TR2 Timeclock USER GUIDE

Time Clock Installation

The TimeTrak TR2 clock can be wired a number of ways depending on the environment.

Wiring Method being used -

RS232- This method should be used where there is only one Timeclock and the distance from the clock to the PC is less than 100 mtrs. (pending electrical interference)

RS485 - This method should be used where there is more than one clock or where the distance is greater than 100 mtrs or where there is excessive line noise due to electrical interference or heavy machinery such as welders.

Modem - This method would be used where it is not possible to run a direct cable.

What to do next?

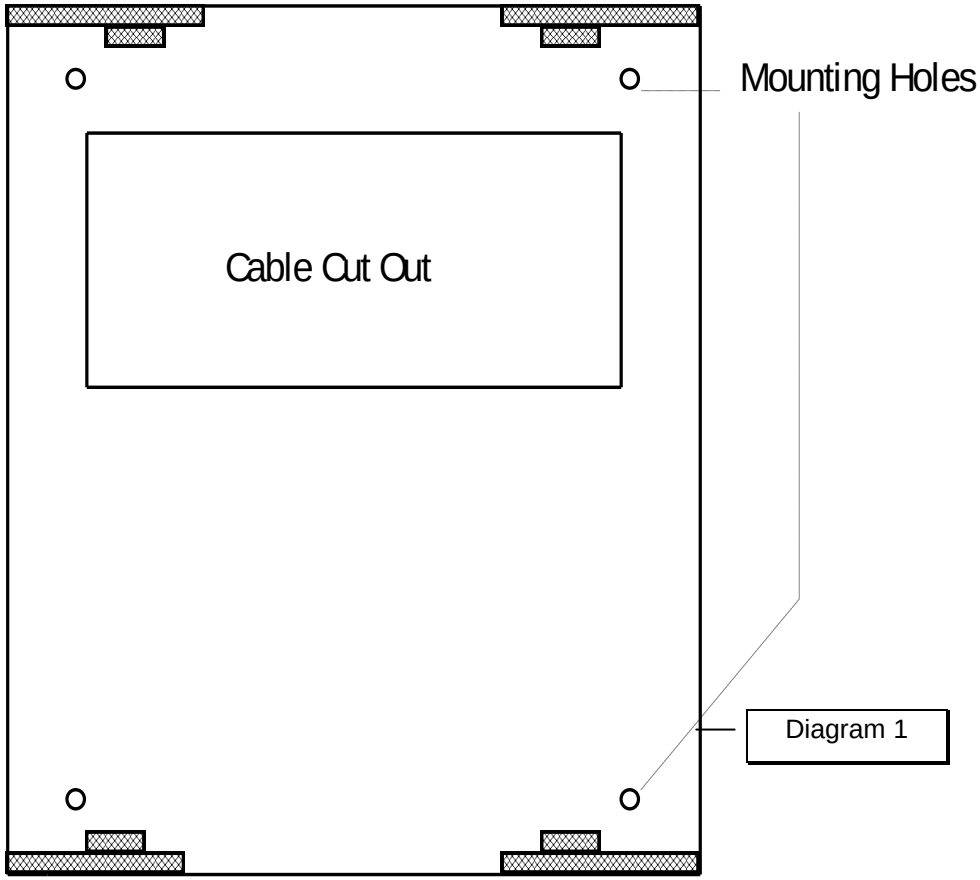
1) Remove the wall mounting plate from the back of the Time Clock. The plate should just slide out from the back of the Time Clock.

2) Mount the wall mounting plate onto the wall using four screws with the cable cutout at the top. Ensure that the mounting plate is level.

3) Run all cables to the Time Clock so that they can enter the Clock from the Top center or Bottom center or if the cables are to come directly through the wall make sure they come through the Cable Cutout in the wall mounting plate.
NOTE: (Terminate all cables with the connectors provided and in accordance with the connections on diagram 2.)

<u>IMPORTANT NOTE: DO NOT RUN THE COMMUNICATION CABLES ALONGSIDE THE POWER CABLES.</u> This can cause noise problems which can produce unpredictable results or cause damage to the clock or computer.

