**GHM - GREISINGER**

## Product information

# Conductivity
# - hand-held instrument
#   SL-C-GL
# - full set SL-C Set

● **Water-proof and shock resistant instrument**
● **Water-proof conductivity electrode with temperature sensor**
● **Control solution 1413 µS/cm**
● **Software for operation, configuration, data read-out, etc.**
● **USB adapter**
● **High-class case**
● **High resolution (5000 digit per measuring range)**
● **Calibration certificate**
● **Gratis calibration after 1 year with automatic recall from calibration laboratory**

## Characteristic

The SL-C measures conductivity over a wide range (subdivided in 5 measuring ranges), or alternatively salinity, TDS ( TDS (total dissolved solids) or conductivity in liquids .

The devices feature min-/max- value memory, HOLD, auto range, logger function with cyclic recording (10 000 data sets) or single values (1 000 data sets), analog output and a large illuminated 4 $^{1}/_{2}$ – digit display.

The device can be optimally adjusted to the specific application via a menu-based configuration. A fully temperature compensated automatic calibration for different standard solutions is supported, alternatively a adjustment by trimming via keys is possible, too. The calibration data is stored in the GLP memory.

The housing, connectors and probes are water-proof.

## Specifications

### Instrument SL-C

| | |
|---|---|
| **Sensor connection** | : 7-pole bayonet socket |
| Output | : 4-pole socket for serial interface and supply, analog output 0..1 V |
| Suitable measuring cells: | 4-pole or 2-pole measuring cells with Pt1000 or NTC 10k temperature sensor (without temperature sensor: manual temperature input) |

### Measuring ranges

| | | |
|---|---|---|
| Number | 5 | |
| Cell constant | 0.4.. 1.5 | 0.04..0.15 |
| Conductivity 1 *) | 0.0..500.0 µS/cm | 0.00..50.00 µS/cm |
| " 2 *) | 0..5000 µS/cm | 0.0..500.0 µS/cm |
| " 3 *) | 0.00..50.00 mS/cm | 0..5000 µS/cm |
| " 4 *) | 0.0..500.0 mS/cm | 0.00..50.00 mS/cm |
| " 5 *) | 0..1000 mS/cm | --- |
| Specific resistance | 0.0010..500.0 kOhm*cm | 0.010..5000 kOhm*cm |
| TDS | 0.0..5000 mg/l | 0.00..5000 mg/l |
| Salinity | 0.0..70.0 g/kg (PSU) | |
| Temperature | -5.0.. +100.0 °C, Pt1000 or NTC 10k 23.0..212.0 °F | |

| | |
|---|---|
| Supported cell constants | : 4.000..15.000 / cm; 0.4000..1.5000 / cm; 0.04000..0.15000 / cm; 0.004000..0.015000 / cm Cell constant manually or automatically via selectable reference solution |

### Accuracy

| | |
|---|---|
| Conductivity | : ±0.5 % of m.v. ±0.1 % FS (system accuracy depends on electrode) |
| Temperature | : ±0.2 K |
| **Interface / ext. supply** | : 4-pole bayonet connection for serial interface and supply (USB adapter SL-USB) |
| Analog output | : 0..1 V, adjustable |
| **Display** | : two 4 $^{1}/_{2}$ - digit 7-segment displays (15 mm and 12 mm), illuminated (white) |
| **Protection class** | : IP65 / IP67 (housing and connection) |
| **Housing** | : material made of shock-resistant ABS w/ support, incl. silicone protection cover |
| **Supply** | : 2 x AAA battery (incl. in scope of supply) current consumption <6.5 mA (without illumination) |
| **Battery operation** | : approx. 150 hours |
| **Dimensions** | : 160 x 86 x 37 mm |
| **Weight** | : 250 g incl. battery |

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# Product information

**SL-C**

## Functions

- **Min- / max- value memory**
  Highest and lowest value are saved
- **Hold**
  Freezing at keystroke
- **Automatic temperature compensation (diverse)**
- **Automatic measuring range switch-over (Auto Range)**
- **Automatic-Off function**
  Device gets automatically turned off after selected time.
  (0..120 min., or deactivated)
- **Status indicator for battery**
  Bargraph display, battery change indicator "BAT" display
- **Background illumination**
  Duration selectable (on / off or 5 s ... 2 min)
- **GLP**
  selectable calibration intervals (1 till 730 days, CAL-warning when due), storage: latest 16 calibrations
- **Analog output**
  0..1 V freely scalable, connection: 4-pole bayonet socket
  Resolution: 12 bit
- **Data logger**
  Measuring value memory:
  Cyclic: 10 000 data sets, multiple recordings
  Single: 1 000 data sets (with measuring with measuring point input, 40 selectable measuring point texts or numbers)
- **Min- / max- alarm**
  Continuous monitoring of alarm boundaries,
  3 alarm conditions:
  - off: alarm function inactive
  - on: alarm notification via display, integrated buzzer and interface
  - no Sound: alarm notification via display and interface

