

20 Function and IP Transmitter with Shift

93 Series – FET System

SYSTEM PART NUMBER

93336 1 x 20 Function Receiver & 1 x 16 Function Receiver
 1 x 40 Function IP Transmitter with Shift Buttons.
Operating with a 20F IP Transmitter

REPLACEMENT TRANSMITTER

93336TX 40 Function IP Transmitter with Shift Buttons.
Operating with a 20 Function IP Transmitter

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IP TRANSMITTER SPECIFICATION

SWITCH - Type	Tactile Dome on PCB Keypad
BATTERY -Type	4 x AAA Alkaline Manganese in holder (6 Volts)
INDICATOR	2 x Red LED
Transmitter Off	The STOP Button has been pressed and released
Transmitter Slow Flash	ON and ready for use. The SET Button has been pressed and released
Transmitter On	Transmitting. A STOP, SET or FUNCTION Button is being pressed
Transmitter Fast Flash	An Indication that the battery will need replacing soon
Enclosure Slow Flash	ON and ready for use with Receiver 2. The SET button has been pressed and released

CURRENT DRAW

Quiescent	20 micro amps
Operating	25 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	1mW Typical

COMPLIANCE

EMC	2004/104/EEC	Exceeds ETSI 300 220
Modulation	FM	
Frequencies	433.92 MHz F1D	
	+ 14 others	Worldwide

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 25 mA 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
 Function 36 20+16
 Master (Secondary) 1 Continuous

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

WIRING

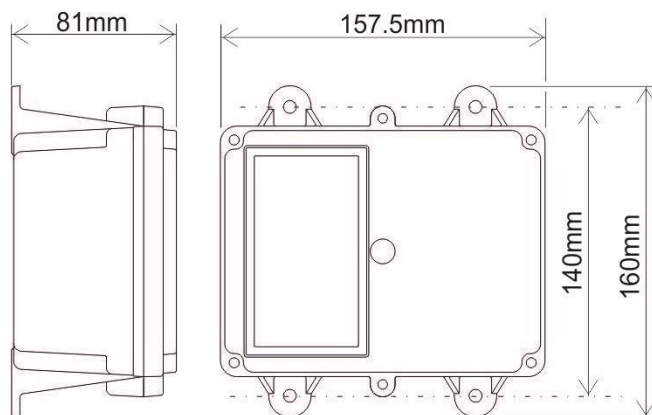
Wiring Loom No Can be supplied as an option
 Cable Gland Yes Supplied – fitted by customer
 Connections Screw terminal into plug and socket on PCB, for easy "swap out"

ENCLOSURE – 20 Function

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

ENCLOSURE – 16 Function

Same as the 20 function



93 Series			93 3 36	93 3 40
BUILD SPECIFICATION TABLE FOR MODELS IN THIS RANGE				
Ident	Legend	Connection		
	+ -	Positive, Negative,	S	S
1	M, F1, F2, F3	Master F1, F2 and F3	S	S
1	F4, F5, F6, F7, F8, F9, F10, F11, F12	F4, F5, F6, F7, F8, F9, F10, F11, F12	S	S
1	F13, F14, F15, F16, F17, F18 F19, F20	F13, F14, F15, F16, F17, F18 F19, F20	S	S
2	F1, F2, F3, F4, F5, F6, F7, F8, F9, F10,	F1, F2, F3, F4, F5, F6, F7, F8, F9, F10,	S	S
2	F11, F12, F13, F14, F15, F16	F11, F12, F13, F14, F15, F16	S	S
	S+, S-	Safety Solenoid S+ and S-	S	S
	STOP, 0Volts	STOP connections	S	S
	ANT	Internal Antenna	S	S
		SMA (external antenna)	S	S
LK1	LK1	Master - Parallel	C	C
LK2	LK2	Master - Continuous	C	C
	RS232	RS232	S	S
		9863 Antenna with 3 metre cable	2	2
		Number of Receivers	2	2
		Number of Transmitters	1	1

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

+	Positive 12/24 Volt supply
-	Negative 0 Volts
F1 to F16	Outputs to F1 through F16
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
LK3	RS232 for interface to access special programmes

EXPLANATION OF “SHIFT” OPERATIONS - as illustrated with a 20 Function Transmitter.

These “SHIFT” operations can be applied to ALL Transmitters. For example, a 10 function Transmitter will give 20 functions – ideal if you do not want the larger 20 function Transmitter.



To operate 2 x 20 function Receivers, giving 40 functions

This is a standard 20 function Transmitter, modified so that it transmits 20 functions in two different modes.

The Green SET Button is the SHIFT button. Both 20 function Receivers can therefore be operated by one Transmitter.

Press the Green SET Button to turn both Receivers on - it will start in mode One; press it again for mode Two; press it again for mode One, and so on.

Press the Red Stop button to turn both modes off.

Receiver One (functions 1 to 20) is operated with the SHIFT buttons in mode One, indicated when the **Keypad LED** is flashing during operation.

Receiver Two (functions 21 to 40) is operated with the SHIFT buttons in mode Two, indicated when the **Enclosure LED** is flashing during operation.

To register a Transmitter to its TWO Receivers.

Switch OFF or DISCONNECT the power to the Receivers.

Switch ON or Reconnect the power to Receiver ONE, this opens a **10 SECOND** registration window in its processor.

Immediately **PRESS** and **HOLD** the green **SET** button while the registration window is open until the **SET** LED lights (5 seconds), the **SHIFT** function must **NOT** be active.

Receiver TWO, repeat the process but this time **PRESS** and **HOLD** the **SHIFT** button, and **PRESS** and **HOLD** the **SET** button until its **SET** LED lights.

You have now coded the Transmitter to both receivers.