4) Connect all the terminated connectors to the Time Clock making sure that the RS232/RS485 dip switch has been selected for the correct communication mode.



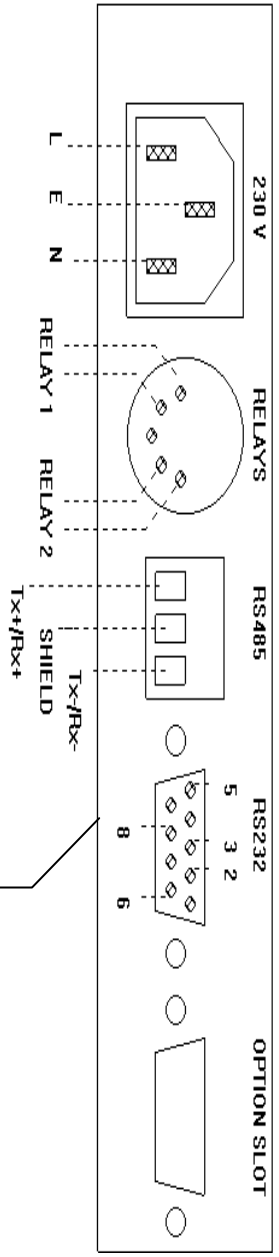


Diagram 2

5) Slide the Time Clock over the wall mounting plate so that the protruding tabs on the mounting plate go inside the Time Clock and the Time Clock sits flush on the wall.

6) Using the four M3 hex screws and hex Allen key provided, screw the Time Clock to the wall mounting plate. There are 2 mounting holes at the top of the Time Clock case and two at the bottom.

NOTE: If the wall that the Time Clock is mounted on is not flush and the wall mounting plate holes do not align correctly with the four holes in the Time Clock then the wall mounting plate will have to be packed out from the wall using washers until the Time Clock mounting holes align with the wall mounting plate holes.

Cable Connections

Below is a diagram which shows the position of the connectors positioned on the under side of the Time Clock and their physical connections. This diagram should be viewed looking directly at the connectors from the outside.

Earthing

When connecting the 230V/240V supply to the mains connector make sure that the **EARTH** is also connected. This equipment **MUST** be **EARTHED**.

Relays for wiring bells to TR2 clock

Use RELAY 1 and 2 for ringing external Bells. These are relay contacts only and are rated at a maximum of 24 volts D.C. with a maximum current rating of 1 amp. These contacts **do not** provide any voltage for driving the Bells or external relays and an external power source must be provided by the user. Use the 5 pin DIN connector provided and solder the cable to the correct pins on the connector then assemble the connector around the cable.

NOTE: If 230 volt or higher current rated bells are used then an external 230 volt relay must be installed along with an external supply to drive the external 230 volt relay. The Clock relay will then activate the external 230 volt relay.

Dip Switch Setting - these are normally preconfigured before shipping the clock to site.

The dip switch is located directly under the RS232 connector on the underside of the Time Clock. There are two positions that select either RS232 or RS485 communications.

Position 1 **ON** Position 2 **OFF** - RS232 selected.
Position 1 **OFF** Position 2 **ON** - RS485 selected.

Only one position must be ON at a time. If both positions are OFF or ON then no communications will occur.
Only one communication mode can be operational.

RS232 - Serial Port Transmission

When connecting the RS232 connector to a DB9 computer connection, connect the RS232 pins shown in Diagram 2, pin for pin onto the computer serial port. The DB9 connector does not have a pin for the cable shield, so either leave the shield disconnected or try to connect it directly to the metal housing of the connector at the computer end only.

For a DB25 computer connection the following connections must be made.

Clock DB9 (pin)	Computer DB9 (pin)
Pin 2 (Tx out)	Pin 2 (Tx in)
Pin 3 (Rx in)	Pin 3 (Rx out)
Pin 5 (GND)	Pin 5 (GND)
Pin 6 (DSR out)	Pin 6 (DSR in)
Pin 8 (CTS out)	Pin 8 (CTS in)

Clock DB9 (9 pin)	Computer DB25 (25 pin)
Pin 2 (Tx out)	Pin 3 (Rx in)
Pin 3 (Rx in)	Pin 2 (Tx out)
Pin 5 (GND)	Pin 7 (GND)
Pin 6 (DSR out)	Pin 6 (DSR in)
Pin 8 (CTS out)	Pin 5 (CTS in)

Note: Connect the cable shield to Pin 1 of the DB25 connector

RS485 - Serial Port Transmission

“ where the RS485 converter HAS BEEN provided by Comacc “.

