



Volumetric Representative Multiphase Sampling



OPERATING PRINCIPLE

The Mirmorax In-line Multiphase Sampling System provides the operator with a sample that, independent of flow regime and compositional mix, is a true volumetric representation of the flow. By taking the multiphase sample in-line the main pipe and maintaining original process pressures, the system avoids the errors and limitations of side branch sampling points and delivers true volumetric, representative multiphase sampling.

A highly reliable shutter system isolates the sample from the main flow without affecting the composition or pressure. The sample is then transported under isobaric conditions into a sampling bottle that maintains stable pressure conditions all the way to the laboratory.

Based on a large number of small samples, the sampling system produces a sample representative for the duration of the time the sample was taken with this time series directly compared to fractional values from water cuts, multiphase, wet-gas or test separators. In this way, the Mirmorax Topside Multiphase Sampling System is a high quality calibration or verification tool.

MODEL FEATURES

The low pressure model of the Mirmorax Multiphase Sampling System enables sampling in any pipe independent of piping size, making it possible to retrofit the system in a standard 2" flange connection. A benefit of the LP900X sampling system is that it avoids using side-branching to obtain the sample and instead grabs the sample directly from the main flow line.

The system has an intrusive type probe that can be retracted during operation without interrupting production and comes

with double pressure barriers, sour service compliant alloys and metal seals for optimal safety.

DESIGN

The Mirmorax Multiphase Sampling System includes three modules: the in-line sampling system integrated directly into the production system, the sampling bottle with docking station, and the operator control console (OCC). This modularization allows for flexibility in integration by maintaining a small footprint and light weight for the in-line sampling module and enables a distance to be set between the sampling bottle and the OCC. The system can either be supplied as an automated system with pre-programmed sampling sequences, operated from a touch display panel on the OCC, or can come as a fully manual system with no requirements for power or communication.

FACTS

Key features for the Mirmorax Topside Multiphase Sampling System are:

- Volumetric representation of each phase
- Isobaric sampling process and transport
- Directly or remotely controlled
- Insertion design 'one size fits all'
- Reliable and robust
- Accurate and high resolution time series samples
- Low maintenance
- Direct read-out of oil, gas and water fractions
- Provides best possible sample for full compositional PVT analysis



GENERAL			
Type: Multiphase Sampling System	Manufacturer model no: LP900X	Operating Temp. Limit: -20 to 140 °C	Operating Press. Limit: 900 PSI / 60 Bar
Mounting: Flanged or welded	Weight: 34 kg		

SAMPLER CHARACTERISTICS			
Nominal uncertainty	Liquid fraction: ±1.5 % rel	Gas fraction: ±2.0 % rel	Water cut: ±0.5 % abs
Sampling time: From 60 sec	Adjustable range: Independent	Grab size: 3 cl to 20 cl	Liquid type: 17-34 API
Pressure rating: 150 PSI / 300 PSI / 900 PSI			

MECHANICAL PROPERTIES			
Bore sizes available: Size independent	Connections: Flanged 2" ANSI	Sampling line size: 1/4" Swagelok	Design codes: ASME B31.3 / ASME IX
Sour service spec.: MR0175 / ISO15156	Material body: AISI316L or UNS S31803 Duplex		

SAMPLING BOTTLE			
Mounting: Docking Station Hub	Dimension: 800mm Long x Ø120mm	Material: AISI 316 L or Titanium Gr2	Volume: 1000 or on request
Pressure qualification: 150 PSI/300 PSI/900 PSI	Manufactur model: Isobaric/ Ni Balanced		

SAMPLER POWER AND COMM			
Function: On line	Output signal: RS485 Modbus/4-20 mA/ Ethernet	Output action: Continous	Consumtion: 30W
Load limitation: min. 2.8 A	Power supply: 24VDC/11-230 AC		