Issue 1284UH 0509

12-84-0000SE
POCSAG
RECEIVER/DECODER

PRODUCT INFORMATION

SEA AIR & LAND COMMUNICATIONS LTD, CHRISTCHURCH, NEW ZEALAND

12-84-0150SE VHF/12-84-0450SE UHF
POCSAG 2 Relay Output Receiver

GENERAL

The 12-84SE POCSAG 2 Relay Output Receiver is available in two versions, a VHF 12-84-0150 and a UHF 12-84-0450 which provide two relay outputs which can be controlled remotely via SALCOM paging systems or wide area paging networks.

OPERATION

The unit receives and decodes a numeric or alphanumeric pager call. If the received *unit number* matches the 12-84 *unit number* or *group number*, the relay outputs are switched according to the ON/OFF fields of the message.

INSTALLATION

Situate the 12-84 away from direct sunlight, vibration and strong heat sources and avoid close proximity to radio transmission equipment. The unit is not certified as intrinsically safe.

In good coverage areas fit the aerial to the aerial socket as shown on the cover. An external aerial may be needed where reception is poor.

Connect a 12 volt DC power supply to the power terminals (see figure 1). The 12-84 is protected against reversed supply connection. The power source must be reasonably noise free.

The connections to the relay contacts are made using the pairs of terminals, labelled 'relay 1' and 'relay 2'. These are normally open contacts, but can be configured to be normally closed by special order. Relays are not to be connected directly to mains voltages.

CORRECT OPERATION

The operation of the unit is shown by the RED System LED. Correct operation is shown by this LED flashing. If the LED does not light, check the voltage on the supply terminal block.

During the reception of a valid command with the correct RIC code, this LED will stay on for approximately one second. When a relay is commanded on, the corresponding LED will light next to the active relay.

UNIT NUMBER

Each unit will respond only to messages containing a matching *Unit Number*. Up to 99 unique unit numbers are available. Any number of units can be programmed with the same unit number. The *Unit Number* comprising of 2 digits is selected using the configuration software.

MONOSHOT

Output mono-shot (momentary) operation can be enabled by using the configuration software. The Relay output can have its own Mono-shot time, ranging from 25mS to 30 minutes in 25mS steps. Setting the value to 0 disables the mono-shot timer altogether, and the relay output is latched until commanded off.

RADIO CHANNEL FREQUENCY

The frequency of the radio channel is preset at the SALCOM factory. The nominal tuning range is: VHF 148 to 161 MHz and UHF 450 to 470 MHz.

SPECIFICATION

Frequency Bands	VHF: 148-161MHz UHF: 450-470MHz
Enclosure.	135mm x 100mm x 30mm. extruded aluminium case.
Supply Voltage	10v to 17v, Nominal 12V.
Current drain	Standby 60mA plus 18mA per energised relay.
Relay contacts	1Amp @24VDC (Not suitable for 240VAC connection)
Temperature limits	-10 to +50degC
Environmental protection	Needs protection from weather
Frequency selection method	Synthesized, programmable via Salcom 12-84SE PSD
RX sensitivity	Approx -124dBm
Serial Output	9600 Baud N:8:1
Aerial connection	BNC connector. Supplied with aerial
Paging protocol	POCSAG 512 or 1200baud, auto selected.

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COMMANDS

The OUTPUT Relay of the 12-84 controlled by a series of numeric commands sent in the form of a numeric or alphanumeric pager message.
*Note: For best sensitivity and range, it is better to send the command as a **numeric** paging message, as this uses the least number of characters.*

Command Format: **UUx..x0y..y9**

UU **Unit number**
This must be entered as 2 digits 00 - 99.

x **Relay to go ON.**
The standard relay in the 12-84 is designated as channel 1. Therefore the command should carry "1" in this position. If a second relay is fitted to the unit, this digit can be 1 or 2 or both. Any combination of Digits 1or 2 can be entered in any order. If none are entered then the function has no effect.

0 **End entry of Output ON values**
This terminates the list of outputs to turn on. This character in mandatory.

y **Relay to go OFF.**
As per "Relay to go ON" above, but this designates the relay to go OFF instead.

9 **End entry of Outputs OFF values & Ignore rest of entry.**
This terminates the list of outputs to turn OFF and Informs the 12-84-0000 to ignore the rest of the message. This allows a text message to follow the command.

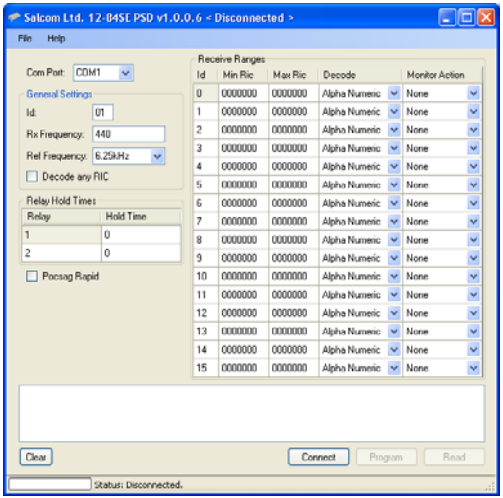
Examples: (All examples are for latching relay control, so "Hold Time" is set to 0. Examples assume a unit id of 11):

Action	Message Received
To close relay 1	11109
To open relay 1	11019
To close relay 2	11209
To open relay 2	11029
To close relay 1 and relay 2 together	111209
To open relay 1 and relay 2 together	110129

12-84 SETUP

The programmable parameters of the 12-84 can be configured using the SALCOM 12-45 programming cable (ordered separately) and the 12-84SE PSD software which can be downloaded from the support area of the Salcom web page www.salcom.co.nz.

