

MTD53 COOLING TOWER CONTROLLER

MXD53 SERIES

One instrument for all applications

- n Water Meter Input, for Volumetric/Proportional Dosing
- n Measurement of Conductivity for Bleed Control
- n Measurement of Redox for Bromine Addition



- n Direct connection of all Pumps & Valves
- n Bleed Inhibit during and after dosing
- n Real Time Clock, for Timed Dosing
- n Simple Intuitive Programming
- n Large Backlit Multifunction Display
- n IP66 Wall & Pipe Mounting Options
- n Multilingual Text Error Messages

MTD53 COOLING TOWER CONTROLLER

Programming made easy

The MTD53 is a comprehensive Cooling Tower controller which has all the functions required for dosing and control of cooling water. It is able to directly control not only the bleed function, but both inhibitor and 2 biocide chemicals. The MTD53 has a water meter input and is also able to directly measure both Conductivity and Redox, so dramatically reducing both purchase and installation costs. The large back-lit multi-function display guides the operator effortlessly through the structured programming procedure, reducing the need to refer to the handbook.

Multilingual text displays can be selected from a choice of English, French, Spanish and Italian. Using multi-level security access, the MTD53 has been designed with two levels of programme complexity, where day to day operator access can be limited to only the basic settings, while allowing full access to the instrument programmer.

In the low level access mode, only a few basic settings are used to configure and run the instrument.

In the high level access mode, all the options and functions which you would normally associate with a high-end, cooling tower controller, together with some new innovative options, can be configured.

Self diagnostics provide the user with a series of text error messages which are displayed when programming is incorrect, or if a sensor is not reading a sensible value.

Configuration data can be saved in one of two independent back-up locations, which can be used for fast reconfiguration, emergency restoration of settings, recovery after tampering by unauthorised operators, etc.

Measurement Inputs

The MTD53 is fitted with inputs for Conductivity and Redox sensors to allow very precise control of the Bleed and Biocide dosing. An input for a water meter has been included to permit volumetric and proportional dosing and giving a "Total Water" count. Interfacing to a wide variety of water meters is permitted by the inclusion of a user selectable 'K' Factor. The MTD53 is also provided with a battery backed Real Time Clock for the control of Dosing and Bleed. Timings are selected from a list allowing dosing from once every 5 Minutes to once a week. The clock is fully Y2K compatible.

Flexible Control & Alarm Configuration

The MTD53 is able to provide very flexible control of the four main cooling tower functions from water meter, timed measurement of Conductivity and Redox. As well as direct control of Bleed, Inhibitor and 2 Biocides, the MTD53 has an alarm relay to signal when outside intervention is required.

The Bleed output can be triggered at a pre-set time, from a water-meter or from an inductive conductivity sensor. The Biocide and Inhibitor functions can also be triggered at a pre-set time, from a water-meter or from the Redox measurement.

These Biocide and Inhibitor outputs can be configured for either ON/OFF or pulsed pump operation. Each function is equipped with volt free relay contacts and power terminals which gives maximum flexibility when connecting to the pumps, and minimises wiring.

Each output can be further configured in a number of ways, with individual Dose Alarm, Dose Duration, Output Pulse Rate, Bleed Inhibit and Pre-Bleed settings.

To assist during installation and testing, each relay output can be activated manually. This allows dosing and bleed to be initiated from the front panel at any time.

The Alarm relay can be programmed to energise on a variety of different conditions, to indicate the instrument state to external systems e.g. Sensor Error, Dose Alarm.

A non-volatile memory is provided for storage of current instrument settings. This allows the unit to recover, if a power failure occurs, without losing dose status information.

Robust Construction

The unit is constructed of a durable polyurethane foam and sealed to IP66.

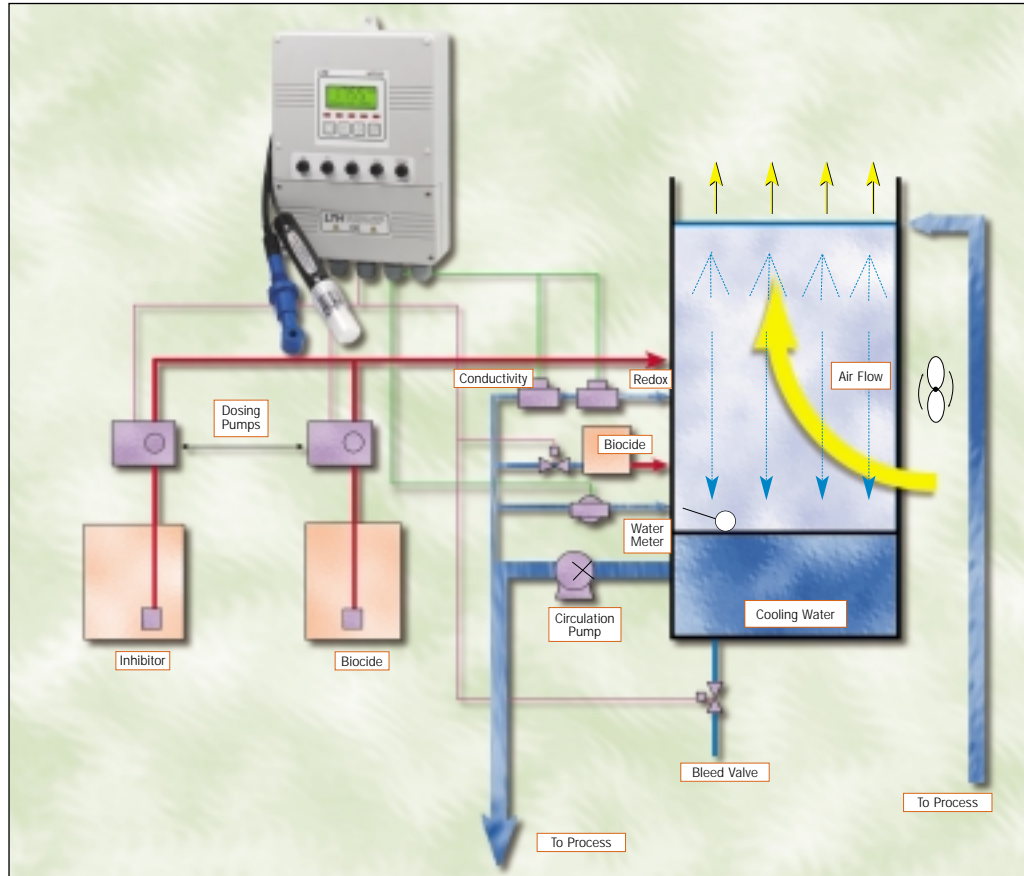
This provides a rugged self contained instrument with excellent chemical resistance. Cables can be fed in to the instrument via five IP66 sealed cable glands, and, if more glands are necessary, an expansion box can easily be fitted to the main enclosure giving up to 10 individually sealed cable entries.

