

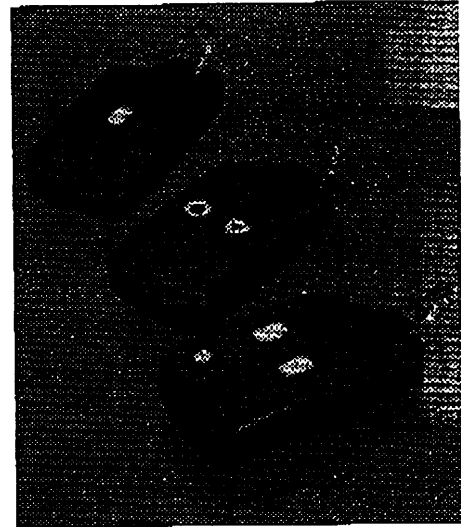


KEYFOB ENCODERS RADIO / INFRA-RED

AM-030Cn-XXX
AM-110Cn-XXX
IR-106Cn

FEATURES

- HIGHLY SECURE KEELOQ PROTOCOL
- AM 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 ENCLOSURE
- BOARD LEVEL PROGRAMMING OF ID
- RANGE:
 - ⇒ AM-030 RADIO UPTO 45m
 - ⇒ AM-110 RADIO UPTO 120m
 - ⇒ INFRA RED UPTO 20 m
- RADIO EMC COMPLIANT



DESCRIPTION

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

The KEELOQ encryption algorithm is the worlds most advanced protocol, providing an unprecedented level of security in data transmission.

Each encoder may be used with one of RF Solutions decoders, or with one of the KEELOQ decoder I/C's.

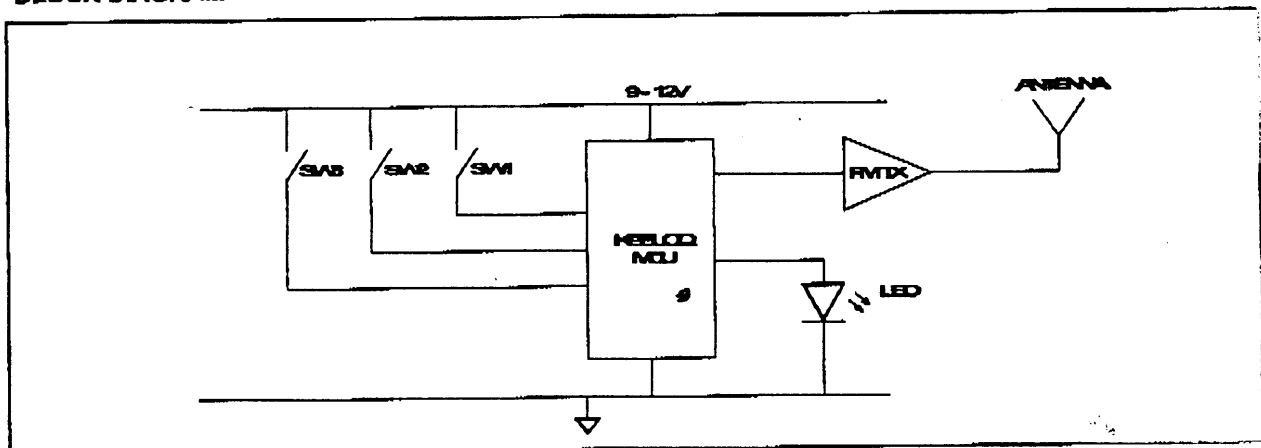
Alternatively, the user may decode the KEELOQ algorithm and embed within a PIC Microcontroller. (Please contact our sales dept to obtain this).

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

The encoder may be supplied as a pcb module or as a complete enclosed product supplied with battery ready to operate. Each encoder can be board level programmed with a specific manufacturers ID code if required

Custom solutions may also be supplied unique to customer specific requirements. Please contact RF Solutions for further information.

BLOCK DIAGRAM



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.

Low Battery

When the unit measures a low battery voltage level, the transmit LED flashes during transmission, and the data transmitted includes a 'Low battery' status flag to the receiver decoder.

