

## Level meter H520 for wells, boreholes and rainwater and sewage sumps



Level meter H520

Immersion  
level sensor  
TSH277

- Choice of 2 types of immersion water level sensors with measuring ranges 0..10 m or 0..25 m, quality PUR cable
- Installation of the sensor by immersion behind a cable or by screwing into a 1/2" socket
- Durable stainless steel design of the sensor body
- Display of the level height in meters and as a percentage of the set maximum level
- Quick setting of measurement parameters using 3 buttons inside the H520 display unit
- Mechanical design suitable for installing the level meter on a vertical wall or panel
- Binary output for closing a relay, solenoid valve or signaling
- Supply voltage in a wide range from 8 V to 28 V DC, low current consumption

### Examples of use

- Monitoring the level of rain and sludge sumps
- Level measurement in wells and boreholes
- Level monitoring in water tankers
- Level sensing in industrial plants
- 4-20 mA signal conversion to RS485 / ModBus RTU

### Basic description

The H520 level meter with a strain gauge level sensor is designed for continuous measurement of the water level in wells and in rainwater and wastewater sumps.

The two red LED displays of the H520 level meter show the measured level in meters and the percentage level relative to the set maximum level. The percentage value is also clearly shown on the bar graph.

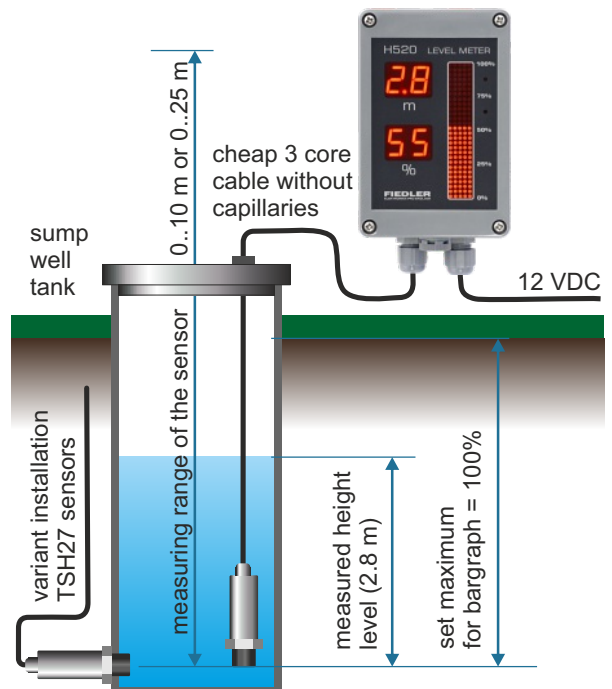
The transistor output signal of the level meter can switch an external relay according to user-set parameters.

The H520 level meter does not have its own power supply battery and therefore requires the supply of an external supply voltage in the range of 8 to 28 V DC / 0.15 A (typically 12 V DC).

The H520 level meter does not allow remote access to measured data such as data loggers H1 to H40 or smart metering modules H530 and H531.

### H520 level meter variants

- H520-10 / 10 (measuring range 0..10 m / cable 10 m)
- H520-10 / 25 (measuring range 0..10 m / cable 25 m)
- H520-25 / 30 (measuring range 0..25 m / cable 30 m)



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Complete product overview, demonstration approach to the data server and complete price list on [www.fiedler.company](http://www.fiedler.company)

## Submersible Level Transmitter TSH27

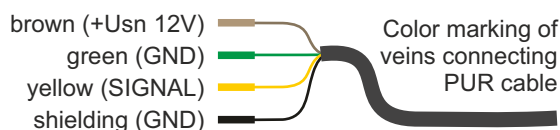
Measurement principle: The TSH27 sensor uses an absolute pressure sensor that measures the hydrostatic pressure of the water above the sensor, including the atmospheric air pressure. In the H520 evaluation unit, the atmospheric air pressure measured by the H520 is subtracted from the sensor output signal. The used principle of absolute pressure measurement allows the connection of the TSH27 sensor to the H520 level meter with a standard 3-core cable without the usual atmospheric pressure compensation capillary and thus significantly reduces the cost of the measuring set.