RS-232 to RS-485 Converter DB25 Pin MALE @ the Computer end	Time Clock 3 PIN TERMINAL
Pin 1	
Pin 2	Tx-/Rx-
Pin 3	Tx+/Rx+
Pin 7	

The RS-232 to RS-485 converter has a built in 120 ohm resistor line terminator so there is no need to fit one at the converter end. However a 120 ohm resistor must still be fitted to the clock end.

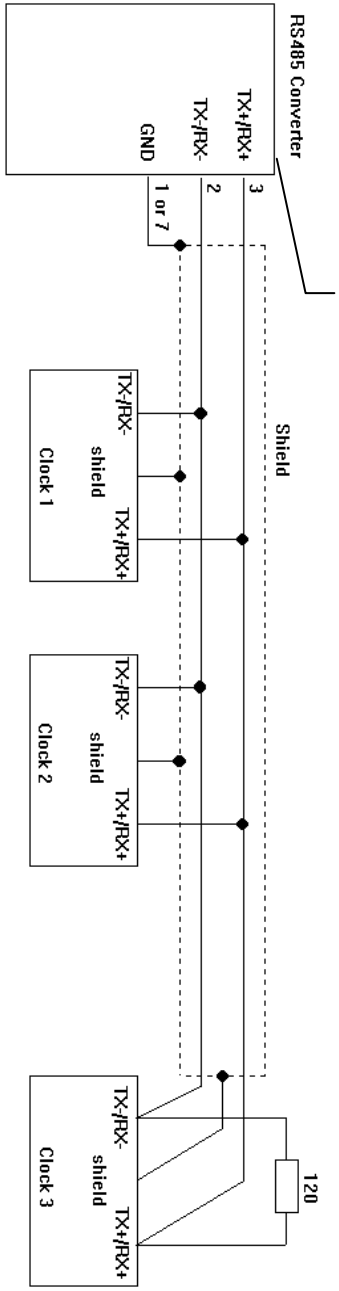


Diagram 3 - RS485 Connection/Wiring

RS485 - Serial Port Connection

" where the RS485 converter has not been provided by Comacc ".

The 3 pin terminal block is used for RS485 communications only. The computer must have a RS232 to RS485 converter connected to the serial port. This **converter must be configured** for **DCE** connection and **T-RTS R-/RTS** operation. The computer polling software uses the RTS (pin 4 of a DB25 connector, pin 7 of a DB9 connector) line to control the data transmission direction. See RS485 converter connection document for connection to computer.

The RS485 communication link is a 2 wire link therefore the **TX+ and RX+ connections on the converter must be connected together** and also the **TX- and RX- connections must be connected together**.

The TX+/RX+ connection from the RS485 converter must be connected to the TX+/RX+ connection of the Time Clock connector and the TX-/RX- connections of the converter must be connected to the TX-/RX- connection of the Time Clock (see Diag. 3 and Diag. 4). If the cable used has a shield then this must be connected to **protective ground at the computer end only**. The shield at the Time Clock end must be connected to the center of the terminal block. Earthing the shield at the Time Clock end is not required.

Up to 32 Time Clocks can be connected to a single RS485 line. The first Time Clock is connected directly to the RS485 converter as described above, the second clock is then connected to the first Time Clock, the third Time Clock is then connected to the second clock. This process is repeated until all the clocks are connected.

Make sure that the TX+/RX+ of each of the Time Clocks are all connected together and the TX-/RX- of each of the Time Clocks are also all connected together and that the cable shield is connected to the center of the terminal block on each of the Time Clocks. Once installation is complete the communication line should form a single long line with all the Time Clocks connected along its length. Do not make multiple connections from the same point on the cable as this will give poor communication results.

