

**AMANO®**

# MTX-15™

Data Collection Terminal

Installation and Operation Guide



# *Thank you...*

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We recommend that this document be read in its entirety before any attempt is made to operate the equipment.

For more information about Amano's complete line of time products, visit our web site at:

[www.amano.com/time](http://www.amano.com/time)

## **About This Operation Guide**

This Operation Guide covers the MTX-15 Terminals for use with Amano Time & Attendance software for the following versions; Time Guardian v5.0, Time Guardian Plus v2.0, and Time Guardian Pro v4.0.

This Operation Guide discusses:

**Chapter 1:** Details typical MTX-15 terminal installation.

**Chapter 2:** Setting up your MTX-15 terminal for use with Amano Time & Attendance software.

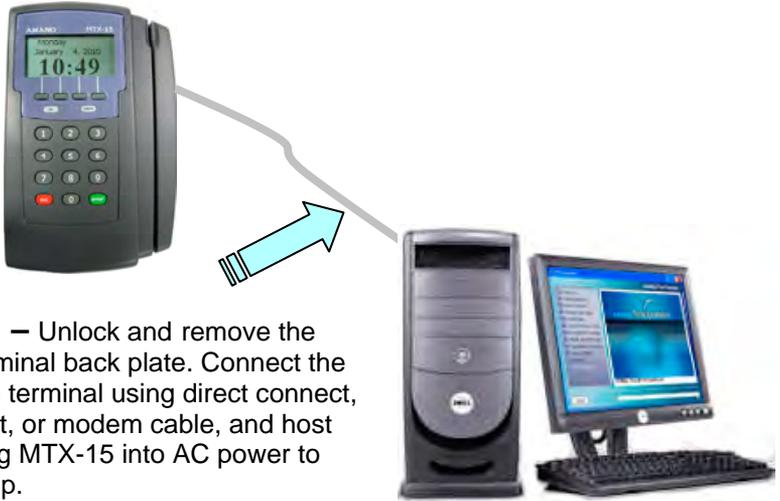
**Chapter 3:** Details MTX-15 diagnostics.

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# Basic Installation for Time Guardian MTX-15/A300 Package



**Step 1** – Unlock and remove the rear terminal back plate. Connect the MTX-15 terminal using direct connect, Ethernet, or modem cable, and host PC. Plug MTX-15 into AC power to power up.

**Step 2** – Install Time Guardian Software on the host PC. The installation should start automatically, but if it stalls, browse on CD to \Disk1\InstData\Windows\VM\install.exe



**Step 3** – Perform software activation by entering the Serial Number and perform on-line registration for Time Guardian.

**Note:** QuickBooks® integration is available, but it needs to be setup in Time Guardian. Also, QuickBooks must be installed on the same host computer and running.

**Step 4** – perform the Wizard Setup for Time Guardian and end by pressing  button.

**Note:** integration and synchronization will occur with employee transfer from Time Guardian when the MTX-15 terminal is polled.

**Note:** Other installations, i.e. with FPT40 terminal, with Time Guardian Plus, or with Time Guardian Pro may be slightly different. This procedure of connecting the MTX-15 terminal utilize examples with Time Guardian software.

# Chapter 1: MTX-15 Installation

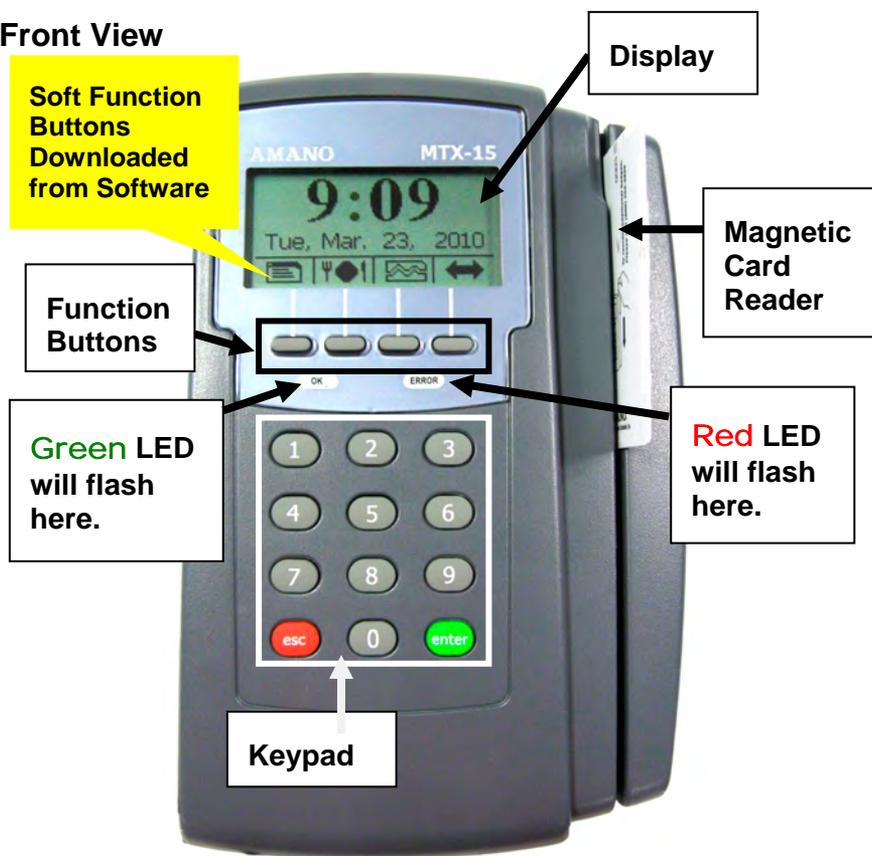
## Unpacking Your MTX-15

In addition to this guide, your package should include the following:

- MTX-15 Data Collection Terminal with AC Adapter
- 1 set of Keys (2)
- Time Guardian CD (only included with MTX-15/A300 package).
- CommStik 50 ft cable (only included with MTX-15/A300 package).
- 6 ft. Ethernet cable (only included with MTX-15/A302 package).

\*AA Batteries for power backup are not included

### Front View



*Figure 1: MTX-15 Front View*

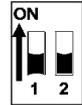
**Note:** The date and time in the desired format (e.g., military or AM/PM) are downloaded from the Time & Attendance software. The software will also control DST and any offset (TZ). Also downloaded to the terminal for display are the employee hours and last 4 punches.

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## Dip Switch

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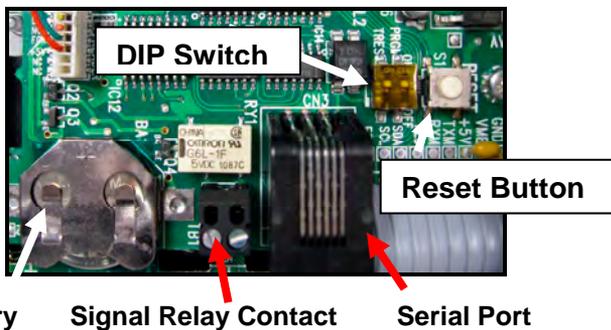
The Dip Switch on the MTX-15 PCB in most instances should not have to be changed from the default factory setting, which is both S1 and S2 set to **ON** as follows:



- **Switch 1:** Enables the termination resistor (ON position). When RS-485 serial communications are used and the terminal is located at the end of the serial chain, this switch should be **ON**. It should also be **ON** for Modem and Network terminals. For all RS-485 terminals except the last one, this switch should be **OFF**.
- **Switch 2:** Disables RS-485 communications (OFF position) in order to permit firmware upgrades via RS-232 (serial models only). For normal operation, this switch should always be in the **ON** position.

**Note:** Firmware upgrades should never be attempted without consulting Amano Technical Support for detailed instructions. **Data should always be polled from the Amano Time & Attendance Software before updating the firmware on the terminal as the current punch information at the terminal could be lost.**

The following Figure illustrates the DIP switch location on the MTX-15 PCB relative to other MTX-15 PCB components.



**Figure 2: MTX-15 PCB Component Location**

**Note:** The Dip Switch, Signal Relay Output and AC Power Adapter cord can be found at the same location on all MTX-15 models.

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# Wall Mounting

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**Warning!** Before selecting a mounting location for your MTX-15, you must consider the following:

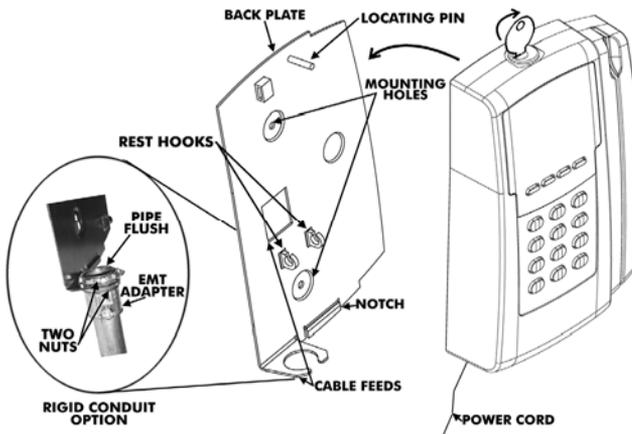
- The mounting surface and hardware must be able to support the unit's weight, 6 lbs. (2.7 kg).
- The area must be within the specified operating temperature range.
- Close proximity to a power source or wall outlet.
- The area or wall can accommodate signal and/or power conduits.

**Note:** Wiring can be routed through either cable feed.

**Note:** If you are using rigid (1/2" EMT) conduit, secure the conduit to the bottom cable feed using two nuts, making sure the pipe doesn't extend beyond the thickness of the nut. **Do not bend** the cable feed.

## ***Amano recommends the following procedure for wall mounting:***

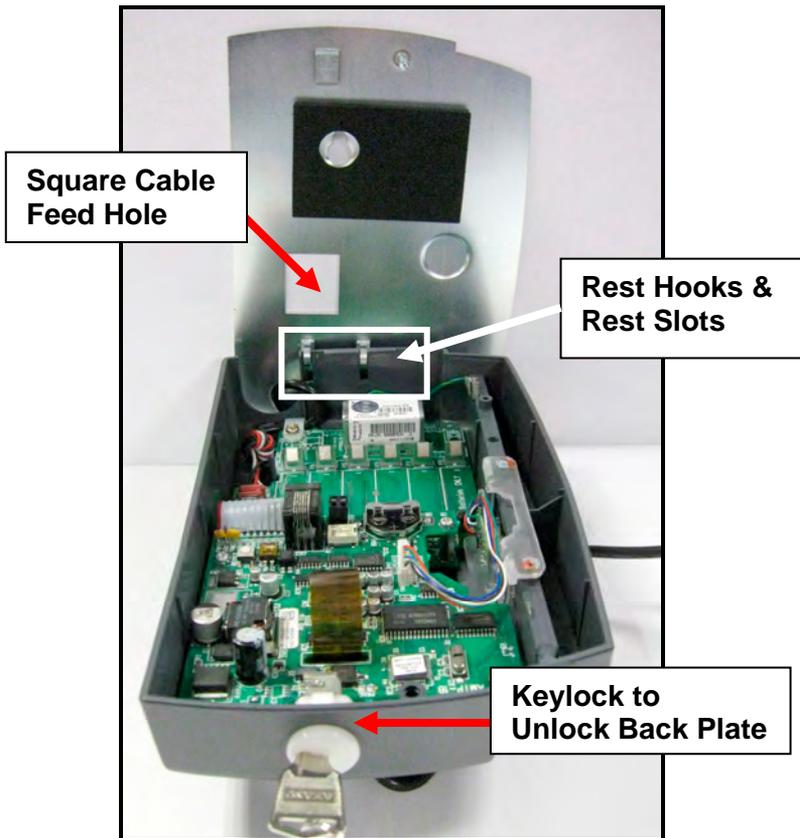
**Step 1.** Insert the key into the keyhole, turn clockwise, and remove the back plate as shown (see **Figure 3**). Set the terminal face up on a flat surface. Do not remove the key.



**Figure 3: Rear Back Plate Removal**

**Step 2.** Using the back plate as a template, mark the location of the upper mounting hole on the wall. Mark a vertical line on the wall as a guide to align the lower mounting hole.

- Step 3.** Install a screw or anchor at the mark and hang the back plate from the top-mounting hole. Level the back plate by centering the vertical line in the bottom hole (see **Figure 3**).
- Step 4.** Mark the location of the bottom hole.
- Step 5.** If using the square Cable Feed hole in the Backing Plate for power or communications, mark this location (see **Figure 4**).
- Step 6.** Install another screw or anchor for the bottom-mounting hole and secure the back plate to the wall.
- Note:** The Rest Slots on the terminal slip over the Rest Hooks (see **Figure 4**) on the Back Plate to hold the terminal in the open position for wiring and configuration, such as connecting to the signal relay to ring a bell (see **Figure 8**).



