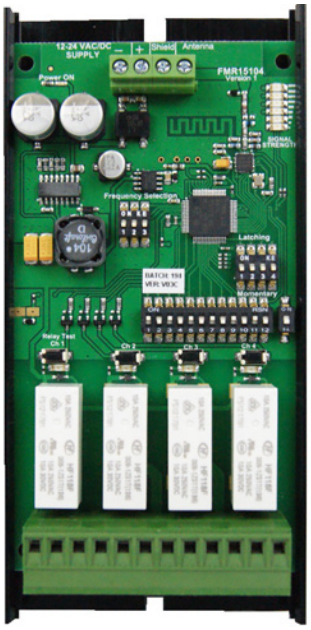
FMR15104

4-Channel 151MHz Receiver



Features

• Four channel receiver with relay outputs

• Supply voltage can be 12 – 24 Volts AC or DC

• Low current consumption

• Built-in noise or signal strength indicator

• User can select 8 different frequencies

• Momentary and Latching modes are all user selectable

• Easy code setup with dip switch settings

• Optional QM150 bracket available for easy mounting to cases or walls. C1020 case is also available.

Applications

• Pump Control

• Long distance panic button

• On/Off applications in agricultural devices

• Security alarm

• Basic Telemetry eg. Water level indication

Description

This receiver gives you four relay outputs with a contact rating of 8 amps at 240VAC. The relay mode can be set to momentary or latching.

The user can select 8 different narrow band frequencies and program unlimited number of transmitters to the receiver. With a narrow band FM 151MHz signal from the transmitter a line of sight operating range of 5000 metres is possible. The receiver uses a crystal oscillator circuit that ensures high frequency stability allowing optimal performance in the receiving range.

Output Modes

Relay output on the receiver can function in either momentary or latching mode. By default the mode is set to momentary. Modes selectable from the 4-way dipswitch. Dipswitch 1 corresponds to relay channel 1 and dipswitch 2 corresponds to relay channel 2 and so on.

Factory Default = Momentary

Momentary - Output is active for as long as the transmitter button is pressed.
This is a standard mode on most automatic gates or garage door openers.

Latching - Output remains active until next press of the transmitter button.
Similar to switching "on" and "off" a light.

Customised Software

Custom output modes can be programmed to do special functions. Contact Elsema for more details

Coding

The 12 way dip switch on the receiver sets the 12 bit unique code for the system. This has to be matched to that on the transmitter. **Do not use the factory default code.**

Apart from the 12 way dip switch there is an additional 1 way dip switch :

This 1 way DIP switch on the right side of the 12 way dip switch denotes the channels. See table below.

Generally to use a 4 channel Tx to 4 channel Rx match all the 13 dip switch (12way + 1way just on the right side of the 12 way).

To use an 8 channel Tx to control 2 x four channel Rx match all the 12 dip switch and switch 13 “OFF” on the first Receiver and switch 13 “ON” on the second Rx.

To use 4 x single channel transmitter to control a 4-channel receiver, match all 13 dipswitches and change dip switch 14 & 15 on the transmitter as per below table.

SW14	SW15	Channel
OFF	OFF	1
OFF	ON	2
ON	OFF	3
ON	ON	4

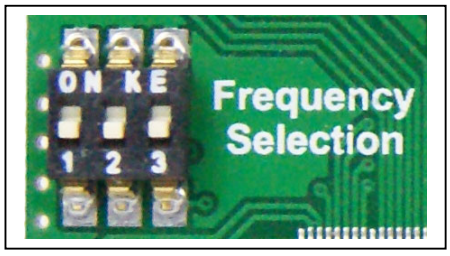
Signal Strength Indicator

The 151MHz receivers have green signal strength LED’s on the board. The table below indicates the level of the valid transmitted signal.

