90 Series - Relay Systems - FM - 2 Function with Standard Transmitter

SYSTEM PART NUMBERS

90 1 00	2 Function Receiver		+ 2 Function Standard Transmitter
90 1 02	2 Function Receiver	with Master	+ 2 Function Standard Transmitter

REPLACEMENT TRANSMITTERS

92 1 02TX	2 Function	Standard Transmitter

SYSTEM CONTENTS

1 x Standard Transmitter

1 x Lo-Cover

1 x Lanyard

1 x Receiver
with Wiring Harness
and Glands

1 x Instructions

STANDARD TRANSMITTER SPECIFICATION

SWITCH

Type	Tactile Dome

POWER

Battery	9V Alkaline Manganese (GP 1604A – JIS 6LF22 – IEC 6LF22 – Eveready 522 – Duracell MN1604)

AMPS

Quiescent	15 micro amps
Operating	20 milliamps

PROTECTION

Reverse polarity	Protected
IP Rating	55
Conformal coating	No
Registration codes	Over 16 million

PERFORMANCE

Temp Range	-10° C to + 40° C (13° F to + 104° F)
Range Nominal	60 metres (200 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 (Not all models – see Build Specification Table)
Functions	2	

CONFIGURATION

RS232 Programming to users requirements	Optional	Receiver must be ordered with 9011 connectors, see Accessories. For programming interlocks, push/push latch, parallel master inhibit, timeout, channel timeout delay, and master on delay.

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

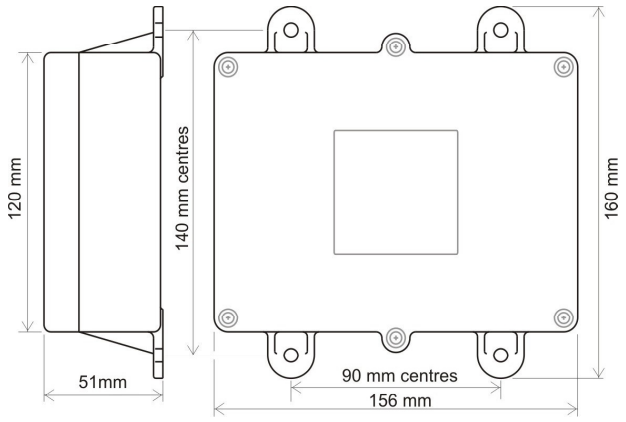
ESR Safety	Yes	See ESR Safety document.
Reverse Polarity	Yes	Protected (with provisions)
Back EMF	Yes	Diode protected on all outputs
Conformal Coating	No	
Registration codes	Over 16 million	
STOP Connection	Optional	External Emergency STOP connector, see Accessories Part No. 9011.

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

4 Function board shown