

MUDLine® TGS

**Portable sludge level measuring instrument,
battery operated**



OPERATING INSTRUCTIONS

BAMO MESURES

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**PORTABLE SLUDGE LEVEL
MEASURING INSTRUMENT**

MUDLine® TGS

MES

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CAUTION: BEFORE ANY OPERATION, PLEASE READ THESE SAFETY PRECAUTIONS

- Do not open the housing!
- The device may only be connected to the included battery charger, which is described in the operating instructions!
- Clean the cable drum with integrated electronics with a humid duster only: do not immerse in or spray with water!

1 Description

The portable MUDLine® TGS is dedicated to measurements of sludge levels in settling and precipitation tanks, as well as in small effluent treatment plants.

It detects the transition zone between the clear phase and the precipitated sludge, on the same time the depth is displayed and stored in memory (until the reset for the next measurement).

The instrument can be set to the desired switching threshold adjusting the value with the "sludge concentration" range switch and then a fine adjustment potentiometer.

The instrument is functional to an immersion depth of up to 10 metres.

2 Technical Data

Setting range / switching threshold

Measuring range 1:

standard

Measuring range 2:

highest sensitivity

Measuring accuracy:

approximately 1 cm

Ambient temperature:

0...+50°C

Housing and switches:

Stand alone with handle

ON / OFF main switch

Auto switch-off after 7 min

Sensitivity switch

Fine adjustment potentiometer "Sensitivity"

IP 44 (EN 60 529)

Display:

LCD-panel 3-digits, immersion depth [cm]

with measured data storage,

with "low battery" signal

Indicators:

1 LED, red, for "Mud level detected"

1 Buzzer for "Mud level detected"

Immersion probe:

PVC / IP68 (10m max.) (EN 60 529)

Cable:

special type TPE-cable, 10 m long

Accumulator charger supply:

230V AC (main) or 12V CC (car cigarette lighter plug)

Maximum 2 h 30 min to complete a full recharging

Dimensions:

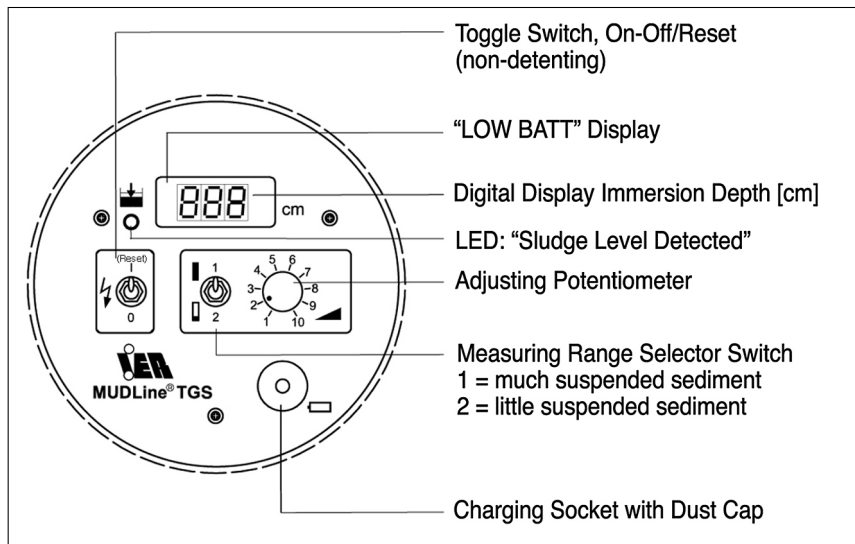
300 x 210 x 180 mm

Mass:

3500 g

3 CE Mark

EMC directive (89/336/ECC), EN 50 081-1:1992, EN 50 082-2:1995



4 Sludge Level Measuring Procedure

- Switch the instrument on, "002" is displayed (= offset).

Rapid Setup:

- Set range selector switch to 1.
- Punch through and clear any floating sludge with a tool.
- Immerse the probe down to the cable gland.
- Set the potentiometer just below the point at which the LED lights up and the horn sounds.

Measuring Procedure:

- Immerse the measuring probe deeper into the fluid.
- The horn sounds and the LED lights up when the sludge phase is reached.
- The immersion depth of the measuring probe can now be read from the digital display.

5 Sensitivity adjustment

High to low difference turbidity between clear and charged fluid or sludge:

- Prepare a sample with the desired concentration of sludge in a bucket.
- Fill in Keep close another bucket full of clear water.
- Immerse the measuring probe into the sludge specimen to a depth of at least 10 cm.
- Adjust the potentiometer as described above. Repeat several times if necessary.