6 LED’s on	-70dBm	Very Strong signal	Very Reliable operating conditions
5 LED’s on	-75dBm	Very Strong signal	Very Reliable operating conditions
4 LED’s on	-80dBm	Very Strong signal	Very Reliable operating conditions
3 LED’s on	-90dBm	Strong signal	Very Reliable operating conditions
2 LED on	-100dBm	Good signal	Reliable operating conditions

Noise Strength Indicator

If more than 2 led is “ON” without a valid transmission, this indicates that there is noise on the frequency selected. Change the **3-way dipswitch** on the **receiver module** to select a different frequency. Following is a table with the Dipswitch settings and the corresponding frequencies.

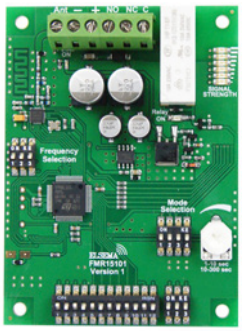
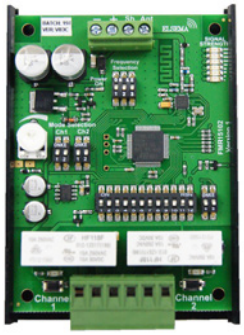
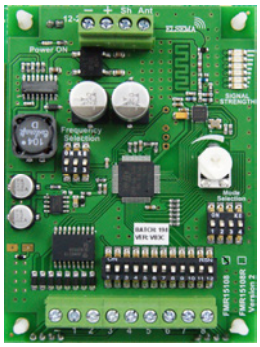
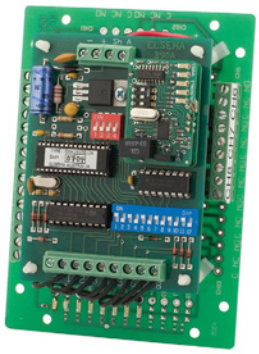
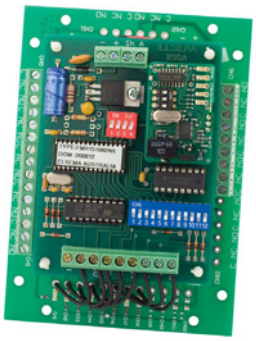


Frequency	1	2	3
151.600 MHz	On	On	On
152.375 MHz	Off	On	On
151.775 MHz	On	Off	On
151.400 MHz	Off	Off	On
151.175MHz	On	On	Off
151.025 MHz	Off	On	Off
150.900 MHz	On	Off	Off
150.825 MHz	Off	Off	Off

