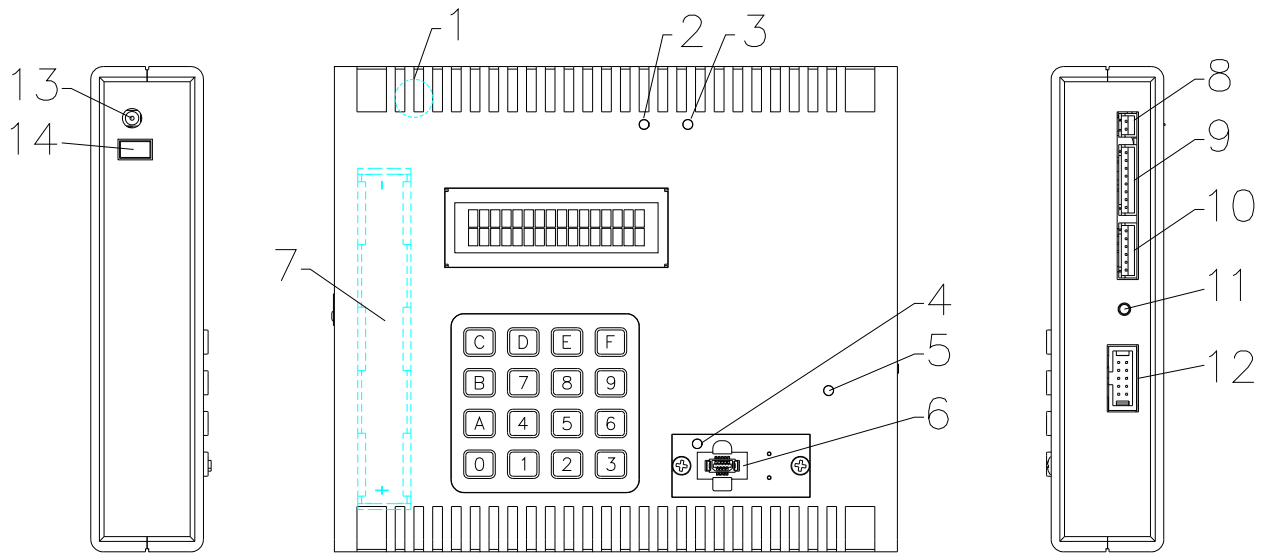


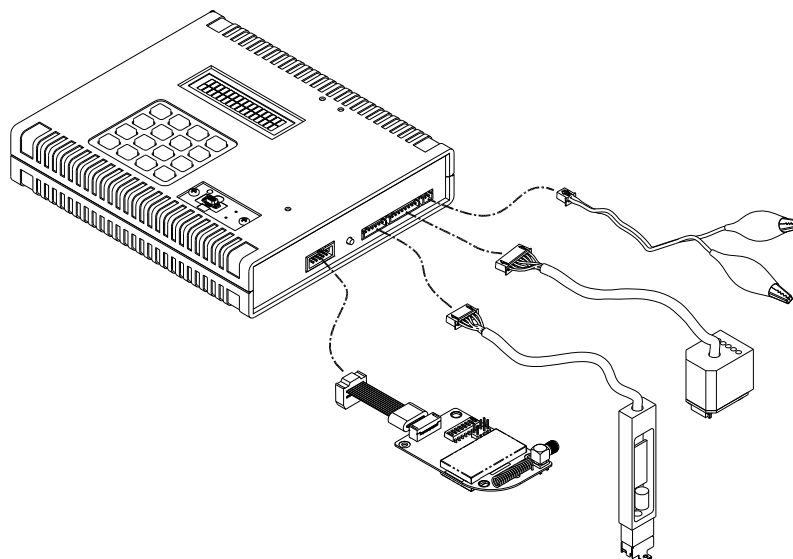
System Diagnostic Unit

User's Manual

A. Exterior Illustrations



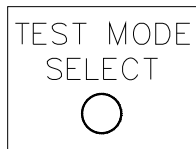
- | | |
|--|--|
| 1) Fuse (1.0A) | 8) Power cable to encoder board |
| 2) Power LED | 9) Cable to encoder board's CN1 connector |
| 3) SQ1 LED (internal receiving module) | 10) Cable to I-Chip slot on decoder modules |
| 4) I-Chip LED | 11) Test mode select button |
| 5) SQ2 LED (external receiving module) | 12) External receiving module input slot |
| 6) I-Chip slot | 13) External power input slot (not provided) |
| 7) Internal battery compartment | 14) Power switch |



B. Testing Complete Transmitter

To check if the transmitter handset is in good order please follow the instruction below.

