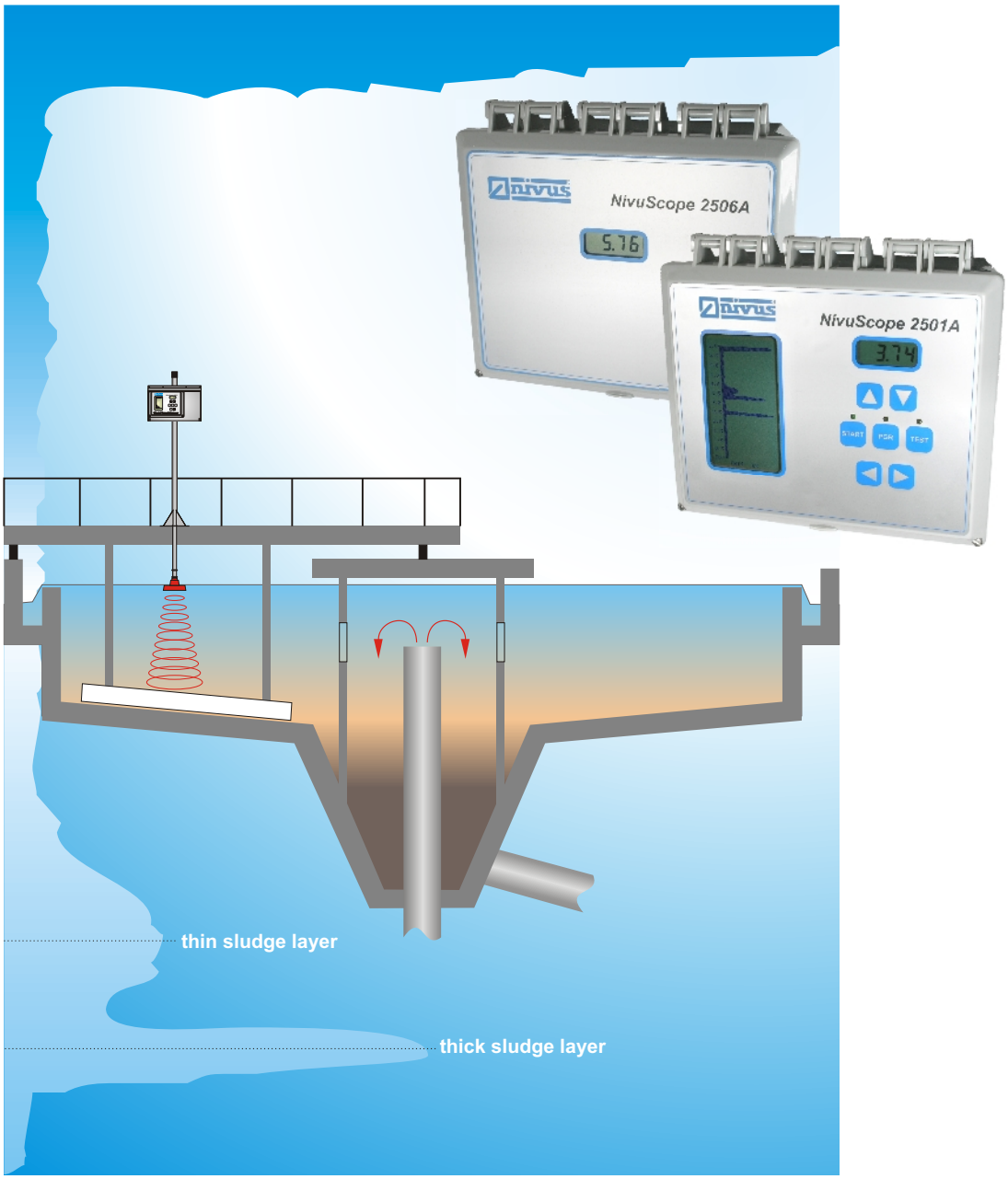


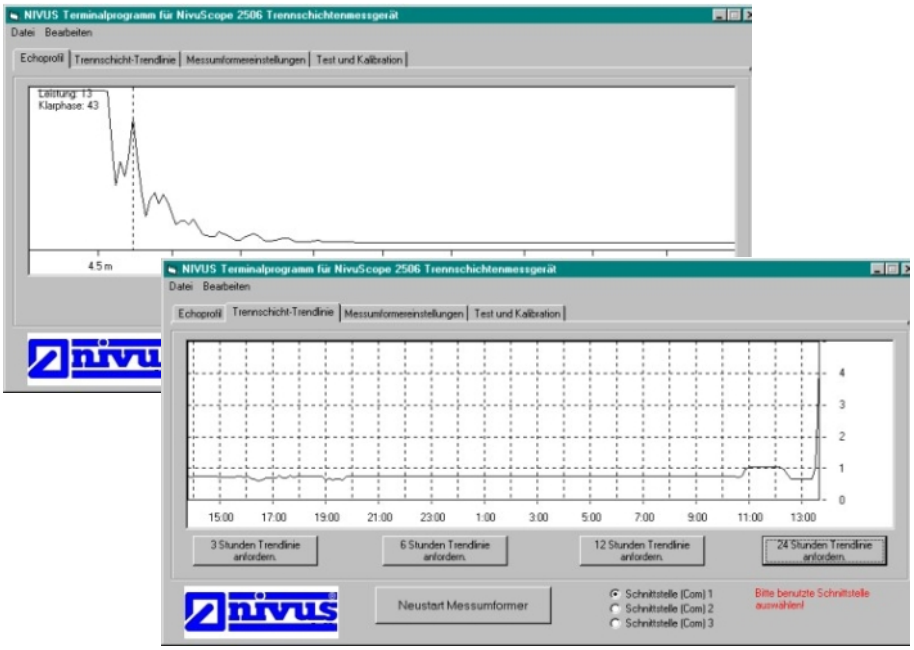
NivuScope

Everything under Control:

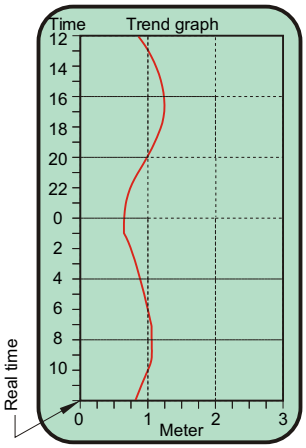
Sludge Level
Interfaces
Sludge Profiles

Evaluation

The NivuScope 2501A has a back-lit graphic display for information and adjustment purposes. This display can be interpreted quick and easily without having specialised knowledge. Further the most suitable out of seven preset evaluation algorithms can be chosen for the corresponding application.
If tank depth and measurement range are entered additionally, the device is largely programmed. The rest is done by the microprocessor.
On the LCD the sludge level referred to the tank bottom or turbid water contents above the sludge will be indicated. The analog signal 1 (4-20 mA) can be set to either indicate sludge depth or the amount of clear water. Analog signal 2 is dedicated to the degree of pollution within the sensor range.



Evaluation



The sludge level progression will be stored backdated within 3, 6, 12 or 24 hours and can be displayed on demand.

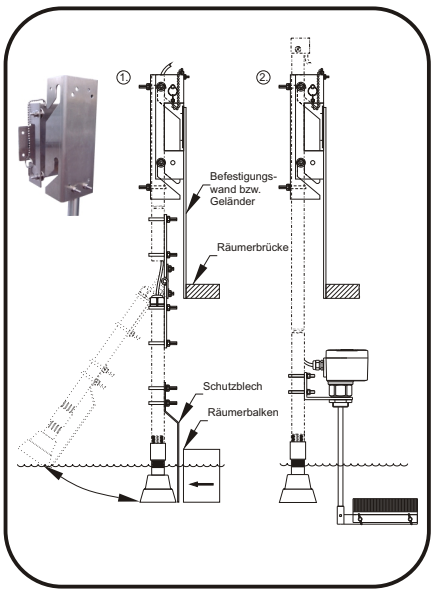
Special features

