

5 YEARS WARRANTY

NEW **EasyTREK SP-500 PRO**

ULTRASONIC LEVEL TRANSMITTERS FOR LIQUIDS



NIVELCO Process Control Co.
H-1043 Business Center
EasyTREK SPA-590-4
Supply: 12-36V DC
Output: 4-20 mA+HART
Amb. temp.: -30...+80°C
Med. temp.: -30...+90°C
CE
MADE IN EU

NIVELCO

LEVEL TRANSMITTERS

MAIN FEATURES

- 2-wire integrated transmitter
- Non-contact level measurement
- Can be powered by a 12 V battery
- Up to 18 m (59 ft) measuring range
- Narrow (5°) beam angle
- Temperature compensation
- HART® 7
- Handheld compatibility
- Advanced threshold management
- Quick start mode
- Faster measurement cycle
- IP68 protection
- 5 year warranty
- PP, PVDF, PTFE transducer
- Service Interface
- Ex version (pending)

APPLICATIONS

- For liquid level measurement, open-channel flow metering
- Wide application area from wastewater to aggressive chemicals
- Level measurement in basins, wells, sumps, lift-stations
- Measuring of hydrocarbons, acids, water-based liquids

CERTIFICATES

- ATEX (Ex ia G) (pending)



SPA-590

The **EasyTREK SP-500 Pro** series level transmitters embody four decades of NIVELCO’s experience in ultrasonic level measurement. **EasyTREK** devices are IP68 rated, their transducer and processing electronics are incorporated into a single unit. **EasyTREK** transmitters utilize HART® 7 communication, they can be used in multidrop systems connected to **MultiCONT** process controller/display, or a PC via a **UNICOMM** HART®-USB modem or similar. Transmitters can be programmed remotely with Handheld Field Communicator as well; they can be connected wirelessly to a computer via an **SAT-504** Bluetooth® HART® modem. The EasyTREK SP-500 Pro devices are smaller in size, their maximum measuring range has been extended, and their minimum measuring range decreased.

OPERATION

The EasyTREK ultrasonic level transmitters can be utilized not only for measuring the level of liquids, but also for flow and tank volume measurement.

The ultrasonic level metering technology is based on the principle of measuring the time required for the ultrasound pulses to cover the distance from the sensor to the level to be measured and back. The echoes bounced back from the surface of the medium to be measured reach the sensor surface after the time of flight of the ultrasonic impulse. The time of flight of the reflected signal is measured and processed by the electronics, and then this is converted to distance, level, volume or flow proportional data using the customizable tank dimensions or the pre-programmed flume / weir parameters. The EasyTREK ultrasonic level transmitters are using NIVELCO’s established SenSonic range transducers with a full beam angle of 5 to 7 degrees connected to the intelligent electronics featuring the QUEST+ advanced signal processing algorithm. The intelligent QUEST+ process adaptive signal processing software system ensures that the electronics identifies and validates the liquid surface signal, giving reliable level monitoring.

TECHNICAL DATA

EasyTREK SP-500 Pro		
System	2-wire	
Power supply	12...36 V DC	
Accuracy ⁽¹⁾	± (0.1% of measured distance +0.025% of range) or ± (0.05% of range), whichever is greater	
Resolution	Depending on measured distance: < 2 m: 1 mm, 2...5 m: 2 mm, 5...10 m: 5 mm, >10 m: 10 mm (< 6.5 ft: 0.04", 6.5...16.5 ft: 0.075", 16.5...33 ft: 0.2", >33 ft: 0.4")	
Output	Analog	4...20 mA
	Relay	SPDT, 30 V DC, 1 A DC
	Digital communication	HART® 7
Ambient temperature	-30...+80 °C (-22...+176 °F)	
Process temperature	PP, PVDF transducers -30...+90 °C (-22...+194 °F)	
Pressure (absolute)	0.5...3 bar (7.25...43.5 psi)	
Housing	PP or PVDF same as the transducer material	
Electrical connection	4 × 0.5 mm ² (relay version: 7 × 0.5 mm ²) shielded Ø6 mm cable; standard cable length: 5 m (up to 30 m) [4× AWG20 (relay version: 7× AWG20) shielded 0.25" cable; standard cable length: 16.5 ft (up to 100 ft)]	
Electrical protection	Class III	
Ingress protection	IP68	
Seal	PP transducers: EPDM; all other transducers: FPM (Viton®)	

