PULSAtrol®
MICROPROCESSOR BASED CONTROLLERS & MONITORS

PULSAFEEDER®
A Unit of IDEX Corporation

MCT Cooling Tower Controller Series

Controllers from PULSAtrol® MCT series continuously protect cooling systems from the harmful effects of scaling, corrosion, and microbiological growth. They are designed using advanced microprocessor technology and the latest in surface mount assembly techniques. The result is amazing versatility in a compact, reasonably priced controller package. The units are simple to program using the clearly labeled keypad and the bright alphanumeric display. And PULSAtrol's distinctive receptacle cords make easy to connect any electrical device being controlled.

Series 300

Key Features:

- A high resolution 10 bit A/D converter and adjustable analog sample sensitivity for greater accuracy from all sensor inputs.
- Control TDS, pH or ORP.
- Fully isolated differential inputs for all circuits help prevent the possibility of ground loops.
- Keypad activated hand/off/auto control of all relay outputs.
- Modular hardware and software for easy access and servicing.
- A prewired NEMA type 4X enclosure for protection from harsh environments.

Options*

The MCT series controllers offer a wide range of additional options to help you select the proper controller for your specific needs. Conduit connections are available where hard wiring is preferrred and is required for 220VAC service. The optional mounted flow assembly is used to interupt the controllers outputs when there is less than 1 GPM of flow. A high pressure (250 PSI max) flow assembly is available for applications above 125 PSI.

The selectable timer is an available option allowing chemicals to be dosed by any one of the following: percent, pulse with accumulator, percent post blow down, or a limit timer. An alarm output relay is available to provide an A/C output to an alarm device such as a strobe light or warning siren. Additionally, an alarm dry contact is also available to send an alarm signal to integral building management systems or other controls.

Biological growth can be easily controlled using the optional 28-day biocide timer; this timer is available as a single, dual, or even triple biocide control. Applications where make up water conductivity varies may require the make up conductivity option. This allows for control of the towers based on cycles of concentration. Controllers that have pH control (except the 120 and 230) can also have the added feature of ORP control, allowing control or monitoring of your oxidizing chemicals. Programmable proportional 4-20mA outputs can be added to allow for control of metering pumps, or remote monitoring of system inputs.

The PULSAworks® serial line communication option can be ordered with or without an internal modem. These unique features allow for the user to monitor and change the system parameters directly or from a remote location. Data history time stamps are stored at user defined intervals between 1 and 120 minutes. Up to 372 time stamps can be stored before the controller begins to overwrite the existing data. These data history time stamps can then be displayed in chart or tabular format.

*For additional information about PULSAtrol Models and available options see the Water Treatment List Price Schedule.

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PULSAtrol® MCT Controller Series Specifications

Model Selections

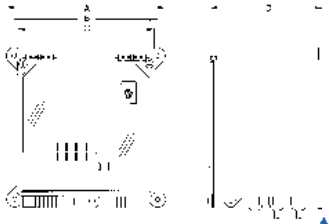
	STANDARD FEATURES	AVAILABLE FOR OPTIONS					
		analog in	digital in	analog out	dry contact	relay out	serial comm
110	Conductivity control with Hi/Lo Alarm Indicator	0	1	1	1	2	0
120	pH Control with Hi/Lo Alarm Indicator	0	1	1	1	2	0
130	ORP Control with Hi/Lo Alarm Indicator and Limit Timer	0	1	1	1	2	0
210	Conductivity control with Hi/Lo Alarm Indicator	1	2	2	1	3	1
220	pH Control with Hi/Lo Alarm Indicator, Limit Timer & Flow Assembly	1	2	2	1	3	1
230	Conductivity and pH Control with Flow Assembly Conductivity - Hi/Lo Alarm Indicator and Selectable Timer pH - Hi/Lo Alarm Indicator and Limit Timer	0	1	2	1	1	1
310	Conductivity control w/ Hi/Lo Alarm Indicator, Alarm Relay & Selectable Timer	3	2	2	1	4	1
320	pH Control with Hi/Lo Alarm, Alarm Relay, Limit Timer & Flow Assembly	3	3	2	1	5	1
330	Conductivity & pH Control with Flow Assembly Conductivity - Hi/Lo Alarm Indicator, Alarm Relay and Selectable Timer pH - Hi/Lo Alarm Indicator, Alarm Relay and Limit Timer	2	2	2	1	3	1

