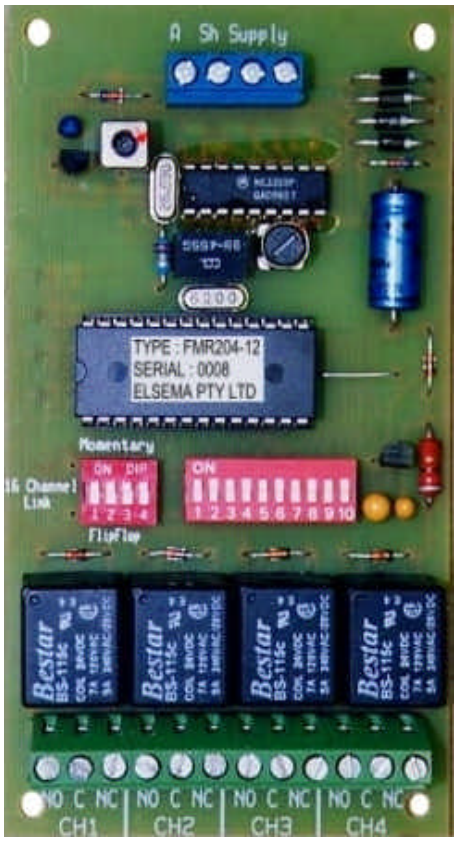
# FMR204-12 and FMR204-24
# 27MHz RECEIVER with 4 CHANNELS, 12 or 24 VOLT SUPPLY

The FMR204-12 and FMR204-24 are crystal controlled four-channel receivers, 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.

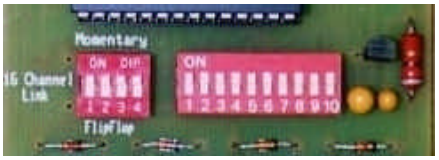
If the code of the input signal (from a transmitter) matches the setting of the 10-way code switch on the receiver (up to 1024 combinations), an output is obtained i.e. the relay operates. This relay provides a clean set of contacts for switching DC current up to 5 Amps. Code switches eleven and twelve are addressed by the four channels. The four channels are binary encoded on eleven and twelve.

The supply and antenna connections to the receiver are via a four-way screw-type terminal block, with a separate twelve-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 400 metres, with our FMT-... series transmitters. A longer wire or a proper 27 MHz CB-Antenna should further improve control range. If a CB-Antenna is used, the shield of the cable must be connected to the "Sh terminal".

The four-way code switch (See below picture) allows individual control of each relays output mode. In the momentary mode (MOM) the output relays are only activated while the correct signal is received. In the flip/flop mode ("FF") 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".

