve match | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time constant in air | 0.5 s to 150 s (inclusive) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation constant in air | 0.1 mW/°C to 6 mW/°C (inclusive) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time constant in water at 0.914 m/s [3 ft/s] | 5 s to 10 s (inclusive) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation constant in water at 0.914 m/s [3 ft/s] | 5 mW/°C to 6 mW/°C (inclusive) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time constant on metal surface | 3.0 s to 30 s (inclusive) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation constant on metal surface | 3.3 mW/°C to 30 mW/°C (inclusive) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Housing material ¹ | <ul style="list-style-type: none"> • aluminum • brass • copper • ceramic-filled tubing • epoxy filled • glass encapsulated • Kynar tubing • nickel-plated copper • plastic • tin-plated copper • stainless steel • stainless steel/plastic • steel magnet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mounting method/mechanical interface ¹ | <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 33%;"><u>Adhesion</u></td> <td style="vertical-align: top; width: 33%;"><u>Ring Tongue</u></td> <td style="vertical-align: top; width: 33%;"><u>Threaded Body</u></td> </tr> <tr> <td></td> <td>• #1/4</td> <td>• 1/8-27 NPT</td> </tr> <tr> <td><u>Bracket</u></td> <td>• #5/16</td> <td>• 1/4-18 NPT</td> </tr> <tr> <td>• with one hole (#6)</td> <td>• #4</td> <td>• 5/15-24 UNF</td> </tr> <tr> <td>• with two holes (#6)</td> <td>• #5</td> <td>• 3/8-24 UNF-2A</td> </tr> <tr> <td></td> <td>• #6</td> <td>• 8-32 UNC-2A</td> </tr> <tr> <td><u>Bullet Housing</u></td> <td>• #8</td> <td>• 9/16 18 UNF-2B</td> </tr> <tr> <td>• magnet</td> <td>• #10</td> <td>• M5x0.8 6 g</td> </tr> <tr> <td>• push fit</td> <td></td> <td>• BS G 1/8 B to BS 2779</td> </tr> <tr> <td><u>Flexible Tie-Down</u></td> <td></td> <td></td> </tr> </table> | <u>Adhesion</u> | <u>Ring Tongue</u> | <u>Threaded Body</u> | | • #1/4 | • 1/8-27 NPT | <u>Bracket</u> | • #5/16 | • 1/4-18 NPT | • with one hole (#6) | • #4 | • 5/15-24 UNF | • with two holes (#6) | • #5 | • 3/8-24 UNF-2A | | • #6 | • 8-32 UNC-2A | <u>Bullet Housing</u> | • #8 | • 9/16 18 UNF-2B | • magnet | • #10 | • M5x0.8 6 g | • push fit | | • BS G 1/8 B to BS 2779 | <u>Flexible Tie-Down</u> | | |
| <u>Adhesion</u> | <u>Ring Tongue</u> | <u>Threaded Body</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | • #1/4 | • 1/8-27 NPT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Bracket</u> | • #5/16 | • 1/4-18 NPT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| • with one hole (#6) | • #4 | • 5/15-24 UNF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| • with two holes (#6) | • #5 | • 3/8-24 UNF-2A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | • #6 | • 8-32 UNC-2A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Bullet Housing</u> | • #8 | • 9/16 18 UNF-2B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| • magnet | • #10 | • M5x0.8 6 g | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| • push fit | | • BS G 1/8 B to BS 2779 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <u>Flexible Tie-Down</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Electrical Interface ¹ | <ul style="list-style-type: none"> • flying leads (two) • leadwires • lead wires with terminal • inbuilt terminal • overmolded connector • cable (pig