

UNIVERSAL MONITOR

Product Specification/Installation Sheet

Description

The Universal Monitor is a microprocessor with multi-sensing, remote monitoring and remote control capabilities. Its advanced technology provides high-availability monitoring around the clock.

The Universal Monitor can operate as an independent, stand-alone controller or in conjunction with Liebert's SiteScan Web Enterprise Monitoring System.

The enclosure of the Universal Monitor makes it suited for various applications in both new construction and retrofit jobs. The Universal Monitor can be mounted on a wall's surface or recessed within a wall.

The keypad display on the face of the panel is a standard part of the Universal Monitor.

The display, the gateway to all configuration and monitoring, is password-protected.

The Universal Monitor has a standard, on-board modem for remote monitoring via a telephone line.

The modem is preconfigured to work with the panel, eliminating configuration and setup requirements.

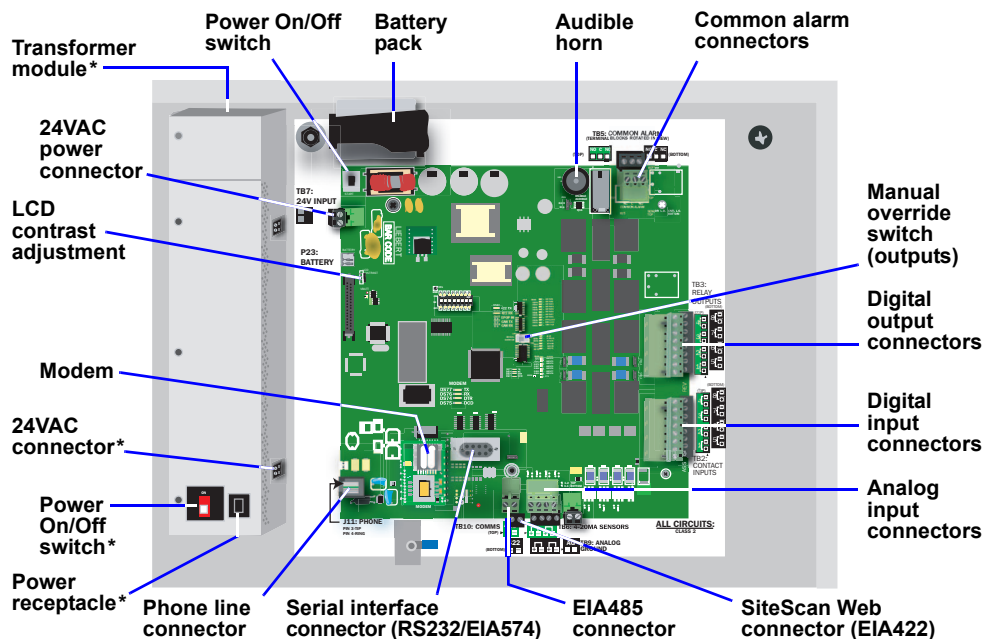


Universal Monitor
Two sizes of enclosures

Features

- Custom configuration for specific applications
- Paging capability—up to four pager numbers
- Preconfigured on-board modem
- Alarm, Event and Trend logs with time and date stamp
- Battery backup to ensure alarm notification
- Backup and download configuration files
- User interface via RS232 or modem connection
- On-board audible alarm
- Configuration data and operating program permanently stored in nonvolatile Electrically Erasable Programmable Read Only Memory (EEPROM) for protection against power loss
- Real-time clock
- Status LEDs for verification and diagnostics

Universal Monitor Components and Key Features



*Transformer module comes standard in large enclosure only

Hardware and Components

Two sizes of enclosures provide flexibility and expansion to meet evolving application needs. Both sizes of enclosures come standard with a liquid crystal display (LCD) and controller board. In addition, the large Universal Monitor has an internal Transformer Module.

The enclosure features a key lock for added security and is made of metal to accommodate secure conduit fittings and protect components against environmental debris. The enclosure is designed for easy wire routing and terminations, with top and bottom access slots for communication cables and network wires. The enclosure is 2-3/4" deep, allowing for recess mounting in a wall.