**Figure 4: MTX-15 Terminal on Rest Hooks**

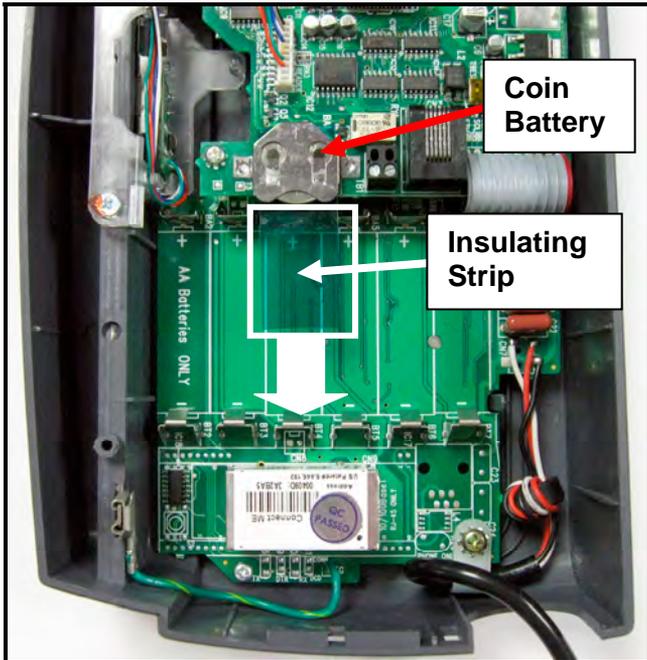
- Note:** Please connect all the desired communications wiring now with the back plate off.

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## Coin Battery Activation (setup retention)

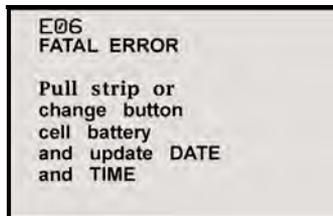
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Once the terminal back plate has been removed the coin battery should be activated with the terminal face down, by pulling and removing the green paper insulating strip from under the coin battery (see **Figure 5**). This battery is used to maintain time/date setup.



**Figure 5: Coin Battery Insulating Strip**

**Note:** If the insulating strip is not removed or the button battery is bad the following error and message may appear on the display:



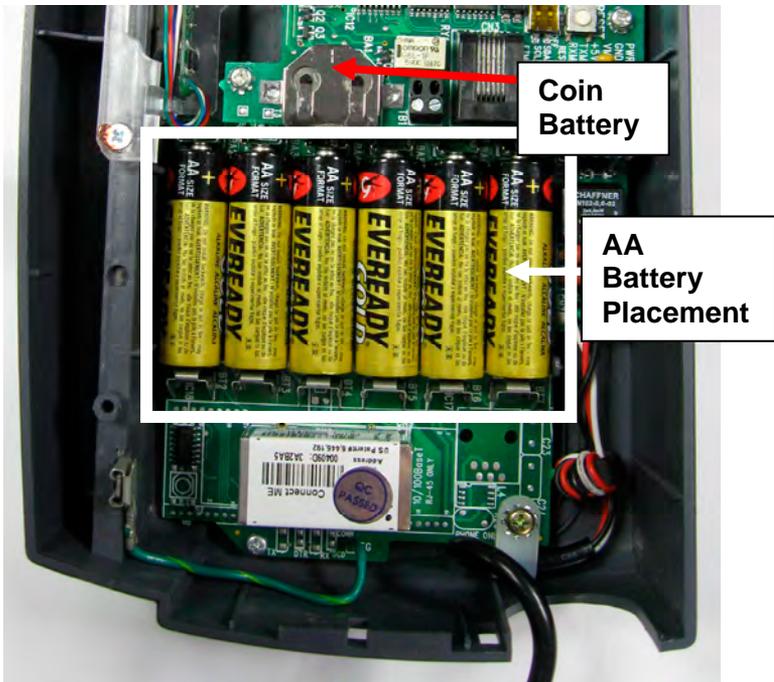
**Figure 6: Coin Battery Error**

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## Battery Backup for Full Power Reserve

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Once the terminal back plate has been removed the 6 disposable AA batteries should be inserted in the battery slots in the correct position [polarity] (see **Figure 7**). These batteries are used to provide emergency full power reserve for a limited time should AC power to the terminal be interrupted. During this type of emergency the terminal will maintain full function utilizing the power from these batteries to let employees in or out. However, the amount of reserve power provided by these batteries corresponds to the battery level as these batteries are disposable and not charged by the MTX-15. Also, the battery life can be reduced by the type of MTX-15 (i.e., the Ethernet MTX-15 requires the most power). The function of these batteries should not be confused with the coin battery function, which maintains power to the flash memory for setup and transactions.



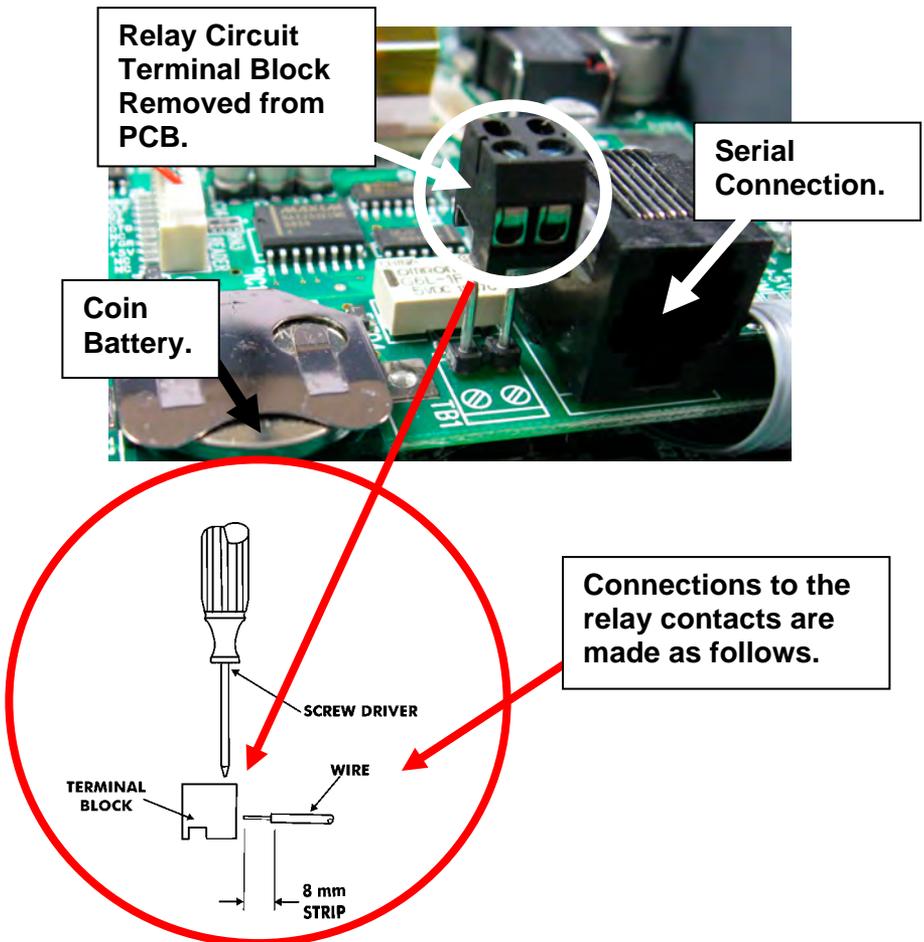
**Figure 7: AA Disposable Battery**

**Note:** Depleted AA batteries can leak which could lead to MTX-15 PCB corrosion and damage.

## Signal Relay Circuit (used to ring Bell/Buzzer)

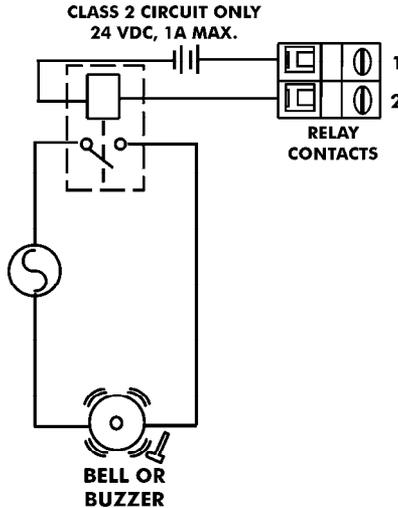
**Warning!** All connections to the relay contacts must be Class 2 wiring with a maximum of 24 VDC, 1A.

The MTX-15 is equipped with one (1) **NORMALLY OPEN (NO)** relay contact that can be used to control external equipment such as a bell or buzzer. Connection to the contacts is via the screw terminal block located on the back panel PCB alongside the serial connector. The terminal block can be removed from the PCB to facilitate wiring (see **Figure 8**). If removed, once connections are made, carefully re-install the terminal block.



**Figure 8: Signal Relay Circuit Location & Connection**

A typical wiring diagram for a bell circuit is shown below:



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## Communication Connections

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Connections between your Host PC and MTX-15 terminal(s) are based upon the model of the MTX-15 terminal you have purchased (Serial-Direct, Ethernet-network, or Modem).

### Serial Connection

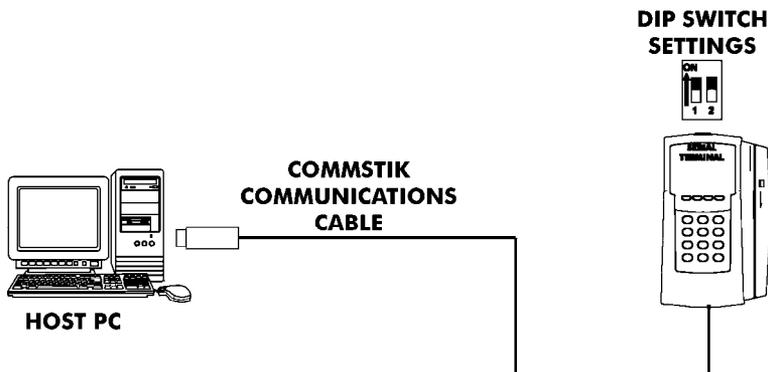
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Use the CommStik™ (50 foot RJ-11 to USB) communications cable to interface with the host PC. This part comes standard with the Time Guardian MTX-15/A300 package. If you purchased the terminal separately, Amano recommends that you use Amano AUS-10065x CommStik™ (50 foot RJ-11 to USB) Communications Cable to interface with the host PC.

RS-485 communications can be used for systems requiring up to 31 terminals. You will require the following accessories for each additional RS-485 terminal:

- AMX-206950: Communications Cable – 10', 6 conductor RJ-11
- AMX-206700: Junction Box

## SINGLE TERMINAL SETTINGS AND CONNECTIONS

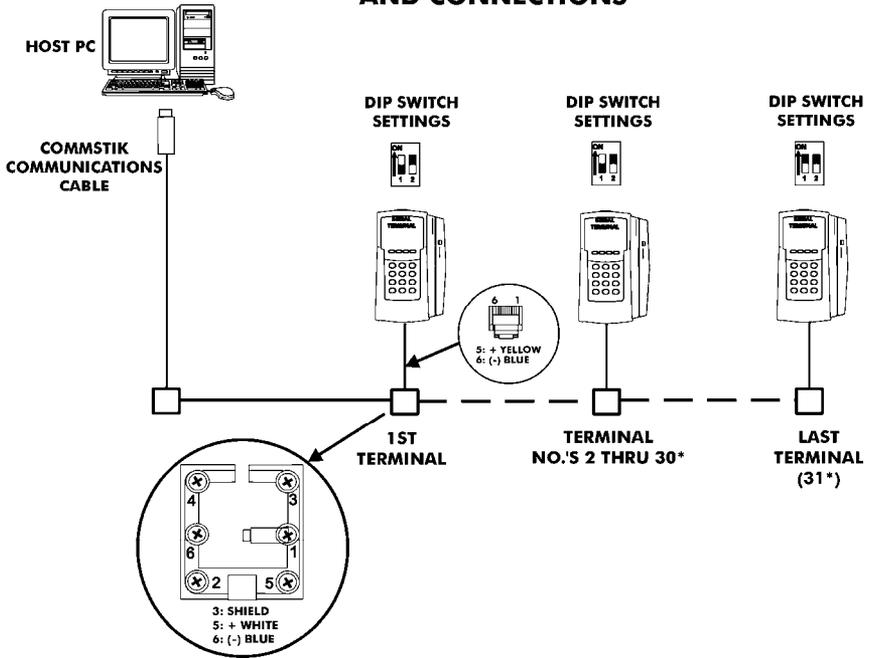


**Note:** When there is only one RS-485 MTX-15 terminal in the system, DIP Switch 1 must be in the ON position to enable the termination resistor.

