



# D-MASH NMR ANALYZER

Qualion NMR is pleased to announce the release of its new process NMR. This is a step forward in the development and delivery of high-end state-of-the-art analyzers for the process industry. The analyzer offers a wider range of physical, chemical and biological parameters that can be measured in real-time with superior accuracy and repeatability. The product incorporates extensive improvements and enhancements, such as self-diagnostic functionality, which also can be remotely monitored. The overall benefit is a higher level of plant utilization and profitability.

## APPLICATIONS

- Crude oil blending
- Crude distillation unit feed switch
- Crude distillation unit rundown or distillates
- Catalytic reformers
- Isomerisation unit
- Alkylation unit
- Aromatics unit
- Fluid catalytic cracker (FCC) feed and rundown
- Hydrocracker unit
- Lube plant
- Fuel oil blending
- Gasoline blending
- Distillates or diesel blending
- Naphtha cracker feed

## FEATURES

- Permanent magnet system (neodymium) of 1.35 Tesla
- Resonance of hydrogen nuclei
- Non-invasive measurement technology
- A variety of sample flow-through probes up to 7 mm
- Linear spectral response
- High spectral resolution
- Remote calibration and diagnostics
- No moving parts



## INNOVATIVE IMPROVEMENTS

- Wall mounted design with reduced installation costs
- Logical layout requiring simple wiring installation for utilities
- Easier and direct service access to both magnet and electronic compartments
- New integrated magnet and shimming heater (MASH) assembly that reduces size as well as the number of cable connections, thereby enhancing reliability
- A new process Flow-Pipe probe with an integrated RF pre-amplifier allowing longer cable distances between the MASH assembly and the spectrometer electronics
- Significant improvement in signal-to-noise ratio, resulting in easier application of chemo-metric modeling
- Complete remote connectivity using the Internet via Ethernet or modem connection to control, diagnose, and service the spectrometer

## NMR BENEFITS

- Enables analyses of opaque and optically dense materials
- Self diagnostic and monitoring system
- Rapid implementation at low cost
- Low maintenance reduces running costs

## ADDITIONAL POTENTIAL MARKETS

- Pharmaceuticals
- Polymers and plastics
- Food and beverages

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High performance Dewar  
Flow-Pipe probe for  
liquids and gases

## ABOUT NMR ANALYSIS

Qualion NMR technology uses a permanent magnet to analyze a wide range of hydrogen containing components. The non-intrusive measurement enables NMR to analyze dark and opaque liquid streams that are beyond the reach of optical measuring, while keeping the sampling extremely simple. Values for multiple control parameters are readily available from a single measurement. High spectral resolution and linear response yields an extremely robust calibration model that allows rapid online implementation with significant improvements in overall production throughput and ROI.

## SPECIFICATIONS

<b>Nuclei Observed</b>	H+ (primary), F19, P31(optional)
<b>Operating Frequency</b>	58±1.0 MHz for H+
<b>Dewar Flow-Pipe Probe</b>	Probe designed to handle liquids and gases at 5°C to 120°C (41°F to 248°F) Maximum pressure of 24.0 kg/cm <sup>2</sup> (350 psi) Maximum internal diameter - 7 mm Typical analyzer sample flow rate of 80 L/H
<b>Magnet System</b>	Temperature stabilized, self-condensed field, permanent (neodymium) magnet with integral field gradient (shim) coils and automatic shim control
<b>Field Strength</b>	1.35 Tesla at 45°C
<b>Fringe Field</b>	Less than 1 gauss on external enclosure of magnet
<b>Dimensions</b>	188.2 cm H x 120.6 cm W x 71.5 cm D (74.1 in H x 47.5 in W x 28.1 in D) Add 15 cm (6 in) to height for shipping pallet
<b>Weight</b>	635 kg (1400 lb) net weight 750 kg (1650 lb) gross shipping weight
<b>Power Requirements</b>	Europe 3~380-415VAC, 7KVA, 50-60 Hz. USA 1~220-240VAC, 7KVA, 50-60 Hz.
<b>Other Utilities</b>	Air purging 5.5 bar (80 psi) minimum instrument air (dry, oil-free) Initial purge: 9.25 scfm (250 L/min) for 20 min Continuous purge: 0.66 scfm (18 L/min)
<b>Ambient Temperature</b>	Range: Min 8°C - Max 38°C (46°F to 100°F)
<b>Communication</b>	DCS - MODBUS RS485. Local: Ethernet or remote connection via modem
<b>Enclosure</b>	NEMA 4, IP 56
<b>Certification</b>	ATEX II 2 G EEx p II T4

## THE COMPANY

Qualion NMR is an innovative company that develops, manufactures and markets process analyzers, based on its unique NMR technology. The company delivers cutting edge solutions for improved process optimization and control to its customers in the petrochemical, refinery, plastics, pharmaceuticals and food industries. It has successfully installed NMR process solutions in numerous sites throughout the world. The company's team of experienced specialists provides full technical support covering planning, implementation, operation and maintenance.

### For more information contact:

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