WATER-PROOF HANDHELD DEVICE FOR CONDUCTIVITY MEASUREMENT

ISO
AUTOHOLD
AUTOOFF
MIN MAX

WATER-PROOF - GERÄT UND STECKVERBINDUNGEN

HIGHLIGHTS:

- Measurement of conductivity, resistance, salinity, TDS
- Large double display with background illumination
- Automatic cell correction with reference solutions
- Incl. calibration protocol

ADDITIONAL FUNCTIONS GMH 5450:

ALARM LOGG

GMH 5430

Art. no. 600035

Waterproof conductivity handheld device without electrode

GMH 5450

Art. no. 600037

Waterproof conductivity handheld device with logger, without electrode

Application:

Mobile use for:
industry and craft
- measurements of waters and aquaristics, fish farming
- drinking water monitoring, process control, soil measurements
- food production and control
- quality management

Additional applications at laboratory:
- medicine, pharmacy, chemistry

Specifications:

Measuring range	
Number of measuring ranges: 5	
Smallest range:	0.000 ... 5.000 µS/cm * or 0.0 ... 500.0 µS/cm **
Biggest range:	0 ... 5000 µS/cm * or 0 ... 1000 mS/cm **
Resistivity:	0.005 ... 500.0 kOhm * cm (depends on cell constant)
TDS:	0 ... 5000 mg/l (depends on cell constant)
Salinity:	0.0 ... 70.0 (g salt / kg water)
Temperature:	-5.0 ... +100.0 °C, Pt1000 or NTC 10 k
Supported cell constants:	4.000 ... 15.000 / cm - 0.4000 ... 1.5000 / cm - 0.04000 ... 0.15000 / cm - 0.004000 ... 0.015000 / cm
Accuracy (at nominal temperature = 25 °C)	
Conductivity:	±0.5 % of m.v. ±0.1 % FS (depends on electrode)
Temperature:	±0.2 K
Connection	
Conductivity, temperature:	1 x 7-pole bayonet connector for connection of different measuring cells, supported temperature sensors: Pt1000 or NTC (10 k)
Interface / ext. supply:	4-pole bayonet connector for serial interface and supply (with accessory: USB adapter USB 5100)
Analog output: (GMH 5450 only)	0 ... 1 V, freely adjustable, connection with 4-pole bayonet connector, resolution 13 bit, accuracy 0.05 % at nominal temperature
Data logger: (GMH 5450 only)	cyclic: 10.000 data sets, adjustable cycle time: 1 s ... 60 min manual: 1000 data sets (with measuring point input, 40 adjustable measuring point texts or measuring point numbers)
Display:	4 ½ digit 7-segment, illuminated (white)
Operating conditions:	Device: -25 ... +50 °C, 0 ... 95 % RH (non-condensing)
Storage temperature:	-25 ... +70 °C
Background illumination:	duration adjustable (off, 5 s ... 2 min)
Power supply:	2 x AAA battery (included), power consumption 6.25 mA
Battery life:	approx. 160 h (without background illumination)
Protection rating:	IP65 / IP67
Housing:	Impact-resistant ABS plastic housing, integrated pop-up clip
Dimensions:	160 x 86 x 37 mm (H x W x D) incl. silicone protection cover
Weight:	approx. 250 g incl. battery and protection cover
Scope of supply:	Device, K 50 BL, battery, calibration protocol, manual

depends on cell constant of used electrode
** cell constant 0.01 / cm ** cell constant 0.1 ... 1.2 / cm (standard)*

Additional functions:

Cell correction
Manually or automatically with reference solution

Automatic temperature compensation
As conductivity depends strongly on temperature, each conductivity value is only valid at the corresponding temperature. Therefore the device supports temperature compensation, i.e. referring the conductivity to a reference temperature (selectable: 20 °C or 25 °C).

Supported types of compensation:
nLF: Non-linear function of natural waters acc. to DIN EN 27888 (ISO 7888) (Reference temperature 25 °C)
Lin: adjustable linear compensation
off: no compensation

Salinity measurement
Salinity means the sum of the concentrations of all dissolved salts in water. The unit is g / kg. (equals PSU = Practical Salinity Unit).

TDS measurement (total dissolved solids)
TDS means the mass concentration of dissolved media in a liquid. The unit is mg / l.