A universal power supply allows a connection to any supply between 80 to 264 volts, AC or DC.

An option for low voltage operation between 18-36 V AC or DC is also available.



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SPECIFICATION

Relay Outputs

Four relay outputs (Bleed, Biocide A, Biocide B, Inhibitor) are provided for Pump/Solenoid operation, each with separate Live and Neutral terminals. (individually fused on the front panel. Relay rated 5A 30V DC/5A 250VAC (non inductive).

Alarm Relay

A volt free relay contact is provided to give external indication of selected instrument conditions.
Relay rated 5A 30V DC/5A 250VAC (non inductive).

Timed Dosing

The embedded real time clock provides a user selectable dose period from 5 minutes to 24 hours, or 'day of week' dosing. A timed 'background' dose can also be defined when using volumetric dosing.

Volumetric Dosing

The water meter input provides a continuous count of water input, using a definable 'K' Factor, allowing volume proportional dosing. Input by contact or semi-conductor sensor, max resistance 500ohms.

Dosing By Conductivity

The Bleed output can be triggered from the conductivity input, operating when the input rises above the set level.

Dosing By Redox

The Biocide outputs can be triggered from the Redox sensor input, operating when the input goes below the set level.

Proportional Dosing

The Dosing outputs can be programmed to operate proportionally in response to the pulses from the water meter.

Dosing Biocide by Ratio

Biocide A can be dosed in ratio to Biocide B in the proportion X:1, Biocide A : B.

Digital Inputs

Three digital inputs are provided (operation by contact closure)
Water Meter Input: for Volumetric and proportional dosing.
Flow Switch: For indication of low flow rate past sensor.
External Trigger: To initiate Dosing / Bleeding from an external source.

SPECIFICATION CONTINUED

Conductivity Sensor Input

LTH ECS20 Electroless Conductivity Sensor with a measurement range of 0 to 9999 μ S/cm, \pm 20 μ S/cm.

Redox Sensor Input

-2000mV to +2000mV, \pm 3mV.

Temperature Sensor Input

2 wire PT1000, -50°C to +300°C, \pm 0.2°C Sensor in ECS20.

Conductivity Sensor Cable

Up to 20 metres.

Temperature Compensation (Conductivity Reading)

Fixed (2%/°C slope, +25°C Base), user selectable ON or OFF.

Linearity

\pm 0.1% of Range.

Repeatability

\pm 0.1% of Range.

Operator Adjustment

Temperature : \pm 20.0°C Offset Redox : \pm 10% Slope.

Ambient Operating Temperature

-20°C to +50°C for full specification.

Ambient Temperature Variation

\pm 0.01% of range / °C (typical).

User Interface.

Large 4 character 7 segment display for the main display, with alphanumeric dot matrix characters for units, information display and programming. Easy to use four button user interface for instrument programming. Status LED's to indicate state of relay outputs and water meter input.

Accessories.

Terminal Expansion Box to allow a separate cable gland for each function. 4 x M20 & 6 x M16 glands provided.

Mounting plate for MTD53 and Terminal Expansion Box for simple 4 point fixing.

Power Supply

85 to 250V AC or DC 10W max.
Optional 18 to 36V AC or DC 15 W max.

Enclosures

Dimensions

96mm x 96mm x 140mm (H x W x D), including connectors.

Surface Mount Housing

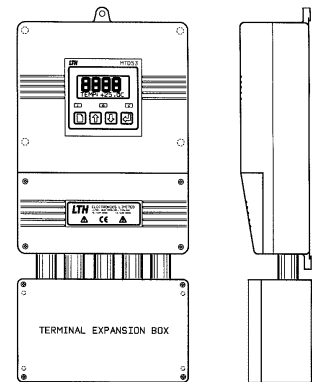
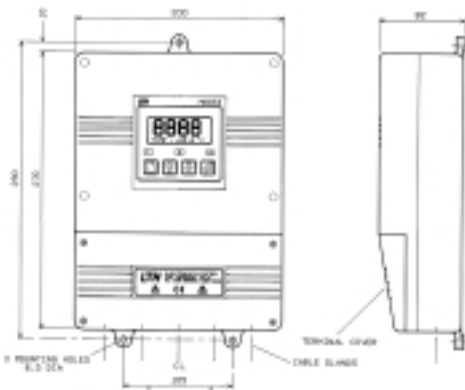
Expanded polyurethane foam rated to IP66.

Weight

Less than 1.5kg.

Dimensions

305mm x 200mm x 82mm (H x W x D), excluding mounting brackets.



LTH
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These products comply with current European Directives

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