

**Installation and Operation Manual for  
4-20mA RF Wireless Receiver Model A750**

# Installation and Operation Manual for 4-20ma Wireless Receiver Model A750

## 1.0 Features

- The Model A750 offers simplicity and reliability in a point to point RF system.
- Designed for easy transmission of 4-20ma or other DC signals.
- Two form C alarm relay outputs.
- RF Link, Alarm and LED indicators.
- Two radio power levels available: 1W or 50mW (A753-LP).
- 11 to 32 Vdc power (nominal 24 Vdc).
- Repeaters can be added to extend range with no programming.
- Simple dip switch selectable RF channel and RF Power.
- No software required.
- RSSI (received signal strength indicator).
- Convenient 35mm DIN rail mount installation.
- Designed to interface with A750 receiver.



## 2.0 Description

The A750 wireless RF instrument is the receiver for the A753 series of process RF transmitters. The receiver has three outputs: one 4-20mA proportional to the process variable and two form C relays (optional open collector). The relays A1 and A2 correspond to the process transmitter's switch state of A1 and A2, respectively if transmitter is an A753-ZG.

If transmitter is an A753-BT (Battery Powered), Relay A1 / LED A1 are used to indicate transmitter's battery condition (e.g. Low Battery). A third form C relay is utilized for RF detection; if the RF signal becomes unreliable the RF Link alarm will activate.

In RSSI (received signal strength indicator) mode the RF signal strength can be monitored, this is helpful to insure reliable RF reception/transmission and antenna alignment. LED indicators indicate when packets of data are being transmitted and received. Power is provided by the industry standard +24 Vdc (11 to 32 Vdc). The Model 750 can be used with a repeater (Model A759).

# Installation and Operation Manual for 4-20mA Wireless Receiver Model A750

## 3.0 Mounting and Electrical Connections

The receiver is designed to mount on 35mm DIN rail. The connectors are removable for easy receiver replacement. Figure 1 and table 1 show connections to the receiver.

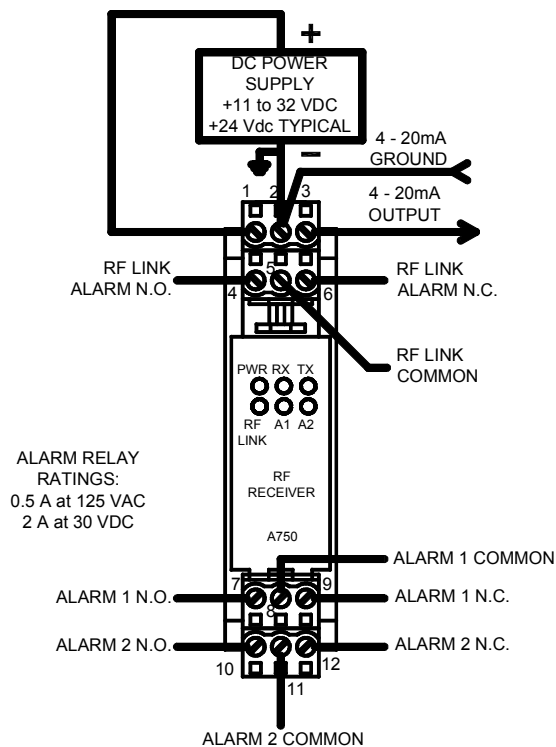


Figure 1 Receiver connections.

Terminal Number	Terminal Description	Terminal Number	Terminal Description
1	Positive +11 to +32 Vdc power supply	7	(A1) Alarm 1 N.O. contacts
2	Power & 4-20mA ground	8	(A1) Alarm 1 common
3	4 – 20mA output*	9	(A1) Alarm 1 N.C. contacts
4	RF Link alarm N.O. contacts	10	(A2) Alarm 2 N.O. contacts
5	RF Link alarm common	11	(A2) Alarm 2 common
6	RF Link alarm N.C. contacts	12	(A2) Alarm 2 N.C. contacts

Table 1 A750 Receiver connections.

\*Other DC outputs available, refer to label on side of unit.

