

# Technical Manual

The WL900 Wireless RF Transmitter / Receiver



**ANYLOAD®**

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**I. ABOUT THIS MANUAL**

Thank you for choosing Anyload WL900 wireless transmitter. This WL900 technical manual provides installation, setup, operation, and configuration information for the WL900 wireless transmitter. This manual is intended to be used by trained service technicians and installers. It is recommended to go through the manual in details before installing, operating or configuring the instrument. For further information please contact Anyload Weigh & Measure Inc. authorized dealer.

**II. DISCLAIMER**




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**III. SAFETY**

Standard safety practices are required before conducting any installation, maintenance, or procedure on device. It is recommended to read and understand the instructions and warnings in this manual before performing any procedure on device. Failure to follow the instructions and warnings could result in injury or death.

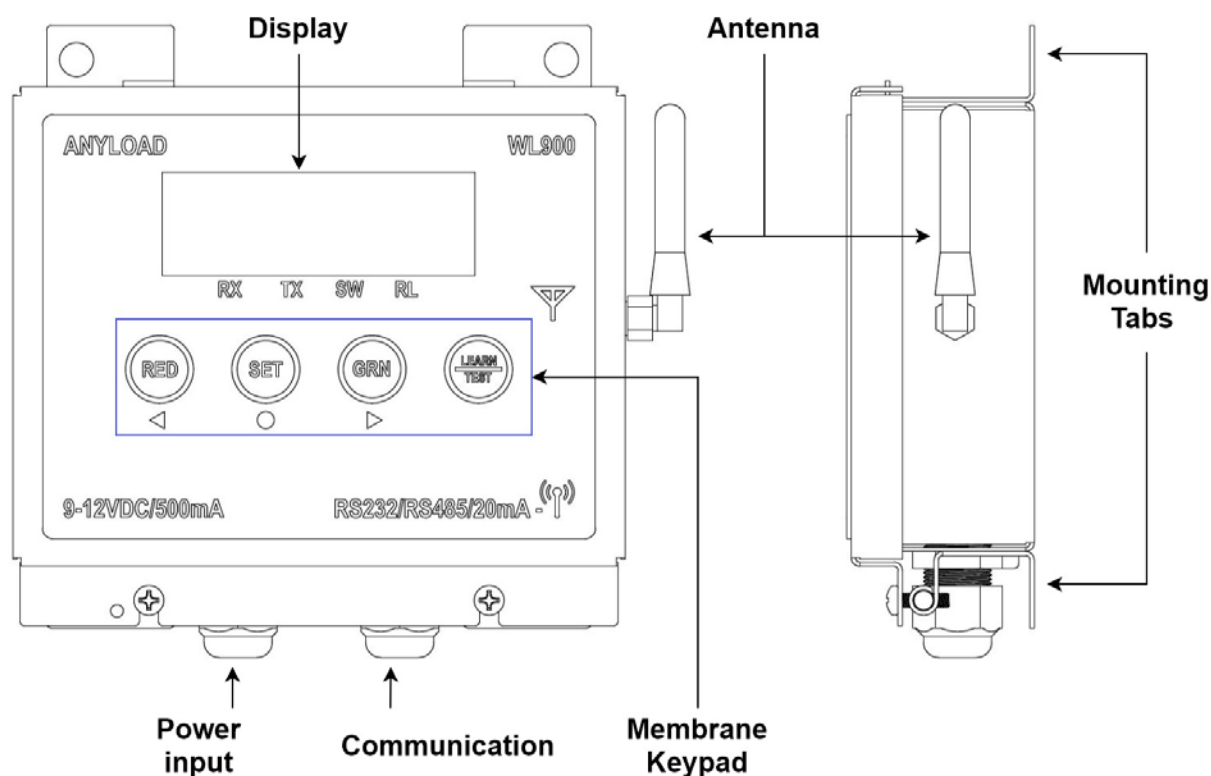
Definition of the safety symbols is described in table below.

| Symbol  | Description   |
|---|---|
|  | <b>WARNING!</b><br>Indicates a potentially hazardous situation which may result in serious injury or death<br>Indicates a potentially dangerous procedure which may cause injury or death |
|  | <b>CAUTION!</b><br>Indicates a potentially wrong procedure which may result in damage to device<br>Indicates a potentially wrong procedure which may result in loss of warranty           |
|  | <b>NOTICE!</b><br>Indicates a procedure which may need more instructions<br>Indicates a procedure which has more information available  |

# 1. INTRODUCTION

## 1.1 MAIN FEATURES

- Designed exclusively for weighing industry.
- Easy connecting weight indicators to remote displays and secondary devices.
- Stainless steel tech friendly NEMA4/IP65 enclosure.
- Keypad and display for easy setup and configuration.
- Screw terminal wiring and strain reliefs for data inputs.
- Lightning ESD protection on communication lines.
- AC wall adaptor with detachable connector.
- Standard seven segments display for setup and diagnostics.
- Automatic learn mode to set communication baud rates.
- Automatic learn mode to detect incoming strings format.
- Menu driven setup function using a membrane keypad.
- Traffic light RED/GREEN control.
- Breather ventilation to avoid condensation inside enclosure.
- Designed and developed by Anyload Weigh & Measure Inc. in Canada.
- Universal worldwide emission approvals: FCC, IC, C-Tick.