## Measuring cells:

### SLF 425



4-pole standard measuring cell

| | | |
|---|---|---|
| Features | : | wide measuring range, high linearity over all measuring ranges, laboratory and universal usage, Ø 16 mm |
| In contact with fluid | : | graphite and plastic |
| Cell constant | : | 0.42 1/cm |
| Measuring range | : | 0-1000 mS/cm |
| Temperature sensor | : | Pt1000 |

### SLF 200 RW



2-pole pure / ultra pure water measuring cells

| | | |
|---|---|---|
| Features | : | electrode for increased resolution in pure and ultra pure water measuring ranges Ø 12 mm |
| In contact with fluid | : | stainless steel and Peek |
| Cell constant | : | 0.1 1/cm |
| Measuring range | : | 0..100.0 µS/cm |
| Temperature sensor | : | NTC 10k |

### SLF 210



2-pole glass/platinum measuring cell

| | | |
|---|---|---|
| Features | : | special measuring cell with increase durability for use in oil, diesel, alcohol, patrol, acid, etc. Ø 12 mm |
| In contact with fluid | : | platinum and glass |
| Cell constant | : | 1 1/cm |
| Measuring range | : | 0..1000 µS/cm |
| Temperature sensor | : | NTC 10k |

## Case SKK 0400

High-quality case made of robust PP incl. rigid foam inlay with cut-outs for equipment

| | | |
|---|---|---|
| Dimensions | : | 450 x 360 x 110 mm (H x W x D) |

## Manufacturer's calibration WSC3 / WSC10

Calibration certificate

| | | |
|---|---|---|
| **WSC3** | : | **included to set and as voucher** 3 test values: ~147 µS/cm, ~1413 µS/cm, ~12.90 mS/cm |
| **WSC10** | : | **optionally upon surcharge** 10 test values from 0.9 µS/cm till ~192 mS/cm |

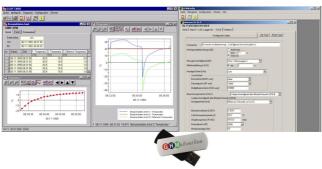*... professional Instruments "MADE IN GERMANY"*

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## Product information
SL-C

## Software GSOFT 3050 and GMHKonfig



### GSOFT 3050
The software allows operation of the logger function of hand-held measuring devices. The logger recording can be started and stopped and the logger data can be read-out and visualized.
The multilingual software is executable with Windows 98, Me, NT, 2000, XP, Vista and 7.

The data is read-out via USB interface of a PC by means or an USB adapter and cable (included).
- Display of status information
- Setting of alarm function
- Operation of logger function
- Diagram display of logger data
- Logger data print-out
- Save logger data
- Export of logger data to ASCII (text, usable for MS Excel®)
- Memorizing of window settings

### GMHKonfig
The software GMHKonfig allows the configuration of hand-held measuring instruments. It automatically detects the connected device type and provides the corresponding functions.
- Device configuration
- Set logger IDs
- Initialization of menu parameters
- etc.

## Adapter and cable SL-USB

Electrically isolated interface converter with power supply via USB incl. connection for analog output

## Consumables

WSC3 : included to set and as voucher
3 test values: ~147 µS/cm, ~1413 µS/cm, ~12.90 mS/cm
WSC10 : optional upon surcharge
10 test values from 0.9 µS/cm till ~192 mS/cm
Control solution 1413 µS/cm
Control solution 50 mS/cm

## Scope of supply SL-C-GL

**Device bulk:**
- SL-C (conductivity hand-held measuring device),
- Operating manual,
- Short manual,
- Battery 2 x AAA

## Scope of supply SL-C Set

**Set:**
- SL-C (conductivity hand-held measuring device),
- 1 measuring cell
  (4-pole graphite, 2-pole stainless steel, or 2-pole glass/platinum)
- SKK0400 (case incl. inlay),
- SL-USB (adapter and cable)
- Flash drive with GSOFT 3050 (software)
- WSC3 (calibration certificate)
- Control solution 1413 µS/cm
- Voucher for 1 x WSC3,
- Operating manual
- Short manual
- Battery 2 x AAA

**Optional:**
Second measuring cell

**Measuring cells:**
SLF 425: 4-pole measuring cell
SLF 200 RW:  2-pole pure / ultra pure water measuring cell
SLF 210: 2-pole glass/platinum measuring cell
Standard length: each 1 m
(lengths up to 10 m available)

## Product key

**SL-C-GL (device bulk)**

**SL-C Set**    –  [ 1. ]  –  [ 2. ]

| 1. | Measuring cell 1 | | |
|---|---|---|---|
| | **425** | 0-1000 mS/cm | 4-pole standard meas. cell |
| | **200** | 0-100 µS/cm | 2-pole pure / ultra pure water measuring cell |
| | **210** | 0-1000 µS/cm | 2-pole glass/platinum measuring cell |

| 2. | Optional measuring cell 2 | | |
|---|---|---|---|
| | **425** | 0-1000 mS/cm | 4-pole standard meas. cell |
| | **200** | 0-100 µS/cm | 2-pole pure / ultra pure water measuring cell |
| | **210** | 0-1000 µS/cm | 2-pole glass/platinum measuring cell |

## Accessories

**GEH 1**

Electrode holder
suitable for electrodes with plastic handle

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