The measuring range of the sensor is 0 to 10 m or 0 to 25 m of water column. The offered length of the connecting cable with which the sensor is equipped also corresponds to the measuring range.

## TSH27 sensor installation

It is enough to simply lower the sensor over the cable into the measured object (well, sump, ...) to such a position that even at the assumed minimum level it is still immersed and at the maximum level in the measured object the measuring range of the sensor 10 m (25 m).

If necessary, the sensor connection cable can be extended. However, due to the reliability of operation, we recommend placing the H520 unit close to the measurement so that overvoltages are not induced in the connecting cable during storms or different ground potentials are not compensated.



## Level meter setting H520

Using the 3 buttons UP, MENU and DOWN located on the back of the device, the parameters can be set by the user for optimal display of the measured level and possibly also the pump control or alarm signaling:

Zero shift [m]: the value of this bipolar parameter is added to the level measured by the sensor itself

Maximum 100% [m]: required maximum level height for percentage expression

On and Off limits [m]: binary output control

In addition to this basic parameter setting, an alternative level sensor with a 4-20 mA current output can be selected instead of the TSH27 sensor using switches and jumpers on the H520 board.

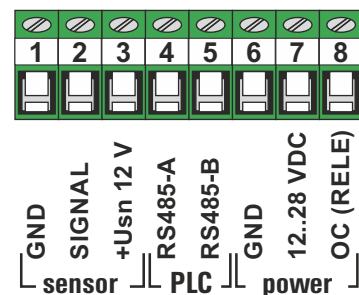
## Connection of H520 level meter terminals

Terminals 6 and 7 are used to connect the supply voltage (usually 12VDC) from a safe voltage source designed for the environment given by the level meter installation site.

If the level meter is to control a pump or a limit signal, then terminal 8 (OC-NPN) is used to switch the relay coil.

The TSH27 level sensor is connected to terminals 1 to 3.

Terminals 4 and 5 (RS485 bus) are intended for connection of a superior system under the ModBus RTU protocol.



## Technical parameters

<b>Level meter H520</b> (evaluation and display unit with air pressure measurement)
<b>Display:</b> double two-digit LED display 15mm, bargraph in 3.5% increments
<b>Display level resolution:</b> 0.1 m in the measuring range up to 10 m
<b>Analog input:</b> voltage 0-5 V or current 4-20 mA (selection via jumpers)
<b>Output for sensor supply:</b> 12 V / max. 40 mA (terminal 3)
<b>Measurement frequency:</b> 5 measurements / sec
<b>Transistor output:</b> open collector, $U_{max} = 28$ V DC, $I_{max} = 300$ mA
<b>RS485 bus:</b> Modbus RTU SLAVE protocol, 19,200 Bd, address 15 (16,17,18)
<b>Supply voltage / current:</b> 8..28 V DC, current consumption max 0.15 A (for 12V)
<b>Dimensions:</b> 120 x 80 x 55 mm, 2 cable glands for connecting Unap and relays
<b>Box material cover:</b> ABS; IP66
<b>TSH27 level sensors</b> (absolute strain gauge, air pressure compensation in H520)
<b>Measuring range of the sensor:</b> 0..10 m v.s. (sensor TSH27-10) or 0..25 m (TSH27-25)
<b>Measurement accuracy:</b> 2.5% of measuring range
<b>Sensor connection cable:</b> PUR cable 3x0.25, length 10 and 25 m (TSH27-10) or 30 m
<b>Sensor material:</b> stainless steel, polyurethane cable insulation
<b>Dimensions and weight:</b> diameter 27mm, 1/2" mounting thread, height 70mm, 350g without cable