tail) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Connector ¹ | <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 33%;"><u>AMP</u></td> <td style="vertical-align: top; width: 33%;"><u>MOLEX</u></td> <td style="vertical-align: top; width: 33%;"><u>Other</u></td> </tr> <tr> <td>• AMP 172157-1</td> <td>• Molex 70107-0002</td> <td>• HRS DF 13-2S-1.25</td> </tr> <tr> <td>• AMP 640443-2</td> <td>• Molex 50-57-9402</td> <td>• quick connect female</td> </tr> <tr> <td>• AMP 104257-1</td> <td>• Molex 19003-0064</td> <td>• 0.187 TAB type</td> </tr> <tr> <td>• AMP 42531-2</td> <td></td> <td>• standard 1/4 phone plug</td> </tr> <tr> <td>receptacles</td> <td><u>Packard</u></td> <td>• standard 1/4 stereo phone plug</td> </tr> <tr> <td>• AMP 172338-1</td> <td>• Packard 15300027</td> <td></td> </tr> </table> | <u>AMP</u> | <u>MOLEX</u> | <u>Other</u> | • AMP 172157-1 | • Molex 70107-0002 | • HRS DF 13-2S-1.25 | • AMP 640443-2 | • Molex 50-57-9402 | • quick connect female | • AMP 104257-1 | • Molex 19003-0064 | • 0.187 TAB type | • AMP 42531-2 | | • standard 1/4 phone plug | receptacles | <u>Packard</u> | • standard 1/4 stereo phone plug | • AMP 172338-1 | • Packard 15300027 | | | | | | | | | | |
| <u>AMP</u> | <u>MOLEX</u> | <u>Other</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| • AMP 172157-1 | • Molex 70107-0002 | • HRS DF 13-2S-1.25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| • AMP 640443-2 | • Molex 50-57-9402 | • quick connect female | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| • AMP 104257-1 | • Molex 19003-0064 | • 0.187 TAB type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| • AMP 42531-2 | | • standard 1/4 phone plug | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| receptacles | <u>Packard</u> | • standard 1/4 stereo phone plug | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| • AMP 172338-1 | • Packard 15300027 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lead material ¹ | Teflon, PVC, Kapton insulated; uninsulated | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Note:

1. Other options available. Please consult the factory.

Packaged Temperature Probes

Figure 1. Mounting Methods



500 Series Packaged Temperature Probes Order Guide (Page 1 of 3)

| Catalog Listing | Temperature Sensing Type | Nominal Resistance at 25 °C [77 °F] | Tolerance | Accuracy | BETA (25/85) | R-T Curve | Housing Material | Mounting Method/ Mechanical Interface | Electrical Interface/ Connector Type | Lead Material | Lead Length | Time Constant in Air | Dissipation Constant in Air | Time Constant in Water at 0.914 m/s [3 ft/s] | Dissipation Constant in Water at 0.914 m/s [3 ft/s] | Time Constant on Metal Surface | Dissipation Constant on Metal Surface |
|-----------------|--------------------------|-------------------------------------|-------------------|-------------------------------------|--------------|-----------|-----------------------|---|---|--|------------------|----------------------|-----------------------------|--|---|--------------------------------|---------------------------------------|
| 511-49BJ01-102 | Air/Gas | 1,000 Ohm | ±20.0% | 25 °C [77 °F] | 3068 | 9 | Plastic | Adhesion | Flying leads (two) | 24 Gauge PVC insulation | 305 mm [12 in] | 0.5 s | 0,1 mW/°C | N/A | N/A | N/A | N/A |
| 512-32AC05-204 | Surface | 200,000 Ohm | ±20.0% | 25 °C [77 °F] | 4268 | 15 | Aluminum | Ring tongue (#5) | Flying leads (two) | 24 Gauge Teflon insulation | 330 mm [13 in] | N/A | N/A | N/A | N/A | 2.0 s | 5.2 mW/°C |
