

93 Series - FET Systems - FM - 20 Function with IP Transmitter

SYSTEM PART NUMBERS

93 2 20 20 Function Receiver with Master + 20 Function IP Narrow Band Transmitter

REPLACEMENT TRANSMITTERS

93 2 20TX 20 Function IP Narrow Band Transmitter



SYSTEM CONTENTS

- 1 x IP Transmitter
- 1 x Lanyard
- 1 x Receiver
- 3 x Glands
- 1 x External Aerial Kit
(3m cable with gland)
- 1 x Instructions

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 Drawn	
Quiescent	15 micro amps
Operating	25 milliamps
PROTECTION	
Reverse polarity	Protected
IP Rating	67
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	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
Modulation	FM
Frequencies	434 MHz Band, 15 Frequencies

RECEIVER PCB

PCB component side, this is viewable through the smoke lid of the Receiver.

LED's are visible for confirmation that the system is operating correctly.

These are:-

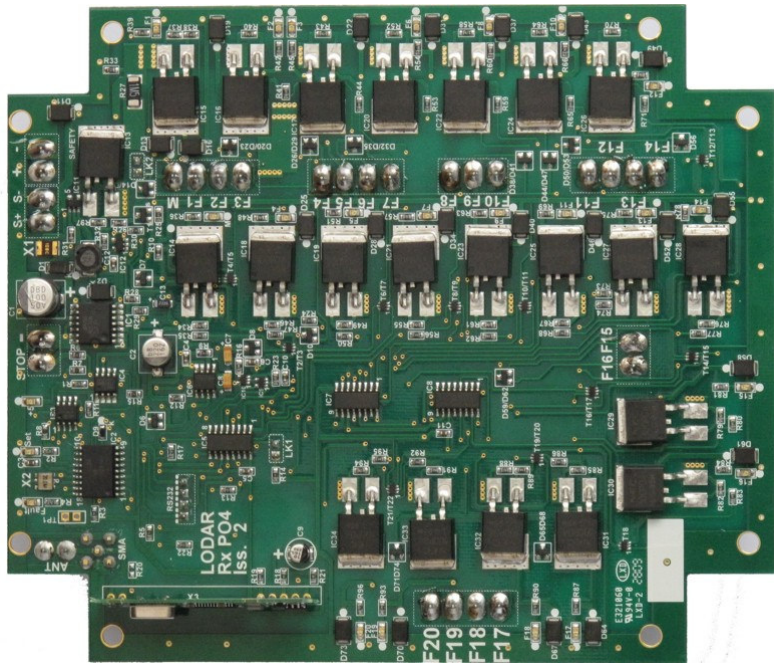
+5V Power Supply OK

SET Receiver operational

Fault Flashes for 20 seconds
At "power up"
Tx coding window open

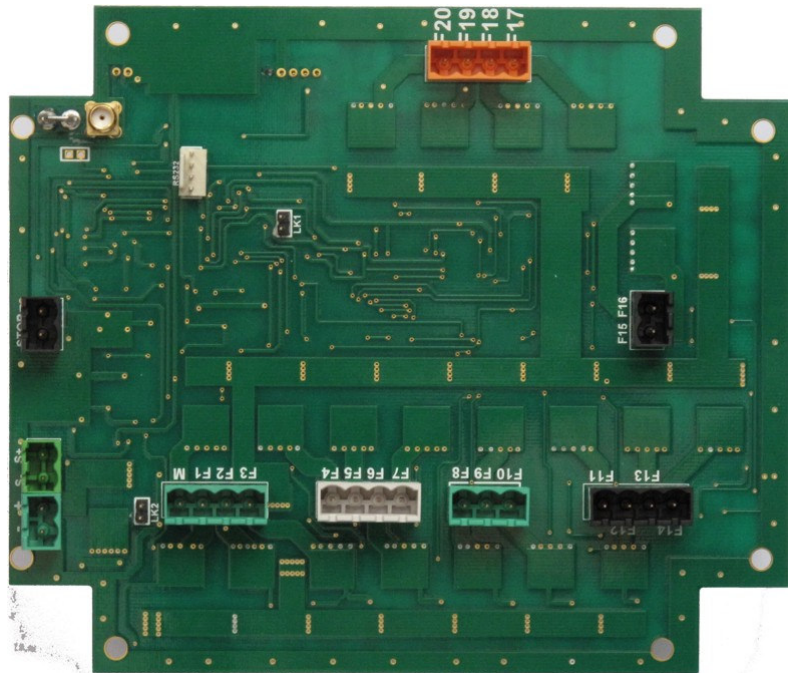
Fault ON = Current overload

LED's F1 to F20 and M
ON when there is an output



RECEIVER PCB

Connector side – not to scale



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 Output 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 Yes P. No. 9863 – External Antenna with cable and gland, supplied

