

Water Industry Instrumentation

APPLICATIONS FOR WATER & SEWAGE

5 YEARS WARRANTY

PIVOTAL

WATER / WASTEWATER INDUSTRY



FROM POTABLE WATER TO SEWAGE

NIVELCO's wide range of instruments covers all the instrumentation needs of the water/wastewater industry. In the past, only a handful of level and pressure instruments were available for this industry segment. More recently, however, we have begun to sell analytical instruments for water to provide complete instrumentation packages that cover all water production and purification technologies. Most of these instruments have ATEX Ex-approved variants that comply with the latest directives. Small and medium-sized systems can easily be set up using NIVELCO's **MultiCONT** multi-channel process controller, which can remotely read and program NIVELCO transmitters. Alternatively, our **NIVISION** process visualization software can integrate all NIVELCO transmitters into a single process visualization system.

PiloTREK – non-contact radar
MicroTREK – guided wave radar
EasyTREK, EchoTREK – ultrasonic level transmitter
NIVOCAP – capacitive level transmitter
NIVOPRESS N – submersible hydrostatic level transmitter

NIVOFLOAT – float switch
NIVOCONT – conductive switch
NIVOPOINT – magnetic tracking level switch
NIVOMAG – magnetic coupling level switch
NIVOSWITCH – vibrating fork level switch
NIVOCAP CK – RF-capacitance level switch

CONTINUOUS LEVEL MEASUREMENT

POINT LEVEL DETECTION



LIQUID ANALYTICS

AnaCONT LED – dissolved oxygen transmitter
AnaCONT LCK – conductivity transmitter

FLOW MEASUREMENT

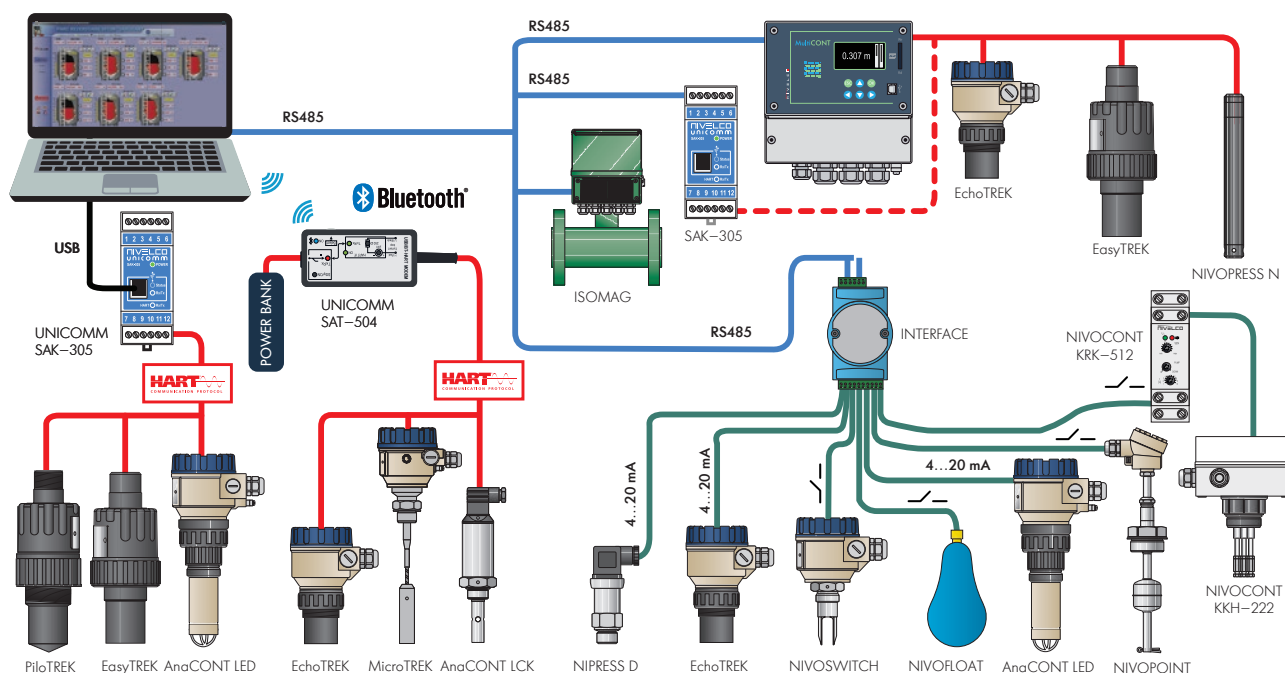
NIVOSONAR – open-channel flowmeter
ISOMAG – electromagnetic flowmeter