(1) Connect the 12-45 programming cable to the programming connector on the 12-84 and to any PC com port.
(2) Apply power to the 12-84.
(3) Press the **Connect** button. If connecting is not successful, ensure that com port settings are correct.
(4) Once connected, click on the **Read** button and the current setup of the target unit will be read and displayed.
(5) Make any desired changes by entering data or modifying data in the appropriate fields.
(6) Reprogram the unit by clicking the **Program** button to upload the changes to the 12-84.



PSD SETTINGS

Com Port Serial communication port.
ID 2 character id which identifies this unit when the 12-84 relay protocol is used.
Rx Frequency The frequency to set receiver to. *Note that there is only a minor adjustment possible (within a few MHz) that can be made until the receiver must be manually aligned again.*
Ref Frequency The receiver synthesizer reference frequency.
Decode any RIC **Checked:** if all messages are to be decoded and sent to serial port. Messages, if not defined within a range are assumed to be alphanumeric.
Unchecked: the receiver will only decode messages within valid ranges (not beginning with 0000000) or using the POCSAG Rapid Relay control RIC.
Relay Hold Times If relay hold times are set to 0, once turned on, a relay will stay on until instructed to turn off. If a relay hold time is set, a relay when turned on will turn off again after the Hold Time (in ms) has elapsed. If POCSAG Rapid is used this Hold Time should not be less than 150ms for reliable operation (otherwise the relays will chatter).
Pocsag Rapid When selected, the Receiver will check more frequently for the preamble, and therefore support the 64 bit preamble that precedes the Salcom POCSAG Rapid format. When enabled the Relay Control RIC is checked and used if matched.
Relay Control This is the POCSAG Rapid control RIC. This RIC also includes the 7 RIC codes following the one specified. Pocsag Rapid transmitters will use the Salcom relay control protocol that will control the 2 on board relays. Decoded messages matched to the Relay control RIC are not sent out the serial port.
Receive Ranges Describes a ranges of RICs that should be managed in a similar fashion. To disable a range, set the first RIC in the range to 0000000.
Min RIC The RIC code between 8 and 2000000 that identifies the beginning of the range.
Max RIC The RIC code between 8 and 2000000 that identifies the end of the range. Max RIC may be the same as the min RIC, but may not be less than the min RIC.
Decode Describes how the messages matched in this range will be decoded (alphanumeric or numeric).
Monitor Action If a RIC is matched in this Range this action will be performed, either no action, close relay 1 or relay 2.
Note: this type of relay control is more vulnerable to false triggering than using the relay control protocol. This should not be used for general relay control , using the relay control protocol is the preferred method.

OPTIONS

Some options are available for the 12-84 to extend its use to other situations. These options can only be fitted by the SALCOM factory and must be requested at the initial order.

(1) An external aerial can be fitted by unplugging the existing aerial and plugging in the BNC aerial connector on the coaxial aerial lead.

(2) Fitted relays can be installed as normally closed.

CONNECTIONS

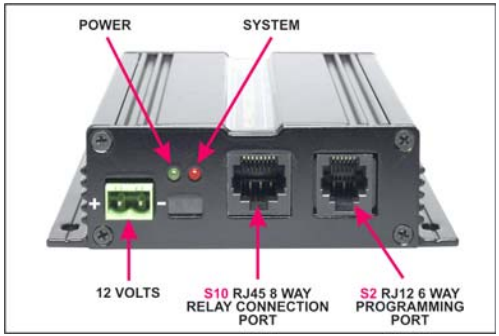


Figure 1
Pin numbering: looking into the sockets with the power connector on the left, pin 1 is on the left.

S2 RJ12 - 6 WAY PROGRAMMING PORT

Pin	Description
1	Ground
2	System LED
3	Unused
4	Power LED
5	RS232 out
6	RS232 in

S10 RJ45 - 8 WAY RELAY CONNECTION PORT

Pin	Description
1	Unused
2	Unused
3	Relay 2 Normally Open
4	Relay 2 Normally Closed
5	Relay 2 Common
6	Relay 1 Normally Open
7	Relay 1 Normally Closed
8	Relay 1 Common

SERIAL DATA OUTPUT

If the need arises to monitor paging messages on a network, the 12-84 can provide serial data output (9600 Baud N:8:1) via the progamming connector. The 12-84 can be connected to the serial port of a PC using a Salcom 12-45 programming lead. The format of the output string is as follows:

512.A.S.0.1234567 TXT CR

512/1200	= Baud Rate
A or N	= Alpha or Numeric
S or I	= (S) non inverted (I) inverted
0	= Level
1234567	= RIC
TXT	= message
CR	= Carriage return

Salcom's VisualPET paging software can be used to log the received data.

WARRANTY

Our Products are warranted for a period of 12 months from date of purchase against faulty materials and workmanship. Should any fault occur the unit should be returned to the vendor, freight pre-paid. Please include a description of the fault to assist with prompt return. Any unauthorized alterations or repairs will invalidate the warranty.

DISCLAIMER

All information provided in this document is carefully prepared and offered in good faith as a guide in the installation, use and servicing of our products. Installers must ensure that the final installation operates satisfactorily within the relevant regulatory requirements. We accept no responsibility for incorrect installation.

We reserve the right to change products, specifications, and installation data at any time, without notice.

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