

MC9200 Series Cooling Tower Controllers

GENERAL

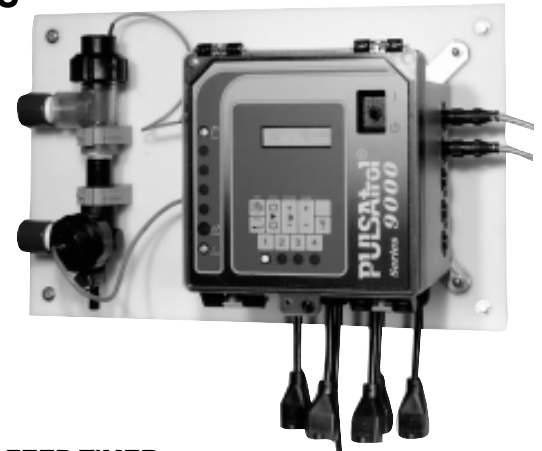
The controller shall provide microprocessor based control of recirculating cooling water systems. Accurately control the level of dissolved solids based on $\mu\text{S}/\text{cm}$, and depending on model selection, control conductivity and pH.

Controller shall also provide:

- One user selectable chemical feed timer and up to two 28-day event timers.
- Lockable viewing window.
- Two point calibration.
- Dry contact water meter input capability.
- Alarm powered and dry contact relays.
- Optional 4-20mA output capability.
- Alarm LED, relay and optional remote callback status.
- 2 x 16 alphanumeric display.
- Convenient keypad menu access, display contrast adjustment and HOA relay control.
- Self charging capacitor to maintain time and history for up to two weeks in the event of a power loss to controller.
- Relay, general alarm, flow alarm and power status LED's.
- DIN connections for conductivity sensor and I/O.
- Prewired incoming power and relay output connections on specified models (receptacle cords).
- Modular flow assembly with flow switch, quick release sensors and sample port mounted on a polyethylene panel.
- Optional remote communications capability via direct serial line or modem connection.
- A full 24 months warranty.

CONTROL FUNCTIONS

All continuously monitored sensor input functions (conductivity, pH) will provide user definable set points for maintaining a specific value within the system. Each set point will have a user definable differential as the control band, programmable high and low alarm points and user defined limit timer for pH.



CHEMICAL FEED TIMER

The chemical feed timer shall be user selectable as any one of the following:

- *Percent* - User will be able to select a percent "ON" time of a user defined "cycle" time.
- *Limit* - Timer will run as controller bleeds until a user programmed "limit" time is met or the bleed is satisfied.
- *Percent of Post-Bleed* - Timer will run for a user defined percentage of the bleed time after bleed is satisfied.
- *Pulse Timer* - Timer initiated from dry contacting head water meter. User can define timer run time, water meter input and contact accumulation before timer initiation.

REMOTE COMMUNICATIONS

The controller shall have the optional capability of serial communications using PULSAworks software. The serial communications can occur either by direct RS232 port, or remotely via an optional internal modem. PULSAworks allows the user to access real-time system values and remotely change operating parameters. The user may download data history files and save files to disk. History files may be viewed and printed in table or graph form, the graph form can be user customized. The optional internal modem allows the controller to perform alarm call back for alarm condition notification to a pager or computer running PULSAworks software.

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MC9200 SERIES SPECIFICATIONS

MODELS: (all models and standard flow assemblies are mounted on a polyethylene panel)

MC9210 - Conductivity with a pre-wired selectable timer, alarm output relay, dry contact alarm output and water meter totalizer.

MC9220 - pH control with a pre-wired selectable timer, alarm output relay, dry contact alarm output and water meter totalizer.

MC9230 - Conductivity and pH control with a pre-wired selectable timer, alarm output relay, dry contact alarm output and water meter totalizer.

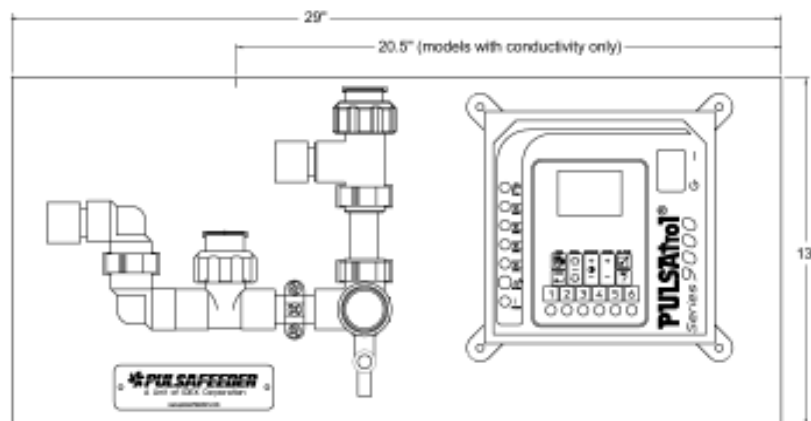
FEATURES:

MODEL	CONDUCTIVITY CONTROL	pH	SELECTABLE TIMER	28 DAY TIMER	4-20mA ¹ OUTPUT	WATER METER INPUT ²
MC9210	1		1	2	2	1
MC9220		1	1	2	2	1
MC9230	1	1	1	1	2	1

Note: Standard conductivity sensor is stainless steel.

- See Water Treatment List Price Schedule for 4-20mA options.
- Water meter is dry contact.

DIMENSIONS:



FEATURES/SPECIFICATIONS:

Enclosure	Nema 4X - High Impact Resistant Polystyrene
Panel	Polyethylene
Power Requirements	90 - 250 VAC @ 50/60 Hz, 100 VA
Control Output	Line Voltage @ 600 VA Per Relay (5 amps @ 120 VAC)
Display	2 x 16 Alpha Numeric, Back Lit Graphics Display
Recessed Front Panel Power Switch	Standard
Lockable Viewing Window	Standard
Hi / Lo Alarm Indicator	Standard
10 Bit A/D resolution	Standard
Standard pH Scale	0 - 14 pH
Conductivity Scales	0-500, 0-2,000, 0-5,000, 0-10,000 and 0-20,000 μ S/cm
Front Panel H/O/A Control	Standard
Analog Outputs	Two
Alarm Dry Contact Outputs	Two - NO/NO
Relay Outputs (Powered)	Five
Timers	Selectable and 28-Day
Accuracy - At point of measure excluding sensor	+/- 1%
Maximum Pressure of Standard Flow Assembly	125 PSI @ 125° F Max. 8.62 Bars @ 52° C
Plumbing	Glass Filled Polypropylene (GFPP) Slip or Threaded
Environment	0 - 125° F -17.8 - 52° C 100% Humidity
Shipping Weight	approx. 20 lbs (9.2 kgs)



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