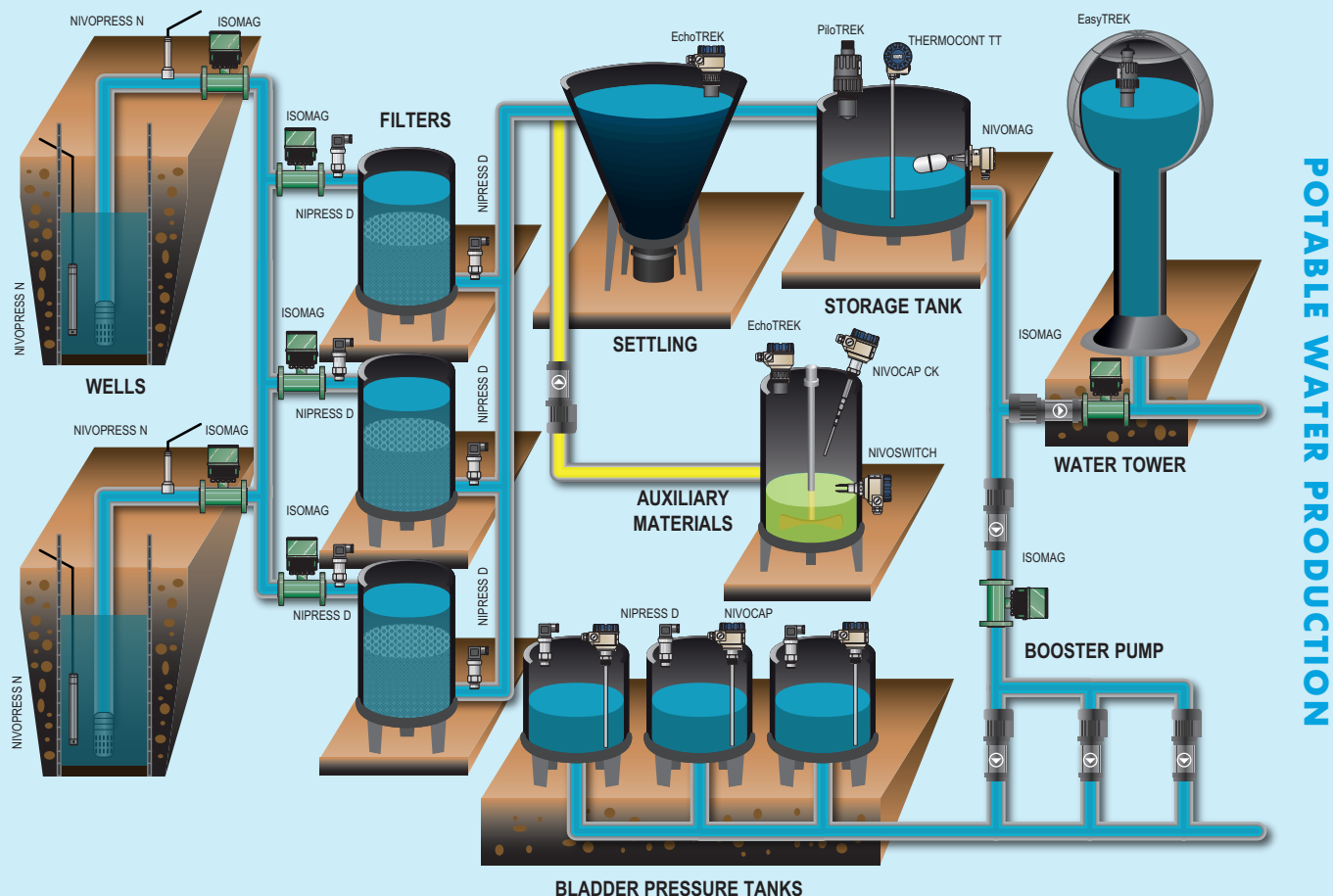
PRESSURE MEASUREMENT

NIPRESS D – pressure transmitter

FIELD INSTRUMENTS IN MEASUREMENT SYSTEMS

Level and analytical transmitters can be connected to the **MultiCONT** process controller, or **MonoCONT** smart field display & data logger (only 1 transmitter), or with the help of suitable interfaces or modems, **NIVELCO** field instruments can provide measurement results and control signals directly to the process control system. The **NIVISION** software is the perfect choice for process visualization, data acquisition, measurement database management and process control tasks.





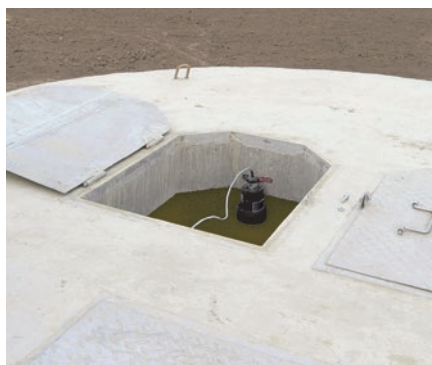
WATER PRODUCTION WELLS

The water production wells are drilled into the ground layers rich in water, where pumps are lowered to pump the raw water to the central water treatment facilities. A popular choice is the NIVOPRESS N submersible transmitter because it is suitable for measuring water level and temperature in deep water wells. The pressure of the water pumped from the wells is measured in the surface pipeline by NIVOPRESS NZ/ND or NIPRESS transmitters.



WATER TREATMENT

Yield of the input, e.g. spa water, is measured with ISOMAG electromagnetic flowmeters and temperature with THERMOCONT TT instruments. Organic and inorganic materials are removed either by mechanical filters or by adding coagulants to the water and the contaminants are separated in settling tanks. EchoTREK and PilotREK are recommended for continuous level measurement.

