

## FMR-202 27MHz RECEIVER WITH TWO CHANNELS

The FMR-202 is a crystal controlled two-channel receiver, comprising of receiving, decoding and relay-output sections. A specially designed MICRO-PROCESSOR is employed in the decoder section, which ensures operation at low supply voltage, highest reliability, associated with very low power drain.

The receiver works on a digitally encoded 27 MHz frequency modulated (FM) signal. It may be used in applications such as the remote control of garage doors, gates, lights, alarms or in any other new or existing installations where the use of conventional wiring is difficult or impossible to accomplish.

If the code, from the transmitter matches the setting of the 10-way code switch on the receiver (up to 1024 combinations), an output is obtained i.e. the relay operates. This relay provides a clean set of contacts for switching DC current up to 5 Amps.

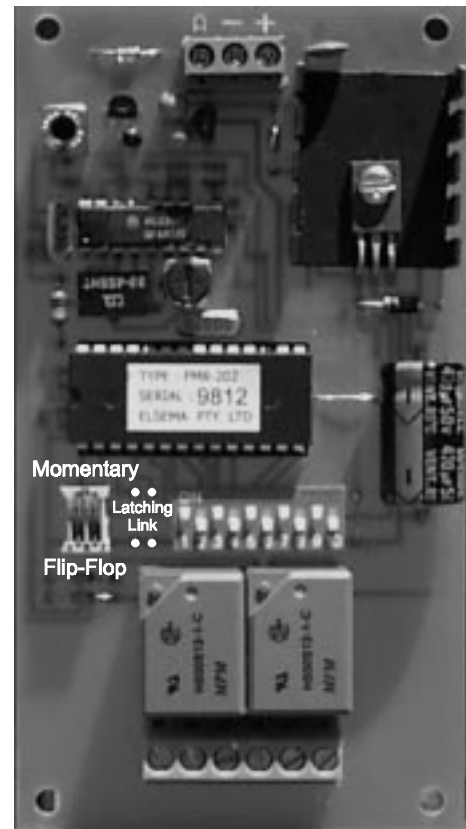
The two channels address code switch eleven. While code switch twelve is addressed with the wire link next to the receiver code switch. This feature enables the user to operate single channel transmitters on either of the two channels.

The supply and antenna connections to the receiver are via a three-way screw-type terminal block, with a separate six-way terminal block for the relay connections.

The receiver can be clipped to a Quick Mount enabling the receiver to be easily mounted against walls, roof, etc.

As an antenna, a piece of any type of wire, approximately one meter long, will be sufficient for a reliable control range of up to 180 metres, with our FM-... series transmitters. A longer wire or a proper 27 MHz CB-Antenna should further improve performance in reception.

The two-way code switch (See below picture) allows individual control of each relays output mode. In the momentary mode the output relays are only activated while the correct signal is received. In the flip-flop mode the output relays are toggled with every correct incoming signal. This enables the direct use for switching on/off lights etc. In flip/flop mode, the relays are off at the initial "power-up".



### **Latching Feature**

Inserting a .4" link into the latching link holes will configure the channels to latching "ON", when the correct signal is received. To turn relay "OFF" power to the receiver must be momentarily turned "OFF".

## TECHNICAL DATA ON THE FMR-202

SUPPLY VOLTAGE	11.0 to 28 VDC. 10.0 to 28 VAC Can use Elsema AC power supply (PP12 or PP24). Supply lines should be less than 3 metres long to comply with radio frequency authorities.
CURRENT CONSUMPTION	15.0 mA stand-by at 12 VDC Supply 44.0 mA if one relay is "ON" at 12VDC. 73.0 mA if both relays "ON" at 12VDC.
RECEIVING FREQUENCY :	27.145 MHz (Other frequencies available on 27.045, 27.195 and 27.455 MHz).
TYPE OF CRYSTAL USED :	26.690 MHz, 3rd overtone, 20 pf, 30ppm at 0 to 50°C.
IF FREQUENCY :	455 KHz
SELECTIVITY :	At least -40 dB at + - 10 KHz.
SENSITIVITY :	Better than 1 $\mu$ V (For relay to switch on).
TYPE OF DEMODULATION :	Narrow-band-width Frequency Modulation (FM).
BAND WIDTH :	+ - 2.5 KHz
DECODING SYSTEM :	On board 10-way coding switch (1024 Combinations).
OUTPUT :	Two change over relays, rated at 5 Amps/240V each
RELAY CONTACTS :	Two sets of : Common (C) Normally Close (NC) and Normally Open (NO)
<u>CONNECTIONS</u>	
SUPPLY AND ANTENNA :	3-way screw type terminal block.
TWO RELAYS :	6-way screw type terminal block.
ANTENNA :	50 ohms, 27 MHz CB-Antenna or piece of approximately 1 metre of wire.
DIMENSIONS :	130 X 70 X 20 mm
WEIGHT :	89 grams
USEABLE TRANSMITTERS :	All Elsema type FMT-... series.

# FMR-202 BLOCK DIAGRAM

