

**Product Information**

# Conductivity Meter GMH 3431 / GMH 3451



- Made in Germany
- Display of conductivity, resistivity, salinity or TDS (total dissolved solids)
- Conforms to Drinking Water Ordinance requirements (TrinkwV 2001) and DIN EN 27888

Professional handheld meters with permanently connected measuring cells for conductive conductivity measurement.

With the different options of the measuring cells all ranges can be covered.

## Variants

- GMH 3431 with 2-pole measuring cell for drinking water and surface water rec. up to 100 mS/cm, max. 200 mS/cm
- GMH 3451 with Ø 12mm 4-pole measuring cell. also suitable for permanent measurements in high conductivities (e.g. seawater).
- GMH 3431-425 / 3451-425 Ø16 mm 4-pole measuring cell for best accuracy and long-term stability without compromise, also in wastewater and chemistry.
- GMH 3431-LTG / GMH3451-LTG 2-pole glass/platinum for application in alcohol, oil, fuels, paints and lacquers up to 1000 µS/cm

## Special Functions

Salinity determination PSU (not -LTG): Salinity is the sum of the concentration of all dissolved salts in sea water. The variable is specified in g / kg.

TDS determination (total dissolved solids): Total dissolved solids is the designation for the mass concentration of substances dissolved in a liquid. The variable is specified in mg / l.

## Additional at all GMH 3451

Analogue output: 0..1 V, freely scalable, connection via 3-pole jack socket Ø 3.5 mm, 13-bit resolution, 0.05 % accuracy at nominal temperature

Data logger: Cyclical: 10,000 data records, individual value: 1,000 data records (with measuring point entry, 40 adjustable measuring point texts or measuring point numbers).

	Order code	incl. Accessories	Article	Measuring cell	Measuring range		Main applications
					recommended	maximum	
Instrument incl. measuring cell	GMH3431		601917	2-pole Graphite Ø 12 mm	0 ... 100 mS/cm	0 ... 200 mS/cm	Drinking water, fresh water
	GMH3431-3001-GKL	Case GKK3001, GKL 100	483322				
	GMH3431-425		486491	4-pole Graphite Premium Ø 16 mm	0 ... 400 mS/cm	0 ... 400 mS/cm	Drinking water, fresh water, seawater, waste water, highest conductivities
	GMH3431-425-3001-GKL	Case GKK3001, GKL 100	486490				
	GMH3431-LTG		608399	Platinum/Glass Ø 12 mm	0 ... 1000 µS / cm	0 ... 1000 µS / cm	Oils, fuels, varnishes, Paints
Instrument incl. measuring cell and Data logger	GMH3451		601919	4-pole Graphite Compact Ø 12 mm	0 ... 200 mS/cm	0 ... 400 mS/cm	Drinking water, fresh water, seawater
	GMH3451-3001-GKL	Case GKK3001, GKL 100	483657				
	GMH3451-425		485570	4-pole Graphite Premium Ø 16 mm	0 ... 400 mS/cm	0 ... 400 mS/cm	Drinking water, fresh water, seawater, waste water, highest conductivities
	GMH3451-425-3001-GKL	Case GKK3001, GKL 100	486492				
		GMH3451-LTG		610028	Platinum/Glass Ø 12 mm	0 ... 1000 µS / cm	0 ... 1000 µS / cm

## Technical data

### Measuring Ranges

<b>Conductivity</b>	0.0..200.0 $\mu\text{S/cm}$ 0..2000 $\mu\text{S/cm}$ 0.00..20.00 $\text{mS/cm}$ 0.0..200.0 $\text{mS/cm}$ 0..400 $\text{mS/cm}$ ( <b>only 4-pole variants</b> )
<b>-LTG:</b>	0,0..200,0 $\mu\text{S/cm}$ 0..1000 $\mu\text{S/cm}$ manually set able or Auto-Range
<b>Resistivity</b>	0.005..100.0 $\text{k}\Omega \cdot \text{cm}$
<b>Salinity</b>	0.0..70.0 $\text{g/kg Wasser}$ (not -LTG)
<b>TDS</b>	0..1999 $\text{mg/l}$