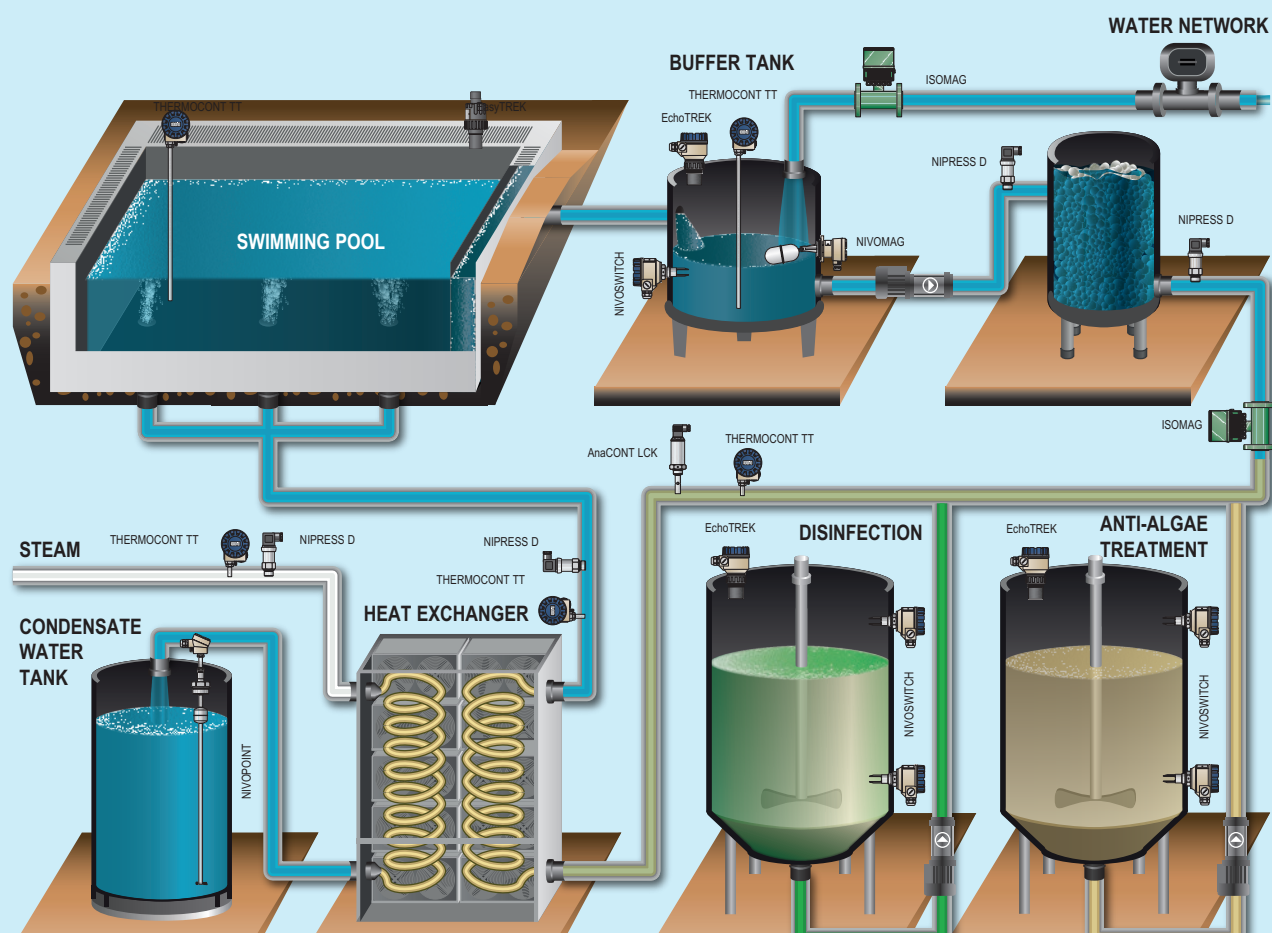


WATER DISTRIBUTION SYSTEMS

In water production, NIVOCONT K conductive switches are an excellent choice for controlling the pumps of small sumps. NIVOFLOAT float switches are ideal fail-safe devices to increase safety. Booster pumps, water towers, and bladder pressure tanks distribute water to the general public. EasyTREK ultrasonic level transmitters are great at measuring the level in the water towers from the top.



SWIMMING POOL CIRCULATION SYSTEM



The overflow from swimming pools is transferred by gravity and collected in a buffer tank. The water from the buffer tank is pumped through filters and a heat exchanger before the water returns to the swimming pool. The amount of recirculated water is continuously adjusted to the daily requirements. A frequency converter can set the number of hourly rotations. The amount of circulating water determines the operation of the anti-algae dosing pump and the disinfectant dosing pumps. When it comes to protecting the heat exchanger, the most important is the upper limit of the supplied water's temperature, which must not exceed $+38^{\circ}\text{C}$ ($+100^{\circ}\text{F}$).

Recommended instruments:

Pools

- Continuous level measurement:
EasyTREK ultrasonic level transmitter
- Continuous temperature measurement:
THERMOCONT TT transmitter

