

AC8

Product Specification/Installation Sheet

Description

The Liebert AC8 is ideal for coordinated control of systems with redundant equipment, such as multiple environmental units or pumps. When the AC8 controller detects an alarm in an operating device, the AC8 enables a standby device and controls the device in alarm as configured, either leaving that device operating or disabling it.

The AC8 controller can also balance usage of devices by rotating units through Operating and Standby modes according to a user-defined schedule. This helps keep redundant equipment operating efficiently and only when needed. The AC8 can perform routine testing of standby devices and alert personnel if a standby device fails an operating test and requires attention.

The staging feature permits standby devices to be turned on or off when a sensor detects specified levels. For example, the AC8 might be configured to turn on a fan when the temperature reaches 75°F, then turn on a second fan at 80°F. When the temperature falls below 80°F, the second fan is turned off; when it drops below 75°F, the first fan is turned off. Liebert's TW420 Temperature Transmitter may be connected to any of the four analog sensor inputs for staging and other functions.

Another capability of the AC8 is monitoring the status of connected devices and keeping personnel apprised through local alarming. The AC8 employs local alarming and remote paging services to keep personnel on-site and at remote locations apprised of the status of equipment.

The AC8 controller can interface with anything that closes an electrical contact. To improve process efficiency and troubleshooting, the controller tracks data in three types of logs: alarm, event and trend.

The AC8 has both a local LCD interface and a remote dial-up interface for configuration and monitoring. Liebert's SiteScan Web may also be used for monitoring, as well as some configuration functions.

When an alarm condition arises, the AC8 displays alarm information, sounds an audible alarm, changes the state of the common alarm relay and turns connected devices on or off according to user configuration. If configured, the controller also sends pager notifications.

For other applications, contact your local Liebert representative or call 1-800-222-5877.



Features and Benefits

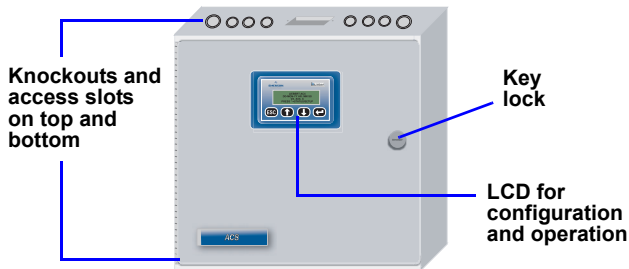
- Custom configuration for specific applications
- Paging capability—up to four pager numbers
- Preconfigured on-board modem
- Alarm, Event and Trend logs with time and date stamp
- Battery backup to ensure alarm notification
- Backup and download configuration files
- User interface via RS232 or modem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

Hardware and Components

Enclosure

The AC8 comes standard in an enclosure, which features a key lock for added security. The enclosure is made of metal to accommodate secure conduit fittings and protect components against environmental debris.

AC8 enclosure - External features



- The enclosure is designed for easy wire routing and terminations. Access slots for communication cables and network wires are located on both the top and bottom of the enclosure.
- The enclosure is 2-3/4" deep, allowing for recess mounting in a wall. The enclosure may also be flush-mounted.
- The enclosure houses the controller board and Transformer Module.

Keypad Display

The keypad is a user interface mounted on the enclosure door of the AC8. The liquid crystal display (LCD) provides for complete monitoring and configuration of the panel and is password-protected. The keypad display provides the ability for the AC8 to operate as a complete standalone panel.



Controller Board

The controller board supports these connections:

- Eight devices, with 1 digital input and 1 digital output per device
- Up to four zones, with staging for each zone
- Four 4-20mA analog inputs (one sensor per zone)
- Two programmable digital relay outputs
- Two Common Alarm outputs
- One EPOP input

The digital inputs are dry contacts. The analog inputs are 4-20mA inputs. The digital outputs, programmable relay outputs and Common Alarm outputs are Form C contact relays. The Common Alarm output is one output with two sets of contacts.

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 AC8.

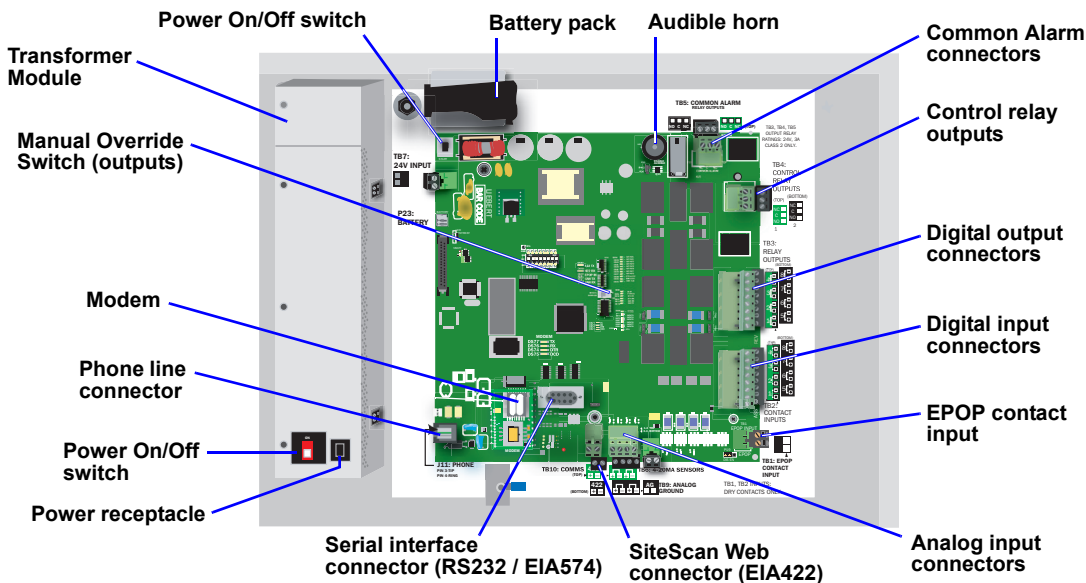
The controller board is a microprocessor-based platform for program execution. The firmware may be easily upgraded at the job site, simplifying the process of installing new firmware as it becomes available. Configuration data is stored in nonvolatile EEPROM to protect against power loss.

