FMT-302 OPERATING MANUAL
27MHz 2-CHANNEL REMOTE CONTROL DIGITAL TRANSMITTER

The hand controller, FMT-302 is part of a two-channel remote control system. A few of its applications could be as:

- a calling device for the elderly or handicapped.

- a personal security alarm activator for home safety or cash carrying businesses e.g. banks, shops service stations, etc.

- a remote control switching device for garage doors, lights, gates and automatic telephone dialer.

It is housed in an attractive, high impact resistant grey ABS plastic case.

Pressing the designated switch on the front positively activates the controller. Activation is confirmed by the sound of its built-in buzzer.

The battery service life approximates its shelf life. 9-Volt Carbon or Alkaline type batteries may be used. Depending on the battery type, shelf life ranges between 1 and 2 years. While the FMT-302 is not transmitting it uses no power. It will operate on as low a 4 Volts DC, however, in such cases the power and range will be reduced.

The highest possible standard of performance is achieved by employing a crystal-controlled, frequency modulated radio signal operating in the 27MHz band. This is enhanced by a specially dedicated custom-built integrated circuit. The latest "state of the art" surface-mount technology (SMD) provides maximum reliability.

A 10-way code switch (part of the digital encoding system) is used. This enables the user to select any one of the 1024 available codes and thus ensure highest security against false operations. The eleventh switch is changed by pressing either channel A or B. The twelfth switch is “On” if a wire link is next to the code switch, if it is removed the twelveth switch is off. This is displayed on the back of the battery cover of the FMT-302. The code can be readily changed at any time.

The maximum operating distance (in conjunction with our FMR series receivers) will average between 200 and 250 metres. The operating distance may depend upon the structure of the building in which it’s used. When operating near its range limit, some improvements may be obtained by pointing the controller towards the receiver. This is due to its slightly directional properties.

In Australia, a licence issued under the "Wireless Telegraphy Act and Regulations" is not required for the operation of this transmitter.

The housing of the controller has been designed to accept Elsema’s leather pockets.

The controller is also available without its front membrane label, to enable the fitting of customers own designed label.

REGULATORY COMPIANCE STAEMENTS

American Users

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference and
(2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Notice

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy and, if installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the computer and receiver.
- Connect the computer into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

Canadian Users

This Class [B] digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe [B] respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Users

This information Technology Equipment has been tested and found to comply with the following European directives:

- ETS 300 683
- I-ETS 300 220

Australian and New Zealand Users

This device has been tested and found to comply with the limits for a Class [B] digital device, pursuant to the Australian/New Zealand standard AS 4268.2 (1995) set out by the Spectrum Management Agency.

TECHNICAL DATA ON FMT-302

POWER SOURCE :	9-Volt Battery Carbon : approximately 1 year shelf life. Alkaline : approximately 2 year shelf life.
SUPPLY VOLTAGE:	6 to 16 VDC (For constant RF-Output).
CURRENT CONSUMPTION :	40mA (Typical) at 8VDC supply while transmitting
OPERATING FREQUENCY :	27.145MHz (Other frequencies available on 27.045, 27.195 and 27.455 MHz).
CARRIER FREQUENCY TOLERANCE :	Crystal controlled 30 parts per million (0 to 50° C).
RADIATED R.F. POWER OUTPUT :	8.71 µW (CKC test result)
ANTENNA :	Built in 50mm proprietary DILEC rod.
TYPE OF EMISSION :	Narrow-band-width Frequency Modulation (5K00F1D)
FREQUENCY DEVIATION :	1600 Hz non-return to zero (+-20%).
TYPE OF MODULATION :	Manchester format 1.08ms per bit (15% tolerance).
BITS PER SECOND	926 bps
SPURIOUS TRANSMISSION :	Complies with FCC 15.227 (USA), MPT 1346 pt 4.5 (UK) and ETS 300 220 (Europe).
NECESSARY BAND WIDTH :	+ - 5.0 KHz
DIGITAL CODING SYSTEM :	On board 10-way coding switch (1024 codes) Channel "A" is equal to code-11 "on", Channel "B" is equal to code-11 "off" Wire Link is equal to code-12 "on" and No Link is equal to code-12 "off" (In receiver)
DIMENSION :	95 X 55 X 20 mm
WEIGHT :	72g excluding battery
USEABLE OPERATING RANGE :	up to 250 metres depending on building structure.
COMPATIBLE RECEIVERS :	All Elsema type FMR-... series.

Due to its popularity, ELSEMA PTY. LTD stocks the Carbon Battery 6F22. The indicated shelf life is only approximated and can vary greatly depending on the freshness and type of brand used.

FMT-302 BLOCK DIAGRAM