| 520-41AD08-153 | Air/Gas | 15,000 Ohm | ±20.0% | 50 °C [122 °F] | 3670 | 12 | Ceramic-filled tubing | Adhesion | Flying leads (two) | 28 Gauge Teflon-impregnated Fiberglass | 1118 mm [44 in] | 16.0 s | 0,7 mW/°C | N/A | N/A | N/A | N/A |
| 520-41AH02-503 | Air/Gas | 50,000 Ohm | ±8.8% | 37 °C [99 °F] | 4061 | 14 | Epoxy filled | Adhesion | Flying leads (two) | 30 Gauge Teflon insulation | 152 mm [6 in] | 16.0 s | 0,7 mW/°C | N/A | N/A | N/A | N/A |
| 520-41AH05-105 | Air/Gas | 1,000,000 Ohm | ±20.0% | 25 °C [77 °F] | 4716 | 5 | Epoxy filled | Adhesion | Flying leads (two) | 28 Gauge Teflon insulation | 305 mm [12 in] | 16.0 s | 0,7 mW/°C | N/A | N/A | N/A | N/A |
| 521-59BP01-103 | Immersion | 10,000 Ohm | ±20.0% | 25 °C [77 °F] | 3670 | 12 | Stainless steel | Bullet housing | Flying leads (two) | 28 Gauge Teflon insulation | 64 mm [2.5 in] | N/A | N/A | 6.0 s | 5.7 mW/°C | N/A | N/A |
| 526-31AD50-153 | Surface | 15,000 Ohm | ±1.0% | ESA/SCC-4006-001-03 | 3670 | 12 | Aluminum | Adhesion | Flying leads (two) | 30 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 1.0 s | 3.3 mW/°C |
| 526-31AN07-202 | Surface | 2,000 Ohm | ±1.0% | ESA/SCC-4006-001-07 | 3518 | 11 | Aluminum | Adhesion | Flying leads (two) | 24 Gauge Kapton insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 1.0 s | 3.3 mW/°C |
| 526-31AN08-153 | Surface | 15,000 Ohm | ±1.0% | ESA/SCC-4006-001-08 | 3670 | 12 | Aluminum | Adhesion | Flying leads (two) | 24 Gauge Kapton insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 1.0 s | 3.3 mW/°C |
| 526-31AN25-402 | Surface | 4,000 Ohm | ±1.0% | ESA/SCC-4006-001-06 | 3518 | 11 | Aluminum | Adhesion | Flying leads (two) | 24 Gauge Kapton insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 1.0 s | 3.3 mW/°C |
| 526-31AN36-402 | Surface | 4,000 Ohm | ±1.0% | ESA/SCC-4006-001-09 | 3518 | 11 | Aluminum | Adhesion | Flying leads (two) | 24 Gauge Kapton insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 1.0 s | 3.3 mW/°C |
| 526-33AB20-153 | Surface | 15,000 Ohm | ±0.1 °C [0.18 °F] | -5 °C to 35 °C [32 °F to 95 °F] | 3670 | 12 | Stainless steel | Threaded body (8-32 UNC-2A) | Flying leads (two) | 30 Gauge silver-plated Teflon | 305 mm [12 in] | N/A | N/A | N/A | N/A | 2.0 s | 5.2 mW/°C |
| 526-33AB47-202 | Surface | 2,000 Ohm | ±0.5 °C [0.9 °F] | 0 °C to 125 °C [32 °F to 257 °F] | 3518 | 11 | Stainless steel | Threaded body (8-32 UNC-2A) | Flying leads (two) | 24 Gauge Teflon insulation | 356 mm [14 in] | N/A | N/A | N/A | N/A | 2.0 s | 5.2 mW/°C |
| 526-59AR04-104 | Immersion | 100,000 Ohm | ±1.0 °C [1.8 °F] | 105 °C to 165 °C [221 °F to 329 °F] | 4061 | 14 | Stainless steel | Bullet housing | Flying leads (two) | 28 Gauge Teflon insulation | 610 mm [24 in] | N/A | N/A | 6.0 s | 5.7 mW/°C | N/A | N/A |
| 528-59AR12-104 | Immersion | 100,000 Ohm | ±1.5 °C [2.7 °F] | 10 °C to 260 °C [50 °F to 500 °F] | 4061 | 14 | Stainless steel | Bullet housing | Flying leads (two) | 26 Gauge Teflon insulation | 4267 mm [168 in] | N/A | N/A | 6.0 s | 5.7 mW/°C | N/A | N/A |
| 535-32AA20-104 | Surface | 100,000 Ohm | ±1.0 °C [1.8 °F] | 25 °C [77 °F] | 3974 | 16 | Nickel-plated copper | Ring tongue (#10) | Flying leads (two) | 22 Gauge Teflon insulation | 1981 mm [78 in] | N/A | N/A | N/A | N/A | 4.0 s | 20 mW/°C |
| 535-32AA30-503 | Surface | 50,000 Ohm | ±10.0% | 25 °C [77 °F] | 3974 | 16 | Nickel-plated copper | Ring tongue (#10) | Flying leads (two) | 22 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 4.0 s | 20 mW/°C |