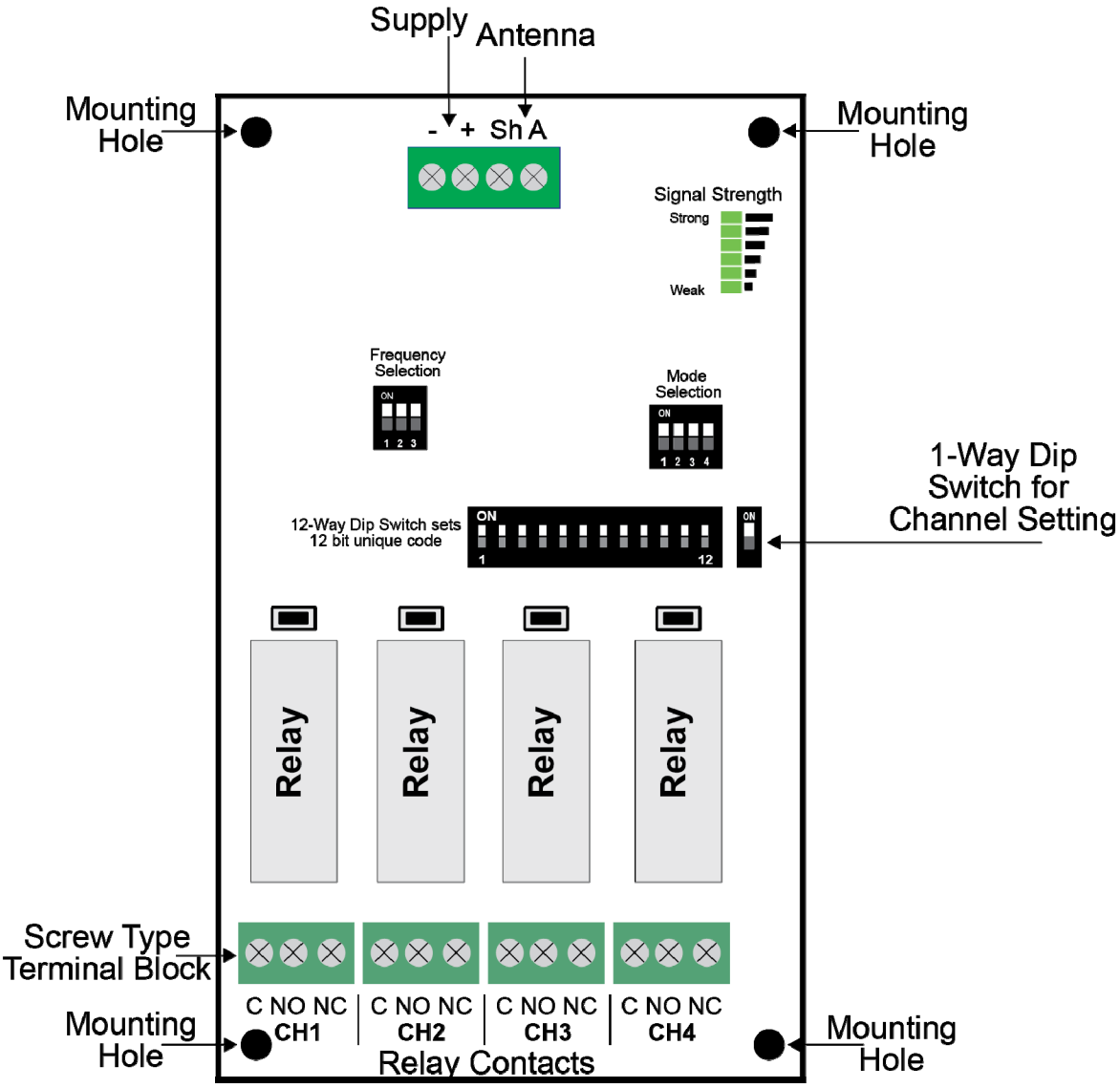
Technical Data

Supply Voltage	12 – 24 Volts AC or DC. Can use Elsema's AC power pack (12PP-1000) Supply lines should be less than 3m long to comply with radio frequency authorities	
Current Consumption	24mA Standby at 12VDC	100mA if both relay "ON" at 12VDC
Receiving Frequency	151.6MHz (8 selectable frequencies. See table above) 161MHz for New Zealand 154MHz for United States of America and Canada	
Operating Temperature Range	-5 to 50°C	
Outputs	Four change over relay outputs, each rated at 8 Amps/240 Volts	
Relay Contacts	Common (C), Normally Closed (NC) & Normally Open (NO)	
Antenna	50Ω, 151MHz Antenna, Elsema ANT151M for maximum performance	
Dimensions	130 x 70 x 30mm	
Mounting Hole Size	3.97mm or 5/32"	
Useable Transmitters	All FMT151 series (with correct setting on the dip switch). See Transmitter datasheet for details.	
Useable operating range	Up to 5000 metres, depending on installation and type of antenna used. Recommended Antenna is Elsema ANT151M	

