

# GLÖTZL Baumeßtechnik

## WEIRBOX for LEAKAGE WATER MEASUREMENT

Type: **GWK 552**

Art. No.: **88.01**

The weirbox for leakage water is used for measurement of free floating water volumes in the dimension of 0.0001 – 2.0 l/s (12 l/s).



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### Figure:

Weirbox, consisting of:

- Inflow reservoir
- Outflow reservoir with measuring orifice
- Measuring reservoir with water level indication
- Cleaning flap

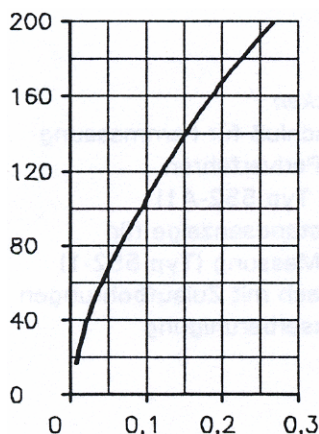


Two measuring orifices are available for measurement of water volumes. The level of dammed-up water – dependent on inflowing water volume – is read in mm at the water level indicator and the flow rate is determined by a calibration table.

With the water level measuring device GWS A 250 a remote control can be done up to 150 m distance by means of the pearl procedure or a registration of the measured value with an automatic measuring device.

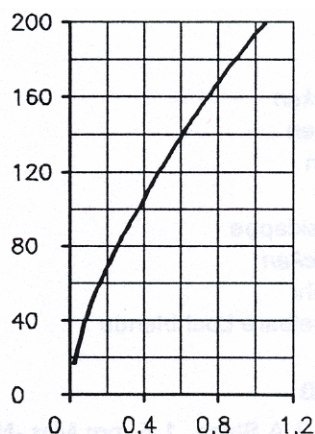
Determination of the water volume by a calibration table

