

# Multiphase Flowmeters





# We are Multiphase Measurement

MEDENG is an international technology company providing Multiphase Flowmeter (MPFM) solutions to the Oil and Gas industry. MEDENG specialises in MPFM applications and manufacture of MPFM equipment to all necessary requirements and specifications. Our MPFM technology simultaneously measures liquid hydrocarbons, gas and water phases of your production inline without the need for prior separation or line conditioning. MEDENG MPFMs represent a vastly superior modern approach to conventional well measurement solutions.

## Real time production data on every well

It is now feasible to have permanent production monitoring on every well. MEDENG MPFMs generate detailed production data, up to the second, 24hrs a day. Having detailed real time production information allows you to maximise the efficiency of your resources and empowers you to make the most informed and timely decisions.

## No PVT data required

Other MPFM solutions require continuing and expensive and time consuming downhole PVT reports. MEDENG MPFMs require only readily available pure phase density information as inputs. The pure liquid hydrocarbons are measured directly without the need for conversion or shrinkage factors.

## Nonradioactive

MEDENG MPFMs do not rely on a gamma-ray source. This eliminates regulatory risks associated with the importation, commissioning and operation of equipment based on principles of radioactivity. All forms of production, including high GVF (up to 100%) are measured accurately.

## Set-and-forget

MEDENG MPFMs are easily installed and maintained. MPFMs are constructed from off-the-shelf components so MEDENG can easily manufacture to any regional and international standard. Large scale and field-wide installations are handled by a very small crew.



MPFM with radio link to SCADA, Texas, 2012



MPFM installation offshore, Qatar, 2011

# MEDENG MPFMs

## Single Range/Dual Range MPFM

Our Single Range MPFM represents the most widely deployed and cost effective onshore MPFM solution. The Single Range MPFM is versatile, with the ability to be deployed both onshore and offshore. It can also be vehicle or trailer mounted for mobile well testing applications.



Dual Range MPFM, Syria, 2011

MEDENG Dual Range MPFMs combine all of the power and versatility of the Single Range MPFM and also deliver a 100:1 turndown ratio, an industry first.

## Subsea MPFM

MEDENG offers a Subsea MPFM based on the same proven working principles as its surface products. The Subsea MPFM is designed for the unique operating requirements of subsea resource extraction.



MEDENG Subsea MPFM, 2015

## Downhole MPFM

MEDENG's Downhole MPFM is a new product that uses the same reverse Venturi mechanism used in the MEDENG Subsea MPFM. The first of its kind, the Downhole MPFM has the ability to monitor all aspects of production with a downhole tool that represents a breakthrough in the industry.



MEDENG Downhole MPFM, 2015

## MPFM Manufacturing Specifications

### Sizing

Pipe Sizing	1/2" up to 6" Nominal Pipe Size
Total Liquid Flowrate	20BPD up to 40,000BPD
Total Gas Flowrate	0.2MSCFD to 90,000MSCFD
Turndown Ratio	Single Range: 10:1 Dual Range: 100:1

### Technical Specifications

Pressure	Up to 5000PSIG
Temperature	Ambient: -50°C to 80°C (-58°F to 176°F) Process: 0°C to 300°C (32°F to 572°F)
Metallurgy	CS/SS316/Duplex/Incolloy
Data Acquisition	SCADA: Modbus TCP/IP, Modbus Serial Sensors: HART, 4-20mA analog
Watercut Range	0-100%
GVF Range	0-100%

Background: MPFM (front) with test separator (rear) during comparative testing. Iraq, 2011





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