

M line

Superior Reliability and Performance in the Field



M line (multi-equipment application) controllers are part of the Automated Logic Corporation native BACnet® system, which also includes S line (single-equipment application) and U line (unitary-equipment application) control modules. M line controllers are ideal for multi-equipment applications in commercial environments. These robust standalone controllers utilize native BACnet communications over a high-speed ARCNET 156 Kbps network to ensure superior performance.

Key Features and Benefits

- Multi-equipment capabilities support general HVAC applications including complex central plants.
- Native BACnet communication over a high speed ARCNET 156 Kbps network.
- Graphical programming for universally understood and self documenting control sequences.
- Tough construction delivers superior performance and reliability in the field.
- Removable screw terminal strips simplify maintenance.
- Modular expandable design, configurable up to 192 points for scalable control solutions.
- Integral support for the BACview® interface display unit - enhances local
- 32-bit microprocessor and ARCNET communications co-processor.

The M line series of expandable and non-expandable controllers are ideal for all types of facilities management applications. The expandable controllers are offered in I/O configurations that easily scale up to 192 points. This flexible design lets you add point types incrementally and size control panels to match system requirements. Intelligent features include on-board expansion connectors for additional I/O capacity and removable screw terminal strips to simplify installation and maintenance.

With powerful 32-bit microprocessor technology, high-resolution inputs and outputs, and pneumatic outputs, M line control modules are a perfect match for the most complex control environments. Support for EIKON® graphical programming also provides an unmatched capability to engineer complex control sequences, verify performance, and generate instant documentation all without special programming expertise. Add in the advantage of the BACview local operator interface and you see why M line control modules provide an industry-leading combination of capability, performance, and value.

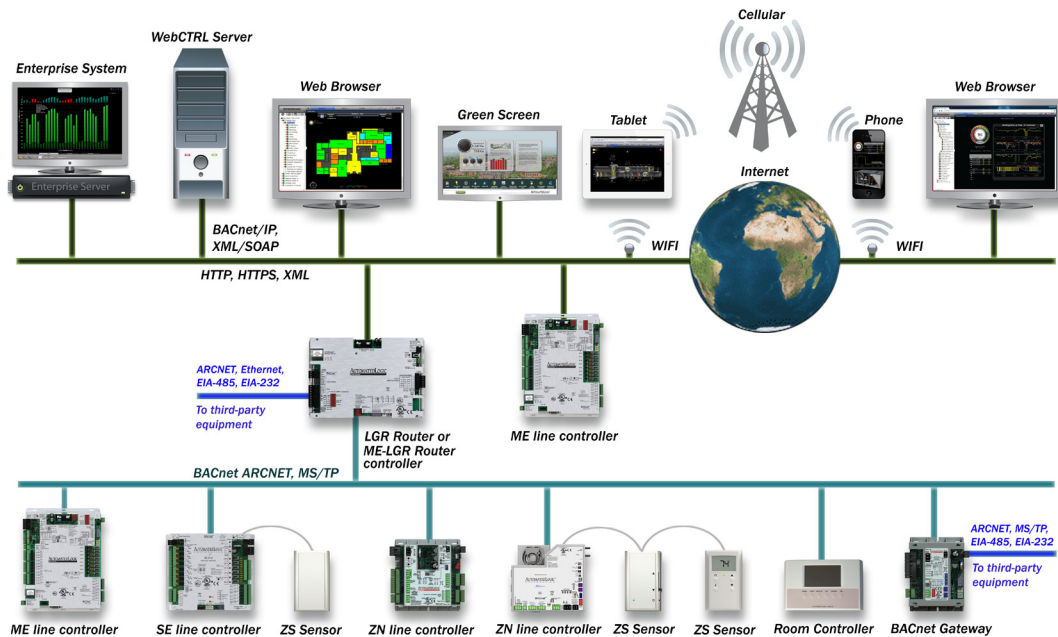
With flexible I/O point configurations, M line is designed to cost effectively fit a variety of commercial control applications. Module circuit boards are protected by a rugged aluminum cover, which serves as a ground plane and provides optimum electrical protection and noise immunity.

