

PRODUCT OVERVIEW

2020

LEVEL TRANSMITTERS

GUIDED MICROWAVE	CAPACITIVE	HYDROSTATIC		MAGNETO-STRICTIVE
<ul style="list-style-type: none"> 2-wire compact transmitter Accuracy: ± 5 or ± 20 mm High pressure High temperature range Wide range of probes Extremely small deadband Rod or cable probes Plug-in graphic display module Explosion-proof models Plastic, aluminium or stainless steel housing Media with turbulent surface, dense dust, vapour or pressurized gas layers above the product surface For all tank shapes, for narrow vessels Heavy industrial applications 	<ul style="list-style-type: none"> 2-wire compact transmitter High sensitivity Rod (0.2 – 3 m) or cable (1 – 20 m) probes Plastic, aluminium or stainless steel housing Fully or partly insulated probes Plug-in display module 32-point linearisation Explosion-proof models Chemicals with dense gas layers above the surface High pressure, high temperature or vacuum Viscous or corrosive media 	<ul style="list-style-type: none"> 2-wire compact transmitter Stainless steel diaphragm Accuracy: 0.25% High overload capability Level and pressure management Plug in display module High temperature range Explosion-proof models Viscous or corrosive materials Chemicals with dense vapour or gas layers above the surface 	<ul style="list-style-type: none"> 2- or 3-wire submersible transmitter Capacitive ceramic, piezoresistive stainless steel and piezoresistive ceramic sensor Plastic or stainless steel body Venting tube in cable Reverse polarity protection Optional lightning protection Linearity: $\pm 0.25\%$ Built-in Pt100 temperature sensor Explosion-proof models Borehole transmitter for the water industry 	<ul style="list-style-type: none"> 2-wire compact and mini compact transmitter 0.1 mm or 1 mm resolution Wetted parts: stainless steel or plastic Plug-in graphic display module 99-point linearisation Distance, level and volume measurement Explosion-proof models Interface measurement Chemicals, solvents, hydrocarbons Custody transfer measurement (OIML R 85)
<ul style="list-style-type: none"> Level, distance or volume measurement of liquids, powders, granules with $\epsilon_r > 1.4$ Agriculture Construction materials Chemical industry Food and beverage Power plants Oil industry Water / wastewater industry 	<ul style="list-style-type: none"> Distance, level and volume measurement of liquids, powders, granules, with $\epsilon_r > 1.5$ relative dielectric constant Chemical industry Food and beverage Power plants Oil industry Water / wastewater industry 	<ul style="list-style-type: none"> Level measurement of most foaming liquids and masses in tanks and vessels Chemical industry Food and beverage Power plants Oil industry Water / wastewater industry 	<ul style="list-style-type: none"> Level metering of small diameter pipes, sewage water, saline solutions, sea water, potable water Chemical industry Water / wastewater industry 	<ul style="list-style-type: none"> Level measurement of normal and flammable liquids, with min. 0.4 kg/dm³ density Chemical industry Power plants Oil industry Water industry
<p>Power supply: 18 – 35 V DC</p> <p>Ambient temperature: -30 °C ... +60 °C</p> <p>Process temperature: -30 °C ... +200 °C</p> <p>Pressure: -1 bar – 40 bar</p> <p>Measuring range: 0 – 24 m</p> <p>Output: 4 – 20 mA + HART®</p> <p>Protection: IP67</p> <p>Approvals: ATEX, IEC Ex, INMETRO</p> 	<p>Power supply: 12 – 36 V DC</p> <p>Ambient temperature: -25 °C ... +70 °C</p> <p>Process temperature: -30 °C ... +200 °C</p> <p>Pressure: max. 40 bar</p> <p>Output: 4 – 20 mA, HART®</p> <p>Process connection: 1", 1½"</p> <p>Protection: IP67</p> <p>Approval: ATEX</p> 	<p>Power supply: 10 – 36 V DC</p> <p>Ambient temperature: -40 °C ... +70 °C</p> <p>Process temperature: -25 °C ... +125 °C</p> <p>Pressure: max. 400 bar</p> <p>Output: 4 – 20 mA, HART®</p> <p>Process connection: 1½", flanges, hygienic fittings</p> <p>Protection: IP65</p> <p>Approval: ATEX</p> 	<p>Power supply: 12 – 30 V DC</p> <p>Process temperature: -30 °C ... +60 °C</p> <p>Measuring range: 0 m – 200 m</p> <p>Output: 4 – 20 mA + HART®, 0 – 10 V</p> <p>Protection: IP68</p> <p>Approval: ATEX</p> 	<p>Power supply: 12.5 – 36 V DC</p> <p>Ambient temperature: -40 °C ... +70 °C</p> <p>Process temperature: -40 °C ... +90 °C</p> <p>Pressure: max. 25 bar</p> <p>Measuring range: 0 m – 15 m</p> <p>Output: 4 – 20 mA, HART®</p> <p>Process connection: 1", 2" or flanges</p> <p>Protection: IP67</p> <p>Approvals: ATEX, FM, IEC Ex, EAC, OIML R 85</p>  <div data-bbox="1250 1890 1356 1963" data-label="Image"> </div> <div data-bbox="1250 2005 1356 2079" data-label="Image"> </div>

