

ELSEMA

**FMR15102240 2
Channel FMR
Receiver with
Relay Outputs**



ELSEMA FMR15102240 2 Channel FMR Receiver with Relay Outputs Owner's Manual

[Home](#) » [ELSEMA](#) » ELSEMA FMR15102240 2 Channel FMR Receiver with Relay Outputs Owner's Manual 

Contents

- [1 ELSEMA FMR15102240 2 Channel FMR Receiver with Relay Outputs](#)
- [2 Product Usage Instructions](#)
- [3 FAQ](#)
- [4 Features](#)
- [5 Applications](#)
- [6 Description](#)
- [7 Different Modes for the Output](#)
- [8 Technical Data](#)
- [9 Products in the Range](#)
- [10 Block Diagram](#)
- [11 Application Diagram](#)
- [12 Contact](#)
- [13 Documents / Resources](#)
 - [13.1 References](#)

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ELSEMA FMR15102240 2 Channel FMR Receiver with Relay Outputs



Product Usage Instructions

Power Connection:

Connect the receiver directly to a mains supply of either 110VAC or 240VAC.

Programming Transmitters:

Select one of the 8 narrow band frequencies available and program an unlimited number of transmitters to the receiver. Ensure the transmitter code matches the receiver's unique 12-bit code set by the dip switches.

Relay Output Modes:

Set the relay output mode using the 2-way DIP switch:

- **Momentary:** Output is active while the transmitter button is pressed.
- **Latching:** Output remains active until the next press of the transmitter button.
- **Delayed OFF:** Output remains active for a set duration.
- **Security:** Output remains active until power to the receiver is removed.

Signal Strength Indicator:

The green signal strength LEDs on the board indicate the level of the received signal. Refer to the provided table

for signal strength interpretation.

Noise Strength Indicator:

If more than 2 LEDs are on without a valid transmission, it indicates noise on the selected frequency. Change the dip switch settings to select a different frequency as per the provided table.

FAQ

- **Q: How far is the operating range of the receiver?**
 - A: The receiver has a line of sight operating range of up to 5000 meters.
- **Q: What are the available relay output modes?**
 - A: The available relay output modes are Momentary, Latching, Delayed OFF, and Security.

Features

- Supply voltage 110-240VAC
- High capacity output relay
- Pluggable type terminal blocks for easy installation
- Output modes can be selected by the user.
- Also available in IP66 rated case (C1020) for outdoor installations.

Applications

- Pump Control
- Long distance light control
- On/Off applications in agricultural devices
- Basic Telemetry eg. Water level indication
- Security alarm

Description

This receiver can be connected directly to the mains supply, 110VAC or 240VAC. The relay output is rated at 8 amps at 240VAC. The relay mode can be set to momentary, latching, security latching or adjustable timed Off delays.

The user can select 8 different narrow band frequencies and program unlimited number of transmitters to the receiver. With the 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.

Connecting wires to the receiver has been made easier by the pluggable type terminal block. On board LED indicates when power is connected and the relay is being activated.

The receiver comes with a Quick Mount or in a weatherproof case with an IP66 rating.

Available with Options



FMR15102240
2- Channel 240VAC Supply



FMR15102240E
2- Channel 240VAC Supply in
an IP66 rated

Different Modes for the Output

2-Way DIP Switch Mode Settings

The output relay will respond in the following manner when receiving the correct signal from a transmitter

Relay Mode Selection Ch1/Ch2		
<div>ON</div> <div>1 2</div>	All OFF	Momentary
	1 ON	Latching
	2 ON	Delayed OFF 2-300 sec
	1 & 2 ON	Security Latching

- 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.

- Delayed OFF – Output remains active for the duration of the time set by the trim pot.
- Security Latching- Output remains active until power to the receiver is removed. Similar to security alarms and fire alarms.

Coding

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

Apart from the 12 way dip switch there will be an additional dip switch depending upon the receiver type:

- Two channel receiver will have a 2 way dip switch.

