BlueWave® MX-MIM Machine Interface Module

Utilize PROFINET or EtherNet/IP Protocol to Independently Drive Up to Four BlueWave® MX-Series Emitters

- Advanced monitoring and diagnostics for systems, controllers, and emitters
- Integrated web browser for set-up and monitoring
- Simplified wiring and I/O
- Independent safety interlocks that are not reliant on firmware
- Mountable on a standard 35-mm DIN rail
- Interconnect cables for multi-station or remote placement (2-, 5-, 10-, and 20-meter lengths)

The BlueWave® MX-MIM machine interface module is designed for machine builders and automated processes using PROFINET and EtherNet/IP network protocols. These two protocols allow machine builders to greatly reduce I/O channels and free up analog control cards compared to traditional analog and digital relay logic PLC control systems.

Incorporating the BlueWave MX-MIM into automated light-curing systems allows machine builders to power up to four Dymax MX-series emitters at the same time: the BlueWave® MX-150 spot lamp, BlueWave® MX-250 flood lamp, or BlueWave® MX-275 light bar. Each emitter can be controlled independently or in any combination to produce flood and light-bar patterns. The emitters can be synchronized together to act as one where higher throughput or larger cure areas are needed. For systems with multiple stations or those that require emitters be positioned away from the controller, interconnect cables are available in 2-, 5-, 10-, and 20-meter lengths.

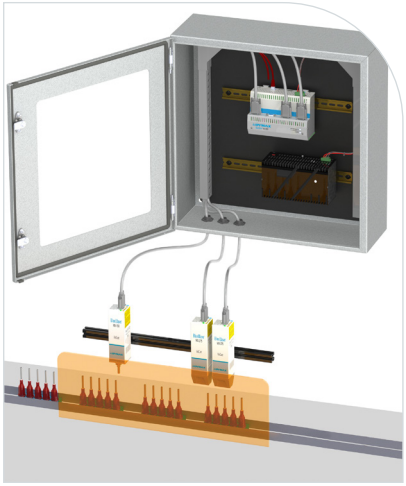
The machine interface module mounts on a standard 35-mm DIN rail, making it easy to mount in cabinets without custom mounting brackets or hardware. This helps improve installation flexibility and reduces space requirements compared to traditional enclosure style controllers.

CE

System Features & Benefits

Advanced Monitoring and Diagnostics

- Monitor system health along with voltage and temperature.
- Monitor emitter health, LED state, temperature, current draw, and fan speed.
- Allows user to collect data during process set-up and validation that uniquely characterizes how the emitters perform.
- Users can program their own warnings to anticipate process drift or anomalies to reduce unplanned down time and process check-ups.
- Capability to develop machine learning and predictive process control.

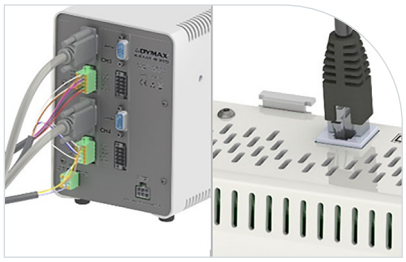


Integrated Web Browser

- Shorter initial set-up and debug
- Auto detects machine language during set-up
- Monitor emitter run time and LED on time
- View controller and emitter alarm logs
- Control emitters

Simplified Wiring and I/O

- Significant savings in materials and labor for wiring and installation
- Frees up I/O channels and reduces analog control cards required for PLC interfaces



From this wiring to this wiring

Independent Safety Interlocks Not Reliant on Firmware

- Improves safety compliance, direct acting switch control
- Shortens reliability testing

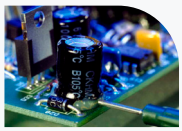
* Compatible with BlueWave® MX-150 and BlueWave® MX-250 emitters with firmware version 1.11 or higher. Dymax can easily upgrade emitter firmware to the latest versions by returning your emitter to our one of our service facilities.

LED Light-Curing Technology

Dymax LED curing systems generate curing energy using high-intensity LEDs in lieu of conventional arc lamp technology. The relatively narrow frequency band of energy emitted by LEDs results in cooler curing environments and substrate temperatures compared to traditional UV-style lamp systems, making them ideal for curing thermally sensitive materials. Dymax LED-curing systems offer many energy and cost-saving benefits, such as no warm-up period, lower energy consumption, no bulbs to change, and more consistent frequency and intensity output for better process control.

