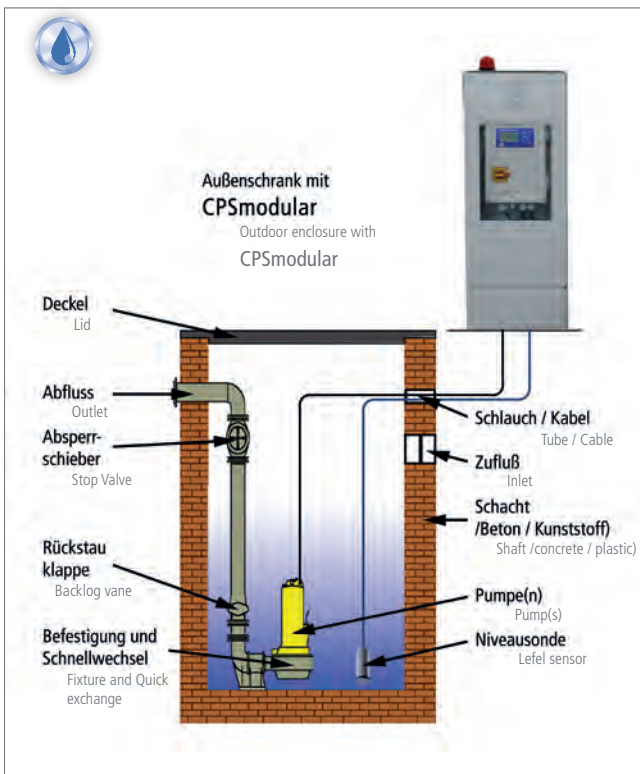


For level measurement there are different methods that can be used



1. Level measurement method using float switches
2. Impact pressure
 - 2.1 Impact pressure method in closed systems
 - 2.2 Impact pressure method in open systems
 - 2.2.1 Open system method with air replenishment
 - 2.2.2 Open system method with bubblers
3. Conductivity measurement method
4. Hydrostatic measurement method (ENS)

1. Description float switches



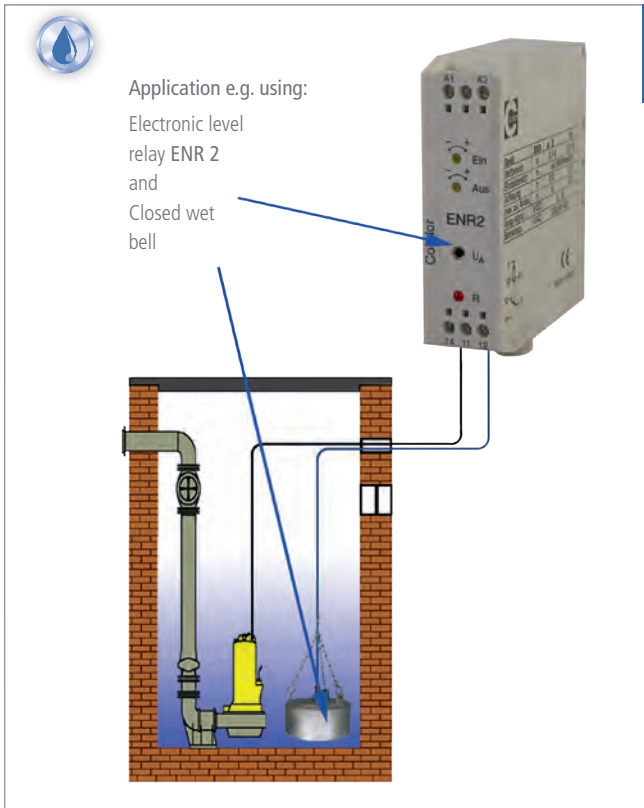
In this application, contacts placed within a floating enclosure are closed / opened depending on the inclination angle of the float switch.