**1.2 TECHNICAL SPECIFICATIONS**

| Item | Specification           | Description   |
|------|-------------------------|---|
| 1    | Indoor / Urban Range    | 100m ( 300ft )  |
| 2    | Outdoor / Line of Sight | 300m ( 1000ft )   |
| 3    | Output Power            | 250mW ( 24dBm )   |
| 4    | Frequency Range         | 900MHZ ( 920MHZ )   |
| 5    | Throughput              | 10Kbps ( 9600bps)   |
| 6    | Antenna                 | Whip RPSMA  |
| 7    | Display Digits          | 0.4" (10 mm) height, 6 digits, 7 Segment display                              |
| 8    | Micro Controller        | 50MHZ ARM Cortex M <sup>®</sup> processor                                     |
| 9    | Status Indication       | 4 annunciators for RX, TX, SW, RL   |
| 10   | Membrane Keypad         | 4 keys domed membrane keypad with LEARN                                       |
| 11   | Communication Ports     | 3 independent serial ports for RS232, RS422/RS485, and 20mA current loop      |
| 12   | Communication Baud      | Auto learn 300,600,1200,2400,4800,9600,19200,38400,57600 baud rate            |
| 13   | Digital Output          | 1 form C relay output rated at 2A / 60VDC                                     |
| 14   | Digital inputs          | 1 independent dry contact switch input  |
| 15   | Main Enclosure          | Stainless steel NEMA 4 / IP65 weather proof suitable for outdoor applications |
| 16   | Power Supply, External  | Input: 100-240VAC, 0.6A, 50/60Hz / Output: 12VDC, 2.0A, 25W Wall adaptor      |
| 17   | Power Consumption       | 12VDC @ 0.5A typical  |
| 18   | Operating Temperature   | -40°F to 120°F (-40°C to 50°C)  |
| 19   | Operating Humidity      | 20%RH to 90%RH  |
| 20   | Enclosure Ventilation   | GORE <sup>®</sup> breather vent to avoid condensation                         |
| 21   | Physical Dimensions     | 5.7" W X 5.6" H X 1.7" D (144 mm X 142 mm X 44 mm)                            |
| 22   | Total Weight            | 1.0 kg ( 2 lbs ) approximately including wall adaptor                         |
| 23   | Industry Approvals      | FCC, IC, C-Tick   |
| 24   | Regional Frequency      | US / CAN / AUS / EU   |

## 2. INSTALLATION

### 2.1 SAFETY PRECAUTIONS

Please practice safety before conducting any installation, maintenance, or procedure on device.




- ✓ It is necessary to practice safety checks before any installation or maintenance.
- ✓ Do not operate this device unless all instructions in this manual have been read.
- ✓ All installation and maintenance shall be conducted by trained service technicians.
- ✓ Avoid any alteration or changes to the device other than factory provided options.
- ✓ Disconnect power source before any installation or maintenance.
- ✓ Make sure proper grounding is provided at the site.
- ✓ Make sure device is properly grounded if custom wiring is provided.
- ✓ Make sure all warning signs are visible and not damaged or altered.
- ✓ Follow warning and caution notes in this manual.



FCC ID: MCQ-XBPS3B

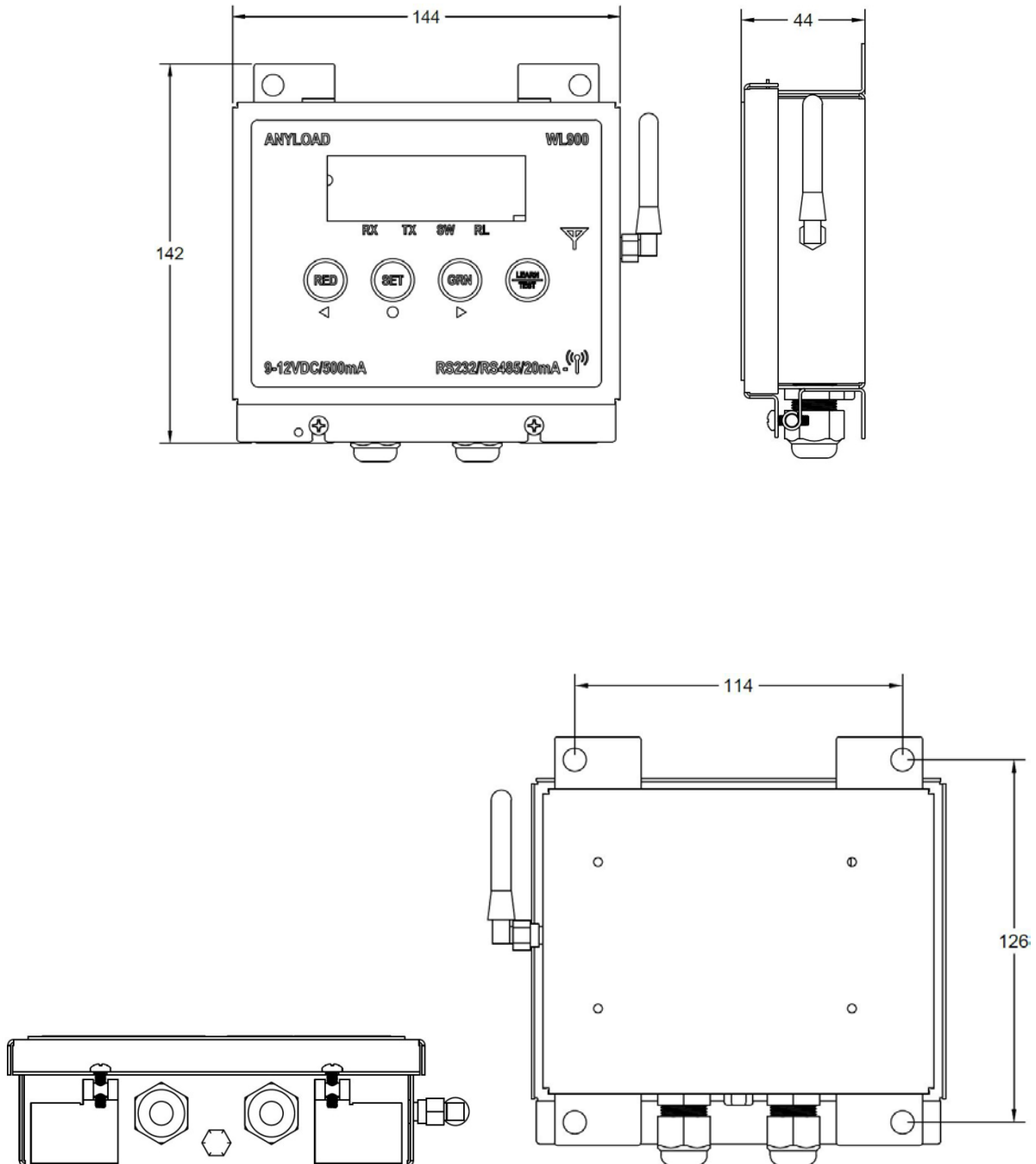
IC: 1846A-XBPS3B

This product complies with Part 15 of the FCC rules. Operation is subject to the following two conditions. (1)This device may not cause harmful interference. (2)This device must accept any interference that may cause undesirable operation.