**Note:** If the distance between the terminal and the host PC is more than 50 feet, two junction boxes will be required (see the next page), or you can use an RJ-11 coupler with a RJ-11 extension cable, not to exceed 3,950 feet.

Multi-terminal (maximum of 31) applications require the DIP Switches to be OFF in all but the last terminal on the communications line. DIP Switch 1 of the last terminal must be set to ON to enable the termination resistor so that all the terminals can properly communicate with the Host PC. The terminal settings and connections between the PC and terminals for this application are as follows:

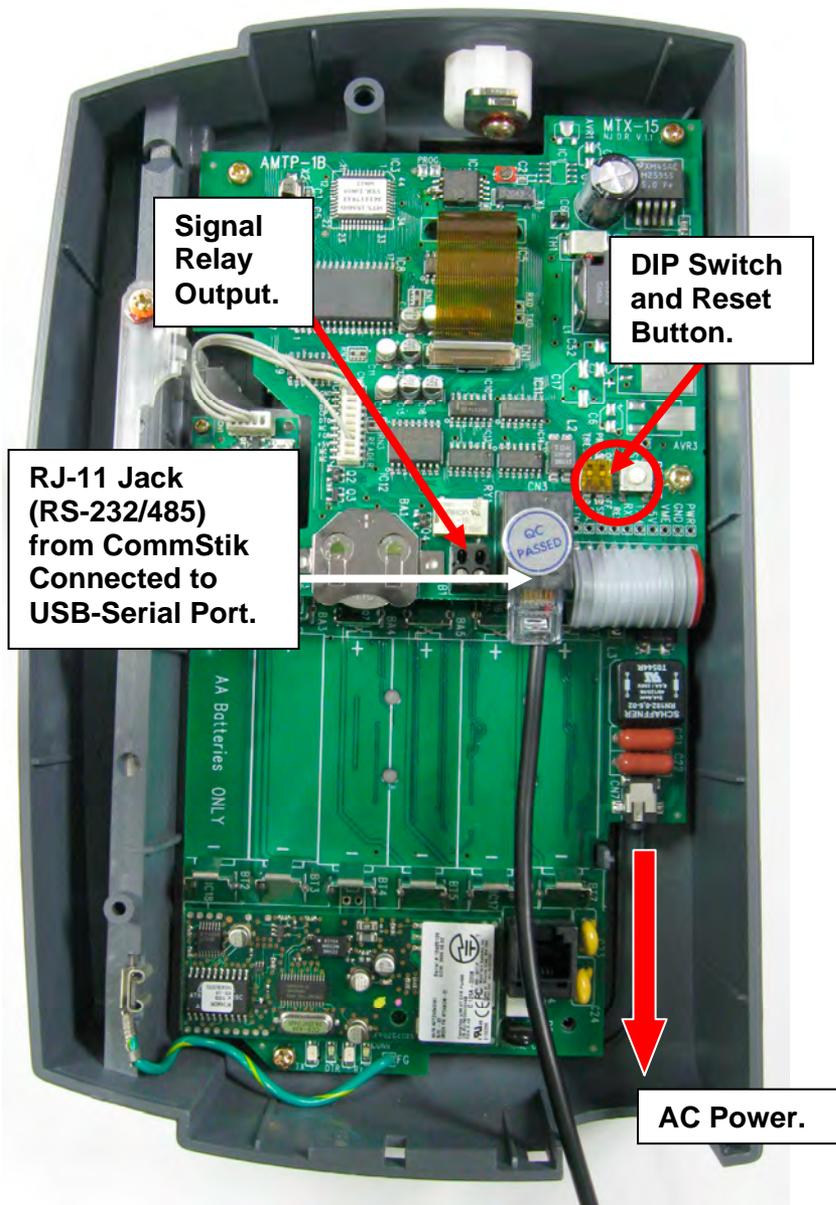
## MULTIPLE TERMINAL SETTINGS AND CONNECTIONS



\*The maximum number of terminals is dependent upon the distance and the quality of cabling used. It is recommended that Belden Low Voltage Computer Cable, P/N 9841 or equivalent be used to connect the junction boxes for this application.

**Warning!** Please note that terminal #3 (used for the RS-485 cable Shield) is disconnected from the internal RJ-11 receptacle of the junction box. This is deliberate; the shield connection is **NOT** fed through to the MTX-15 Terminal.

## Interior View with Back Plate Removed



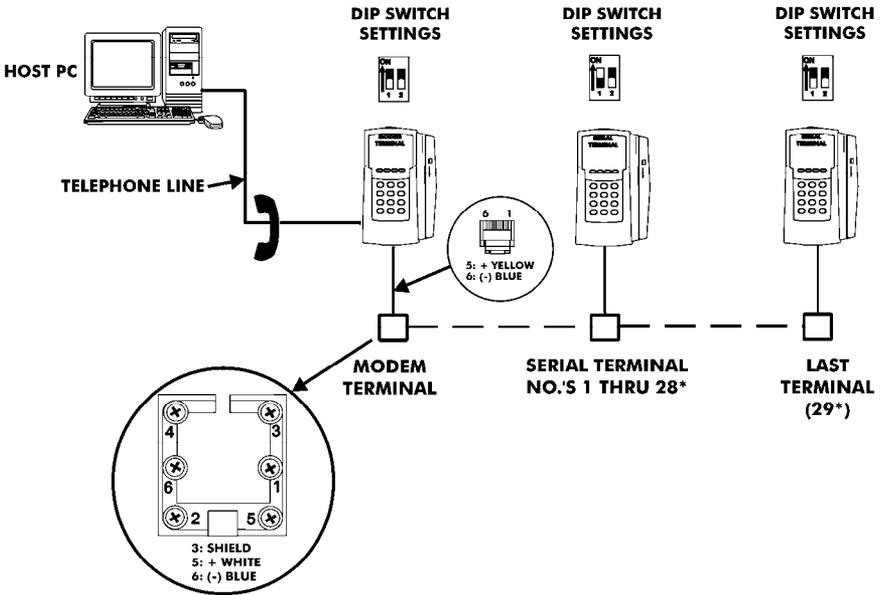
**Figure 9: Serial Connection to MTX-15**

# Modem Connection

The dial-up modem communication is generally used when the host PC is located at a different facility from the terminal(s). This configuration can consist of a single MTX-15 Modem Terminal, or an MTX-15 Modem Terminal networked (via RS-485) with a group of up to (29) Serial MTX-15 Terminals.

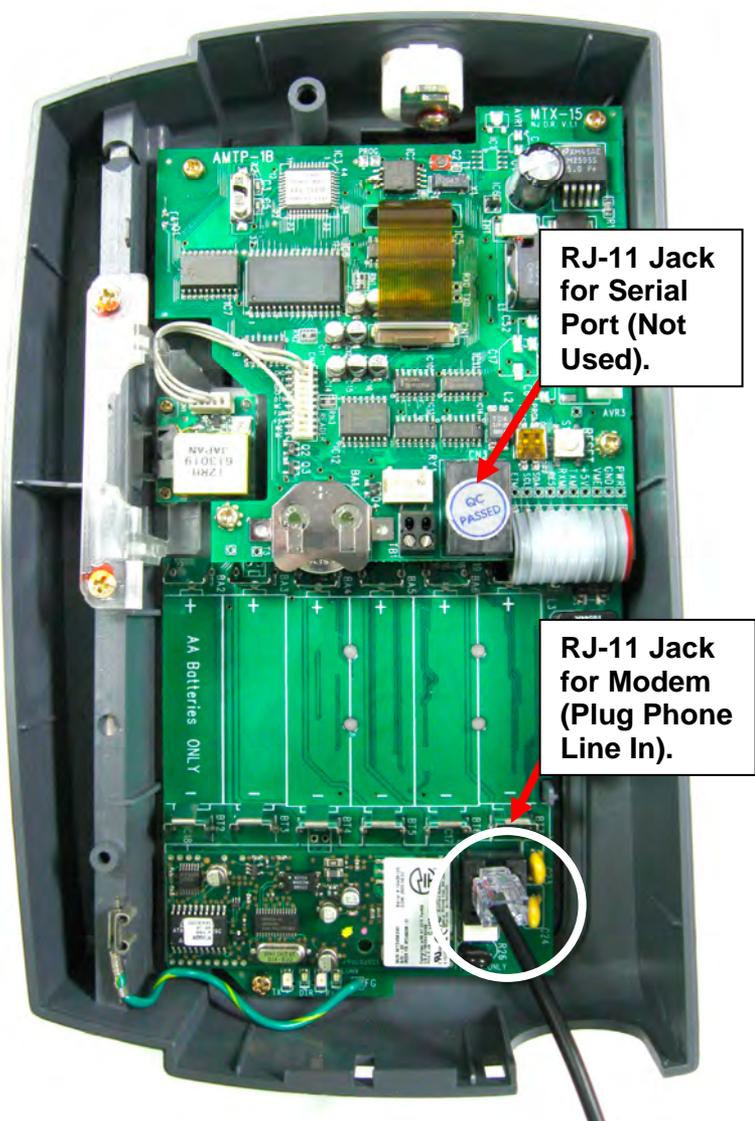
The Modem Terminal is connected to a standard telephone line. The terminal settings and connections between the Modem Terminal and Serial Terminals are as follows:

## MODEM TERMINAL WITH RS-485 NETWORK SETTINGS AND CONNECTIONS



**Note:** The serial connections depicted in the above illustration are the same as for the RS-485 wiring described previously.