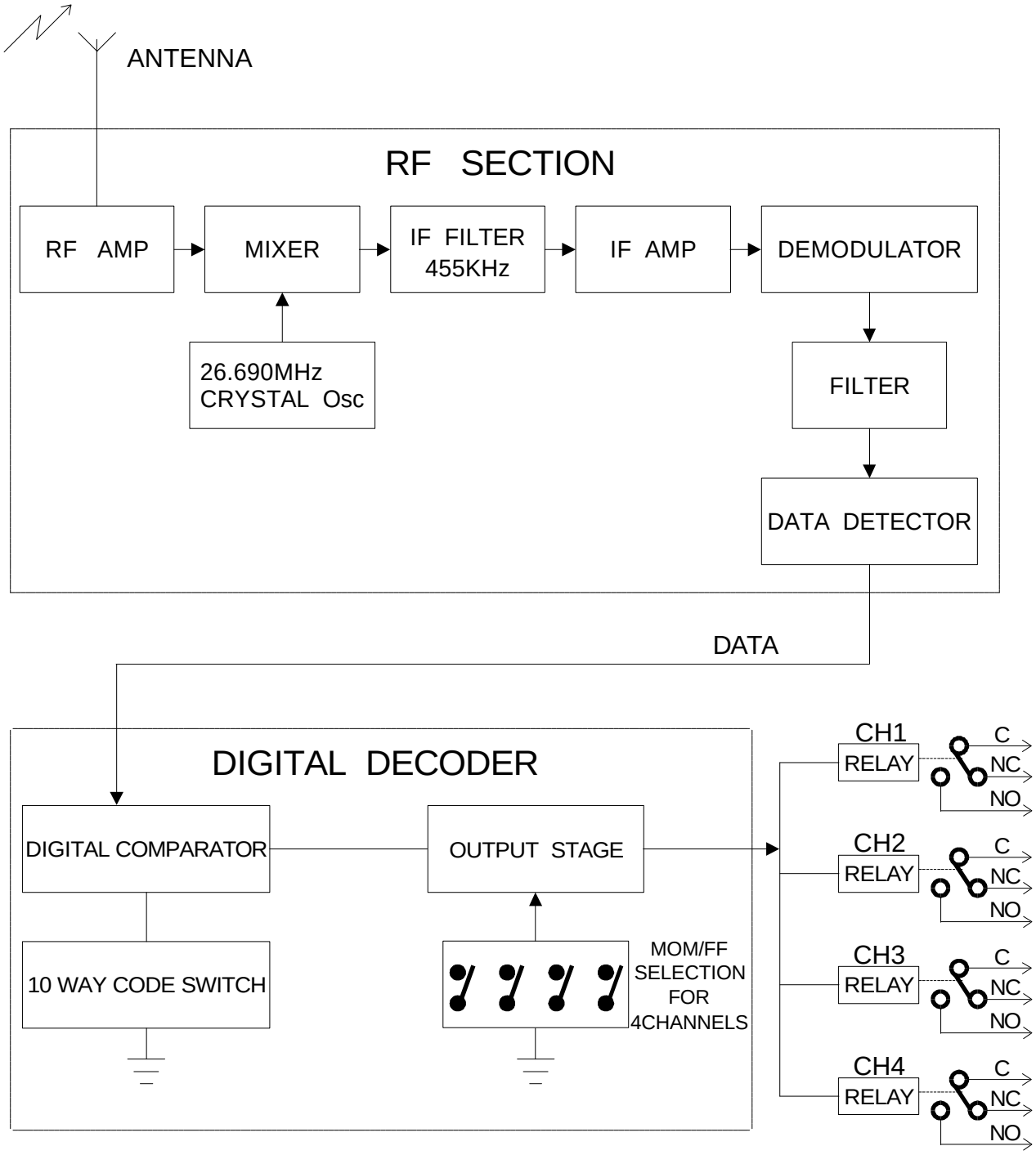



Care must be taken, not to bring a receiver near strong magnetic fields, such as DC-Motors, speakers, magnets for reed switches, transformers etc. as it would magnetise the coils and may cause severe de tuning.

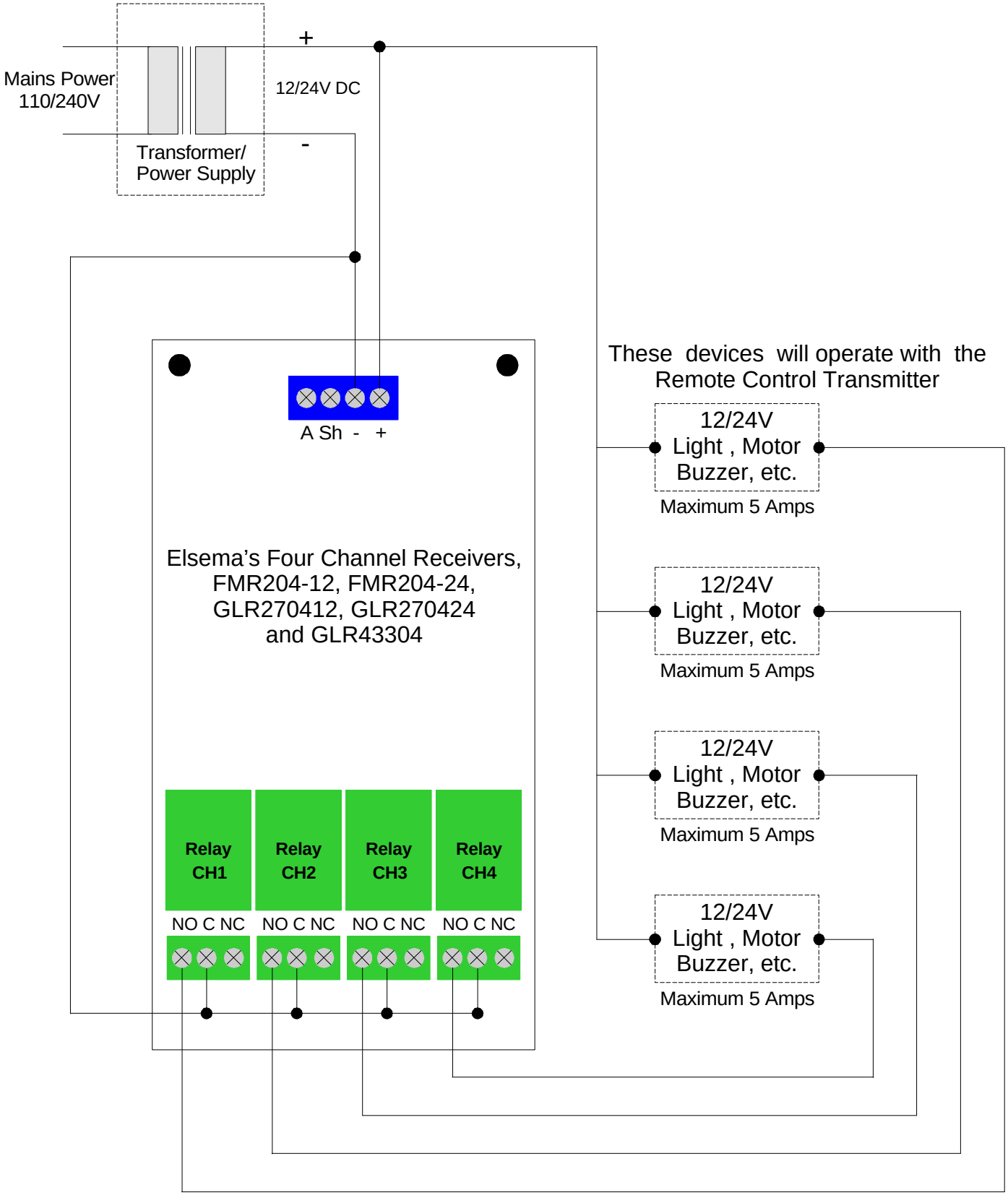
# TECHNICAL DATA ON THE FMR204-12 AND FMR204-24