- 1) Press the Test Mode Select button until the LCD screen display “Testing Complete Transmitter 1”.



- 2) The LCD screen is displayed as follow:

Testing Complete Transmitter

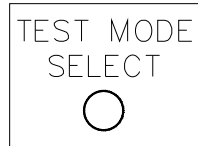
S - - - - -	T - -	M - -	CH 01
↓	↓	↓	↓
Serial number	Type	Mode	Channel

- 3) First set this unit’s channel identical to the one set on the transmitter handset to be tested via the ↑ & ↓ push buttons on the keypad.
- 4) Turn on the transmitter and rotate the power key to Start position.
- 5) At this time the SQ1 LED should blink red with transmitter information displayed on the LCD screen. If SQ1 LED does blink red but without transmitter information shown on the LCD screen then the encoder board is defective. If nothing is shown at all (both SQ1 LED and transmitter information), then either the internal transmitting board or the encoder board is defective. If this is the case, then proceed to section C to check the transmitting board and encoder board.
- 6) If SQ1 LED does blink red with transmitter information shown on the LCD screen then go on to check all the push button command.
- 7) Press all the push button on the transmitter one at a time to check if this unit decodes all the pushbutton commands. When a push button is pressed, an arrow should appear below the system information, both 1st and 2nd steps. If not, then the encoder board is defective. But if only a few push buttons do not display the arrows on the LCD screen when pressed, then those push buttons are defective.
- 8) If all the information is correct then the transmitter handset is in good order. Then go on to section D to check the receiving module.

C. Testing Encoder Board

To check if the encoder boards is in good order please follow the instruction below.

- 1) Press the Test Mode Select button until the LCD screen display “Testing Encoder Board 5”.

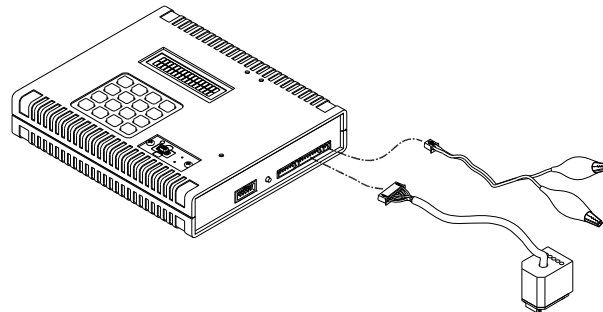


- 2) The LCD screen is displayed as follow:

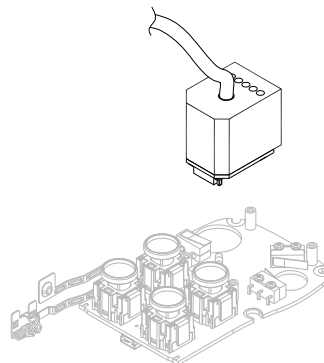
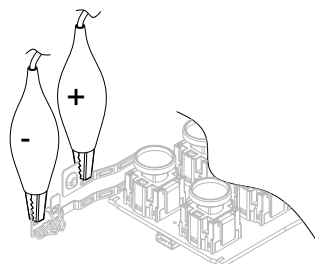
Testing Encoder Board

S - - - - -	T - -	M - -
↓	↓	↓
Serial number	Type	Mode

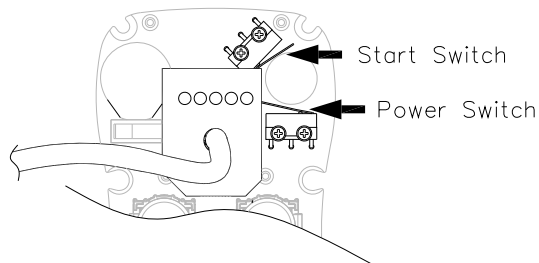
- 3) Plug all the required cables onto this unit



