

STs4xxx submersible conductivity transmitter

features

- isolated 4-20 ma output -- operates down to 7 volts
- 316SS and PVDF construction
- patented connector system -- allows for 'two-turn' cable and sensor assembly
- 'true' 2-wire operation
- automatic temperature compensation
- auto-polarity correction
- optional, independent temperature output (0 to 50 °C)
- small, 19 mm (3/4") diameter -- ideal for wells
- comes with 10 meter cable (33 feet) -- rated for continuous submersion and burial

description

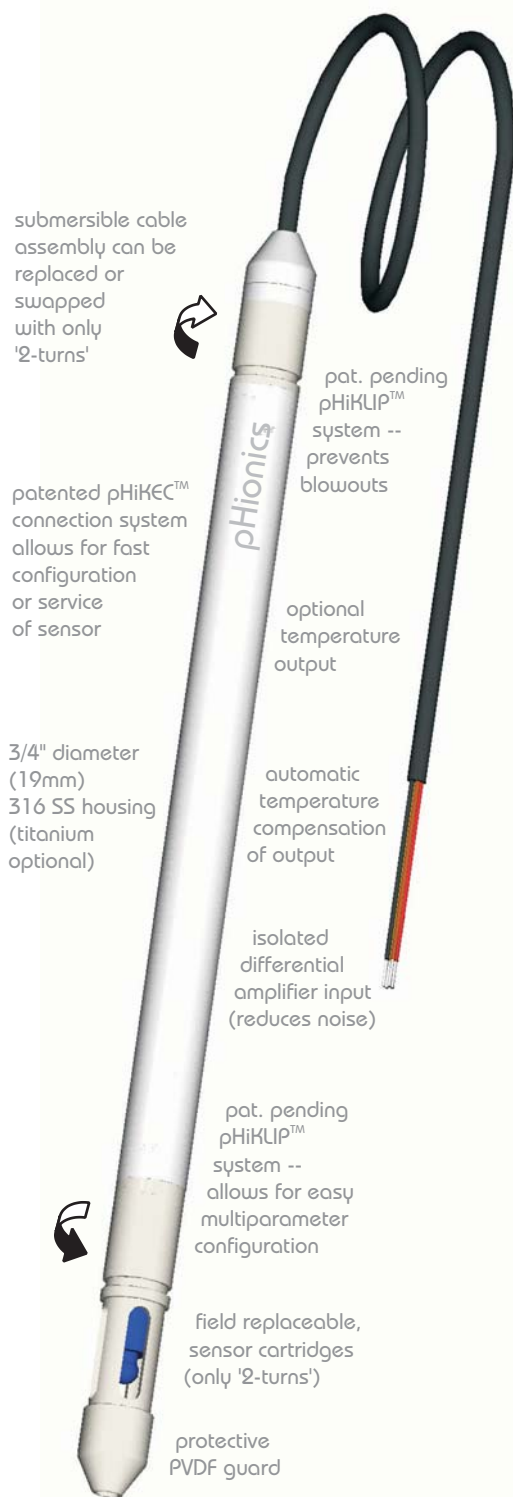
The STs series of submersible water quality transmitters have an integrated preamp and an isolated 'true 2-wire', 4-20 ma transmitter. Two independent channels can simultaneously transmit a conductivity and temperature signal -- two wires for conductivity and two wires for temperature. The compact design afforded by the patented pHiKEC™ keyless connection system -- and the 316SS and PVDF construction -- make the rugged sensor/transmitter ideal for applications such as process control, data acquisition, wastewater treatment, and, groundwater monitoring. The units can be submersed to 200 feet (approximately 100 psi). Individual units can be combined to make redundant or multiparameter modules using the pHionics' patent pending pHiKUP™ array system. The pHiKUP™ system also allows for the units to be used in in-line (insertion) applications without fear of blow-out. As with all pHionics' designs, the sensor/transmitters are designed with 'ease of service' as a primary goal.

