KEELOQ® REMOTE CONTROL SYSTEMS, 230Vac

119, 129
10209

- 1 – 2 Channel Remote Control Systems
- **230Vac Supply**
- AM / FM / FMNB Remote Receiver Decoder
  - AM Range upto 100m
  - FM Range upto 200m
  - FMNB Range upto 1000m
- High Security KEELOQ CODE HOPPING Protocol
- 'Easy Learn' Tx Encoder Feature
- Easy Installation Via Screw Terminals.
- Up to 50 Transmitters per System
- 315 / 433 / 868 / 915 MHz Available
- 2 Relays Rated 12A pk at 230Vac
- Momentary or Latching Outputs
- IP65 Rated Enclosure (Wall Mounting Lugs Supplied)
- Requires No Radio Licence

Description

A Range of 'ready to operate' remote control systems supplied as either AM or FM and contain a transmitter and receiver decoder pair.

Installation requires connections to power supply (230Vac Live and Neutral) and the output relay screw terminals. The output relays are activated by the key press on the transmitter encoder.

The system utilises the Microchip Keeloq protocol, ensuring high security and reliability.

The decoder has the capacity to learn up to 50 unique transmitters. These are memorised even if the power is removed.

The decoder is supplied in an IP65 rated enclosure with Cable Gland and wall mounting lugs supplied

AM Remote Controls

Part Number	Description	Transmitter Type	Freq (MHz)	Range** (Metres)
119S1-433A	AM RC System 1 ch 230Vac	Pocket Keyfob	433.92	100
119S2-433A	AM RC System 2 ch 230Vac	Pocket Keyfob	433.92	100

Additional AM Transmitter Keyfobs

Part Number	Description	Freq (MHz)	Range** (Metres)
110C1-433A	Transmitter Keyfob, 1 switch	433.92	100
110C2-433A	Transmitter Keyfob, 2 switch	433.92	100

FM Remote Controls

Part Number	Description	Transmitter Type	Freq (MHz)	Range** (Metres)
129S1-433F	FM RC System 1 ch 230Vac	Pocket Keyfob	433.92	150
129S2-433F	FM RC System 2 ch 230Vac	Pocket Keyfob	433.92	150
10209S1-433F	FM RC System 1 ch 230Vac	Handheld	433.92	200
10209S2-433F	FM RC System 2 ch 230Vac	Handheld	433.92	200
10209S1-525N	FM NB RC System 1 ch 230Vac	Handheld	434.525	1000
10209S2-525N	FM NB RC System 2 ch 230Vac	Handheld	434.525	1000

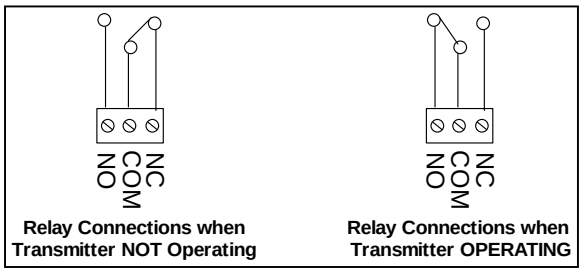
Additional FM Transmitter Keyfobs

Part Number	Description	Freq (MHz)	Range** (Metres)
120T1-433F	Transmitter Keyfob 1 switch	433.92	150
120T2-433F	Transmitter Keyfob 2 switch	433.92	150
102C1-433F	FM Transmitter encoder 1 switch	433.92	200
102C2-433F	FM Transmitter encoder 2 switch	433.92	200
102C1-525N	FM Transmitter encoder 1 switch	434.525	1000
102C2-525N	FM Transmitter encoder 2 switch	434.525	1000

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

Data Outputs

Each of the transmitter switches maps directly to the relay outputs. (SW1 to RLY1, SW2 to RLY2)
Each output relay provides an isolated switch. Connections are Common (COM), Normally Open (NO) and Normally Closed (NC).



Relay Connections when Transmitter NOT Operating | **Relay Connections when Transmitter OPERATING**

The jumper links (LK1, LK2) configure the outputs to be momentary or latching.