Compatible Materials & Applications

The BlueWave® MX systems are ideally suited for a number of applications in the medical, consumer electronics, automotive, aerospace and defense, optical, and appliance industries. The chart below displays materials for various markets that can be cured using the BlueWave MX systems.

Materials		
Adhesives		✓ Medical device (catheter, needles, tube set, facemask) assembly; glass bonding (stemware, furniture, etc.); automotive headlamp assemblies; camera module assemblies; appliance assembly; speaker assembly; optical display bonding
Conformal Coatings		✓ Printed circuit board protection in aerospace avionics, automobiles, appliances, and consumer electronics; camera module assembly; electric vehicle battery management systems
Potting Compounds		✓ Tamper proofing; potting electrical connectors, switches, and sensors; cable potting; medical potting*
Maskants		✓ Surface protection for turbine blades and rotorcraft components during processing; protection for surfaces during metal finishing processes; protection of orthopaedic parts during processing; protection of PCB components for consumer electronics, automotive electronics, avionics, and medical electronics; protection for surfaces during metal finishing processes*
Encapsulants		✓ Chip encapsulation on PCBs used in automobiles, plane and helicopter control panels, consumer electronics, appliance, and medical diagnostic equipment*
Ruggedization Materials		Flex circuit reinforcement; wire tacking; ball grid array (BGA) ruggedization; Videos graphics arrays (VGA) ruggedization; shock absorption; underfill alternative*

✓ BlueWave MX systems compatible with this material * Materials should be evaluated in customer application to their performance requirements.

Ordering Information

Part Numbers		
BlueWave MX-MIM	43299	Machine interface module only. Emitters and interconnect cables to connect controller to emitters and power supply sold separately.
Interconnect Cables	43453 42287 42889 43010 43011	12-Inch Interconnect Cable Assembly 2-Meter Interconnect Cable Assembly 5-Meter Interconnect Cable Assembly 10-Meter Interconnect Cable Assembly 20-Meter Interconnect Cable Assembly

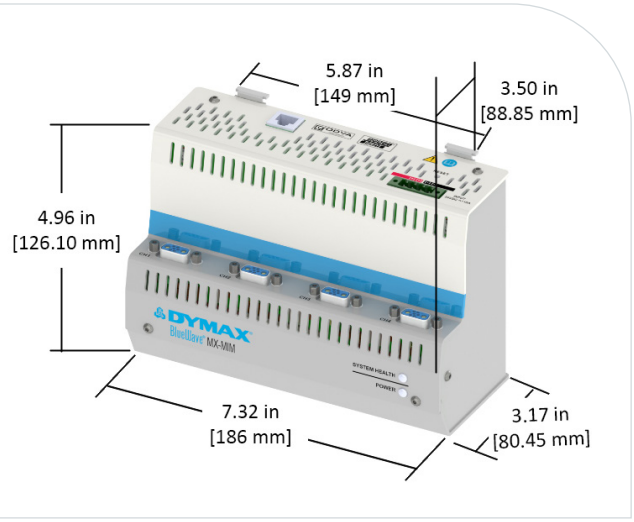
Customers must provide their own 24 Volt DC power supply based on the following specifications:

- 24 volts at 10 amps minimum supply (300 watts suggested)
- 1% voltage tolerance
- CE-marked units recommended to assure performance is in line with the BlueWave MX-MIM

System Specifications

Property	Specification
Power Supply Input	24 VDC ± 1% @ 10A Min (300W supply recommended)
Emitter Channels	Supports up to four MX-series emitters
Network Interface	One 10/100 base-T Port Supports EtherNet/IP, and PROFINET *Please Note: Device Level Ring (DLR) is not supported*
Physical Dimensions	4.96" H x 7.32" W x 3.50" D
Mounting	DIN Rail; 35-mm top-hat style
Weight	2.035 lbs.
Cooling	Internal fan, no filter
Operating Environment	Indoor use only. Not qualified for outdoor use. Ambient temperature +10 to +40°C 0-80% relative humidity, non-condensing at sea-level *NOTE: This device is designed to operate in a typical production environment where dust particulates and harmful vapors are kept to a minimum. Cabinet air filtration is suggested to prevent dust accumulation.*
Storage Conditions	-20 to +50°C, 0-75% relative humidity, non-condensing, at sea level

BlueWave MX-MIM Dimensions



DYMAX®

www.dymax.com

PB067DA 03/07/2022