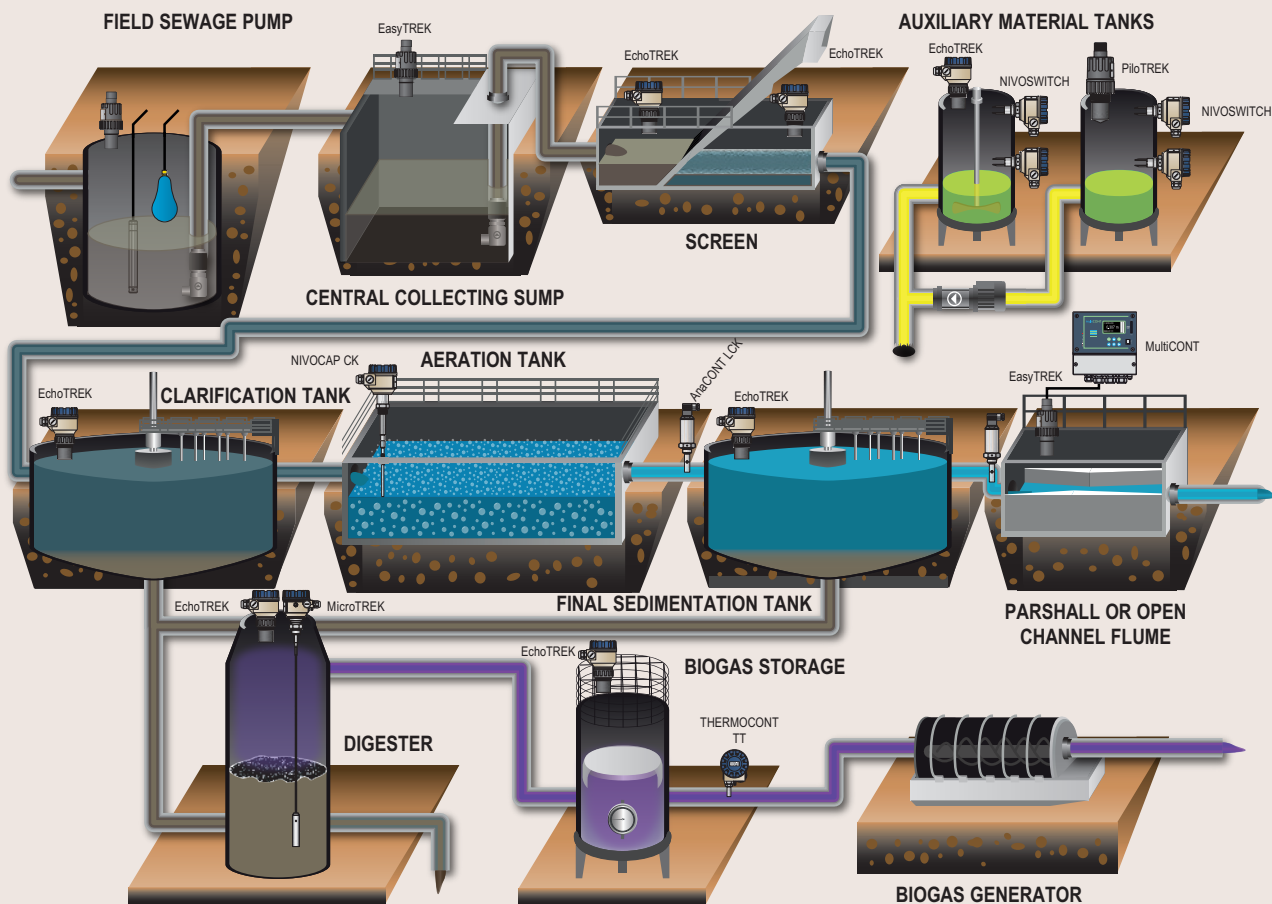
Buffer storage tank

- Non-contact level measurement:
EchoTREK ultrasonic level transmitter
- Low level switching:
NIVOSWITCH vibrating fork
- Level control:
NIVOMAG MK magnetic coupling level switch
- Continuous temperature measurement:
THERMOCONT TT transmitter