To complete installation a 120 ohm resistor must be connected to each end of the line. Connect the first 120 ohm resistor across the TX+/RX+ and TX-/RX- connections of the RS485 converter and another 120 ohm resistor across the connections at the clock end. The resistors must be at the beginning of the line and at the end of the line, with nothing else in between.
(See Diag. 4).

For best results 120 ohm shielded twisted pair cable should be used. Total distance of cable that can be used depends on the number of clocks used, type of cable used, and the amount of electrical noise the cable is exposed to.
TX+/RX+ and TX-/RX- connections of the last Time Clock on the line. The resistors

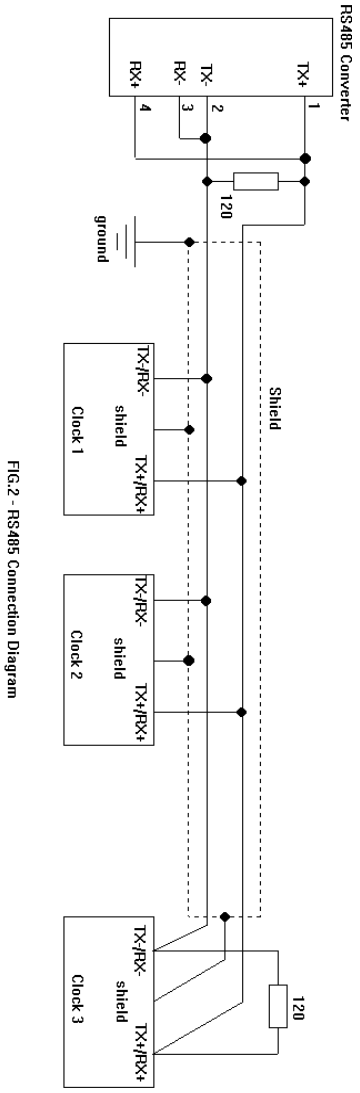


FIG.2 - RS485 Connection Diagram

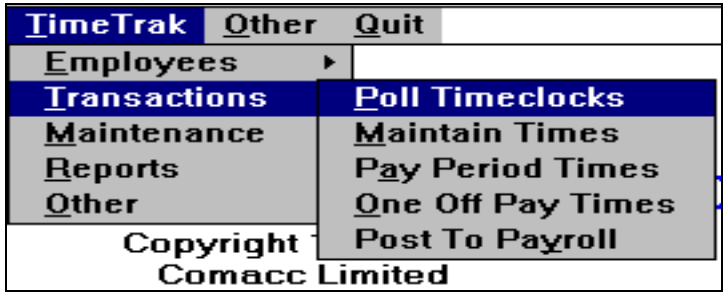
Modem Cable Requirements

The table below shows a set of common connections from the Time Clock to a modem. Check the modem handbook for RS232 connections to make sure these are the same as listed below. If they differ use the connections stated in the modem hand book.

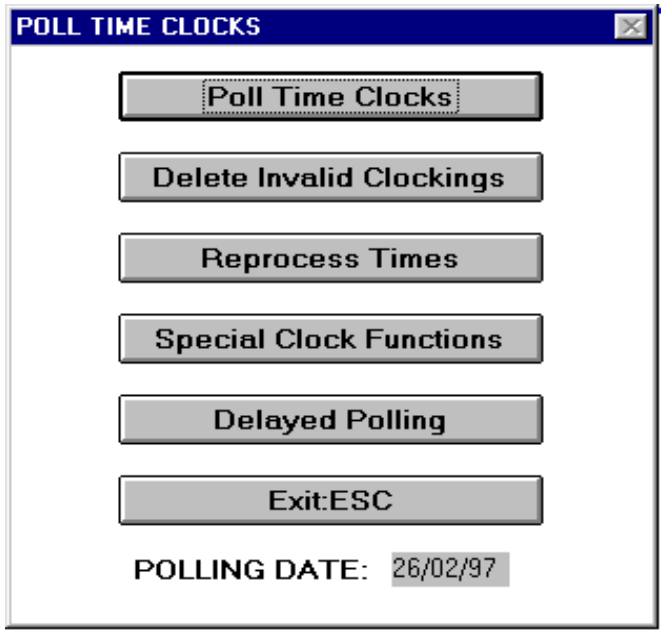
TIME CLOCK	MODEM	
DB9 (male)	**DB9 (male)**	**DB25 (male)**
Pin 2 Orange (Tx out)	Pin 3 Orange (Rx in)	Pin 2 (Rx in)
Pin 3 Black (Rx in)	Pin 2 Black (Tx out)	Pin 3 (Tx out)
Pin 5 Green (GND)	Pin 5 Green (GND)	Pin 7 (GND)
Pin 6 Red (CTS out) or Pin 8 (DSR out)	Pin 4 Red (DTR in)	Pin 20 (DTR in)