Orifice A 0.001-0.25 l/s



Flow rate l/s

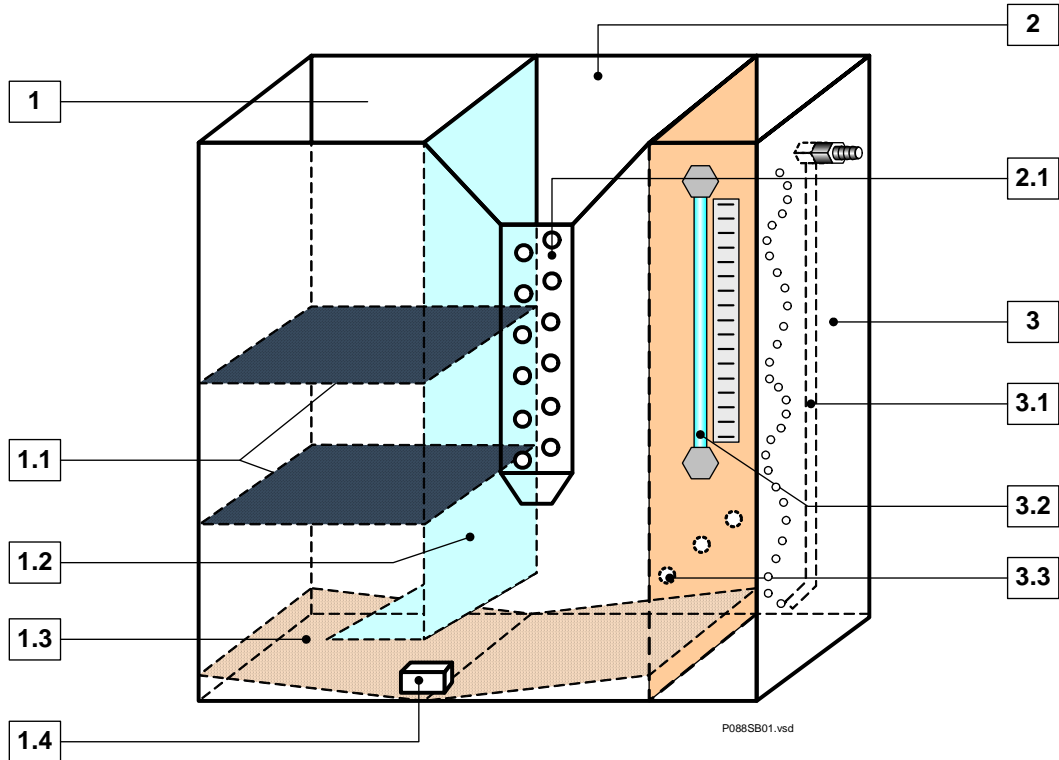
Orifice B 0.02-1.00 l/s



Flow rate l/s

## Function:

The water is entering the inlet reservoir 1 and is calmed by the orifices 1.1 as well as by the separating plate 1.2. The outflow is done by the orifice 2.2, whereby a water level is built in the outflow reservoir 2. This level is transferred to the measuring basin by means of the opening 3.3 and calmed. The measured water level in the measuring basin is registered in the calibration table where the searched water volume can be read in l/sec.



## Models:

- |    |                 |                                                                                         |
|----|-----------------|-----------------------------------------------------------------------------------------|
| 1) | Type GWK 552-A1 | Remote control and automatic registration by means of pearl procedure at connection 3.1 |
| 2) | Type GWK 552-1  | Direct measurement from water level indication 3.2                                      |

## Orifices:

- |    |                     |                                           |
|----|---------------------|-------------------------------------------|
| A. | 0.001 – 0.25 l/sec. |                                           |
| B. | 0.02 – 1.00 l/sec.  | Resolution over 200 mm measuring distance |
| C. | 0.2 – 2.00 l/sec.   | Further measuring ranges on request       |
| D. | 0.2 – 12.00 l/sec.  |                                           |

## Description:

- |     |                          |     |                                                                                            |
|-----|--------------------------|-----|--------------------------------------------------------------------------------------------|
| 1.  | Inlet reservoir          | 3.  | Inlet reservoir                                                                            |
| 1.1 | Orifices                 | 3.1 | Measuring connection for remote control by means of pearl procedure (only for type 552-A1) |
| 1.2 | Separating plate         | 3.2 | Water level indication for direct measurement (type 552-1)                                 |
| 1.3 | Metal guide              | 3.3 | Separating plate with intake borings for water calming                                     |
| 1.4 | Cleaning flap            |     |                                                                                            |
| 2   | Outflow reservoir        |     |                                                                                            |
| 2.1 | Interchangeable orifices |     |                                                                                            |

## Technical Data:

Material: V2A sheet, 1.5 mm mat. No.: 1.4571  
 Dimensions: Length 500 mm, height 500 mm, depth 200 mm  
 Weight: 15 kgs  
 For orifice D (dependent on location) a special model of box is required.

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## LEAKAGE WATER VOLUME MEASURING SYSTEM



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**Type: SWP02**  
**Art. No: 88.10.10**

- High measuring accuracy and long-term stability
- Clear measuring procedure
- Configurable for weir or pump operation
- Measuring range:
  - Flow rate 0.1...150 l/s
  - Level of 20...100 cm
- Outputs:
  - Vibrating wire compatible
  - RS485-bus
  - 4...20 mA (optional)
- For cable lengths up to
  - 2 km (vibr. wire comp.)
  - 1.2 km (RS485)
- Illuminated local display



### Application

The leakage water volume measuring system can be used for automatic measurement of smallest up to large leakage water volumes. Furthermore, a direct water level measurement can be done up to approx. 1 m (optional 2 m). Of special advantage is the application in case of not-easily accessible locations, e.g. shafts. The system can be used as simple, local measuring system with on-site indication or can be connected to a central measuring station. The applied output signal allow large line lengths without measuring error. In case of bus-operation, several instruments can be operated by a common two-wire circuit.

### Description

The leakage water volume measuring system is operating with ultrasonic. The US sensor is temperature compensated. By means of a micro computer, level and flow values can be calculated from the distance raw values and the stored calibration data. In flow operation, the results of the laboratory calibration are used for it.