GLP (Good Laboratory Practice)
adjustable calibration intervals
GMH 5450: Calibration memory: latest 16 calibrations

Accessories and spare parts:

GKL 10... conductivity control solution see next page

EBS 20M
Art. no. 601158
Measuring data acquisition software for EASYBus & GMH (p.r.t. page 109)

GSOFT 3050
Art. no. 601336
Windows software for GMH 3000 and GMH 5000 with logger, p.r.t. page 110

USB 5100
Art. no. 601095
Electrically isolated interface converter, supplied via USB

GNG 5 / 5000
Art. no. 602287
Plug in power supply for devices of the series GMH 5XXX, p.r.t. page 115

GKK 5001
Art. no. 611606
with cut-outs for 1 device of the GMH 5xxx-/7500 series and accessories for water analysis (395 x 295 x 106 mm), p.r.t. page 112

CONDUCTIVITY ELECTRODES

PURE AND ULTRA PURE WATER

LF 200 RW

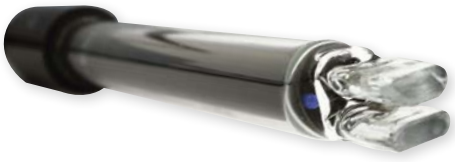
Art. no. 602841

Conductivity cell for GMH 5400 / G 7500-Series, stainless steel

Application:
Pure and ultra pure water

Specifications:	
Measuring range:	0 ... 200 µS/cm
Temperature range:	-5 ... +100 °C
Cell constant *:	approx. 0.1
Temperature measurement:	NTC 10 k
Shaft:	Stainless steel, Ø 12 mm x 75 mm
Electrode:	2-pole stainless steel
Cable length:	1 m
Scope of supply:	Measuring cell, manual

FOR ALCOHOL, FUEL, DIESEL



LF 210

Art. no. 602969

Conductivity cell for GMH 5400 / G 7500-Series, glass / platinum

Application:
Alcohol, fuel, diesel

Specifications:	
Measuring range:	0 ... 1000 µS/cm
Temperature range:	-5 ... +100 °C
Cell constant *:	approx. 1
Temperature measurement:	NTC 10 k
Shaft:	Glass, Ø 12 mm x 120 mm
Electrode:	2-pole glass / platinum
Cable length:	1 m
Scope of supply:	Measuring cell, manual

FOR UNIVERSAL APPLICATION

LF 400

Art. no. 602968

Conductivity cell for GMH 5400 / G 7500-Series , 4-pole graphite

Application:
for Universal application, Economy Class

Specifications:	
Measuring range:	0 ... 200 mS/cm
Temperature range:	0 ... 100 °C
Cell constant *:	approx. 0.55
Temperature measurement:	NTC 10 k
Shaft:	Epoxide, Ø 12 mm x 120 mm
Electrode:	4-pole graphite
Cable length:	2 m
Scope of supply:	Measuring cell, manual

** Note:*
The particular cell constant (appears in calibration protocol and electrode's label) has to be entered to device. Then it is ready-to-use.

FOR TIGHT TOLERANCES, ROBUST AND PRECISE

LF 425

Art. no. 602840

Conductivity cell for GMH 5400 / G 7500-Series, 4-pole graphite

Application:
Tight tolerances, robust and precise, High End Class

Specifications:	
Measuring range:	0 ... 1000 mS/cm
Temperature range:	-10 ... +80 °C (90 °C - max. 5 min.)
Cell constant *:	approx. 0.42
Temperature measurement:	Pt 1000
Shaft:	PVC-C, Ø 16 mm x 145 mm
Electrode:	4-pole graphite
Cable length:	1 m
Scope of supply:	Measuring cell, manual

HD-22-3 with sensor

Accessories and spare parts:

HD-22-3
Art. no. 700040
freely positionable laboratory sensor holding arm for sensors Ø12mm

GKL 100
Art. no. 601396
Conductivity control solution (100 ml bottle with 1413 µS/cm according to DIN EN 27888)

GKL 101
Art. no. 601398
Conductivity control solution (250 ml bottle with 84 µS/cm)

GKL 102
Art. no. 601400
Conductivity control solution (100 ml bottle with 50 mS/cm)

GWZ-01
Art. no. 603499
Flow-through chamber for sensors with Ø 12 mm, tube connection Ø 6 mm

CONDUCTIVITY MEASUREMENT SET

HANDHELD INSTRUMENTS INCL. ELECTRODE

GMH 5430-SET

Art. no. 611611

Waterproof conductivity handheld device, measurement set

GMH 5450-SET

Art. no. 611246

Waterproof conductivity handheld device with logger, measurement set

General:

With our ready-to-use conductivity measurement set, you have everything you need for your work in a practical case and with the set price, you save 10 % in comparison with the prices for the individual components.