| 535-32AA33-103 | Surface | 10,000 Ohm | ±5.0% | 25 °C [77 °F] | 3974 | 16 | Tin-plated copper | Ring tongue (#10) | Flying leads (two) | 22 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 4.0 s | 20 mW/°C |
| 535-32AA35-103 | Surface | 10,000 Ohm | ±5.0% | 25 °C [77 °F] | 3974 | 16 | Nickel-plated copper | Ring tongue (#10) | Lead wires/AMP 172157-1 | 22 Gauge Teflon insulation | 102 mm [4 in] | N/A | N/A | N/A | N/A | 4.0 s | 20 mW/°C |
| 535-32BH03-104 | Surface | 100,000 Ohm | ±5.0% | 25 °C [77 °F] | 3974 | 16 | Tin-plated copper | Ring tongue (#1/4) | Flying leads (two) | 24 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 4.0 s | 20 mW/°C |
| 535-32BR01-503 | Surface | 50,000 Ohm | ±10.0% | 25 °C [77 °F] | 3974 | 16 | Tin-plated copper | Ring tongue (#5/16) | Flying leads (two) | 24 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 4.0 s | 20 mW/°C |
| 535-33AF01-823 | Surface | 82,000 Ohm | ±2.9% | 225 °C [437 °F] | 3974 | 16 | Brass | Threaded body (BS pipe thread G 1/8 B to BS 2779) | Flying leads (two) | 18 Gauge Teflon insulation | 127 mm [5 in] | N/A | N/A | N/A | N/A | 30.0 s | 10 mW/°C |
| 535-34AB03-103 | Surface | 10,000 Ohm | ±1.0 °C [1.8 °F] | 0 °C to 100 °C [32 °F to 212 °F] | 4261 | 1 | Stainless steel | Cable-tie wrap | Lead wires/quick connect female terminals | 24 Gauge PVC insulation | 1905 mm [75 in] | 30.0 s | 6 mW/°C | N/A | N/A | N/A | N/A |
| 535-39BU02-105 | Air/Gas | 1,000,000 Ohm | ±3.0% | 120 °C to 232 °C [248 °F to 450 °F] | 4261 | 1 | Glass encapsulated | Bullet housing | Flying leads (two) | 22 Gauge solid nickel | 107 mm [4.2 in] | 4.0 s | 2.5 mW/°C | N/A | N/A | N/A | N/A |
| 535-41AA12-103 | Air/Gas | 10,000 Ohm | ±5.0% | 25 °C [77 °F] | 3974 | 16 | Kynar tubing | Adhesion | Flying leads (two) | 24 Gauge Teflon insulation | 1448 mm [57 in] | 25.0 s | 1.9 mW/°C | N/A | N/A | N/A | N/A |

500 Series Thermistor Packaged Temperature Probes Order Guide (Page 2 of 3)

| Catalog Listing | Temperature Sensing Type | Nominal Resistance at 25 °C [77 °F] | Tolerance | Accuracy | BETA (25/85) | R-T Curve | Housing Material | Mounting Method/Mechanical Interface | Electrical Interface/Connector Type | Lead Material | Lead Length | Time Constant in Air | Dissipation Constant in Air | Time Constant in Water at 0.914 m/s [3 ft/s] | Dissipation Constant in Water at 0.914 m/s [3 ft/s] | Time Constant on Metal Surface | Dissipation Constant on Metal Surface |
|-----------------|--------------------------|-------------------------------------|--------------------|-----------------------------------|--------------|-----------|-------------------------|--------------------------------------|--|------------------------------------|--------------------|----------------------|-----------------------------|--|---|--------------------------------|---------------------------------------|
| 535-42AR08-503 | Air/Gas | 50,000 Ohm | ±5.0% | 25 °C [77 °F] | 3974 | 16 | Stainless steel | Bracket with one hole (#6) | Flying leads (two) | 28 Gauge Teflon insulation | 165 mm [6.5 in] | 150.0 s | 3 mW/°C | N/A | N/A | N/A | N/A |
| 535-42AR10-403 | Air/Gas | 40,000 Ohm | ±5.0% | 25 °C [77 °F] | 3974 | 16 | Stainless steel | Bracket with one hole (#6) | Flying leads (two) | 28 Gauge Teflon insulation | 457 mm [18 in] | 150.0 s | 3 mW/°C | N/A | N/A | N/A | N/A |
| 535-42AR16-253 | Air/Gas | 25,000 Ohm | ±1.0% | 25 °C [77 °F] | 3974 | 16 | Stainless steel | Bracket with one hole (#6) | Flying leads (two) | 28 Gauge Teflon insulation | 165 mm [6.5 in] | 150.0 s | 3 mW/°C | N/A | N/A | N/A | N/A |