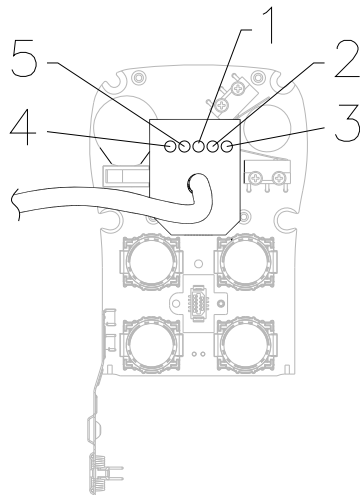
- 4) Plug all the cables from this unit to the encoder board.



- 5) Make sure the encoder board is with I-Chip installed.
- 6) Press and hold on to the power switch.



- 7) Press the Start micro switch one time and let go. The LED 1 should blink green.

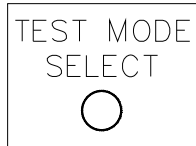


- 8) At this time the LCD screen should display the transmitter I-Chip information. If not, then the encoder board is defective.
- 9) If the LCD screen does display transmitter information correctly, then press all the push button on the encoder board one at a time to see if the unit decodes all the pushbutton command. When a push button is pressed, an arrow should appear below the system information, both 1st and 2nd steps. If not, then the encoder board is defective. But if only a few push buttons do not display the arrows on the LCD screen when pressed, then those push buttons are defective.
- 10) If all the information is correct then the encoder board is in good order. If this is the case, then the transmitting board is defective.

D. Testing Receiving Module

To check if the receiving module is in good order please follow the instruction below.

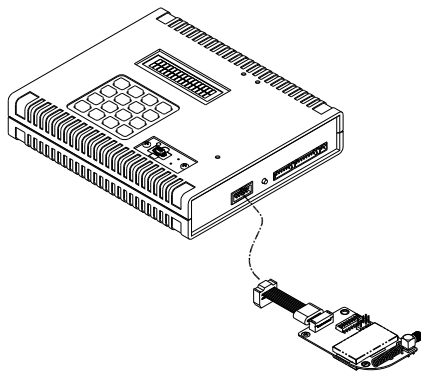
- 1) Press the Test Mode Select button until the LCD screen display “Testing Receiver Module 2”.



- 2) The LCD screen is displayed as follow:

Testing Receiving Module
S - - - - - T - - M - -
↓ ↓ ↓
Serial number Type Mode

- 3) Plug the receiving module to be tested on to this unit.

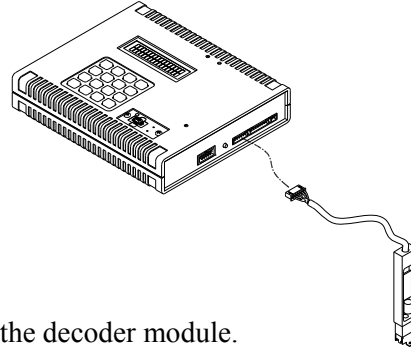


- 4) Use a good transmitter handset (any type) to test the receiving module.
- 5) Set the channel dip switch on the receiving module to the one set on the transmitter.
- 6) Turn the transmitter power on and rotate the power key to Start position. The SQ2 LED should light up or blink, if not, then the receiving module is defective.
- 7) If SQ2 LED blinks red with all the transmitter information shown on the LCD screen then the decoder module is defective.

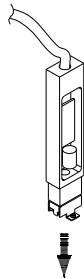
E. Decoder Module Programming

You can program serial number, system type, Start/Aux, brake function and service date onto the decoder module.

