



## Electric Contact Meters Type KLL / KLL-T / KLL-Mini and TLG

Easy groundwater level and temperature measurement

- Measuring of water level and total depth for groundwater
- Quick and digitale temperature indication (LC-Display)
- Optical and acoustical signal when probe touches water level
- Low power consumption



Water level measurement



Ground water sampling



KLL with electrical drive



KLL-T

## Contact Meter Type KLL Principle of function

The SEBA-Electric Contact Meter type KLL is a portable, reliable instrument for measuring the water level and total depth in boreholes, wells, reservoirs etc.

For the measurement the bob is lowered to the water level. When touching the level, a sensor effects the illumination of a signal lamp. On request, an additional acoustic signal will be released by a buzzer. The depth is shown on the cable in metres and centimetres. If the measurement of water level and total depth is desired, an additional ground sensor (see accessories) is adaptable. When the sensor is touching the bottom, the signal lamp is switched off. In case of very small diameter tubes, instruments with a probe of 10 mm dia. (not suitable for ground-sensor and sensor-cap) are available.

When the probe is touching the water-level there is a conductive connection between the tip of the probe and the sensor-body. Thereby a circuit of the lamp and the buzzer will be closed.

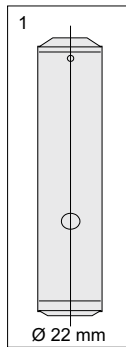


Contact Meter Typ KLL 15-50m with hand-drum

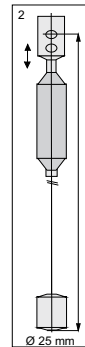
## Accessories



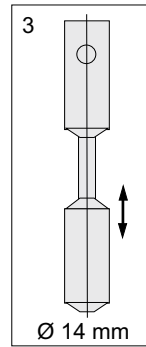
KLL with electrical drive



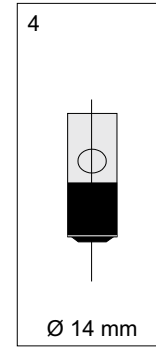
1  
sensor for high resp. non conducting liquids  
Ø 22 mm



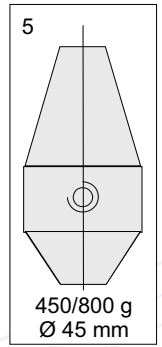
2  
ground-sensor with steel cable for muddy bottom  
Ø 25 mm



3  
ground-sensor  
Ø 14 mm



4  
sensor cap for salty water  
Ø 14 mm



5  
additional weight  
450/800 g  
Ø 45 mm

# Technical Data KLL

<b>Cable:</b>	Polyethylene with 2 steel cores (anticorrosiv), metric scale, figures printed all metres in red colour and decimetres with centimetres in black colour
<b>Probe:</b>	<b>standard version:</b> made of corrosion resisting material, 14 mm dia., 175 mm long with build-in electrode <b>special version:</b> 10 mm dia., 175 mm long
<b>Cable drum:</b>	plastic, impact and temperature resistant
<b>Power supply:</b>	6 V DC, 4 Baby Cells each 1.5 V

<b>Accuracy:</b>	< 1 cm with cable length 100 m	
<b>Supporting frame:</b>	aluminium, formed parts, surface coated	
<b>Measuring ranges and weights:</b>		
<b>15 m:</b> 1.4 kg; 2.0 kg*	<b>100 m:</b> 3.6 kg*	
<b>30 m:</b> 1.6 kg; 2.2 kg*	<b>150 m:</b> 4.9 kg*	
<b>50 m:</b> 1.9 kg; 2.5 kg*	<b>200 m:</b> 5.5 kg*	
<b>80 m:</b> 3.3 kg*	<b>300 m:</b> 8.4 kg*	
*) with support frame. On request, special ranges up to 1000m are available.		

## Contact Meter Type KLL-T

The SEBA-KLL-T has been developed for accurate measurements of water level and temperature in groundwater observation tubes and wells.

Offering quick indication of the temperature, the instrument is suitable for the determination of temperature profiles.



## Principle of function

### Water level measurement:

Dipping into a fluid, a conducting connection between the probe head and the probe body is being established. This completes the circuit of the bulb and the buzzer.



carrying bag for KLL-T

### Temperature measurement:

The temperature is measured with a semi-conductor sensor and transformed into proportional current. Through an A/D-transformer the analogue value is transformed into a digital value and indicated on an 3 1/2 digit LCD-display.