Making changes to your TR2 clock using TimeTrak Software

The “Special Clock Functions” menu can be found in TimeTrak under - “Transactions - Poll Timeclocks”.



Having chosen “Poll Timeclocks, select “Special Clock Functions from the menu.



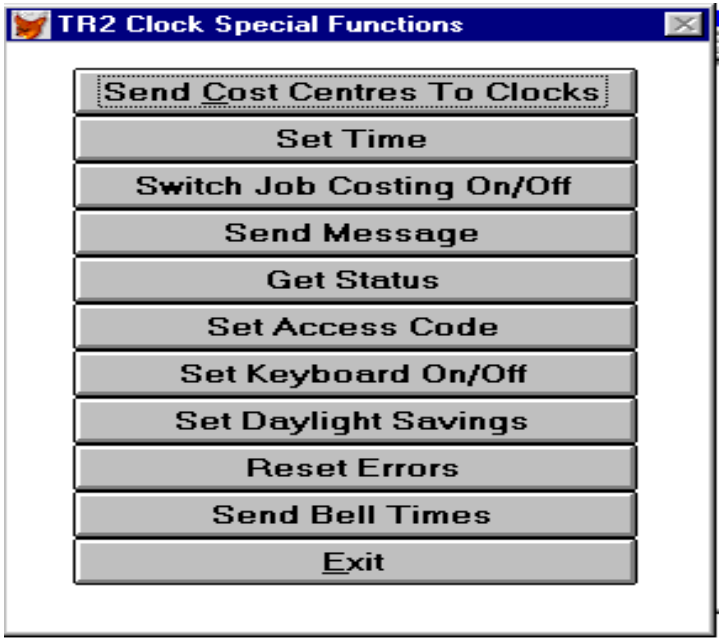
You will now se a menu that list a number of functions that can be performed with the clock. These will include - Setting the time on the clock, Setting your Bell table, Sending employee messages etc. We will cover each of these functions in the next section.

As many of these functions (and several others) can also be performed at the clock there is a section on how to do this. If you see - ***** @ **The Clock** against a software function this indicates that it can also be performed at the clock.

These functions available at the clock include:

1. Changing the time
2. Changing the date
3. Manual Entry
4. View Memory
5. Job Costing
6. Change Access
7. Change Station
8. Baud Rate
9. Modem Control
10. Exit menu

These Functions Include: 1. Changing the time



Send Cost Centres to Clocks - Job Costing

This option is normally only used where the TR2 is being used for Job Costing and/or Department Transfers, and where you wish to have the Job numbers (Cost Centres) entered at the clock by employees validated i.e. the clock will check the number entered by the employee against a table of valid numbers and it will reject any number not in the table.

Note :- Before performing this task you must have set up your Job Numbers (cost centres) in TimeTrak.

1. Having created our Job numbers, selection "**Send Cost Centres to Clocks" .** Job numbers will be downloaded and the clock will now verify all Job Numbers as entered.
1. As the Cost Centres are being downloaded you will see a blue screen, followed by a "Status" screen that will report if the files were transferred successfully of if there were any problems. You should just see "OK"
2. Having turned this option (Job Costing) on the employee will be asked to enter a Job Number each time they clock in or out or between jobs. Depending on what the employee is doing at the time will determine what they do when they swipe -

