PULSAtrol® Controller Specification Sheet

MPT110ACR1 Inhibitor Dosage and 28 day biocide timer with 24 hour bleed lockout

PULSAtrol Controllers are microprocessor based units specifically designed for a wide range of water treatment control and monitoring options.

MPT110ACR1 is designed to activate an output, either on a timed basis or in proportion to make up, and dose a single biocide to a cooling tower on a variable timed basis.

The controller can control bleed or inhibitor dosage (but not both) and allows the optimum dosage regime to be maintained for the biocide in use.

Inhibitor or bleed is effected via a Selectable Timer which has “Percent”, and “Pulse” options.

Biocide dosage can be activated on any specific day or combination of days weekly, or any combination of weeks in a 28 day cycle.

If the unit is used to control cooling tower bleed, the MPT110 controller will stop bleed occurring when biocide is being dosed.

This optimises the contact time for the biocide and should be taken into account when the bleed control requirement is calculated to ensure that the cooling water does not over concentrate when biocide is being dosed.

The standard unit has a number of upgrade options to enable it to perform additional functions.

Key Features

- Microprocessor based for accurate and reliable control
- Wall mounted unit for ease of operation
- Easily programmable via display and menu activated keypad
- Keypad activated hand/off/auto control of all really outputs
- Modular hardware and software for easy access and servicing
- IP65 High Impact Resistant PVC enclosure for protection against harsh environments

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Operation

- A S**electable Timer** is incorporated in the Controller which is intended to control *either* inhibitor dosage *or* cooling water bleed - but not *both*. The selectable timer offers a choice of the following control options;
    - **percent**; also referred to as a cycle timer. The timer runs continuously on an adjustable time cycle, such as ten minutes, with the output being activated for an adjustable percentage of the time cycle. The timer is adjustable in increments up to 100% and the cycle time is adjustable from one to 120 minutes.
    - **pulse with accumulator**; also referred to as water meter or reset timer. The timer accepts pulses from a water meter to actuate the inhibitor metering pump. The timer has an adjustable feed time (Run Time) in one second increments up to 59 minutes and 59 seconds with an elapsed time display. It has a built in accumulator that can count pulses up to 255 before activating the output with an elapsed pulse counter. Also incorporated into the timer is a pulse totaliser that keeps an on-going count of the number of pulses received by the timer.
- Dosage of **scale and corrosion inhibiting chemical** or **bleed** via a solenoid valve can be achieved in one of two ways.
  i) On a ***timed*** basis; in which case the ***percent*** option would be selected.
  ii) On a ***proportional*** basis; in which case the ***pulse with accumulator*** option would be selected and an impulse water meter installed in the make up line to the cooling tower.
- A **28 day Biocide Timer** is incorporated in the Controller.
- The timer provides the ability to dose a biocide on a 28 day programme cycle *via* four individual programmes with a wide range of day and week setting combinations.

  The duration of operation for the biocide metering pump is adjustable in one minute increments up to 23 hours 59 minutes. (factory set at 1 hour 30 minutes)

  The time when actuation occurs can be varied as follows;

Biocide Settings			
Week		**Day**	
*No Week	4th Week	Sunday	Thursday
1st Week	Even Week	Monday	Friday
2nd Week	Odd Week	Tuesday	Saturday
3rd Week	Every Week	Wednesday	Every Day

*If this option is selected, no biocide addition will occur.

The **biocide timer** has a **24 hour bleed lockout** facility.

If a solenoid valve is being used to control system concentration, the operation of that valve would normally be from an independent control system as the MPT110 Controller has no facility for bleed control.

If bleed occurs during biocide dosage, the effectiveness of the biocide dose is likely to be diminished.

The bleed lockout facility enables the opening of the externally controlled solenoid valve to be prevented during the period when biocide dosage occurs and for an adjustable period after biocide dosage ceases to ensure the optimum biocide contact time is achieved in the system water.

Lockout commences when biocide dosage commences. The total lockout time achievable is 24 hours in one minute increments.

Additional Equipment Requirements

The **MCT110 Controller** is a stand alone unit. To operate as a complete system the following equipment must be in place – either existing or supplied in addition to the controller.

- **Dosage Pumps**
  - ◊ If the MCT110 unit is controlling inhibitor make up and biocide dosage, two dosage pumps will be required. Care must be taken to ensure that the pumps are capable of delivering the chemical requirements specified by the controller.
- **Chemical Storage**
  - ◊ Treatment chemicals will normally be stored in a chemical storage tank. Dosage can be from the container that the chemical is supplied in, but it should be ensured that a means of monitoring usage is available.
- **Solenoid Valve**
  - ◊ If the MCT unit is controlling bleed, a normally closed solenoid valve will be required.
- **Impulse Water Meter**
  - ◊ If proportional inhibitor dosage or bleed control is required, an impulse water meter will be required, for the cooling tower make up line, to monitor the rate of make up flow into the cooling tower. The "K" factor, i.e. the volume of water passing through the water meter between impulses generated, will depend on the individual operating parameters.

