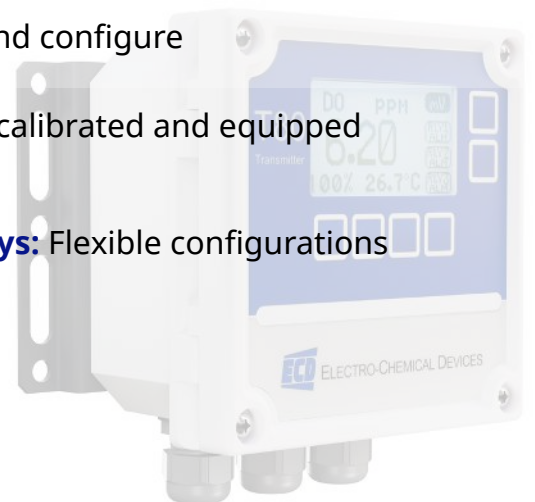
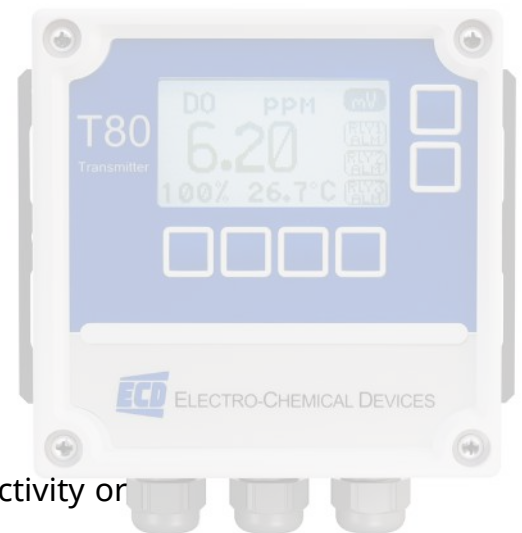


Model T80 Universal Transmitter

Simplify your process monitoring with the ECD T80. This single- or dual-channel transmitter works with any ECD S80 Intelligent Sensor, automatically detecting the sensor type and configuring itself for pH, ORP, pION, Dissolved Oxygen, Turbidity, Conductivity, or Resistivity, UV 254, COD, BOD, TOC, Oil in Water, Chlorine, Algae, Chlorophyll and Color.

One transmitter, unlimited measurement possibilities.



The ECD 6 Point Advantage

- 1 Universal Transmitter:** Single, or Dual Channel Measures pH, ORP, DO, Specific Ion, Turbidity, Conductivity or Resistivity, UV 254, COD, BOD, TOC, Oil in Water, Chlorine, Algae, Chlorophyll and Color
- 2 Graphic LCD Display:** Easy to read graphical and numerical information
- 3 Simple Menu Structure:** Intuitive, easy to navigate and configure
- 4** Use with ECD **Digital Intelligent Sensors** — Factory-calibrated and equipped with onboard data storage.
- 5 4-20 mA output with MODBUS RTU and Alarm Relays:** Flexible configurations for all applications
- 6 HART® communication (optional)**

Description

The ECD Model T80 Universal Transmitter is a single or dual channel transmitter designed for the continuous measurement of pH, ORP, pION, Dissolved Oxygen, Turbidity, Conductivity or Resistivity in a general purpose industrial environment. The Model T80 transmitter digitally communicates with any ECD Model S80 Intelligent Sensor, automatically configuring the transmitter's menus and display screens to the measured parameter. The same transmitter can be used for any of the measurements, i.e. plug an S80 Conductivity Sensor into the T80 pH transmitter and it will automatically reconfigure into a conductivity transmitter. There is no longer any need to inventory multiple instrument types. One Model T80 Transmitter will automatically configure to any of the listed measurements.

Sensors

The Model S80 Intelligent Sensors facilitate two way communication with the Model T80 Transmitters. The type of sensor, identity and serial number are stored in the sensor's memory along with calibration registers. The Model S80 Sensors are calibrated at factory so they are ready to use when connected to a Model T80 Transmitter. The Model S80 Sensors are waterproof and submersible with all internal components epoxy encapsulated inside the 3/4" O.D. housing. The Model S80 Sensors use the same field proven, easily replaceable electrodes as the Model S10 and S17 sensors, saving time and money. A digital converter option is available for the Model T80 transmitter to allow the use of non-digital sensors. The digital converter is only available on line powered instruments.

Display

The Model T80 Transmitter features a large viewed LCD display. Loop powered instruments have black lettering on a grey background, while the 100-240 VAC and 24 VDC powered instruments have blue lettering on a white background when the LED backlight is on. The Model T80 display is easily switched between the single and dual channel display modes. It has three main display screens; The Data Screen, The Millivolt Screen, and The Graphical Display Screen.

The Data Screen displays the measurement type, the measured value with units, the % milliamp output of the 4-20 mA channel and the temperature.

The mV Screen displays the measurement type, the raw millivolt signal from the sensor, the % milliamp output of the 4-20 mA channel and the temperature.

The Graphical Screens display the measurement type, the measured value with units and a graphical representation of the % milliamp output.