| Symbol  | Description   |
|---|---|
|  | <p><b>WARNING!</b></p> <p>Make sure the power source is disconnected before any installation<br/>                     Make sure the site has proper grounding</p>   |
|  | <p><b>CAUTION!</b></p> <p>Any unauthorized change or alteration in default wiring may void warranty<br/>                     Any installation and wiring must be handled by authorized personnel</p>            |
|  | <p><b>NOTICE!</b></p> <p>Refer to the local electrical code for the wiring color codes<br/>                     Refer to the installation section for instructions to how to access to the wiring terminals</p> |

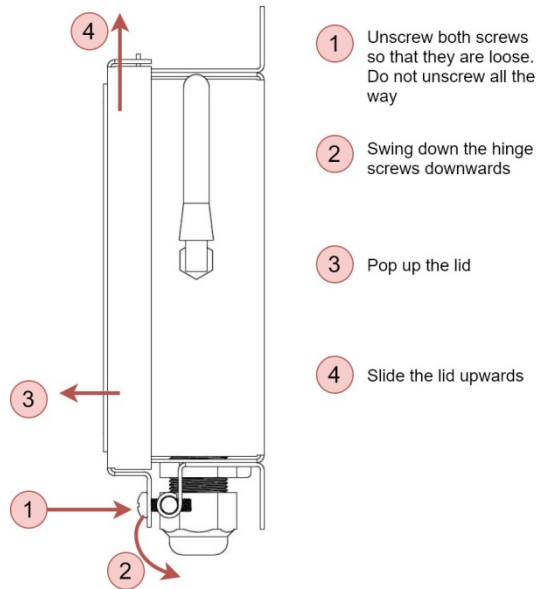
## 2.2 MAIN ENCLOSURE

The main enclosure of the WL900 is latch design metal enclosure protected by two hinged screws on the bottom for easy service. The enclosure is a weather proof stainless steel with internal rubber gasket for weather proofing. All internal parts are installed on standoffs mounted inside of the enclosure.



### 2.3 OPENING ENCLOSURE


To open the cover, unscrew the two screws at the bottom and swing the screw hinge down. The cover should pop up a little bit from the gasket pressure. Then slide the cover up to remove the cover.



### 2.4 WALL MOUNTING

To mount the WL900 to a wall use the 4 tabs at each corner as mounting points.



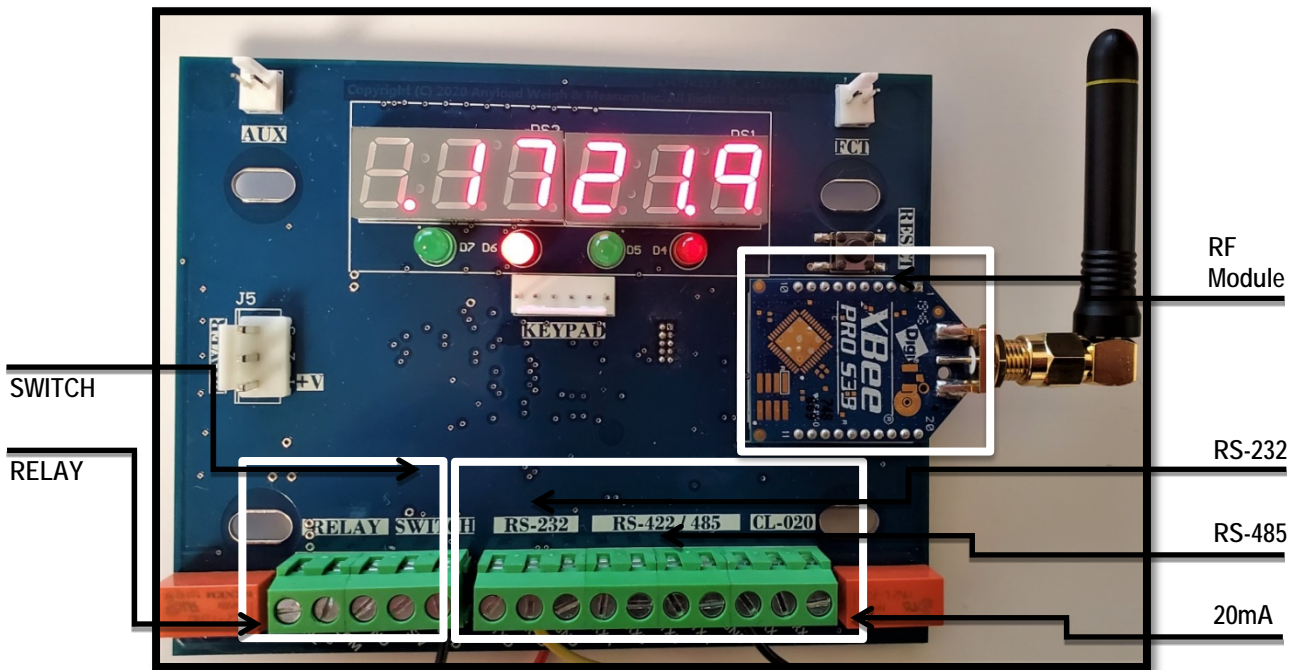
| Symbol  | Description   |
|---|---|
|  | <p><b>NOTICE!</b></p> <p>Make sure the site has proper grounding<br/>                     Make sure the power source is disconnected before any installation<br/>                     Any installation and wiring must be handled by authorized personnel</p> |



### 3. WIRING

#### 3.1 CONTROLLER BOARD TERMINALS

All communication signals, switch input, and relay output can be terminated to the controller board via accessible screw terminals. These terminals are designed to accept serial data communication signals, dry contact switch input, and a relay output. The signals can be entered via cable strain reliefs to the enclosure. The power supply is detachable, and can be disconnected from enclosure.



| Item | Protocol      | Distance          |
|------|---------------|-------------------|
| 1    | RS-232        | 50 feet (15 m)    |
| 2    | RS-422/RS-485 | 1000 feet (300 m) |
| 3    | 20mA          | 500 feet (150 m)  |

| Symbol | Description   |
|--------|---|
|        | <p><b>NOTICE!</b></p> <p>Availability of the options is subject to confirmation by manufacturer and may vary by firmware version<br/>                     Refer to the configuration section for instructions on how to configure the functions of wireless transmitter<br/>                     Refer to the installation section for instructions on how to access the wiring terminals</p> |

