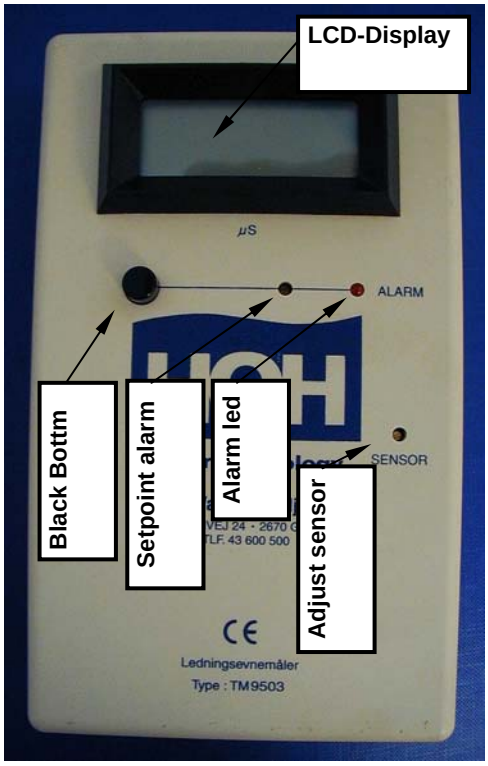
# 1. CONDUCTIVITY METER




The purpose of the conductivity meter is to measure and show the conductivity and give alarm signal in case of excess of set value or power failure.

## 1.1 Design

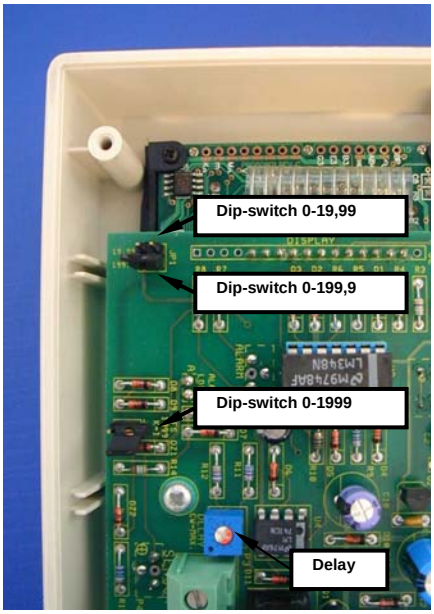
The conductivity is read on the grey 3½ digit LCD-display. Below the display is a black knob, a metering screw for alarm and an LED for alarm. Midway to the right there is a metering screw for sensor.

The conductivity meter is supplied with a potential-free alarm relay exit and adjustable alarm point.

## 1.2 Commissioning

The conductivity meter has to be connected to 230V AC/50 Hz and can be adjusted in three ranges of measurement; full scale 19.99 µS, 199.9 µS or 1999 µS. The range of measurement is adjusted by moving the dip-switch on the circuit board. You get access to the circuit board by loosening the four screws at the back.

As auxiliary equipment a converter with analogue 4-20 mA output signal could be incorporated.




## 1.3 Alarm

There is access to the change-over contacts of the alarm relay. This means that the alarm function can use either a normal open or normal closed contact function. The relay is drawn (active), when the conductivity meter is switched on and there is no alarm. If the alarm unit is used for remote alarm call, the alarm will occur if the conductivity meter is switched off or if an alarm occurs. When an alarm occurs, the red LED marked "ALARM" will be lighted and the alarm relay will be deactivated. The alarm is delayed and adjustable.

### 1.3.1 Setpoint alarm level

The alarm setpoint is changed by turning the screw for setpoint alarm and simultaneously pressing down the black button. The level can be adjusted up by turning right and down by turning left.

## 1.4 Sensor

The sensor is designed with a black PVC housing and measures Ø22/SP25x41mm. On top there are two cable clips where the electrical connection shall be connected. The bottom (the wet side) is furnished with 19mm x ½" outside pipe thread. The sensors are placed here too. The length of the sensors depends on the cell constant (K-value) of the sensor.

Item No. 452536007Cell constant by full scale 19.99 µS: K = 0.1 *l*=18 mm

Item No. 452536006Cell constant by full scale 199.9 µS: K = 1.0 *l*=0 mm

The cell constant of the sensor is clearly marked on the cable. The sensors are made of graphite

Following data should not be exceeded:

- **Max. temperature 60°Celsius**
- **PH-value 4-9**
- **Max. pressure 12 bar**

### 1.4.1 Calibration

It is possible to compensate for the sensor's cell constant, K ± 35%. The cell constant is calibrated by adjusting the screw marked "sensor" until the display shows the correct conductivity, cf. calibration instrument or water with specific conductivity. It is recommended to adjust at approx. 25-50% of full scale. When the sensor is not connected, the display shows the least important digit between 0-2.

## 1.5 Technical data

**Setpoint alarm**

Alarm occurs at the set value ± 0.5% of full scale.

**Alarm-hysteresis:**

Approx. + 0%, -0.25% of full scale. The alarm point can be set in the area 1% to 99% of full scale. The alarm can be delayed by turning the delay screw on the circuit board. See picture. Access to the circuit board is obtained by loosening the four screws in the back.

**Connections, etc.**

Supply voltage: 230 VAC/50H/± 10% to be connected between the terminals marked "230 VAC".

The sensor shall be connected to the terminals marked "SENSOR".

Measuring frequency/voltage:50 Hz/6.3 VAC

Remove alarm call is connected by means of potential-free switches, ALARM, NC, NO and C.

C and NC are short-circuited when the box is switched on and no alarm has occurred.

C and NO are short-circuited when the box is switched off, or there is an alarm.

The maximum terminal voltage/power of the relay (resistive load): 230 VAC/0.5 Amp.

***The relay port is not equipped with a fuse.***

## Mechanics:

Casing: Material: High-impact polystyrene (UL94HB)

Colour: Off-white, RAL 9002.

Measures: H = 158 x W = 95 x D = 57 mm

The casing shall be assembled with 2 screws, screw head max. Ø = 7 mm, min. Ø = 5 mm; screw thread max.: Ø = 4 mm.