Three graphical styles are available;

- Trend Line
- Bar Graph
- Gauge

The status of alarm relays, energized/de-energized is displayed on transmitters with relays.

Menus

Menu navigation is accomplished using membrane switch buttons. Soft keys display the function associated with each button. Pressing any of the buttons twice within 2 seconds activates the Model T80 soft key menus. The primary selections are;

- Calibration Menu
- Info Screens
- Configuration Menu
- Simulate Menu

Calibration

Model S80 Sensors come pre-calibrated from the factory. Field calibrations are easily performed with the Model T80. The calibration menu includes:

- Auto Cal Function
- Standardized Function
- Two Point Calibration
- Single Point Calibration or the Manual Calibration where previously determined offset and slope values are entered manually into the Model T80 Transmitter.

Configuration

The Configuration Menu allow the Model T80 Transmitter's display and output functions and the Model S80 Sensor's characteristics to be configured or adjusted. Display screens include:

- Hold Function
- Graphical Display Style
- Back Light and Contrast Adjustments
- Labels/Tags - for naming the transmitter
- Password Protection
- Factory Default Reset

Output Screens included setting the address for MODBUS or HART® outputs, setting the 4-20 mA Range, Fault Settings and configuring the Alarm Relays.

Info

The Info Screens provide Transmitter and Sensor Information. The Transmitter Screens display the:

- Name
- Firmware Version
- Power
- Output Configuration
- Serial #

The Sensor Screen displays:

- Name
- Serial #
- Part #
- Stored Calibration Data

Simulate

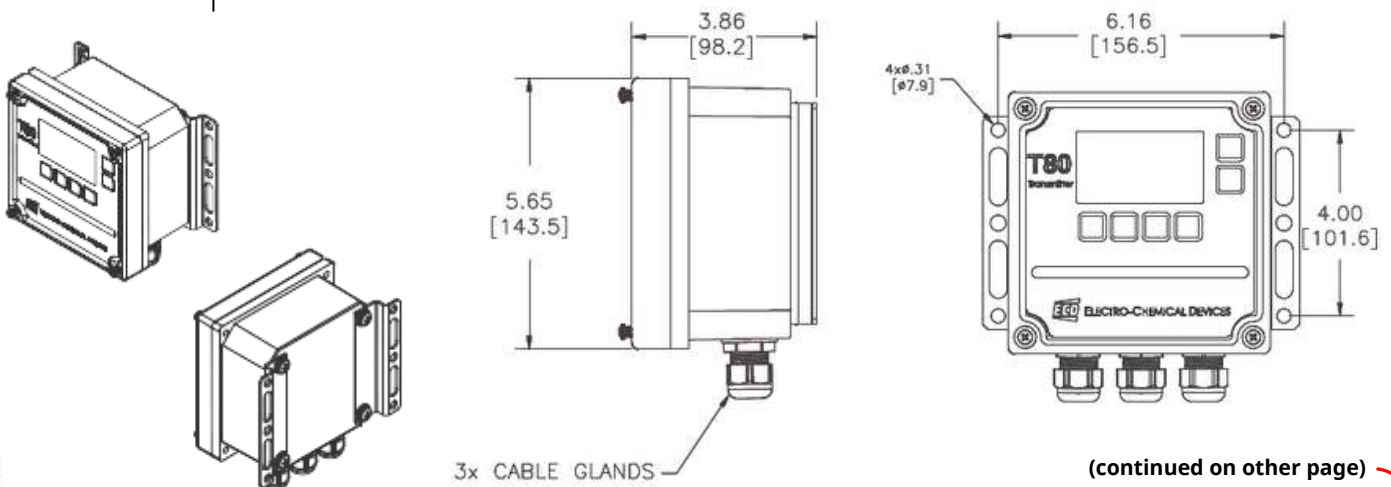
The Simulate Menu allows the input and output signals to be simulated. The outputs are easily tested by entering a 4-20 mA output value or energizing and de-energizing a relay. The ramp function cycles the signal across the configured 4-20 mA range, i.e. the transmitter generates a signal from 0 pH to 14 pH and back to 0 pH activating relays and generating a 4-20 mA output. The cycle time and duration are adjustable allowing sufficient time for an individual to walk to the control room to verify the output.

Power Supply and Outputs

The Model T80 Transmitters is available as a loop powered (single channel only), a 24 VDC or a 100/240 VAC powered transmitter. The loop powered version is available with an optional HART® output. The line powered instruments have one 4-20 mA output per channel and MODBUS RTU. Available options include HART® communication and an Alarm Relay package. The (3) relays can be configured as Alarm (setpoint) Relays, Timer Activated Relays or Fault Relays.

