



M2

Modular Direct Digital Universal Controllers

M2 is a DDC universal peer-to-peer unitary controller featuring complete on board intelligence. Each M2 controller contains a powerful 16 bit flash microprocessor to automate and monitor any mechanical system while continually logging pertinent programmed system operating data.

M2 operates effectively in both stand alone and networked environments and has the programming flexibility to manage applications from simple time of day scheduling to sophisticated control strategies. The advanced flash microprocessor permits remote uploading of future enhancements to the M2 firmware.

Each M2 controller contains 8 universal inputs with status LEDs (thermistor, 0-10VDC, 4-20mA, pulse and dry contact.), 8 universal analog outputs, 0-10 VDC, and 8 virtual inputs used as any calculated variables. Each controller contains a set of (2) output ports where optically isolated 4 channels relay Form -C or 4 channel solid-state triac cards can be installed. M2's 0-10VDC outputs are software configurable for PID and proportional control applications. All input, output, and network communication circuits are optically isolated. RJ-45 and RJ-11 connector ports are provided for programming and monitoring the M2 in network via Solidyne's hand held M2-HH terminal and provide other sensor wiring opportunities as well.

The M2 controller provides complete building automation with energy management via temperature, demand, humidity, and lighting control with real time monitoring including extensive historical logging of operating data. Up to 1000 peer-to-peer M2 controllers may be linked through an optically isolated 3 wire,

- ▶ Built up Systems
- ▶ Packaged roof top systems
- ▶ Split systems
- ▶ Heat pump systems
- ▶ Chillers/boilers/ domestic hot water
- ▶ Variable speed drives
- ▶ Lighting
- ▶ Dampers, valves, actuators
- ▶ Gas detection and monitoring
- ▶ Multiple alarm dial out

RS485 communications bus providing up to 16,000 calculated I/O points.

Solidyne's enhanced Windows* based software (ICMS) on a desk top or laptop computer provides the user interface for programming and monitoring M2 network, on site or remote. Utilizing Solidyne's i3 web server permits system monitoring via the Internet. A scheduling feature in the software is ideal for systems requiring continuous operating hour modifications. Clearly defined software characteristics allow inexperienced users to easily program the controllers for specific applications. Security passwords protect unauthorized access levels.

M2's industrial grade cast aluminum mechanical construction; removable multi -color and individually pad printed terminal blocks are designed for accurate and efficient installation and servicing as well as protection from external electrical interference. M2's 24VAC power is protected with transorbs and self-resetting solid state fuses.

HARDWARE FEATURES/BENEFITS

- Networkable Distributed - fully peer-to-peer modular system architecture
 - scalable
- Fully isolated (optical and power supply) output circuitry
 - immune to electrical noise
- On board isolation transformer
 - for transient protection and noise immunity
- Stand alone capability - controller operates if network is down
- M2 communications - M200 series of communication modules - allows for remote programming and monitoring
- Battery backup of critical system data
 - ensures retention of operating data after extended power failure
- Lithium back-up of control program and logged data via lithium battery: 7 + years
- Flash based operating controller: Eliminates obsolescence and operating system can be uploaded remotely
- Extensive data logging and monitoring
 - past 35 days peak value recording for all points
 - past 48 hours of point value is recorded with 15 minute average values
- point value totalization
- override time totalization
- 48 hour logging of 0-10VDC and digital output status
- output status
- programmable input averaging period

PROGRAMMING FEATURES

- Sophisticated temperature control, building automation and energy management strategies in stand-alone or networked applications.
- Time of day scheduling
- Fixed and variable duty cycling with parallel or staggered outputs
- Fixed and variable output control
- Adaptive/non-adaptive optimum start/stop for heating/cooling
- PID control of outputs
- Demand management strategies = load shedding
- Global overrides - enabling programs based on any global point value - primary/secondary output switchover based on run time
- Event and holiday scheduling
- Security - user defined security access codes
- Alarm - multiple phone, pager, cell phone or email dial out - run time limit alarm
- Global point value alarm

SPECIFICATIONS

- M2 Controllers
 - 8 universal digital output ports (option via 4 channel relay modules), optically isolated from the processor with HOA switches built in
 - Option: 4 Channel NO Relay module, form C, 5 Amps@ 24 VAC with HOA switches and status LEDs
 - Option: 4 Channel solid state (Triac, with zero cross switching) N.O. output module
 - 8 Analog Outputs: 0-10 VDC
 - 8 universal analog inputs: 4-20mA, 0-10V, various thermistors, pulse (event) or digital inputs (with status LEDs)
- Serial Sub-LAN port: wiring via CAT-5 cable for multiple zone sensors
- Future expansion Flash Memory ID Tag port
- Communications
 - Programmable from 1200 Bauds to 57K Bauds
 - RS485 -2 or 3 wire with network TXT and RCV status LEDs
 - Power supply and optical isolated
 - Flash based non-volatile configuration
- Electrical- input power: Transorb and self-resetting fuse protected
 - class II, 22-28VAC, 50/60Hz 8VA max.
 - Lithium battery back up, 7 year
 - Regulated 24 VDC built-in. Can supply from 25 up to 100 mA based on total hardware energized by the controller
 - Additional built in 8 VDC power supply
- Hand Held terminal interface port via CAT-5 cable
- Environmental
 - operating: 0°F to 140°F and 0%-95% RH, non condensing
- Mechanical: Cast aluminum housing construction
- Shipping weight 2 lb.
- User interface- remote or direct through a personal computer utilizing Solidyne's Windows® based front-end software. Optional equipment allows for web browser based control

Ask us about
our product catalog!



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