Options

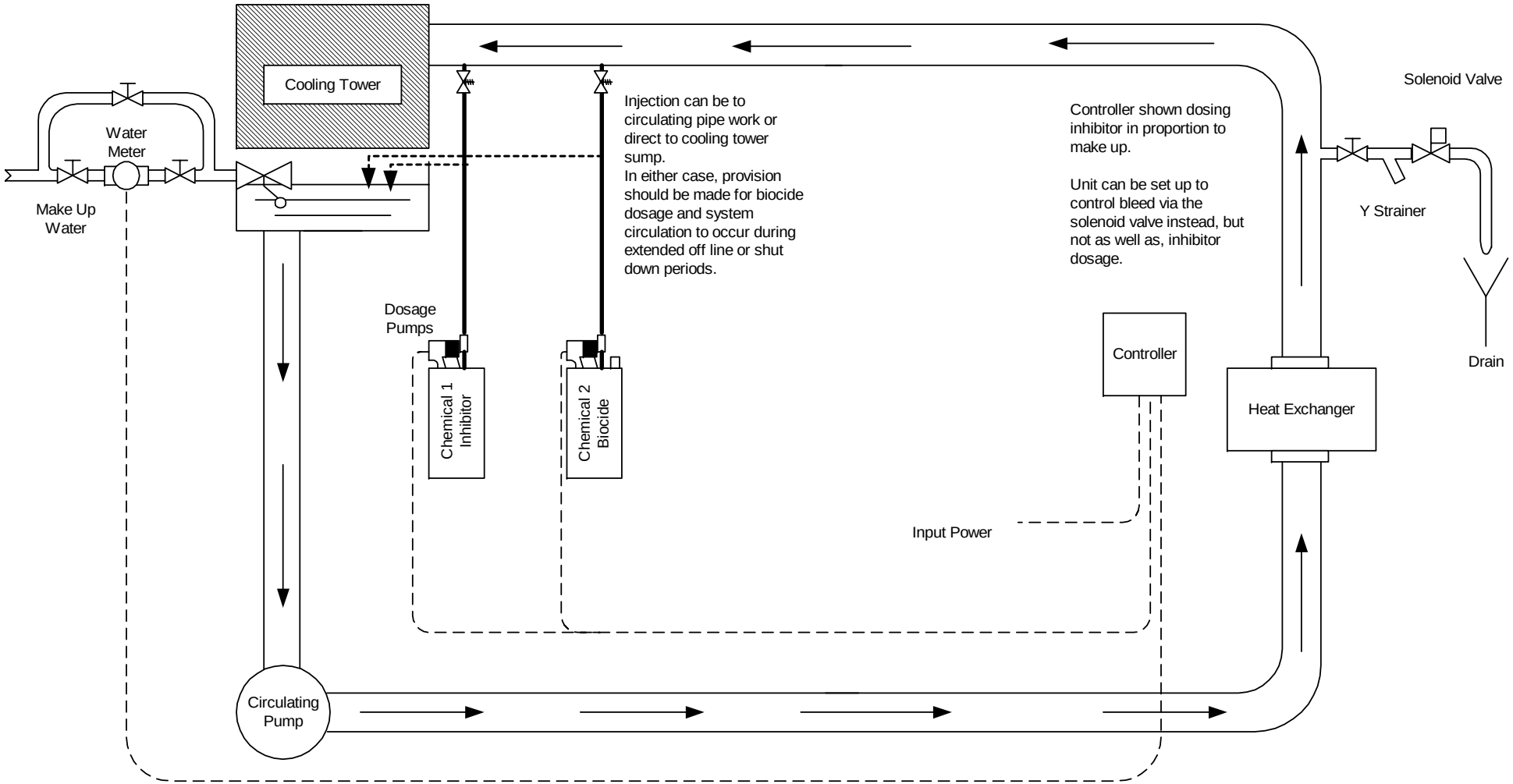
The MPT110ACR1 is the standard control unit to perform the tasks defined above. If additional features are required, the following options are available at additional cost.

- An alarm output relay can be fitted to give an external signal of any alarm conditions.
- One volt free contact can be incorporated to provide a signal of timer activation.

Specification

Feature	MPT110ACR1
MPT110	Selectable Timer and 28 day timer with a 24 hour bleed lockout facility
A	"Conduit" which signifies cable gland connections on base of controller.
C	Selectable Timer with %, limit, pulse, % post bleed
R1	CE approval
Power input	90 to 250 VAC @ 50/60 Hz 100 VA
Control Output	Line Voltage @ 600 VA
Display	1 x 8 Alpha Numeric, Lighted Display
Electronic Environment	-17.8 to + 52^{o}C, 100% Humidity
Controller Weight (kg)	2.5
Shipping Weight (kg)	3.7
Maximum Width (mm)	177.8
Fixing Hole Centres (mm)	152.4
Controller Width (mm)	146.0
Depth (mm)	165.1

Schematic Illustrating Typical Installation Arrangement for PULSAtrol MPT110ACR1
Inhibitor Dosing or Bleed and 28 Day Biocide Controller - Cooling Tower Application



Not all items shown will be present in every application

Electrical Schematic Detailing Connections for MPT110ACR1