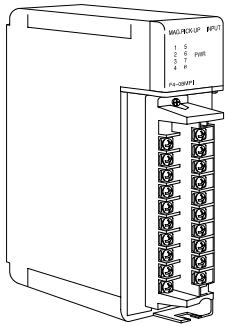


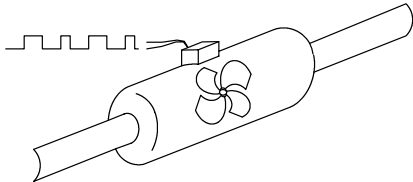
# Magnetic Pulse Input Module

## F4-08MPI



The F4-08MPI is an eight channel Magnetic Pulse Input CoProcessor Module. It is designed to take input pulses from Hall effect type magnetic pick-

ups, (typically found on turbine meters, tachometers and signal generators), and perform calculations. Up to 8 differential inputs from magnetic pickups are wired directly to the terminal block on the front of the module.



The Magnetic Pulse module is based on the FACTS Engineering CoProcessor design. Therefore, it offers a built-in real-time battery-backed clock/calendar and a very fast floating point processor. Because of this powerful design, it can easily support Indicated Volume, Gross Volume, Volume Logging, Flow rate, and Tachometer modes. These operational modes are explained in the adjacent chart.

Specifications	
<b>Module Type</b>	CoProcessor, Intelligent
<b>Number of Channels</b>	8 Differential per module
<b>Modules per CPU</b>	8 Maximum, any slot in CPU base
<b>Input Voltage Range</b>	±10 mV to ±10 VDC peak
<b>Input Frequency Range</b>	DC to 5.0 KHz (channels 1 to 4) DC to 2.5 KHz (channel 5 to 8)
<b>Maximum Continuous Overload</b>	-150 to +150 VDC, 220 Vrms
<b>Input Impedance</b>	100KW
<b>Differential Low – Pass Filter</b>	f <sub>-3db</sub> = 20KHz, 6db per octave roll-off
<b>Common Mode Voltage Range</b>	±15VDC
<b>Common Mode Rejection</b>	Over common mode input voltage range
<b>Update Time</b>	3 PLC scans minimum
<b>Isolation</b>	750 VDC, channels to PLC
<b>LED Status Indicators</b>	Power ON, Input Pulse (8 LEDs)
<b>Field Termination</b>	20 Position Removable Terminal Block 16 positions, ±CHn, Pulse inputs 2 positions, 24 VDC power supply
<b>External Power Required</b>	170 mA maximum, +18 to +25VDC
<b>Internal Power Consumption</b>	225 mA from 5VDC maximum
<b>External Power Required</b>	170 mA maximum, +18 to +25VDC
<b>Internal Power Consumption</b>	225mA from 5VDC maximum
<b>Operating Environment</b>	0°C to 60° C (32°F to 140°F)/5% to 95% humidity (non-condensing)
<b>Manufacturer</b>	FACTS Engineering

Modes	
<b>Indicated and Gross Volume</b>	
<b>Configuration</b>	The module calculates Indicated Volume of flow given a K Factor. The K Factor is the nominal pulses per unit for the flow meter. This is the factory calibration number normally stamped on the flow meter housing. Indicated volume may be in pulses, gallons, dm <sup>3</sup> , or barrels depending on the K Factor. Gross Volume may also be calculated by substituting for the K Factor, the K Factor divided by the Meter Factor (Meter Factor is the calibration factor derived at the installation).
<b>Output Data</b>	Total volume of flow is output to the PLC in engineering units. The formulas used to calculate volume are: Indicated Volume = Total Pulses ÷ K Factor Gross Volume = Total Pulses ÷ (K Factor/Meter Factor)
<b>Flow Rate</b>	
<b>Configuration</b>	The Flow Rate calculation uses the same configuration information as the Volume calculation. The sample rate may range from .1 to 999.9 seconds, or minutes.
<b>Output Data</b>	Flow rate is output to the PLC in engineering units. The formula used to calculate flow rate is: (Volume last sample time – Current Volume) ÷ Sample Rate.
<b>Volume Logging</b>	
<b>Configuration</b>	Indicated or Gross Volume may be logged at either a particular time or at periodic intervals throughout the day. If desired, the counters may be automatically reset when the data is logged. The built-in real time battery-backed clock calendar must be set before volume logging is enabled.
<b>Output Data</b>	Indicated or Gross Volume is output to the PLC in engineering units. A one-shot flag is also set to indicate to the PLC that new data has been logged.
<b>Tachometer</b>	
<b>Configuration</b>	Tachometer applications are simply a variation of the flow rate calculation. To calculate revolutions per minute, set the K Factor equal to the number of pulses per revolution multiplied by 60. Set the Sample Rate equal to one second. To calculate pulses per second (PPS), set the K Factor equal to one and the sample Rate equal to one second.
<b>Output Data</b>	RPM or PPS