

Interference-Resistant Pressure Transmitters

Keller AG für Druckmesstechnik, Winterthur, has implemented a new concept for temperature compensation and for protection from electromagnetic fields (EMC) in the recently approved Series 21 Y pressure transmitters. With measuring ranges between 2 bar and 1000 bar, the Series 21 Y transmitters can be used at temperatures ranging from -20 °C to +100 °C in any industrial application, even in the immediate proximity of frequency converters. Particular attention has been paid to providing low-cost calibration that guarantees a maximum Total Error Band of $\pm 1.5\%$ FS over the entire standard temperature range of -10 °C to +80 °C.

Extensive data collection, such as that required by polynomial correction

schemes, is replaced by a much simpler, cost-effective method. The temperature range is divided into as many as 120 subdivisions, of 1.5 Kelvin each, by an integrated temperature sensor and an additional digital circuit. The compensation values for TK zero point and TK amplification for each of these subdivisions are calculated individually in accordance with a mathematical model and stored in the transmitter. These values are fed into the analogue signal path during operation depending on the temperature, without having to reduce the 2 kHz bandwidth. Series 21 Y transmitters are also characterised by being extremely resistant to electromagnetic fields.

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▲ Series 21 Y pressure transmitters

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