- If they are clocking In and they have no Job to work on, they can either enter a "Non Productive" code which will have be set up or they can just push enter and they will be costed to their Home Cost Centre until they start their first Job. We recommend the use of a "Non Productive" code as this gets the employee in the habit of entering Job numbers.
- If they are clocking In and have know the Job they are working , they enter the Job number which will have be set up and they **push enter. Note they must push enter every time they swipe their card or the clocking will not be accepted.**
- If they are clocking between Jobs they simply swipe their card once and enter the Job number which will have be set up and they **push enter.** This will clock them off their last Job and on to the next one Automatically.
- **If they are going to lunch or finishing for the day they simply swipe their card and push enter. They do not need to enter a job number.**

Set Time (and Date)*@ Clock

When changing the Date and Time the system uses the PC's date and time so you must ensure this is correct. If you wish to change the PC date and time this is done in DOS
At the C: prompt type: Time
The PC time will be displayed as HH:MM:SS
This is a 24 hour clock format so the entry of a correct time is important i.e. 1.00pm = 13.00 etc .Enter the time in the format above and press enter to change the time

Changing the date is the same :-
At the C: prompt type: Date and press enter.

Enter date as DD:MM:YY, Press enter to accept this date.
Or simply Press enter to accept the default date.

Once you are happy that your PC date and time are correct, select **"Set Time"** from the menu. As the Date and Time are being downloaded you will see a blue screen, followed by a "Status" screen that will report if the files was transferred successfully of if there were any problems. You should just see "OK"

Switch JOB COSTING On/Off *@ Clock

Selecting this function will either Turn On or Off Job Costing at the Timeclock. When you select this option you will be asked to select the clock you wish to change. You will then be asked whether you wish to turn the option on or off. Simply choose Yes or No when asked.

Send Message

The TR2 clock can be used as an Employee Message bulletin board with a message being displayed either to all employees or a specific message for a particular employee. To use this function select "**Send Message".** You will then see a screen into which you can enter a Global message by entering it in the **Message** field and pressing **F10.** This downloads the message to the clock. If you want to have a message display for a particular employee when they clock select Add. You can then enter the card number for the employee/s concerned and then the message you want displayed. Note : This message will continue to display each time the employee clocks. Once you have entered all your messages press **F10.** This downloads the message/s to the clock.

Get Status

The Get Status function is generally used to check if the clock is communicating with the PC or where you wish to check the current settings of the clock/s. To use this function simply select this option and the system will connect to the clock/s and then display the clock settings in the Status screen. Normally you will see 8 lines displayed per clock and this function would be performed under the supervision of a Comacc Support Technician.

Set Access Code *@ the Clock

This function changes the password that must be entered when accessing the Menu on the Timeclock. Regularly changing your password ensures added security. Select this function from the menu. The system will ask you which clock you wish to change. The system will then ask you to confirm that you want to change the access code i.e. "Are you sure Y/N"
Select "YES" or Type "y".

Then enter your new access code(4 numbers only) and press enter. The new
Access entry code is now set.

Set Keyboard On/Off *@ the Clock

Selecting this function will either Turn On or Off the Keyboard on the Timeclock. This is not normally done unless you are not using Swipecards and are having your staff use the keypad to clock In and Out. When you select this option you will be asked to select the clock you wish to change. You will then be asked whether you wish to turn the option on or off. Simply choose Yes or No when asked.

Set Daylight Savings

This function enables the clock to automatically adjust its time to day light saving times on appropriate dates. Select this option and enter

the dates for when Daylight Saving starts and finishes. When you save this option this will download the dates, to the clock and it will automatically change on the appropriate dates.

Reset Errors

" Do not use this option unless under the supervision of a Comacc Support Technician "

Send Bell Times

1)Go to the DOS Prompt i.e. C:\
*(in **Windows 3.1**(Program Manager) goto File then Run and type COMMAND then press enter, in **Windows95'** click on the Start button the goto Run and type COMMAND and press Enter)*

2)Change directory to where the Payroll or TimeTrak is located i.e. cd\payroll or cd\payrollw (enter)

3)To create or edit the bell file type EDIT BELL.DAT (enter)

4)Once in the DOS edit screen you must type a line for each day and time you want the bell to ring. This will be entered in the following format. :-

01073003.
01100003
02073003 etc.

