

Models:

MT03 4 Channel SUNDial

MT03 SUNDial

Overview

The Innotech MT03 is a 4 Channel programmable switch which can be configured to turn on or off external hardware devices, based on accurately estimated sun position information.


The MT03 calculates the sun's daily cycle from user entered Time, Date, Latitude, Longitude and Time Zone data.

MT03 applications include lighting, blinds, security and virtually any application that requires events to occur at a scheduled time based on real-time sun position information.

Specifications

Power Supply

- 240VAC + 10% @ 50/60Hz **OR**
- 24VAC + 10% @ 50/60Hz
- Power Consumption: 7VA Max

 When powered by 24 VAC, the operating voltage must meet the requirements of safety extra low voltage (SELV) to EN 60730 terminals.

Temperature Ratings

- Storage: 0 to 50°C non-condensing
- Operating: 0 to 40°C non-condensing

Enclosure & Mounting


The MT03 is housed in a rectangular case suitable for DIN Rail mounting. The housing is moulded from flame retardant plastics recognised by UL as UL 94-V0.


Colour: Grey

Dimensions (max): 89mm (h) x 107mm (w) x 69mm (d)

Installation

- The MAXTime should be mounted on DIN rail in cabinets approved for switchgear or industrial control equipment. It should be mounted in a dry and clean location, free of excess vibration. Maximum terminal cable entry is 1.5mm² wire.
- Wire in accordance with Innotech connection diagrams and local bylaws or refer to your local distributor.

 Both a 240VAC supply and a 24VAC supply should NEVER be connected at the same time.

 This product should only be installed by qualified personnel.

Wiring

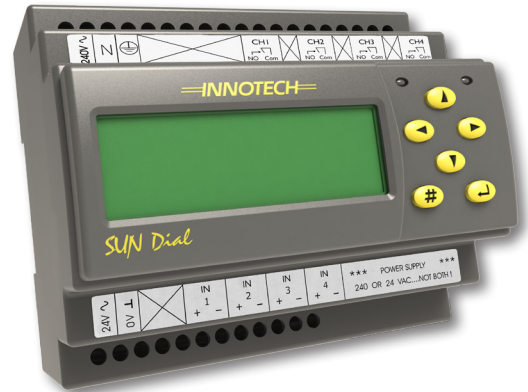
- DO NOT connect 24V or 240VAC to "IN+ or IN-" terminals.
- The Override Inputs are connected between the "IN+ and IN-" terminals.

Inputs

- 4 x Dry Contact Digital Inputs.

Outputs


- 4 x 10A @ 240VAC Relays, Normally Open.



Battery

Contains a lithium battery, Dispose of Properly (in accordance with local regulations).

- Type CR-2032 Lithium Battery
- Nominal voltage 3 Volts
- Shelf life – 5 years, dependent on ambient temperature

 To avoid the risk of explosion, replace battery with the correct type.

Applications

The MT03 can be used in a variety of situations that require the automatic on/off scheduling of devices based on sunrise, sunset or sun angle in the sky during the day.

Applications include:

- Night or Security Light scheduling
- Driving of blinds Up/Down
- Timed control of Equipment
- Devices routinely turned on/off based on sunrise, sunset and sun position cycles
- Automated control of shade blinds