## Interior View with Back Plate Removed

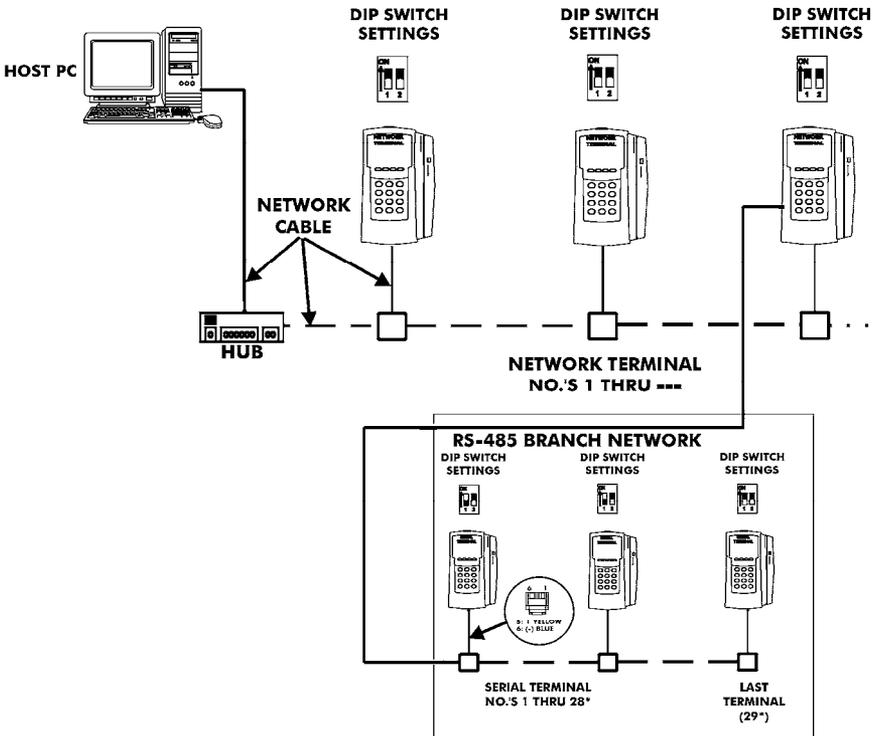


**Figure 10: Modem Connection to MTX-15**

## Ethernet Connection (Network)

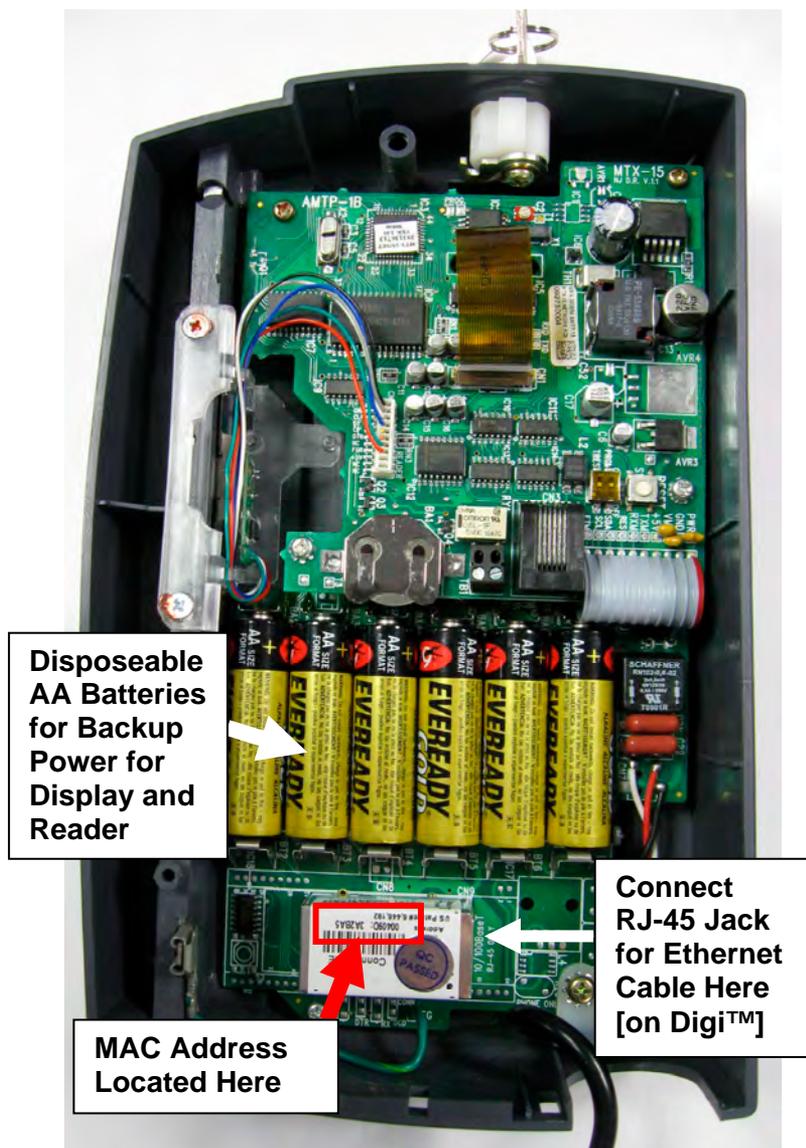
Network Terminals can be connected to a standard 10BaseT or 100 BaseTx computer network. In addition, each Network Terminal can have a group of up to 29 Serial Terminals networked via RS-485 (in the same manner described previously for a Modem Terminal).

### NETWORK TERMINALS WITH RS-485 BRANCH NETWORK SETTINGS AND CONNECTIONS



**Note:** The serial connections for the RS-485 branch network are the same as for the RS-485 wiring described previously.

## Interior View with Back Plate Removed



**Figure 11: Ethernet Connection to MTX-15**

**Note:** Failure of the AA Batteries will not cause the loss of any transaction and setup data stored in the flash memory of the terminal, provided the coin battery is enabled (see page 1-5).

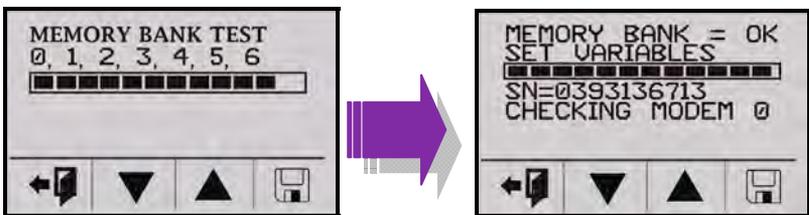
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## MTX-15 Startup (Initialization)

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Once connections have been made and the terminal back plate has been mounted on the wall, the MTX-15 terminal can be initialized. To do so perform the following:

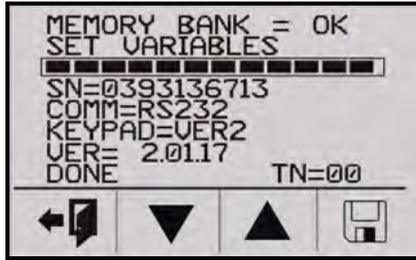
- Step 1.** Re-install the MTX-15 terminal on the back plate by placing the notch on the bottom of the Back Plate (see **Figure 3**) over the plastic tab in the bottom of the terminal cabinet. Pivot the terminal up so the locating pin on the Back Plate aligns with its corresponding hole in the cabinet. Rotate the key counterclockwise to lock the terminal in place. Remove the key.
- Step 2.** Plug in the terminal AC power adapter into an outlet. The terminal will beep and do the following:
- Test memory banks “0” through “6” and display the results.



**Figure 12: Initial Memory Bank Test**

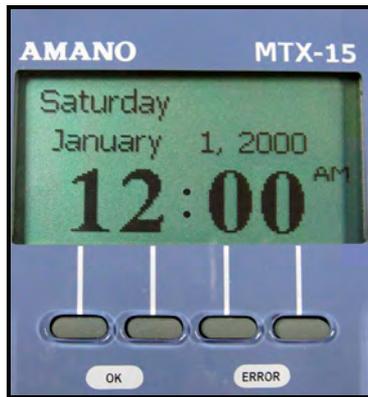
**Note:** After this test has been initially performed, the 0 thru 6 screen will not appear on startup unless the coin battery fails.

- Display the serial number of this terminal.
- Display the terminal communication type: serial (RS232/RS485), Modem or Ethernet.
- Test the keypad and if OK, display the keypad version.
- Display the version of firmware installed.
- Display the Terminal Number (TN always defaults to “0” until re-assigned by the Time & Attendance Software).



**Figure 13: Terminal Status**

- After display of terminal status, the initial startup display will appear with January 1, 2000, 12:00 am. Also no function buttons will be displayed until the terminal is downloaded from the host.



**Figure 14: MTX-15 Initial Startup Display**

- Note:** The time and date cannot be set from the keypad; it must be downloaded to the terminal using the Time & Attendance software from the host PC. Pressing any numeric key will display a flashing “**E04 Keypad Lock**” on top. All MTX-15 terminal features and functions must be enabled from the host.
- Step 3.** Once the default time is displayed (see **Figure 14**), you can swipe a badge to verify that the badge reader is working. The badge number will be displayed at the top of the screen.
- Step 4.** Please insert the Amano Time & Attendance Software CD into the CD-ROM drive of your PC to install the software. See the next Chapter for additional details on using your MTX-15 terminal with the Amano Time & Attendance software.

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## Chapter 2: MTX-15 Operation with Time & Attendance Software

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The MTX-15 is a data collection terminal to record the time attendance information, which is integrated with the Amano Time & Attendance software such as Time Guardian, Time Guardian Plus and Time Guardian Pro for further data processing. The MTX-15 terminal enables an employee to swipe a magnetic badge card, use a proximity reader, or enter his/her badge number and other information. It has a 12 button numerical keypad to enter the badge number with 4 additional function buttons for operation, configuration, or Diagnostics (see Chapter 3). The terminal has a graphical LCD display to show the current date/time and other information depending upon the mode. The terminal can be powered through the AC power adapter or utilize backup power from AA batteries (not included). It can be connected to the host Time & Attendance computer by modem, serial-direct, or Ethernet-network interface. The MTX-15 Data Collection Terminal can support:

- **12 Digit Badge Number:** The MTX-15 supports a 12 digit employee badge number. When the MTX terminal bar code or mag card reader reads a card, it reports 8-digits to the software. However, a proximity card will report 12-digits.
- **View Punch Information:** The MTX-15 allows the user to view the last 4 punches on any MTX-15 terminal in a multiple terminal configuration. The Time & Attendance software will download the last 4 punch data of each employee to each MTX-15 terminal at a predetermined time every night. Each terminal will hold the last 4 punch information in its memory for all employees in the table. The user can view the last 4 punches from the main screen as shown in *Figure 19*.

**Note:** The latest punch will replace the last punch and be displayed only at the terminal where the punch occurred. All other terminals will have to be polled by the Time & Attendance software to get updated punch information.

- **View Hour Information:** The MTX-15 allows the user to view the number of hours on any MTX-15 terminal in a multiple terminal configuration. The Time & Attendance software will download the number of hours in each different pay category for each employee to each MTX-15 terminal at a predetermined time. Each terminal will hold the hour information in its memory for all employees in the table. The maximum type of the hours will be

limited to 5. The host software will decide the number of hours that should be downloaded and the text label for each hour type. The user can view this information from the main screen as shown below.

- **Lock-In Schedule:** The MTX-15 supports the ability to restrict the employee to a certain time period. The schedules are configured and downloaded from the Amano Time & Attendance software. Each employee can have his/her own schedule for each day with a grace time period configured for all employees through the software. The terminal will allow the user to punch during the grace period. For example, if there is a 15 minute grace period for start time and a 30 minute grace period for end time, the terminal will allow the user to punch between 7:45AM to 5:30PM for a normal 8:00AM – 5:00PM schedule. Once this time period is expired, the terminal will restrict the user from making a punch on the terminal.
- **Unlock Schedule:** If the employee has passed the scheduled time to punch, the supervisor has the ability to unlock the schedule to allow the employee to punch. When the employee table is downloaded, there is one field that distinguishes between the regular employee and the supervisor. Only a supervisor is allowed to override the schedule so the employee can punch.

**Note:** Previous versions of the Amano Time & Attendance software cannot enable all the discussed features on the MTX-15 terminal. These previous versions are;

- Time Guardian v4.0 or lower.
- Time Guardian Plus v1.0.
- Time Guardian Pro v3.7 or lower.

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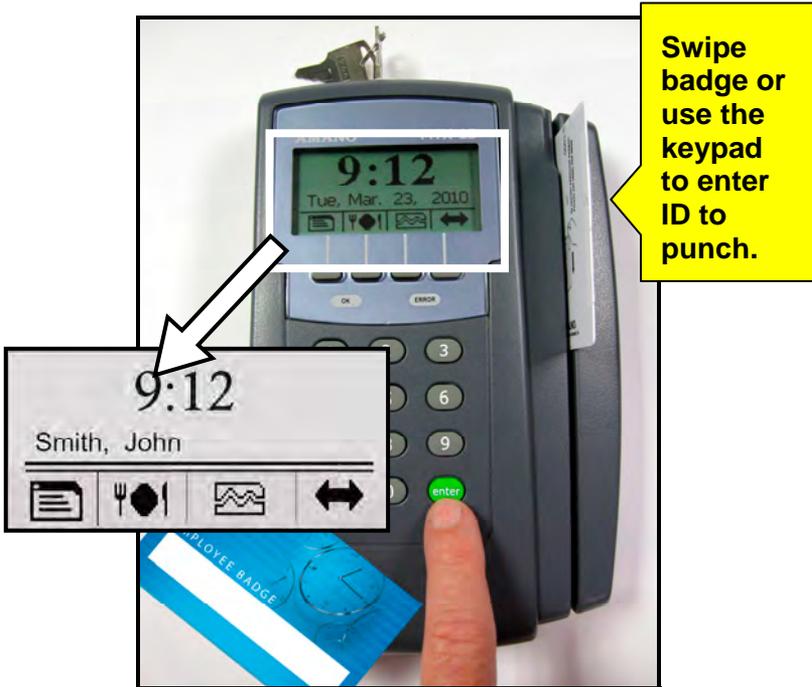
## Daily MTX-15 Use

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### Normal Punching at the MTX-15 terminal

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The MTX-15 firmware supports a 12 digit badge number so the terminal will always expect the user to press the **enter**  button after entering the badge number and it will prefix the badge number with zeroes if it is less than 12 digits. For example, if the user enters “1234” for a badge number and presses the **enter**  button, the number will be treated as “000000001234”.



**Figure 15: Normal Punch Display at Terminal**

When the user enters a valid employee ID with the keypad and/or swipes a valid badge, the Last and First name (see **Figure 15**) of the employee will appear in the display if that ID is associated with a name in the Time & Attendance software.

**Note: The terminal contains repunch protection. An error message, “E03 Only one” will appear if you try to punch more than one within 3 minute period.**

**Note:** All employee information such as hours, punches, and unlock schedule is always displayed at the MTX-15 terminal in military time format (i.e., 5:00PM = 17:00). However, the clock time displayed is controlled by the settings in the Amano Time & Attendance software, which can be set to either AM/PM or military.