Application e.g. using:

Float switches
PSN – O

2.1 Impact pressure method, closed system

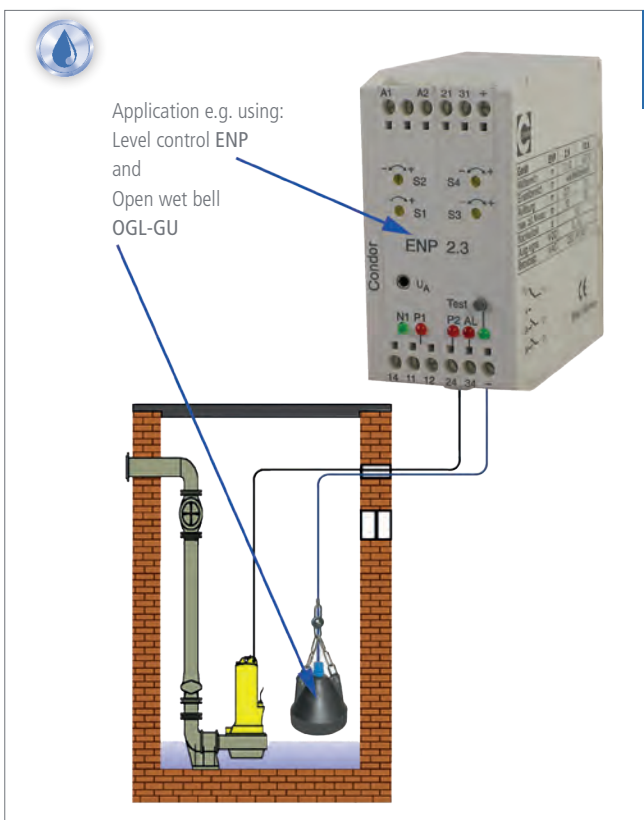


In this application the level change is transmitted via a pneumatic tube to the sensor and evaluated. The two types of systems - closed and open - are described in more detail below:

Closed system

For the use of a closed system, a completely sealed measuring system is an absolute necessity. A leak in the system, through which air can diffuse, leads to a drop in pressure and subsequently a malfunction of the device. The sealed bell GGL-8 (see accessories section) placed into the medium seals the measurement system at the "measuring point".

2.2.1 Impact pressure method, open system with air replenishment



Open systems

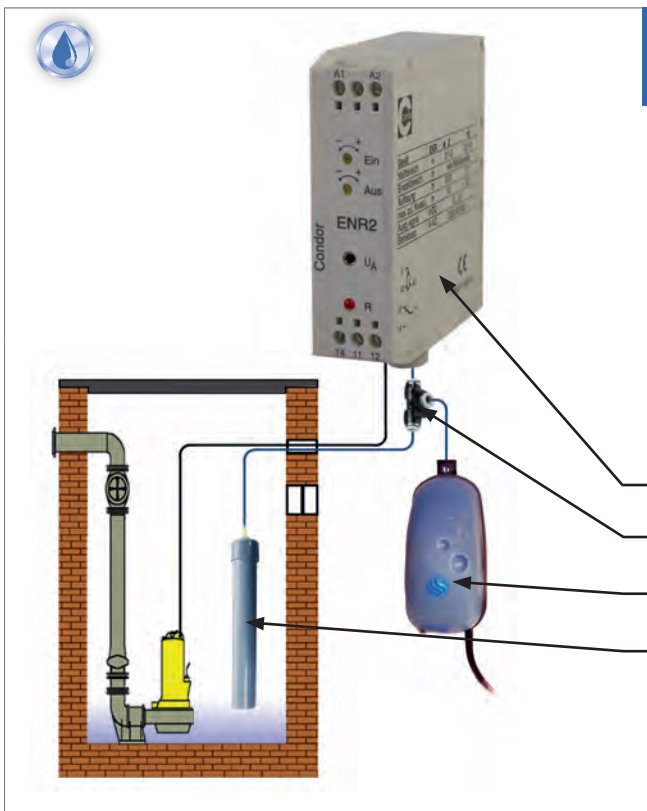
In open systems, the medium to be monitored creates pressure inside the pneumatic tube which is then electronically evaluated. Any leaks, which could lead to false measurement results, can be compensated for by suitable aeration or by bubbler operation.

Air replenishment operation

Open systems which function without aeration must achieve a regeneration of pressure within the system - this can be reached by an increase in volume and temporary operation in air replenishment mode. Any air losses in the measurement system will thereby be compensated for which, during the emptying process, causes the level to drop so far at regular intervals that the bell becomes exposed and air can therefore penetrate into the system (air replenishment).

In addition, with the help of a wet bell, the air volume within the measuring system should be increased.

2.2.2 Impact pressure method, open system using bubblers



In this application, the aid of a small compressor is necessary, whereby in either continuous or periodic operation, air is fed into the system. The pressure within the measuring system (pneumatic tube) therefore remains constant. Only when a change in the level occurs is the pressure altered in the measuring system, which is subsequently detected by the evaluating unit.