| 535-42BA02-303 | Air/Gas | 30,000 Ohm | ±2.0% | 7.2 °C [50.0 °F] | 3974 | 16 | Plastic | Bracket with two holes (#6) | Inbuilt terminal/0.187 TAB Type | N/A | N/A | 30.0 s | 2 mW/°C | N/A | N/A | N/A | N/A |
| 535-53DA02-303 | Immersion | 30,000 Ohm | ±0.2 °C [0.36 °F] | 25 °C [77 °F] | 3974 | 16 | Brass | Threaded body (9/16 18 UNF-2B) | Flying leads (two) | 20 Gauge SE J1128 Type TXL | 102 mm [4 in] | N/A | N/A | 15.0 s | 6 mW/°C | N/A | N/A |
| 535-59AD14-104 | Immersion | 100,000 Ohm | ±7.5% | 125 °C [257 °F] | 4261 | 1 | Stainless steel | Bullet housing | Flying leads (two) | 28 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | 6.0 s | 5.7 mW/°C | N/A | N/A |
| 535-59BF05-503 | Immersion | 50,000 Ohm | ±1.0 °C [1.8 °F] | 60 °C to 85 °C [140 °F to 185 °F] | 3974 | 16 | Stainless steel/plastic | Bullet housing | Overmolded connector/standard ¼ phone plug | 22 Gauge silicon rubber insulation | 450 mm [17.7 in] | N/A | N/A | 10.0 s | 6 mW/°C | N/A | N/A |
| 535-59DV26-303 | Immersion | 30,000 Ohm | ±2.0% | 0 °C [32 °F] | 3974 | 16 | Stainless steel | Bullet housing | Flying leads (two) | 24 Gauge PVC insulation | 3,048 mm [120 in] | N/A | N/A | 6.0 s | 5.7 mW/°C | N/A | N/A |
| 535-59DV37-303 | Immersion | 30,000 Ohm | ±2.0% | 0 °C [32 °F] | 3974 | 16 | Stainless steel | Bullet housing | Flying leads (two) | 24 Gauge PVC insulation | 63,096 mm [240 in] | N/A | N/A | 6.0 s | 5.7 mW/°C | N/A | N/A |
| 535-59DV41-303 | Immersion | 30,000 Ohm | ±2.0% | 0 °C [32 °F] | 3974 | 16 | Stainless steel | Bullet housing | Flying leads (two) | 24 Gauge PVC insulation | 9,144 mm [360 in] | N/A | N/A | 6.0 s | 5.7 mW/°C | N/A | N/A |
| 590-31AB10-103 | Surface | 10,000 Ohm | ±0.5 °C [0.9 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Stainless steel | Adhesion | Flying leads (two) | 24 Gauge Teflon insulation | 1219 mm [48 in] | N/A | N/A | N/A | N/A | 2.0 s | 4 mW/°C |
| 590-32AC35-103 | Surface | 10,000 Ohm | ±0.2 °C [0.36 °F] | 32 °C to 42 °C [90 °F to 108 °F] | 3974 | 16 | Aluminum | Ring tongue (#5) | Flying leads (two) | 24 Gauge Teflon insulation | 559 mm [22 in] | N/A | N/A | N/A | N/A | 2.0 s | 10 mW/°C |
| 590-32AC36-103 | Surface | 10,000 Ohm | ±0.2 °C [0.36 °F] | 32 °C to 42 °C [90 °F to 108 °F] | 3974 | 16 | Aluminum | Ring tongue (#5) | Flying leads (two) | 24 Gauge Teflon insulation | 330 mm [13 in] | N/A | N/A | N/A | N/A | 2.0 s | 10 mW/°C |
| 590-32AD01-103 | Surface | 10,000 Ohm | ±0.5 °C [0.9 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Aluminum | Ring tongue (#6) | Flying leads (two) | 28 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 2.0 s | 5.2 mW/°C |
| 590-32AD11-303 | Surface | 30,000 Ohm | ±0.05 °C [0.09 °F] | 32 °C to 42 °C [90 °F to 108 °F] | 3943 | 18 | Aluminum | Ring tongue (#6) | Flying leads (two) | 28 Gauge Teflon insulation | 508 mm [20 in] | N/A | N/A | N/A | N/A | 2.0 s | 5.2 mW/°C |
| 590-32AD16-103 | Surface | 10,000 Ohm | ±0.2 °C [0.36 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 4261 | 16 | Aluminum | Ring tongue (#6) | Lead wires/Molex 70107-0002 | 24 Gauge Teflon insulation | 76 mm [3 in] | N/A | N/A | N/A | N/A | 2.0 s | 5.2 mW/°C |
| 590-32BP01-203 | Surface | 20,000 Ohm | ±0.2 °C [0.36 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Tin-plated copper | Ring tongue (#10) | Flying leads (two) | 22 Gauge PVC insulation | 914 mm [36 in] | N/A | N/A | N/A | N/A | 3.0 s | 20 mW/°C |
