

# Engineering Specification

## Inductive Conductivity Indicating Transmitter (Mettler-Toledo Thornton 7100E Series)

The indicating transmitter shall measure from an inductive (toroidal, non-contact or electrodeless) conductivity sensor over the range of 0-2 S/cm, with indication, alarms and output signals. It shall allow readout in conductivity units or in percent concentration of hydrochloric acid, sulfuric acid, nitric acid, sodium chloride or sodium hydroxide. In addition, it shall provide continuous temperature readout and output.

Temperature compensation shall be provided as either an adjustable linear coefficient or the non-linear characteristic of natural waters per EN27888.

The transmitter shall operate from 20-253 V, AC or DC. It shall be provided with hardware for wall mounting or with an optional kit, for panel or pipe mounting, as specified. The transmitter enclosure shall be rated NEMA 4X, IP65.

The indicating transmitter shall be provided with adjustable high and low alarm setpoints with mechanical relays and two isolated analog output signals settable for 0-20 or 4-20 mA – one for conductivity and one for temperature. Output scaling shall be selectable as linear or logarithmic-to provide high resolution at the low end of range yet keep high measurements on-scale. In addition, two more relay contacts shall be available as a general instrument alarm and for an automatic sensor washing function. The transmitter shall allow selection of PID (proportional, integral, derivative) control with pulse length or pulse frequency output using the alarm relays.

The transmitter shall provide continuous sensor checking and periodic automatic checks of all instrument functions. A red LED and relay contact closure as well as a 22 mA output signal, if selected, shall indicate a system failure.

The instrument shall be ISO9001 factory calibrated using standards traceable to NIST and be provided with a test certificate.

The inductive conductivity sensor shall have a 3/4" NPTM process connection for submersion, of polypropylene or glass-filled PEEK material, as specified, with no wetted metal parts. It shall have an integral temperature sensor to enable automatic temperature compensation in the instrument. For insertion mounting, a 1-1/2" or 2" NPT PVDF bushing or a 2" type 316L SS Tri-Clamp adapter shall be provided, as specified.

The inductive conductivity transmitter and sensor shall be Mettler-Toledo Thornton model 7100E instrument and 7200-series sensor.

For the most current product information visit:

**[www.thorntoninc.com](http://www.thorntoninc.com)**

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