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

FMR15102

2-Way DIP Switch & 2 Relay Output

SW13	SW14		Relay 1	Relay 2
OFF	OFF		Ch1	Ch2
OFF	ON		Ch3	Ch4
ON	OFF		Ch5	Ch6
ON	ON		Ch7	Ch8

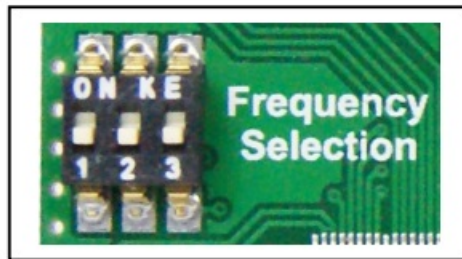
Signal Strength Indicator

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

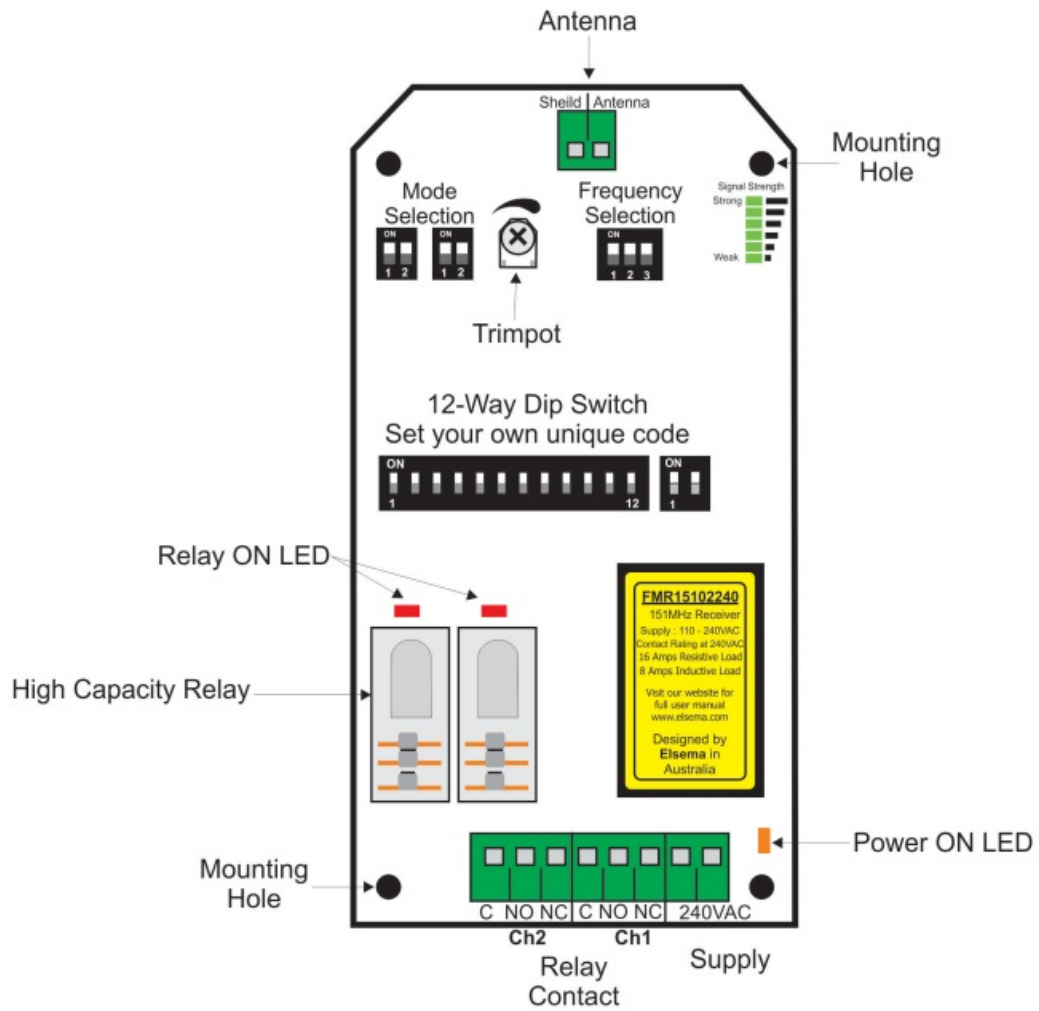
Technical Data

Supply Voltage	110 – 240Volts AC Mains
Current Consumption	18mA at 240V AC
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
Connection	Supply & Output – pluggable type terminal blocks
Output	Change over relay output, rated at 16 Amps of resistive load and up to 8 Amps of inductive load
Antenna	50Ω, 151MHz Antenna, Elsema ANT151M for maximum performance
Dimensions	130 x 70 x 37mm
Mounting Hole Size	3.97mm or 5/32"
Useable Transmitters	All FMT151 series (with correct frequency setting) refer to the table above

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 with Open Collector Outputs	FMR15108R 8-Channel with relay outputs

