# MT300
# Three Channel Temperature Monitor
# **Quick Start Guide**

**Temperature Monitor**
3-Channel RTD/Thermocouple

CH          TEMPERATURE

PEAK / RESET
MANUAL FAN
TEST

● FAN
● ALARM
● TRIP

SILENCE     CANCEL     ENTER / MENU

**MOD-TRONIC**
INSTRUMENTS LIMITED

MODEL MT300

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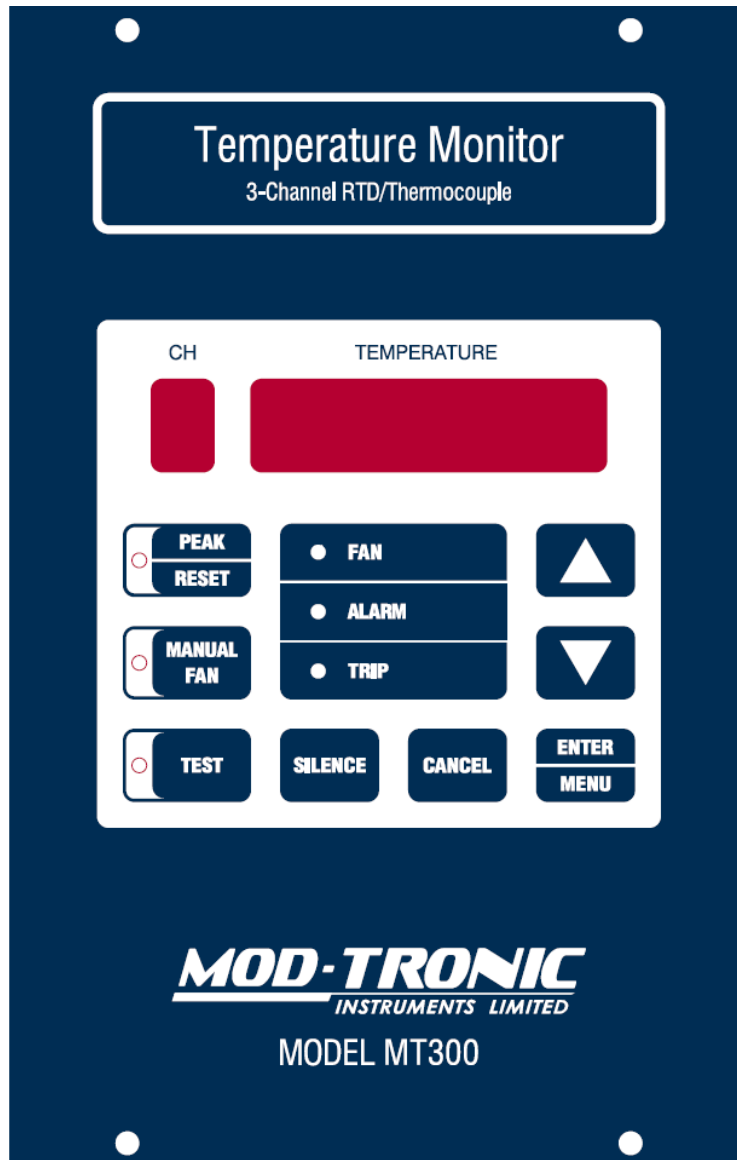
# 1   Introduction

This quick start guide covers general usage, basic configuration, and USB setup.  It assumes the user has some prior experience with similar products; a considerable amount of detail has been omitted in this guide.  It is also assumed that the MT300 is wired for power at minimum.  More detailed instructions will be found in the user's manual.

# 2   Installation

The cutout should be made to 5.6" X 9.0", or 142mm X 229mm.  Use the specification drawing to determine the location of the mounting holes, although it may be easiest to simply insert the MT300 into the new cutout, and mark the mounting hole locations.

# 3   General Usage

After applying power, the MT300 is in Monitor Mode and from there the front panel buttons function as such:

PEAK/RESET: Press momentarily to display peak values.  Press UP or DOWN to cycle through the minimum/maximum values for each channel.  Press and hold until display says *dOnE* to clear peak values.  Press PEAK/RESET again, or press CANCEL to stop viewing peak values.

MANUAL FAN: Press momentarily to force the Fan Relay to the tripped state.  Press again to return to normal state.

TEST: Press and hold to enter Test Mode.  All relays will energize and all LEDs will illuminate.  Press and hold CANCEL to exit.

SILENCE: Press momentarily to silence the audible alarm.

CANCEL: Press momentarily to cancel alarms on the displayed channel.  Will not cancel if trip condition still exists.

ENTER/MENU: Press and hold to enter Configuration Mode.

UP and DOWN: Press to change displayed channel, or to change a setting in Configuration Mode.

# 4   Configuration

Upon entering Configuration Mode, the user may use the UP and DOWN buttons to scroll though each of the base menu options listed below.  ENTER/MENU is used to select one of the options, and UP and DOWN is used to change the setting.  Once ENTER/MENU is pressed, that setting is saved and the next setting is displayed if there is one.  If there isn't one, it reverts back to the base menu.  CANCEL may be pressed at any time to drop back a menu level and/or exit Configuration Mode.  Any settings changed and confirmed with ENTER/MENU will be saved in non-volatile memory upon leaving Configuration Mode.