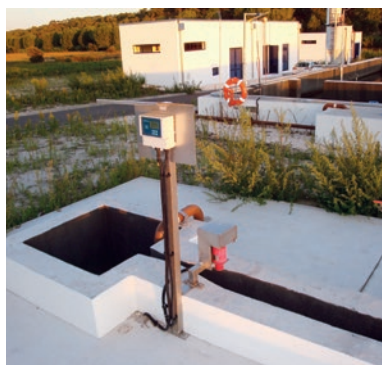
Filter / Heat exchanger

- NIPRESS D pressure transmitters measure the pressure at the inlet and the outlet
- UNICONT PM universal controllers calculate the difference between pressure values, and when it's above a specified value, it sends a warning signal for cleaning the filter; other units indicate the temperature or provide a control signal at the primary side of the heat exchanger.
- THERMOCONT TT transmitters measure the temperature at the inlet and the outlet





SEWAGE TREATMENT



SEWAGE PUMP STATIONS

Sewage is collected in underground sumps and pits, also known as wet wells or pump stations, and is pumped to the sewage treatment plant. Our number one recommendation for these measurement tasks is the **EasyTREK SP** non-contact ultrasonic level transmitter with IP68 ingress protection.

Another popular choice for deep sumps is the **NIVOPRESS N** submersible level transmitter with sewage adapters.

The robust **NIVOFLOAT NW** float level switch is suitable for fail-safe protection jobs. The sewage from the network contains many organic and inorganic materials dissolved and floating. All contaminants must be removed.

SEWER FLOW MEASUREMENT

Sewer networks utilize P9 Parshall flumes for reliable open-channel flow measurement across wide capacity ranges. These flumes enable accurate, non-mechanical flow calculation based on upstream head under free-flow conditions. Legacy manometric probes required full submersion and delivered inaccurate readings during low-flow periods when water levels dropped below sensor intake points.

NIVELCO PiloTREK W-200 non-contact 80 GHz radar level transmitters ensure continuous, precise measurement. Due to varying hydraulic conditions and occasional submerged-flow effects, dual-sensor configuration was implemented. One device measures upstream head, the second monitors flume conditions for automatic correction. Narrow-beam radar technology delivers stable, high-accuracy readings unaffected by debris, sediment, or surface disturbances. This solution enhances measurement reliability while preserving existing infrastructure integrity.

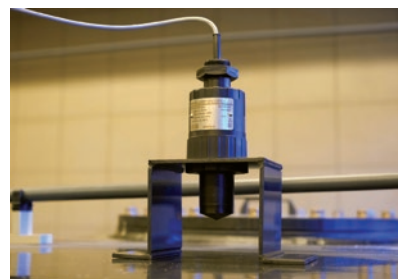


INSTRUMENT SELECTION



PiloTREK WP-200 – integrated non-contact radar

- 2-wire 80 GHz (W-band) radar
- High-precision level measurement of liquids, emulsions, and other media
- Integrated design with IP66 / IP68 protection
- User-friendly threshold management
- It can be used in a vacuum
- Open-channel flow measurement



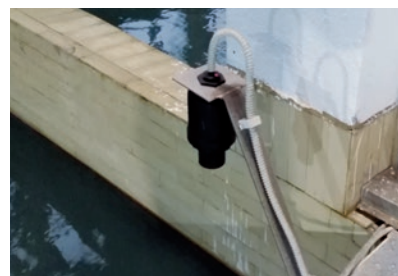
PiloTREK WE-200 – compact non-contact radar

- 2-wire 80 GHz (W-band) radar
- High-precision level measurement of liquids, emulsions
- Plug-in graphic display module
- IP66 / IP67 protection
- User-friendly threshold management
- It can be used in a vacuum
- Open-channel flow measurement



EasyTREK Pro – ultrasonic level transmitter

- IP68 protection
- Continuous level measurement in basins, wells, sumps
- Narrow, 5° beam angle
- Advanced threshold management
- Quick start mode
- Faster measurement cycle
- Service interface



EasyTREK – ultrasonic level transmitter

- IP68 protection
- Continuous level measurement in basins, wells, sumps
- Sewage pump control
- Tank fill/discharge control
- Flow measurement
- Remote programming
- Volume calculation



