

SP MPFM



The Haimo SP (Spool Piece) MPFM is a state-of-the-art technology for inline measurement of multiphase flow.

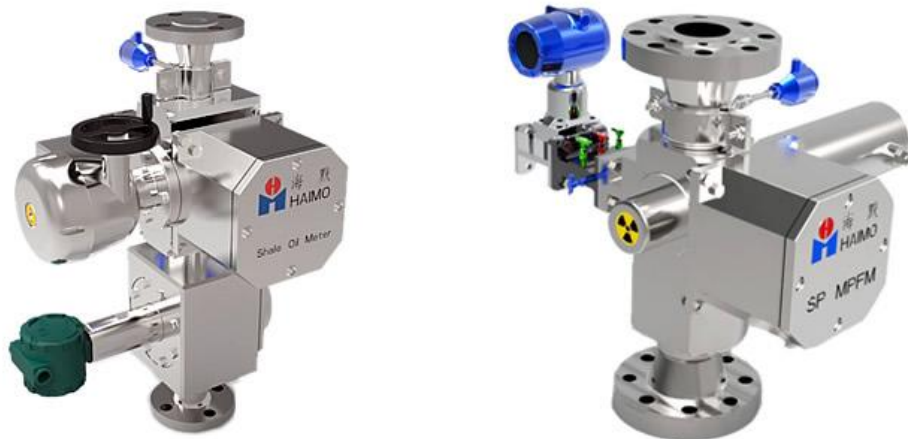
Introduction

The Haimo [SP \(Spool Piece\) MPFM](#) is a state-of-the-art technology for inline measurement of multiphase flow. The meter allows for accurate measurement of oil, water and gas flow rates, with a very compact mechanical solution. Depending upon requirement, the meter can either be a spool piece or a skid mounted design.

Working Principle

- This compact unit is composed of a Venturi flow meter and dual gamma meter.
- Total Flow Rate of the multiphase fluids (TFR) is measured by venturi flow meter.
- Multi-Variable Transmitter (MVT) measures the differential pressure across the venturi alongwith temperature and pressure. The raw signals from the MVT are processed by the Data Acquisition Unit, and then used to calculate the total flow rate alongwith PVT parameters.
- The Dual Gamma Meter is used to measure GVF and WLR of the multiphase fluids. The pulses from the dual gamma detector are collected and processed by the updated Haimo high speed dual gamma transmitter to provide high water cut accuracy at 0~95% GVF level.

The volumetric flow rates at standard conditions are computed from flow rates at line conditions using PVT software model . The PVT model developed by Haimo is a versatile tool for characterizing multi-component mixtures with emphasis on reservoir fluids.



Measurement principle

Haimo Inline Multiphase Meter detects gas fraction (GVF) and water (WLR) by gamma ray technology. Total flow rate of the multiphase stream is measured by the Venturi flow meter. A data acquisition unit (DAU) performs all calculations and converts flow measurements from line to standard condition using a PVT model.

Performance

Measurement Uncertainty (Confidence level=95%)			
GVF level	Term of Measurement Output	<2Mpa	≧2MPa
0-95%	Liquid Flow (Rel)	5%	5%
	Gas Flow (Rel)	7%	5%
	WaterCut (Abs)	2%	2%

Features

- Inline flow meter
- Highly accurate and repeatable data
- Remote operation and data acquisition
- Non – intrusive
- No moving parts – low maintenance
- Small footprint and weight
- Simple installation and safe operation
- Excellent dynamic response to change in well flow
- Low pressure loss
- Low power consumption

APPLICATIONS

- Measurement of the oil, water and gas in the multiphase flow at GVF<95%
- Production well testing
- Improvement of well testing and reservoir management
- Production monitoring and optimization

BENEFITS

- Reduce costs of field development

- Early detection of water
- Better diagnosis per well
- Remote and automated operation
- Simple installation and safe operation
- Acquisition of real-time data

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<http://www.haimotech.com/Products-and-Services/MPFM/SP-MPFM.html>

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