Overview
This transmitter amplifies a signal from a RTD or linear resistance, and it turns the signal into a current which increases from 4 to 20 milliamperes as the temperature or input signal increases. This industry-standard 4-20mA signal travels thousands of feet over a pair of wires, ignoring electrical interference and bringing the temperature, accurately, into your computer or controller. Drawing power directly from the signal line, only 2 wires are needed for power and signal.

- RTD or Ohm input
- Accurate, Stable 4–20mA Output
- PC and field-programmable
- FM Approved Intrinsically Safe

Converts multiple inputs
Temperature measurement can be done with one of several RTD’s: 100 Ω, 1000 Ω platinum, 100 Ω Nickel and 1000 Ω Nickel. Because amplification and conversion of the input signal is performed within a few feet of the sensor, electrical interference in noisy environments is eliminated. The transmitter can be mounted at the field location in a standard DIN form B head or on a DIN rail inside a local box.

Applications
- Single temperature measurement

Configuration
The TT518 is delivered configured to the customer’s specifications, including the transmitter’s measurement range and RTD type.

PC Programming
The TT518 transmitter can be configured via a standard PC using a programming kit. It can be configured before installation or while installed in the process - even in hazardous areas. Communication is 2-way, so set-up and serial/tag numbers can be retrieved from the transmitter.

Electrical Specifications
- Ambient temperature range: -40°C to +85°C

Common Specifications
- Supply voltage: 8 -30 VDC
- Warm-up time: 5 min.
- Communication interface: PC Interface/Loop Link
- Signal/noise ratio: Min. 60 dB
- Response time (programmable): 0.33 sec. to 60 sec.
- Update time: 135 msec.
- Calibration temperature: 20 to 28°C
- Effect of supply voltage change: < 0.005% of span/ VDC
- EMC-Immunity influence: < ±0.5% of span
- Vibration: IEC 600 68-2-6 Test FC
- Lloyd’s specification no. 1: 4 g / 2 - 100 Hz
- Max. wire size: AWG14 (1.5 mm²)
- Air humidity: 0 - 95% RH
- Dimensions: Ø1.73 x 0.84 in (Ø44 x 20.2mm)
- Tightness (enclosure/terminal): IP 68 / IP00
- Weight: 50g
Inputs (common specifications)

Max. offset: 50% of selected max. value
Cable resistance per wire (max.): 10Ω
Sensor current: >0.2mA, <0.4mA
Effect of sensor cable resistance:
(3-wire): < 0.002 Ω/Ω

<table>
<thead>
<tr>
<th>Type</th>
<th>Minimum Value</th>
<th>Maximum Value</th>
<th>Minimum Span</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD (Pt100)</td>
<td>-200°C</td>
<td>+850°C</td>
<td>25°C</td>
</tr>
<tr>
<td>PF (Pt1000)</td>
<td>-200°C</td>
<td>+850°C</td>
<td>25°C</td>
</tr>
<tr>
<td>Linear Res.</td>
<td>0 Ω</td>
<td>10000 Ω</td>
<td>30°C</td>
</tr>
</tbody>
</table>

Basic accuracy:
PD/PF (Pt100/1000): <±0.3°C
Linear Resistance: <±0.2Ω

Temperature coefficient:
PD/PF (Pt100/1000): <±0.01°C/°C
Linear Resistance: <±20mΩ/°C

Current output:
Signal range: 4 - 20 mA
Min. signal range: 16 mA
Load resistance: < (Vsup. – 8) / 0.023 [Ω]
Load stability: ± 0.01% of span / 100 Ω

Sensor error detection:
Programmable: 3.5 - 23 mA, or no action
Namur NE43 Downscale/Upscale: 3.5 mA/ 23 mA

Approvals:
- EMC: EN 61326-1
- ATEX: KEMA 03ATEX1535
- FM: 2DS5A7
- CSA: 1125003
- GOST R: Yes
- GOST Ex: Yes
- DNV Marine: Stand. F. Certification No. 2.4

Output

The 4-20 mA output follows the TT518 input configuration, reflecting the temperature and/or resistance. The unit is protected against polarity reversal. The output signal action can be reversed with respect to the input signal. Sensor and/or cable errors can be programmed to cause the output to go to a fixed value.

Specification and order options:

<table>
<thead>
<tr>
<th>TT518</th>
<th>Model Number: TT518 Temperature Transmitter</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD</td>
<td>Sensor Type: PD = 100 Ω Platinum RTD (0.00385)</td>
</tr>
<tr>
<td></td>
<td>PF = 1000 Ω Platinum RTD (0.00385)</td>
</tr>
<tr>
<td>(-25/200)</td>
<td>Ranging:</td>
</tr>
<tr>
<td>C</td>
<td>Display Units: C = Celsius, F = Fahrenheit</td>
</tr>
<tr>
<td>1</td>
<td>Calibration:</td>
</tr>
<tr>
<td></td>
<td>1 = Nominal</td>
</tr>
<tr>
<td></td>
<td>2 = Matched to sensor ±0.75% of span</td>
</tr>
<tr>
<td></td>
<td>For other calibration options, contact Minco</td>
</tr>
<tr>
<td>Z</td>
<td>Sensor Leads: (3 Lead Recommended)</td>
</tr>
<tr>
<td></td>
<td>Y = 2-lead RTD (Supplied with jumper wire to connect terminals 3 and 4)</td>
</tr>
<tr>
<td></td>
<td>Z = 3-lead RTD</td>
</tr>
</tbody>
</table>

TT518PD(-25/200)C1Z : Sample part number

Specifications subject to change.