Battery Supply

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

License Exemption

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

KEELOQ Protocol Configuration

All devices are supplied with an RF Solutions manufacturers ID, directly compatible for use with RF Solutions decoders.

Each encoder is supplied ready programmed with a unique random serial number. The decoder has the ability to memorise this serial number using a simple learn procedure (please see decoder datasheet).

How does KEELOQ technology work?

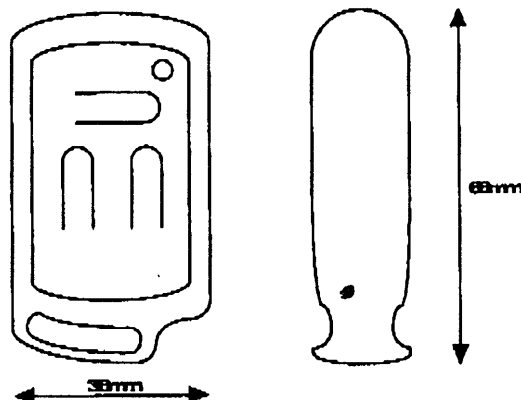
KEELOQ is based on a code hopping algorithm which provides Rock Solid Security. KEELOQ uses a programmable 64-bit encryption key that is unique to each device to generate 32-bit hopping code. The key length and hopping code combination reduces the possibility of unwanted access, due to code grabbing and code scanning, to essentially zero. Such CIA-like levels of security are desirable, but many manufacturers would expect them to be cost-prohibitive. KEELOQ offers the solution for affordable, Rock Solid Security that is the future of technology for the cars, homes and offices we wish to protect.

Programming the manufacturers ID / Custom Protocol Configuration

Access to the HCS301 / KEELOQ encoder is through the connector J4.

For supply of custom programmed product please see the form 'KEELOQ configuration template' this is the information we require in order to supply custom programmed devices.

Mechanical Details





KEYFOB ENCODERS RADIO / INFRA-RED

AM-030Cn-XXX
AM-110Cn-XXX
IR-106Cn

Absolute Maximum Ratings

Storage Temperature -10°C to +70°C
Operating Temperature 0°C to +55°C

ELECTRICAL CHARACTERISTICS	MIN	TYPICAL	MAX	DIMENSION
Supply Current (Transmitting) : AM	9	12	16	mA
Frequency	417.9170	418.000	418.0830	MHz
Frequency	432.90	433.920	434.100	MHz
Output Power (ERP) @ 418 MHz			0.25	mW
Output Power (ERP) @ 433.92 MHz			10	mW

PART NUMBER	DESCRIPTION
AM-030C1-XXX	AM KEELOQ Transmitter Keyfob 1 Switch xxxMHz
AM-030C2-XXX	AM KEELOQ Transmitter Keyfob 2 Switch xxxMHz
AM-030C3-XXX	AM KEELOQ Transmitter Keyfob 3 Switch xxxMHz
AM-030CUSTOM	Custom AM KEELOQ Transmitter

PART NUMBER	DESCRIPTION
AM-110C1-433	AM KEELOQ Transmitter Keyfob 1 Switch 433MHz
AM-110C2-433	AM KEELOQ Transmitter Keyfob 2 Switch 433MHz
AM-110C3-433	AM KEELOQ Transmitter Keyfob 3 Switch 433MHz
AM-110CUSTOM	Custom AM KEELOQ Transmitter

IR-106C1	Infra Red KEELOQ Transmitter Keyfob 1 Switch
IR-106C2	Infra Red KEELOQ Transmitter Keyfob 2 Switch
IR-106C3	Infra Red KEELOQ Transmitter Keyfob 3 Switch xxxMHz
IR-106CUSTOM	Custom Infra Red KEELOQ Transmitter

Should you require further assistance please contact

R. F. Solutions Ltd.,
Unit 21, Cliffe Industrial Estate,
South Street,
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>

R F Solutions is a member of the Low Power Radio Association.
All Trademarks acknowledged and remain the property of the respected owners.



Information contained in this document is believed to be accurate, however no representation or warranty is given and R.F. Solutions Ltd. assumes no liability with respect to the accuracy of such information. Use of R.F. Solutions as critical components in life support systems is not authorised except with express written approval from R.F. Solutions Ltd.