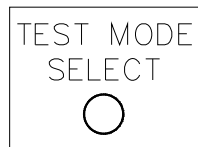
- 1) Plug all the required cables onto this unit



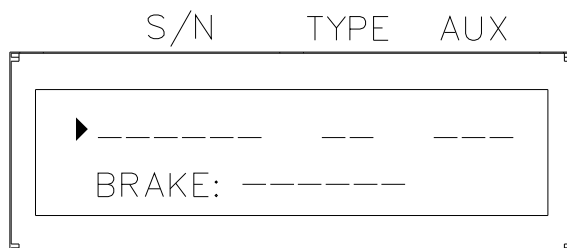
- 2) Plug the cable from this unit to the I-Chip slot on the decoder module.



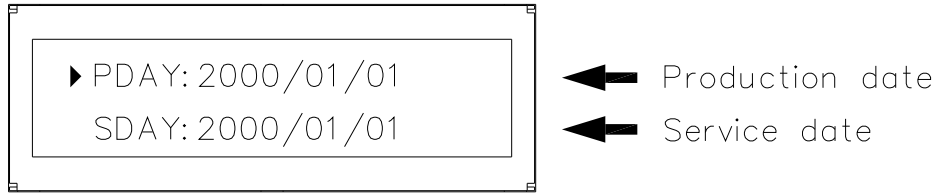
- 3) Press the Test Mode Select button until the LCD screen display “Decoder Programming 4”.



- 4) Set serial number, system type, Start/Aux and brake function by using Next, Previous, ↑ & ↓ arrows and keypad. Press Copy button when done.

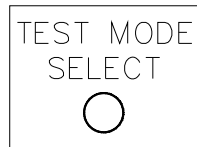


- 5) Scroll down to the next screen by pressing the Next button, the production and service date information will appear. Only the service date can be reprogrammed.

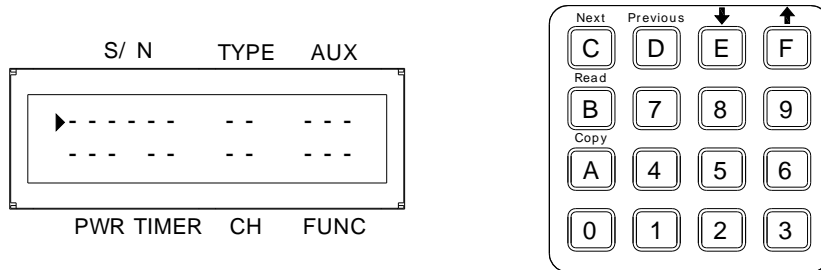


F. I-Chip programming

Press the Test Mode Select button until the LCD screen display “I-Chip Programming 3”.



1. LCD and keypad illustrations



2. Copy I-Chip

If you do not have an empty I-Chip on hand, you can first store the original I-Chip’s information into the programmer unit temporarily and perform copy at later time.

Steps: First insert the original I-Chip onto the I-Chip slot, press READ button to store original I-Chip information into the programmer unit (red light will appeared on the I-Chip LED then green again), insert an empty I-Chip onto the same I-Chip slot, press COPY

button to transfer information from the programmer unit to the empty I-Chip (red light will appeared on the I-Chip LED then green again). Programming completed!

3. Program System Serial Number

Change system serial number simply by moving the black arrow on the LCD screen to the **S/N** location via NEXT and PREVIOUS button, then either press the ↑ & ↓ arrows or the number buttons directly to change serial number.

When finished, take the same I-Chip and insert it onto the I-Chip programming port located on the decoder module to transfer the serial number from the I-Chip to the receiver. To transfer I-Chip information to the receiver, JP6 must be inserted (not required if programmed directly on the decoder module – Section E).

4. Program System Type

Change system type simply by moving the black arrow on the LCD screen to the **TYPE** location via NEXT and PREVIOUS button, then press the ↑ & ↓ arrows to change value. For standard system, always set the value at “00”. For tandem transmitters, you must set tandem transmitter-A to “01” value and tandem transmitter-B to “02” value.

When finished, take the same I-Chip and insert it onto the I-Chip programming port located on the decoder module to transfer the Tandem function to the receiver (transmitter-A to receiver-A and transmitter-B to receiver-B). To transfer I-Chip information to the receiver, JP6 must be inserted (not required if programmed directly on the decoder module – Section E).