EchoTREK – ultrasonic level transmitter

- Continuous level measurement in basins, wells, sumps
- Tank fill/discharge control
- Flow measurement
- Remote programming
- Volume calculation



NIPRESS D – pressure transmitters

- Ceramic or stainless steel flush diaphragm
- Relative or absolute measurement mode
- For high pressure up to 2000 bar (29,000 psig)
- For vacuum, overpressure and absolute pressure measurement
- Environmental engineering, medical technology, laboratory techniques

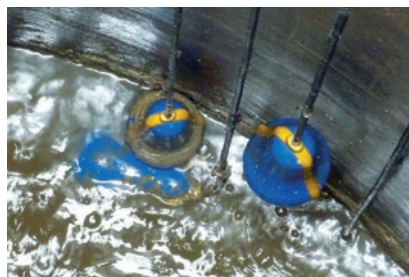


INSTRUMENT SELECTION



MicroTREK – wave radar (GWR)

- Level, distance or volume measurement of liquids
- Media with turbulent surface, vapor or pressurized gas layers above the medium's surface
- Stainless steel, FEP, PFA or PP-coated probes
- For all tank shapes, and narrow vessels
- Interface measurement function



NIVOFLOAT – float switch

- For water and sewage
- Level switching of tanks, basins and sumps
- Fill/discharge control
- Level switching of sewage pumps
- Fail-safe indication



NIVOPRESS N – submersible level transmitter

- Drawdown protection of wells
- Level measurement in tanks, basins
- Sewage pump control
- Remote programming
- Detachable variants



ISOMAG – electromagnetic flowmeter

- Electromagnetic operating principle
- For water and sewage measurement in pipelines
- Compact or separated type
- Certifiable measurement
- For custody transfer measurement



NIVOSONAR – open-channel flow measurement

- Ultrasonic level transmitter
- For calibrated, standard Parshall flumes
- Suitable for all flume types
- Suitable for water and sewage
- Certifiable measurement
- Treated effluent sewage measurement
- Yield measurement of irrigation canals



NIVOCONT K – conductive level transmitter

- Electronic level switch for conductive liquids
- Compact and separated types
- Fill / discharge control
- Indication of water inflow



INSTRUMENT SELECTION



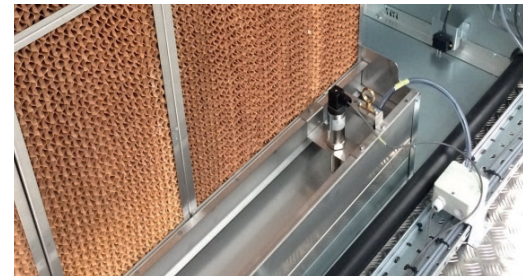
NIVOCAP CK – RF-capacitance Level switch

- Intelligent electronic level switch
- Easy calibration, adjustable sensitivity
- Level switching in tanks and basins
- Foam detection
- For high viscosity, sticky materials



AnaCONT – conductivity transmitters

- Continuous conductivity measurement in swimming pools and drinking water processing
- Checking of water quality
- Water purification



AnaCONT LED – dissolved oxygen transmitter

- Continuous dissolved oxygen measurement of surface waters, aeration processes, swimming pool equipments
- Plug-in graphic display module
- Separated version up to 10 m (33 ft)
- Temperature-compensated
- Explosion-proof models



MultiCONT – multichannel process controller

- Flexible commissioning for HART®-based process transmitters
- Galvanically isolated 4...20 mA output
- 1...15 channels (standard) or 1...4 channels (Ex ia)
- Large, high-information LCD/OLED display
- Trend logging to internal memory or SD card with USB data download
- Ex ia variant



MonoCONT – smart field display & data logger

- Provides a flexible solution for commissioning process control systems containing HART®-compatible intelligent transmitters
- Supports 1 HART® transmitter
- Field loop display and controller module
- Ex-approved variant available
- Bluetooth® communication
- Data logging to internal memory



Explore our success stories in the water & wastewater industry!



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