### 3.2 ELECTRICAL POWER WIRING

The WL900 wireless transmitter is a 12 VDC powered device and comes with a 12VDC/2.0A wall adapter. Please use the supplied power adapter.

| Item | AC Power Supply | Description                                       |
|------|-----------------|---|
| 1    | Input           | AC 100-240V~ 0.6A 50-60HZ                         |
| 2    | Output          | DC 12V 2A 25W                                     |
| 3    | Specifications  | Wall adaptor, AC/DC Switching Power Supply, LPS   |
| 4    | Protection      | Short circuit, Over load, Over voltage protected, |
| 5    | Approvals       | UL / cUL Approved, CE Mark                        |

### 3.3 SERIAL COMMUNICATION WIRING

The WL900 wireless transmitter provides industry standard serial communication ports with installation via screw terminals. The ports are automatically detected and adjusted upon start up. There are three communication ports available as RS-232, RS-422, RS-485, and 20mA current loop in both active and passive mode. The serial communication wires coming from indicator shall be entered to the unit via bottom strain reliefs and be terminated to the proper terminals.

| Communication        | Indicator | WL900 | Description              |
|----------------------|-----------|-------|--------------------------|
| RS-232 Communication | GND       | GND   | Signal Ground            |
|                      | TX        | RXD   | Transmit to Receive Data |
|                      | -         | TXD   | Transmit Data            |

| Communication                                | Indicator | WL900 | Description                                |
|--|-----------|-------|--|
| RS-422 Communication<br>RS-485 Communication | GND       | GND   | Signal Ground                              |
|  | TXB       | RXB   | Negative Transmit to Negative Receive Data |
|  | TXA       | RXA   | Positive Transmit to Positive Receive Data |
|  | -         | TXB   | Negative Transmit Data                     |
|  | -         | TXA   | Positive Transmit Data                     |

| Communication                            | Indicator | WL900 | Description                                |
|--|-----------|-------|--|
| 20mA Current Loop<br>(Passive or Active) | TX-       | RX-   | Negative Transmit to Negative Receive Data |
|  | TX+       | RX+   | Positive Transmit to Positive Receive Data |

### 3.4 808AH/BH/CH RF MODULE INSTALLATION

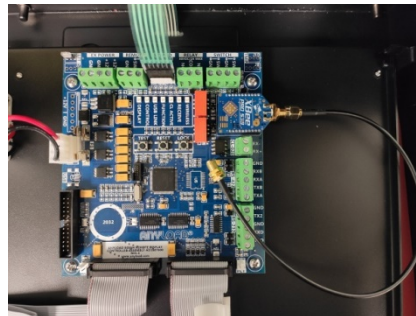
The hardware configuration of the 808AH/BH/CH large display to a wireless display is explained below. The wireless conversion kit consists of:

- Wireless module
- Antenna
- Antenna cable

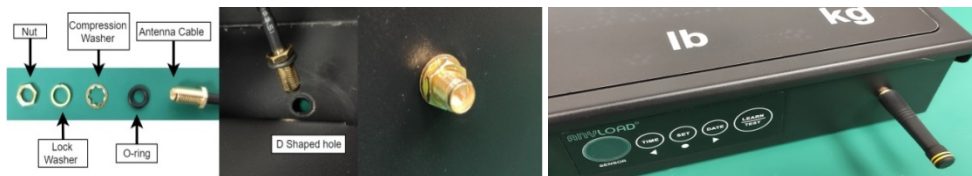



- *ASSEMBLY INSTRUCTIONS:*

Install the wireless module in the correct orientation on the main board. Make sure the pins are aligned properly. Mount the other end of the antenna cable on the large display enclosure.



Install the antenna outside the unit at the bottom.



| Symbol  | Description  |
|---|--|
|  | <p><b>NOTICE!</b><br/>                     The Wireless kit is an electronic sensitive device<br/>                     The wireless kit must be installed, and handled with care to avoid any ESD damage<br/>                     Make sure the power source is disconnected before any installation</p> |

### 3.5 SWITCH AND RELAY WIRING

The input switch SWITCH can be used on transmitter configuration to control the output relay on receiver side. The switch only accepts dry contact as input configuration.

The relay RELAY can be used on receiver configuration to receive traffic light commands to control external traffic lights.

To use functions related to the Switch and Relay, refer to the configuration, and troubleshooting sections of this technical manual.

| Terminal | Relay | Description                  |
|----------|-------|------------------------------|
| 1        | NC    | GREEN External Traffic Light |
| 2        | COM   | Common for External Voltage  |
| 3        | NO    | RED External Traffic Light   |




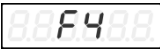
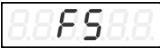

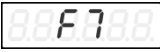


| Terminal | Switch | Description   |
|----------|--------|---------------|
| 1        | SW     | High Side     |
| 2        | GND    | Signal Ground |

| Symbol | Description  |
|--------|--|
|        | <p><b>WARNING!</b></p> <p>The switches only accept dry contact as inputs<br/>                     The relay contact is limited to 2A/60VDC<br/>                     Make sure the site has proper grounding</p>  |
|        | <p><b>CAUTION!</b></p> <p>The switches only accept dry contact as inputs<br/>                     Any unauthorized change or alteration in default wiring may void warranty<br/>                     Any installation and wiring must be handled by authorized personnel</p>   |
|        | <p><b>NOTICE!</b></p> <p>The switch and relay functions are disabled as default<br/>                     Refer to the configuration section for instructions to how to configure inputs and outputs<br/>                     Refer to the installation section for instructions to how to access to the wiring terminals</p> |

## 4. CONFIGURATION

### 4.1 FUNCTION SETUP MENU

The function setup menu is consisted of different function blocks used to set different configuration values of WL900 RF transceivers. There are five function blocks currently available for configuration showed in the table below.