EasyTREK SP-500

ULTRASONIC LEVEL TRANSMITTER FOR LIQUIDS

The newest generation **EasyTREK SP-500** series level transmitters are based on NIVELCO's 35 years of experience with ultrasonic level measurement.

The IP68 rated units have their transducer and processing electronics incorporated in one single housing. The new **EasyTREK** transmitters utilize HART® 7 communication so they can be used in multidrop systems connected to **MultiCONT** process controller/display, or to a PC with the help of the **UNICOMM** HART®-USB modem or similar. The transmitters can be remotely programmed also with Handheld Field Communicator, and can be connected wirelessly to a PC with the SAT-504 Bluetooth® HART® modem.

The members of the new **EasyTREK SP-500** series can be recognized from the more compact size, the increased maximum measuring range and the decreased minimum measuring range.

MAIN FEATURES

- 2-wire integrated transmitter
- Non-contact level measurement
- Can be powered from 12 V battery
- Max. 18 m (59 ft) measuring range
- Narrow (5°) beam angle
- Temperature compensated
- HART® 7
- Handheld compatibility
- IP68 protection

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
- Suitable for level measurement of hydrocarbons, acids, water based media



OPERATING PRINCIPLE

NON-CONTACT MICROWAVE

COMPACT

INTEGRATED

FEATURES

- 2-wire compact transmitter
- 25 GHz (K-band) measuring signal
- Non-contact level metering
- Accuracy up to ± 3 mm
- Measuring range up to 23 m
- Plug-in graphic display module
- 99-point linearisation
- Plastic, aluminium or stainless steel housing
- Stainless steel parabolic, horn or plastic enclosed antenna
- High temperature range
- Explosion-proof models

- 2-wire integrated transmitter
- 25 GHz (K-band) measuring signal
- Non-contact level metering
- Accuracy up to ± 3 mm
- Measuring range up to 23 m
- 99-point linearisation
- Plastic housing
- Horn, planar or parabolic antenna
- Stainless steel or plastic encapsulated sensor
- Explosion-proof models
- Where IP68 is needed

APPLICATION

- Level measurement of liquids, emulsions and other chemicals
- Agriculture
- Construction materials
- Chemical industry
- Pharmaceutical industry
- Food and beverage
- Power plants
- Oil industry
- Water / wastewater industry

- Level measurement of liquids, emulsions and other chemicals
- Food and beverage
- Chemical industry
- Oil industry
- Water / wastewater industry

SPECIFICATION






Power supply:
20 – 36 V DC
Ambient temperature:
-20 °C ... +60 °C
Process temperature:
-30 °C ... +180 °C
Pressure:
-1 bar – 25 bar
Output:
4 – 20 mA + HART®
Process connection:
1½", 2" or flanges or sanitary
Protection:
IP67
Approvals:
ATEX, IEC Ex,
FCC, FM,
INMETRO



Power supply:
20 – 36 V DC
Ambient temperature:
-20 °C ... +60 °C
Process temperature:
-30 °C ... +100 °C
Pressure:
-1 bar – 3 bar
Output:
4 – 20 mA + HART®
Process connection:
1½", 2" or flanges or sanitary
Protection:
IP68
Approvals:
ATEX, IEC Ex, FCC,
INMETRO