Application e.g. using:

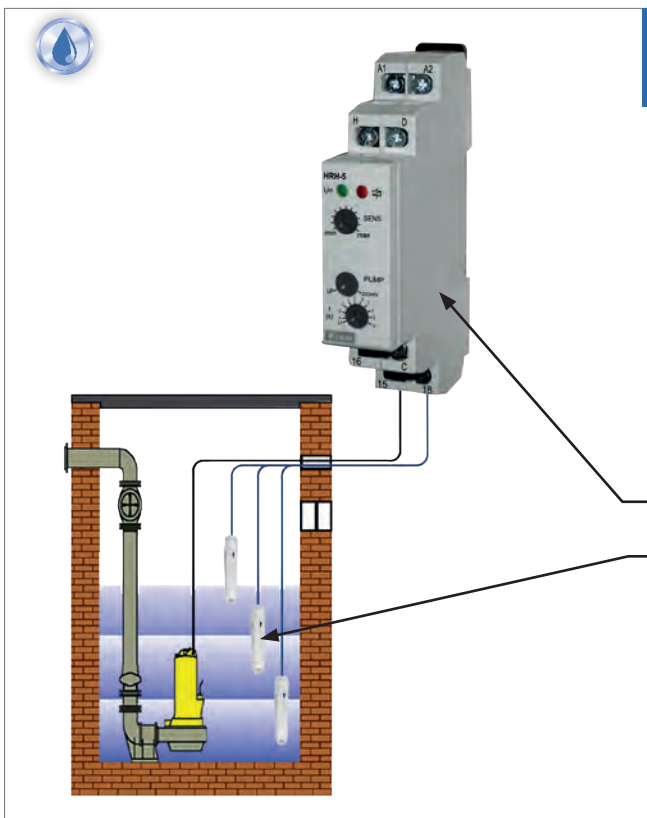
Electronic level relay ENR 2

T-connector for pneumatic tube

Small air compressor Rena Air 100

Open wet bell OGL

3. Conductivity measuring method



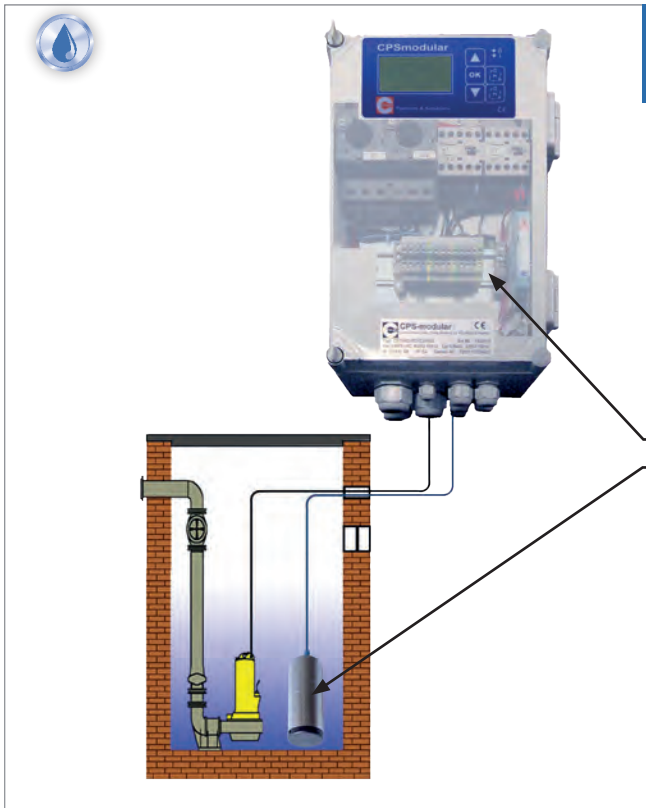
In this application, immersion electrodes are connected to an electronic analyser. When the electrodes are moistened by the liquid being measured, their conductivity alters correspondingly. One or two variable threshold values can then be adjusted.

Application e.g. using:

Electronic level relay HRH-5 and

Electrodes TEL - ..

4. Hydrostatic measurement method



In this application, a level sensor is lowered into the medium within a sealed enclosure, whereby ceramic or piezoresistive sensors are used. The filling level pressure then acts directly on the ceramic or piezoresistive sensor and the subsequent value is then transmitted as a 4-20 mA signal via the connecting lead.

Application e.g. using:

Electronic pump control CPS modular 2 and
Level sensor ENS