

Steam Flow Meter Used For Industrial Applications

Optical sensors used in a steam flow meter can provide safer, more accurate measurements without the need for electricity or wires, reducing the potential for fire or explosions. Accuracy in volume and velocity measurements is said to be within one half of one percent and new models claim to not only be able to measure the flow of steam but also the amount of water present.

A few steam flow meters can take measurements in both directions in applications where flow may have to be reversed for maintenance of safety reasons as well as measuring saturated steam due to the extreme temperatures involved.

With temperature of steam being extremely high, intrusive flow measuring equipment often failed due their exposure to the high temperatures. By being able to install a non-intrusive steam flow meter that can measure not only the flow, but also the saturation of the steam can be helpful in many applications. The saturation measurements show what percent of the steam is in water form.

Steam Measured By Volume Not Mass

A typical steam flow meter will give the measurement in volume instead of mass, as the pressure of the steam will affect the mass and accuracy is nearly impossible to attain. If the steam pressure doubles, the density will double and its mass will double, however the volume will remain constant. In most cases a pressure valve will restrict the flow at the end use to maintain a constant pressure. This however may increase pressure at the boiler.

Proper maintenance is required on all steam generating equipment to insure the accuracy of the steam flow meter readings. Boilers are by nature in a harsh environment and rust and corrosion are common causes of breakdowns. Intrusive type of steam flow meters can also be affected by this environment. Monitoring of the equipment is a must, as is frequent calibration of the metering device to insure accurate readings at the process end.

A miscalculated steam flow meter could allow too much steam, consequently too much pressure to build up and damage critical equipment. Steam is produced for the purpose of a specific process. Whether it's to provide heat or power to a source, therefore the amount of steam released to the process needs to be accurately measured.

Since most steam flow meters utilize orifice plates in their measurements, they must be check frequently due to their penchant to wear and give false or inaccurate readings. Simple precautions and preventive maintenance can reduce costly repairs and unscheduled down time.

Source: <http://www.articlecircle.com>

About the Author

For more information on steam flow meters visit <http://www.FlowMeterBasics.com/> or <http://FlowMeterBasics.blogspot.com/>