LEVEL TRANSMITTERS

BYPASS LEVEL INDICATORS	ULTRASONIC INTEGRATED		ULTRASONIC COMPACT	
	FOR LIQUIDS	FOR SOLIDS	FOR LIQUIDS	FOR SOLIDS
<ul style="list-style-type: none"> No power required Brightly coloured indication Stainless steel bypass chamber Error indication Optional level switches Optional magnetostrictive level transmitter 10 mm accuracy Stainless steel or titanium float High temperature version 	<ul style="list-style-type: none"> 2-wire transmitter Non-contact level metering Narrow 5° beam angle Excellent signal processing via QUEST+ software Temperature compensated Secondary lightning protection 32-point linearisation PP, PVDF, PTFE housing and transducers Explosion-proof models Level and volume measurement Open channel flow measurement Fail-safe indication For challenging applications such as vapour, fume, mixing blades, and light foam 	<ul style="list-style-type: none"> 4-wire transmitter Non-contact level metering Narrow 5° beam angle Excellent signal processing Temperature compensated Secondary lightning protection 32-point linearisation PP and aluminium housing transducers with PVC foam Joystick aiming device Explosion-proof models Level and volume measurement Fail-safe indication For challenging applications such as long distance measurement and light dust during filling 	<ul style="list-style-type: none"> 2- or 4-wire integrated transmitter Non-contact level metering Narrow 5° beam angle Excellent signal processing Temperature compensated Secondary lightning protection 32-point linearisation PP, PVDF, PTFE housing and transducers Plug-in display module Plastic, aluminium or stainless steel housing Explosion-proof models Level and volume measurement and display Open channel flow measurement Fail-safe indication For challenging applications such as vapour, fume, mixing blades, and light foam 	<ul style="list-style-type: none"> 4-wire transmitter Non-contact level metering Narrow 5° beam angle Excellent signal processing Temperature compensated Secondary lightning protection 32-point linearisation PP and aluminium housing transducers with PVC foam Joystick aiming device Plug-in display module Paint coated aluminium housing Explosion-proof models Level and volume measurement and display Fail-safe indication For challenging applications such as long distance measurement and light dust during filling
<ul style="list-style-type: none"> Level measurement of pressurized vessels, boilers and tanks Chemical industry Power plants Oil industry Water industry 	<ul style="list-style-type: none"> Level measurement of liquids, wastewater, aggressive chemicals and slurries Agriculture Construction materials Chemical industry Food and beverage Oil industry Paper mill Water / wastewater industry 	<ul style="list-style-type: none"> Level measurement of free flowing solids Chemical industry Food and beverage Mining industry 	<ul style="list-style-type: none"> Level measurement of liquids and slurries Agriculture Construction materials Chemical industry Food and beverage Oil industry Paper mill Water / wastewater industry 	<ul style="list-style-type: none"> Level measurement of free flowing solids Chemical industry Food and beverage Mining industry
<p>Flange distance (CL to CL): 500 – 5500 mm</p> <p>Process connection: DIN, ANSI flanges</p> <p>Pressure: max. 100 bar</p> <p>Process temperature: -60 °C ... +250 °C</p> <p>Medium density: 0.55 – 1.25 kg/dm³</p> <p>Approvals: PED approval, ATEX: MAK-100 level switches</p> 	<p>Power supply: 11 – 36 V DC</p> <p>Ambient temperature: -30 °C ... +80 °C</p> <p>Process temperature: -30 °C ... +90 °C</p> <p>Pressure (absolute): 0.05 – 0.3 MPa (0.5 – 3 bar)</p> <p>Measuring range: 0.15 – 25 m</p> <p>Process connection: 1" BSP, 1½" and 2" NPT</p> <p>Output: 4 – 20 mA, HART®, relay</p> <p>Protection: IP68</p> <p>Approvals: ATEX, INMETRO</p> 	<p>Power supply: 11.4 – 40 V DC, 11.4 – 28 V AC</p> <p>Ambient temperature: -30 °C ... +60 °C</p> <p>Process temperature: -30 °C ... +60 °C</p> <p>Measuring range: 0.6 – 60 m</p> <p>Process connection: 1" BSP and joystick aiming device</p> <p>Output: 4 – 20 mA, HART®, relay</p> <p>Protection: IP65</p> <p>Approval: ATEX</p> 	<p>Power supply: 2-wire: 12 – 36 V DC, 4-wire: 85 – 255 V AC, 20 – 28 V AC/DC</p> <p>Ambient temperature: -30 °C ... +70 °C</p> <p>Process temperature: -30 °C ... +100 °C</p> <p>Pressure (absolute): 0.05 – 0.3 MPa (0.5 – 3 bar)</p> <p>Measuring range: 0.2 – 25 m</p> <p>Process connection: 1½", 2" BSP / NPT, flange</p> <p>Output: 4 – 20mA, HART®, relay</p> <p>Protection: IP67</p> <p>Approval: ATEX, INMETRO</p> 	<p>Power supply: 85 – 255 V AC; 11.4 – 40 V DC; 11.4 – 28 V AC</p> <p>Ambient temperature: -30 °C ... +60 °C</p> <p>Process temperature: -30 °C ... +75 °C</p> <p>Measuring range: 0.6 – 60 m</p> <p>Process connection: joystick aiming device</p> <p>Output: 4 – 20 mA, HART®, relay</p> <p>Protection: IP65</p> <p>Approval: ATEX</p> 