| 590-33AA26-104 | Surface | 100,000 Ohm | ±0.2 °C [0.36 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 4261 | 1 | Aluminum | Threaded body (8-32 UNC-2A) | Flying leads (two) | 28 Gauge Teflon insulation | 356 mm [14 in] | N/A | N/A | N/A | N/A | 3.0 s | 6 mW/°C |
| 590-33AA33-503 | Surface | 50,000 Ohm | ±0.2 °C [0.36 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 4261 | 1 | Aluminum | Threaded body (8-32 UNC-2A) | Lead wires/AMP 104257-1 | 28 Gauge Teflon insulation | 30 mm [1.2 in] | N/A | N/A | N/A | N/A | 3.0 s | 6 mW/°C |
| 590-33AA34-503 | Surface | 50,000 Ohm | ±0.2 °C [0.36 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 4261 | 1 | Aluminum | Threaded body (8-32 UNC-2A) | Flying leads (two) | 28 Gauge Teflon insulation | 64 mm [2.5 in] | N/A | N/A | N/A | N/A | 3.0 s | 6 mW/°C |
| 590-33AA38-103 | Surface | 10,000 Ohm | ±0.05 °C [0.09 °F] | 37 °C [99 °F] | 3974 | 16 | Aluminum | Threaded body (8-32 UNC-2A) | Flying leads (two) | 28 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 3.0 s | 6 mW/°C |
| 590-33AB06-503 | Surface | 50,000 Ohm | ±0.2 °C [0.36 °F] | 0 °C to 50 °C [32 °F to 122 °F] | 4261 | 1 | Stainless steel | Threaded body (8-32 UNC-2A) | Flying leads (two) | 28 Gauge Teflon insulation | 457 mm [18 in] | N/A | N/A | N/A | N/A | 3.0 s | 6 mW/°C |
| 590-33BN01-103 | Surface | 10,000 Ohm | ±0.1 °C [0.18 °F] | 0 °C to 39 °C [32 °F to 102 °F] | 3974 | 16 | Aluminum | Threaded body (M5x0.8 6 g) | Lead wires/Molex 50-57-9402 | 28 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 3.0 s | 6 mW/°C |
| 590-33BQ01-103 | Surface | 10,000 Ohm | ±0.1 °C [0.18 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Aluminum | Threaded body (M5x0.8 6 g) | Lead wires/Molex 50-57-9402 | 28 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 3.0 s | 10 mW/°C |
| 590-39CG02-103 | Surface | 10,000 Ohm | ±0.05 °C [0.09 °F] | 15 °C to 25 °C [59 °F to 77 °F] | 3974 | 16 | Steel magnet | Magnet | Overmolded connector/standard ¼ phone plug | N/A | 3,810 mm [150 in] | N/A | N/A | N/A | N/A | 25.0 s | 30 mW/°C |
| 590-51AF05-103 | Immersion | 10,000 Ohm | ±0.2 °C [0.36 °F] | 0 °C to 100 °C [32 °F to 212 °F] | 3974 | 16 | Epoxy filled | Adhesion | Flying leads (two) | 28 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | 10.0 s | 5 mW/°C | N/A | N/A |
| 590-51AF09-103 | Immersion | 10,000 Ohm | ±1.0% | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Epoxy filled | Adhesion | Lead wires/AMP 640443-2 | 28 Gauge Teflon insulation | 178 mm [7 in] | N/A | N/A | 10.0 s | 5 mW/°C | N/A | N/A |

500 Series Thermistor Packaged Temperature Probes Order Guide (Page 3 of 3)

| Catalog Listing | Temperature Sensing Type | Nominal Resistance at 25 °C [77 °F] | Tolerance | Accuracy | BETA (25/85) | R-T Curve | Housing Material | Mounting Method/ Mechanical Interface | Electrical Interface/ Connector Type | Lead Material | Lead Length | Time Constant in Air | Dissipation Constant in Air | Time Constant in Water at 0.914 m/s [3 ft/s] | Dissipation Constant in Water at 0.914 m/s [3 ft/s] | Time Constant on Metal Surface | Dissipation Constant on Metal Surface |
|-----------------|----------------------------|-------------------------------------|-------------------|------------------------------------|--------------|-----------|-------------------|---------------------------------------|--------------------------------------|-----------------------------------|------------------|----------------------|-----------------------------|--|---|--------------------------------|---------------------------------------|
