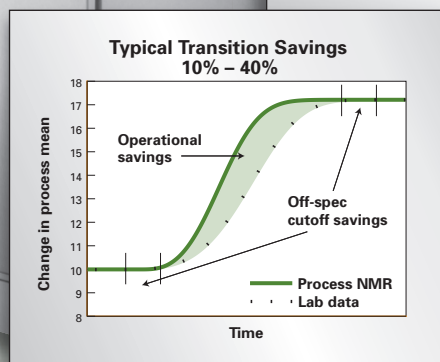
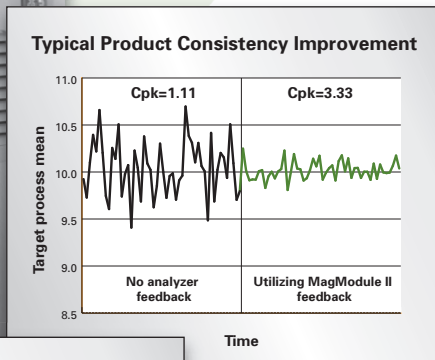


# MagModule II™

The leader in process NMR technology

Magneflow®



WINNER

Progression is the world's leading provider of Nuclear Magnetic Resonance (NMR) solutions for process control. The MagModule II utilizes 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 measurement 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
- Fully compatible with off-line MagStation™ products
- Independent of particle size

## Advantages

- Routine calibration not required
- No radioactive or hazardous material required
- Prior NMR knowledge not required
- Measures powders, pellets, slurries and liquids
- Worldwide support/training

## Applications

- Polypropylene production
  - Xylene solubles
  - Decalin solubles
  - Ethylene content
  - Flex modulus
  - Heptane insolubles
  - Tacticity
  - Melt flow
- Polyethylene production
  - Crystallinity
  - Melt index
  - Density
- Phosphate mining and chemicals
  - BPL
  - Fluorine
  - P<sub>2</sub>O<sub>5</sub>
- Energy
  - Fuel oil viscosity
  - BTU
  - Biofuel qualification



# 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 25°C (77°F) ± 5°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

Integral PLC in field cabinet 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

### 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

### Connections

Direct phone line to modem needed  
Communication connections between control computer system and field cabinet  
Fiberoptic 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.  
Components used on extraction panel are approved to appropriate area classification.

### 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)

### 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

Operation and software manual, as-built drawings, P&ID drawings.

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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