LEVEL SWITCHES

OPERATING PRINCIPLE

FLOAT

CONDUCTIVE

MAGNETIC COUPLING

MAGNETIC TRACKING

FEATURES

- Operation without power supply
- Low cost polypropylene level switch
- Hermetically moulded, double chamber
- Mercury free microswitch
- Adjustable switch differential
- For low density liquids

- Low cost level switch
- Limit switch or differential switch versions
- Adjustable sensitivity
- Adjustable time delay
- High or low fail-safe mode
- All wetted parts stainless steel
- Compact unit with two independent relays
- Separate probe and relay unit
- Rod probes up to 3 m

- Operation without power supply
- Micro-switch separated from the process
- All wetted parts stainless steel
- Side or top mounting
- Fixed or adjustable switch differential
- Submersible versions
- Various process connections
- Operational check via optional tester
- Flame-proof models
- SIL1 approval

- Operation without power supply
- Reed switches separated from process
- Wetted parts stainless steel or plastic
- Up to 5 switch points
- Vertical adjustability of all switch points
- Various process connections
- Flame-proof models

APPLICATION

- Level switch from potable water to sewage
- Suitable also for tanks and basins
- Fail-safe indication and pump control
- Water / wastewater industry

- Conductive liquids with minimum 1×10^{-5} S/cm conductivity
- Fail-safe indication and pump control
- Chemical industry
- Water / wastewater industry

- Liquids with minimum 0.7 kg/dm^3 density
- Fail-safe and control level switches in closed tanks
- Ballast tanks on ships
- Chemical industry
- Food and beverage
- Power plants
- Oil industry
- Water industry

- Liquids with minimum 0.4 kg/dm^3 density
- Multi-point level switch in closed tanks
- Foaming liquids, chemicals with dense vapour or gas layer above the surface
- Chemical, oil industry
- Food and beverage
- Power plants
- Oil industry
- Water industry

SPECIFICATION

Switch rating:
250 V AC, 10(3) A
Process temperature:
0 °C ... +50 °C
Pressure:
max. 1 bar
Protection:
IP68



Switch rating:
250 V AC, 16 A or 8 A
Power supply:
24 – 240 V AC/DC
Ambient temperature:
-20 °C ... +50 °C
Process temperature:
max. +200 °C
Pressure:
max. 16 bar
Process connection:
3/8", 1 1/2"
Protection:
IP65 / IP67, IP20



Switch rating:
250 V AC, 10 A NO/NC
Ambient temperature:
-20 °C ... +80 °C
Process temperature:
-40 °C ... +250 °C
Pressure:
max. 25 bar
Process connection:
flanges or 2" thread
Protection:
IP65, IP68
Approvals:
ATEX, IEC Ex, INMETRO,
EAC, DNV GL (Marine),
BV (Marine), SIL1



Switch rating:
250 V AC, 3 A
Ambient temperature:
-40 °C ... +95 °C
Process temperature:
-40 °C ... +150 °C
Pressure:
max. 25 bar
Process connection:
1" or 2" or flanges
Protection:
IP67, IP68
Approvals:
ATEX, BV (Marine)



