



110 / 106 SERIES KEYFOB ENCODERS RADIO / INFRA-RED

- Highly Secure  Protocol
- AM Radio or Infra Red
- 1 – 3 Switch Options
- Led Indication of Transmission
- Directly Compatible With Keeloq Decoder
- Power Saving Auto Shut Off Feature
- Automatically Transmits Battery Low Condition.
- User Customisable Housing
- Board Level Programming of ID
- Range:
 - ⇒ AM-315MHz Upto 50m
 - ⇒ AM-433MHz Upto 100m
 - ⇒ Infra Red Upto 20m
- 433MHz version CE Compliant for use in Europe
- 315MHz FCC Compliant for use in USA



DESCRIPTION

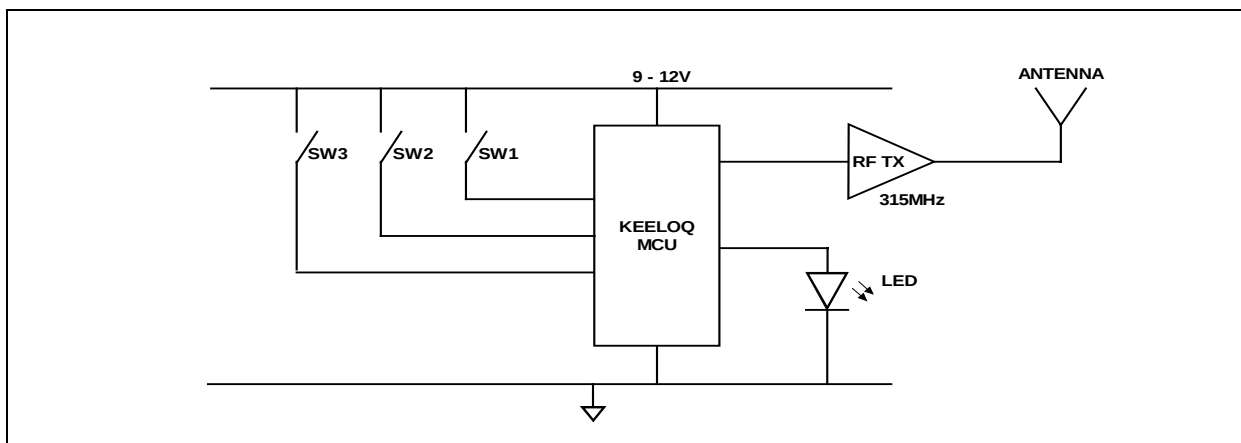
The RF Solutions KEELOQ range of miniature pocket Keyfob encoders are available as Radio or Infra Red transmitters.

When paired with one of the KEELOQ Rx decoder boards, a complete remote control system may be achieved, with comprehensive interfacing capabilities. This may also be high security "code hopping"

The keyfobs are housed in a tough ABS enclosure and supplied with Battery ready to operate.

An membrane overlay sticker is used to indicate the switch positions which may be customised to incorporate a specific logo or mark.

BLOCK DIAGRAM





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'110' Series Keyfob Encoders

Part Number	Description	Freq (MHz)	Range** (Metres)	Compatible Decoders
110C1-315AR1	AM Transmitter Keyfob 1 Sw	315.0	50	AM-HiRK-315
110C2-315AR1	AM Transmitter Keyfob 2 Sw	315.0	50	
110C3-315AR1	AM Transmitter Keyfob 3 Sw	315.0	50	
AM-110C1-433	AM Transmitter Keyfob 1 Sw	433.92	100	AM-HiRK-433 AMS-001B-433 AMS-0011-433 AMS-008C3B-433 AMS-105C3A-433
AM-110C2-433	AM Transmitter Keyfob 2 Sw	433.92	100	
AM-110C3-433	AM Transmitter Keyfob 3 Sw	433.92	100	

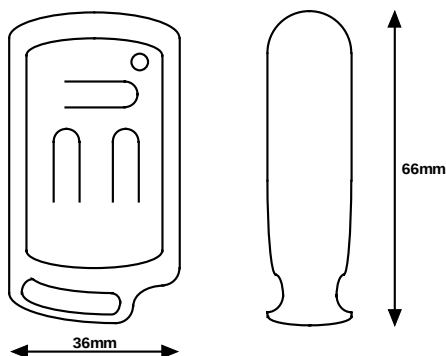
'IR' Series Infra Red Keyfob Encoders

These products use the HCS360 Keeloq Encoder Device

Part Number	Description	Range** (Metres)	Compatible Decoders
AM-106C1-433	IR Transmitter Keyfob 1 Sw	20	IR-105C4A
AM-106C2-433	IR Transmitter Keyfob 2 Sw	20	
AM-106C3-433	IR Transmitter Keyfob 3 Sw	20	

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

Mechanical Details



Operation

The Tx encoder transmits the KEELOQ code for as long as any push-button switch is depressed. Operation of the Tx encoder buttons will cause either a momentary or a latching action at the Rx decoder, depending on the configuration of the Rx decoder.

Battery Supply

The keyfob is supplied with a standard cigarette lighter 12V battery type GP23A or equivalent.

Low Battery

When the unit measures a low battery voltage level, the data transmitted includes a 'Low battery' status flag to the receiver decoder.

Auto Shutoff Feature

After 26seconds of continuous transmission the Keyfobs are programmed shut down. This is to prevent the battery being drained through accidental operation (i.e. if it is in the users pocket!).



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License Exemption

Europe: The transmitter encoders use ECM compliant radio transmitter modules and complies with ETSI330-220 and ETSI300-683.

USA: This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation."

Technical Specification

Max Storage Temperature	-10°C to +70°C		Max Operating Temperature	0°C to +55°C	
Electrical Characteristics	Min	Typical	Max	Dimension	
Supply Current (Transmitting)	9	12	16	mA	
Frequency 315MHz version		315.00		MHz	
Frequency 433MHz version	432.90	433.920	434.100	MHz	
Output Power (ERP) @ 433.92 MHz			10	mW	

Further Information: Developing a Keeloq Based Decoder System

The RFEVAL2 is a Evaluation Kit consisting of a several transmitter encoders and receiver decoder board. This kit provides a hardware development platform capable of accepting a variety of radio modules and antennae to enable the engineer to develop a Remote Telemetry application.

The kit provides a hardware development platform for:

- Embedding Telemetry
- Producing a Decoder with RS232 Output
- Range Testing
- Target Environment Testing
- Antenna Evaluation



This enables the engineer to select the optimum radio modules, antenna type and get a radio application working with the minimum time. Please see Datasheet DS123 Full schematics and parts list supplied.

R. F. 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

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