‘105’ SERIES REMOTE RECEIVER DECODERS

- Remote Decoder; Radio, Infra-Red, Pager
- 4 Relay Channels – Expandable To 15
- Radio Freqs; 433 / 458 / 868 MHz
- IP65 Rated Enclosure
- Easy Installation Via Screw Terminals
- 230Vac Or 12-30Vdc Supply
- 15 CMOS/TTL Channel O/P's
- Led Indication of Each Relay Output.
- Momentary or Latching Outputs
- 1 Timed Output Adjustable 0 To 255 Secs
- Relay Contacts 230Vac (5A pk, 2.5A cont)
- Requires No Radio Licence

Description

A general-purpose Rx decoder which may operate as radio, infra-red or pager system. The unit is supplied in a tough ABS enclosure with IP65 rating, complete and ready to operate.

As a pager system (using Globemaster Module G100UK), the unit is a stand-alone pager controller. As a radio or infrared Rx decoder, the system may be supplied as one of several options to enable the user to choose the optimum frequency modulation and range.

The Rx decoder has a self-learning feature, which enables it to learn the signature code of up to 50 individual RF Solutions KEELOQ Tx encoders.

Connections to the power supply and relay outputs are provided through screw terminals (these are the only connections required). The output relays are rated 2.5A @ 240Vac operating as either momentary of latched operation. An additional ”Low battery” LED and relay is also provided to indicate that the Tx encoder battery voltage is low.

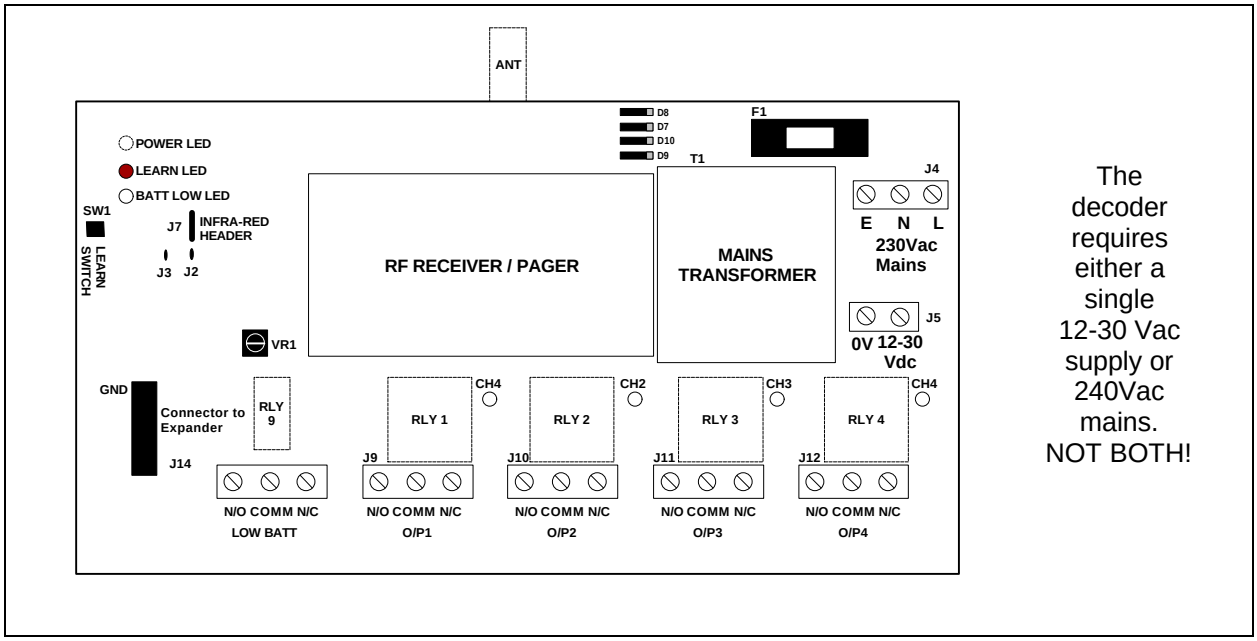
Output 1 has a variable time feature, which may be adjusted to give a timed output (upto 4 minutes). A further 15 momentary digital outputs are also provided for expansion using the ‘115’ Expander (See datasheet DS115).

Performance Table

Modulation	RF Frequency (MHz)	Transmit Output Power (mW)	Range ** (m)
Infra-Red	**-**	**-**	**20**
AM	**433**	**10**	**45**
QM	**433**	**10**	**100**
FMNB	**433NB**	**10**	**800**
FM	**458**	**500**	**3,000**
Globemaster		**See Datasheet DS100**	**The UK**

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

Connections



The decoder requires either a single 12-30 Vac supply or 240Vac mains. NOT BOTH!

Warning!

