MODCON
SYSTEMS LTD

Process NMR Analyzer
Model MOD-8000

The **MOD-8000** is a new generation of **NMR (Nuclei Magnetic Resonance)** online process analyzer. MOD-8000 is designed to analyze composition of process fluids, using magnetic resonance spectroscopic techniques. It can detect the presence and the concentration of the chemical constituents in a process stream. By utilizing exclusive software, it provides closed loop supervisory control of a process unit. It has an extensive range of applications from light Naphtha streams to heavy Crude oil.

The user benefits include :

- Increased throughput
- Better process control
- Timely detection of off-spec product
- Lower operating costs

NMR ANALYZER ADVANTAGES

- Increase in the productivity of valuable products
- Process control improvement
- Timely detection of sub-standard products and improvement of the quality of petroleum products
- Dramatic decrease of production operating costs

CE Ex ATEX EEC's authorized ATEX representative has reviewed the contents IP68 INGRESS PROTECTION Intertek

NMR Analyzer MOD-8000

KEY ADVANTAGES

- **Real time**, continuous **flow-through stream** analysis
  - ◊ Reduction in response time allows tighter control
- Provides analysis of **dense** and **opaque** materials
- **Direct Molecular Measurement**
  - ◊ No indirect predictions on critical measurements
- **Linear Spectral Response** across broad range
  - ◊ Models can be extrapolated accurately
- **Direct** and **Multi-property** analysis
  - ◊ Replaces conventional analyzers
  - ◊ Provides high accuracy data for precise control
  - ◊ High repeatability and reproducibility
- **Simple Sample Conditioning** required
  - ◊ No water removal, limited filtering
- **Minimal maintenance** required

IMPLEMENTATION EXAMPLES

- Crude Switching/Blending
- Gasoline Blending
- Diesel Fuel Blending
- Fuel Oil Blending
- Naphtha Cracking
- Raw materials for catalytic cracking
- FCCU Distillates
- FCCU Feed
- CDU Distillate
- Catalytic Reforming

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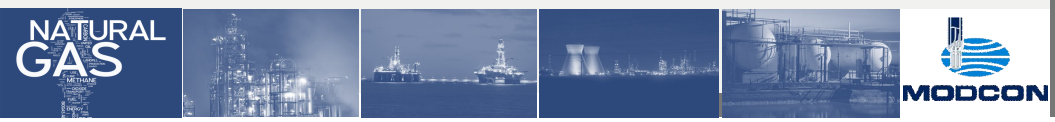

TECHNICAL SPECIFICATIONS

Measurement Method:	Nuclei Magnetic Resonance spectroscopy
Calibration Method:	Chemometrics
Multi-channel Ability:	Up to six measurement streams
Time per Measurement:	Approximately 2 minutes (application dependent)
Sample Conditioning:	Application dependent
Communication:	Modbus over RS485 or over Ethernet, TCP/IP over Ethernet
Weight & Dimensions:	
Dimensions:	Stainless steel enclosure 140x190x60 (IP56 / NEMA 4X)
Weight:	400 kg
Power Consumption:	3 Ø 380 - 415 VAC 25 A
Environmental Operating Conditions:	
Operating Temperature:	+10°C to +40°C
Relative Humidity:	30-90% (non-condensing)
Storage Temperature:	0°C to +45°C
Standard Flow Cell:	48 inches (105 cm) long, 3/8 inches (10mm) diameter
Process Operating Conditions:	
Operating Temperature:	4°C to 120°C
Maximum Inlet Pressure:	25 bar
Flow rate requirement:	1000-3000 ml/min
Relative Humidity:	90% (non-condensing)
Instrument Air:	Dry, oil-free 3.5 bar minimum
Initial purge:	9.25 scfm (250 L/min) for 20 min
Continuous purge:	0.66 scfm (18 L/min)
Reference Material:	Water or Diesel

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SYSTEM SUPPORT

- Calibration models construction
- Installation and start - up
- Support for calibration models is provided within one year from the validation date
- Real time remote support
- 24x7 remote support
- Technical support for hardware and software
- One year warranty for all the components
- Complex deployment of analytical Shelters and peripheral equipment

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