The MT300's configuration may be reset to defaults by pressing and holding the UP and DOWN buttons while applying power.  Wait at least two seconds before releasing UP and DOWN.  A progress indicator will be displayed while defaults are applied, then *dOnE*  will be displayed.  This is particularly useful if the Primary Password is forgotten.

- $InPUtS$: Input types; $tC\ CA$ **(T/C type K)**, $tC\ E$ **(T/C type E)**, $Pt\ 100$ or $Pt\ 1000$. Channel being set is indicated on far left digit.
- $OFFSEt$: Amount of offset in degrees to apply to each channel
- $SCALE$: $C$ or $F$ scale
- $CHdI\ SP$: What channel to display in normal running mode
- $4-20$: 4-20mA loop settings
  - Loop or internal power
  - Channel to display
  - $0$: Zero point
  - $S$: Span
- $SILEnt$: Number of minutes for AUDIBLE SILENCE button to silence beeper
- $1\ trIP\ A$: Channel 1, trip setup a
  - $S$: This trip settings enable/disable. Skips rest of settings if set to disable
  - $E$: Trip on error enable/disable
  - $F$: Fan output enable/disable
  - $A$: Alarm output enable/disable
  - $t$: Trip output enable/disable
  - $b$: Beeper output enable/disable
  - $S$: Setpoint
  - $OuEr/UndEr$: Whether to trip over or under the trip point
  - $CAnCEL/hYSt$: Whether this trip setup can be untripped by hysteresis, or if it requires pressing CANCEL
  - $H$: Hysteresis for untrip (only displayed if previous is set to $hYSt$)

- $1\ trIP\ b$: Channel 1, trip setup b
  - Same as previous, and same with remaining
- $1\ trIP\ C$: Channel 1, trip setup c
- $2\ trIP\ A$: Channel 2, trip setup a
- $2\ trIP\ b$: Channel 2, trip setup b
- $2\ trIP\ C$: Channel 2, trip setup c
- $3\ trIP\ A$: Channel 3, trip setup a
- $3\ trIP\ b$: Channel 3, trip setup b
- $3\ trIP\ C$: Channel 3, trip setup c
- $SErIAL$: MODBUS setup
  - (first parameter): MODBUS node ID number
  - (second parameter): Communication bitrate or USB
- $FAn\ EH$: fan exerciser
  - $P$: Period in days, or disable
  - $d$: Duration, in hours
- $FAn\ tO$: Manual fan timeout in minutes

- **rA rLY**: Reverse acting relays
  - **F**: Enable or disable reverse acting for Fan Relay
  - **A**: Enable or disable reverse acting for Alarm Relay
  - **t**: Enable or disable reverse acting for Trip Relay
- **brI tE**: LED display brightness, press up/down when it says **AdJUSt** to adjust brightness
- **PASS**: Password settings for setup menu.  Set to **0000** to disable
  - **P**: Primary password, allows full access to all settings
  - **S**: Secondary password, allows access to setpoints only
- **OUtErr**
  - **F**: Fan Relay behavior during A/D failure
  - **A**: Alarm Relay behavior during A/D failure
  - **t**: Trip Relay behavior during A/D failure
  - **b**: Buzzer behavior during A/D failure
  - **L**: 4-20 Loop behavior during A/D failure
- **OUttESt**
  - **F**: Fan Relay behavior during Test Mode
  - **A**: Alarm Relay behavior during Test Mode
  - **t**: Trip Relay behavior during Test Mode
  - **b**: Buzzer behavior during Test Mode
  - **L**: 4-20 Loop behavior during Test Mode
- **rESEt**: Reset all settings to defaults

# 5   USB Setup and FAQ

## 5.1   Installing USB driver

The first time a MT300 is connected to a computer via USB, the driver may not install correctly.  Check device manager for something listed as "MCP2200 USB Serial Port Emulator" with a yellow exclamation mark, similar to Figure 1.  If this is present, right click on it, choose to update driver, and direct it to load the driver from the MT300 CD.

There should now be a "USB Serial Port (COM4)" or similar in the "Ports" category.
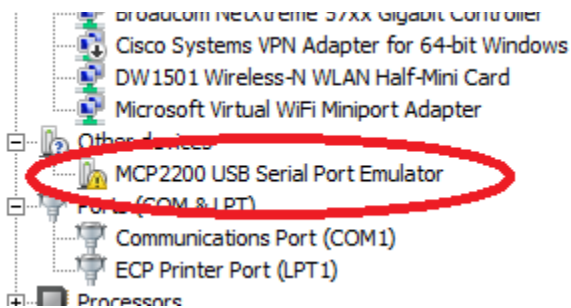


Figure 1

## 5.2   Why is the message "USB Device Not Recognized" displayed?

If a message is displayed "USB Device Not Recognized" or similar, the USB interface on the MT300 may need to be reinitialized.  To do this, momentarily press the TEST button the MT300.  After a few seconds, the message should disappear and the USB connection should function.

## 5.3   Why won't the MT300 Windows Utility program connect to the MT300?

If the utility program is not connecting to a MT300, first ensure that the MT300 is set to USB communication rather than a specific bitrate, which disables USB.  If it still isn't working, and the USB driver has been installed, then exit the MT300 Utility program, reset the USB connection by momentarily pressing the TEST button on the MT300, and start the Utility program again.