LK1	LK2	O/P 1	O/P2
Open	Open	Mom	Mom
Open	Connected	Mom	Latch
Connected	Open	Latch	Mom
Connected	Connected	Latch	Latch

Note : In momentary mode the relay will operate for as long as the transmitter switch is held on.

Learning a new Transmitter Encoder

To enter and activate the learn mode the following sequence must be performed.

1. Power the receiver unit up and wait 10secs for the unit to enter ‘normal operation’ mode.
2. Switch the receiver unit OFF and then ON again in ~1sec intervals four times finally leaving the unit powered up.
3. After 5secs until a ‘beep’ sound is heard.
4. The unit is now in ‘learn’ Mode.
5. Briefly press a button on the transmitter, the receiver unit will ‘beep’ twice.
6. Briefly Press the transmitter button again, he receiver unit will ‘beep’ three times.
7. Wait 10sec for the unit to return to ‘normal operation’ mode.
8. The transmitter is now ‘learnt’ to the receiver unit and will operate the output relays.

Erasing Transmitter Encoders form Memory

To enter and activate the erase mode the following sequence must be performed.

1. Power the receiver unit up and wait 10secs for the unit to enter ‘normal operation’ mode.
2. Switch the unit off and then on again in ~1sec intervals six times finally leaving the unit powered up.
3. Wait 5secs until a ‘ticking’ sound is heard for a period of 10secs by the operation and release of one of the relays.
4. Wait 10secs for the receiver unit to return to ‘normal’ mode
5. The unit has now erased all encoder data.

Note

During Learn and Erase the relays should not be connected to equipment that will be harmed by rapid changes of the relay polarisation.

Technical Specifications

'110' & '120' Transmitter Keyfob

Battery Type GP23AE (supplied)

Electrical Characteristics	Min	Typical	Max	Units
Supply Voltage	8.5	9	16	V
Supply Current : Quiescent		0		mA
Supply Current : Transmitting		8		mA
Operating frequency		433.92		MHz

'102' Transmitter Encoder

Battery Type PP3 (supplied)
Dimensions 110mm x 65mm x 24mm

Electrical Characteristics	Min	Typical	Max	Units
Supply Voltage	8	9	12	V
Supply Current	11	14	21	mA
Frequency: Wideband Narrowband	432.90 434.450	433.92 434.525	434.10 434.575	MHz MHz
RF Output Power (ERP) @ 433 MHz	-		10	mW

'009' Receiver Decoder

Dimensions 110mm (not including antenna) x 85mm x 35mm
Storage Temperature: -10 to +70^{o} Celsius. Operating Temperature: 0 to +55^{o} Celsius.

Electrical Characteristics	Min	Typical	Max	Units
Supply Voltage		230		VAC
Supply Current : Quiescent all relays operating		 19 260		 mA
Relay Rating at 230Vac*		5	12	A
Time delay from Tx on Switch to Rx Relay operation			100	mS
Time delay from Tx sw relax to Rx Relay release			300	MS

***The relay contacts in this unit are for functional use only and must not be used for isolation purposes**

RS232 Serial Data Output

The '009' receiver decoder board can have the capability of an RS232 serial data output via Connector J6. This requires the addition of an RS232 driver chip (MAX232) in position U5 and associated capacitors C5,6,7,8 (100nF). The data output connections from the PCB should be made to Pin 2 and the ground connection made to Pin 5 of a 9 way 'D' type connector. The COM port settings should be:-

Bits per Second: 9600
Data Bits: 8
Parity: None
Stop Bits: 1
Flow Control: None

The data stream contains the encoder serial number, button code and low battery status bit.
For more information on using the serial data output or for general enquiries, please call:

RF Solutions Ltd.
Unit 21, Cliffe Industrial Estate,
Lewes, E. Sussex, BN8 6JL, England
Tel +44 (0)1273 898 000 Fax +44 (0)1273 480 661

Email: sales@rfsolutions.co.uk *http://www.rfsolutions.co.uk*