| | |
|---|---|
| SUPPLY VOLTAGE | |
| FMR204-12 : | 10.5 to 14 VAC/DC.<br>Can use Elsema 12-Volt AC Power Supply (PP12). |
| FMR204-24 : | 22 to 28 VAC/DC.<br>Can use Elsema 24-Volt AC Power Supply (PP24). |
| CURRENT CONSUMPTION | |
| FMR204-12 : | 13.50mA stand by,<br>120mA if four relays on. |
| FMR204-24 : | 13.50mA stand by,<br>80mA if four relays on. |
| RECEIVING FREQUENCY : | 27.145 MHz (Other frequencies available on 27.045, 27.195 and 27.455 MHz. The 27.455 frequency is not available for Australia). |
| 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 1µV (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 Digital Channels). |
| OUTPUT : | Four change over relays, rated at 5 Amps/240V each |
| RELAY CONTACTS : | Four sets of : Common (C) Normally Close (NC) and Normally Open (NO) |
| CONNECTIONS | |
| SUPPLY AND ANTENNA : | 4-way screw type terminal block. |
| FOUR RELAYS : | 12-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 |
| MOUNTING : | Clip into a QM150 Quick Mount or C160 plastic case |
| WEIGHT : | 112 grams |
| USEABLE TRANSMITTERS : | All Elsema type FMT-... series. |