AUTOMATED LOGIC
United Technologies

1150 Roberts Boulevard
Kennesaw, Georgia 30144
770/429-3000
Fax 770/429-3001
www.automatedlogic.com

M line

Specifications



BACnet Support:	Conforms to the BACnet Advanced Application Controller (B-AAC) Standard Device as defined in BACnet 135-2001 Annex L.
Power:	24VAC \pm 10%, 50-60Hz.
Physical:	Rugged aluminum cover. Removable screw terminal blocks.
Expansion:	Up to five expansion modules with a maximum of 192 points.
Protection:	Surge and transient protection circuitry for power and communications.
Communication:	BACnet® over ARCNET 156 Kbps (or CMnet for backwards compatibility with existing ALC systems). Includes optically isolated communication port and diagnostic port.
Network Option:	BACnet over ARCNET 156 Kbps standard for CMnet. BACnet MS/TP @ 9600 to 76.8 kbps optional. (For M220nx, 9600 and 38.4 kbps only.)
BIBB Support:	Supports BACnet Interoperability Building Blocks (BIBBs) from the following groups: Data Sharing, Alarm and Event Management, Scheduling, Trending, and Device and Network Management.
Microprocessor:	32-bit Motorola MC68-series microprocessor.
Memory:	1MB of Flash memory and 2 MB of non-volatile, battery-backed RAM.
Realtime Clock:	Battery-backed realtime clock keeps track of time in event of power failure.
Environmental Operating Range:	0°-130°F (-17.8 to 54.4°C), 10-95% RH non-condensing. NOTE: Control modules should be installed within the building.
Digital Outputs:	Relay contacts rated at 3A resistive @ 24VAC. Hand-Off-Auto switches. Normally open-normally closed jumpers. LED indication.
Universal Inputs:	0-5VDC, 4-20mA. Thermistor (BAPI Type II curve).
Input Resolution:	12 bit A/D.
Input Pulse Frequency:	10Hz (minimum 50mS pulse width).
Analog Outputs:	0-10VDC, 4-20mA, LED indication.
Output Resolution:	8 bit D/A.
Listed by:	UL916 (Canadian Std C22.2 No.205-M1983), CE, FCC Part 15 - Subpart B - Class A. Dimensions:



M-Line Standalone Control Modules

Designation	Digital Outputs	Universal Inputs	Analog Outputs	OVERALL DIMENSIONS:		Recommended Panel Depth
				Width	Height	
Standalone Control Modules						
M0100	0	10	0	11-5/16" 287mm	7-1/2" 190mm	2-3/4" 70 mm
M0320	0	32	0	11-5/16" 287mm	11-5/16" 287mm	2-3/4" 70 mm
M220nx [†]	2	2	0	8-7/8" 225mm	7-1/2" 190mm	2-3/4" 70 mm
M4106nx	4	10	6	11-5/16" 287mm	7-1/2" 190mm	2-3/4" 70 mm
M4106	4	10	6	11-5/16" 287mm	7-1/2" 190mm	2-3/4" 70 mm
M8102nx	8	10	2	11-5/16" 287mm	7-1/2" 190mm	2-3/4" 70 mm
M8102	8	10	2	11-5/16" 287mm	7-1/2" 190mm	2-3/4" 70 mm
M16160	16	16	0	11-5/16" 287mm	11-5/16" 287mm	2-3/4" 70 mm
M880nx	8	8	0	11-5/16" 287mm	7-1/2" 190mm	2-3/4" 70 mm
<i>(nx denotes non-expandable control module)</i>						
Expander Control Modules[†]						
MCPU	Central Processor Unit			11-5/16" 287mm	4" 102mm	2-3/4" 70 mm
MX040	0	4	0	11-5/16" 287mm	3-3/4" 95mm	2-3/4" 70mm
MX080	0	8	0	11-5/16" 287mm	7-1/2" 190mm	2-3/4" 70 mm
MX0160	0	16	0	11-5/16" 287mm	11-5/16" 287mm	2-3/4" 70 mm
MX0320	0	32	0	11-5/16" 287mm	11-5/16" 287mm	2-3/4" 70 mm
MX400	4	0	0	11-5/16" 287mm	3-3/4" 95.2mm	2-3/4" 70 mm
MX440	4	4	0	11-5/16" 287mm	3-3/4" 95.2mm	2-3/4" 70 mm
MX4106	4	10	6	11-5/16" 287mm	7-1/2" 190mm	2-3/4" 70 mm
MX800	8	0	0	11-5/16" 287mm	7-1/2" 190mm	2-3/4" 70 mm
MX880	8	8	0	11-5/16" 287mm	7-1/2" 190mm	2-3/4" 70 mm
MX8102	8	10	2	11-5/16" 287mm	7-1/2" 190mm	2-3/4" 70 mm
MX1600	16	0	0	11-5/16" 287mm	11-5/16" 287mm	2-3/4" 70 mm
MX16160	16	16	0	11-5/16" 287mm	11-5/16" 287mm	2-3/4" 70 mm