OUTPUTS

Master 1 Parallel or Continuous.
 Functions 20
 Master (Secondary) 1 Continuous (S+ S-)

CONFIGURATION

RS232 Programming Yes For programming interlocks, push/push latch, parallel master inhibit, timeout, channel timeout delay and master on delay.
 To users requirements

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

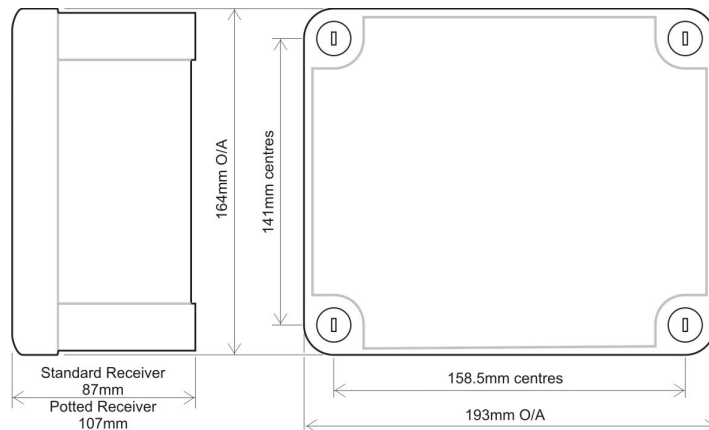
ESR Safety Yes See ESR Safety document.
 Reverse Polarity Protected (with provisions)
 Back EMF Diode protected on all outputs
 Conformal Coating No
 Registration codes Over 16 million
 STOP Connection Yes

WIRING

Wiring Loom No
 Cable Glands Yes 3 Supplied
 Connections Screw terminal into plug and socket on PCB, for easy “swap out”

ENCLOSURE

Weight 1.2kg
 Lid Smoke PVC - to view LEDs
 Base Grey
 Breather No
 Mounting 4 Holes under Lid Fixings
 Fixings Not supplied
 IP Rating Performs to IP67 standard



ACCESSORIES

9861, 9862, 9863 and 9869 – External Antenna with cable.

93 Series			93 2 10	93 2 16	93 2 20
BUILD SPECIFICATION TABLE FOR MODELS IN THIS RANGE					
Ident	Legend	Connection			
	+ -	Positive, Negative,	S	S	S
	M, F1, F2, F3	Master F1, F2 and F3	S	S	S
	F4, F5, F6, F7	F4, F5, F6 & F7	S	S	S
	F8, F9 & F10	F8, F9 & F10	S	S	S
	F11, F12, F13, F14	F11, F12, F13 & F14		S	S
	F15, F16	F15 & F16		S	S
	F17, F18, F19, F20	F17, F18, F19 and F20			S
	S+, S-	Safety Solenoid S+ and S-	S	S	S
	STOP, 0Volts	STOP connections	S	S	S
	ANT	Internal Antenna	S	S	S
		SMA (external antenna)	S	S	S
LK1	LK1	Master - Parallel	C	C	C
LK2	LK2	Master - Continuous	C	C	C
	RS232	RS232	S	S	S
		9863 Antenna with 3 metre cable	S	S	S

S = Standard. C = Customer configured (see "Factory Settings").

+	Positive 12/24 Volt supply
-	Negative 0 Volts
F1 to F20	Outputs to F1 through F20
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	Master Selection by Jumper (BA = Continuous & AC = Parallel)
LK2	Connected when using Parallel Master, connects safety circuits
Factory Settings	418MHz configured Parallel, 433.92MHz configured Continuous
RS232	RS232 for Wired Remote and interface to access special programmes