In contrast to electromechanical / optical measurement devices the NivuScope will detect interfaces or density alternations independent of the absolute density. Hence, it is possible to safely avoid the topmost interface e.g. in secondaries. This protects our waters and ensures operators to safely operate their facilities according to the high environmental requirements. Similar applies to the sludge stock in secondaries. Here, it must be made sure that the sludge level does not fall below the minimum.

Recommendations for installation

1. Pendulum bracket SE for floating installation in case of scrapers or skimmers rotating on the water surface.

2. Mounting bracket AE for rigid installation, optional cleaning device.



Initial start-up

TANK DEPTH

Entry:
Distance between sensor and tank bottom in (m)

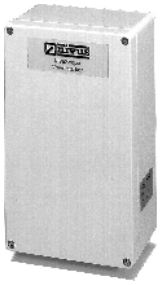
Must be entered correctly in order to avoid double echoes or faulty echoes!

Proceed with NEXT or BACK

The 2501A setup can be made very easy in dialog mode via the graphic display. The 2506A can be programmed analogous via PC.

The Preamplifier

The standard sensor cable length is 7,5 m (24.6 in). Special cable lengths up to 20 m (65.6 in) max. are available. At distances from 20 to 230 m (65.6 to 754.4 in) the preamplifier, which normally is integrated in the 2501A, will be placed close to the sensor in a separate enclosure.
The preamplifier is supplied by the transmitter.