Keypad Display

The keypad display is a user interface mounted on the enclosure door of each Universal Monitor. The display provides for complete monitoring and configuration of the panel and is password-protected.



Keypad

The keypad display provides the ability for the Universal Monitor to operate as a complete standalone panel.

Controller Board

The controller board supports 22 points:

- Eight digital inputs
- Four analog inputs
- Eight digital outputs
- Two Common Alarm outputs

The digital inputs are dry contacts. The analog inputs are 4-20mA inputs. The digital outputs and Common Alarm outputs are Form C contact relays.

The point terminations are made using removable terminal blocks. This allows for easier access to the terminators, streamlining the process of connecting external devices to the Universal Monitor.

The battery supplies power to the modem for a minimum of 10 minutes, providing the capability to send out a loss-of-power alarm to all configured pagers.

Flash ROM may be easily upgraded at the job site, simplifying the process of installing new firmware as it becomes available.

An RS232 operator terminal port is included with each controller board for easy interface to a laptop or desktop PC for setup and device monitoring.

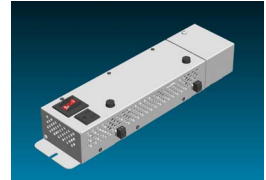
An integrated on-board modem is included with each controller board for remote access to the Universal Monitor. An RJ11 phone modem jack is also included. The modem is factory-configured, eliminating field configuration and wiring requirements.

An IGM422 connection is included with each controller to connect the Universal Monitor to Liebert's SiteScan Web Enterprise Monitoring System. This connection allows information and alarms to be monitored from a centrally located command center.

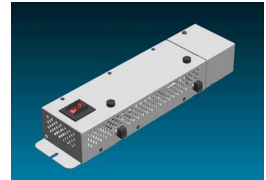
Transformer Module

The large Universal Monitor comes with either 115VAC or 230VAC Transformer Module.

- The **115VAC Transformer Module** provides step-down power from 115VAC to 24VAC, two Class 2 24VAC 40VA power terminations and one 115VAC outlet to power accessory devices, such as a Portable Operator's Terminal.
- The **230VAC Transformer Module** provides step-down power from 230VAC to 24VAC and two Class 2 24VAC 40VA power terminations. An outlet is not provided on this Transformer Module.



115VAC Transformer



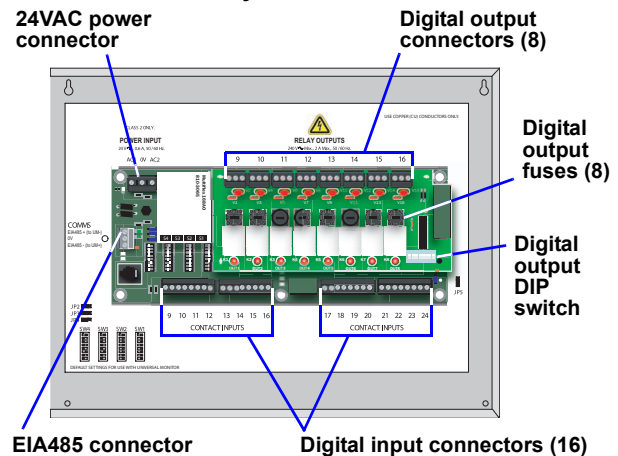
230VAC Transformer

The Transformer Module may be ordered separately as an option for the small Universal Monitor—or any device requiring 24VAC—and mounted outside the enclosure.