Features

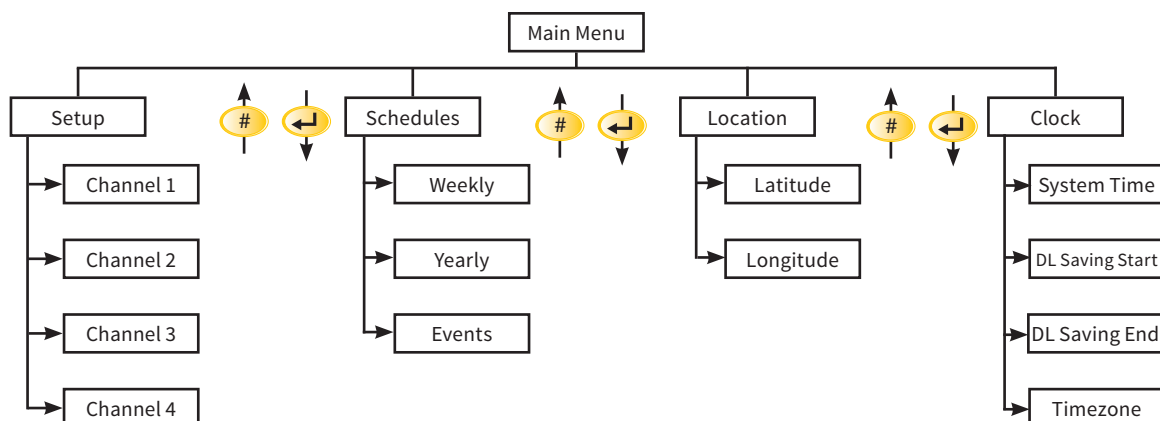
- 4 programmable Relay channels with 10A @ 240VAC Capability
- Independent Override Inputs for each Relay channel
- 4 line, 80 character backlit Liquid Crystal Display
- Current clock, location and schedules information stored to nonvolatile memory and is battery backed
- Automatic Daylight Savings adjustment
- Automatic sunrise/sunset calculation based on specified latitude, longitude, time zone and calendar date information
- Automatic time calculation for specified angle of the sun
- Able to program bypass schedules for recurring weekly or yearly events
- Operates on 24 or 240VAC
- DIN Rail mountable

Approvals

The Innotech MT03 conforms to:

- Electromagnetic emission and immunity requirements according to standards EN55011 (CISPR11) and EN50822 for RCM Labelling
- Designed and tested in accordance with IEC61010-1, Edition 3.0:2010 Safety Standard

MT03 Menu Layout



Interface

The interface of the MT03 comprises of a 4 line, 80 character backlit Liquid Crystal Display (LCD):

- Directional Keys
- Exit/Undo Key
- Enter/Save Key

A menu system with on-screen user instructions ensures ease-of-use.

Standby Screen

The Standby screen of the display shows the current time and status of all relay channels.

- Open relays are represented with a hollow circle
- Closed relays are represented with a solid circle

Main Menu

From the Standby Screen, pressing Enter on the keypad will take the user to the Main Menu where you can configure the MT03. The display returns to the Standby Screen within two minutes if no keys are pressed.

Setup

The Set Up menu allows you to configure the properties of the MT03's four channels. Each of the four channels is programmable to have two events per day. These events are called Start and Stop events, and each of the channel's Start and Stop events are independent from other channels.

Furthermore, each Start and Stop Event has its own unique programmable trigger. This event is what the Channel does upon event activation.

Start and Stop Trigger Types

- Sunrise event with 0-120 minutes lead or lag time
- Sunset event with 0-120 minutes lead or lag time
- Angle of sun in sky, between 5-175 °, with 0-120 minute lead or lag time
- Offset from Start Event. (0-240 Seconds)
- No event, or none

Channel Event Types

- Switch Open / Closed
- Drive Open / Closed 5-240 seconds
- Pulse Open / Closed (Specific for Blind Controls)

Schedules

The Schedule menu allows for the programming of weekly and yearly bypass schedules for the MT03. For example, you might program a schedule where the MT03's program does not activate on weekends; or one that deactivates during holiday periods.

The Schedules menu also can be used to check the current daily schedule for each of the relays, based on your current settings. This is done through the Events sub-menu item.

Location

The Location menu allows you to set Latitude and Longitude information in Degrees and Minutes North/South, East/West. The location data is used for the MT03's sunrise, sunset and sun position calculations.

Latitude and Longitude of the nearest city will provide enough data for the MT03 to provide an accurate estimate.

