

# 2 Function with Mini Transmitter - Narrow Band

## 93 Series - FET Systems

### SYSTEM PART NUMBER

**93000** 2 Function Receiver + 2 Function Narrow Band Mini Transmitter

### REPLACEMENT TRANSMITTER

**93002TX** 2 Function Narrow Band Mini Transmitter

### CONTENTS

1 x Receiver  
1 x Mini Transmitter  
1 x Lanyard  
1 x Instructions



### MINI TRANSMITTER SPECIFICATION

#### SWITCH

Type Rubber membrane with carbon contact

#### BATTERY

Type 3 Volts (2 x AAA)

#### CURRENT DRAW

Quiescent 4 micro amps  
Operating 20 milliamps

#### PROTECTION

Reverse polarity Protected  
IP Rating 65  
Registration codes Over 16 million

#### PERFORMANCE

Temp Range -10° C to + 40° C (13° F to + 104° F)  
Range Nominal as supplied 150 metres (500 ft) from the Receiver, when driving a momentary output without signal drop out  
Transmitted power 1 mW Typical

#### COMPLIANCE

EMC	Exceeds ETSI 300 220.	Compliant E11 10R-037601
Modulation	FM	
Frequencies	418.00 MHz F1D 433.92 MHz F1D	USA (optional UK) World wide (optional USA)

## RECEIVER SPECIFICATION

### SWITCH TYPE

Output Switching                      MOS Field Effect Transistor (P Channel Power MOSFET)

### VOLTS

Nominal                                    12/24 Volts DC  
 Absolute Maximum                    40 Volts DC  
 Minimum                                   8 Volts DC  
 Output Switch Supply                 Internal 12/24 Volts

### AMPS

FET Rating                                15 Amps  
 System Rating                          15 Amps  
 Quiescent Current                    25 mA    (connected before a "SET")  
 Overload Protection                 15 Amps (Auto Shutdown)

### AERIAL

Internal Antenna                        Yes        Supplied and fitted  
 External Antenna                      Optional See Accessories.

### OUTPUTS

Function                                    2            Supply to Receiver is switched

### CONFIGURATION

RS232 Programming                    Yes        Not all models, see Build Specification Table. For programming interlocks, push/push latch, parallel master inhibit, timeout, channel timeout delay, master on delay, radio button de-latching and output allocation.

### PERFORMANCE

Simultaneous                            Yes        With horizontal interlocks (Interlocks are programmable – see CONFIGURATION above)  
 Instant TX Response                 Yes        No perceivable delay between TX operation and RX action

### DIAGNOSTICS

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

### PROTECTION

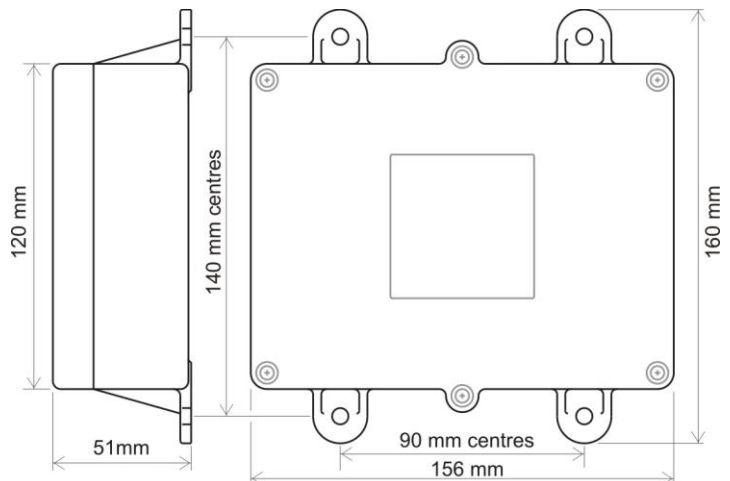
ESR Safety                                Yes        See ESR Safety document.  
 Back EMF                                Yes        Diode protected on all outputs  
 Registration codes                    Over 16 million (2<sup>16</sup>)  
 STOP Connection                      Yes        Not all models, see Build Specification Table.

### WIRING

Wiring Loom                              Yes        3 metres (10ft) 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    Clear PVC to view LEDs  
 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.

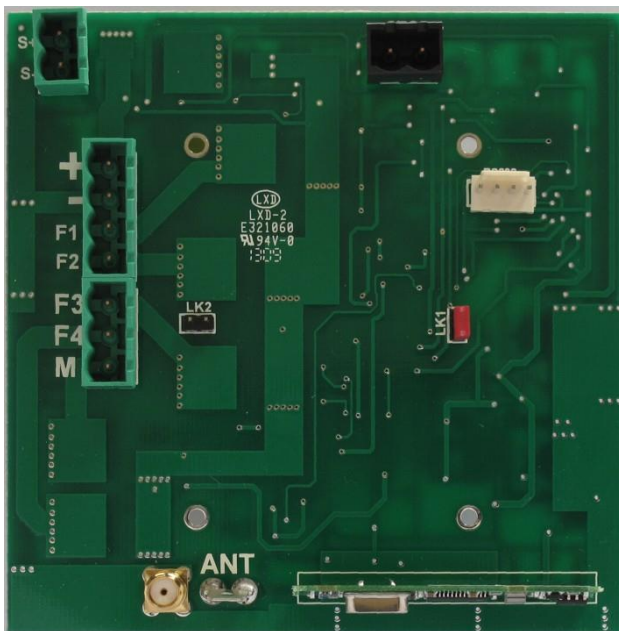
93 Series			93 0 00	93 0 02	93 0 04	93 1 00	93 1 02	93 1 04
BUILD SPECIFICATION TABLE FOR MODELS IN THIS RANGE								
Ident	Legend	Connection						
	+ - F1 F2	Positive, Negative, F1 and F2	S	S	S	S	S	S
	F3 F4 M	F3, F4, and Master		M	S		M	S
	ST -	STOP and -		S	S		S	S
	S+ S-	S+ S-		S	S		S	S
	ANT	Internal Antenna	S	S	S	S	S	S
	SMA	Connector (external antenna)		S	S		S	S
LK1	P	Master - Parallel		C	C		C	C
LK2	C	Master – Continuous		C	C		C	C
LK3	RS232	RS232		S	S		S	S
		3 metres 4 core	S			S	S	
		3 metres 7 core		S	S			S
LK3		RS232		S	S		S	S

S = Standard. M = Standard but Master only connected. C = Customer configured (see “Factory Settings”).

- + Positive 12/24 Volt supply
- Negative 0 Volts
- F1, F2, F3 & F4 Outputs to F1 through F4
- M Master Output
  
- STOP - STOP, when grounded shuts down the Receiver
- S+ S- Master Secondary for Safety solenoid connections etc.
- ANT Blade connector for internal antenna
- SMA Aerial connection for optional external antenna (internal antenna must be removed)
  
- LK1 Jumper fitted to this link for continuous Master
- LK2 Jumper fitted to this link for parallel Master
- Factory Settings 418MHz configured Parallel, 433.92MHz configured Continuous
- LK3 RS232 for interface to access special programmes  
Also for connection to RS232 modules

### PCB – Not to scale

Connector Side



Component Side