* Note: Add 1 VA when used in conjunction with BACview¹, a local operator keypad display.

Add 8.5 VA when used in conjunction with BACview², a local operator keypad display.

† Note: M220nx, MCU and MX expanders do not support BACview.

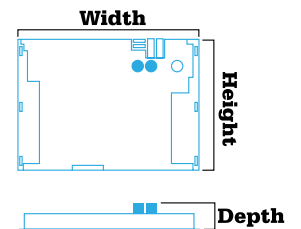
and Expander Module Specifications

MOUNTING HOLE DIMENSIONS: (Center-Center)

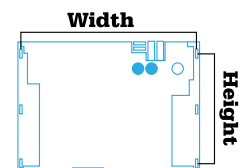
Width Height Weight Power
See Note *

10-13/16" 275mm	5" 127 mm	2.1 lbs 0.95 Kg	20 VA
10-13/16" 275mm	9-13/16" 249mm	3.0 lbs 1.36 Kg	35 VA
8-3/8" 213mm	5" 127 mm	1.6 lbs 0.73 Kg	20 VA
10-13/16" 275mm	5" 127 mm	1.8 lbs 0.82 Kg	20 VA
10-13/16" 275mm	5" 127 mm	1.8 lbs 0.82 Kg	20 VA
10-13/16" 275mm	5" 127 mm	2.1 lbs 0.95 Kg	20 VA
10-13/16" 275mm	5" 127 mm	2.1 lbs 0.95 Kg	20 VA
10-13/16" 275mm	9-13/16" 249 mm	3.2 lbs 1.45 Kg	35 VA
10-13/16" 275mm	5" 127 mm	2.1 lbs 0.95 Kg	20 VA
10-13/16" 275mm	2-13/16" 71mm	1.3 lbs 0.59 Kg	7.5 VA
10-13/16" 275mm	2-1/2" 63mm	1.1 lbs 0.5 Kg	25 VA
10-13/16" 275mm	5" 127 mm	2.1 lbs 0.95 Kg	20 VA
10-13/16" 275mm	9-13/16" 249mm	3.2 lbs 1.45 Kg	35 VA
10-13/16" 275mm	9-13/16" 249mm	3.0 lbs 1.36 Kg	35 VA
10-13/16" 275mm	2-1/2" 63mm	1.1 lbs 0.5 Kg	25 VA
10-13/16" 275mm	2-1/2" 63mm	1.1 lbs 0.5 Kg	25 VA
10-13/16" 275mm	5" 127 mm	1.8 lbs 0.82 Kg	20 VA
10-13/16" 275mm	5" 127 mm	2.1 lbs 0.95 Kg	20 VA
10-13/16" 275mm	5" 127 mm	2.1 lbs 0.95 Kg	20 VA
10-13/16" 275mm	5" 127 mm	2.1 lbs 0.95 Kg	20 VA
10-13/16" 275mm	9-13/16" 249mm	3.2 lbs 1.45 Kg	35 VA
10-13/16" 275mm	9-13/16" 249mm	3.2 lbs 1.45 Kg	35 VA

Overall Dimensions:



Mounting Hole Dimensions: *



*Requires mounting in a protective enclosure.