An RS232 operator terminal port is included with each controller board for operator devices such as a simple CRT terminal or laptop PC.

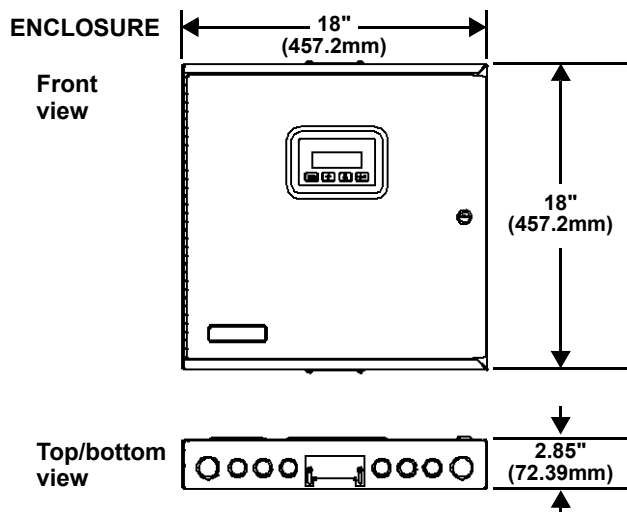
An integrated on-board modem allows remote access to the AC8. The modem is factory-configured, eliminating field configuration and wiring requirements. An RJ11 phone modem jack is also included.

An IGM422 connection permits access to Liebert's SiteScan Web Enterprise Monitoring System. This connection allows information and alarms to be monitored from a centrally located command center.

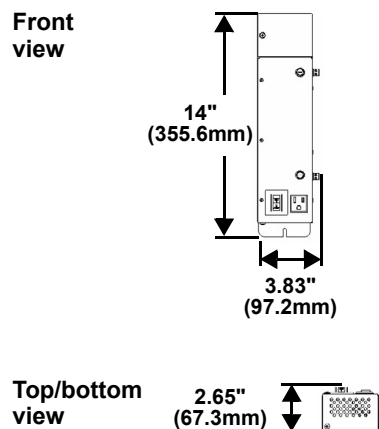
AC8 Components and Key Features



Dimensions - Enclosure and Transformer Modules



TRANSFORMER MODULES (115V & 230V)



Wiring Specifications

| Connection | Supported Wire Type | Maximum Wire Length | | | Rating |
|---|--|--|---|---|---|
| Digital Input/EPOP | 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/Control Relay | 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) | | | |
| 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) | | | |
| Communication EIA422 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 (TB7) | 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 @4A |
| 230VAC | 14 AWG Stranded & Unshielded Non Plenum - Belden 5101UE | 150 ft. (45m) | | | 230VAC @0.5A |

* Recommended

AC8 Specifications

| | | |
|--|--|---|
| Power Requirements | 115VAC Transformer Module / UML11500 | 230VAC Transformer Module / UML23000 |
| | 115VAC ±10% of nominal; 60Hz, 4A, 460VA | 230VAC ±10% of nominal; 50Hz, 0.5A, 115VA |
| Dimensions: W x D x H, in. (mm) | 18 x 2-3/4 x 18 (457.2 x 69.85 x 457.2) | |
| Weight (Assembled) | 20.56 lb. (9.33 kg) | |
| Enclosure Type | NEMA 1 | |
| Liquid Crystal Display (LCD) | 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) | |
| Processor Specifics | | |
| Model | Motorola XC68HC812A4 | |
| Clock speed | 16MHz | |
| Total RAM | 256Kb | |
| Total FLASH | 4M | |
| Total EEPROM | 4K | |
| A/D Resolution (Analog IN) | 12 Bit | |
| 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 Communications | RS232 | |
| Remote: Modem (9600-N-8-1) Remote: Supported pagers | Baud rate 9600 bps, Parity=None, Data bits=8, Stop bits=1 9600 E-7-1 supports TAPI protocol version 1.8 | |
| SiteScan Web | IGM Protocol, EIA422 | |
| Agency Listings | 115VAC Transformer Module (TM115) | 230VAC Transformer Module (TM230) |
| UL | UL1012 | UL1585 |
| CSA | C22.2 No. 66 and C22.2 No. 107.1 | |
| CE | Yes | |
| FCC Compliance | N/A | |
| Inputs & Outputs (Quantity) | | |
| Digital Inputs (8) | Dry Contact Closure 24VDC, 10 mA | |
| Analog Inputs (4) | 4-20 mA signal input with selectable power source of 12VDC or 24VDC | |
| Digital Outputs (8) | 24VAC, 3A | |
| Common Alarm Outputs (2) | 24VAC, 3A | |

Ordering Information

| Quantity | Part # | Description |
|----------|----------|--|
| | AC8L115 | AC8 controller board & Transformer Module 115VAC with two 24VAC outputs (40VA each) and 115VAC receptacle in enclosure |
| | AC8L230 | AC8 controller board & Transformer Module 230VAC with two 24VAC outputs (40VA each) in enclosure |
| | 201258P1 | RS232 configuration cable |
| | TW420 | Temperature Transmitter Wall 4-20 mA @ 45°F to 96°F |



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