The unit is designed to be a fixed installation, which may be connected to a mains supply. Before removing the cover ensure that the mains input supply is removed. Any operation of the product that involves removal of the front cover should only be carried out by a competent person or qualified electrician.

Configuration the Outputs (Jumper Links J2, J3)

These links configure the operation of the digital outputs according to the table below.
NOTE: The link status is read **only** on power up, after changing the links please to remove and re-apply power.
The system is supplied with relay(s) type OMRON GL5114P or equivalent.
Note: The user must ensure that the load connected does not overload the relay!

J2	J3	RL 1	RL 2	RL 3	RL 4
Open	Open	Latch	Latch	Latch	Latch
Open	Connected	Timed	Momentary	Momentary	Momentary
Connected	Open	Latch	Latch	Momentary	Momentary
Connected	Connected	Timed	Momentary	Latch	Latch

Latch: The relay operates until the next valid transmission is received
Momentary: The relay operates momentarily, or for as long as the Tx encoder switch is held on.
Removing Timed Output: Turn the trimmer (VR1) fully anti Clockwise.

Timed Output (O/P1)

This is a variable timed output controlled by VR1. This may be adjusted from no delay to a maximum of 4 minutes 15 seconds. Turning VR1 anti-clockwise increases the output delay.
To remove the timed delay (for either momentary or latching mode) turn the trimmer fully clockwise.

Low Battery Output

The low battery feature informs the user that the Tx encoder used has a low voltage battery.
The LOW BATT channel operates if the Rx decoder has received a transmitted signal with low voltage signal present. This will continue to operate until a transmitted signal without the low voltage signal has been received.
NOTE: the LOW BATT relay is type BT47W/6 or equivalent.

Expanding the system to 15 Relay outputs

The EX115C16A unit is available to connect directly to the ‘105’ Series Decoder providing 15 momentary relay outputs. For further information please see Datasheet DS115.

Learning A New Transmitter Encoder

1. Press and release the programming switch (PSW1)
2. Note that the LED will illuminate
3. Depress and release the transmitter once, LED on the decoder will extinguish
4. Depress and release the transmitter again, LED on the decoder will flash
5. After the LED has stopped flashing the transmitter has been successfully taught to the decoder
6. This transmitter will now operate the system
7. To completely erase the transmitters, press PSW1 on the decoder for 10 seconds. The LED will turn off after the 10 seconds to indicate that the transmitter(s) have been erased

Erasing Existing Tx Encoder

1. To completely erase the Tx encoders, press SW1 on the Rx decoder for 10 seconds.
2. The learn LED will turn off after the 10 seconds to indicate the Tx encoder(s) have been erased

NOTE: You can not erase individual Tx encoders

**Range

Please note that 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, e.g. local environmental conditions, atmospheric conditions, interference from other radio transmitters.
In very worse case applications the range quoted may be reduced to 30% of the optimal range stated.

Technical Specifications

Dimensions: Enclosure : 190 x 120 x 60 mm (PCB: 174 x 106mm)

Storage Temperature; -10 to +70^{o} Celsius. Operating Temperature; 0 to +55^{o} Celsius.

Electrical Characteristics	Min	Typical	Max	Units
Supply Voltage	11.0	12.0	30.0	V
Supply Current : Quiescent		25		mA
Time from Encoder Switch depressed to Decoder output change			100	mSecs
Time from Encoder Switch release to Decoder output change			300	mSecs
All Relays operating		400		mA
Relay Rating (240Vac) RLY1-4		2.5	5	A
Low Battery Relay Rating (RLY9)			2	A @12Vdc

Part Numbering

‘AM105’ Series Decoders

Part Number	Relay Outputs	Freq (MHz)	Description	Range** (Metres)	Compatible RFSL Encoders
AM-105C3A-433	3	433.92	AM-Superegen Decoder	45	AM-030 Series

Universal IR, AMS and QM Series Decoders

Part Number	Relay Outputs	Freq (MHz)	Description	Range** (Metres)	Compatible RFSL Encoders
U105C4A	4	433.92	Universal Decoder	80 100 20 20	AM-110 Series 102C-433Q Series IR106 Series IR102 Series

‘FM105NB’ Series Decoders

Part Number	Relay Outputs	Freq (MHz)	Description	Range** (Metres)	Compatible RFSL Encoders
105C4A-433NBFR2	4	433.92	FM 433 Narrow Band Radio Modules for increased Range	800	102-433NB, 103-433NB Series
105C4A-458FR2	4	458.850	Long Range Remote Control	3000	102-458NB, 103-458NB Series

‘G105’ Series Decoders

Part Number	Relay Outputs	Freq (MHz)	Description	Range** (Metres)	Compatible RFSL Encoders
G100-105C4A	4	N/A	Pager Based Unit	The UK	Any DTMF Telephone

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

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RF Solutions is a member of the Low Power Radio Association