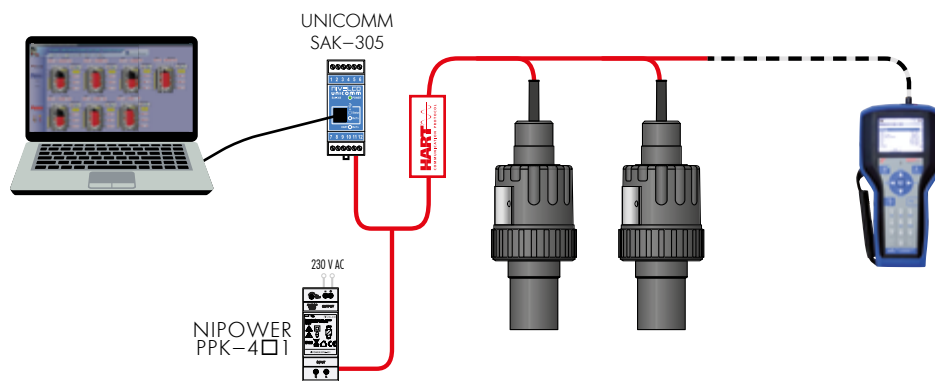
⁽¹⁾ Under optimal conditions and constant transducer temperature.

TRANSDUCER DETAILS

	SP□-					
	5A□-□	59□-□	58□-□	57□-□	56□-□	54□-□
Beam angle	5°	6°	5°	7°	5°	
Transducer material	PP, PVDF					
Dimensions (mm)						
Upper process connection	1" BSP					
Lower process connection	1" BSP / NPT	1½" BSP / NPT	2" BSP / NPT		-	
Maximum measuring range ⁽¹⁾	3 m (10 ft)	5 m (16 ft)	8 m (26 ft)	10 m (33 ft)	12 m (39 ft)	18 m (59 ft)
Minimum measuring range ⁽¹⁾	0.15 m (0.49 ft)	0.18 m (0.59 ft)	0.2 m (0.65 ft)	0.25 m (0.82 ft)	0.25 m (0.82 ft)	0.35 m (1.2 ft)

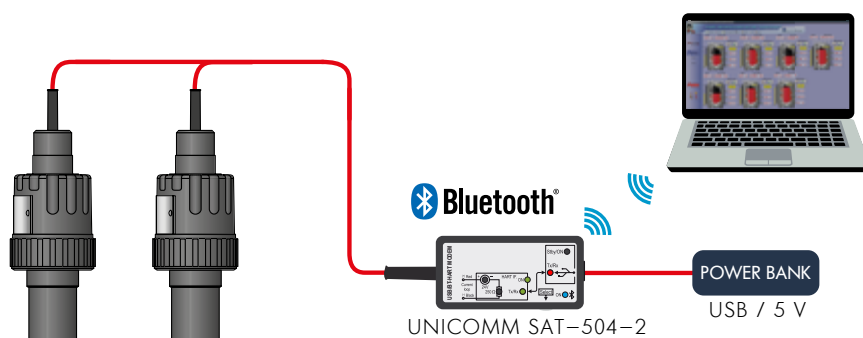
⁽¹⁾ Under optimal conditions and constant transducer temperature.