**Note:** When performing View Punches, View Hours, and Unlock Schedule the same error messages can appear for invalid punch, etc.

## View Employee Punches at MTX-15

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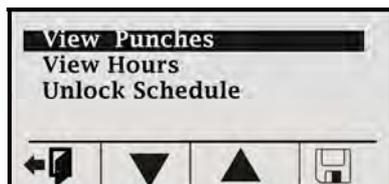
The user should be on the main screen as shown below to access the employee punch information. The terminal will always timeout within 3 seconds of no activity and return to the normal display.



**Figure 16: MTX-16 Normal Startup Display**

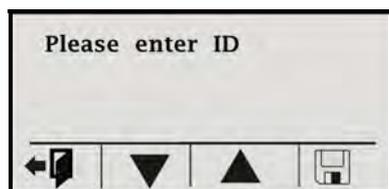
**Note:** The function buttons shown in **Figure 15** will only appear after successful download with Amano Time & Attendance software. The coffee break options must be enabled in the Time & Attendance software for these function buttons to be active.

**Step 1.** From the normal main display (see **Figure 16**) press the menu  button on the left to view employee information (see **Figure 17**). From this screen, use the **Back**  button to exit and return to the main display.



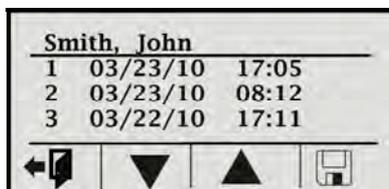
**Figure 17: View Employee Punches**

- Step 2.** Use the Function buttons (see **Figure 17**) as indicated underneath the display to move Up ▲ or Down ▼ to highlight “View Punches” and press **enter enter** to select and the screen will change to the following (see **Figure 18**).



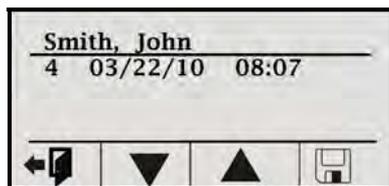
**Figure 18: Enter ID for Punches**

- Step 3.** The user can swipe his/her badge magnetic card or use the keypad to enter the ID number. Press **enter enter** to accept the ID number. If a mag card is used, there is no need to press **enter enter**. The terminal will display the last 4 punches recorded for that ID with the employee name (see **Figure 19**).



**Figure 19: View 1<sup>st</sup> Page of Punches at Terminal**

Use the Down ▼ function button to scroll down to view the 4<sup>th</sup> punch at the terminal (see **Figure 20** for an example).



**Figure 20: Scroll Down to View 4<sup>th</sup> Punch**

**Note:** The terminal will display the punch information if a valid ID is entered and it finds the ID in the employee table in the terminal. The following error message will display for invalid entry;

### **“E00 ID NOT Found”**

All the punch information is not communicated in real time with the terminals from the Time & Attendance software, so the terminal will show the last 4 punches as of yesterday.

**However, the terminal where the punch occurred will actually be the latest punch.**

**Note:** The feature to View Punches, View Hours, and Unlock Schedule is enabled or disabled in the Time & Attendance software. If View Punches is disabled in the Time & Attendance software the following error message will appear for an entry;

### **“E08 NOT Allowed”**

If the feature is enabled but there is no data downloaded from the host Amano Time & Attendance software, the following message will be displayed;

### **“NOT Available”**

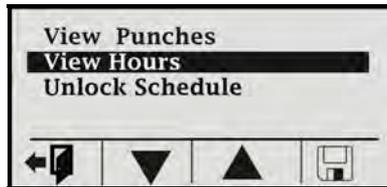
If there is no activity by the user (no key press, badge swipe, etc.) after entering this mode in 3 to 9 seconds, the terminal will timeout and exit this mode and return back to the normal main screen.

## View Employee Hours at MTX-15

---

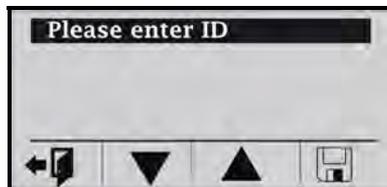
The user should be on the main screen to access the employee hour information.

- From the normal main display press the menu  button on the left to view employee information choices (see **Figure 21**).



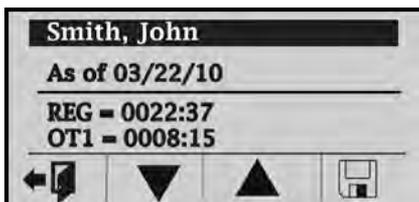
**Figure 21: View Hours at Terminal**

- Use the Function buttons as indicated underneath the display to move Up  and Down  to highlight "View Hours" and press **enter enter** on the keyboard to select and the screen change to the following (see **Figure 22**).



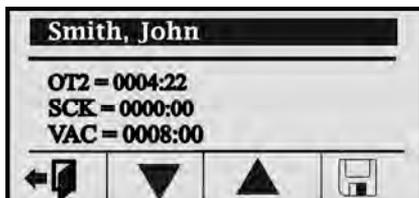
**Figure 22: Enter ID for Hours**

- The user can swipe his/her badge magnetic card or use the keypad to enter the ID number. Press **enter enter** to accept the ID number. The Time & Attendance software will download the numbers of hours worked in the pay period for each different category setup for each employee to all the MTX-15 terminals at a predetermined time every night. The date that the last download occurred will be displayed "As of MM/DD/YYYY" (see Figures 23 and 24). Each MTX-15 terminal will store the hour information for all employees in that location. The hours worked depends on the Time & Attendance software setup.



**Figure 23: First Page of Employee Hours at Terminal**

To see the 2<sup>nd</sup> page of an employee's hours, press the Down ▼ function button.



**Figure 24: Second Page of Employee Hours at Terminal**

Where the display, for example, might show depending upon what has been defined in the Time & Attendance software:

REG = REGULAR HOURS

OT1 = OVERTIME1

OT2 = OVERTIME2

SCK = Sick Time

VAC = Vacation Time

**Note:** The terminal will display the hour information if a valid ID is entered and it finds the ID in the employee table in the terminal. The same error messages will displayed as shown for View Punches.

**Note:** All the hour information is not communicated in real-time with the terminals and the Time & Attendance software, so the terminal will show the hours as of the date displayed.

- Press the **Back**  function button or **esc**  key to return to the previous menu.

## Lock-In Schedule Feature

---

The new MTX-15 firmware has the ability to restrict the employee to a scheduled time period. For example, depending on the schedule an employee will not be able to punch before 8:00AM and after 5:00PM, Monday thru Friday. The schedules can be configured and downloaded from the host Time & Attendance software. Each employee will have his/her own schedule for each day. See the Time & Attendance Software User Guide for additional information about Schedules.

A grace period for the lock-in schedule feature can be defined in the Time & Attendance software. If a grace period is defined it will affect all employees and all schedules on the terminals that have the lock-in schedule feature enabled. If some terminals have this feature disabled then it will not be active on those terminals.

For example, an enabled lock-in schedule of 08:00am to 05:00pm with a grace period of 15 minutes for **Start** and **End** times would allow an employee to successfully punch from 7:45am to 5:15pm. The following error message will appear for invalid punch due to lock-in schedule rules:

**“E07 ScheduleLock”**

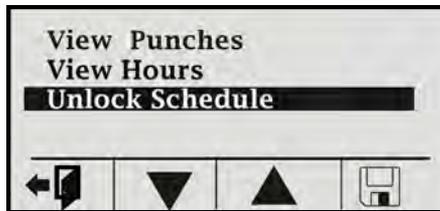
## Unlock Schedule Procedure at the MTX-15 terminal

---

The MTX-15 firmware supports the ability to restrict invalid employee punching times. The following procedure can be used at the terminal to override lockout and allow an employee to punch. For example, an employee might be asked to work on Saturday and need supervisor assistance to punch.

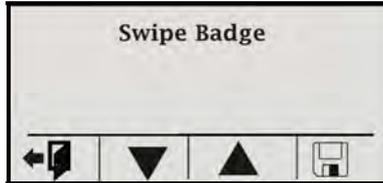
***For successful procedure, the Supervisor will need his/her badge:***

- Step 1.** From the normal main display press the menu  button on the left to view employee information choices (see **Figure 25**).



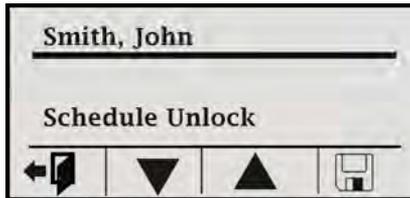
**Figure 25: MTX-15 Unlock Schedule at Terminal**

**Step 2.** Use the Function buttons (see **Figure 25** as indicated underneath the display to move Up ▲ and Down ▼ to highlight “Unlock Schedule” and press **enter enter** on the keyboard to select. The screen will change to the following (see **Figure 26**).



**Figure 26: Swipe Supervisor Badge**

**Step 3.** A user with supervisor rights must swipe his/her badge magnetic card to unlock the terminal and the screen will change to the following (see **Figure 27**).



**Figure 27: Employee Hours at Terminal**

**Note:** The terminal will display the Supervisor name and Schedule Unlock if a valid badge is swiped and it finds the ID in the employee table in the terminal. The same error messages will be displayed as shown for View Punches.

**Step 4.** The screen will change to the normal main screen to allow the user who was locked out to punch. **The user must punch within 10 seconds.** After a successful punch or the 10 second timeout the employee lock-in schedule will be re-enabled.

**Note:** The employee lock-in schedule feature and supervisor ID's are all configured in the Time & Attendance software and downloaded to the terminals when they are polled.

## Meal Punch Procedure for MTX-15

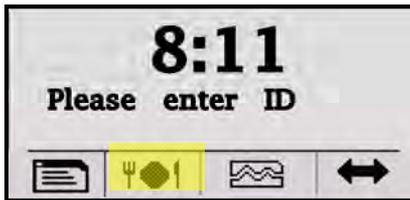
---

The user should be on the main screen as shown in the example Figure to access the employee Meal punch function. The [Meal button](#) box must be checked on the Time & Attendance [Terminal Options](#) screen (see page 2-24) for this function button to be active on the MTX-15 terminal.



*Figure 28: MTX-15 Normal Startup Display*

- Step 1.** From the normal main display (see *Figure 28*) press the  function button to enter an employee ID for a meal punch (see *Figure 29*).



*Figure 29: Enter ID for Meal Break*

- Step 2.** The user can swipe his/her badge magnetic card or use the keypad to enter the ID number. Press **enter enter** to accept the ID number when using the keypad. If the ID is valid for that terminal, the screen will change to display name [if a name exists] and allow meal punch (see *Figure 30*).



*Figure 30: Enter Meal Punch*

**Note:** The terminal will allow the meal punch if a valid ID is entered and it finds the ID in the employee table in the terminal. The following error message will displayed for invalid entry.

### “E00 ID NOT Found”

**Note:** If the ID fails the validation rule, the screen will display the following error message.

### “E03 ID Only One”

**Step 3.** Press the **Back**  function button or **esc**  key to return to the previous menu.

## Break Punch Procedure for MTX-15

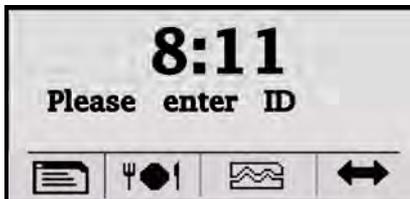
---

The user should be on the main screen as shown in the example Figure to access the employee Break punch function. The **Break button** box must be checked on the Time & Attendance **Terminal Options** screen (see page 2-24) for this function button to be active on the MTX-15.



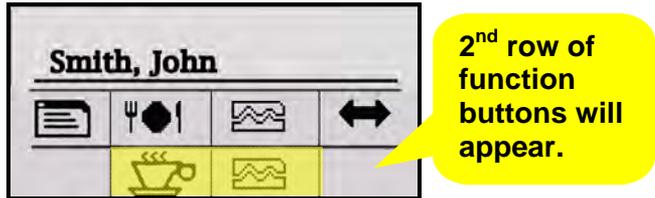
*Figure 31: MTX-15 Normal Startup Display*

**Step 1.** From the normal main display (see *Figure 31*) press the **break**  function button to enter an employee ID for a break punch (see *Figure 32*).



*Figure 32: Enter Employee ID for Break*

**Step 2.** The user can swipe his/her badge magnetic card or use the keypad to enter the ID number. Press **enter**  to accept the ID number when using the keypad. If the ID is valid for that terminal, the screen will change to display name [if a name exists] and display the 2<sup>nd</sup> row with Coffee and Break function buttons under the first row of buttons (see **Figure 33**).