Clock

The Clock Menu allows setting of the System Time and Daylight Saving Parameters and for the Time Zone information to be set. When the System Time reaches the calculated Daylight Saving Start Date, the system will advance by one hour. When the System Time reaches the calculated Daylight Saving Stop date, the System Time will retard by one hour.

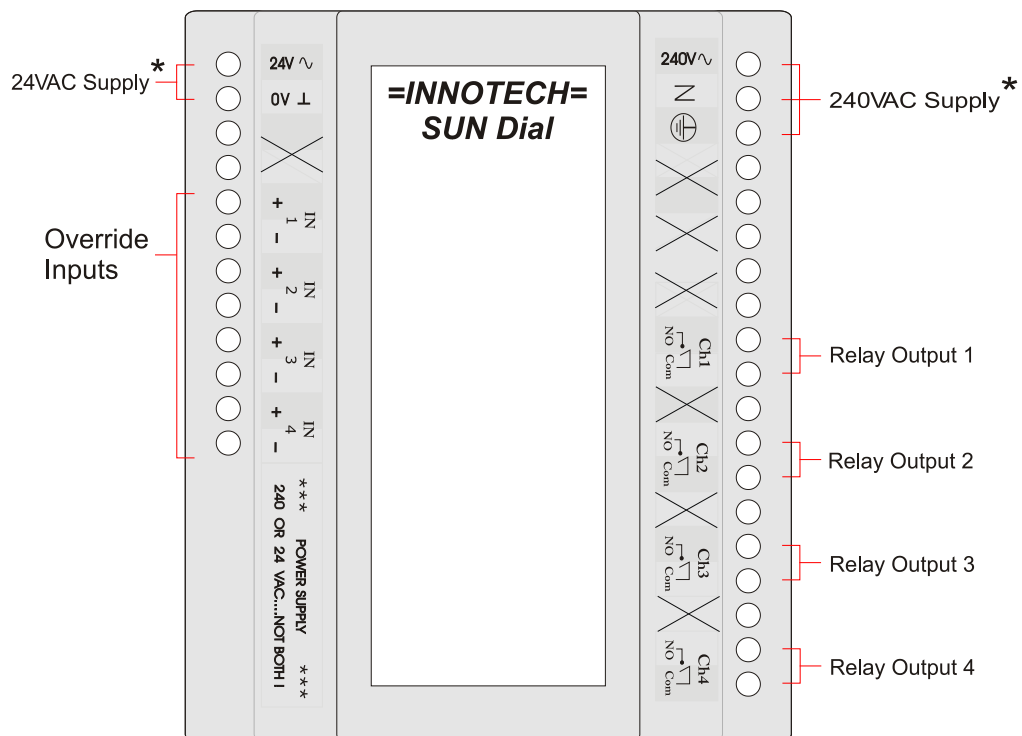
Both the System Time and Daylight Saving Parameters are battery backed and will be retained in the absence of a supply voltage. The clock data is used for the MT03's sun position calculations, relay activation and triggering programmed Schedules.

Time Zone is the number of hours difference from Coordinated Universal Time, or UTC, and your current location. Locations to the East of UTC are entered as positive values, and those to the West are entered as negative values.

CAUTION

The following describes potentially hazardous situations which, if not avoided, could result in death, serious or minor injury, or property damage.

1. Never touch the I/O terminals while power is being supplied.
2. Never attempt to disassemble the unit while power is being supplied.
3. Emergency stop circuits, limit circuits, interlock circuits and similar safety measures must be provided.
4. The MT03 outputs may remain On or Off due to burning or deposition of the output relays. External safety measures must be provided for such problems to ensure safety in the system.
5. Follow Innotech wiring diagrams and the installation / wiring instructions contained in this Datasheet.



Use only 240VAC OR 24VAC, NOT BOTH!

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INNOTECH®

Australian Owned, Designed & Manufactured
by Mass Electronics Brisbane

Phone: +61 7 3421 9100 **Fax:** +61 7 3421 9101
Email: sales@innotech.com.au www.innotech.com.au

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