



Product	815DT Smart Differential Pressure Transmitter & 1400 Series Temperature Transmitter Assembly
Application	Transmitters Measure Water Level Temperature Fluctuations
Industry	Power Generation/Industry

Challenge A thermal power plant wants to measure the liquid level in their water storage tank, but due to mounting restrictions and space limitations they are unable to use typical liquid level sensing technologies. The level of water in the storage tank can be measured indirectly by using a differential pressure transmitter to measure pressure and then calculating liquid level using the density. However, the density of water changes with temperature; when temperature increases the water expands in volume and vice versa. This causes the water level to rise without varying the amount of pressure being applied to the transmitter's sensors. If only a pressure measuring device is used, the system will lack the temperature data required for correctly adjusting the density calculations. Temperature compensation is needed to accurately determine the level of water within the process.

Solution The 815DT Smart Differential Transmitter combined with a 1400 Series Temperature Transmitter Assembly gives the plant personnel all the necessary information to calculate the density and indirectly measure the water level. With the 815DT's stick style form, it is able to be installed into confined areas where other instruments would be too large. Both transmitters constantly measure the temperature and pressure and the process data is relayed to a digital control system. The temperature transmitter data is used to compensate the level readings accordingly. The combination of transmitters provides the digital control system with the process parameters needed for precisely calculating the density and thus, it is able to accurately determine the water level within the storage tank.