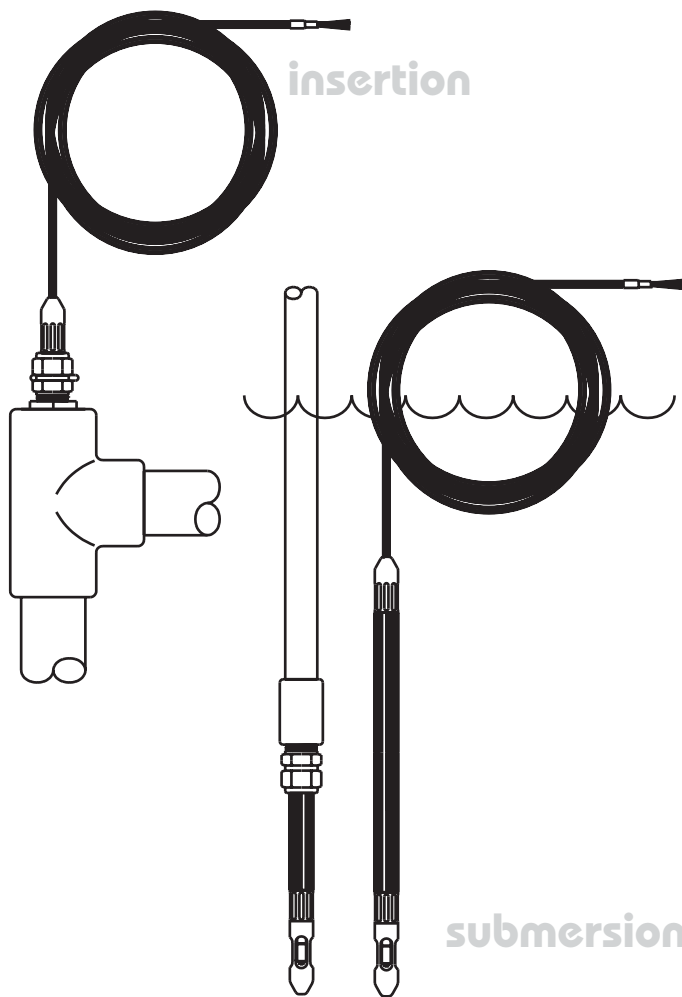
operation

The 'true 2-wire', 4-20 ma STs series sensor/transmitters send a current proportional to the parameter being measured on the same two wires that provide the power (7 to 40 volts dc). Current transmission allows for long runs of inexpensive cable or wire (up to three miles) that is virtually noise-free without any signal loss that is common to voltage (IR drop) or digital (capacitance affecting 'rise/fall' timing). The seven volt operation allows the units to be powered by 12 volt battery systems with 5 volts of compliance, making them compatible with RTU's and solar powered applications. The units are intended for calibration via software supplied with the datalogger, PLC, or through the DCS.

The conductivity signal on channel 1 is automatically temperature compensated -- providing a correction to yield the true conductivity output regardless of temperature changes. This is not to be confused with the temperature option (STs1010T), which provides an independent, isolated, 4-20 ma output proportional to the 0 to 50 °C range on channel 2. The auto-polarity correction feature directs the applied supply voltage to allow for proper operation regardless of wire hookup. Red and Black are for channel 1 -- pH, and Orange and Brown are for the optional channel 2 -- temperature.

pHiKEC™, pHiKUP™, and sensorlogger™ are trademarks of pHionics Inc.. The pHiKEC™ connector system is covered by U.S. Patent Nos. 6,331,117, 6,612,848 and various patents pending. The pHiKUP™ array system is patent pending.
voice: 925-692-0080, fax: 925-692-0081, 800: 800-964-0063, e-mail: sales@phionics.com





insertion

submersion

ordering information

Model	input1	output1	input 2	output2	cable length
STs4503-0033	0 - 5000uS	4-20 ma		4-20 ma	33ft (10 meters)
STs4xxx-0050	0 - xxxuS	4-20 ma			50 feet
STs4503T-0033	0 - 5000uS	4-20 ma	0 to 50 °C	4-20 ma	33ft (10 meters)

To specify a cable length other than the standard 10 meters – replace the last 4 digits (-0033) with the length in feet as shown in the second row above. Other common ranges – shown below (in uSiemens).

STs4102	0-100uS	STs4203	0-2000
STs4202	0-200	STs4503*	0-5000
STs4502	0-500	STs4104	0-10000
STs4103*	0-1000		* typically in stock

Spare parts

SC4010	Replacement sensor cartridge
CBLs0033	Cable assembly for STs series, 33ft (10 meters)
CBLsnnnn	Cable assembly, replace 'nnnn' with desired length in feet
STs4xxx	Sensor/transmitter without cable
STs4xxxT	Sensor/transmitter without cable, with temperature option

Miscellaneous parts

CMP34SS	Compression fitting for insertion/submersion applications
CMP34SS/o	Same as above with O-ring seal
CMP34SS/ab	CMP34SS with anti-blowout ring for pressurized insertion apps
pHiKLiP/k1	Basic pHiKLiP kit for combining 2, 3, or 4 sensors in a polar array

For more information, contact your pHionics representative at:

pHionics, inc.
www.phionics.com
 1-800-964-0063

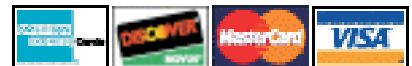
Series STs4xxx and STs4xxxT (Channel 1), 2-wire, 4-20 ma conductivity sensor/transmitters

sensing range	0-100uS to 0-10,000uS, custom ranges available
Output	4 to 20 ma
Power supply voltage	7 to 40 vdc
Loop impedance (max)	250 ohms at 12 vdc, 850 ohms at 24 vdc, 1650 ohms at 40 vdc
Isolation	600 vdc, >70 db at 50/60 hz
Linearity (of electronics)	± 1% of full scale
Accuracy	± 1% of full scale
Sensitivity	± 0.05% of full scale
Stability	± 0.1% of full scale
Repeatability	± 0.1% of full scale
Electrode type	contacting
Response time (including electrodes)	90% < 5 seconds
Temperature compensation	automatic, 0-50 °C
Pressure	0-100 psi
Humidity	0-100%
Wetted materials	316 ss, PVDF, Viton
Length	343 mm (13.5 in.)
Diameter	19 mm (0.750 in.) maximum
Shipping weight (excluding cable)	< 1.1 kg (0.5 lb.)
Cable type	Shielded polyethylene, 2.5 lbs/100feet
Cable length (standard)	10 meters
Cable from transmitter to power supply	4 conductor, twisted pair, 3 mile maximum

Series STs4xxxT, 2-wire, 4-20 ma conductivity sensor/transmitters with optional, independent 2-wire, 4-20 ma temperature output. The following specifications pertain to the channel 2 temperature output option.

Range	0-50 °C
Output	4 to 20 ma
Linearity	± 0.5 °C
Accuracy	± 1 °C
Power supply voltage	7 to 40 vdc
Loop impedance (max)	250 ohms at 12 vdc, 850 ohms at 24 vdc, 1650 ohms at 40 vdc
Cable from transmitter to power supply	4 conductor, twisted pair, 3 mile maximum
Isolation	600 vdc, >70 db at 50/60 hz

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