

MOD 4100

石油分析仪

这款新型MOD-4100开创了石油在线分析的突破。
这款独特的分析仪结合了不同化学物理技术来实现精准测试石油的主要参数指标。
通过这一独立分析系统可以安装在室外不锈钢外壳，具有积分样品处理系统。

测试项目

- ⇒ 盐含量
- ⇒ 黏度
- ⇒ 密度
- ⇒ 硫化氢
- ⇒ 水

优势

- ◆ 石油质量在线临界参数的测量方法。
可以实现任何波动的脱盐工艺条件在线优化
- ◆ 减少水、化学品和脱盐能耗
- ◆ 表明电脱盐破乳效率。
- ◆ 提供在线信息的属性的石油从油井，在存储，在管道运输和运输
提供原油均匀性的在线数据及其规范
- ◆ 减少腐蚀，防止管道堵塞和结垢。
使高效石油混配
- ◆ 可根据石油性质进行蒸馏的在线优化，防止原油蒸馏
- ◆ 防止湿硫化氢石油蒸馏



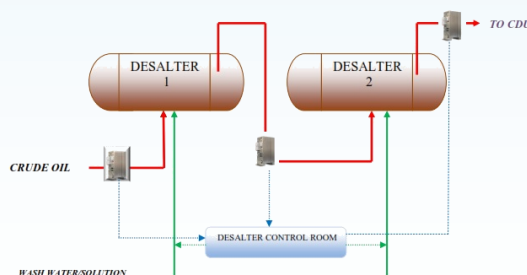
THE BENEFIT OF CRUDE ANALYSES

Crude oils and crude oil blends have different physical and chemical properties which depend on their place of origin. Even if originated from the same location, fluctuations in the physical properties are a common phenomenon. Several quality properties have an impact on the crude price and cost of processing a crude oil in blending stations and refineries. Major properties of interest are the density, the salt content, the hydrogen sulfide content, the viscosity and the water content.

On-line information of these parameters is critical for the CDU performance, the sulfur content of final distillates and in the prevention of corrosion, fouling and plugging of the pipelines and production units of the refinery.

In crude distillation, real time data is a basic requirement that enables taking immediate steps in desalter and CDU process parameters to reduce the impact of these parameters to its minimum.

Incorporation of the MOD 4100 before, between and after the desalters allows to operate the desalter at maximum efficiency and at lowest cost. It enables to reduce the salt content to its minimum before entering the CDU.



The MOD 4100 has been developed as an *“all included” On-Line Crude Oil Process analyzer* to provide on-line and at real time analytical data of these critical crude oil properties.

The importance of measuring on-line crude oil parameters is not only restricted to the refinery operations, but is also essential from a commercial point of view.

It enables to check the crude quality on-line, during the transportation and storage chain from well-head to until the end user.

The MOD 4100 is also an effective tool in crude blending. It allows on-line changing of the ratio between different crude qualities to form crude blend of lowest cost, and by maximization of low cost heavy and opportunity crude in the blends, without losing expected physical properties.

TECHNICAL SPECIFICATION

PROPERTY	SALT (*)	DENSITY (*)	VISCOSITY (*)
Principle / Detection	Electrometric / Conductivity (Based on ASTM 3230)	Oscillating U-Tube	Vibrating technology at resonance
Measuring Range	0-150 PTB 0-400 PTB	0-3000 Kg/m ³	From 0.1-10 mPa. To 1000-1000000 mPa.s
Response Time (per stream)	6 min	5min	
Accuracy	Correlates with ASTM D 3230	± 0.1 kg/m ³	+/- 0.5% FS
Repeatability	± 2 % FS	± 0.1 kg/m ³	+ /- 0.2 % FS

PROPERTY	H2S (*)	WATER (*)
Principle / Detection	Stripping and H2S detection	Dielectric Constant
Measuring Range	0-100 ppm	0-4%
Response Time (per stream)	5 min	5 min
Accuracy	+/- 10 ppm	+/- 0.1%
Repeatability	+/- 5 ppm	+/- 0.02%

(*) Optional

GENERAL PROPERTIES <i>(May vary according to optional configurations)</i>	
Operating Temperature	0– 40 °C
Sample Temperatures	0- 60 °C
Sample Inlet Pressure	4-12 barg for others
Sample Return Pressure	0 -2 bar
Power Supply	100-130 VAC 50-60 Hz 200-220 VAC 50-60 Hz
Sample Flow Rate	3 l/min
Ambient Temperature	0—35 °C (outside) , optional –40 to + 70 °C
Instrument Air	5-6 barg clean instrumentation air 5-10 l/min
Nitrogen	4 –10 Barg, 2-5 l/min
ATEX	Exp—Class 1 Div 2

PRINCIPLE AND USERS BENEFIT

The MOD 4100 provides a complete solution to measure major properties in crude oil, by implementation of different techniques. The analyzer is controlled by an automatic system, that opens valves and activates pumps and dosing pumps to bring the sample from the sampling point to the measuring system. The salt and water content, the density and the viscosity are measured, being based on physical properties.

Accurate analyses start from the sampling. The MOD 4100 crude analyzer is equipped with a appropriate sampling system, for sampling the process stream and preparing the sample, if required heating, cooling, filtration etc, to be measured at optimized conditions.

Sample can be withdrawn from the oil-well, pipes, vessel, tanks, or at any other location in the crude oil supply chain from the oil well during transportation and storage, desalting until the crude distillation unit.

Water, viscosity and density are determined directly in a flowing sample. The salt concentration measured in samples taken from the process stream.

The analyses to be performed by the MOD 4000 Crude oil analyzer are adapted to crude oil to be measured and the requirements and the needs of the customer.

The MOD 4100 crude oil analyzer contributes to a better on-line control of the physical properties of the crude oil at any spot. It enables to ensure the homogeneity of crude oils in and during transportation. It enables to determine that an entire cargo of crude oil complies with its specification.

The MOD 4100 is characterized by low cost of ownership and maintenance.

Corrosion prevention, efficient operation of the desalter, on-line crude oil monitoring of critical crude oil parameters during transportation, storage and blending reduce unnecessary financial losses in the crude oil chain that can easily be prevented. This provides a short ROI (return of investment) to the MOD 4100 Crude Oil analyzer.

