



**KAM CONTROLS IS AN  
ISO 9001 CERTIFIED COMPANY**

# **KAM® OWD® OIL WATER DETECTOR**

API COMPLIANT **CE** **Ex** PTB 08 ATEX 1026



**KAM® OWD® FT**



**KAM® OWD® INSERTABLE**



**KAM® OWD® SPOOL**

# KAM<sup>®</sup> OWD<sup>®</sup> OIL WATER DETECTOR

With **1% of full scale accuracy regardless of range**, the rugged KAM<sup>®</sup> OWD<sup>®</sup> Oil Water Detector is the ideal instrument for monitoring water concentrations in a variety of applications from production to refinery. The OWD<sup>®</sup> detector offers continuous, real-time data for net oil and net water, plus the conductivity, dielectric, and both real and imaginary parts of permittivity of the fluid. The patented three-antenna design **reads both oil continuous and water continuous modes simultaneously and automatically transitions between the two**. The OWD<sup>®</sup> can also be calibrated to correct for the affects of salinity. Measurement is fully automatic with no need for operator intervention or supervision.

The KAM<sup>®</sup> OWD<sup>®</sup> detector also uses internal references to **auto calibrate** for drift caused by temperature changes of the electronics, the aging of the electronics components, fluid pressure, and fluid temperature.

The **simplicity of design** and quality of engineering employed in the OWD<sup>®</sup> detector mean there are no moving parts. The KAM<sup>®</sup> OWD<sup>®</sup> is the only water cut meter available with all the requisite electronics incorporated into the unit itself. The output signal can be sent to Flow Computers, SCADA, PLC's or to a Central Control Room for logging or display on chart recorders or monitors.

The **four available models** include the OWD<sup>®</sup> Insertable sensor which can be inserted directly into your pipe or tank through a hot tap, helping you avoid costly drainage, the need for a bypass loop, or having to cut a section in the pipe. The KAM<sup>®</sup> OWD<sup>®</sup> FT Flow Through model can be used in an analyzer/densitometer loop, for process optimization where an accurate determination of water concentration is important. It is also vital to optimizing the desalinization process. The KAM<sup>®</sup> OWD<sup>®</sup> Spool is designed for well-head applications and includes a KAM<sup>®</sup> SMS<sup>™</sup> Static Mixing Spool and an integrated sample valve.

## KEY KAM<sup>®</sup> ADVANTAGES

- Automatic temperature correction
- Pressure rated up to ANSI 2500
- All requisite electronics housed within unit (can also be mounted remotely) and included in unit price
- Negligible pressure drop with insertable model

## PATENTED 3-ANTENNA DESIGN

- Automatically corrects for effects of density
- Automatically detects transitions between oil continuous and water continuous modes and monitors both modes simultaneously

## MULTIPLE APPLICATIONS

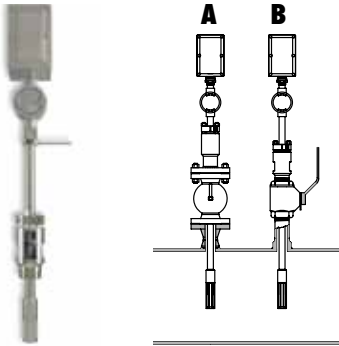
- Continuous production management, optimization and automation
- Refinery: incoming crude stream, feedstock, desalter optimization (KAM DOS)
- Custody transfer: marine, truck, and LACT unit
- Crude batching
- Well head: automatic well test, multiphase separators

## HEAVY OIL SUPERIORITY

- Fluid temperature to 315 °C
- 1% of full scale accuracy
- No salinity offset required

# AVAILABLE MODELS and MOUNTING OPTIONS

## KAM® OWD® INSERTABLE



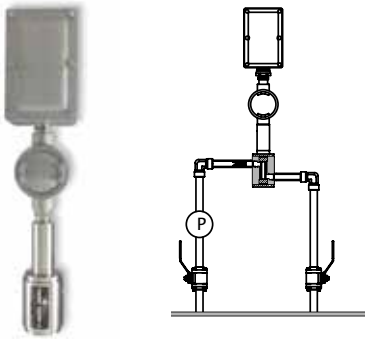
**A:** KAM® OWD® Insertable installed on a main pipe with 2", 3", or 4" flanged seal housing

OR

**B:** KAM® OWD® Insertable installed on a main pipe with 2" MNPT seal housing

- Inserts and retracts without having to drain the pipe
- Available in 0-100% or 0-10% models
- Ideal for Pipeline and Automated Tank Dewatering applications