**Figure 33: Select Coffee or Break Function**

**Step 3.** At this point choose to punch for a coffee break by pressing the Coffee function  button or choose to punch for a regular break by pressing the break  function button.

**Note:** The terminal will not display this 2<sup>nd</sup> row of buttons if the coffee and/or break function is not enabled in software Terminal Options setup (see page 2-24).

## **Labor Transfer Procedure for MTX-15**

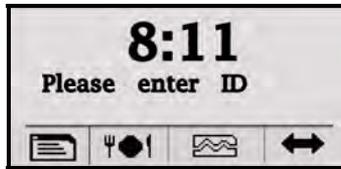
---

The user should be on the main screen as shown in the example Figure to access the employee labor transfer function. The Labor button MUST be selected on the Terminal Options screen in the Time & Attendance software (see page 2-24) for the transfer  function to appear on the MTX-15 and be active.



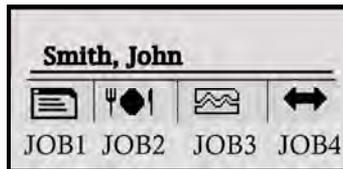
**Figure 34: MTX-15 Normal Startup Display**

**Step 1.** From the normal main display (see **Figure 34**) press the **transfer**  function button to enter an employee ID for a labor transfer (see **Figure 35**).



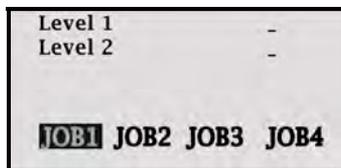
**Figure 35: Enter Employee ID for Transfer**

**Step 2.** The user can swipe his/her badge magnetic card or use the keypad to enter the ID number. Press **enter**  to accept the ID number when using the keypad. If the ID is valid for that terminal, the screen will change to display name [if a name exists] and display the JOB1, JOB2, JOB3, and JOB4 function buttons under the first row of buttons (see **Figure 36**).



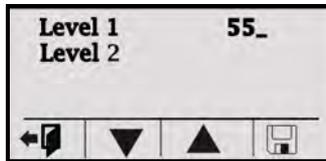
**Figure 36: Select JOB for Transfer**

**Step 3.** At this point choose the Labor Level to transfer by pressing the appropriate JOB function button. There are 6 Labor levels that can be defined in the Amano Time & Attendance software, but only 4 JOB function buttons will appear on the MTX-15. However you can choose to assign more than one labor level to a JOB function button. Also, the labor level name will appear after the JOB function button has been pressed (see Figure ) if a labor level has been defined in the Time & Attendance software (see page 2-25) and transferred to the terminal.



**Figure 37: JOB1 Selected for Labor Level 1**

**Step 4.** If the function button has more than one labor level, use the function keys to move Up ▲ and Down ▼ to highlight the desired labor level. At this point use the keypad to enter the department number [4 digits maximum] to transfer to the Labor Level (in this example Level 1). Press the Save  function button to save the transfer. From this screen, use the **Back**  button to exit and return to the main display.



**Figure 38: Labor Level 1 Department Number Entered**

**Note:** This operation is controlled by configuring the Time & Attendance software and downloading the information to the MTX-15 terminal. An invalid department number entry will cause the following error message to appear at the bottom of the display:

**“E01 Invalid num.”**

---

## MTX-15 Terminal Communications

---

The **Communications module** in the Time & Attendance software is used to communicate with MTX-15 terminals when setup. Locations and terminals can be configured utilizing the Time & Attendance software Clock tab in the Setup Wizard. Operations from this module include polling, downloading, setting the time, and viewing specific terminal settings in a location. **Polling**, or **polled** operation, refers to actively sampling the status of the external terminals by the client Time & Attendance program. **Downloading** is utilized to send data to the remote terminals from the Time & Attendance software.

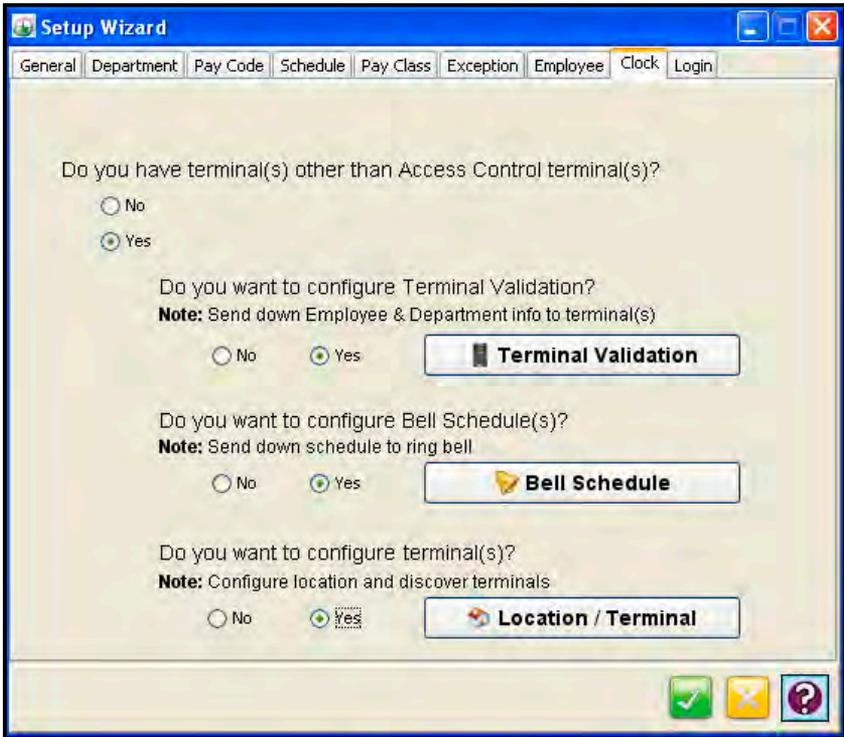
**Note:** All operations at the clock including time and employee ID's are controlled by downloading information from the Time & Attendance software.

The following sections describe how to setup the Amano Time & Attendance Software to communicate with the MTX-15 terminal for normal time and attendance functions.

## MTX-15 Setup with Amano Time & Attendance Software

**Note:** Prior to commencing with the Time & Attendance software Setup Wizard, Amano recommends that you install the MTX-15 terminal(s), using this MTX-15 Terminal Installation and Operation Guide. The MTX-15 terminal is installed to communicate with your PC/Time & Attendance software. You may need to obtain the IP address for each Ethernet MTX-15 terminal(s) connected to the system. Also, see the section on “Network Configuration” for how to obtain an automatic IP and/or enter a specific IP in your MTX-15 terminal.

During the installation and setup of the Time & Attendance software the Setup Wizard for **Step 8: Clock Setup** is optional;



**Figure 39: Clock Setup from Time & Attendance Software**

## Use Step 8 if:

### Do you have Terminals other than Access Control Terminals?

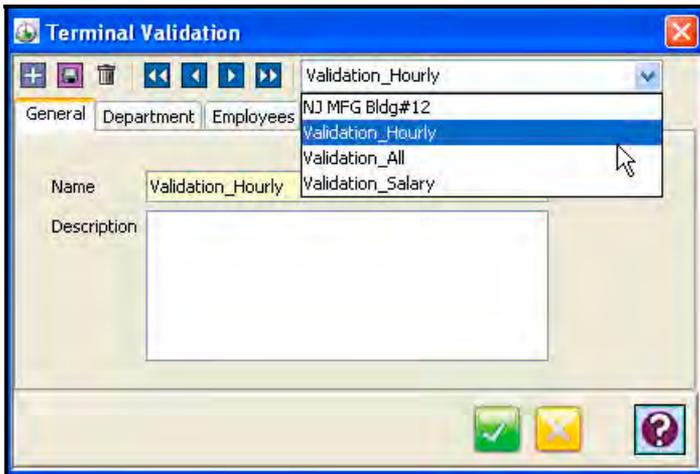
If **Yes**, the Time & Attendance software will automatically poll and upload punches from connected MTX-15 terminals each time the software is opened.

If **No**, the connected MTX-15 terminals will have to be polled manually using the Communications module in the Time & Attendance software.

### Do you want to configure Terminal Validation?

If **Yes** is selected for Terminal Validation, click the **Terminal Validation** button and the Terminal Validation screen will appear (see **Figure 40**). Terminal validation provides employee filtering from the setup configured in the **General**, **Department**, and **Employee** tabs in the Time & Attendance software.

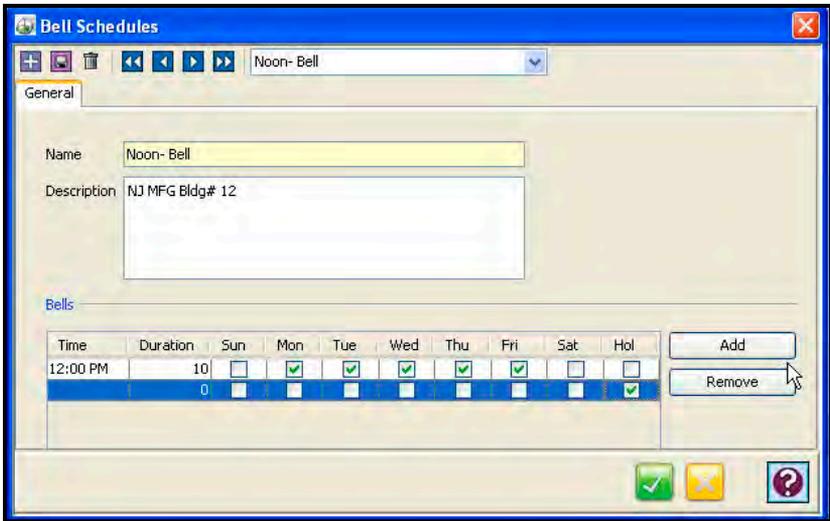
Terminal Validation is used to assign employees and Labor Levels to specific MTX-15 terminals in the system. When validation is used, only employees assigned to a particular terminal with the selected Labor Levels can use that terminal. Labor transfers at the terminal can only occur within the selected Labor Levels. Terminal Validations are downloaded to the selected MTX-15 terminals by location from the Communications module. To do so, see the Time & Attendance Software User Guide for more detailed information:



**Figure 40: Software Setup for Terminal Validation**

## Do you want to configure Bell Schedules?

If **Yes** is selected for Bell Schedules, click the **Bell Schedule** button for the Bell Schedules screen (see **Figure 41**).



**Figure 41: Software Setup for Bell Schedules**

**Special Note:** Selecting Holidays will only work with HandPunches (all HandPunch models).

A Bell schedule requires you to enter the Duration for the bell to ring, the time of day for the bell to ring and the days of the week. Multiple entries can be made for Bell Schedules with different duration and day assignments. Bell Schedules are downloaded to the selected MTX-15 terminals by location by using the **Communications** module in the Time & Attendance Software. To do so, see the next section and/or Time & Attendance Software User Guide for more details.

## Do you want to configure your Terminals?

Answer **Yes** to this question if you are using terminals such as a MTX-15 terminal via a serial, Ethernet, or modem connection.

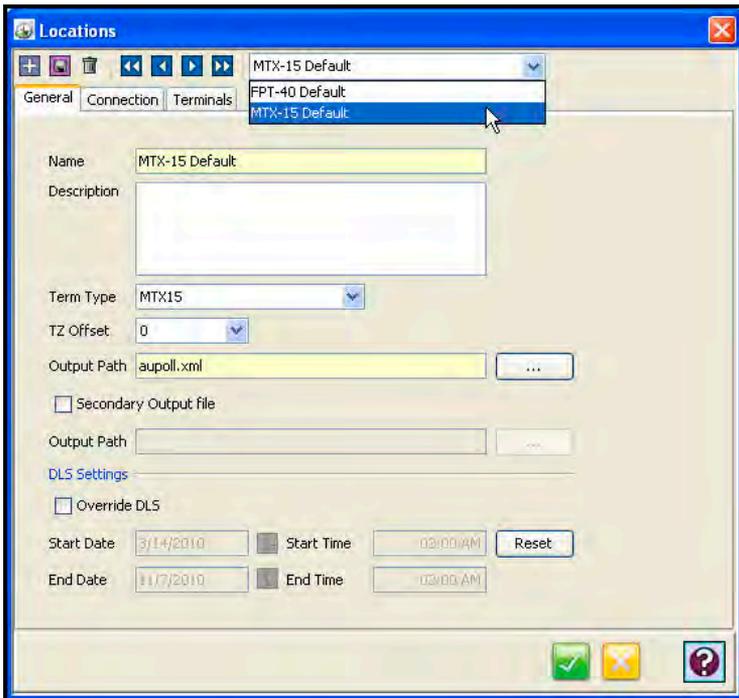
### Direct (serial) Connection

If **Yes** is selected, and a **Direct connection** using the included 50 foot USB/serial cable is desired, you can just use the “**MTX-15 Default**” location. You do not have to do anything else. The MTX-15 terminal, if connected, will automatically be detected upon login.