| 590-53AD10-103 | Immersion | 10,000 Ohm | ±0.2 °C [0.36 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Stainless steel | Threaded body (1/8-27 NPT) | Flying leads (two) | 24 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | 5.0 s | 5.7 mW/°C | N/A | N/A |
| 590-53AD33-104 | Immersion | 100,000 Ohm | ±0.2 °C [0.36 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 4261 | 1 | Stainless steel | Threaded body (1/8-27 NPT) | Flying leads (two) | 24 Gauge Teflon insulation | 457 mm [18 in] | N/A | N/A | 6.0 s | 5.7 mW/°C | N/A | N/A |
| 590-53AZ06-302 | Immersion | 3,000 Ohm | ±0.2 °C [0.36 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Stainless steel | Threaded body (1/4-18 NPT) | Flying leads (two) | 22 Gauge PVC insulation | 1829 mm [72 in] | N/A | N/A | 10.0 s | 5.7 mW/°C | N/A | N/A |
| 590-53BJ01-502 | Immersion | 5,000 Ohm | ±0.2 °C [0.36 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Stainless steel | Threaded body (3/8-24 UNF-2A) | Flying leads (two) | 20 Gauge PVC insulation | 305 mm [12 in] | N/A | N/A | 6.0 s | 5.7 mW/°C | N/A | N/A |
| 590-53CU02-103 | Immersion | 10,000 Ohm | ±1.0 °C [1.8 °F] | 0 °C to 80 °C [32 °F to 176 °F] | 3974 | 16 | Brass | Threaded body (1/8-27 NPT) | Lead wires/ Packard 15300027 | 18 Gauge polyolefin insulation | 152 mm [6 in] | N/A | N/A | 15.0 s | 5 mW/°C | N/A | N/A |
| 590-53CU05-153 | Immersion | 15,000 Ohm | ±1.0 °C [1.8 °F] | 0 °C to 80 °C [32 °F to 176 °F] | 3974 | 16 | Brass | Threaded body (1/8-27 NPT) | Lead wires/ Packard 15300027 | 18 Gauge polyolefin insulation | 152 mm [6 in] | N/A | N/A | 15.0 s | 5 mW/°C | N/A | N/A |
| 590-59AD02-104 | Immersion | 100,000 Ohm | ±0.5 °C [0.9 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 4261 | 1 | Stainless steel | Bullet housing | Flying leads (two) | 28 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | 6.0 s | 5.7 mW/°C | N/A | N/A |
| 590-59AD07-302 | Immersion | 3,000 Ohm | ±0.5 °C [0.9 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Stainless steel | Bullet housing | Flying leads (two) | 24 Gauge PVC insulation | 813 mm [32 in] | N/A | N/A | 6.0 s | 5.7 mW/°C | N/A | N/A |
| 590-59AR18-103 | Immersion | 10,000 Ohm | ±0.5 °C [0.9 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Stainless steel | Bullet housing | Flying leads (two)/Molex 19003-0064 | 24 Gauge Teflon insulation | 1219 mm [48 in] | N/A | N/A | 6.0 s | 5 mW/°C | N/A | N/A |
| 590-59AR19-103 | Immersion | 10,000 Ohm | ±0.5 °C [0.9 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Stainless steel | Bullet housing | Flying leads (two)/Molex 19003-0064 | 24 Gauge Teflon insulation | 1524 mm [60 in] | N/A | N/A | 6.0 s | 5 mW/°C | N/A | N/A |
| 590-59AR20-103 | Immersion | 10,000 Ohm | ±0.5 °C [0.9 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Stainless steel | Bullet housing | Flying leads (two)/Molex 19003-0064 | 24 Gauge Teflon insulation | 1524 mm [60 in] | N/A | N/A | 6.0 s | 5 mW/°C | N/A | N/A |
| 590-59BC20-103 | Immersion | 10,000 Ohm | ±0.5 °C [0.9 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Copper | Bullet housing | Flying leads (two)/Molex 19003-0071 | 20 Gauge PVC insulation | 914 mm [36 in] | N/A | N/A | 6.0 s | 5 mW/°C | N/A | N/A |
| 590-59BC21-103 | Immersion | 10,000 Ohm | ±0.1 °C [0.18 °F] | 0 °C to 25 °C [32 °F to 177 °F] | 3974 | 16 | Stainless steel | Bullet housing | Flying leads (two) | 20 Gauge PVC insulation | 1397 mm [55 in] | N/A | N/A | 6.0 s | 5 mW/°C | N/A | N/A |