LEVEL SWITCHES

VIBRATING FORK		VIBRATING ROD	ROTARY PADDLE	RF – CAPACITANCE
FOR LIQUIDS	FOR SOLIDS			
<ul style="list-style-type: none"> No moving parts Self-cleaning for most mediums Stainless steel and plastic coated probes Solid rod extension up to 3 m Various output configurations High or low fail-safe mode Plastic, aluminium or stainless steel housing Explosion-proof models For corrosive, thick, turbulent, flowing liquids 	<ul style="list-style-type: none"> No moving parts Self-cleaning for most mediums Stainless steel probes Solid rod extension up to 3 m Various output configurations Selectable density High or low fail-safe mode Plastic, aluminium or stainless steel housing Dust-Ex models 	<ul style="list-style-type: none"> No moving parts Self-cleaning for most mediums Stainless steel vibrating section Rod (0.3 – 3 m) or flexible cable extension (1 – 20 m) Plastic or aluminium housing Selectable density High or low fail-safe mode Selectable switching delay Dust-Ex models For grain, flour, plastic granules, cement, fly ash, etc. 	<ul style="list-style-type: none"> Plastic or aluminium housing Long service time Motor shut-off feature Flexible coupling Solid rod or flexible cable extension (0.3 – 3 m) Sealed bearings High temperature version Dust-Ex models High or low fail-safe Feed, coal, sand, rocks, limestone, metals, rubber 	<ul style="list-style-type: none"> Intelligent electronic level switch Build-up immunity Easy calibration Selectable sensitivity Fail-safe operation mode Solid rod (0.7 – 3 m) or flexible cable extension (1 – 10 m) High temperature version Dust-Ex models For high viscosity, sticky materials For special applications such as blockage detection in hopper and hot ash
<ul style="list-style-type: none"> Most liquids with minimum 0.7 kg/dm³ density and maximum 10⁴ mm²/s viscosity Chemical industry Food and beverage Power plants Oil industry Water industry 	<ul style="list-style-type: none"> Granular material particulate and powder with minimum 0.01 kg/dm³ bulk density Chemical industry Food and beverage Power plants Paper mill Plastic industry 	<ul style="list-style-type: none"> Granular material and powder with min. 0.05 kg/dm³ bulk density Agriculture Construction materials Chemical industry Food and beverage Mining industry Power plants Paper mill Recycling Plastic industry 	<ul style="list-style-type: none"> Granular material and powder with minimum 0.1 kg/dm³ density Agriculture Construction materials Chemical industry Food and beverage Mining industry Paper mill Recycling Plastic industry 	<ul style="list-style-type: none"> For solids with $\epsilon_r \geq 1.5$ and liquids Agriculture Construction materials Chemical industry Pharmaceutical industry Food and beverage Mining industry Power plants Paper mill Plastic industry
<p>Power supply: 20 – 255 V AC, 20 – 60 V DC</p> <p>Ambient temperature: -40 °C ... +70 °C</p> <p>Process temperature: -40 °C ... +130 °C</p> <p>Pressure: max. 40 bar</p> <p>Process connection: 1", 1½", 2" or flanges or hygienic fittings</p> <p>Output: 1 or 2 relays (SPDT), 2-wire AC / DC, transistor (PNP, NPN)</p> <p>Protection: IP67, IP68, IP65</p> <p>Approvals: ATEX, IEC Ex, FM, DNV GL (Marine)</p>	<p>Power supply: 20 – 255 V AC, 20 – 60 V DC</p> <p>Ambient temperature: -40 °C ... +70 °C</p> <p>Process temperature: -40 °C ... +130 °C</p> <p>Pressure: max. 40 bar</p> <p>Process connection: 1", 1½", 2" or flanges</p> <p>Output: 1 or 2 relays (SPDT), 2-wire AC or DC, transistor (PNP, NPN)</p> <p>Protection: IP67, IP68, IP65</p> <p>Approval: ATEX</p>	<p>Power supply: 20 – 255 V AC/DC</p> <p>Ambient temperature: -30 °C ... +60 °C</p> <p>Process temperature: -30 °C ... +160 °C</p> <p>Pressure: max. 25 bar</p> <p>Process connection: 1½"</p> <p>Output: relay (SPDT) or electronic switch (SPST)</p> <p>Protection: IP67</p> <p>Approvals: ATEX, IEC Ex</p>	<p>Power supply: 24 V AC/DC, 120 V AC, 230 V AC</p> <p>Ambient temperature: -30 °C ... +60 °C</p> <p>Process temperature: -20 °C ... +200 °C</p> <p>Pressure: max. 3 bar</p> <p>Process connection: BSPT 1", 1½", mounting plate</p> <p>Output: relay (SPDT) 250 V AC, 5 A, AC1</p> <p>Protection: IP67</p> <p>Approval: ATEX</p>	<p>Power supply: 20 – 250 V AC/DC</p> <p>Ambient temperature: -30 °C ... +65 °C</p> <p>Medium temperature: -30 °C ... +235 °C</p> <p>Pressure: max. 25 bar</p> <p>Process connection: ¾", 1", 1½"</p> <p>Output: relay (SPDT) or electronic switch (SPST)</p> <p>Protection: IP67</p> <p>Approvals: ATEX, IEC Ex</p>