PC CONNECTION



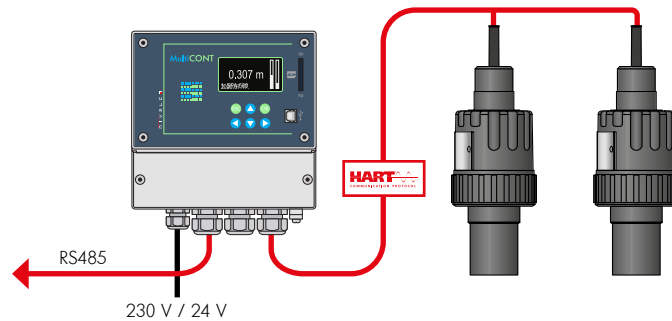
Instruments with HART® connectivity can be linked to a PC using a **UNICOMM SAK-305** HART®-USB modem. All measured values of **EasyTREK** level transmitters can be visualized, and the instruments can be remotely programmed via HART®. Applicable software for PC: **EView2** configuration tool or **NIVISION** process visualization program.

Bluetooth® CONNECTIVITY



Instruments with HART® connectivity can be linked to a PC via Bluetooth® using a **UNICOMM HART®-USB/Bluetooth®** modem (SAT-504). The USB power bank connected to the **UNICOMM** modem can power the entire setup.

HART® MULTIDROP LOOP



MultiCONT Multichannel Process Controllers process and display measurement data supplied by NIVELCO's HART® compatible transmitters in a Multidrop loop. Connected transmitters can be programmed through **MultiCONT**, and it can also perform data logging tasks. Processed data may be sent to a computer via RS485 and displayed in NIVISON.

ORDER CODES (NOT ALL COMBINATIONS AVAILABLE)

EasyTREK integrated compact ultrasonic level transmitters for liquids

EasyTREK SP -5 - P R

Transducer material	Code
PP	A
PVDF	B
PTFE ⁽¹⁾	T

Output / Ex	Code
4...20 mA + HART®	4
Ex ia G ⁽⁶⁾	8
+ relay	H

Range / Frequency	Code
0.15...3 m / 120 kHz ⁽²⁾	A
0.18...5 m / 80 kHz ⁽³⁾	9
0.2...8 m / 80 kHz ⁽⁴⁾	8
0.25...10 m / 60 kHz ⁽⁴⁾	7
0.25...12 m / 60 kHz ⁽²⁾	6
0.35...18 m / 40 kHz ⁽²⁾	4

Process connection	Code
BSP thread	0
1", 1½", 2" NPT, 1" BSP ⁽⁵⁾	N

- ⁽¹⁾ Only for SP-5A
⁽²⁾ Only for 1" process connection
⁽³⁾ Only for 1" or 1½" process connection
⁽⁴⁾ Only for 1" or 2" process connection
⁽⁵⁾ Only for SP-5A, SP-59, SP-58, SP-57
⁽⁶⁾ Under development.

ACCESSORIES SOLD SEPARATELY

Accessories	Code
Flanges	SFA-3 <input type="checkbox"/> <input type="checkbox"/> -0
HART®-USB/Bluetooth® modem	SAT-504- <input type="checkbox"/>
HART®-USB modem	SAT-304-0
HART®-USB/RS485 modem	SAK-305-2
HART®-USB/RS485 modem (Ex ia G)	SAK-305-6
Mounting brackets	SAA-10 <input type="checkbox"/> - <input type="checkbox"/>
Fast connecting gland for pipe mounting devices with 1" process connection, PP	SAA-101-0
Damping gland for mounting SP devices to thin metal roofs, PP	SAA-106-0

TRANSDUCERS

Transducer material	PP	PVDF	PFTE
SP <input type="checkbox"/> -5A <input type="checkbox"/> - <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SP <input type="checkbox"/> -59 <input type="checkbox"/> - <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-
SP <input type="checkbox"/> -58 <input type="checkbox"/> - <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-
SP <input type="checkbox"/> -57 <input type="checkbox"/> - <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-
SP <input type="checkbox"/> -56 <input type="checkbox"/> - <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-
SP <input type="checkbox"/> -54 <input type="checkbox"/> - <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-

