ASTi

HiQDT-EX-LEDTX Explosion-Proof Series

pH, ORP & Dissolved Oxygen (D.O.) Transmitter & Explosion-Proof Controller System

SAFE TOUCH Through-Glass Button Programming

Single Channel Explosion-Proof Controller with Submersible Smart pH Sensor shown connected

4.05
PH

FM APPROVED · CSA · Ex · CE · IECEx
Approvals for controller only.

Hand-held Communicator for Configuration & Calibration

HIQDT-EX-LEDTX pH, ORP & D.O. TRANSMITTER & EXPLOSION-PROOF CONTROLLER SYSTEM

The HiQDT-EX-LEDTX is a line of high durability Smart Modbus RTU pH, ORP & D.O. probes combined with an easy-to-connect explosion-proof controller.

The System can display a wide-range of Smart Probe variables including all calibration values and time since calibration was last performed for predictive maintenance notification. In addition analytic information such as the sensor item number, month & year of manufacture as well as min and max temp in field use and total time in service as shown. These systems come pre-assembled and factory calibrated for easy and fast field installation.

SMART MODBUS RTU pH, ORP & DISSOLVED OXYGEN PROBES

The HiQDT-EX-LEDTX system works with Smart Probes. These Smart MODBUS RTU sensors enable access to a wide range of information from the probe. They are designed specifically for tough industrial applications and can work in wet/dry environments, with slurries and other abrasive materials, and have low-profile glass to protect the sensor from damage. The smart HiQDT measurement systems come with precalibrated sensors and preconfigured controllers allowing for fast and easy commissioning right out of the box.

Submersible HiQDT Dissolved Oxygen Sensor

- Inline, Immersion, Submersible, Twist Lock Quick Disconnect, HOT-TAP Valve Retractable and Sanitary Installation Styles Available
- Ship & Store Dry Option Available for intermittent wet & dry use
- Predictive Maintenance Notification Relays
- Thick-Wall Low-Profile Rugged Parabolic pH Glass suitable for use in heavy slurries and abrasives without breaking during service or cleaning regimen
- Smart HiQDT Probes come precalibrated from factory - Ready for immediate plug and play installation in the field
- Fully Submersible and Outdoor Installations

► **Click here to see more details on SMART pH Probes**

EXPLOSION-PROOF FIELD MOUNTED CONTROLLERS WITH 4-20 mA OUTPUTS (HIQDT-EX-LEDTX)

The controller is provided configured to connect to a Smart Probe with an integral NEMA 6P waterproof snap connector. In the case of the four probe system, a single controller connects to all four Smart Probes. Each controller is a Modbus master, and can display up to 16 variables sent by the Smart Probe.

Alternatively, the controllers and Smart Probes can be connected to a remote Modbus master device, and the controllers can be configured to read the Modbus variables being polled from the Smart Probes by the Master.

- Ready-to-Mount EX Controller & Waterproof Connectors
- Read the Probes Directly, or Display Modbus Variables Being Polled by a Remote Modbus Master
- Each controller includes an Isolated, Scalable & Reversible 4-20mA output and 4 each programmable contact relays
- 12-24 VDC or 85-265 VAC line powered systems
- Provides Power for the Smart Probe, Max 1 each in Hazardous Location and Max 8 each for Safe Areas

CONFIGURE SENSORS WITH THE HAND-HELD COMMUNICATOR

One hand-held calibrator is required to recalibrate and test the Smart pH, ORP and Dissolved Oxygen Probes. Calibrate and configure a Smart Probe from any-where with the hand-held communicator. The battery powered hand-held com-municator is easy to carry to the location of any probe for quick troubleshooting or calibration checks. The hand-held communicator is especially handy when you have multiple installations because of its hot-swap plug and play functionality.

In addition to performing configuration and calibration functions, the hand-held communicator can also search and find the node address as well as change the node address of any connected smart HiQDT MODBUS RTU sensor. Only one hand-held communicator is required for each facility no matter how many installation points and sensors are employed.

CONTROLLER PROGRAMMING & MONITORING SOFTWARE

ASTI's ScanView software can program and monitor a single ASTI HiQDT-EX-LEDTX controller. This makes custom setups easy, and is a simple solution for control room monitoring.