| 590-59BC22-103 | Immersion | 10,000 Ohm | ±0.5 °C [0.9 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Copper | Bullet housing | Flying leads (two)/Molex 19003-0071 | 20 Gauge PVC insulation | 1219 mm [48 in] | N/A | N/A | 6.0 s | 5 mW/°C | N/A | N/A |
| 590-59EU01-502 | Immersion | 5,000 Ohm | ±0.5 °C [0.9 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 3974 | 16 | Stainless steel | Bullet housing | Cable (pig tail) | 24 Gauge PVC insulation | 762 mm [30 in] | N/A | N/A | 10.0 s | 5 mW/°C | N/A | N/A |
| 592-39AK14-103 | Surface | 10,000 Ohm | ±0.2 °C [0.36 °F] | 32 °C to 42 °C [90 °F to 108 °F] | 3974 | 16 | Epoxy filled | Bullet housing | Flying leads (two) | 28 Gauge Teflon insulation | 203 mm [8 in] | N/A | N/A | N/A | N/A | 3.0 s | 10 mW/°C |
| 592-39CD04-103 | Surface | 10,000 Ohm | ±0.1 °C [0.18 °F] | 28 °C to 39 °C [82 °F to 102 °F] | 3974 | 16 | Epoxy filled | Bullet housing | Lead wires/ Molex 50-57-9402 | 28 Gauge Teflon insulation | 406 mm [16 in] | N/A | N/A | N/A | N/A | 3.0 s | 10 mW/°C |
| 592-59LS01-103 | Immersion and liquid level | 10,000 Ohm | ±1.0 °C [1.8 °F] | 80 °C to 100 °C [176 °F to 212 °F] | 3974 | 16 | Stainless steel | Bullet housing push fit | Lead wires/ AMP172338-1 | 26 Gauge Teflon insulation | 279 mm [11 in] | N/A | N/A | 10.0 s | 5 mW/°C | N/A | N/A |
| 593-51AR01-303 | Immersion | 30,000 Ohm | ±0.2 °C [0.36 °F] | 0 °C to 70 °C [32 °F to 158 °F] | 4261 | 1 | Epoxy filled | Adhesion | Flying leads (two) | 28 Gauge Teflon insulation | 279 mm [11 in] | N/A | N/A | 10.0 s | 5 mW/°C | N/A | N/A |
| 595-32AB13-104 | Surface | 100,000 Ohm | ±10.0% | 25 °C [77 °F] | 4261 | 1 | Tin-plated copper | Ring tongue (#6) | Flying leads (two) | 28 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 3.0 s | 20 mW/°C |
| 595-32AE04-103 | Surface | 10,000 Ohm | ±1.0% | 25 °C [77 °F] | 3974 | 16 | Tin-plated copper | Ring tongue (#4) | Flying leads (two) | 24 Gauge Teflon insulation | 762 mm [30 in] | N/A | N/A | N/A | N/A | 4.0 s | 20 mW/°C |
| 595-32AE05-103 | Surface | 10,000 Ohm | ±5.0% | 25 °C [77 °F] | 3974 | 16 | Tin-plated copper | Ring tongue (#5) | Lead wires/ HRS DF 13-2S-1.25 | 28 Gauge Teflon insulation | 203 mm [8 in] | N/A | N/A | N/A | N/A | 4.0 s | 20 mW/°C |
| 595-32AB13-104 | Surface | 100,000 Ohm | ±10.0% | 25 °C [77 °F] | 4261 | 1 | Tin-plated copper | Ring tongue (#6) | Flying leads (two) | 28 Gauge Teflon insulation | 305 mm [12 in] | N/A | N/A | N/A | N/A | 3.0 s | 20 mW/°C |
| 597-32BM06-103 | Surface | 10,000 Ohm | ±2.0% | 25 °C [77 °F] | 3974 | 16 | Tin-plated copper | Ring tongue (#8) | Flying leads (two) | 24 Gauge solid nickel uninsulated | 38,1 mm [1.5 in] | N/A | N/A | N/A | N/A | 4.0 s | 20 mW/°C |
| 597-32BM07-104 | Surface | 100,000 Ohm | ±2.0% | 25 °C [77 °F] | 4261 | 1 | Tin-plated copper | Ring tongue (#8) | Flying leads (two) | 24 Gauge solid nickel uninsulated | 38,1 mm [1.5 in] | N/A | N/A | N/A | N/A | 4.0 s | 20 mW/°C |

WARNING

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Phone and Fax:

Asia Pacific +65 6355-2828
+65 6445-3033 Fax
Europe +44 (0) 1698 481481
+44 (0) 1698 481676 Fax
Latin America +1-305-805-8188
+1-305-883-8257 Fax
USA/Canada +1-800-537-6945
+1-815-235-6847
+1-815-235-6545 Fax

Sensing and Control
Honeywell
11 West Spring Street
Freeport, Illinois 61032
www.honeywell.com/sensing

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