



Platinum Temperature Sensors

2I – Product Series

Temperature Range: –50°C...+200°C

Platinum temperature sensor elements with long insulated connections

Technical Data

| | | |
|--------------------------|--|-----------------|
| Specification: | DIN EN 60751 | |
| Temperature range: | -50°C to +200°C | |
| Temperature Coefficient: | TCR = 3850 ppm/K | |
| Tolerance Classes: | F 0.1 (Class Y) | -50°C to +150°C |
| | F 0.15 (Class A) | -50°C to +200°C |
| | F 0.3 (Class B) | -50°C to +200°C |
| | F 0.6 (Class C) | -50°C to +200°C |
| | 1/5 F 0.3 (Class K) | on request |
| | 1/10 F 0.3 (Class K) | on request |
| Leads: | Cu/AG wire, PTFE insulated, AWG 30/1 Recommended connection technology: Soldering, Crimping | |
| Lead Lengths: | 20 mm to over 1000 mm | |
| Long-term stability: | Max. Drift = Less than 0.03% after 1000h at max. operating temperature | |
| Note: | Other connection length, nominal value, wire diameter and chip sizes on request | |



INNOVATIVE SENSOR TECHNOLOGY

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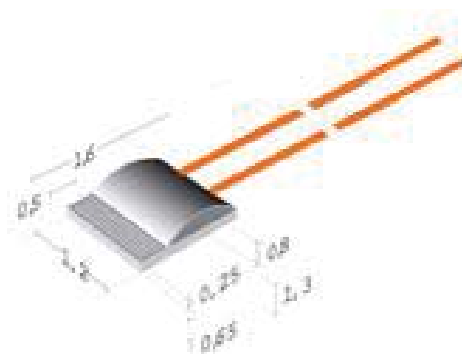
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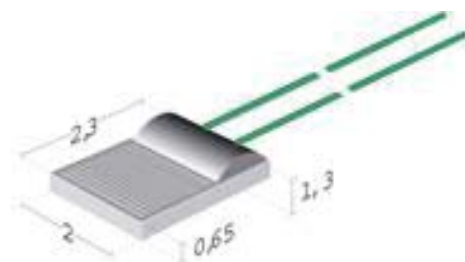
2I 161

| | | |
|--|--|---|
| Chip Dimensions, L x W: | 1.6 x 1.2 mm | |
| Nominal Resistance at 0°C (ohm) : | 100/1000 | |
| Self Heating (mK): | Water (v= 0 m/s) Air (v= 0 m/s) | $\Delta T_w = 8.3$ at 0°C $\Delta T_a = 56$ at 0°C |
| Response Time (s): | Water (v= 0.4 m/s) Air (v= 1 m/s) | $T_{0.5} = 0.05$ $T_{0.63} = 0.08$ $T_{0.9} = 0.18$ $T_{0.5} = 1$ $T_{0.63} = 1.2$ $T_{0.9} = 2.5$ |
| Measuring Current (mA): | 100Ω: 1 1000Ω: 0.3 | |
| Note: | AWG 32 | |



2I 232

| | | |
|--|--|---|
| Chip Dimensions, L x W: | 2.3 x 2.0 mm | |
| Nominal Resistance at 0°C (ohm) : | 100/500/1000 | |
| Self Heating (mK): | Water (v= 0 m/s) Air (v= 0 m/s) | $\Delta T_w = 2.5$ at 0°C $\Delta T_a = 25$ at 0°C |
| Response Time (s): | Water (v= 0.4 m/s) Air (v= 1 m/s) | $T_{0.5} = 0.09$ $T_{0.63} = 0.12$ $T_{0.9} = 0.33$ $T_{0.5} = 2.7$ $T_{0.63} = 3.6$ $T_{0.9} = 7.5$ |
| Measuring Current (mA): | 100Ω: 1 500Ω: 0.5 1000Ω: 0.3 | |



INNOVATIVE SENSOR TECHNOLOGY

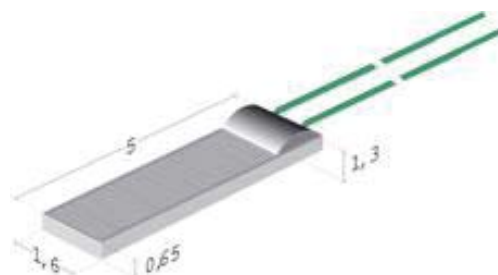
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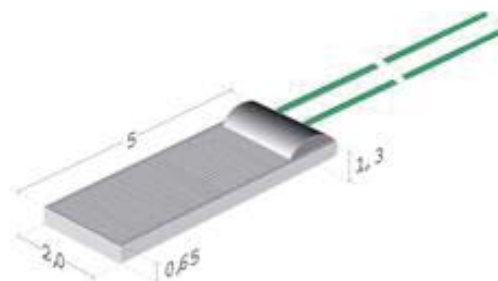
2I 516

| | | |
|---|--------------------|---------------------------|
| Dimensions, LxW: | 5.0 x 1.6 mm | |
| Nominal Resistance at 0°C (ohm): | 100/500/1000 | |
| Self Heating (mK): | Water (v= 0 m/s) | $\Delta T_w = 1.3$ at 0°C |
| | Air (v= 0 m/s) | $\Delta T_a = 14$ at 0°C |
| Response Time (s): | Water (v= 0.4 m/s) | $T_{0.5} = 0.25$ |
| | | $T_{0.63} = 0.3$ |
| | | $T_{0.9} = 0.7$ |
| | Air (v= 1 m/s) | $T_{0.5} = 5.5$ |
| | | $T_{0.63} = 7.5$ |
| | | $T_{0.9} = 16$ |
| Measuring Current (mA): | 100Ω: 1 | |
| | 500 Ω: 0.5 | |
| | 1000Ω: 0.3 | |



2I 520

| | | |
|---|--------------------|---------------------------|
| Dimensions, LxW: | 5.0 x 2.0 mm | |
| Nominal Resistance at 0°C (ohm): | 100/1000 | |
| Self Heating (mK): | Water (v= 0 m/s) | $\Delta T_w = 1.3$ at 0°C |
| | Air (v= 0 m/s) | $\Delta T_a = 14$ at 0°C |
| Response Time (s): | Water (v= 0.4 m/s) | $T_{0.5} = 0.25$ |
| | | $T_{0.63} = 0.3$ |
| | | $T_{0.9} = 0.75$ |
| | Air (v= 1 m/s) | $T_{0.5} = 6$ |
| | | $T_{0.63} = 8.5$ |
| | | $T_{0.9} = 18$ |
| Measuring Current (mA): | 100Ω: 1 | |
| | 1000Ω: 0.3 | |





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Order Example:

| | | | | | | |
|----------|-------------|-------------|----------|-----------|-----------|------------|
| <i>P</i> | <i>1K0.</i> | <i>232.</i> | <i>2</i> | <i>I.</i> | <i>B.</i> | <i>020</i> |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

1. Material Identification = Platinum temperature sensor
2. Resistance Value in ohm = $1000\Omega / 0^\circ\text{C}$
3. Chip Dimension = $2.3 \times 2.0 \text{ mm}$
4. Temperature Range = -50°C to $+200^\circ\text{C}$
5. Extension = Insulated Contacts
6. Tolerance Class = DIN EN 60751 F 0.3 (former Class B)
7. Connection length = 20 mm



INNOVATIVE SENSOR TECHNOLOGY

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