- Monitor up to 16 process variables on a single HiQDT-EX-LEDTX controller
- Easily program a HiQDT-EX-LEDTX controller via Windows software that is automatically loaded when USB cable is connected.
- Single through-glass push button holds all outputs (4-20mA + 4 each relays) to allow for simple removal of sensor from service for cleaning and recalibration without changing 4-20mA value or relay state.
- Single through-glass push button to release all holds (4-20mA + 4 each relays) after sensor is hot-swap plug and play reconnected back into service returns 4-20mA to live value and active relay states.
- Single through-glass push button toggles between scanning up to 16 process variables or else just displaying one process variable such as the pH, ORP, dissolved oxygen ppm, % saturation or temperature value.

HiQDT-pH Master Configuration

pH	Sensor Item Number	Time since Acid Slope Cal	Month of Manufacture
3.91 PH	1418 ItEm	4.0 dAYS	11 month
Temperature Celsius	Asymmetric Potential (A.P.)	Slope for Alkaline Range	Software Revision
21.7 dEgC	-54.6 mV	59.2 mV/PH	8 SoFtw
Raw mV Input	Time since Offset Cal	Time since Base Slope Cal	Min Temp in Use (Celsius)
117 AbSmV	4.0 dAYS	159.8 dAYS	18.1 min-C
Total Days in Use	Slope for Acid Range	Year of Manufacture	Max Temp in Use (Celsius)
159.8 dAYS	56.2 mV/PH	2018 YEAr	31.4 mAX-C

HiQDT pH Master Configuration Example

HiQDT-DO Master Configuration

Dissolved Oxygen PPM	Sensor Item Number	Air Pressure	Month of Manufacture
8.21 dOPPm	18017 ItEm	760 mmHg	6 month
Temperature Celsius	Raw mV Input	Slope in mV per DO PPM	Software Revision
25.3 dEgC	14.69 AbSmV	1.79 mV/PP	5 SoFtw
Percent Saturation	% Saturation w/o Salinity	Time since Slope Calibration	Min Temp in Use (Celsius)
106.6 PErCnt	99.5 CALPct	1.0 dAYS	22.7 min-C
Total Days in Use	Salinity	Year of Manufacture	Max Temp in Use (Celsius)
9.8 tlmE	12.2 PSu	2019 YEAr	54.0 mAX-C

HiQDT DO Master Configuration Example

ADD A LOCAL DISPLAY WITH A MODBUS SNOOPER

Connect 1 probe in explosion-proof areas or connect up to 8 probes in safe areas.
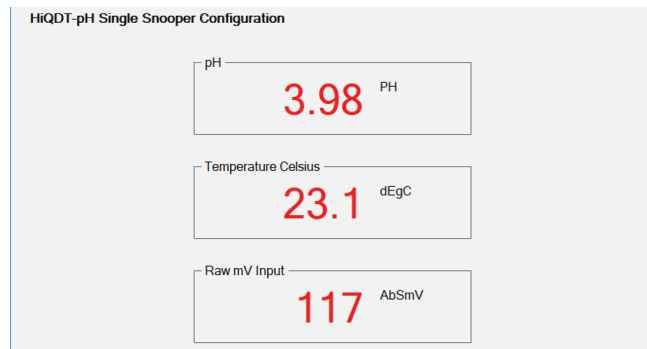
WHAT IS A MODBUS SNOOPER?

A Modbus Snooper "eavesdrops" on the communications between two or more instruments on a serial communications bus. With Modbus, a master will tend to ask its slave(s) for much more information than your average operator needs to perform their daily duties. The Modbus Snooper will listen in on the conversation between the master and the slave(s), and only display the information that your operator needs to see with no additional programming of the master.
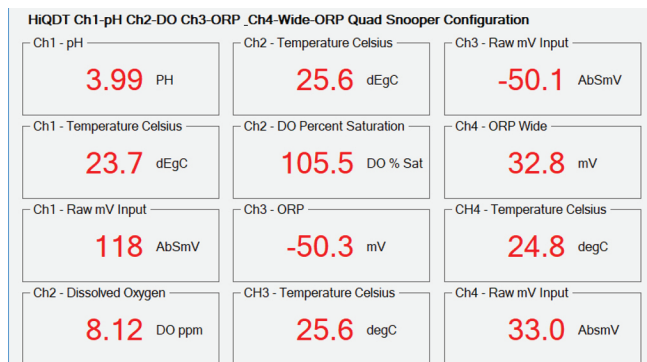
In Snooper mode, the controllers act as RS-485 Modbus packet sniffers. This allows for a convenient field display while still providing access to all the information available in the Smart Probe. No programming change is required at the remote Modbus master to work with the controllers in Snooper mode.