Model Specifications

FEATURES/CONTROLLERS	SERIES 100	SERIES 200	SERIES 300
Enclosure	Nema 4X - High Impact Resistant PVC	Nema 4X - High Impact Resistant Polystyrene	Nema 4X - High Impact Resistant Polystyrene
Power Requirements	90 - 250 VAC @ 50/60 Hz, 100 VA	90 - 250 VAC @ 50/60 Hz, 100 VA	90 - 250 VAC @ 50/60 Hz, 100 VA
Control Output	Line Voltage @ 600 VA Per Relay (5 amps @ 120 VAC)	Line Voltage @ 600 VA Per Relay (5 amps @ 120 VAC)	Line Voltage @ 600 VA Per Relay (5 amps @ 120 VAC)
Display	1 X 8 Alpha Numeric, Lighted Display	2 X 16 Alpha Numeric, Back Lit Display	64 X 128 Pixels Dot Matrix, Back Lit Graphics Display
Recessed Front Panel Power Switch	N/A	Standard	Standard
Lockable Viewing Window	N/A	Standard	Standard
Hi/Lo Alarm Indicator	Standard	Standard	Standard
10 Bit A/D resolution	Standard	Standard	Standard
Standard pH Scale	0 - 14 pH	0 - 14 pH	0 - 14 pH
Standard Conductivity Scale	0-500, 0-2,000, 0-5,000, 0-10,000 and 0-20,000 S/cm	0-500, 0-2,000, 0-5,000, 0-10,000 and 0-20,000 S/cm	0-500, 0-2,000, 0-5,000, 0-10,000 and 0-20,000 S/cm
Standard ORP Scale	0-1000 mV	0-1000 mV	0-1000 mV
Front Panel H/O/A Control	Standard	Standard	Standard
Analog Inputs	One	Two	Four
Digital Inputs	Two	Three	Four
Analog Outputs	One	Two	Two
Alarm Dry Contacts	One	One	One
Relay Outputs	Three	Four	Six
Timers	Programmable	Programmable	Programmable
Security Code	N/A	Standard	Standard
Accuracy - At point of measure excluding sensor	+/- 1%	+/- 1%	+/- 1%
Maximum Pressure of Standard Flow Assembly	200 PSI @ 70° F 125 PSI @ 125° F 8.62 Bars @ 52° C	200 PSI @ 70° F 125 PSI @ 125° F 8.62 Bars @ 52° C	200 PSI @ 70° F 125 PSI @ 125° F 8.62 Bars @ 52° C
Sensors:	Consult Factory	Consult Factory	Consult Factory
Differential	Programmable	Programmable	Programmable
Standard Plumbing	Glass Filled Polypropylene (GFPPL) Slip or Threaded	Glass Filled Polypropylene (GFPPL) Slip or Threaded	Glass Filled Polypropylene (GFPPL) Slip or Threaded
Electronic Environment	0 - 125° F -17.8 - 52° C 100% Humidity	0 - 125° F -17.8 - 52° C 100% Humidity	0 - 125° F -17.8 - 52° C 100% Humidity
Controller Weight	6 lbs (2.5 kgs)	8 lbs (3.7 kgs)	8 lbs (3.7 kgs)
Shipping Weight	8 lbs (3.7 kgs)	10 lbs (4.6 kgs)	10 lbs (4.6 kgs)

Dimensions

DIMENSION	SERIES 100	SERIES 200	SERIES 300
A	7.00 in.(sq.) 17.78cm	10.00 in.(sq.) 25.40cm	10.00 in.(sq.) 25.40cm
B	6.00 in.(sq.) 15.24cm	8.99 in.(sq.) 22.83cm	8.99 in.(sq.) 22.00cm
C	5.75 in.(sq.) 14.60cm	8.66 in.(sq.) 22.00cm	8.66 in.(sq.) 22.00cm
D	6.50 in. 16.5cm	7.08 in. 17.98 cm	7.08 in. 17.98cm
Controller Weight	6 lbs. 2.5kgs	8 lbs. 3.7kgs	8 lbs. 3.7kgs
Shipping Weight	8 lbs. 3.7kgs	10 lbs. 4.6kgs	10 lbs. 4.6kgs



An ISO Certified Company

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