Specifications

Input Specification	Digital Protocol, all ECD S80 Sensors, Liquid, Gas, Process Sensors (optional analog to digital input board for mV sensors)	
Input Ranges	pH	-1.00 – 15.00 pH
	ORP	-1500 – +1500 mV
	pION	000.1 – 999.9, Auto Ranging: ppb ↔ ppm ↔ ppthousand
	Dissolved Oxygen	000.1 – 999.9, Auto Ranging: ppb, ppm, % SAT, mg/L
	Conductivity	000.1 – 999.9, Auto Ranging: ppb, ppm, % SAT, mg/L
	Resistivity	000.1 – 50 meg-ohms
	Turbidity	000.0 – 9999NTU Auto Ranging: NTU, FNU, mg/L, ppm, % Solids
	TSS	0 - 150,000 ppm
	Temperature	000.1 – 999.9, Auto Ranging: ppb, ppm, % SAT, mg/L
Accuracy	pH	± 1
	ORP	± 1%
	pION	± 1 - 2 % (Specific for ion type)
	Dissolved Oxygen	± 2% of calibrated range
	Conductivity	± 1% of calibrated range
	Resistivity	± 2% of calibrated range
	Turbidity	± 2% of calibrated range
	Temperature	± 0.3 °C
	TSS	± 2% of calibrated range
Enclosure		
Polycarbonate, NEMA 4X, Weatherproof, ½ DIN, (L xWx D) 5.7" X 5.7" X 3.5" (14.4cm X 14.4cm X 9.0cm)		
Environmental Conditions		
Ambient Temperature: -20°C - 70°C		
Storage Temperature: -30°C - 85°C		
Relative Humidity: 0 – 90% NC		
Display	LCD: 128 x 64 pixels (2.75" x 1.5") Loop Powered: Black/Grey background 100-240 VAC and 24 VDC Powered: Blue/White background LED Backlight	
Input Power	Code -0: Loop powered, 24 VDC, 600 Ω maximum load (18-36VDC @ 35 mW minimum) Code -1: 24 VDC (18-36VDC @ 250 mW minimum) Code -2: 100-240 VAC, 50/60 Hz, 4W	
Outputs	4-20 mA Output (standard)	Modbus RTU (standard)
	Fault Condition: 3.5 mA, 22 mA or None	HART® (optional)
Alarm Relays (optional): • Three (3) SPDT • SPDT • Form 1C • 250 VAC • 3 Amp Resistive Maximum Relays • User Configurable as Hi/Lo or Fault Alarms • T80 Self Diagnostics with Fault Alarms		
Shipping	Dimensions: 8" x 8" (20.5 x 20.5 x 12.7 cm) Weight 1.6 lbs (0.75 kg)	
Dimensions		



(continued on other page)

Order Information

Sample

- 1 Channel
- 110/210 VAC Power, 3 Relays
- 2 x 4-20 mA & Modbus
- Universal Mounting Bracket

T80 - 1 0 - 21 2 - 01 T80-10-212-01

A. Channel #1 Sensor Type

Part No.

- 1 (S80) S80 Digital Sensor, pH, ORP, pION, DO, Conductivity, Resistivity, TR80, TR82, TR86, DO82)
4 (PC) Internal Preamp, Digital to SGTC Conductivity/Resistivity (CSX2)

B. Channel #2 Sensor Type

Part No.

- 0 No Second Channel
1 (S80) S80 Digital Sensor, pH, ORP, pION, DO, Conductivity, Resistivity, TR80, TR82, TR86, DO82)

C. Power Supply and Relay Option

Part No.

- 00 2 Wire, 4-20mA Loop Power (24 VDC) (single channel only)
10 24 VDC Power
11 24 VDC Power, (3) SPDT Relays
20 110/220 VAC Power
21 110/220 VAC Power, (3) SPDT Relays

D. Outputs

Part No.

- 0 (MA) 4-20 mA (single channel only)
1 (H) HART®
2 (2MA) 2 x 4-20 mA & Modbus
3 (2MAH) HART® & 2 x 4-20 mA (Hart only on Channel One)

E. Mounting Hardware

Part No.

- 00 No Mounting Hardware
01 (UM) Universal Mounting Bracket (Standard)
02 (PM) Panel Mounting Hardware
03 (HM) Handrail Mounting Plate (including 2" hardware)
04 (SP) SSR Polyester Sun Shield with Pole Mounting (2" hardware)
05 (SR) SSR Polyester Sun Shield with Rail Mounting (2" hardware)

Model T80 Accessories

Part No.

- T80-Benchtop Model T80 Benchtop, 110/210 VAC, 3' line cord, 3' Detachable Connector Cable
T80-11-112-00-PORT Model T80 Portable, 2 Sensors, 24 VDC, Relays, 2 x 4-20 mA
1000260-1 GFR Polyester Sun Shield with Pole Mounting (2" hardware)
1000260-2 GFR Polyester Sun Shield with Rail Mounting (2" hardware)
1000260-7 Stainless Steel Sun Shield with Pole/Rail Mounting
1000070 PVC Panel (12" x 18") with Mounting for T80 & Sensor Flow
1000086-1 PVC Panel (12" x 18") with Mounting for T80 & Sensor Flange Style Flow Cell
1000300-1 4-20 mA USB Data Logger

Note: Other configurations and specialized customizations are available.
Please contact Electro-Chemical Devices Support toll free at [800-729-1333](tel:800-729-1333) or your ECD Representative.

Represented By:



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Equipment and Specifications may be updated periodically to enhance performance and reliability.