HiQDT-EX-LEDTX-PSDC-SNOOPER

HiQDT pH Single Snooper Configuration Example

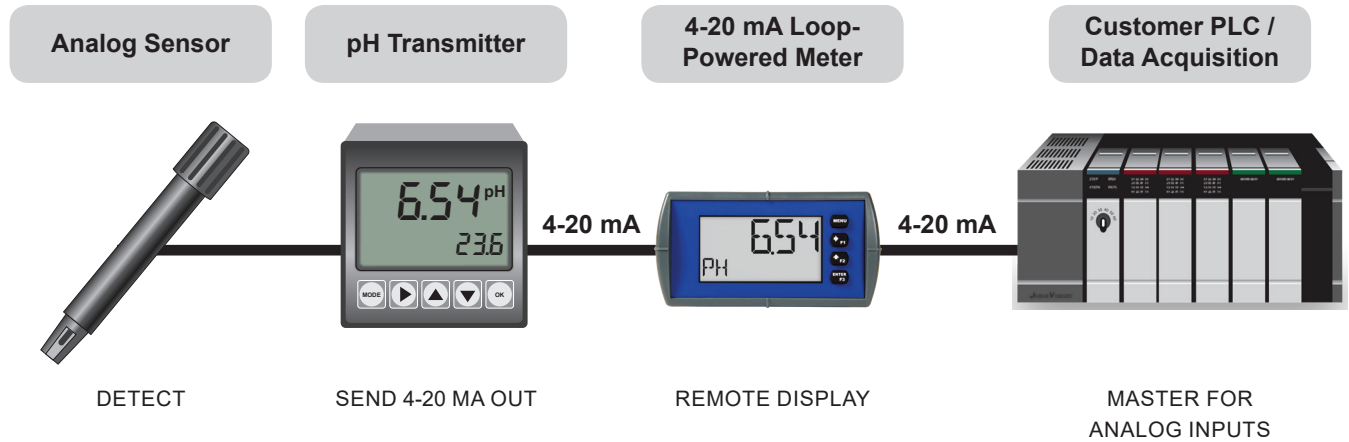**HiQDT pH, ORP & DO Quad Snooper Configuration Example**

NEED TO DISPLAY MODBUS REGISTERS IN MULTIPLE LOCATIONS?

Customers often ask if we can put two Modbus masters on a Modbus network in order to display the process variables in multiple places on a plant floor. However, it is highly uncommon and complicated to incorporate two masters on a Modbus network. Instead, a Modbus Snooper can be used to display any of the registers that the master is requesting from anywhere on the network without the need of additional programming of the master.

INTEGRATE THE HiQDT-EX-LEDTX SNOOPER INTO YOUR SKID

The explosion-proof field mount snooper configuration is ideal for OEM clients and system integrators where a local PLC is already present to provide a local display for the connected smart sensor as well as to provide the necessary isolated 10VDC power & isolated RS-485 serial port to fulfill the sensor installation requirements.

TRADITIONAL INSTALLATIONS USING ANALOG SENSORS WITH 4-20 mA ANALOG CURRENT LOOPS

Analog Sensor	pH Transmitter	4-20 mA Loop-Powered Meter	Customer PLC / Data Acquisition

4-20 mA   **4-20 mA**

DETECT   SEND 4-20 MA OUT   REMOTE DISPLAY   MASTER FOR ANALOG INPUTS

ENHANCED INSTALLATIONS USING SMART DIGITAL MODBUS SENSORS

HiQDT Sensor	Snooper	Customer PLC / Data Acquisition

MODBUS RTU SLAVE   LOCAL DISPLAY & POWER SENSORS   MODBUS MASTER FOR RTU SLAVES

ORDERING INFORMATION

Model #	Description
HiQDT-EX-LEDTX-PSAC	(1) 85-265 VAC powered Modbus MASTER controller with integral waterproof connector for hot-swap plug & play operation with smart HiQDT MODBUS RTU sensor
HiQDT-EX-LEDTX-PSDC	(1) 12-24 VDC powered Modbus SNOOPER with integral waterproof connector for hot-swap plug & play operation with smart HiQDT MODBUS RTU sensor
Contact Factory For Probe Details	RS-485 MODBUS RTU HiQDT Smart Sensors are custom built to order per customer requirements
HHC	Hand-held Communicator for HiQDT Smart Digital pH, ORP & DO MODBUS RTU Sensors