207 / 210 Remote Control System

207 Industrial Hand Held Transmitter

- Upto 8 Switch Industrial hand held transmitter
- Polypropylene IP65 Rated Enclosure
- Range;
  - 433MHz NB Up to 1,000 Metres
  - 458MHz Up to 6,000 Metres
- Low power consumption
- High Capacity NiMH Rechargeable Battery
- LED Indication of Transmission and Low Power
- Auto Transmit mode
- Auto 'Watchdog' Transmission
- Custom Overlays available on request
- Battery Charger Supplied

Description

The 207 transmitter is an industrial hand held multi channel radio transmitter. It is supplied in a rugged Polypropylene IP65 rated enclosure. The transmitter features upto 8 robust micro-switch buttons rated upto ten million operations.

The 207 has an auto-transmit option link. When this link is enabled the transmitter will send the status of all of its inputs every 5 seconds. This signal is continually monitored by the receiver for reliable operation.

Battery Low / Charging

The external LED will flash for 5 seconds after a button has been released if the transmitters batteries are low.

The battery recharge circuit is accessed by a 2.1mm jack socket.

The batteries can be recharged in approximately 8 hours using a 12Vdc power supply. A battery charger is supplied

Dimensions

250 x 90 x 45 (mm, excluding antenna)

Part Numbering

Part Number	Description	Freq (MHz)	Range** (Metres)	Compatible Decoders
207C8-525NR	FM Narrow Band Transmitter, 8 Switch	433.525	1000	210- 525NR
207C8-458FR	FM High Power Transmitter, 8 Switch	458.885	6000	210- 458FR

** Range stated is optimum, direct line of sight. In worst conditions this can be reduced by up to 50%

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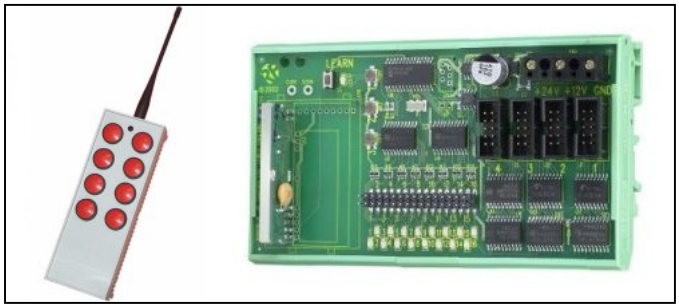
Configuring a Remote Control System using 207 & 210



There are three Steps:

1. Pre-Configure the 207Tx transmitter.
2. Pre-Configure the 210Rx to operate with a 207 series industrial transmitter
3. Marry a 207Tx to a 210Rx

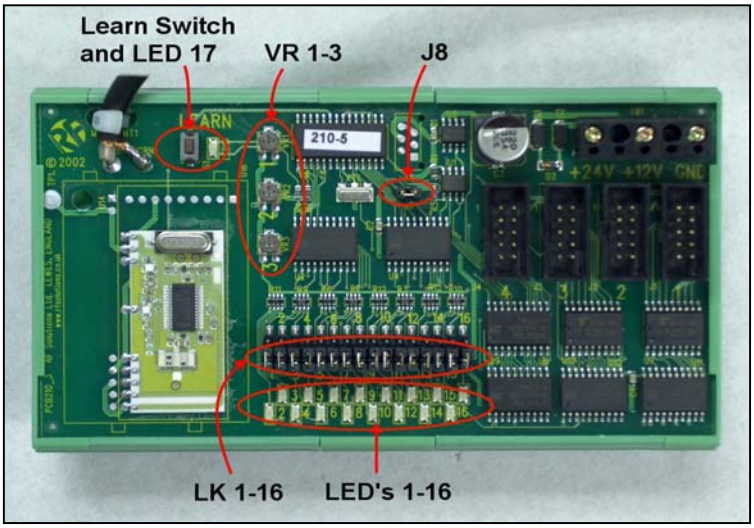
1. Pre-Configure the 207Tx Transmitter

The 207 Transmitter has a single option link which offers the following functionality:

Auto Transmit with Watchdog Mode 'Auto Tx'

When the 'Auto Tx' link is made, the 207Tx automatically transmits its data once within every 5 second period, in addition, channel 16 on the 210 receiver is allocated as a 'system watchdog'. As long as the 210Rx continues to receive the 'Auto Tx' watchdog signal then output '16' is held ON. If for any reason (fault or RF interference) the signal is not received for approx 20secs then output '16' will drop out.

