‘105’ SERIES REMOTE RECEIVER DECODER

- 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 2.5A @ 240VAC
- 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 with one of several modules 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.

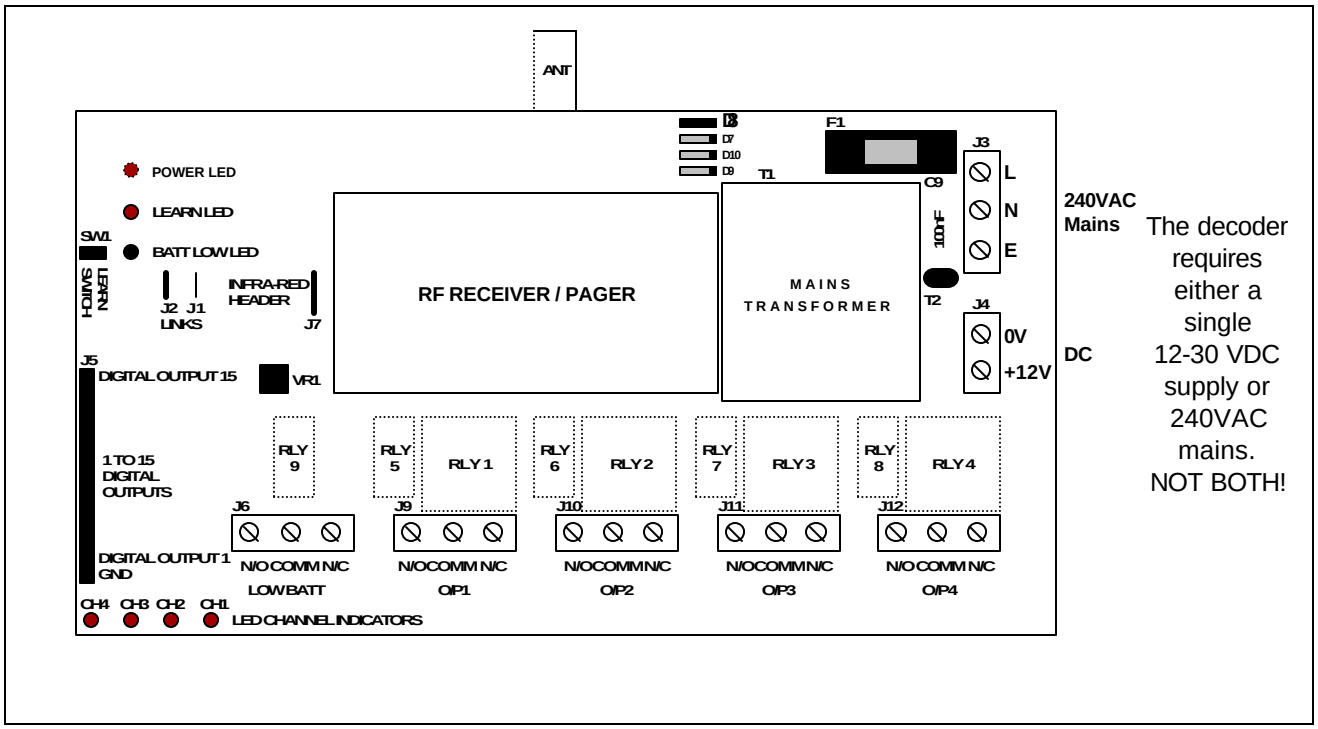
Output 1 has a variable time feature, which may be adjusted to give a timed output (upto 4 minutes). A further 15 momentary digital channels are also provided for expansion using the ‘115’ Expander (See datasheet DS115).

Performance Table

Modulation	RF Frequency (MHz)	Transmit Output Power (mW)	Range ** (m)
Infra-Red	**-**	**-**	**20**
AM	**433**	**10**	**45**
AMS	**433**	**10**	**100**
FM	**433**	**10**	**200**
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 upto 50%

RX DECODER CONNECTIONS



The decoder requires either a single 12-30 VDC 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.

