

The PULSAtronic 9300 & 9500 Series provides 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, pH, ORP and cycles of concentration based on the conductivity of the system make-up water. The PULSAtronic 9000 Series cooling tower controllers represent a significant improvement in the PULSAtronic product line. We simplified the configurations to bring you the most popular features as standard without compromising the flexibility to select the product you need to meet your specific requirement. All controllers come standard with a complete flow assembly mounted to a polypropylene backboard. All the installer needs to do is mount the assembly to the wall and connect the power and water.

All MC9300 Series include as standard, four tagable timers two water meter totalizers user configured as dry contact or hall effect, dry contact alarm relay and alarm output relay. Options include two 4-20 mA outputs, conduit connection for power and relays, communications, language and agency approvals.

All 9500 Series include as standard, four tagable timers, two water meter totalizers user configured as dry contact or hall effect, four drum level inputs, dry contact alarm relay and alarm output relay. Options include up to four 4-20 mA inputs and outputs, conduit connection for power and relays, communications, language and agency approvals.

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

Features

- Up to four user selectable timers that will operate in any one of seven modes.
- A manually entered data collection field with ten user defined fields and units, stored in controller's history (downloadable with PULSAworks software).
- Four single-point drum level inputs. (9500 only)
- Multiple security levels and lockable viewing window.
- One or two point calibration.
- Ability to reset relay "ON" times with date/time stamp.
- Calibration date/time stamp.
- Two water meter input capability (dry contact or hall effect).
- Alarm powered and dry contact relays.
- Optional 4-20mA input (9500 only) and output capability.
- Alarm LED, relay or optional remote callback status.
- Self charging capacitor to maintain time and history for up to two weeks in the event of a power loss to controller.
- EEPROM protection of operating parameters during extended power outages.
- Relay, drum level alarm, general alarm, flow alarm and power status LED's.
- 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.

Operating Benefits

- Easy to use.
- Many options to customize controller.
- Two year warranty.
- Feed timer user selectable
 - Percent Timer
 - Limit Timer
 - % Post Bleed with Limit Timer
 - Pulse Timer
 - 28 Day Event Timer
 - Cycle Timer
 - Slave Timer
 - Disabled Timer



MC9500 Series



MC9300 Series

Aftermarket

- Solenoids
- Motorized Ball Valves
- Water Meters
- Corrosion Coupon Racks
- Metering Pumps (PULSAtronic, XP Series)



PULSAtronic[®]

**MC9300 & MC9500 Series
 Cooling Tower Controller**



PULSA[®] MC9300 & MC9500 Series

Specifications and Model Selection

MODEL	COND CONTROL	pH	ORP	MAKE-UP COND.	PROG. TIMERS	4-20mA OPTIONS ³		LEVEL ⁴ INPUT	WM ⁵ INPUT
						OUTPUT	INPUT		
MC9310	1				4	2	0	0	2
MC9320	1		1		4	2	0	0	2
MC9330	1	1 ¹			3 or 4 ²	2	0	0	2
MC9510	1				4	4	4	4	2
MC9520	1		1		4	4	4	4	2
MC9530	1	1 ¹			3 or 4 ²	4	4	4	2
MC9540	1	1 ¹		1	3 or 4 ²	4	4	4	2
MC9550	1	1 ¹	1	1	2 or 3 ²	4	4	4	2
MC9560	2				4	4	4	4	2
MC9570	2				4	4	4	4	2

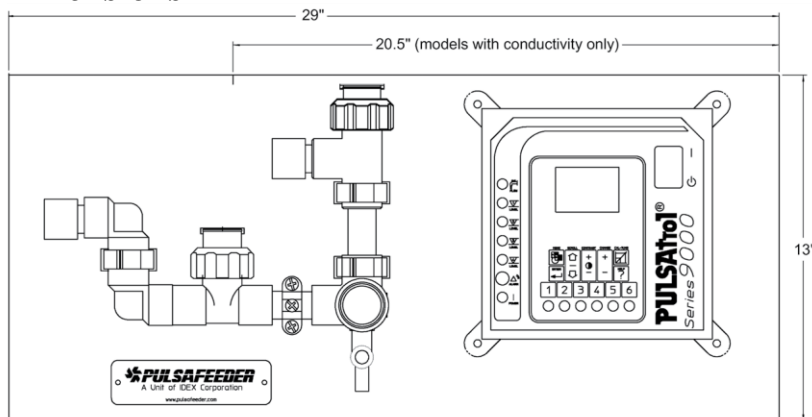
Note: Standard conductivity sensor is stainless steel.

