The hps+ sensor measures the level in a vessel in up to 6 bar overpressure contactless. The G1 and G2 threaded pipe end permits the mounting and sealing of the sensor in a flange of the vessel. The push switched outputs are set according to the adjusted detect distances.

### Important instructions for assembly and application

- All employee and plant safety-relevant measures must be taken prior to assembly, start-up or maintenance work (see operation manual for the entire plant and the operator instruction of the plant).
- The sensors are not considered as safety equipment and may not be used to ensure human or machine safety!
- The hps+ sensors indicate a blind zone, in which the distance cannot be measured. The operating range indicates the distance of the sensor that can be applied in normal atmospheric pressure with sufficient function reserve.

#### Set sensor parameters alternatively numerically using LED-display...

**Start up**

- hps+ sensors are delivered factory made with the following settings:
  - Switched outputs on NOC.
  - Detecting distances at operating range and half operating range.

**Operation**

- hps+ sensors work maintenance free. Small amounts of dirt on the surface do not influence function. Thick layers of dirt and caked-on dirt affect the sensor function and therefore must be removed.

Note

- In operation in overpressure it is recommended to adjust the sensitivity of the hps+ sensor: choose the parameter A14 in the Add-on menu and set it to sensitivity E2 for atmospheric pressure from 1 to 3 bar or to sensitivity E3 for atmospheric pressure > 3 bar.
- hps+ sensors have internal temperature compensation. Because the sensors heat up on their own, the temperature compensation reaches its optimum working point after approx. 30 minutes of operation.
- During normal mode operation, a yellow LED signals that the corresponding switched output has connected.
- During normal mode operation, the measured distance value is displayed on the LED-indicator in mm (up to 999 mm) or cm (from 100 cm). Scale switches automatically and is indicated by a point on top of the digits.
- During Teach-in mode, the hysteresis loops are set back to factory settings.
- If no objects are placed within the detection zone the LED-indicator shows »- - -«.
- If no push-buttons are pressed for 20 seconds during parameter setting mode the made changes are stored and the sensor returns to normal mode operation.

**Show parameters**

- Tapping push-button T1 shortly during normal mode operation shows »PAR« on the LED-display. Each time you tap push-button T1 the actual settings of the analogue output and the switched output are shown.
...or with the Teach-in procedure

- Adjust detect point D1
- Place object at position 1
- Press T1 until «End» is shown
- Adjust two-way reflective barrier D1
- Place object at position 2
- Press T1 until «End» is shown

Teach-in switched output D1

- Set NOC/NCC D1
- Press T1 until »d« is shown
- Place object at position 2
- Press T1 until «End» is shown

Normal mode operation

- Current measuring value
- Symbol NOC or NCC

- Current measuring value
- Symbol NOC or NCC

Teach-in switched output D2

- Set NOC/NCC D2
- Press T2 until »d2« is shown
- Place object at position 1
- Press T2 until «End» is shown

Useful additional functions in Add-on menu (for experienced users only, settings not required for standard applications)

- Press T1 and T2 simultaneously for about 13 s until +Add is shown in the LED-display
- Normal mode operation

Key lock and factory setting

- Activate/deactivate TouchControl
- Reset to factory setting
- Turn supply voltage ON
- Turn supply voltage OFF
- While pressing T1 turn supply voltage ON until «on» or «off» is displayed
- To activate or deactivate press T1
- While pressing T1 and keep pressed for ca. 15 s until +Add is passed through the display
- Release T1 before turning supply voltage OFF

Note: Changes in the Add-on menu may impair the sensor function. A1, A2, A8, A10, A11, A12 have influence on the response time of the sensor.