93 Series - FET System
2 Function with IP Narrow Band Transmitter

System Contents	
1x	Transmitter with batteries
1x	Lanyard
1x	Receiver with wiring harness and glands
1x	Instructions

System shown: 93202 with optional cradle

SYSTEM PART NUMBER

93202 2 Function Receiver with Master + 4 Function IP Narrow Band Transmitter

REPLACEMENT TRANSMITTER

93202TX 2 Function IP Narrow Band Transmitter

IP TRANSMITTER SPECIFICATION

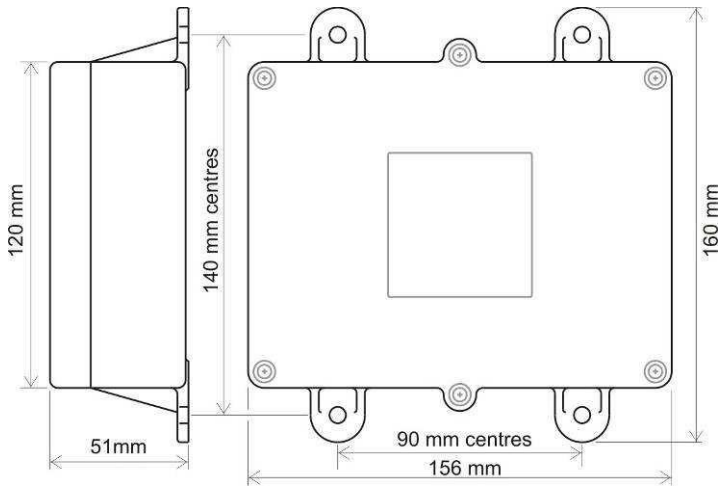
SWITCH - Type	Tactile Dome on PCB Keypad
BATTERY - Type	4 x AAA Alkaline Manganese in holder (6 Volts)
INDICATOR	
Type	1 x Red LED
Off	Transmitter OFF (The STOP Button has been pressed and released)
Slow flash	Transmitter ON and ready for use (The SET Button has been pressed and released)
On	Transmitting (A STOP, SET or Function Button is being pressed)
Fast flash	Transmitting – Indication that the battery will need replacing soon
CURRENT DRAW	
Quiescent	15 micro amps
Operating	24 milliamps
PROTECTION	
Reverse polarity	Protected
IP Rating	67
Registration codes	Over 16 million
PERFORMANCE	
Temp Range	-10° C to + 40° C (13° F to + 104° F)
Range Nominal as supplied	300 metres (1000 ft) from the Receiver, when driving a momentary output without signal drop out
Transmitted power	10mW Typical
COMPLIANCE	
EMC	2004/104/EEC Exceeds ETSI 300 220 Compliant E11 10R-037601
Modulation	FM
Frequencies	434 MHz Band, 15 Frequencies

RECEIVER SPECIFICATION

SWITCH TYPE		
Output Switching	MOS Field Effect Transistor (P Channel Power MOSFET)	
SUPPLY 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	25mA on Standby (Not SET)	
Overload Protection	15 Amps (Auto Shutdown)	
AERIAL		
Internal Antenna	Yes	Supplied and fitted
External Antenna	Optional	See Accessories.
OUTPUTS		
Master	1	Can be Parallel or Continuous. Not all models – see Build Specification Table.
Function	2/3	
Master (Secondary)	1	Continuous. Not all models, see Build Specification Table.
CONFIGURATION		
RS232 Programming to users requirements	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 Outputs	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	Confirm 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
STOP Connection	Yes	Internal Emergency Stop Connection, 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"

DIMENSIONS

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 2 00	93 2 02	93 2 03	93 2 04	93 5 05
BUILD SPECIFICATION TABLE FOR MODELS IN THIS RANGE							
Ident	Legend	Connection					
	+ - F1 F2	Positive, Negative, F1 and F2	S	S	S	S	S
	F3 F4 M	F3, F4, and Master		M	F3	S	S
	ST -	STOP and -		S	S	S	S
	S+ S-	S+ S-		S	S	S	S
	ANT	Internal Antenna	S	S	S	S	S
	SMA	Connector (external antenna)		S	S	S	S
LK1	P	Master - Parallel		C		C	
LK2	C	Master – Continuous		C		C	
LK3	RS232	RS232		S	S	S	S
		3 metres 4 core	S				
		3 metres 7 core		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

Photo of PCB

Connector Side

Component Side