Figure 1 and table 1 show connections to the receiver. There is one 4-20mA output\* and two form C relays. The relays correspond to the switch or low battery status of the transmitter; A1 on the transmitter is mapped to A1 on the receiver and A2 on the transmitter is mapped to A2 on the receiver. A third relay (RF Link) is used to monitor signal integrity. If the signal strength becomes insufficient for reliable reception/transmission the relay will trigger. Both normally open and normally closed contacts are available for all relays. Relays are rated for 0.5A at 125Vac and 2A at 30Vdc.

**Note:** If the transmitter is battery powered (e.g. A753-BT), the A1 LED and A1 Relay on the A750 indicates low battery status. In low battery condition, the A1 LED will be On and the A1 Relay will be engaged.

# Installation and Operation Manual for 4-20ma Wireless Receiver Model A750

## 4.0 Setup

Setup for the receiver is accomplished without software. Access the programming buttons and switches by lifting the access door as shown in figure 2.

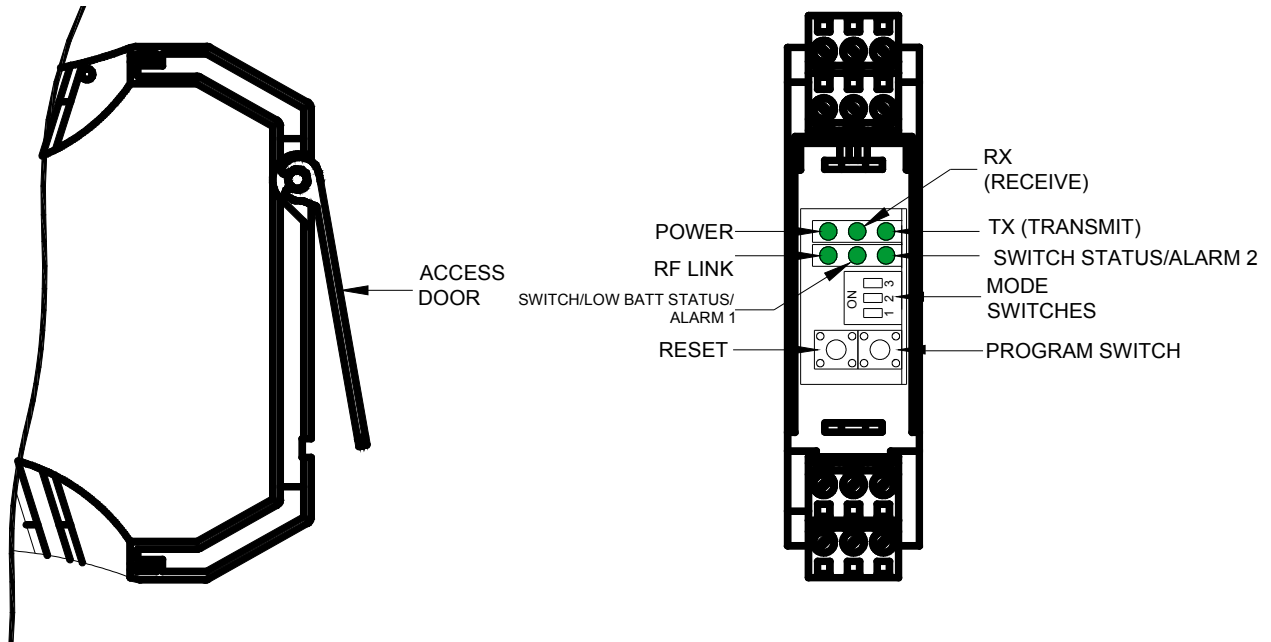


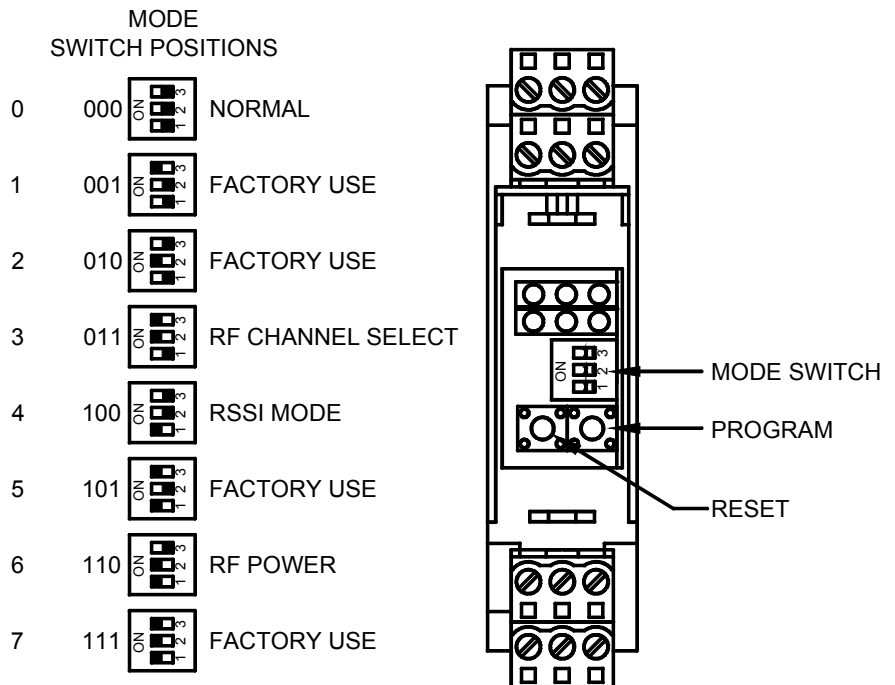
Figure 2 Access door, switch and LED locations.

## 4.1 Power up Sequence

When the A750 is powered, LEDs light in the following sequence: Power, RF Link, A1, A2. Then either A1 or A2 will blink (4 times) - this will indicate Normal RF Mode or Repeater mode — see Section 4.4 for configuration. After a brief pause all LEDs will report the appropriate status.

## 4.2 Mode Switch Selection

The mode switches are used for RF channel selection and RSSI (received signal strength indication). Figure 3 shows the location of the mode switches, program switch and reset switch.



Note: b000 is binary 000, the decimal equivalent of decimal 0. The least significant bit is switch position 3.

**Return all switches to Mode 0(b000) for normal operation. Refer to figure 3 for switch mode settings.**

Figure 3 Mode switch settings.

# Installation and Operation Manual for 4-20ma Wireless Receiver Model A750

**Mode 0: Normal operation (b000):** set mode switches for mode 0, press and release the reset switch. Use this mode for standard 4-20mA and switch/alarm output.

**Mode 3: RF Channel Select (b011):** set mode switches for mode 3, press and release the reset switch. There are 8 RF channels available, 0-7. The present RF channel will be displayed, see figure 4. To return to normal mode return all switches to b000 or to change RF, channels press the program switch and the next incremented channel will be displayed. Each subsequent press of the program switch increments the RF channel, channels will wrap around from 7 to 0. When the desired channel is selected, press and hold the program switch (approximately 4 seconds) until the power LED blinks twice to indicate value has been stored. Programming is complete, return all switches to b000,