## KAM® OWD® FT FLOW THROUGH

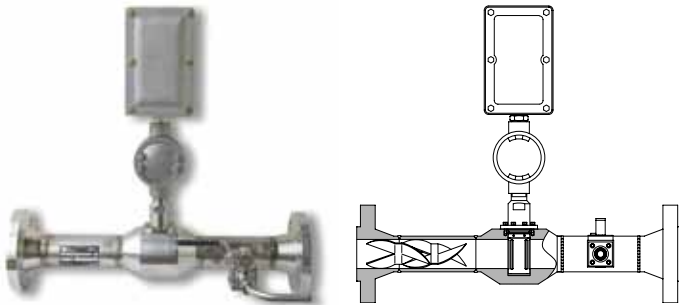


KAM® OWD® FT Flow Through installed on an analyzer loop with 1/2", 3/4", 1", or 2" FNPT

Also available with 2" flanges

- Other sizes, including metric available
- Available in 0-100% or 0-10% models
- Ideal for refinery desalter and analyzer loop applications

## KAM® OWD® SPOOL



KAM® OWD® Spool on 2" seamless pipe with weld-neck flanges; Integrated KAM® SMS® Static Mixing Spool; 1/2" sample valve with 1/2" pitot probe

- Ideal for skid fabrication and automated well test applications
- Includes patented KAM® SMS™ Static Mixing Spool
- Includes 1/2" sample valve with 1/2" pitot probe

## KAM® OWD® PORTABLE LAB/FIELD



- Completely portable, smaller than one cubic meter
- Includes KAM® CSM™ Circulating Sample Mixer and KAM® SR™ Sample Receiver
- Circulates sample fluid for complete homogeneity

To ensure the highest degree of accuracy, the flow must be homogenous. KAM CONTROLS recommends installation of the patented KAM® SMP™ Static Mixing Plate or KAM® SMS™ Static Mixing Spool upstream of your OWD™ detector to create a fully homogenous mixture in your pipeline. Proper calibration, also key to complete accuracy, can be achieved in the field with the KAM® PKF Portable Karl Fischer Moisture Analyzer. Data from the PKF analyzer can then be entered into the OWD® detector via optional wireless (Bluetooth® or ZigBee®) or corrected via RS232 at the flow computer.

# KAM<sup>®</sup> OWD<sup>®</sup> OIL WATER DETECTOR

## MEASUREMENT CAPABILITIES: CALIBRATED RANGE AND ACCURACIES

Range (water in oil)	0-5%	0-10%	0-30%	0-40%	0-100%
Accuracy (at listed range)	0.05%	0.10%	0.30%	0.40%	1.00%

## SPECIFICATIONS

Media:	Crude oil, refined products and chemicals
Material:	Wetted parts - 316 stainless steel (Optional NACE MR-01-75 Compliance Available)
Fluid temp:	To 600°F (315°C)*
Power:	24 VDC/1 amp at 24 watts
Accuracy:	1% of full range
Repeatability:	± 0.01%
Resolution:	± 0.01%
Pressure ratings:	ANSI 150, 300, 600, 900, 1500, 2500
Minimum water detection:	100 PPM
Sensor dimensions:	Ø1.5" x 7" (38mm x 178mm)
EX enclosures:	Sensor electronics - 3" x 6" x 3" (76mm x 152mm x 76mm)
Shaft length:	Off-the-shelf lengths are 12", 24", and 36" (305mm, 610mm, 915mm,) Additional lengths available
Pipe Size:	½" to 72" (15mm to 1829mm)
Weight:	from 20 lbs. (9kg)

## OUTPUTS

Selectable 4-20 mA with adjustable range or 0-5 VDC

Alarm or relay (digital contact closure)

RS232 Communication interface for calibration, connection to PLC

RS485 Modbus interface

HART protocol

Optional Bluetooth<sup>®</sup> or ZigBee<sup>®</sup> wireless



[WWW.KAM.COM](http://WWW.KAM.COM)

The KAM<sup>®</sup> OWD<sup>®</sup> must be installed in accordance with API MPMS Chapter 8, Section 2, Table 1.



Email [Sales@Kam.com](mailto:Sales@Kam.com)

Tel +1 713 784 0000

Fax +1 713 784 0001

KAM CONTROLS, INC. RESERVES THE RIGHT TO CHANGE THIS DOCUMENT WITHOUT NOTICE.

OWDLIT-0412