**Note:** The default terminal connection is for a USB (serial-direct) MTX-15 Terminal.

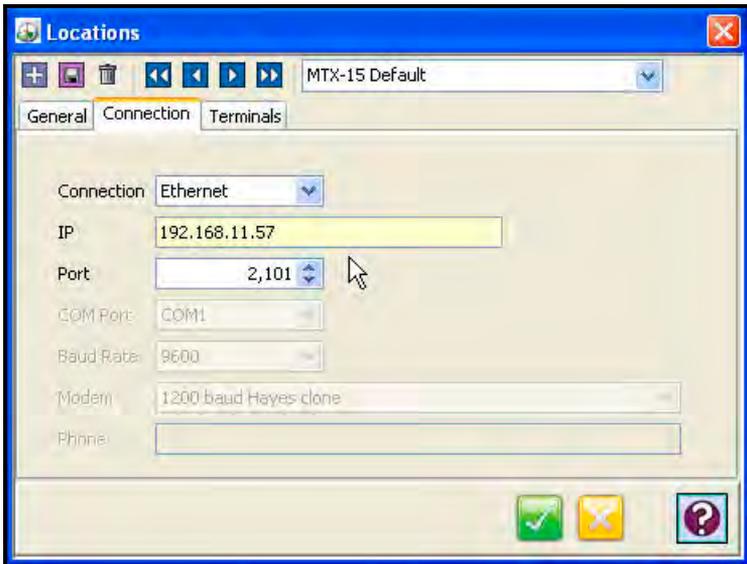
### Ethernet (network) Connection

If **Yes** is selected, and you are installing an **Ethernet connection** for the MTX-15 click on the **Location/Terminal** button (see **Figure 39**) and the **Locations** screen will appear (see **Figure 42**).



**Figure 42: Software Setup for Locations**

- Select “**MTX-15 Default**” on the General tab from the dropdown menu for Locations [recommended for easy configuration].
- Click on Connection tab to select **Ethernet** for Connection Type and enter your **IP Address**. The default MTX-15 Location automatically defines everything else for Ethernet. Click on  button.



**Figure 43: Software Setup for Locations with Connections Tab**

A Bell Schedule (optional) and Terminal Validation list should be setup.

You can create a Location to communicate with your MTX-15 terminals. A Location enables the Time & Attendance software to distinguish and interact with the desired terminal(s). Only one terminal type can be used per Location. If you have more than one terminal type, you must have multiple Locations.

***To create a new Location in Time & Attendance software for the MTX-15 terminal:***

- Step 1.** Click the new + button to create a new Location. You will be required to enter a unique **Name** [yellow required field] that will be used to describe the area or site where a terminal or group of terminals is located.

- Step 2.** In the **Description** field, enter a brief description of the Location. This field is optional.
- Step 3.** In the **Term Type** field; select MTX-15.
- Step 4.** In the **TZ (Time Zone) Offset** field, select the time zone difference (if applicable) between the physical location of your PC and the MTX-15 terminals.
- Step 5.** In the **Output Path** field, enter the path of the output XML file. If necessary, press the Browse button to navigate to the location of the XML output file.
- Step 6.** If necessary, check the “Secondary Output File” box, and In the Output Path field, enter the path of the secondary output file. Press the Browse button to navigate to the location of the secondary output file.

**Step 7.** For **DLS (Daylight Savings Time ) Settings**, enter the following:

- **Start Date:** The date that the DLS period will begin.
- **Start Time:** The time of the day of the Start Date that the DLS period will begin.
- **End Date:** The date that the DLS period will end.
- **End Time:** The time of the day of the End Date that the DLS period will end.

Press the **Reset** button to Reset the DLS at the Terminal.

**Step 8.** Click on the **Connection** tab.

**Note:** The Port number for Ethernet terminals must be set to; MTX-15 = **2101**, MTX-10 & 20 = **401**, FPT-40 = **4370**, and HandPunch's = **3001**.

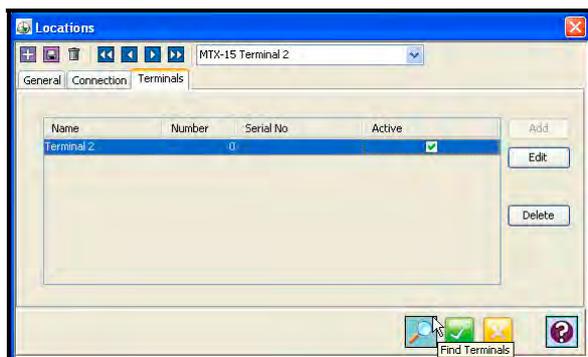
**Step 9.** In the Connection field, select the type of connection you are using to communicate with the MTX-15 terminal(s). The required information in the Connection Info depends on your connection.

- **Ethernet:** The MTX-15 terminals communicate to the Host PC via Ethernet connection. If selected, you must enter the IP Address and Port **2101**. [Obtain the correct IP address from your network administrator, or alternatively, please

consult Chapter 3: Network Configuration of this Guide for additional information about hardware configuration, and identifying the IP address].

- **Modem:** A modem can be used at the Com Port of the Host PC to communicate to the terminal(s). If selected, you must select the Com Port, Baud Rate, Modem Type, and enter the Phone Number. If your modem is not available from the list, select a compatible model. This information should be provided in the modem's documentation. The telephone number entered must be the terminal's modem. (Include 1 + (Area Code) + 7-digit phone number, when applicable).
- **Direct:** The MTX-15 terminal(s) are directly connected to the Host PC via Com Port. If selected, you must select the Com Port and Baud Rate.

**Step 10.** Click on the **Terminals** tab to add, edit, delete, or find terminals.



**Figure 44: Software Setup for Locations with Terminals Tab**

**Step 11.** To find terminals, click on the **Find Terminals** button to search for terminals (see **Figure 45**).



**Figure 45: Software Communicating with Terminals**

**Note:** The error message “ *no terminals found* ” will appear if there is a communication problem with the terminal(s) at the location. Please check cable connection and/or configuration.

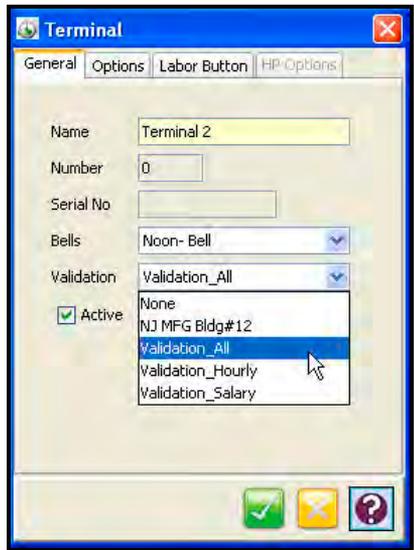
The Ethernet and direct connection MTX-15 terminals in this location should appear in the Terminals list (see **Figure 46**) if found.



**Figure 46: Locations Terminal List**

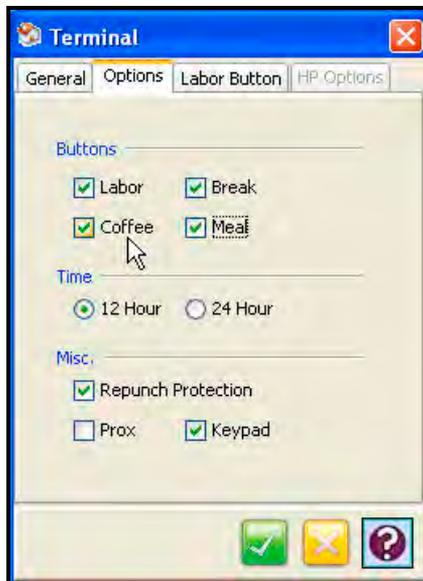
**Note:** Search eyeglass function is only for MTX terminals.

**Step 12.** Double-click on the found terminal or highlight the terminal and click on the **Add** button to add a new Terminal to the Location and the Terminal window will appear for setup. If adding a new MTX Terminal you must first search for the Terminal.



**Figure 47: Software Terminal General Setup**

- Step 13.** In the **Name** field, enter in a unique name [required field] that will be used to describe the terminal. This field will be automatically populated with the MAC address when the **eyeglass** find button is used.
- Step 14.** In the **Number** field, enter in a unique number for the terminal if allowed.
- Step 15.** In the **Serial No.** field, a unique number will appear for a found MTX-15 terminal.
- Step 16.** If you wish to assign a Bell Schedule to the terminal, select one from the dropdown list in the Bells field.
- Step 17.** If you wish to assign a Terminal Validation setting to the terminal, select one from the dropdown list in the Validation field.
- Step 18.** Click on the Options tab (see **Figure 48**). To activate the Labor button on a MTX-15 terminal, place a check in the Labor box.
- Step 19.** In the Time Format box, select the time format (12-hour or 24-hour) for the terminal.
- Step 20.** In the Misc boxes, select whether to enable the RR, Keypad, and/or Repunch Protection for the terminal.

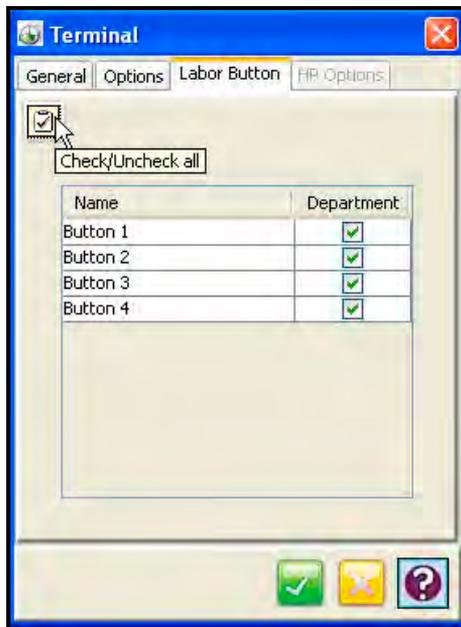


**Figure 48: Software Terminal Options Setup**

**Note:** The Coffee, Break, and Meal buttons will not be able to be selected if the Advanced Overtime Module has not been activated. This module provides the Shifts with Meal Templates (see Time & Attendance User Guide). By default the Labor button will be selectable. **However, if the Labor**

**button box is not checked the transfer**  **button will not appear on the MTX-15 terminal display. Therefore, no labor transfer will be allowed at the terminal.**

**Step 21.** Click on the Labor Button tab (see **Figure 49**) to enable departments for Labor transfer with the buttons on a MTX-15 terminal, place a check in the appropriate Department box.

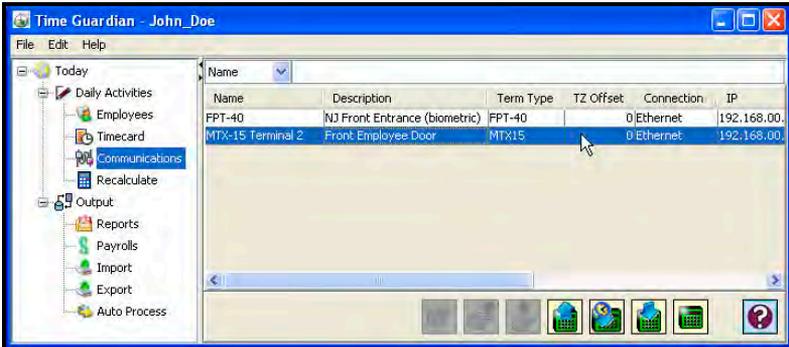


**Figure 49: Software Terminal Labor Button Setup**

**Step 22.** To update the terminal settings, click on the Update button. This will download the current settings in this window to the terminal.

## Time & Attendance Software Communications Module

With the Time & Attendance Software open on the host PC, from the tree view, click on the **Communications** module within the Daily Activities group and the following type of screen should appear for Time Guardian Plus. Note – the tree view can look a little different depending upon which modules are activated and/or whether it is Time Guardian Pro (all modules will be active).