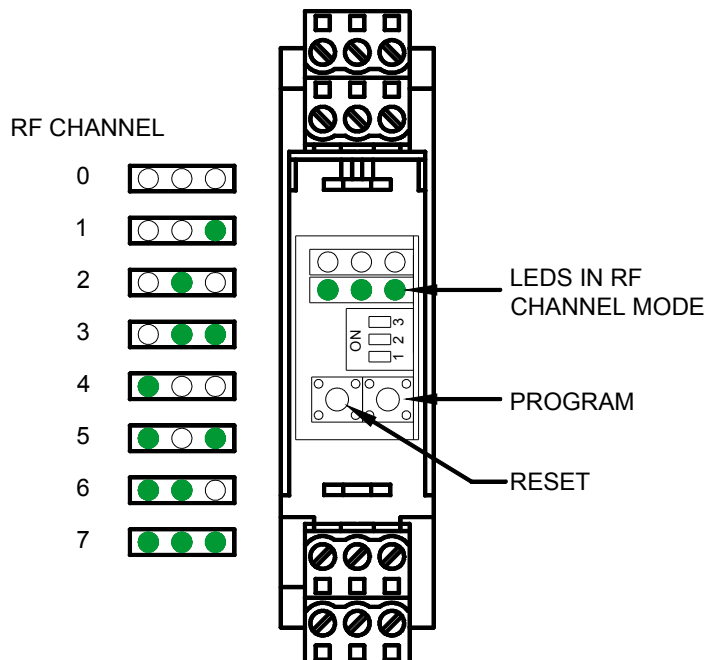


Figure 4 RF channel setting.

The RF channel must match the RF channel on the A753 transmitter.

**Mode 4: RSSI mode (b100):** Set mode switches for mode 4, press and release the reset switch. In this mode the strength of the RF signal from the transmitter can be monitored, this is helpful for antenna alignment or trouble shooting. Three LEDs are used for signal strength indication: RF Link, A1 and A2. The signal strength is shown by the number of on LEDs as shown in figure 5.

*Note that the status of RF Link, A1 and A2 are not displayed in this mode. To exit RSSI mode return all mode switches to 000.*

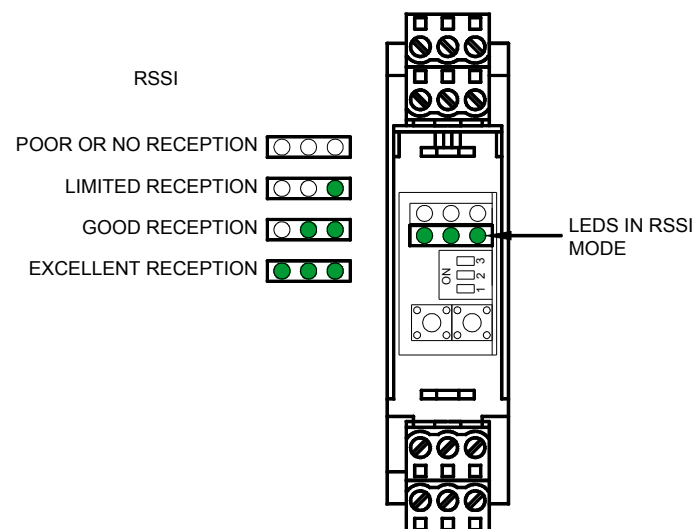


Figure 5 RSSI mode LED indication.

# Installation and Operation Manual for 4-20ma Wireless Receiver Model A750

**Mode 6 (b110): RF Power Select:** Set mode switches for mode 6 (see figure 6) then press and release the reset switch. There are 5 RF power settings available (1mW, 10mW, 100mW, 500mW, 1W). After power up sequence, the present RF power setting will be displayed, see figure 7. To return to normal mode return all switches to b000 or to change RF power setting, press and release the program switch and the next incremented channel will be displayed. Each subsequent press and release of the program switch increments the RF power, power setting will wrap around from 4 to 0. When the desired power level is displayed, press and hold the program switch for five seconds, the power LED will blink twice to indicate value has been stored. Return all switches to b000, programming is complete.

**Modes 1, 2, 5, and 7 are for factory use only.**

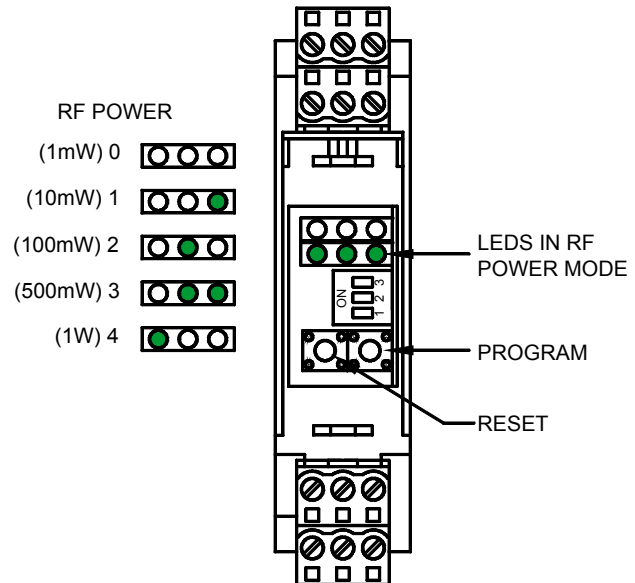


Figure 6 RF power setting.