2. Pre-Configure the 210Rx to operate with 207Tx Transmitters



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1. Ensure option link J8 is open.
2. Apply power to the 210Rx, All output LEDS flash alternately. This is factory reset default state.
3. Briefly Press any switch on a 207Tx transmitter.
4. The 210Rx. LED2 flashes 5 times to indicate that the 210Rx is configured for use with 207Tx transmitters.
5. Each time power is applied the 210Rx, LED2 flashes 5 times to show it is configured to operate with 207Tx transmitters.

Note: Option links LK 1-16 have no affect on the operation of the industrial remote control system.

3. Marry a 207Tx to a 210Rx

1. On the 207Tx, remove the Link header 'Auto Tx'. (prevents automatic transmission during the learn process).
2. On the 210Rx Ensure option link J8 is open.
3. Apply power to the 210Rx, note that LED2 flashes 5 times to show it is configured for use with 207Tx transmitters.
4. Briefly press the 210Rx Learn Switch: Note that the 210Rx Learn LED (LED 17) will flash.
5. Wait until the 210Rx Learn LED has stopped flashing but is still illuminated.
6. Press any button on the 207Tx briefly.
7. Note that the 210Rx learn LED will turn off.

The learn cycle is now complete and the transmitter/encoder will operate the system.

4. Erasing the 210Rx Receiver Outputs (Return to Factory Default State)

1. To completely erase the 210Rx decoder's memory, press and hold the 210Rx learn switch.
2. The learn LED (LED 17) will illuminate
3. Hold the Learn switch until the learn LED extinguishes (approx 10 seconds).
4. Release the learn button and all the output LED's 1-16 will now flash alternately to indicate that all encoder data has been erased and the 210Rx has returned to factory default state.

Note: It is not possible erase individual transmitters.

5. Connecting output Modules to the 210 Receiver

A range of '200' series output modules are available which can be plugged into the 210 Receiver via the four IDC header boxes on the receiver. The selection of output module will be dependant on the application. Please see DS200S-1 for a summary the available modules and references to individual datasheets for each output module.

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1 Antenna and Range

1.1 Connecting an Antenna

The 210Rx has a 300mm flying lead cable (50ohm) with a panel mount BNC socket provided to mount on an enclosure. This cable may be extended however please note that typically there is a 50% range reduction with every 3metres of coax cable used!
For increasing range performance a +3dB gain antenna is available. This is supplied with wall mounting bracket and 2metres of coax cable, it plugs in directly to the 210Rx BNC connector.

1.2 Range

The antenna choice and position directly controls the system range. Keep it clear of other metal in the system. The best position by far, is protruding from the top of the product. This is often not desirable for practical or ergonomic reasons and thus a compromise may be needed. If an internal antenna must be used then try to keep it away from other metal items, and in particular large ones like transformers, batteries and PCB tracks and earth planes.
Note that the space around the antenna is as important as the antenna itself. All radio systems are dependant on a radio signal being received through airspace.
The range quoted is the optimal in direct line of sight without obstacles and in good atmospheric conditions.
Range is affected by many things, for example local environmental conditions, atmospheric conditions, interference from other radio transmitters. For evaluating the local environment please see our RF Meter (DS006)
In very worse case applications the range quoted may be reduced to 30% of the optimal range stated.

1.3 Signal integrity

In systems where many encoders are in close proximity there may be occasions when, due to signal overlay between encoders, it is difficult or impossible to guarantee system integrity. In such circumstances it is the responsibility of the installer to ensure that the system performance is adequate for the purposes of the installation.

1.4 Information availability

All products are supplied with their relevant datasheets. These are also available for download from the website or on request from RF Solutions Ltd. For an overview of the complete 200 Series please see Datasheet DS200S-Overview.pdf

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