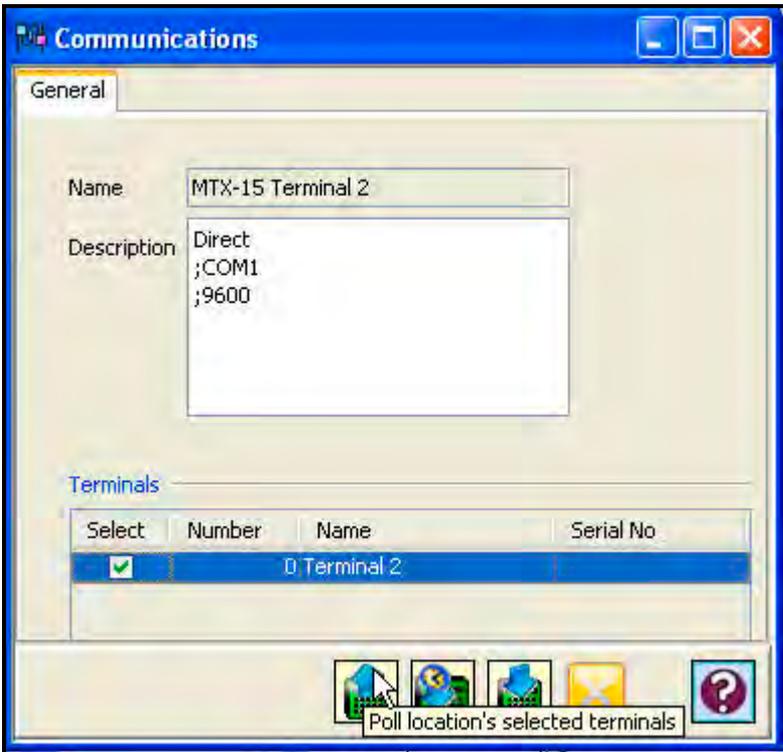
**Figure 50: Time & Attendance Software Tree View**

Locations are selected by clicking on the desired row (see highlighted example in **Figure 50**). You can select multiple locations by holding down the Ctrl Key and clicking on other locations. Also, you can sort the displayed Locations list by clicking on the dropdown list in the upper left-hand corner and selecting on; Name, Description, Term Type, TZ Offset, Connection, IP, Port, COM Port, Baud Rate, Modem, and Phone. Once the location is selected use the following commands found at the bottom of the screen to communicate with the connected MTX-15 terminal(s) at that location:

Button	Description
	Poll all terminals of the selected locations
	Set the time for all terminals at the selected locations
	Download validations and settings to all terminals at the selected locations
	View and communicate with specific or multiple terminals at a location.

To select specific terminals within a location, double-click on the desired location row, and the following Communications dialog will appear:

**Note:** The Send fingerprint maps , Receive fingerprint maps , and Clear fingerprint maps  icons will be grayed out unless an FPT-40 terminal is selected.



**Figure 51: Software Communications Screen**

Select terminals in the Terminals list by placing a check in the Select box of each terminal. When you have finished making your selections, use one the commands to communicate with the MTX-15 terminals.

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# Chapter 3: MTX-15 Diagnostics

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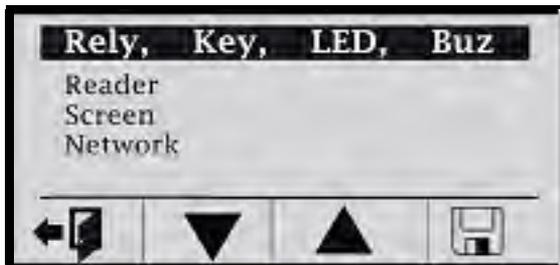
## Running Diagnostics

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In addition to a power up diagnostic, the MTX-15 has an internal diagnostic utility for verifying the correct operation of the terminal, adjusting the display contrast and configuring network communications (Ethernet terminals only).

### ***To access diagnostics:***

- Step 1.** Cycle the AC power on the MTX-15 or press the Reset button on the PCB (see **Figure 2**).
- Step 2.** Press the **enter**  key when the Memory Bank test first appears. After the terminal initializes, the Diagnostic screen will appear with the Relay, Keypad, LED and Buzzer test highlighted as illustrated in **Figure 52**.



**Figure 52: MTX-15 Main Diagnostic Screen**

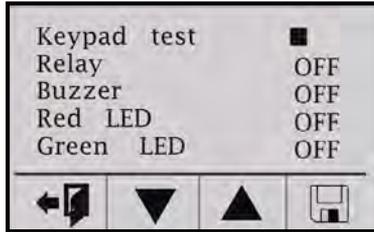
**Note:** Cycling the power and/or using the Reset button will not erase any employee transactions at the terminal.

Use the Function keys (see **Figure 52**) as indicated underneath the display to move Up ▲ and Down ▼ to highlight the desired test and press **enter**  on the keyboard to advance to the test screen. From this screen, use the **Back**  button to exit diagnostics and return to the main display.

## Relay, Keypad, LED and Buzzer Test

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With **Rely, Key, LED, Buz** highlighted press **enter enter** on the keyboard to advance to the test screen.



*Figure 53: Relay, Keypad, LED & Buzzer Test Screen*

Use the Function keys to move up or down to highlight the desired test and press **enter enter** to perform that test.

- **Keypad test:** Pressing any numeric key will display the number on the Keypad test line. Pressing the **esc esc** key will display “C”, while pressing the **enter enter** key will display “E”. The function keys (from left to right) will display “L,”M,”N” and “O”, respectively. Press the “▼” function key twice to exit this test.
- **Relay:** With this test highlighted, pressing **enter enter** will display “ON” and energize the signal relay (closing the contacts). Pressing enter a second time will display “OFF” and deactivate the relay.
- **Buzzer:** With this test highlighted, pressing **enter enter** will display “ON” and sound the internal buzzer for approximately one second.
- **Red LED:** With this test highlighted, pressing **enter enter** will display “ON” and turn the **red** “ERROR” LED on for one second, then deactivate the LED and display “OFF”.
- **Green LED:** With this test highlighted, pressing **enter enter** will display “ON” and turn the **green** “OK” LED on for one second, then deactivate the LED and display “OFF”.

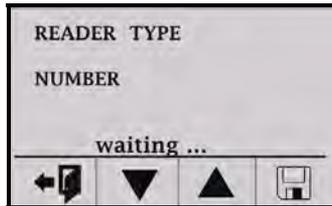
Press the left Function key to return to the previous Diagnostic menu.

## Reader Test

---

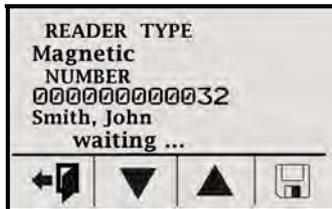
With **Reader** highlighted press **enter enter** on the keyboard to advance to the READER TYPE test screen (see **Figure 54**).

This test will display the type of reader installed in the MTX-15 terminal and indicate the functional status of the reader.



**Figure 54: Reader Type Test Screen**

Swipe a badge to initiate the test. If the buzzer beeps, the **green LED** (OK) flashes and the display advances to the following screen, the reader is functioning normally:



**Figure 55: Reader Test Results Screen**

If the **red LED** (ERROR) flashes and “FAIL” is displayed instead of a number it indicates an unreadable card. A name will appear as illustrated in the example shown in Figure 55 if that badge has been assigned to an employee in the Time & Attendance software.

The test can be repeated by re-swiping a card.

Press the left Function key to return to the main Diagnostic menu.

**Note:** When using previous versions of Amano Time & Attendance software only 4 digits will be displayed for employee ID instead of 12 digits.

## Screen Test

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With **Screen** highlighted press **enter enter** on the keyboard to perform the screen test. This diagnostic tests the display by turning on all the pixels. Any spots would indicate a defective pixel.

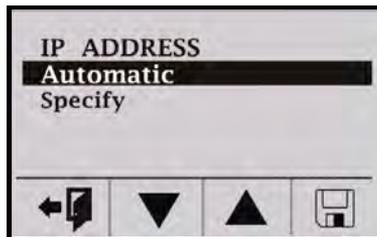
Press the left Function key to return to the main Diagnostic menu.

## Network Configuration

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This selection will only function on an MTX-15 Terminal with Ethernet and can be used to configure network communications.

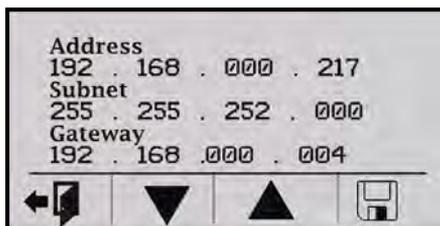
From the main diagnostic screen use the down or up function keys to highlight **Network** and press **enter enter** on the keyboard to advance to the IP ADDRESS screen. "Please Wait" will momentarily be displayed on the bottom.



*Figure 56: IP ADDRESS Screen*

Automatic IP is the default, which will obtain the settings automatically when the terminal is connected to the network. If this is acceptable, press the right Function  key to save the setting and reboot the terminal. "Please Wait" and "Rebooting" will momentarily flash along the bottom of the display while the terminal reboots. The left Function key or **esc esc** key will exit without saving your setting or rebooting the terminal.

To view the IP address set by the network, from the IP ADDRESS screen highlight **Specify** and press **enter enter** and the following type of screen will appear.



**Figure 57: IP Settings Screen**

Copy down the Address, Subnet, and Gateway IP settings displayed in order to configure your Time Guardian time and attendance software.

Press the left function key or **esc**  key to exit the screen to maintain the automatic setting.

**Note:** It is important to exit this screen without saving. If save is pressed, the terminal will reboot with the displayed address in manual mode (see below); automatic IP setting will be disabled.

If you need to set the IP Address manually use the IP Address window. You may need to obtain the appropriate IP settings from your network administrator.

Enter the IP Address, Subnet Mask and Gateway settings using the numeric keypad. The Up  and Down  Function keys will allow you to move between the three fields.

Press the right Function  key to save the settings. This will automatically reboot the terminal. "Please Wait" and "Rebooting" will flash along the bottom of the display for a few minutes while the terminal reboots. The new settings will be in effect after the terminal reboots. The left Function key or **esc**  key will exit without saving your setting or rebooting the terminal.

## Invalid Network Settings

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If you set the IP Address manually with the wrong IP Address, Subnet Mask, and/or Gateway Address one of the following error messages may be displayed;

- ERROR Invalid IP Address,
- Invalid subnet mask,
- Invalid gateway address, or
- Invalid network configuration (no route from host to gateway)

Press **enter** **enter** to reboot the terminal and clear the error message.

You may need to obtain the appropriate IP settings from your network administrator.

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# Specifications

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<b>Operating Environment:</b>	32°F to 113°F (0°C to 45°C) 10 - 90% relative humidity, non-condensing
<b>AC Adapter Power Input:</b>	105 - 130 VAC, 50-60 Hz
<b>Power Consumption:</b>	1.5 Watts (Serial version) 2.1 Watts (Modem version) 3.0 Watts (Network version)
<b>Dimensions:</b>	8.86" L X 5.5" W X 1.9" D (225 mm L X 140 mm W X 49 mm D)
<b>Weight:</b>	6 lbs. (2.7 kg)
<b>Daylight Saving Time (DST):</b>	Settings are programmable through Amano Time & Attendance software.
<b>Employee Badges:</b>	3.375" L X 2.215" W X 0.030" D (86 mm L X 54 mm W X 0.76 mm D)  Magnetic stripe card badges conform to Amano proprietary standard.  Barcode badges are Amano standard code 39.  Proximity devices have embedded chip with Amano format.
<b>Readers:</b>	Index No.'s A201, A202 and A203: Mag-stripe reader that accepts Amano proprietary standard mag-stripe encoding.  Index No.'s A204, A205 and A206: Equipped with visible barcode reader that accepts Amano standard code 39 barcode card.  Index No.'s A207, A208 and A209: Proximity reader, ACI format
<b>Memory Backup:</b>	Provides up to 1 year of continuous memory backup without AC power.
<b>Battery Backup: (Optional)</b>	(6) AA size alkaline (non-rechargeable) batteries.

**Battery Backup Time  
(Range dependant on  
reader type)**

Serial Version: 14 to 24 hours  
Modem Version: 7 to 10 hours  
Ethernet Version: 5 to 6 hours

**Display:**

2.8" diagonal, 128 x 64 dots resolution  
LCD reflective (no backlight)

**Keypad:**

3x4 keypad (0~9, ENT, ESC)  
+ 4 function keys (used for Cost Center  
/Job costing feature).

**External Signal  
Capability:**

1 Dry contact: 1A, 24V, Class 2 circuit,  
Normally Open



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