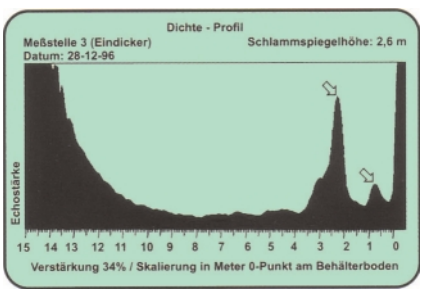
See where sludges deposit in liquids or where sedimenting substances are:

NivuScope makes your basins and containers transparent.

How it works

The transmitter stage of the dual-head sensor constantly emits a directional high-frequency burst of ultrasonic energy into the liquid. To achieve this, the sensor must be immersed into the liquid that far that it is some cm or inches above the topmost interface to be measured.

Solid particles or sludge in the liquid reflect the sound waves back to the receiver stage of the dual-head sensor. The sensor converts the acoustic signals into electric signals. The intensity of the received signal depending on the ultrasonic transit time will be evaluated and indicated graphically on the display.



The typical sludge layers or interfaces can now be seen very clearly on the display graph.

Typical applications

- **Waste treatment clarifiers**
  primaries and secondaries, gravity thickeners
- **Raw water clarifiers**
  sludge settling basins, filters
- **Flue gas desulphurisation facilities**
  settling tanks
- **Aluminium industry**
  filter tanks and thickeners
- **Paper industry**
  flotation plants
- **Mining**
  washing
- **Construction materials**
  purifying plants
- **Industry / chemical industry**
  heavy metal separation
  sedimentation monitoring
  brine tanks
  crystal growing

Advantages

- no moving parts, no wear
- interface and sludge level detection, independent of density
- indication of current sludge level and progression up to 24 hours
- menu driven programming and HELP screens
- no recalibration required
- world-wide service
- fully automatic purification function available for extreme conditions

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Specifications

NivuScope 2501A / NivuScope 2506A

Measurement range.....0.21 to 30 m (0.7 to 28.4 ft, depending on sensor and application)
Resolution.....3 to 12 cm (1.2 to 4.7 in) depending on selected measurement range
Dead zones.....21 cm (8.3 in) below sensor and approx. 5 cm (2 in) above tank bottom
Digital display.....4-character, back-lit LC display in m or %
Graphic display (only 2501A).....114 x 62 mm (4.5 x 2.4 in) back-lit graphic display
Temperature effect.....0,1 % / °C
Voltage.....230/115 V AC, 50/60 Hz ±15 %
Power consumption .....40 W max. (90 W with enclosure heating)
Protective enclosure .....plastics, protection IP65
Ambient temperature .....-30° C to +50° C (-22°F to 122°F); relative humidity 5 to 100 %, non-condensing
Heating .....power consumption 50 W (optional)
Interface.....RS232 / RS485 (not for 2501A 1 relay version)
Outputs 2501A.....2 x 4 - 20 mA, isolated, load max. 600 Ohm
1 relay, function: limit values / clock
option: 5 relays version, additionally:
3 relays, function: limit values
1 alarm relay (loss of echo / sensor error)
(all contacts as SPDT, max. 3A at max. 230 V AC)
Outputs 2506A.....2 x 4 - 20 mA, isolated, load max. 600 Ohm
1 relay, function: limit values / clock
1 relay, function: limit values

Sensor Type 25SN/25DN

Standard sensor made of Polyurethane, LEXAN and stainless steel 316ss, IP68 for all common liquids, e.g. waste water.
Cable length.....on sensor 7,5 m (24.6 ft, max. 20 m (65.6 ft) optional)
Temperature range .....-30 °C to +80 °C (-22°F to 221°F)
Fastening.....NPT 3/4“ (DN25 outside thread / SN25 inside thread)

Preamplifier enclosure for TR-25 (possible only for 2501A)

The 2501A has a built-in sensor preamplifier as standard.
In case of separate installation the preamplifier will be supplied via the transmitter.
Protective enclosure .....plastics, protection IP65
Cable connection .....max. 230 m (754.4 ft) to transmitter
Cable type.....8 x 1 mm² (8 x 0.0394 sq in), common shield
Dimensions .....130 x 130 x 61 mm (5.1 x 5.1 x 2.4 in, W x H x D)

Cleaning device RE-SN

incl. cleaning brush and fastening material for ¾“ and 1“ pipes.
Voltage:..... 230 V AC, 50 Hz

Mounting bracket AE

for easy sensor removal. Incl. fastening material for ¾“ and 1“ pipes.

Pendulum bracket SE

for installation on basins with scrapers. Incl. fastening material for ¾“ and 1“ pipes.