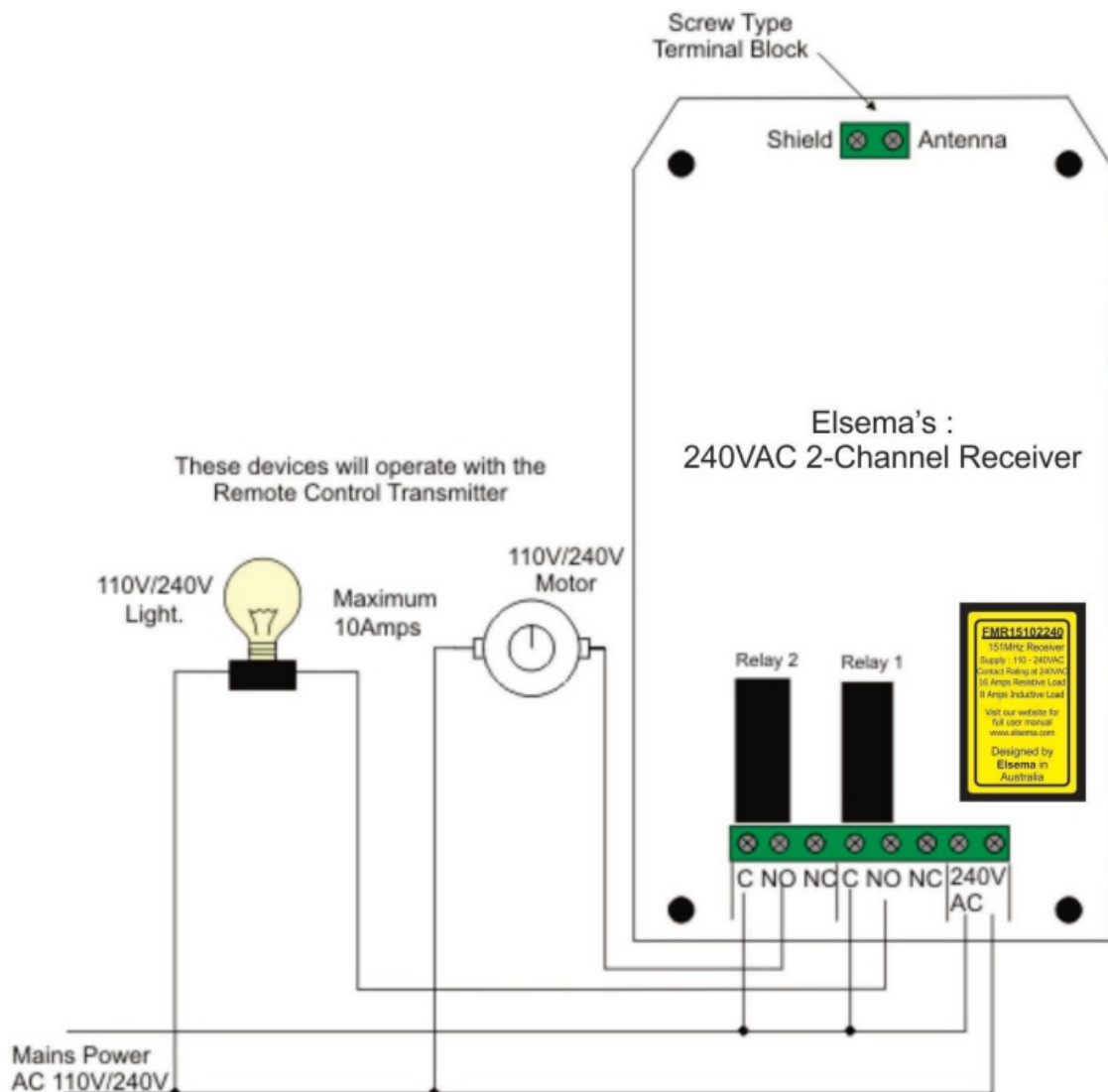
Block Diagram



Relay output is voltage free contact

Application Diagram

FMR15102240



Contact

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Documents / Resources

	<p>ELSEMA FMR15102240 2 Channel FMR Receiver with Relay Outputs [pdf] Owner's Manual FMR15102240, FMR15102240E, FMR15102240 2 Channel FMR Receiver with Relay Outputs, FMR15102240, 2 Channel FMR Receiver with Relay Outputs, FMR Receiver with Relay Outputs, Receiver with Relay Outputs, Relay Outputs</p>
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References

- [User Manual](#)

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