CONFIGURING THE OUTPUTS (Jumper Links J1, J2)

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 remember to remove and re-apply power.

J1	J2	O/P 1	O/P 2	O/P 3	O/P 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.

RELAY OUTPUTS

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!

	Output Channel				
Relay Type	**1**	**2**	**3**	**4**	**Low Battery**
OMRON G5L114P	RLY 1	RLY 2	RLY 3	RLY 4	
BT47W/6					RLY 9

Timed Output

Output 1 has a variable timed output controlled by VR1. This may be adjusted from no delay to a maximum of 4 minutes 15 seconds. Turning VR1 clockwise increases the output delay.
To remove the timed delay (for either momentary or latching mode) turn the trimmer fully anti-clockwise.

Low Battery Relay

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

A relay expansion unit is available to connect directly to the '105' Series Remote Decoder via single connector (16 way screw terminal) and provides 15 momentary relay output channels, mapped directly from the '105 ' digital outputs.

For further information please see Datasheet DS115.

LEARNING A NEW TX ENCODER

1. Press the programming switch on the Rx decoder once (SW1)
2. The learn LED will illuminate
3. Press one of the switches on the Tx encoder once, learn LED on the Rx decoder will extinguish
4. Press one of the switches on the Tx encoder again, learn LED will flash
5. When the learn LED has stopped flashing this Tx encoder will now operate the system

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 worse case applications the range quoted may be reduced to 10% of the optimal range stated.

Decoder Connections: The digital outputs are located on connector J5. These are momentary CMOS/TTL compatible outputs.
The decoder output channels on J5 are directly linked to inputs on the encoder.

TX Encoder I/P					RX Decoder O/P	
Digital Inputs (J2)	**SW4**	**SW3**	**SW2**	**SW1**	**Digital Output (J5)**	**Output channel**
1	**0**	**0**	**0**	**1**	**1**	**1**
2	**0**	**0**	**1**	**0**	**2**	**2**
3	0	0	1	1	3	2,1
4	**0**	**1**	**0**	**0**	**4**	**3**
5	0	1	0	1	5	3,1
6	0	1	1	0	6	3,2
7	0	1	1	1	7	3,2,1
8	**1**	**0**	**0**	**0**	**8**	**4**
9	1	0	0	1	9	4,1
10	1	0	1	0	10	4,2
11	1	0	1	1	11	4,2,1
12	1	1	0	0	12	4,3
13	1	1	0	1	13	4,3,1
14	1	1	1	0	14	4,3,2
15	1	1	1	1	15	4,3,2,1

TECHNICAL SPECIFICATIONS

Dimensions:
Enclosure : 190 x 120 x 60 mm (PCB: 174 x 106mm)
Storage Temperature; -10 to +70° Celsius. Operating Temperature; 0 to +55° Celsius.

ELECTRICAL CHARACTERISTICS	MIN	TYPICAL	MAX	DIMENSION
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

'AMS105' Series Decoders

Part Number	Relay Outputs	Freq (MHz)	Description	Range** (Metres)	Compatible RFSL Encoders
AMS-105C3A-433	3	433.92	AM-SupHet Decoder	80	AM-110 Series

'FM105' Series Decoders

Part Number	Relay Outputs	Freq (MHz)	Description	Range** (Metres)	Compatible RFSL Encoders
FM-105C4A-433	4	433.92	FM	200	FM-102, FM-103, FM-107 Series
FM-105C4A-433NB	4	433.92	FM 433 Narrow Band Radio Modules for increased Range	1000	FM-102NB, FM-103NB Series
FM-105C4A-458	4	458.850	Long Range Remote Control	5000	FM-103, FM-107 Series

'IR105' Series Decoders

Part Number	Relay Outputs	Freq (MHz)	Description	Range** (Metres)	Compatible RFSL Encoders
IR-105C4A-433	4	N/A	Infra-Red Receiver Decoder 4 output relays	20	IR106, IR-102, 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 upto 50%

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