**FEATURES**

- Pressure range of -30 to 300 mmHg
- Excellent burst pressure
- Compliant with AAMI BP22 specifications
- Dielectric gel barrier
- Fully tested
- Small, disposable, low-cost package
- Temperature compensated
- Solid state piezoresistive sensor
- Top side pressure entry
- Easy to install into customer’s disposable blood pressure device housing
- Compatible with automated assembly equipment
- Compatible in air, gas and liquid
- Shipped as 120UP snapstrates or on tape and reel
- Automated testing and assembly
- Custom options available
- Engineering, design, and manufacturing under one roof in Utah, USA.

**APPLICATIONS**

- Disposable blood pressure measurement
- Kidney dialysis machines
- Infusion pumps
- Surgical procedures

The Merit Sensor Blood Pressure sensor is ideal for low cost, high-volume, disposable medical applications including blood pressure monitoring. The BP Series sensor is temperature compensated, dielectric gel protected and can easily be installed into a customer’s pressure device housing.

**COMPANY:** Merit Sensor is a leader in piezoresistive pressure sensing and partners with clients to create high performing solutions for a variety of applications and industries. Design, engineering and manufacturing of Merit Sensor products takes place in state-of-the-art wafer fabrication facility in Utah, US.

**TECHNOLOGY:** Merit Sensor utilizes a piezoresistive Wheatstone bridge with a chemically etched silicon diaphragm. All products are RoHS compliant.

**CAPABILITIES:** Merit Sensor designs, engineers, fabricates, dices, assembles, tests and sells and services die and packaged products from a state-of-the-art facility near Salt Lake City, Utah.
NOTES:

1. Assumes 6 VDC, 22°C and after five second warm-up unless otherwise specified.
2. Output of sensor with no pressure applied and a 150 KΩ resistor shorted across +IN to +OUT.
3. Over a temperature range of 15°C to 40°C.
4. Normalized offset/bridge voltage – 8 hours after 20 second warm-up.
5. Previously qualified, not tested in production.
7. Sterilization performed by customer.

SPECIFICATIONS

Parameter | Minimum | Typical | Maximum | Units | Notes
--- | --- | --- | --- | --- | ---
**General**
Pressure Range | -30 | 300 | mmHg | 
Overpressure | 125 | PSI | Typical burst of +800 PSI | 
**Electrical (22°C unless otherwise stated)**
Input Excitation (In) | 1 | 10 | VDC | Calibrated to 6 VDC |
Risk Current | 2 | μA | 5 | |
Input Impedance | 1,200 | 3000 | Ω | |
Output Impedance | 285 | 315 | Ω | |
Dielectric Breakdown | 10,000 | VDC | 5 | |
**Environmental**
Temp (Comp/Operating) | 15 | 40 | °C | |
Temperature (Storage) | -25 | 70 | °C | (Non Condensing) |
Humidity | 10 | 90 | % | |
Light Sensitivity | 1 | mmHg | 5 - Per AAMI BP22 |
**Mechanical**
Weight | 2 | Grams | |
Volume Displacement | .02 | mm³ | Medical grade, dielectric gel |
Media Interface | 
Gel Tube Interface Material | Polycarbonate | |
**Performance**
Offset | -25 | 0 | 25 | mmHg | Zero |
Sensitivity | 4.95 | 5 | 5.05 | μV/V/mmHg | |
Calibration | 97.5 | 100 | 102.5 | mmHg | 2 |
Symmetry | 5 | | |
Accuracy (-30 to 50 mmHg) | -1 mmHg - 1% of Reading | 0 | 5 | % | |
Accuracy (50 to 300 mmHg) | -3 | 0 | 3 | % of Reading | |
Temp Coeff – Zero | -0.3 | 0 | 0.3 | mmHg/°C | 3, 5 |
Temp Coeff – Sensitivity | -0.1 | 0 | 0.1 | %/°C | 3, 5 |
Frequency Response | 1,200 | Hz | 5 | |
Phase Shift | 5 | degrees | 5 | |
Offset Drift | 1 | mmHg/8 hrs | 4, 5 | |

**Notes:**
- Sensors are shipped as 120UP snapstrates which must be singulated by the customer.
- Each plate may include units that have failed electrical or visual test. Bad units are identified with a red dot on the backside of the unit.
- Plates are shipped in dust free anti-static containers to prevent damage to the gel.
### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Parameter</th>
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3. Over a temperature range of 15°C to 40°C.
4. Normalized offset/bridge voltage – 8 hours after 20 second warm-up.
5. Previously qualified, not tested in production.
6. Combined effect of sensitivity, repeatability, non-linearity and hysteresis errors.
7. Sterilization performed by customer.

### Dimensions (millimeters)

- **BP0001**
  - Pin-out Table for solder pads
  - Gel cup placement centered on ceramic ±0.38mm in each axis

- **BP0002**
  - Note: Pads 2 & 3 must be shorted
  - Pads 4 & 5 must be shorted
  - Note: Vent hole must not be blocked

**NOTE:**
- When sensors are shipped as 120UP snapstrates, the ceramic plates must be singulated by the customer.
- Each plate may include units that have failed electrical or visual test. Bad units are identified with a red dot on the backside of the unit.
- Plates are shipped in dust free anti-static containers to prevent damage to the gel.

### PACKAGING AND SHIPPING

- Dimensions in millimeters
- When shipped, units are packaged in a blow-tight dust free anti-static container to ensure the silicone gel remains free of any particulates that could contaminate the sensor.
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**DATA SHEET**

**BP Series Standard Part Numbers**
- BP0001
- BP0002