1. pH single or dual control (acid relay, base relay).
2. Dual pH systems have one less timer than single pH systems.
3. See List Price Schedule for 4-20mA options.
4. Level inputs are single point.
5. Water meter is dry contact or hall effect.

Engineering Data

Conductivity Range:	0-500, 0-2,000, 0-5,000, 0-10,000 and 0-20,000 µS/cm
pH Range:	0 - 14 pH
Standard ORP Scale:	0-1000mV
Accuracy:	± 1.0% (At Point of Measure Excluding Sensor)
Display:	8 Line, 64 x 128 Pixels Dot Matrix, Back Lit Graphics Display
Analog Inputs:	Four (9500)
Analog Outputs:	Four (9500), Two (9300)
Digital Level Inputs:	Four
Alarm Dry Contact Outputs:	Two – NO/NO
Relay Outputs (Powered):	Six – NO/NC (one alarm)
Timers (Tagable):	Programmable
Max Pressure of Standard Flow Assembly:	125 PSI (8.6 BAR) @ 125°F (52 °C)
Hi/Lo Alarm Indicator:	Standard
10 Bit A/D Resolution:	Standard
Front Panel H/O/A Control:	Standard
Recessed Front Panel	
Power Switch:	Standard

Dimensions



Models: All Models and standard flow assemblies are mounted on a polyethylene panel

MC9310: Conductivity Control (4) Tagable Timers (2) Water Meter Totalizers Alarm Output (Relay and Dry Contact)	MC9540: Conductivity Control Make-Up Conductivity and pH Control (3) Tagable Timers (2) Water Meter Totalizers (4) Single Point Drum Level Inputs Alarm Output (Relay and Dry Contact)
MC9320: Conductivity and ORP Control (4) Tagable Timers (2) Water Meter Totalizers Alarm Output (Relay and Dry Contact)	MC9550: Conductivity Make-Up Conductivity and pH Control ORP control (3) Tagable Timers (2) Water Meter Totalizers (4) Single Point Drum Level Inputs Alarm Output (Relay and Alarm Dry Contact)
MC9330: Conductivity and pH Control (4) Tagable Timers (2) Water Meter Totalizers.	MC9560: (1) Tower and (1) Closed Loop Conductivity Controller (2) Conductivity Inputs (4) Tagable Timers (2) Water Meter Totalizers (4) Single Point Drum Level Inputs Alarm Output (Relay and Alarm Dry Contact)
MC9510: Conductivity Control (4) Tagable Timers (2) Water Meter Totalizers (4) Single Point Drum Level Inputs Alarm Output (Relay and Dry Contact)	MC9570: (2) Cooling Tower Conductivity Controller (4) Tagable Timers (2) Water Meter Totalizers (4) Single Point Drum Level Inputs Alarm Output (Relay and Alarm Dry Contact)
MC9520: Conductivity and ORP Control (4) Tagable Timers (2) Water Meter Totalizers (4) Single Point Drum Level Inputs Alarm Output (Relay and Dry Contact)	
MC9530: Conductivity and pH Control (4) Tagable Timers (2) Water Meter Totalizers (4) Single Point Drum Level Inputs Alarm Output (Relay and Dry Contact)	

Engineering Data

Security Code:	Multi-Level
Lockable Viewing Window:	Standard
Control Output:	Line Voltage @ 600 VA Per Relay (5 amps @ 120VAC
Power:	90-250 VAC @ 50/60 Hz, 100 VA
Electronic Environment:	0° - 125°F (-17.8 - 52°C) 100% Humidity
Standard Plumbing:	Glass Filled Polypropylene (GFPP) Slip or Threaded
Enclosure:	NEMA 4X – High Impact Resistant Polystyrene
Panel:	Polyethylene
Shipping Weight:	approx. 20 lbs (9.2 kg)

Communications

The controller has 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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