### Precision ( $\pm 1$ Digit) (at nominal temperature = 25 °C)

<b>Conductivity</b>	$\pm 0.5\%$ of value $\pm 0.3\%$ FS or $\pm 2 \mu\text{S/cm}$
<b>Temperature</b>	$\pm 0.2\%$ of value $\pm 0.3 \text{ K}$
<b>Cell correction</b>	Manually adjustable 0.800..1.200 $\text{cm}^{-1}$ or automatically with selectable reference solutions
<b>Temperature-compensation</b>	Automatically or deactivatable, via temperature sensor integrated in the sensor
<b>Compensation type</b>	LF: Non-linear function of natural water according to DIN EN27888 (ISO 7888) (Adjustable reference temperature: 20 °C or 25 °C) Lin: Linear compensation of 0.3..3.0 % / K (Adjustable reference temperature: 20 °C or 25 °C) off: No compensation.

<b>Display</b>	2 four-digit LCDs (12.4 mm and 7 mm high) for conductivity (resistance, salinity, TDS) and temperature or for min and max value, hold function, etc., as well as additional indicator arrows.
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<b>Measuring cells</b>	Conductivity measuring cell with temperature sensor integrated in the shaft. Electrode material/shaft material: GMH 3431: Graphite /PPE, PS GMH 3451: Graphite /epoxy -Option- 425: Graphite /PVCU, epoxy -Option -LTG: Platinum/Glass
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<b>Cell warranty</b>	12 Months
<b>Operating environment</b>	Device: -25..+50 °C, 0..95 % relative humidity Measuring cell: -5..+80 °C (continuous) up to +100 °C (temporary)

<b>Interface</b>	Serial with direct connection to RS232 or USB interface of the PC via galvanically isolated interface converter GRS 3100 or USB 3100 N (accessory)
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<b>Operating elements</b>	6 touch keys for On/Off switches, measuring range selection, min/max value memory, hold function, etc..
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<b>Power supply</b>	9 V battery and additional mains adapter socket (1.9 mm inside pin diameter) for external 10.5..12 V DC voltage supply (suitable mains adapter: GNG10/3000)
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<b>Battery life</b>	ca. 150 h
<b>Housing</b>	Made of impact-resistant ABS, foil keypad, clear viewing pane, integrated stand/suspension clip

<b>Dimensions</b>	Device: 142 x 71 x 26 mm (H x W x D) Measuring cell dimensions (shaft): approx. 120 mm, measuring cell permanently attached to the device over approx. 1 m cable.
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<b>Weight</b>	approx. 230 g (incl. battery) approx. 250 g (option -425, incl. battery)
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## Measuring Cells

Fixed cable, not detachable



LF 202 measuring cell Graphite 2-pole



LF 400 measuring cell Graphite 4-pole



LF 210 measuring cell Glass/Platinum 2-pole



LF 425 measuring cell Graphite 4-pole Ø 16mm

## Scope of supply

Device incl. measuring cell, battery, test protocol, Operating manual

## Zubehör

GKL 100 Art.-Nr. 601396  
100 ml conductivity reference solution 1413  $\mu\text{S/cm}$ , acc. EN 27888), e.g. for drinking water application

GKL 102 Art.-Nr. 601400  
100 ml conductivity reference solution 50  $\text{mS/cm}$ , e.g. for sea water application



GKK 3001 Art.-Nr. 611605  
Instrument case for GMH 3000 series water analysis with recesses for one instrument and accessories 395 x 295 x 106mm

GNG 10 / 3000 Art.-Nr. 600273  
Mains adapter for GMH 3XXX-Series

GRS 3100 Art.-Nr. 601097  
Interface converter GMH3xxx  $\Leftrightarrow$ PC, RS232

USB 3100 N Art.-Nr. 601092  
Interface converter GMH3xxx  $\Leftrightarrow$ PC, USB#

• Further accessories on request or in our catalog