Application:

No matter which sector you work in, our comprehensive SET-GMH 5450 never lets you down and stows away in the tidy practical case

Specifications:

Measuring range device	
Number of measuring ranges:	5
Smallest range:	0.000 ... 5.000 µS/cm or 0.0 ... 500.0 µS/cm
Biggest range:	0 ... 5000 µS/cm or 0 ... 1000 mS/cm
Resistivity:	0.005 ... 500.0 kOhm cm (depends on cell constant)
TDS:	0 ... 5000 mg/l (depends on cell constant)
Salinity:	0.0 ... 70.0 (g salt / kg water)
Temperature:	-5.0 ... +100.0 °C, Pt1000 or NTC 10 k
Electrode LF 425	
Measuring range:	0 ... 1000 mS/cm
Temperature range:	-10 ... +80 °C (90 °C - max. 5 min.)
Cell constant:	approx. 0.42
Temperature measurement:	Pt 1000
Shaft:	PVC-C, Ø 16 mm x 145 mm
Electrode:	4-pole graphite
Application:	Tight tolerances, robust and precise for highest demands, High End Class
Cable length:	1 m
Dimensions:	450 x 360 x 123 mm (case)
Weight:	approx. 1800 g
Scope of supply:	Device incl. silicone protection cover, measuring cell LF 425, case GKK 5001, battery, calibration protocol, manuals **SET-GMH 5450 only:** Software, interface converter

Accessories and spare parts:

GMH 5430
Art. no. 600035
Waterproof conductivity handheld device without electrode

GMH 5450
Art. no. 600037
Waterproof conductivity handheld device with logger, without electrode

LF 425
Art. no. 602840
Conductivity electrode 4-pole graphite

GSOFT 3050
Art. no. 601336
Windows software for GMH 3000 and GMH 5000 with logger, (p.r.t. page 110)

USB 5100
Art. no. 601095
Electrically isolated interface converter, supplied via USB

GKK 3700
Art. no. 601064
Case with punched lining for universal application (450 x 360 x 123 mm)

GKK 5001
Art. no. 611606
with cut-outs for 1 device of the GMH 5xxx-/7500 series and accessories for water analysis (395 x 295 x 106 mm), p.r.t. page 112

GMH 5430-400

Art. no. 602752

Conductivity meter including measuring cell, precisely adjusted

GMH 5450-400

Art. no. 602754

Conductivity meter including measuring cell, precisely adjusted, with data logger

GMH 5430-425

Art. no. 602753

Conductivity meter including measuring cell, precisely adjusted

GMH 5450-425

Art. no. 602755

Conductivity meter including measuring cell, precisely adjusted, with data logger

General:

All sets get preadjusted and are ready-for-use. They do not include a case.

Accessories and spare parts:

GKK 5001
Art. no. 611606
with cut-outs for 1 device of the GMH 5xxx-/7500 series and accessories for water analysis (395 x 295 x 106 mm), p.r.t. page 112

CONDUCTIVITY MEASURING DEVICE

2-pole measuring cell GMH 3431

4-pole measuring cell GMH 3451

HIGHLIGHTS:

- Display of resistivity, salinity or TDS (total dissolved solids)
- Conform to the regulations of the drinking water ordinance (TrinkwV 2001) and DIN EN 27888

ADDITIONAL FUNCTIONS GMH 3451:

GMH 3431

Art. no. 601917

Conductivity handheld device with 2 pole measuring cell

GMH 3451

Art. no. 601919

Conductivity handheld device with measuring cell and data logger

General:

Intelligent set with 2-pole measuring cell for tap water, etc., 4-pole worry-free package also suitable for continuous measurement in high conductivity ranges (e.g. salt water)

Specifications:

Measuring range	
Conductivity:	0.0 ... 200.0 µS / cm 0 ... 2000 µS / cm 0.00 ... 20.00 mS / cm 0.0 ... 200.0 mS / cm 0 ... 400 mS / cm **(GMH 3451 only)** manually selectable or AutoRange
Temperature:	-5.0 ... +100.0 °C
Resistivity:	0.005 ... 100.0 kOhm * cm
Salinity:	0.0 ... 70.0 g / kg water
TDS:	0 ... 1999 mg/l
Accuracy (±1 digit) (at nominal temperature = 25 °C)	
Conductivity:	±0.5 % of m.v. ±0.3 % FS or ±2 µS/cm
Temperature:	±0.2 % of m.v. ±0.3 K
Cell correction:	adjustable 0.800 ... 1.200 cm^{-1} manually or automatically with selectable reference solution
Temperature compensation:	automatically or off, by temperature sensor integrated to electrode
Type of compensation:	nLF: Non-linear function of natural waters acc. to DIN EN 27888 (ISO 7888) (Reference temperature selectable: 20 °C or 25 °C) Lin: linear compensation from 0.3 ... 3.0 % / K (Reference temperature selectable: 20 °C or 25 °C) off: no compensation.
Display:	two 4-digit LCD displays (12.4 and 7 mm high) for current conductivity (resistivity, salinity, TDS) and temperature, or for min-, max- value, hold function, etc. and additional indicator arrows
Measuring cell:	Conductivity measuing cell with integrated temperature sensor in shaft. Electrode material: graphite. Shaft material: PPE, PS (GMH 3431), Epoxide (GMH 3451). The graphite electrodes are the optimum solution for sewage and can be cleaned easily. GMH 3431: 2-pole; GMH 3451: 4-pole
Warranty for sensor element:	12 months
Working conditions:	device: -25 ... +50 °C, 0 ... 95 % RH; measuring cell: -5 ... +80 °C (permanent), up to +100 °C (short-term)
Relative humidity:	0 ... +95 % RH (non-condensing)
Interface:	serial interface; connectable to RS232 or USB interface of PCs via electrically isolated interface converter GRS 3100, GRS 3105 or USB 3100 N (accessories).
Pushbuttons:	6 membrane keys for ON/OFF-switch, selection of meas. range, min- and max-value memory, hold-function, etc.
Power supply:	9 V-battery as well as additional PSU connector (internal pin Ø 1.9 mm) for external 10.5 ... 12 V DC supply. (suitable power supply: GNG10/3000)
Battery life:	approx. 150 h
Housing:	Impact-resistant ABS plastic housing, membrane keyboard, transparent panel, integrated pop-up clip
Dimensions:	Device: 142 x 71 x 26 mm (H x W x D) Dimensions (electrode shaft): approx. 120 mm long, Ø approx. 12 mm, 1 m of fixed connection cable between electrode and device
Weight:	approx. 230 g (incl. battery and measuring cell)
Scope of supply:	Device incl. measuring cell, battery, calibration protocol, manual

Additional functions:

Salinity determination:
Salinity is understood to be the sum of concentrations of all salts dissolved in water. Displayed in g / kg.

TDS-determination (total dissolved solids):
The dry residue of filtrate is understood to be the concentration of substances dissolved in a liquid. Displayed in mg / l.

Additional functions GMH 3451:

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

4-pole measuring cell:
Better long-term stability at high conductivity values (>20 mS / cm) and for harsh environments, stable measuring values even in polluted media (e.g. sewage, salt water)

Data logger:
cyclic 10.000 data sets, manual: 1.000 data sets (with measuring point input, 40 adjustable measuring point texts or measuring point numbers)

Variants:

GMH 3431-LTG
Art. no. 608399
GMH 3451-LTG
Art. no. 610028

for organic matter (alcohol, petrol, diesel) up to 1000 µS / cm with glass shaft, platinum electrodes, 1.35 m PUR-cable permanently connected to device

Accessories and spare parts:

GKL 100
Art. no. 601396
Conductivity control solution (100 ml bottle with 1413 µS / cm, acc. to DIN EN 27888)

PRECISE CONDUCTIVITY MEASURING DEVICE

AUTOOFF
HOLD
ISO
MIN MAX

DURABLE AND AFFORDABLE

G 1410 G 1420

HIGHLIGHTS:

- Modern and functional housing
- Outstanding price/performance ratio
- 3-line display / overhead display at the push of a button
- Backlighting
- Waterproof (IP67)
- Durable, long battery life
- High-quality measuring cell for wider range of application included
- rapid measurement detection

SUCCESSOR TO THE **GLF 100...** PRODUCTS

THEY ARE STILL AVAILABLE ON REQUEST - CONTACT US IMMEDIATELY!