## 4.4 Normal RF or Repeater Mode Configuration

When transmitter initially powers up or unit is reset – Transmitter will go through power up sequence (see Section 4.1) – the A1 or A2 LED blinks (4) times to indicate if unit is in Normal RF Mode or Repeater mode. If the system does not have a repeater (Model A759) – it should be in Normal RF Mode (A1 will blink 4x at initial power up – see fig 2). If system does use a repeater – the unit should be in Repeater Mode (A2 will blink 4x at initial power up).

To program for Normal RF or Repeater mode , please do the following.

- 4.4.1 Lift Access Door to expose mode, reset, and programming switches (see figure 2).
- 4.4.2 Press Reset switch and then press / hold programming switch.
- 4.4.3 After initial power up – the Normal RF / Configuration will change from one to the other by blinking the appropriate A1 or A2 LED. Release Programming switch.
- 4.4.4 Repeat process if needed until correct configuration is achieved.

# Installation and Operation Manual for 4-20ma Wireless Receiver Model A750

## 5.0 Low Battery Indication

Note: The following information only applies if transmitter is battery powered (e.g. A753-BT).

### **A753-BT (see A753-BT manual for details):**

If the Lithium “D” Cell battery/batteries are OK — the A1 Indicator LED will be OFF (> 3.4VDC).

If the Lithium “D” Cell battery/batteries are LOW — the A1 Indicator LED will be ON (< 3.4 VDC).

*Note that the transmitter must be on to identify battery condition.*

### **A750 Receiver**

If the A753-BT battery/batteries are OK — the A1 Indicator LED will be OFF. Low Battery Alarm N.C. will remain closed. Low Battery N.O. will remain open.

If the A753-BT battery/batteries are LOW — the A1 Indicator LED will be ON. Low Battery Alarm N.C. will be open. Low Battery N.O. will be closed.

Note: The A753-BT will read battery status at each transmit interval. At 3.0VDC the transmitter will cease to transmit.

## 6.0 RF Link

The RF Link has a 6 second timeout. If a packet from the transmitter is not sent or recognized within 6 seconds, the RF Link LED will turn off and also trigger the RF Link Relay.

If the transmitter is an A753-BT and has a transmit interval greater than 6 seconds, the RF Link LED/Relay will toggle (ON/OFF) with every transmission.

# Installation and Operation Manual for 4-20ma Wireless Receiver Model A750

## 7.0 Specifications

### Output:

- (1) 4-20mA (optional analog outputs are available, refer to label on side of unit)
- (2) Dry Contact Relays rated for 0.5A at 125Vac and 2A at 30Vdc.

### Accuracy:

16 bit

### RF Output:

1 Watt (+30 dBm), 900 MHz FHSS  
Optional 50mW (+20dBm) 900 MHz FHSS (Model A753-LP)

### Power:

+24Vdc (11 to +32 Vdc), 5W maximum

### Operating Temperature Range:

-40°C to +85°C

### RF Encryption:

256 bit

### DIN RAIL MOUNT:

35mm

## 8.0 Warranty

All Analynk Wireless, LLC products are warranted against factory defects for two years after date of shipment. An RMA number is required for return shipments to be accepted. To receive an RMA number contact us by any of the following

Analynk Wireless, LLC  
790 Cross Pointe Road  
Columbus, OH 43230

PH: 614-755-5091  
Fax: 614-755-5093  
Email: [info@analynk.com](mailto:info@analynk.com)



# Installation and Operation Manual for 4-20ma Wireless Receiver Model A750

This page intentionally left blank

# Installation and Operation Manual for 4-20ma Wireless Receiver Model A750

This page intentionally left blank

# Installation and Operation Manual for 4-20ma Wireless Receiver Model A750

This page intentionally left blank