| Block   | Menu       | Description   |
|---|------------|---|
|    | DISPLAY    | Functions Related to Digits Display                       |
|    | UTILITIES  | Functions Related to Utilities and Special Programs       |
|    | -          | N/A   |
|    | SERIAL     | Functions Related to Data Communications and Serial Ports |
|    | AUXILIARY  | Functions Related to Switch Inputs and Relay Outputs      |
|  | -          | N/A   |
|  | -          | N/A   |
|  | -          | N/A   |
|  | DIAGNOSTIC | Advance Diagnostics                                       |

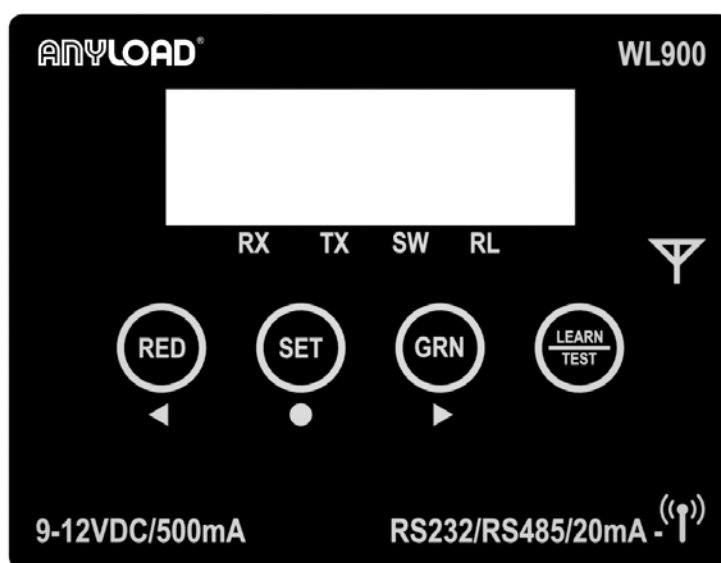
### 4.2 OPERATING MODES

| Mode        | Description  |
|-------------|--|
| Transmitter | Default setting is used to connect weight indicators to remote displays.                           |
| Receiver    | Alternative setting is used in receiver mode to connect weight indicators to PC or traffic lights. |
| Custom      | N/A  |

### 4.3 MEMBRANE KEYPAD

The setup menu is used to configure main operating functions of the WL900 Wireless Transmitter. A four keys membrane keypad, located at front of the enclosure, is used to enter into, exit from, and navigate through setup menu functions.

To enter into setup menu, press and hold ◀ & ▶ keys together for two seconds. To exit from setup menu, use the same keys combination. To navigate through menus, press short or hold ◀ or ▶ keys. To enter into or exit from a sub menu press ○ key. To change a sub menu value, press ◀ or ▶ keys. To exit from setup, without saving, press and hold TEST button.



| Keypad | Key | Function  | Description   |
|--------|-----|---|---|
|        |     | Short press:<br>LEARN<br>Long press:<br>TEST            | LEARN:<br>Attempts to learn communication baud and format of an incoming data.<br>TEST:<br>Advance testing and adjusting the display.                                     |
|        |     | Short press:<br>FX.X - 0.1<br>Long press:<br>FX.X - 1.0 | LEFT :<br>Short Press: Decrements subsection categories, FX.X.<br>Long Press: Decrements section categories, FX.  |
|        |     | Short press:<br>SET<br>Long press:<br>ABORT             | SET:<br>Short Press: Entering into section categories FX.X.<br>Short Press: Accepting the value of a subsections FX.X.<br>Long Press: Returning to section categories FX. |
|        |     | Short press:<br>FX.X + 0.1<br>Long press:<br>FX.X + 1.0 | RIGHT :<br>Short Press: Increments subsection categories, FX.X.<br>Long Press: Increments section categories, FX.   |

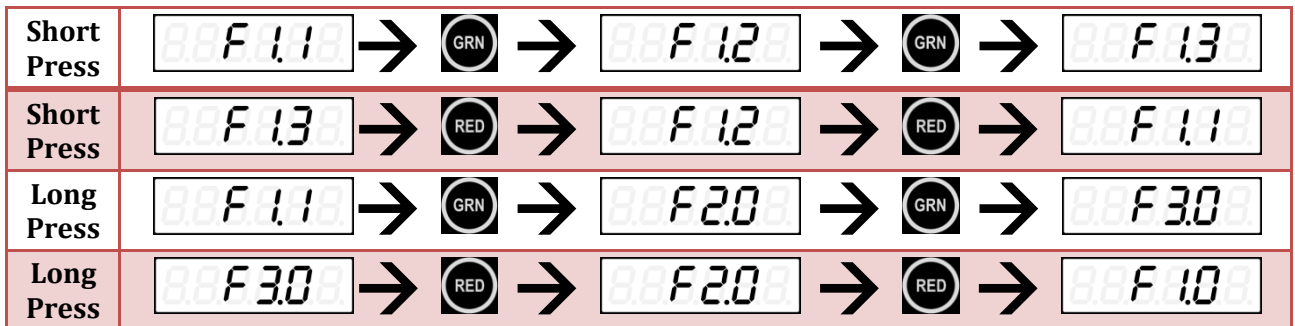
- *ENTERING INTO SETUP MENU*

Press and hold ◀ & ▶ keys together simultaneously for two seconds to enter setup menu, the SETUP message will appear. Then first function block F1.0 will be displayed.



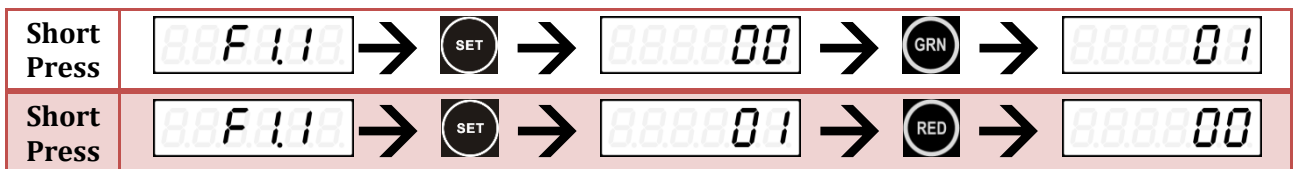
- *NAVIGATING THROUGH MENU*

To navigate through the menu, press ◀ or ▶ keys. A short press will cause FX.X to increase or decrease by 0.1 (move within the submenu) and a long press will increase or decrease by 1 (exit the submenu and go to the root menu).