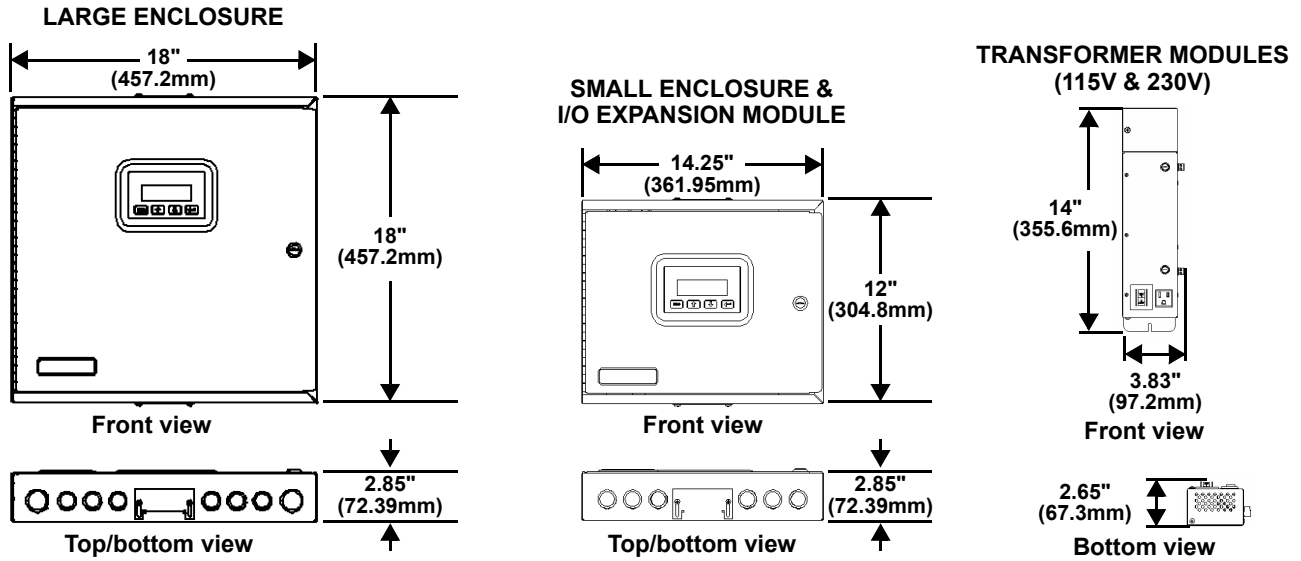
I/O Expansion Module

The Universal Monitor I/O Expansion Module, purchased separately, has connectors for 16 digital inputs and eight digital outputs, as shown below. The board has light emitting diodes (LEDs) to display the status of monitored output devices, communications ports for connection to the Universal Monitor, power connections and other features necessary to monitor and protect your operation.

I/O Expansion Module Components & Key Features



Dimensions - Enclosures, I/O Expansion Module, Transformer Modules



Wiring Specifications

Connection	Supported Wire Type	Maximum Wire Length			Rating
Digital Input	18-22 AWG Stranded & Unshielded 18 AWG (recommended) Non Plenum - Belden 9740 Plenum - Belden 89740	750 ft. (225m)			Dry Contact (24VDC, 10 mA)
Digital Output	18-22 AWG Stranded & Unshielded 18 AWG (recommended) Non Plenum - Belden 9740 Plenum - Belden 89740	18 AWG* (recommended)	20 AWG	22 AWG	24VAC @3A
		@3A 50 ft. (15m) @2A 100 ft. (30m) @1A 200 ft. (60m)	@3A 40 ft. (12m) @2A 60 ft. (18m) @1A 100 ft. (30m)	@3A 25 ft. (7m) @2A 35 ft. (10m) @1A 75 ft. (23m)	
Analog Input 2-Wire Transducer	18-22 AWG Stranded & Unshielded 18 AWG (recommended) Non Plenum - Belden 9740 Plenum - Belden 89740	750 ft. (225m)			4-20 mA Signal Input Selectable Power Source (12/24VDC)
Analog Input 4-Wire Transducer	18-22 AWG Stranded & Unshielded 18 AWG (recommended) Non Plenum - Belden 8489 Plenum - Belden 88489	750 ft. (225m)			4-20 mA Signal Input Selectable Power Source (12/24VDC)
Common Alarm Output	18-22 AWG Stranded & Unshielded 18 AWG (recommended) Non Plenum - Belden 9740 Plenum - Belden 89740	18 AWG* (recommended)	20 AWG	22 AWG	24VAC @3A
		@3A 50 ft. (15m) @2A 100 ft. (30m) @1A 200 ft. (60m)	@3A 40 ft. (12m) @2A 60 ft. (18m) @1A 100 ft. (30m)	@3A 25 ft. (7m) @2A 35 ft. (10m) @1A 75 ft. (23m)	
Communication RS232	Null Modem Cable	50 ft. (15m)			N/A
Communication IGM422 SiteScan	18-22 AWG Stranded & Shielded 22 AWG (recommended) Non Plenum - Belden 9461 Plenum - Belden 88761	1000 ft. (300m)			N/A
Communication EIA485	18-22 AWG Stranded & Shielded 22 AWG (recommended) Non Plenum - Belden 9461 Plenum - Belden 88761	3000 ft. (900m)			N/A
Phone/Modem Line	4 Wire (Pins 3 & 4) RJ11 Connector	N/A			N/A
24VAC Power Connection	18-22 AWG Stranded & Shielded 18 AWG (recommended) Non Plenum - Belden 8770 Plenum - Belden 88770	150 ft. (45m)			24VAC @ 1.3A
Power Connections (Transformer Module)					
115VAC	14 AWG Stranded & Unshielded Non Plenum - Belden 5101UE	150 ft. (45m)			115VAC @5A
230VAC	14 AWG Stranded & Unshielded Non Plenum - Belden 5101UE	150 ft. (45m)			230VAC @0.5A