In pump operation, additionally the circuit control commands for an external pump and it's control are generated from the level data. In this operation

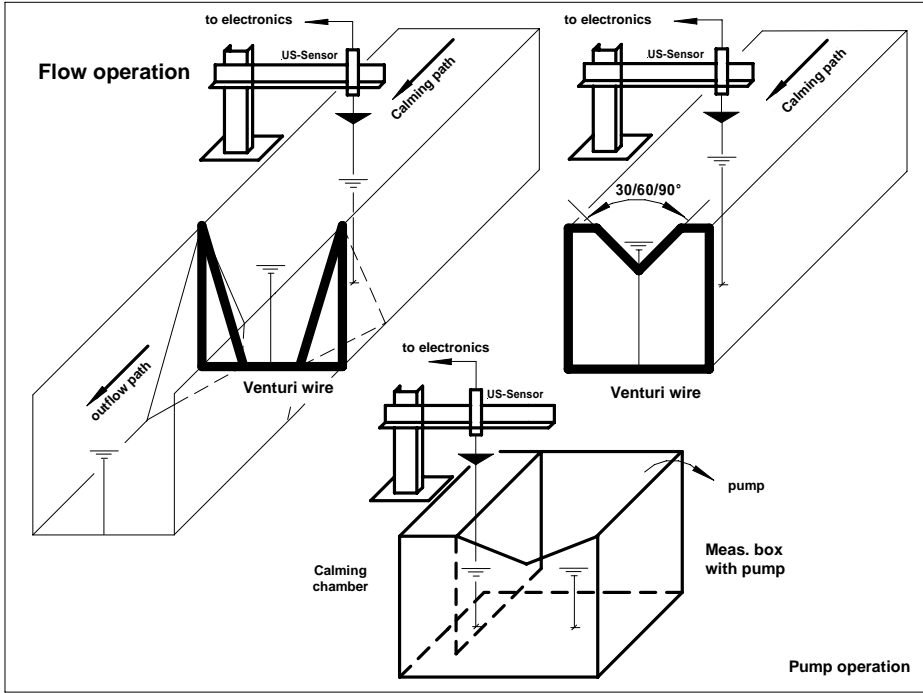
mode, the leakage water flow is calculated by filling time and volume of the measuring box. The indication of the measuring values flow and water level is done by display on site. Then the values are converted into a vibrating wire-compatible frequency signal (or 4...20 mA signal) and can now be measured on site like a conventional vibrating wire transducer (or 4...20 mA sensor) by manual measuring device or can be transferred to a measuring station by sensor cable.

Additionally, a bus-capable RS485 connection is existing. By this, the instruments are interlinkable.

By means of a service instrument, measured data and calibration values can be read and changed in case of a corresponding necessity.

The system is operating with 230 V. The pumps are fed and secured by an independent closing switch. The supply is done with 230 or 380 V dependent on the necessary pumping capacity.

## Measuring Principle of Leakage Water Volume Measuring System



meas. principle of leakage water volume meas. system

### Models

- Weir operation, with or without measuring box
- Pumping operation with external control box for pump
- Level measuring device

### Technical Data Type LD02

Measuring range water level	20 cm ... 1 m, (opt. 2 m)
Measuring range flow	0.01 ... 150 l/s, depend. on size meas. box/weir
Resolution	0.5 %
Accuracy measurement water level	1 mm, opt. 0.5 mm
Operating temperature range	0 ... 60 °C
Output	- RS485, bus-capable - VW, 642...1000 Hz vibrating wire compatible (option) - 4 ... 20 mA (option) all outputs galvanically separated
Overvoltage protection	installed, 2.5 kA
Maximum cable length	RS485: max. 1200 m VW: 2000 ... 5000 m
Supply/current consumption	230 V / 40 mA
Weight:	Electronic unit      1.2 kg Measuring box      acc. to model 2.5 kgs ... 50 kgs
Dimensions:	Electronic unit      approx. 250 x 220 x 120 mm Measuring box      acc. to model, e.g. 50 x 50 x 35 cm or 50 x 200 x 50 cm (also Venturi possible)



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