TEMPERATURE

# Nickel Temperature Sensors

## 1E/ 1K – Product Series — Temperature Range: –60°C...+150°C

**Nickel temperature sensor elements with PTFE-insulated connections**

### Technical Data

| | |
|---|---|
| **Specification:** | DIN 43760 |
| **Temperature range:** | -60°C to +150°C |
| **Temperature Coefficient:** | 4280 ppm/K (NC series)<br>5000 ppm/K (NL series)<br>5696 ppm/K (NM series)<br>6180 ppm/K (ND series)<br>6370 ppm/K (NJ series)<br>6720 ppm/K (NA series) |
| **Tolerance Classes:** | Class A -60°C to +150°C<br>Class B -60°C to +150°C |
| **Leads:** | Enameled copper wire, AWG 32<br>Recommended connection technology: Soldering, Welding |
| **Lead Lengths:** | Your choice |
| **Long-term stability:** | Max. Drift = Less than 0.1% after 1000h at max. operating temperature |
| **Notes:** | Other TCRs, chip sizes, wire diamater and wire length on request |

RoHS

IST
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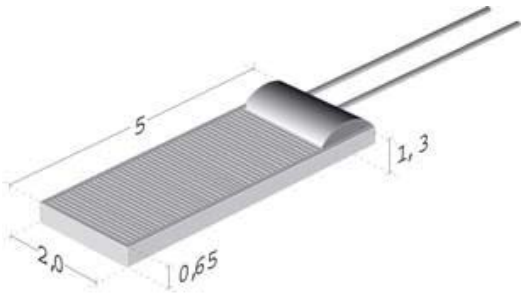
## 1E/ 1K – Product Series — Temperature Range: –60°C...+150°C

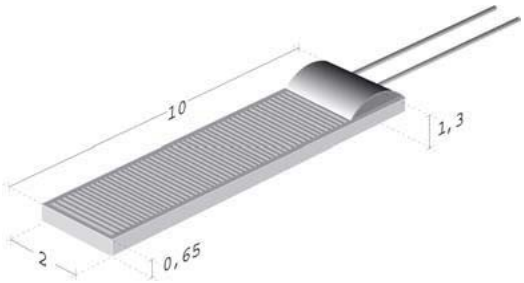
### 1E 520

| | | |
|---|---|---|
| **Dimensions, LxW:** | 5.0 x 2.0 mm | |
| **Nominal Resistance at 0°C (ohm):** | 100/500/1000 | |
| **Self Heating (mK):** | Water (v= 0 m/s) | $\Delta T_w$ = 1.1 at 0°C |
| | Air (v= 0 m/s) | $\Delta T_a$ = 12.9 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:** | 100 Ω: 1 mA (max. 5 mA)<br>500 Ω: 0.5 mA (max. 3 mA)<br>1000 Ω: 0.3 mA (max. 2 mA) | |




### 1E 102

| | | |
|---|---|---|
| **Dimensions, LxW:** | 10.0 x 2.0 mm | |
| **Nominal Resistance at 0°C (ohm):** | 100/500/1000 | |
| **Self Heating (mK):** | Water (v= 0 m/s) | $\Delta T_w$ = 0.6 at 0°C |
| | Air (v= 0 m/s) | $\Delta T_a$ = 9 at 0°C |
| **Response Time (s):** | Water (v= 0.4 m/s) | $T_{0.5}$ = 0.33 |
| | | $T_{0.63}$ = 0.4 |
| | | $T_{0.9}$ = 0.85 |
| | Air (v= 1 m/s) | $T_{0.5}$ = 7.5 |
| | | $T_{0.63}$ = 10.5 |
| | | $T_{0.9}$ = 20 |
| **Measuring Current:** | 100 Ω: 1 mA (max. 5 mA)<br>500 Ω: 0.5 mA (max. 3 mA)<br>1000 Ω: 0.3 mA (max. 2 mA) | |

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## 1E/ 1K – Product Series

## Temperature Range: –60°C...+150°C

| ***Order Example:*** | ***N*** | ***D*** | ***1K0.*** | ***520.*** | ***1*** | ***E.*** | ***B.*** |
|---|---|---|---|---|---|---|---|
| | *1* | *2* | *3* | *4* | *5* | *6* | *7* |

1. *Material Identification = Nickel temperature sensor*
2. *Characteristic Curve = 6180 ppm/K*
3. *Resistance Value in ohm = 1000Ω / 0°C*
4. *Chip Dimension = 5.0 x 2.0 mm*
5. *Temperature Range = -60 °C to +150°C*
6. *Extension = Enameled copper wire*
7. *Tolerance Class = DIN EN 60751 F 0.3 (former Class B)*

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