Increased High Sensitivity:

- When the turbidity is very low for a minimal sludge concentration, you may use the Highest sensitivity range: select measuring range 2. Minimal turbidity differences are then detected.
- Proceed as described above to complete the adjustment.

CAUTION ! In this mode, the instrument detects very low turbidity differences between purified and turbid water and extremely small suspended particles!

6 Automatic storing value of immersion depth

- When sludge level is detected: the horn sounds continuously and the LED lights up
- Hold the measuring probe at this depth for approximately 5 seconds.
- The horn signal changes from continuous to intermittent.
- The LED changes from continuous to blinking mode.
- The probe may now be removed.
- The horn signal stops, but the LED continues to blink.
- Read the stored immersion depth value.
- Delete it with the on-off / reset button.
- The LED lights off and a value of 000 to 005 is displayed.
- The instrument is now ready for the next measurement.

7 Cleaning

- Clean the drum with integrated electronics with a humid duster.
- Do not immerse it or spray water on it.
- The measuring probe and the cable can be cleaned under running water with a soft brush.
- Do not use high-pressure water blasters or steam cleaners, the submersible pressure transducer will otherwise be damaged.
- Use mild household cleaners only: do not use solvents or degreasing agents!

8 Maintenance

The device is maintenance-free if used for its intended purpose.

9 Battery Charger

“LOW BATT” appears on the LCD panel when the battery is weak.

The integrated, rechargeable NiMH battery can be quickly and reliably recharged with the included “ACS 410 mobile” battery charger.

Recharging time for a fully depleted battery is about 2 h 30 min.

The charger can be connected either to a 230 V mains outlet, or to a 12 V automotive cigarette lighter with the help of the included DC connector cable.

Charging Procedure:

- Remove the dust cap from the recharging socket on the MUDLine® TGS.
- Plug the connector cable into the charger and screw into place.
- Plug the charger into a 230 V mains outlet, (or to an automotive cigarette lighter via the DC connector cable).
- The red LED on the charger blinks for about 10 seconds, testing the battery connection.
- The LED then remains continuously lighting, battery is recharging.
- The green LED lights up and the red LED goes out: The battery is fully recharged and the charger has switched to the trickle-charge mode.

If the battery is defective, the red LED continues to blink after the test phase.

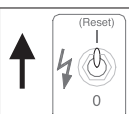
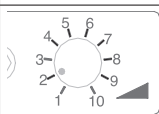
The yellow knob can be used to fully deplete the batteries, but this is not necessary with the NIMH batteries!

CAUTION: After charging, fit on the dust cap back to the charging socket on the MUDLine® TGS!

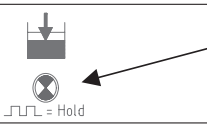
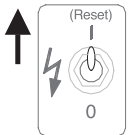
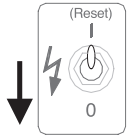
Charger Functions:

- Recharging is monitored by a micro-controller.
- A test is performed before recharging, it detects defective batteries.
- The charger is automatically switched to the trickle-charge operating mode as soon as the batteries are fully recharged, i.e. the charger can be left connected to the MUDLine® TGS for long periods of time.
- The yellow knob can be used to fully deplete the batteries, but this is not necessary with the NIMH batteries.

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	Before initial use:		Connect the charger and fully charge the batteries (approx. 2½ hours)
1	Switch the device on. Set the toggle switch to I.		The digital display is activated.
2	Digital display, immersion depth		002* = initial value before immersing the probe * Values between 000 and 005 are permissible.
3	Select a measuring range.		1 = much suspended sediment 2 = little suspended sediment
4	Switching point potentiometer:		1 = low 10 = high
5	Rapid Setup	Immerse the probe down to the cable gland. (clear area).	Set the potentiometer just below the point at which the LED lights up and the horn sounds (turn back and forth several times).
6	Measurement	Slowly immerse the measuring probe deeper.	The LED and the acoustic signal indicate that the sludge level has been detected. Immersion depth appears at the digital display.

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		Automatic Measured Value Memory for Immersion Depth	
1	After the sludge level has been detected, a continuous acoustic signal is generated and the LED lights up.	Hold the measuring probe at this depth for approx. 5 seconds.	The acoustic signal switches from continuous to intermittent , and the LED switches from continuous illumination to blinking mode.
2	The probe may now be removed.		The acoustic signal stops, but the LED continues to blink.
3	Read the stored immersion depth value.		
4	Delete the stored immersion depth value: Press the reset button.		The LED goes out. Digital display: 002 Ready for next measurement
5	Switch the device off. Set the toggle switch to 0.		The digital display is deactivated.