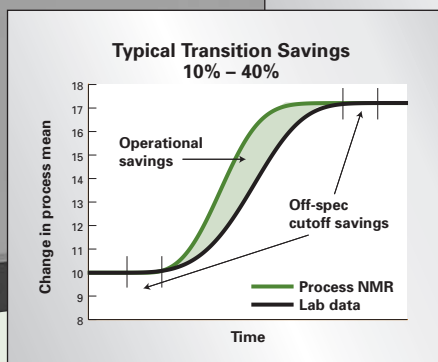
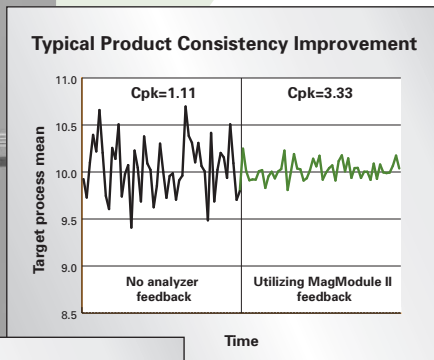


MagModule II™

The leader in process NMR technology

magneflow®



MagModule II selected for
2003 R&D100 Award

progression is the world's leading provider of Nuclear Magnetic Resonance (NMR) solutions for process control. The MagModule II is the latest generation in process NMR technology combining a small footprint with a track record of proven success and is available for installation in both hazardous and

non-hazardous locations. Patented, high-performance, data analysis methods provide reliable analysis of key process parameters. Complete logic and computer controls are provided to enable Advanced Process Control (APC) and greater profitability.

Benefits

- Improved plant efficiency
- Increased production rates
- Improved transition times
- Independent of process temperature
- Fully compatible with off-line MagStation™ products
- Independent of particle size

Advantages

- Routine calibration not required
- Prior NMR knowledge not required
- Measures powders, pellets, slurries and liquids
- Worldwide support/training

Applications

- Polypropylene
 - Xylene solubles
 - Decalin solubles
 - Heptane insolubles
 - Tacticity
 - Ethylene content
 - Flex modulus
 - Melt flow
- Polyethylene
 - Density
 - Crystallinity
 - Melt index
- Phosphate mining/fertilizers
 - BPL
 - P₂O₅
- Power generation
 - Fuel oil viscosity
 - Coal analysis



Specification

Field Cabinet

Hazardous Area Option

Class 1, Division 2, Group C and D, Zone 2, Group IIB, T4
Designed for use in -20°C (-4°F) to +40°C (104°F)
Consult factory for higher temperatures.
Cabinet is NEMA4 (IP66).

Climate Control

Air conditioner/electric heaters maintain cabinet to 35°C (95°F) ± 10°C.

Dimensions

Cabinet: 32" W x 24" D x 66" H (81 x 61 x 168 cm)
Footprint required (including purge system and air conditioner):
59" W x 24" D (150 x 61 cm)

Weight

Approximately 1000 lbs (454 Kg)

PLC

Software based (Soft-PLC) for control and sequencing of valves and plant interfacing

Piping/Tubing

Piping and tubing is 304/316 stainless steel. Swagelok fittings are used on all tubing connections. 150 lb RF flanged connections are used on all customer interfaced piping. Customer connections are as follows: purge and actuator gas (instrument air or nitrogen) supply, nitrogen supply (1" flange), sample inlet and outlet (**progression's** scope), vent outlet (1" flange).

Control Computer System

Location

At plant control room or maintenance building

Area Rating

Non-hazardous

DCS Link

Will be linked through the control computer system

Hardware

High-end Windows® compatible PC

Software

progression's proprietary A/Ztec® operating software
(Windows based) pcAnywhere™ modem communication software
Soft-PLC operating software

Connections

Direct phone line to modem needed
Communication connections between control computer system and field cabinet
Fiber optic cable (4 fibers) to field cabinet (wire connection optional)
Purge safety alarm contact to DCS (optional)

On-line Extraction System

Location

Location (at plant transfer line or process) is agreed upon by **progression** and customer.

Hazardous Area Option

Class 1, Division 2, Group C and D; Zone 2, Group IIB, T3/4

Dimensions

Approximately 30" W x 14" D x 46" H (76 x 37 x 116 cm)

Weight

Approximately 200 lbs (91 Kg)

Electrical

One connection (one 4-wire cable) from field cabinet to extraction system utilizing DeviceNet technology

Piping/Tubing

All piping and tubing is 304/316 stainless steel.
Swagelok fittings are used on all tubing connections.
150 lb RF flanged connections are used on all piping.
Customer connections are as follows: nitrogen supply (1"), instrument air supply (0.5"), inlet to extraction system (1"), sample/gas return to process (1.5").

Manual Sampling Optional

(1) 1" 150 lb RF flange for manual sampling at the extraction panel

Documentation

Two complete sets of the following documents are issued at shipment of system: operation and software manual, as-built drawings, P&ID drawings.

Service

Components used on extraction panel are approved to appropriate area classification.

Covered by one or more of the following patents: USA: #5,530,350, #5,596,275, #5,675,253, #5,408,181, #5,420,508, #5,015,954, #5,049,819, #5,302,896, #5,162,103, #5,319,308, #5,302,897. Canada: #2,170,640. Germany, France, UK, Netherlands: #576,421. Other patents pending.



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