

# 90 Series - Relay Systems - FM - 4 Function with Mini Transmitter

## SYSTEM PART NUMBERS

90 0 04      4 Function Receiver      with Master      + 4 Function Mini Transmitter

## SPECIAL ORDER

90 0 03      3 Function Receiver      + 4 Function Mini Transmitter

## REPLACEMENT TRANSMITTERS

90 0 04TX      4 Function      Mini Transmitter



## SYSTEM CONTENTS

- 1 x Mini Transmitter
- 1 x Lanyard
- 1 x Receiver  
with Wiring Harness  
and Glands
- 1 x Instructions

## MINI TRANSMITTER SPECIFICATION

### SWITCH

Type      Rubber membrane with carbon contact

### POWER

Coin Cell      6 Volts (2 x CR2032)

### AMPS

Quiescent      4 micro amps  
Operating      20 milliamps

### PROTECTION

Reverse polarity      Protected  
IP Rating      65  
Conformal coating      No  
Registration codes      Over 16 million

### PERFORMANCE

Temp Range      -10° C to + 40° C (13° F to + 104° F)  
Range Nominal as supplied      45 metres (150 ft) from the Receiver, when driving a momentary output without signal drop out  
Transmitted power      1 mW Typical

### COMPLIANCE

EMC      Exceeds ETSI 300 220  
Modulation      FM  
Frequencies      418 MHz F1D      USA (optional UK)  
433.92 MHz F1D      World wide (optional USA)

## RECEIVER SPECIFICATION

### SWITCH TYPE

Output Switching Relay

### SUPPLY VOLTS

Nominal 12/24 Volts DC  
 Absolute Maximum 40 Volts DC  
 Minimum 8 Volts DC  
 Output Switch Supply Internal 12/24 Volts or external up to 80 Volts DC max  
 (External requires optional connector - see Accessories 9011)

### AMPS

Relay Rating 5 Amps  
 System Output Rating 8 Amps  
 Quiescent Current 25 mA on Standby (Not Set)  
 Overload Protection None

### AERIAL

Internal Antenna Yes Supplied and fitted  
 External Antenna Optional Receiver must be ordered with 9010 SMA connector, see Accessories.

### OUTPUTS

Master 1 Parallel or Continuous  
 Functions 4

### CONFIGURATION

RS232 Programming to users requirements Optional

### PERFORMANCE

Simultaneous Outputs Yes With horizontal interlocks  
 Instant Tx Response Yes No perceivable delay between TX operation and RX action

### DIAGNOSTICS

LED's Yes Confirm 5 Volts, SET, Fault and all Outputs.

### PROTECTION

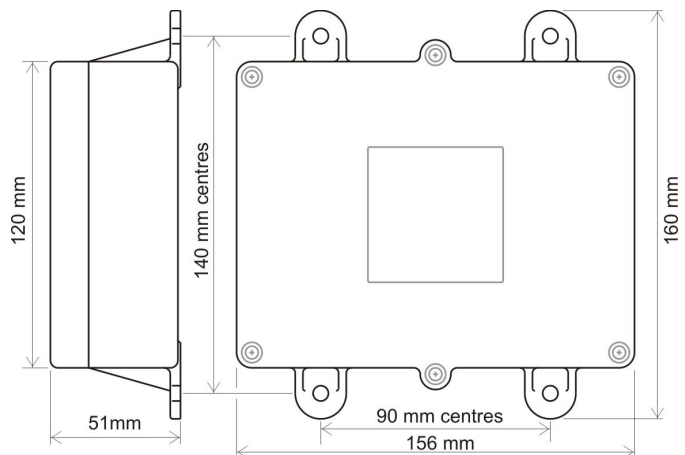
ESR Safety Yes See ESR Safety document.  
 Reverse Polarity Yes Protected (with provisions)  
 Back EMF Yes Diode protected on all outputs  
 Conformal Coating No  
 Registration codes Over 16 million  
 STOP Connection Optional External Emergency STOP connector, see Accessories Part No. 9011.

### WIRING

Wiring Loom Yes 1.5 metres (60") supplied and fitted  
 Cable Gland Yes Supplied and fitted  
 Connections Screw terminal into plug and socket on PCB, for easy "swap out"

### ENCLOSURE

Weight 0.3 lbs (335gms)  
 Lid Black PVC  
 Base Black PVC  
 Breather Gortex fitted in base  
 Mounting 4 external lugs  
 Fixings 5mm (3/16") not supplied  
 IP Rating Performs to IP67 standard  
 (0.5 metre water for 1 hour)



### ACCESSORIES

9861, 9862, 9863 and 9869 – External Antenna with cable.  
 9010 – SMA Connector, for external aerial  
 9011 – ST, S+ & S- connector and RS232 connector

90 Series			90 0 00	90 0 02	90 0 04	90 1 00	90 1 02	90 1 04
BUILD SPECIFICATION TABLE FOR MODELS IN THIS RANGE								
Ident	Legend	Connection						
X1	+ - F1 F2	Positive, Negative, F1 and F2	S	S	S	S	S	S
X2	F3 F4 M	F3, F4, and Master		M	S		M	S
X3	ST Vs- Vs+	STOP and Vs- Vs+	O	O	O	O	O	O
X4	ANT	Internal Antenna	S	S	S	S	S	S
X5		SMA (external antenna)	O	O	O	O	O	O
LK1		Master (configuration)		C	C		C	C
LK2		RS232	O	O	O	O	O	O
LK3		RS232	O	O	O	O	O	O
LK4		Safety (parallel master)		C	C		C	C
		1.5 metre 4 core cable	S			S		
		1.5 metre 7 core cable		S	S		S	S
		9801 Lo-Cover				S	S	S

S = Standard. M = Standard but Master only connected. O = Optional extra. C = Customer configured (see "Factory Settings").

+ Positive 12/24 Volt supply  
 - Negative 0 Volts  
 F1, F2, F3, F4 Outputs F1 to F4  
 M Master Output

ST STOP - grounding shuts down the Receiver  
 Vs- Vs+ 12/24 Volt supply for control circuits  
 (used when link is broken to allow switching of DC Voltages outside normal operating limits)

ANT Blade Connector for Internal Antenna  
 SMA Aerial Connection for External Antenna (Internal Antenna must be removed)

LK1 Master Selection by jumper (AP = Parallel, AM = Continuous)  
 Factory Settings 418MHz configured Parallel, 433.92MHz configured Continuous  
 LK2 RS232 for programming  
 LK3 RS232 for interface with other RS232 modules  
 LK4 Connected when using Parallel Master, connects safety circuit

Photo of PCB

