



ELECTRO-CHEMICAL
DEVICES, INC.



Class I, II, & III Division I
Groups A through G



T r a n s m i t t e r
M o d e l T 2 8

Bringing Simplicity To A Solution

Model T28

STATE-OF-THE-ART TECHNOLOGY...

The Model T28 microprocessor-based two-wire transmitter provides ergonomic simplicity housed in a powerfully designed package! A choice of measurement parameters include pH, ORP, specific Ion, Dissolved Oxygen, Conductivity or Resistivity.

MICROPROCESSOR DESIGN

The microprocessor based design of the T28 transmitter provides enumerable benefits. A "state of the art" circuit board design eliminates the need for a battery backup by retaining the calibration and selected data in the event of unexpected power outages. Incorporating a manual output mode enables the user to select and hold a 4-20 mA value preventing pump or recorder actuation during calibration. A "back to factory" default allows the transmitter to be returned to the programmed parameters as originally configured at ECD's manufacturing facility.

VERSATILE DIGITAL DISPLAY

A 24-character supertwist alphanumeric Liquid Crystal Display (LCD) is used for operational and diagnostic menus. The LCD module can be rotated to accommodate a variety of installation/viewing angles. The contrast is adjustable for different intensities to enhance day/night visibility. The main menu displays the process identification, variables (in engineering units), % output and temperature in degrees Celsius or Fahrenheit.

HAZARDOUS LOCATIONS

The T28 transmitter is FM and CSA approved for intrinsically safe and explosion proof applications. This allows the transmitter to be installed into class I, II, and III, Division I Groups A through G hazardous environments.

ENCLOSURE

The T28 is enclosed in a 300 series stainless steel - NEMA 7C housing. The enclosure incorporates sealed and isolated wiring and electronics compartments. A universal style mounting bracket allows for easy wall or pipe mounting utilizing the same hardware. ECD's compact electronic transmitter module can be easily unplugged from the housing for bench calibration or additional diagnostic routines.

pH DISPLAY

pH 7.00
_ 50.0% 25.0C

ORP DISPLAY

ORP -500.0
_ 25.0% 25.0C

DO DISPLAY

DO 8.4 ppm
_ 44.6% 25.0C

RESISTIVITY DISPLAY

RS 18.00 M
_ 50.0% 25.0C

CONDUCTIVITY DISPLAY

Cd 5.00 mS
_ 50.0% 25.0C

ION DISPLAY

S-- 10.0 ppm
_ 10.0% 25.0C



Class I, II, & III Division I
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Process Transmitter



CONDUCTIVITY TRANSMITTERS

All calibrations and selected parameters of the T28 transmitter are performed with an ECD magnetic screwdriver via magnetic influence keys accessed through the T28's front viewing window. This eliminates the need to open the T28 enclosure to atmosphere thereby exposing the electronics to a potentially hazardous environment. The temperature readout is field configurable to read in degrees Celsius or Fahrenheit. Diagnostic data for determining sensor degradation can be quickly accessed for instant review by the operator.

ISOLATED 4-20 MA OUTPUT

The T28 provides isolated 4-20 mA current signals to a receiver, controller, or recorder for evaluation or control purposes.



To eliminate the requirement for additional power wiring and power-signal separation, the 4-20 mA signal is transmitted on the same two wires as the 24 dc supply voltage. Hence, the creation of a highly stable, noise free signal allowing the transmitter to be located up to 3 miles from the power source. The effects of ground loops are virtually eliminated by the incorporation of transformer input-output isolation that provides a common mode voltage rejection greater than 60 db.

T28 Specifications

MEASURING PARAMETERS & RANGES

PH

-2.00 pH to 15.00 pH, fully expandable and reversible, standard

ORP

+1000 to -1000 mV, fully expandable and reversible, standard. (+2000 to -2000 mV optional)

SPECIFIC ION

Auto Ranging from ppb through parts/thousand. Concentration range 1 to 999.00 of the Molar calibration range or 0.1 to 9,999 ppm, (5 decades)

DISSOLVED OXYGEN (DO)

0 to 200% saturation or 0 to 20 ppm, full expandable and reversible.

CONDUCTIVITY

1 microsiemen to 1.5 siemens

RESISTIVITY

0 to 2 megohms
0 to 20 megohms
0 to 50 megohms

TEMPERATURE

-30°C to +140°C

Output

4-20 mA or 20-4 mA, linear, field expandable and reversible.

Power

(with zero loop impedance)

Recommended 24 VDC
Maximum 50 VDC
Minimum 14 VDC
Maximum Loop Impedance (@ 24 VDC) 500 ohms for 4-20 mA compliance

Temperature Compensation

Automatic, -30 to +140°C, RTD. Accuracy within +/- 1% over a 0°C - 100°C span.

Input/Output Isolation

Maximum 300 volts between process input and 4-20 mA output.

Memory

Non-Volatile, EEPROM.

Power Supply (optional)

115 VAC, 50/60 Hz, 0.5 amp.
UL Approved, Unfused and encapsulated, mounts inside wiring chamber of T28

Operating Temperature

-4°F to +158°F (-20°C to +70°C)

Display

Menu driven, 24 character alphanumeric, Supertwist, High Temp LCD. Internally rotates +/- 180° for best viewing angle. The main menu simultaneously displays:

Process identity
Process value (in engineering units)
Current output (0 to 100%)
Temperature in °C or °F

Enclosure

FM and CSA approved EXPLOSION PROOF for use in class I, Division I, Groups C through G with proper sealing fittings. 300 series Stainless Steel NEMA 7C Electronics; FM approved Intrinsically safe for use in Class I, II, and III Division I, Groups A through G. Diameter X Length (8.7 cm X 12.5 cm).

Weight

Standard T28: 6.5 lbs. (2.95 kg)
Shipping Weight: 7.5 lbs. (3.4 kg)

*55°C for FMRC LS Rating

Pipe/Wall Mounting Dimensions

