

Intelligent Temperature Sensor

Last year Turck presented the new PS400/PS500 series of pressure sensors at the Hannover Fair. The successful philosophy behind this series naturally formed the basis for a further development in temperature sensors, which Turck will be presenting at the 2006 Hannover Fair as the new TS400/500 temperature sensors. The housing design, the operating concept and the output variations were used as the basis for the development of the new series. Like the pressure sensor, the TS400 is the fixed version and the TS500 rotatable version.

Measuring ranges, accuracy and outputs

The temperature sensors are connected via a standard M12 4-pole connector. These can either be connected directly or via a cable. The maximum measuring range of -50 to 500°C covers the most typical applications in machine building. The measured value can be displayed in °C, °F, K and Ohm. A choice of Pt100 class A elements are available that allow a switch point accuracy of 0.2K.

Like the well-known pressure sensors, TS400/500 devices either feature two transistor switch outputs or one switch and one analogue output. The usual current or voltage signals are available for the analogue output. Versions with a programmable output function and switch logic are also on offer.

Optimum ease of operation for programming

One of the most important criteria when selecting an intelligent sensor is its operating convenience for programming. A clear menu structure enables you in just a few steps to change the values for switch and reset points, output function, analogue ranges and a number of special functions such as switch delays, rotation of display direction or peak value memory. No additional external devices are required

The display

The sensors of the TS400/500 series come with a four-digit, 7-segment display that shows the measured value during normal operation and supports the user during programming. The large and clearly visible LED display can still be read accurately from long distances even in poor light conditions. When the sensor is installed horizontally, the reading direction of the display can be rotated by 180° via the software. A row of LEDs above the 7-segment display permanently indicate the selected unit as well as the status of the switch outputs.

Robust design

The sensors offer an outstandingly high EMC immunity and meet the requirements of IP 67 protection. The housing is manufactured entirely from stainless steel, the electrical connections are metal sheathed and offer a high level of mechanical stability. In this way, a high level of operational reliability can be ensured.

Fast and simple installation

With a diameter of only 34 mm, these compact devices can be fitted in the standard 40mm grid dimensions (centre-centre) for machine tool construction. The display angle of 45° enables the sensor to be installed from above or from the front. In order for the customer to read the display from a defined direction, mounting aids are normally required that enable the sensor to be aligned before fixing. With the TS500 series sensor, this function is already integrated. After installation, the devices can be rotated to the required position to achieve optimum readability. The sensor is then fixed by means of a second nut.



Flexibility in the process

Temperature sensors are available with different probe lengths and diameters. A protective tube enables the temperature sensor to be adapted to requirements very simply, even with critical applications. All this therefore ensures maximum flexibility of use.

Conclusion

The new TS400/500 series sensors from Turck combine high accuracy and performance with simple and reliable installation and operation. They can be used flexibly and are easy to program. They provide machine builders with devices that make their machines even better and more service-friendly.

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