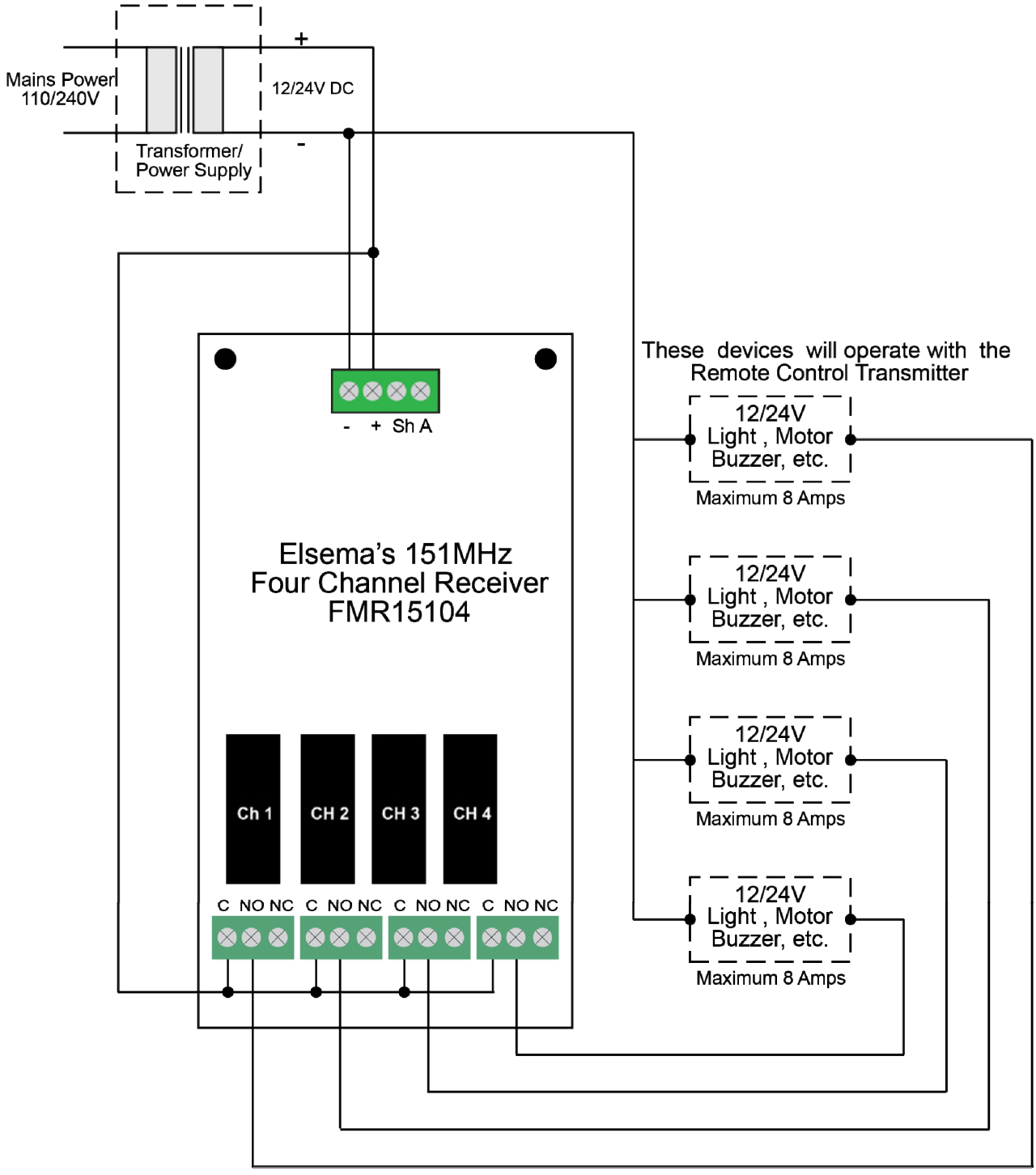
Products in the Range

			
FMR15101 **1-Channel**	**FMR15102** **2-Channel**	**FMR15101240** **1- Channel 240VAC Supply**	**FMR15102240** **2- Channel 240VAC Supply**
			
FMR15104 **4-Channel**	**FMR15104240** **4- Channel 240VAC Supply**	**FMR15108** **8-Channel**	**FMR1510812R** **8-Channel, 12V Supply**
			
