

What is a submersible pressure transmitter

A submersible pressure transmitter is a pressure transmitter used especially for level measurement and designed to be completely submerged in a fluid. It will contain an electrical connection that is IP 68 or NEMA 6P, usually a cable with a very special design to enable it to cope with the surrounding pressure of the media even in depths of several hundreds of meters. The submersible pressure transmitter is most commonly a gauge pressure sensor, that is vented through the cable to atmospheric pressure to allow it to adjust itself to changes in the ambient pressure, or a sensor sealed to a reference pressure such as vacuum in case a vented sensor is not applicable.



Sometimes the submersible pressure transmitter is used to monitor submerged machinery such as a hydraulic actuator or an oil tank of a hydroelectric turbine. However the most common task using a submersible pressure transmitter is level monitoring of liquids as a level probe, most commonly in the water and waste water industry. For level monitoring the submersible pressure transmitter may also be referred to as a hydrostatic level transmitter.

In some applications it may not be possible to vent the submersible pressure transmitter to adjust to the changes of atmospheric pressure. Therefore, it may be sealed to an average atmospheric pressure of nominally 1 bar and either the atmospheric changes considered as an additional error or the reading may be compared with an external barometric reading for correction. These applications are most common where the submersible pressure transmitter is used for monitoring of submerged equipment and if the pressure measured is so high, the error caused by the atmospheric pressure changes will not be a concern. If it is used as a level probe, then the level should be deeper than at least 100 meters or yards for the error to be ignored. Where the submersible pressure transmitter is part of a sealed submerged logging device for long-time monitoring, the measurements can be correlated to simultaneously recorded barometric pressure measurements when analysing and processing the data of the logging device.



Submersible pressure transmitters are one of the most commonly used level sensors in the water and waste water industry, due to their reliable and accurate measurements, in depths of up to a few hundreds of meters.

Please find further information on this topic on our information platform www.wika.com/hydrostatic-level

Application Note



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