## Technical Data KLL-T

<b>Cable:</b>	2-core flat cable, polyethylene with V2a-leads, black cm-division with dm-figures and red m-marking.
<b>Power supply:</b>	6V DC (4 batteries baby-cells 1,5V)
<b>Actual operation time with one set of battery:</b>	approx. 1000 hours, with back-light 50 hours
<b>Accuracy temperature:</b>	0.10°C ± 1/2 digit (range 0-25°C) 0.15°C ± 1/2 digit (range 0-50°C)
<b>Indication temperature::</b>	°C, Fahrenheit (setup in menu)
<b>Accuracy probe:</b>	1 cm at 30m cable length
<b>Measuring ranges:</b>	30m, 50m, 100m, 150m, 200m, 300m, 500m
<b>Display:</b>	in one row, 8 digits, contrast temperature controlled
<b>Languages:</b>	German, English, French, Spanish (setup through menu)
<b>Operating temperature:</b>	- 15°C up to 50°C
<b>Storage temperature:</b>	- 40°C up to 80°C

<b>Protection drum/probe:</b>	IP 52 / IP 68
<b>Probe:</b>	made of non-corrosive material, 16mm Ø
<b>Supporting frame:</b>	aluminium, formed parts, surface coated
<b>Cable drum:</b>	plastic, impact and temperature resistant
<b>Dimensions:</b>	220 x 350 x 330, 280 x 415 x 330, 400 x 570 x 330 (width x height x depth, mm)
<b>Weight:</b>	depends on the cable length, e.g. instrument with 30m cable weighs approx. 5.5kg
<b>Conductivity:</b>	<b>range 1:</b> 20 - 200µS/cm, <b>range 2:</b> 200µS/cm - 2mS/cm, <b>range 3:</b> 2 - 20mS/cm, <b>range 4:</b> 20-50mS/cm This electric contact meter can be used for a rough measurement of conductivity. An exact measurement can be done with the SEBA electric contact meter type <b>KLL-Q</b> .

# Contact-Meter Type KLL-Mini

With the KLL-Mini a full contact-meter in pocket-format has been developed. In quality regards it's equivalent to the existing KLL-family. Generally it is equipped with optical and acoustic signal, which enables the exact measurement of the water level. The two 1.5V batteries are sufficient for approx. 250 measurements.

For convenient transport and safe storage a protection bag is available, made of textile with zip, carrying strap and belt loop.



*Power in the pocket: small, light, easy to handle and precise*      *carrying bag for KLL-Mini*

## Technical Data KLL-Mini

<b>Cable:</b>	2-core flat cable, polyethylene with V2a-leads, black cm-division with dm-figures and red m-marking
<b>Probe:</b>	made of non-corrosive material, 14mm Ø, 120mm long, with built-in electrode
<b>Drum:</b>	plastic, impact and temperature resistant

<b>Power supply:</b>	3 VDC, 2 standard batteries 1.5V (baby cells) Please use leakproofed batteries only!
<b>Accuracy:</b>	<1cm
<b>Measuring range/weights:</b>	10m / 550g, 15m / 600g
<b>Dimension:</b>	Ø140mm

## Depth Indicator Type TLG

The SEBA-Depth Indicator Type TLG has been developed as a portable unit for rapide and accurate observation of bore hole water levels. It also can be used for measurements in the open sea or for measurements of the cross section of a lake.

Operated manually by holding above the bore hole it provides a clear, instantaneous indication on a five figure counter calibrated in metres and centimetres and is rapidly rewound.

### Advantages:

- mech. measuring system
- rapide and accurate measurements
- digital indication of the measuring result
- handy and portable
- light in weight and compact design



## Technical Data TLG

<b>Measuring ranges:</b>	50, 100 and 200m
<b>Bobs</b>	20mm and 40mm dia. of plastic for water-level indication; 20mm dia. of metal for depth sounding
<b>Cable control:</b>	constant, due to stable centrifugal brake
<b>Steel wire:</b>	0.5mm dia. stainless, stretch- and acid-proof
<b>Indication:</b>	5 digit indication in metres and centimetres
<b>Dimensions:</b>	250 x 120 x 8 (mm, high x width x depth)
<b>Weight:</b>	1kg

*The right is reserved to change or amend the foregoing technical specification without prior notice.*

### Contact:

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