



Operating Manual

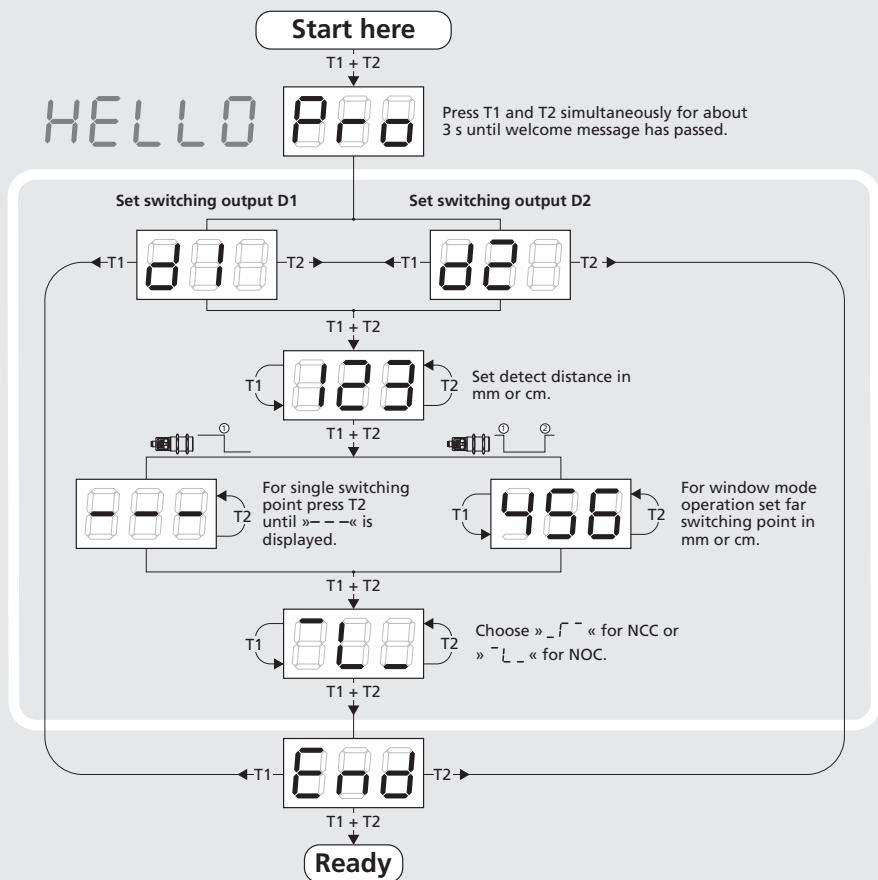
hps+ Ultrasonic Sensors for application in overpressure with two switching outputs

hps+25/DD/TC/E/G1
hps+35/DD/TC/E/G1
hps+130/DD/TC/E/G1
hps+340/DD/TC/E/G2
hps+340/DD/TC/G2

Product description

- 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 pnp switching outputs are set according to the adjusted detect distances.
- The surfaces of the ultrasonic transducers of the hps+ sensors are protected by a PTFE film and sealed with a FFKM O-ring against the sensor housing. Therefore the surface of the ultrasonic transducer can be cleaned from cakings or spots.
- All settings are done with two push-buttons and a three-digit LED display (TouchControl).
- Light emitting diodes (three-colour LEDs) indicate the switching status.

Diagram 1: Set sensor parameters numerically using LED display



Safety Notes

- The output functions are changeable from NOC to NCC.
- The sensors are adjustable manually using the numerical LED display or may be trained via Teach-in processes.
- Useful additional functions are set in the Add-on-menu.
- Using the LinkControl adapter (optional accessory) all TouchControl and additional sensor parameter settings can be adjusted by a Windows® Software.

Factory setting

hps+ sensors are delivered factory made with the following settings:

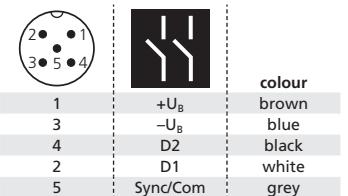
- Switching outputs on NOC
- Detecting distances at operating range and half operating range
- Measurement range set to maximum range at ≥ 2 bar overpressure
- Sensitivity at normal pressure

Maintenance

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.

Notes

- 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 operating mode, a yellow LED signals that the corresponding switching output is set.
- During normal operating mode, the measured distance value is displayed on the LED display 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 value is set back to factory settings.
- If no objects are placed within the detection zone the LED display shows »—«.
- If no push-buttons are pressed for 20 seconds during parameter setting mode, the parameter changes are saved and the sensor returns to normal operating mode.
- The sensor can be reset to its factory setting, see »Key lock and factory setting«, Diagram 3.