Note a) 01 being Sunday , 0730 being 7.30 am , 03 being 3 seconds.
b) Numbers for each day are :- 01 Sunday, 02 Monday, 03 Tuesday, 04 Wednesday, 05 Thursday, 06 Friday 07 Saturday.
c) Whenever you are entering a time it should be entered in 24hr clock format. NOTE Midnight is not 2400, it is 0000 and is the start of the next day...so midnight Tuesday is actually the start of Wednesday so you will need to change the day number to the next day.
d) When you have entered the last day and time DO NOT PRESS ENTER as this will cause the Bell not to ring.
e) Press the "Alt" key and select "File" from the menu and then "Save".
f) Press the "Alt" key and select "File" from the menu and then "Exit".

5)Having created your Bell time file you can now return to your Payroll or TimeTrak and go to "Transactions - Poll Timeclocks". Once in the Polling menu select - "Special Clock Functions" and"Send Bell Times". This will then download your Bell.Dat file to the Timeclock.

6)Subject to your your Bells being correctly wired they should start ringing at the appropriate times.

Enable the Keyboard

This option is available so that manual entry of job numbers & employee codes is capable. It also reverses the disabled function. Choose this option by selecting " keyboard enable" with your mouse or press "I". . Keyboard is then enabled and an Employee is able to Clock in manually. They must enter a 6 digit Employee number.

KEYBOARD DISABLE

Selecting this option is a sure of tamper proofing the units keypad. It also serves to reverse enable option.
Select "keyboard disable" with your mouse or by pressing "J" on the keyboard.
Keyboard is then disabled.

TR2 Timeclock USER GUIDE

TIME CLOCK INSTRUCTIONS

ACCESSING THE TR2 MENU

By pressing "enter" and "F1" together, prompts access code entry for menu options.
Enter access code, enter.
By scrolling left arrow you can choose the desired function from the menu.
Enter on selection.

The following is a list of the functions that are only accessible from the clock and not through the software. Where a function is not listed, refer to software instructions.

Functions

1) CHANGING THE TIME

***** @ **The Clock -** Access Options Menu (see Access the Clock)
Use the Arrow key to scroll through the options.
Select change time option by pressing enter
Enter in new time (using 12 hour clock format). Enter as HH:MM:SS
Follow instructions on clock for am/pm (am-0, pm-1)

2)CHANGING THE DATE

Use the same method to change the date.

3) MANUAL ENTRY

After accessing the menu, scroll until you reach "3) Manual Entry" and press enter.
At the "employ" prompt, key in the company card prefix and employee code and press enter. I.e. 800 then 001, if the company card prefix is 800*(look in TimeTrak setup to confirm),* and the employees card number is 1.
The main function of this option is to monitor "late comers" and to allow supervisor to clock in employees who loose their cards.
Manual entry of job number is also available should "job costing" be enabled.

4) VIEW MEMORY

After accessing the menu scroll onto the View Memory and press enter when prompted. Swipe the employee card and press enter. This will give you the ability to view the employee's last clocking since the last time the clock was polled. If you wish to view all employee clocking, DON'T swipe a card but merely press the enter key when prompted for a number. Hint! - you scroll scroll forwards and backwards using F3 and F2 respectively.

5) JOB COSTING

***** @ **The Clock -** Access options menu
Scroll left arrow to select job costing and press enter
Scroll left arrow to turn on /enable or turn off/disable. Once selected press enter.
Job costing is now on/off.

6) CHANGING THE ACCESS CODE

***** @ **The Clock -** Access options menu
Select "change access" option
Enter old access code and press enter
Enter new access code and press enter
Re-enter new access code and press enter

New access code is now set.

7) CHANGE STATION

This option is used whenever you have more than one Timeclock in sequence. Each Clock must have its own ID or Station Number.

Access the menu and scroll to the Change Station option and press enter. Enter the Station Number required and press enter to save.

8)_ CHANGING BAUD RATE

@ **The Clock -** Access options menu
Select baud rate by scrolling left arrow and pressing enter
Scroll left arrow to select 9600, 4800, 2400, or 1200 baud rate, once selected press enter.

9) MODEM CONTROL

Access the menu and move onto function 9 use the scroll arrow to enable or disable the modem control.

Should you have any additional enquiries, please feel free to contact the Support Team at Comacc on ❶❾❶❶▪❺▪❹❸❺❼