G 1410-1002

Art. no. 474039

Universal conductivity measuring device
Device, measuring cell LF 202, 2 pole graphite, fix mounted, in suitcase GKK1002

G 1420-1002

Art. no. 474040

high resolution ultrapure water conductivity measuring device; Device, measuring cell LF 200 RW, 2 pole stainless steel, fix mounted, in suitcase GKK1002

G 1410

Art. no. 610006

Universal conductivity measuring device of up to 100 mS / cm, incl. graphite measuring cell

G 1420

Art. no. 610007

high resolution ultrapure water conductivity measuring device up to 100 µS / cm, incl. stainless steel measuring cell

General:

The primary focus in the development of the new GMH 1000 series was place on the essential functions of the measurement technology. Pure measurement with a focus on precision, speed and reliability packaged in a compact housing distinguish an impressive price/performance ratio, Made in Germany.
The new handheld measuring devices also impress with their ergonomic design, dust and water-protected design in accordance with IP 65/67 and the illuminated display. The compact conductivity measuring device as a G 1410 is a precise and durable wide-range measuring cell for universal use from DI water to salt water. As a G 1420, it has a specialised measuring cell for high-resolution clean/clea-nest water applications.

Application:

Freshwater and salt water aquariums, reverse osmosis and similar filters, cleaning processes, cooling/lubricating processes, plant cultivation and agriculture; laboratories, quality assurance, service

Operation:	4 long-lasting, easy-to-operate buttons
Additional functions:	automatic measuring range shifting, automatic temperature compensation
Operating conditions:	**Device:** -20 ... +50 °C, 0 ... 95 % RH (non condensing) **measuring cell:** -5 ... +80 °C (shorttime 100 °C)
Power supply:	2 x AA battery, >1000 h operating time
Protection rating:	IP65 / IP67
Housing:	Break-proof ABS housing
Dimensions:	108 x 54 x 28 mm (H x W x D) without sensor connection
Weight:	approx. 200 g (G 1410) approx. 230 g (G 1420)
Scope of supply:	Device with measuring cell, calibration log, 2 x battery, manual

Specifications:	G 1410	G 1420
	Wide-range measuring device, incl. graphite measuring cell	Cleanest water version, incl. stainless steel measuring cell
Measurement:	Conductivity, salinity, TDS	conductivity, specific resistance:
Measuring range:	With automatic measuring range shifting	
Conductivity:	0 ... 2000 µS/cm 0.00 ... 20.00 mS/cm 0.0 ... 100.0 mS/cm	0.000 ... 2.000 µS/cm 0.00 ... 20.00 µS/cm 0.0 ... 100.0 µS/cm
Specific resistance:	--	0.0100 ... 0.2000 MOhm*cm 0.010 ... 2.000 MOhm*cm 0.01 ... 20.00 MOhm*cm
TDS:	0 ... 2000 mg/l	--
Salinity (PSU):	0.0 ... 50.0 g/kg	--
Temperature:	-5.0 ... +105.0 °C	-5.0 ... +105.0 °C
Accuracy		
Conductivity:	±0.5 % of m.v. ±0.5 % FS	Typ. ±1 % of m.v. ±0.5 % FS
Temperature:	±0.3 °C	±0.3 °C
Temperature compensation:	off: deactivated nLF: non-linear, according to EN 27888	off: deactivated nLF: non-linear, according to EN 27888 LIN: linear with variable coefficients NaCl: For weak NaCl solutions in accordance with EN 60746-3
Reference temperatures:	20 and 25 °C	20 and 25 °C
Sensors / measuring inputs:	permanently connected 2-pole measuring cell with integrated temperature sensor	
Measuring cell:	2-pole measuring cell, Ø 12 mm (graphite), cable 1.2 m (others available for surcharge)	2-pole measuring cell, Ø 12 mm (stainless steel 1.4404, 1.4435), cable 1.2 m (others available for surcharge)
Display:	3-line unit with battery status indicator, background light, protected by an unbreakable pane, overhead display at the push of a button	

Accessories and spare parts:

GKL 100
Art. no. 601396
Conductivity control solution
(100 ml bottle with 1413 µS / cm, in accordance with DIN EN 27888)

GKL 101
Art. no. 601398
Conductivity control solution
(250 ml bottle with 84 µS / cm)

GKL 102
Art. no. 601400
Conductivity control solution
(100 ml bottle with 50 mS / cm)

HD-22-3
Art. no. 700040
freely positionable laboratory sensor holding arm for sensors Ø12mm

GWZ-01
Art. no. 603499
Flow-through chamber for sensors with Ø 12 mm, tube connection Ø 6 mm

ST-G1000
Art. no. 611373
Protection bag, leather

GB AA
Art.-Nr: 610049
Spare battery Mignon (AA) 1,5 V (2 batteries required)

GKK 1002
Art. no. 411907
Case G1000 series water analysis small