**Description**

The MicroMag-12-NEMA4 is a rugged controller designed for the hostile environment of the HVAC/R industry. It is designed to be the primary manager of the unit it is controlling. The MicroMag provides flexibility with set points and control options that can be selected prior to commissioning a system or when the unit is live and functioning. Displays, alarms and other interfaces are accomplished in a clear and simple language that informs the user as to the status of the controller.

The MicroMag is designed to control up to 6 circuits with up to 1 compressor each. Complementing the MicroMag controller are 2 expansion boards that allow 26 Relay Outputs, 1 Triac Output, 42 Sensor Inputs and 12 Analog Outputs (using 2 RO and 2 SI expansion boards). The MicroMag connects to the expansion boards using its MCS-I/O port. The MCS-I/O uses a RS485 network cable supporting a maximum length of 5000 ft.

The MicroMag has two additional RS-485 ports. Both ports allow the user to interactively communicate with the MicroMag via MCS-Connect. A BMS (Building Management System) running Modbus RTU or BACnet MSTP can also communicate with the MicroMag via either RS-485 port for monitoring and control purposes.

Because the terminal blocks are removable, board replacement requires no wires to be removed.

A complete software support package MCS-CONNECT is available for your PC allowing for dynamic on-line display screens, remote communication, graphing, and more.

The MicroMag-12-NEMA4 is suitable for installation, both indoor and outdoor. Utilizing a gasket for an environment seal provides the unit with a NEMA 4 rating if installed in a NEMA4 enclosure.

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**Specifications - Rev. 6.1**

**Controller**
- Dimensions: 10.842"l, 7.867"w, 3.141"h
- Mounting Holes: Mounts on a door using Eight #6 metal studs and nuts
- Operating Temperature: -4°F to +158°F (-20°C to +70°C)
- Operating Humidity: 0-95% Non-Condensing
- Storage Temperature: -4°F to +158°F (-20°C to +70°C)
- Sensor Inputs (SI): 10 inputs 0-5vdc (10-bit A/D)
- Relay Outputs (RO): 6 outputs 5.0 amps @ 24V/120V/230V
- Analog Outputs (AO): 4 outputs 0-10vdc
- Printed Circuit Board: Four layer with separate power and ground planes
- Input Power (Standard): 12VDC ±10% 50/60Hz
- Current Draw: 850mA @ 12VDC
- MCS-I/O Comm Port: 1 @ 38,400 baud
- RS-485 Comm Port: 2 @ 19,200 to 115,200 baud, select from MCS Protocol, BACnet MSTP, Modbus RTU
- Real Time Clock: Battery backup
- Power Detection: Automatic power fail reset
- Real Time Clock: Battery backed
- Power Detection: Automatic power fail reset

**Keypad/LCD**
- Display: 2 x 16 Backlit
- Keypad Layout: 6 keys (Menu, Enter, 4 direction)
- Connection: 12 pin header plus 4 nylon bolts