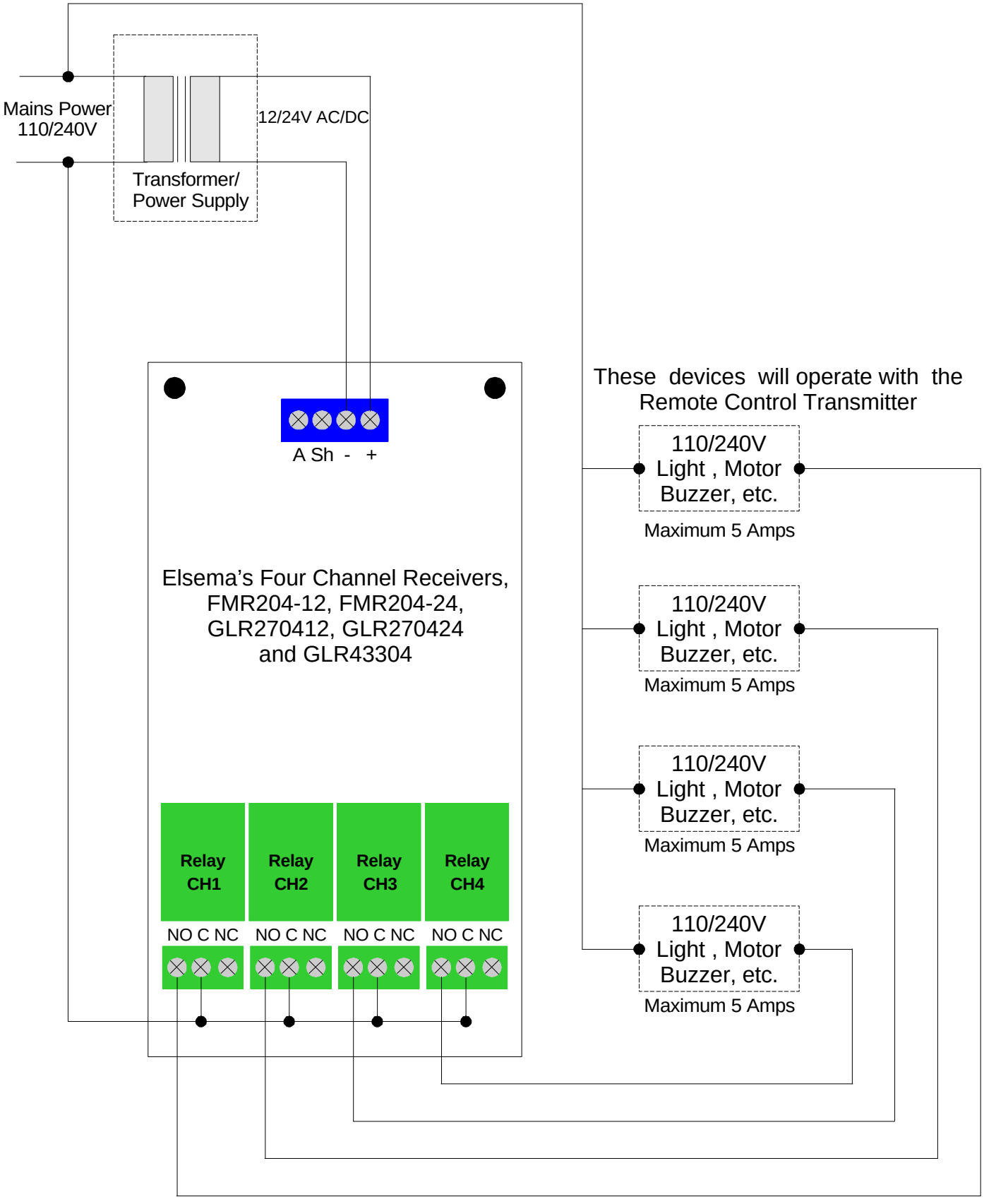
# FMR204-12 and FMR204-24 BLOCK DIAGRAM



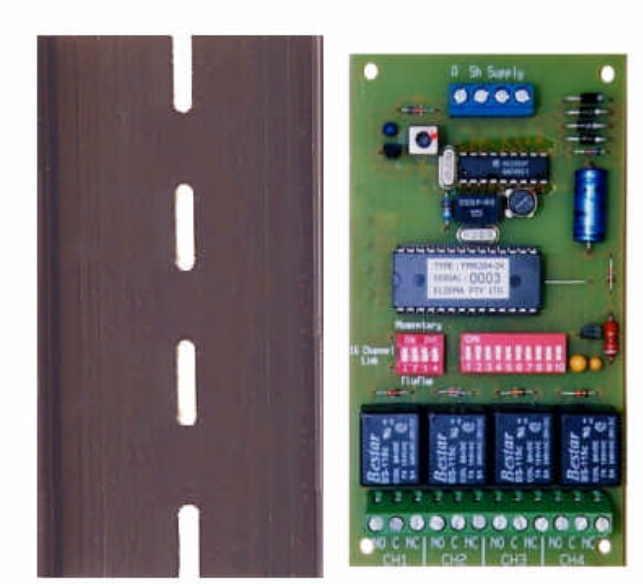
# FMR204-12 and FMR204-24 12/24 VDC APPLICATION



# FMR204-12 and FMR204-24 240/110 VAC APPLICATION



FMR204-12(24) with QUICK MOUNT



FMR204-12(24) with a C160 Plastic Case