- *EDITING SUBMENU VALUES*

Press ○ key to enter the shown submenu and the current setting of that submenu will be displayed. Press ◀ or ▶ keys to change the value of the submenu as required.



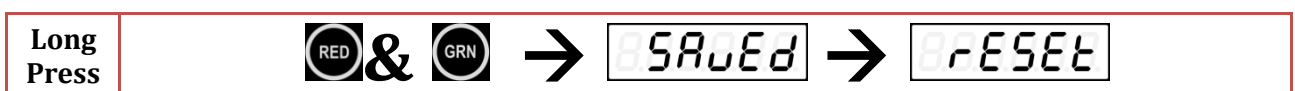
- *SETTING SUBMENU VALUE*

Press ○ key to accept the selected value and return to the submenu. A FX.X message showing corresponding function block will be displayed.



- *EXITING FROM SETUP MENU*

Press and hold ◀ & ▶ keys together simultaneously to save and exit the setup menu. A SAVED message will be displayed and then it will reset. To exit without saving, press and hold TEST button.



#### 4.4 F1 DISPLAY SETTING

| Function                   | Value                 | Setting                       | Description   |
|----------------------------|-----------------------|-------------------------------|---|
| F1.0<br>Factory Reset      | 0<br>1                | Abort<br>Factory              | If set 1, transmitter will reset its functions to default factory settings.                                     |
| F1.1<br>Setup Lockout      | 0<br>1                | Allowed<br>Prevented          | If set 1, any changes to settings is prevented. This is useful to disable setup menu to avoid unwanted changes. |
| F1.4<br>Brightness Setting | 100<br>80<br>50<br>20 | 100 %<br>80 %<br>50 %<br>20 % | Brightness level is shown in percentage.  |
| F1.6<br>Startup Test       | 0<br>1                | Disabled<br>Enabled           | Runs display test at startup as default.  |

#### 4.5 F2 UTILITY SETTING

| Function                     | Value  | Setting  | Description   |
|------------------------------|--|--|---|
| F2.0<br>Utility Programs     | 0<br>1   | 0<br>1   | Utility programs used for different modes. The programs availability may vary based on the firmware.<br><br>Refer to Section 5 and 6.   |
| F2.1<br>Network Address      | 0<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9 | Id 0<br>Id 1<br>Id 2<br>Id 3<br>Id 4<br>Id 5<br>Id 6<br>Id 7<br>Id 8<br>Id 9 | Network and multiple address setting. Not available with this version. 0 is set as default.   |
| F2.2<br>Data Timeout Default | 10<br>20<br>30<br>40<br>50<br>60               | 10 sec<br>20 sec<br>30 sec<br>40 sec<br>50 sec<br>60 sec                     | It sets display timeout in seconds if communication is lost. It is used for regular programs as default unless mentioned otherwise. The display shows dashes if received data is timed out. |



### 4.6 F4 COMMUNICATION SETTING

| Function                               | Value  | Setting  | Description  |
|--|--|--|--|
| F4.0<br>Communication Mode             | <b>Auto</b><br><b>bAud</b>   | <b>Auto</b><br>Manual  | If set to Auto, It will learn the communication baud rate at startup.<br>If set to Manual, it uses its previously saved value to be the communication baud rate.   |
| F4.1<br>Communication Port             | <b>RS-232</b><br><b>RS-422</b><br><b>CL-020</b><br><b>RF-900</b>             | <b>RS232</b><br>RS422/485<br>20mA Loop<br>RF Wireless                        | It shows currently used communication port for serial communication.<br>It is set to RS232 as default.<br>Wireless option is not available with this version.  |
| F4.2<br>Serial Communication Baud Rate | 300<br>600<br>1200<br>2400<br>4800<br><b>9600</b><br>19200<br>32800<br>57600 | 300<br>600<br>1200<br>2400<br>4800<br><b>9600</b><br>19200<br>32800<br>57600 | It sets and shows current communication baud rate.<br>If F4.0 set to Auto, it shows current baud rate detected.<br>If F4.0 set to Manual, it shows current baud rate setting.  |
| F4.3<br>Parity                         | <b>0</b><br>1<br>2   | <b>8 bits</b><br>7 bits even<br>7 bits odd                                   | 8 bits data no parity as default.<br>7 bits data even parity.<br>7 bits data odd parity.   |
| F4.4<br>Stop Bit                       | <b>0</b><br>1  | <b>1 stop bits</b><br>2 stop bits  | 1 stop bits as default<br>2 stop bits  |
| F4.5<br>Current Loop Active Mode       | <b>PAS I<sub>w</sub></b><br><b>ACT I<sub>w</sub></b>                         | <b>Passive</b><br>Active   | It sets 20mA current loop mode to passive or active mode.<br>Set to passive mode if the indicator supplies current as default.<br>Set to active mode if the indicator is in passive mode.<br>To use this function refer to indicator user manual for proper setting. |
| F4.6                                   | 2400<br>4800<br><b>9600</b><br>19200   | 2400<br>4800<br><b>9600</b><br>19200   | It sets communication baud rate if wireless option is installed.<br>Not available with this version.<br>9600 is set as default.  |

