

Application Note Oil and Gas Separators

Separators reside on onshore well pads and offshore platforms and can be horizontal, vertical, or a sphere. They're used in upstream oil and gas applications for periodic well testing (as a test separator) or continuous production measurement (as a production separator), and can function in either two-phase or three-phase. The separator has one goal: separate the oil from the gas and water. But, if you choose the best flow measurement for your separator, you can really make it work not only this goal but also deliver much more insight into your operation.

The Tek-Cor 1100A Coriolis can be used on all three phases to ensure accurate and reliable measurements.



Tek-Cor 1100A
Coriolis Flow Meter



Application

For Gas:

In order for a separator to function, it requires a steady, maintained level of pressure in order to push the fluids out of the separator and into a tank. If the pressure's too high, you can get gas entrained in the oil where it will simply vent off from the tank resulting in higher emissions and lost product. If the pressure's too low, you can lose the more valuable, lighter, or intermediate gases (called natural gas liquids or NGLs) as they get pulled out into the natural gas. NGLs have a higher BTU content, and you'll want to keep these valuable BTUs in liquid form. In some applications, the Gas Outflow serves as a Custody transfer point. If so, you'll want to know how much gas each well is producing, and there are several flow measurement technologies that can help. The Tek-Cor 1100A Coriolis offers excellent accuracy for any custody transfer point is provided and can also deliver diagnostic information whether the separator is operating at peak efficiency.

For Oil:

Like a quality check of the entire separator, the oil outflow flow point provides insight into how the well is performing and delivers an indication of reservoir decline rates. The oil outflow is critical as it's used as an allocation measurement to calculate any royalties owed to the landowner. The Tek-Cor 1100A Coriolis is highly accurate, no parts that wear, and diagnostic insight ensure you don't over – or underpay on critical royalty payments.

For Water:

Produced water is a by-product of oil production and can provide an indication of where the reservoir is on the production decline curve. It can also serve as a simple indicator as to how often water tanks need to be emptied. In some oil fields, how much water is produced must be reported for regulatory reasons. The big advantage of a Tek-Cor Coriolis meter in this kind of application is as another quality checkpoint to determine if there is any oil in the water. It can measure the water cut (net oil) in two-phase separators.