Specifications

	Small Enclosure	Large Enclosure		I/O Expansion Module
	UMS02400	115VAC UML11500	230VAC UML23000	UMEXP
Input Power Requirements	24VAC±10% of nominal; 50/60 Hz, 1.3A, 30VA	115VAC±10% of nominal; 60Hz, 4A, 460VA	230VAC±10% of nominal; 50Hz, 0.5A, 115VA	24VAC±10% of nominal; 50/60 Hz, 0.6A, 15VA, Class 2
Dimensions W x D x H, in. (mm)	14-1/4 x 2-3/4 x 12 (361.95 x 69.85 x 304.8)	18 x 2-3/4 x 18 (457.2 x 69.85 x 457.2)		14-1/4 x 2-3/4 x 12 (361.95 x 69.85 x 304.8)
Weight (Assembled)	7.68 lb. (3.48 kg)	20.56 lb. (9.33 kg)		7.68 lb. (3.48 kg)
Enclosure Type	NEMA 1			NEMA 1
Liquid Crystal Display	Four line, 20 character, backlit			—
Mounting Surface	Building Wall or Structural Member			
Ambient Operating Environment	32°F to 104°F (0°C to 40°C) 0% RH to 95% RH (non-condensing)			
Modem/Clock Specifics				—
Modem Type	Embedded 14.4K bps			—
Clock Type	Real-Time Clock			—
Clock battery backup type	Lithium Cell (non-replaceable)			—
Clock battery life	7 years, constant, no power			—
Modem battery backup type	Nickel Cadmium (replaceable)			—
Modem battery life	10 minutes at full load			—
Communications				—
Local	EIA232			—
Remote: Modem	Baud rate 9600 bps; Parity=None; Data bits=8; Stop bits=1			—
Remote: Supported pagers	9600 E-7-1 supports TAPI protocol version 1.8			—
SiteScan Web	IGM Protocol, EIA422			—
Expansion Board (optional)	EIA485			EIA485
Agency Listings				
UL	UL3121	UL1012	UL1585	—
CSA	C22.2 No. 1010	C22.2 No. 66 and C22.2 No. 107.1		—
CE	Yes	Yes		—
FCC Compliance	CFR 47 Part 15	N/A		—
Inputs & Outputs (Quantity)				
Digital Inputs	Dry Contact Closure 24VDC, 10 mA (8)			Dry Contact Closure 24VDC, 10 mA (16)
Analog Inputs	4-20mA signal input with selectable power source of 12VDC or 24VDC (4)			—
Digital Outputs	24VAC, 3A (8)			240VAC, 2A (8)
Common Alarm Outputs	24VAC, 3A (2)			—

Ordering Information

Quantity	Product #	Description
	UMS02400	Universal Monitor small enclosure
	UML11500	Universal Monitor large enclosure with 115VAC Transformer Module
	UML23000	Universal Monitor large enclosure with 230VAC Transformer Module
	TM115	Transformer Module 115VAC with two 24VAC outputs (40VA each) and 115VAC receptacle
	TM230	Transformer Module 230VAC with two 24VAC outputs (40VA each)
	UMEXP	I/O Expansion Module



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