5. Program Start/Aux Function (not required if programmed directly on the decoder module - Section E)

After initiating the START function, the same location will then become an AUX function. You can set the FUNCTION relay in the receiver, when rotate to START position, the relay will close momentarily, toggled or toggled affected by E-Stop activation. When set with START/AUX function, the external warning function is no longer available. Add START/AUX function simply by moving the black arrow on the LCD screen to the **AUX** location via NEXT and PREVIOUS button, then press the ↑ & ↓ arrows to change value.

---	:	START function only, no AUX function thereafter.
NOR	:	START function + AUX with normal momentary contact.
TOG	:	START function + AUX with toggled/latching contact.
T/E	:	START function + AUX with toggled/latching contact affected by the power key switch (when transmitter power is turned off, the FUNCTION relay will open).
EXT	:	FUNCTION relay works simultaneously with receiver MAIN.

- A+B : FUNCTION relay closes when selector switch is rotated to A+B position (tandem systems only) and opens when rotate to other positions.
- S/P : FUNCTION relay closes when Start command is initiated and opens only when transmitter power is turned off.
- HORN : FUNCTION relay closes for up to 3 seconds when Start command is initiated at transmitter power on and then becomes normal momentary outputs thereafter.

When finished, take the same I-Chip and insert it onto the I-Chip programming port located on the decoder module to transfer the START/AUX function to the receiver. To transfer I-Chip information to the receiver, JP6 must be inserted (not required if programmed directly on the decoder module – Section E).

6. Program Transmitter Output Power

Change transmitter output power simply by moving the black arrow on the LCD screen to the **PWR** location via NEXT and PREVIOUS button, then press ↑ & ↓ arrows to change the output power. “-23” value will give you the shortest transmitting range but longest battery life while “+10” value will give you the longest transmitting range but shortest battery life. We recommend that for indoor applications, the transmitter output power should be set from “-5” to “+3” value. For outdoor applications, we recommend that you set the transmitter output power from “+6” to “+10” value.

7. Program Transmitting On Time (CE version only)

Change continuous transmitting time from 1 up to 60 minutes or constant on until the transmitter power is turned off. Change transmitter on time simply by moving the black arrow on the LCD screen to the **TIMER** location via NEXT and PREVIOUS button, then press the ↑↓arrows to change value.

8. Program System RF Channel

Change system channel simply by moving the black arrow on the LCD screen to the **CH** location via NEXT and PREVIOUS button, then either press the ↑ & ↓ arrows or the number buttons directly to change system channel.

9. Program Transmitter Push Button Functions

Program transmitter push button functions (transmitter toggle and select functions) simply by moving the black arrow on the LCD screen to the **FUNC** location via NEXT and PREVIOUS button, then either press the ↑ & ↓ arrows or the number buttons directly to set transmitter push button functions. The transmitter push button function table will tell you which number value correspond to which push button function.

10. BRAKE Function (not required if programmed directly on the decoder module - Section E)

There are 3 different types of brake configurations made available, Demag 1, Demag 2 and P&H types.

Demag 1 : When releasing the push button from 2nd speed up to 1st speed, 1st speed output relay will open for up to 1.0 second and then closes again.

Demag 2 : When push button is pressed down to the 2nd speed directly from neutral position (0 speed), 1st speed output relay will maintain closure for up to 0.4 second before 2nd speed output relay is closed. When releasing the push button from 2nd speed up to neutral position (0 speed), 1st speed output relay will maintain closure for up to 0.5 second before going to neutral (0 speed).

P&H: When releasing the push button from 2nd speed up to neutral position (0 speed), 1st speed output relay will maintain closure for up to 0.1 second before going to neutral (0 speed).

When finished, take the same I-Chip and insert it onto the I-Chip programming port located on the decoder module to transfer the START/AUX function to the receiver. To transfer I-Chip information to the receiver, JP6 must be inserted (not required if programmed directly on the decoder module – Section E).

11. PASSWORD / Security Code Function

Only push button #1 through #4 is used for the password function. “1” represents PB1, “2” represents PB2, “3” represents PB3 and “4” represents PB4.

1 1 1 1 : Password function disabled (manufacture preset)