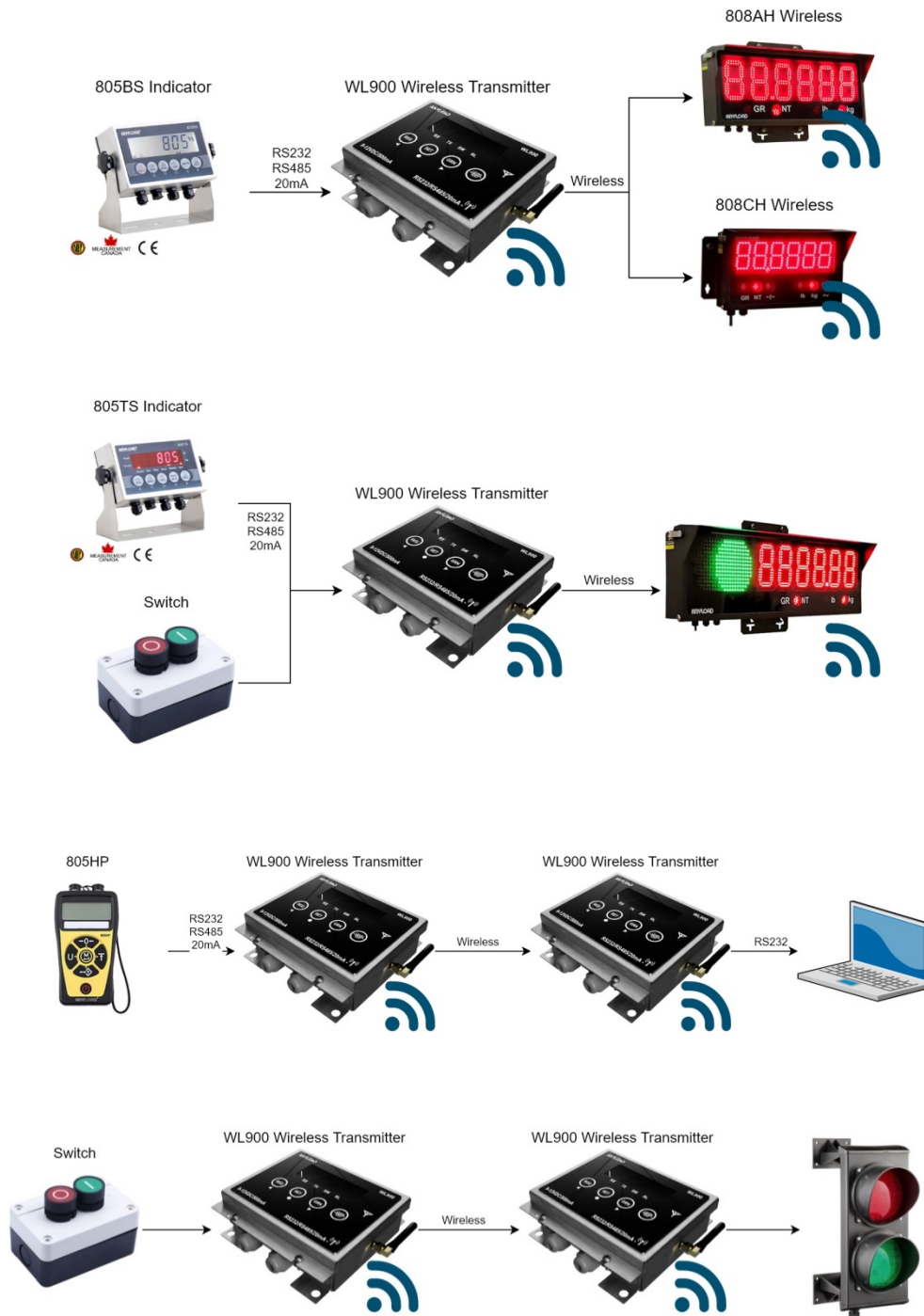
### 4.7 F5 AUXILIARY SETTING

| Function                       | Value              | Setting                               | Description   |
|--------------------------------|--------------------|---------------------------------------|---|
| F5.0<br>Switch Function        | <b>0</b><br>1<br>2 | <b>Disabled</b><br>Momentary<br>Latch | If set to Disable, SWITCH is disabled as default.<br>If set to Momentary, active as push buttons.<br>If set to Latch, active in latched mode.<br>Refer to Section 5, 6.                   |
| F5.1<br>Relay Function         | <b>0</b><br>1      | <b>Disabled</b><br>Enabled            | If set to 1, relay function is active.<br>It operates based on SWITCH current state.<br>It is disabled as default.<br>Refer to wiring chapter and relay section of this technical manual. |
| F5.2<br>Traffic Light Function | <b>0</b><br>1      | <b>Disabled</b><br>1                  | Disable as default controlled by software.<br>Refer to Section 5, 6.  |

## 5. UTILITIES

### 5.1 APPLICATIONS

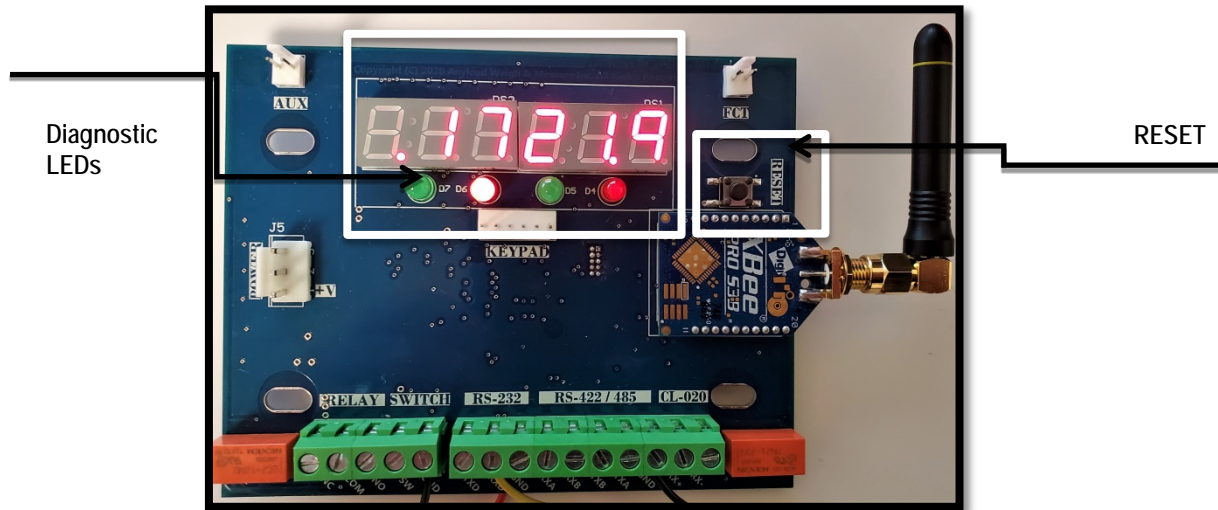
The following illustrations will show how the WL900 wireless transmitter can be used in conjunction with the indicators, external switches, and large displays.



## 6. TROUBLESHOOTING

The WL900 RF transceivers have comprehensive tools for troubleshooting, including diagnostic lights, onboard push buttons, error codes, message codes, and advance diagnostics inside setup menu.