Start-up

- Connect the power supply.
- Set the parameters of the sensor manually via TouchControl (see Fig. 2 and Diagram 1)
- or use the Teach-in procedure to adjust the detect points (see Diagram 2).

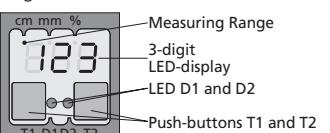


Fig. 2: TouchControl/LED display

Show parameters

- In normal operating mode shortly push T1. The LED display shows »PAr.«
- Each time you tap push-button T1 the actual settings of the analogue output are shown.

Diagram 2: Set sensor parameters via Teach-in procedure

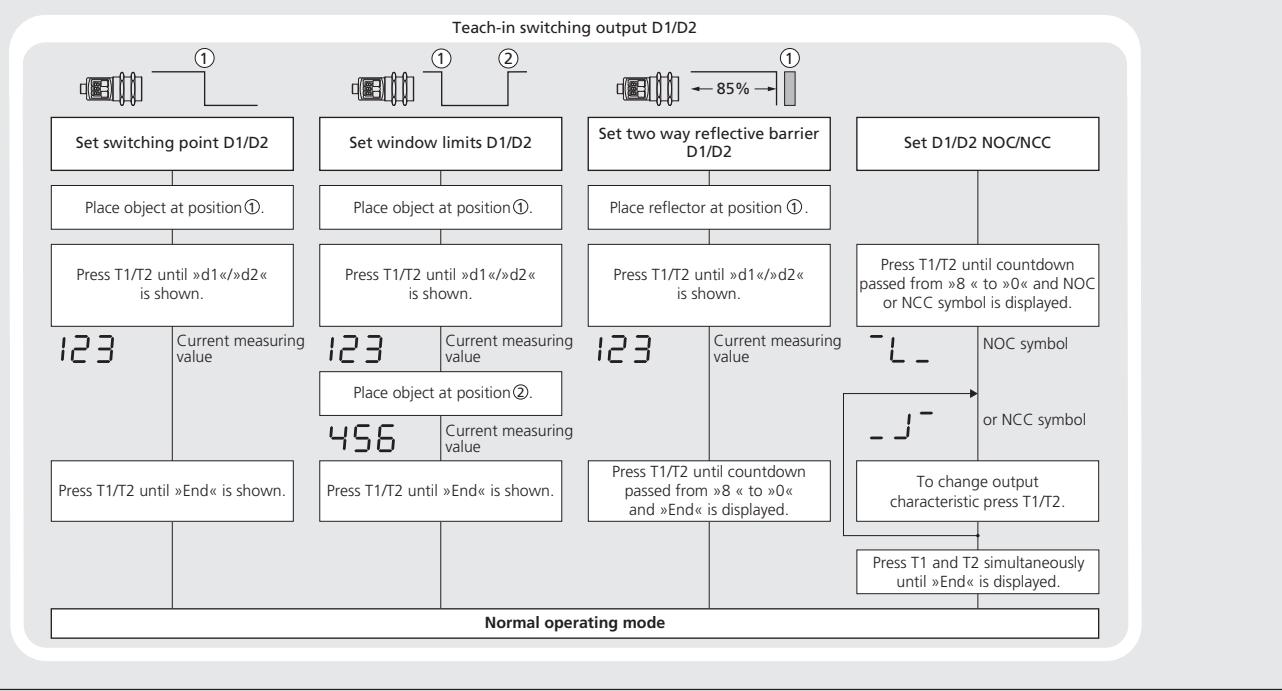


Diagram 3: Key lock and factory setting

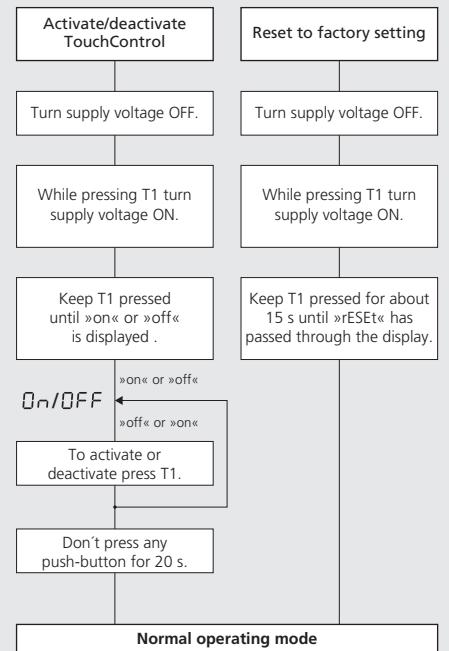


Diagram 4: Useful additional functions in Add-on menu (for experienced users only, settings not required for standard applications)

