

# Conductivity measuring devices



- Wide measuring range from 0,0  $\mu\text{S}/\text{cm}$  to 200,0  $\text{mS}/\text{cm}$  manually selectable or automatic range selection
- Double display for conductivity and temperature
- Display of resistance, salinity or TDS (dry residue of filtrate) (for GMH3430)
- Conform to the regulations of the drinking water ordinance (TrinkwV 2001) and DIN EN 27288
- Automatic temperature compensation, reference temp. ( $20^\circ\text{C}/25^\circ\text{C}$ ) selectable
- Setting of different temperature coefficients (for GMH3430)
- Extremely small measuring probe (dimensions as for pH-probe)
- Min./Max. value memory, Hold function,
- Serial interface, device can be connected to bus system (up to 5 devices can be connected to one PC interface)
- Battery and d.c. operation

## GMH 3410

## GMH 3430

### Specification:

#### Measuring range:

**Conductivity:** 0,0 ... 200,0  $\mu\text{S}/\text{cm}$   
 0 ... 2000  $\mu\text{S}/\text{cm}$   
 0,00 ... 20,00  $\text{mS}/\text{cm}$   
 0,0 ... 200,0  $\text{mS}/\text{cm}$   
*manual setting or auto range*

**Temperature** (GMH3410): 0,0 ...  $+85,0^\circ\text{C}$   
 (GMH3430):  $-5,0$  ...  $+100,0^\circ\text{C}$

**Resistance:** (GMH3430) 0,005 ... 100,0  $\text{k}\Omega$

**Salinity:** (GMH3430) 0,0 ... 70,0

**TDS:** (GMH3430) 0 ... 1999  $\text{mg}/\text{l}$

**Resolution:** 0,1  $\mu\text{S}/\text{cm}$ ; 1  $\mu\text{S}/\text{cm}$ ; 10  $\mu\text{S}/\text{cm}$  or 0,1  $\text{mS}/\text{cm}$   
 0,1  $^\circ\text{C}$   
 0,001  $\text{k}\Omega$ ; 0,01  $\text{k}\Omega$  or 0,1  $\text{k}\Omega$   
 0,1 (salinity)  
 1  $\text{mg}/\text{l}$

**Accuracy:** ( $\pm 1$  digit) (at nominal temperature =  $25^\circ\text{C}$ )

**Conductivity:**  $\pm 0,5\%$  of m.v.  $\pm 0,3\%$  FS or  $\pm 2\mu\text{S}/\text{cm}$

**Temperature:**  $\pm 0,2\%$  of m.v.  $\pm 0,3\text{K}$

**Cell constant:** adjustable from 0,8 ... 1,2  $\text{cm}^{-1}$

**Temp. compensation:** automatic or off (GMH3430).

#### Compensation coefficient:

- nLF: non-linear function of natural water according to EN27888 (DIN38404).

- Lin: linear compensation from 0,3 ... 3,0  $\%/K$ . (GMH3430 only)

- off: no compensation. (GMH3430 only)

**Display:** 2 four digit LCDs (12,4mm and 7mm high) for conductivity (resistance, salinity, TDS) and temperature, min./ max values, hold function, etc. as well as additional functional arrows.

**Measuring cell:** two-electrode-conductivity measuring cell; temperature sensor integrated in shaft. Electrode material: graphite. The graphite electrodes are the optimum solution for sewage and can be cleaned easily.

**Working temperature:** 0 to  $+50^\circ\text{C}$  (device)

meas. cell: 0 to  $+80^\circ\text{C}$  (permanent) 0 to  $+100^\circ\text{C}$  (short time)

**Relative humidity:** 0 to  $+95\%\text{RH}$  (non-condensing)

**Storage temperature:**  $-20$  to  $+70^\circ\text{C}$

**Min/Max-value memory:** max. and min. values as well as the corresponding temperature will be memorized.

**Hold function:** by pressing a button the current meas. value and the corresponding temperature will be 'frozen'.

**Pushbuttons:** 6 membrane keys for ON/OFF-switch, selection of meas. range, min- and max-value memory, hold-function, etc.

### Difference between GMH 3430 and GMH 3410:

Additional features of GMH 3430:

- Determination of resistance, salinity and TDS.
- The following temperature coefficients are freely selectable: natural waters, linear compensation or to be deactivated.
- Increased temperature measuring range

**Interface:** serial interface, direct connection to RS232 or USB interface of a PC via electrically isolated interface adapter GRS3100 or GRS3105 resp. USB3100 (p.r.t. accessories).

**Power supply:** 9V-battery, type IEC 6F22 (included) as well as additional d.c. connector (internal pin  $\varnothing$  1.9mm) for external 10.5-12V direct voltage supply. (suitable power supply: GNG10/3000)

**Power-Off-function:** Device will be automatically switched off if no key is pressed/no interface communication takes place for the time of the power-off delay. The power-off delay can be set to values between 1 and 120 min.; it can be completely deactivated.

**Low battery warning:**  $\Delta$  and 'bAt'

**Power consumption:** approx. 5 mA (meas. power not incl.)

**Housing dimensions (device):** 142 x 71 x 26 mm (H x W x D)  
 Impact-resistant ABS plastic housing, membrane keyboard, transparent panel. Front side IP65, integrated pop-up clip for table top or suspended use.

**Electrode dim.:** approx. 120mm long,  $\varnothing$  approx. 12mm, 1m of fixed connection cable between electrode and device.

**Weight:** approx. 255 g (incl. batteries and measuring cell)

**Automatic temperature compensation:** The conductivity is highly dependant on the temperature, i.e. it is only valid for one temperature. For better comparison the device offers the possibility to compensate the conductivity to a reference temperature (adjustable  $20^\circ\text{C}$  or  $25^\circ\text{C}$ ).

**Temperature measurement:** The temperature of the agent can be displayed by means of the temperature probe integrated in the electrode.

**AutoRange:** Automatic selection of to the optimum meas. range for conductivity measurements. AutoRange mode can be deactivated by pressing a button.

**Salinity determination** (GMH3430 only): Salinity is understood to be the sum of concentrations of all salts dissolved in water. Reading in  $\text{g}/\text{kg}$ .

**TDS-determination (dry residue of filtrate)** (GMH3430 only): The dry residue of filtrate is understood to be the concentration of substances dissolved in a liquid. Reading in  $\text{mg}/\text{l}$ .

### Accessories:

**GKL 100** 100ml conductivity control solution (100ml bottles with 1413  $\mu\text{S}/\text{cm}$ . (pursuant to DIN EN 27888))

**miscellaneous accessories (case, power supply, etc.) suitable for all GMH3xxx devices p.r.t. p. 35 and 36**