### 6.1 CONTROLLER BOARD




### 6.2 ERROR CODES

| Error  | Description                      | Action                                   |
|--------|----------------------------------|--|
| --E1-- | Communication baud rate failure  | Check wirings for proper connection      |
| --E2-- | Incoming string protocol failure | Check Indicator to be in continuous mode |
| --E3-- | Wireless communication failure   | Check installed RF module                |
| --E4-- | Factory setting failure          | Perform factory reset                    |
| --E5-- | Memory checksum failure          | Perform factory reset                    |





### 6.3 DISPLAY MESSAGES

| Message | Description                            | Reason   |
|---------|--|--|
| -----   | Shows dashes or blanks display         | Data communication failure                       |
| LEARN   | LEARN for auto learn baud and protocol | Auto learn mode to detect baud rate and protocol |
| SAVED   | SAVED for saving setup information     | Setup data stored in flash memory                |
| TEST    | TEST for running a display test        | Display tests segments and brightness            |

### 6.4 PUSH BUTTONS

| Button  | Description   | Function                  |
|---|---|---------------------------|
| <b>RESET</b><br> | Runs a cycle test<br>Loads startup values<br>Shows version number | Performs a hardware reset |

### 6.5 DIAGNOSTIC LIGHTS

| LED  | Normal         | Function                       |
|--|----------------|--------------------------------|
| <b>RX</b><br>   | Flashing GREEN | Receive data from RF module    |
| <b>TX</b><br>   | Flashing RED   | Transmit data out of RF module |
| <b>SW</b><br>   | Solid GREEN    | Switch is closed               |
| <b>RL</b><br> | Solid RED      | Relay is activated             |

### 6.6 ADVANCE DIAGNOSTIC





| Function          | Value  | Setting             | Description   |
|-------------------|--------|---------------------|---|
| F9.0<br>Character | XXXXXX | None                | Character counter<br>Shows number of ASCII characters received in buffer              |
| F9.1<br>Numeric   | XXXXXX | None                | Numeric counter<br>Shows number of ASCII numeric received in buffer                   |
| F9.2<br>String    | XXXXXX | None                | String counter<br>Shows number of complete strings received in buffer                 |
| F9.3<br>Checksum  | XXXXXX | None                | Data checksum<br>Shows memory checksum check failure                                  |
| F9.4<br>Signal    | XX     | None                | RF signal strength<br>Shows wireless signal strength if it is installed               |
| F9.5<br>Sensor    | XXXX   | None                | N/A   |
| F9.6<br>Version   | XX-XX  | None                | Displays software version   |
| F9.7<br>Model     | XX-XX  | None                | Displays model number   |
| F9.8<br>Protocol  | XX     | None                | Reserved  |
| F9.9<br>Reset     | 0<br>1 | Abort<br>Initialize | Alternative setup reset<br>Resets all setup values to default, except string settings |


## 6.7 TRAFFIC LIGHT

The WL900 transmitter can be paired easily with the 808BH remote display series to control RED/GREEN built in traffic light on remote display. The on board RED/GRN buttons on WL900 can be used to control RED/GREEN on remote display. The WL900 is set as default in transmit mode. The 808BH remote display settings to control RED/GREEN are as follows:

| Function                       | Value | Setting     | Controlled by Commands                                       |
|--------------------------------|-------|-------------|--|
| F2.0<br>Utility Programs       | 3     | 3           | Remote display is set to accept RED/GREEN commands           |
| F5.0<br>Switch Function        | 0     | Disabled    | If set to Disable, both SW1 and SW2 are disabled as default. |
| F5.2<br>Traffic Light Function | 1     | GREEN / RED | Solid RED / GREEN.   |

The on board RED/GRN buttons can be used to control RED/GREEN as follows:

| Keypad  | Key   | Function       | Description  |
|---|---|----------------|--|
|  |  | Press and Hold | Sends out RED command to 808BH remote display with RED/GREEN |
|  |  | Press And Hold | Sends out GREEN command to 808BH remote display              |

| Symbol  | Description   |
|---|---|
|  | <p><b>NOTICE!</b></p> <p>Refer to the troubleshooting diagnostic lights and push buttons section for more information<br/>Refer to the configuration section for more information on advance diagnostic</p> |

## 6.8 RECEIVER MODE

The WL900 can be also set in receiver mode to accept RED/GREEN commands, and activate a relay to control external traffic lights. The WL900 settings are as follows:

| Function                       | Value  | Setting             | Controlled by Commands  |
|--------------------------------|--|---------------------|---|
| F2.0<br>Utility Programs       | 0<br>1   | 0<br>1              | Include commands in the indicator string:<br>For RED use "&", and for GREEN use "*".<br><br>Example:<br>10000LBGR* <CR> will display 10000 lb and GREEN |
| F4.0<br>Communication Mode     | <input type="checkbox"/> <i>Auto</i><br><input type="checkbox"/> <i>Manual</i> | Auto<br>Manual      | Set to Manual baudrate.   |
| F5.0<br>Switch Function        | 0  | Disabled            | Set to 0.   |
| F5.1<br>Relay Function         | 0<br>1   | Disabled<br>Enabled | Set to 1, to activate the RELAY function.   |
| F5.2<br>Traffic Light Function | 0<br>1   | Disabled<br>1       | Set to 1, to activate function.   |

The commands used by programmable indicators to activate relay on WL900 are as follows:

| ASCII | Command | Function                   |
|-------|---------|----------------------------|
| &     | RED     | Set traffic light to RED   |
| *     | GREEN   | Set traffic light to GREEN |

| Symbol | Description   |
|--------|---|
|        | <b>WARNING!</b><br>The switches only accept dry contact as inputs<br>The relay contact is limited to 2A/60VDC<br>Make sure the site has proper grounding  |
|        | <b>CAUTION!</b><br>The switches only accept dry contact as inputs<br>Any unauthorized change or alteration in default wiring may void warranty<br>Any installation and wiring must be handled by authorized personnel   |
|        | <b>NOTICE!</b><br>The switch and relay functions are disabled as default<br>Refer to the configuration section for instructions to how to configure inputs and outputs<br>Refer to the installation section for instructions to how to access to the wiring terminals |



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