FMR1510824R **8-Channel, 24V Supply**			

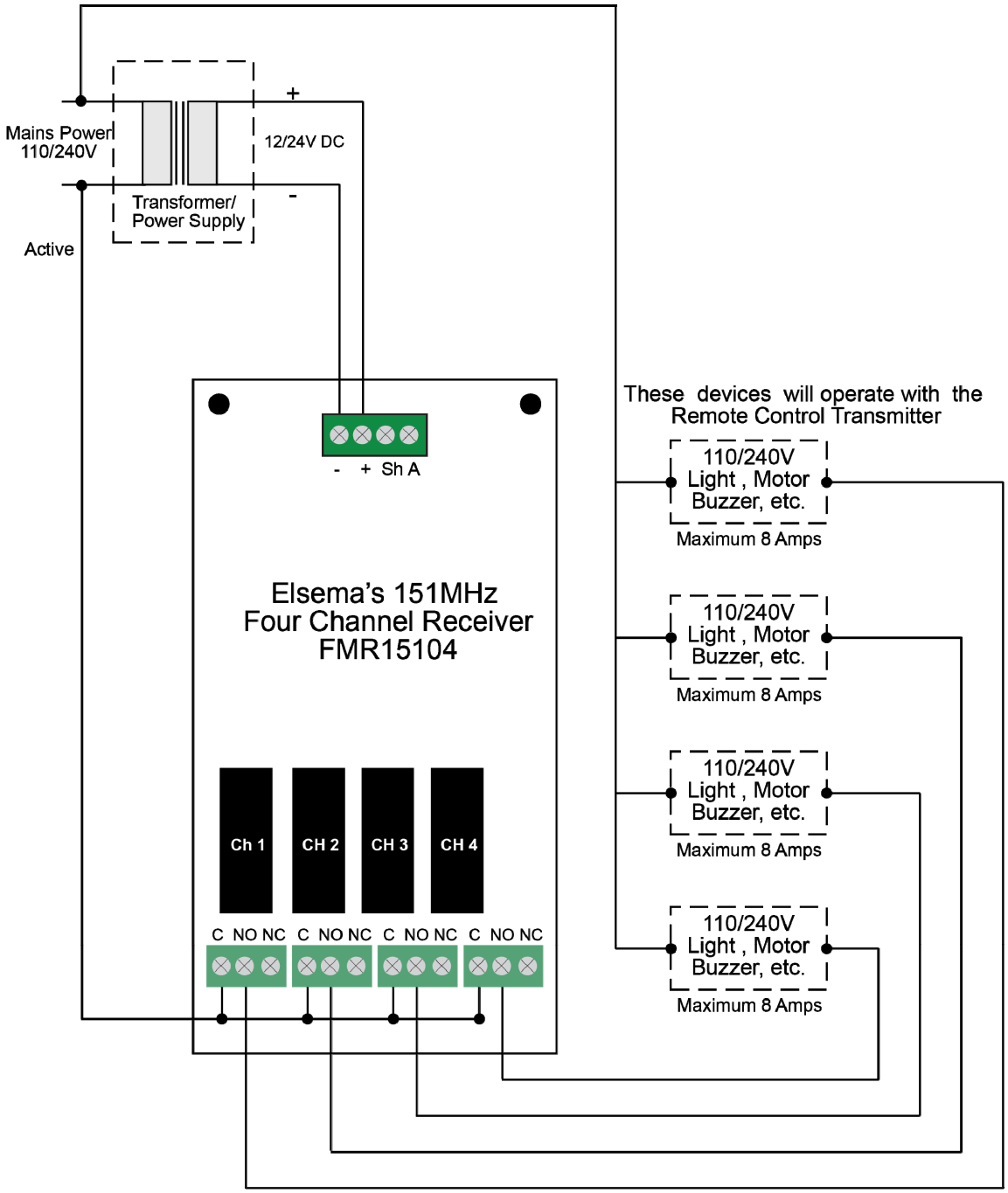
Block Diagram



FMR15104 12/24 VAC/DC Application



FMR15104 110/240 VAC Application



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