

# 97104 – AC 2 Function & Standard Transmitter Narrow Band

## 97 Series – AC Relay System (No Master)

**CONTENTS**

- 1 x Receiver
- 1 x Standard Transmitter
- 1 x Lanyard
- 1 x Instructions

**SYSTEM PART NUMBER**

**97104**                      2 Function Receiver + 2 Function Standard Transmitter Narrow Band

**REPLACEMENT TRANSMITTER**

**93104TX**                    2 Function Standard Transmitter Narrow Band



**STANDARD TRANSMITTER SPECIFICATION**

**SWITCH**

Type                                      Tactile Dome

**BATTERY**

Type                                        9V Alkaline Manganese

**CURRENT DRAW**

Quiescent                                15 micro amps  
 Operating                                20 milliamps

**PROTECTION**

Reverse polarity                        Protected  
 IP Rating                                 55  
 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                    1 mW Typical

**COMPLIANCE**

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

## RECEIVER SPECIFICATION

### SWITCH TYPE

Output Switching	HF118F Miniature High Power Relay
Max. Switching Current	10 amps at 250VAC
Max. Switching Power	2500VA
Max. Switching Volts	250 VAC Nominal
Min. Switching Volts	48 VAC (below this the Safety Circuits will switch off the Receiver)

### SUPPLY VOLTS

Nominal	90/264 VAC
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### AMPS

Quiescent Current	25 mA on Standby (Not SET)
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### AERIAL

Internal Antenna	Yes	Supplied and fitted
External Antenna	Optional	Receiver <u>must</u> be ordered with SMA connector (see Accessories Part 9010).

### OUTPUTS

Master Functions	1	Can be Parallel or Continuous. Not all models – see Build Specification Table
	4	

### CONFIGURATION

RS232 programming	Optional	Receiver <u>must</u> be ordered with RS232 connector (see Accessories Part 9011) for programming to user requirements; interlocks, push/push latch, parallel master inhibit, timeout, channel timeout delay, master output delay etc.
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### 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.
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### PROTECTION

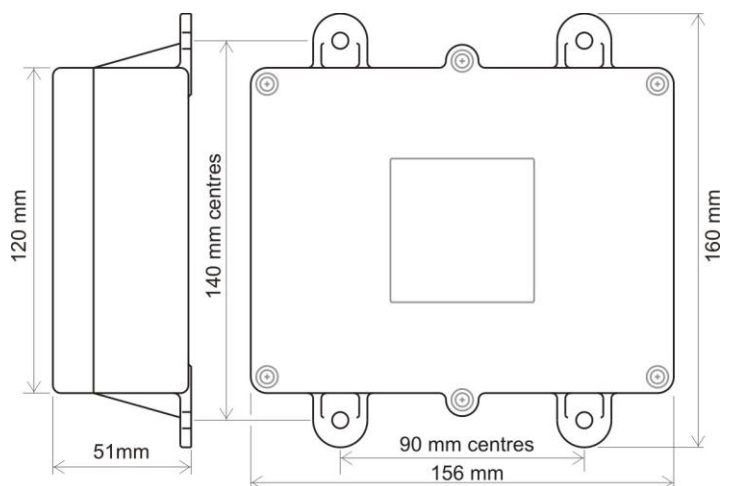
ESR Safety	Yes	See ESR Safety document.
Back EMF	Yes	Diode protected on all outputs
Registration codes	Yes	Over 16 million
STOP Connection	Optional	External Emergency STOP connector (see Accessories Part 9011).

### WIRING

Wiring Loom	No	
Cable Gland	Yes	Supplied and fitted
Connections	Yes	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

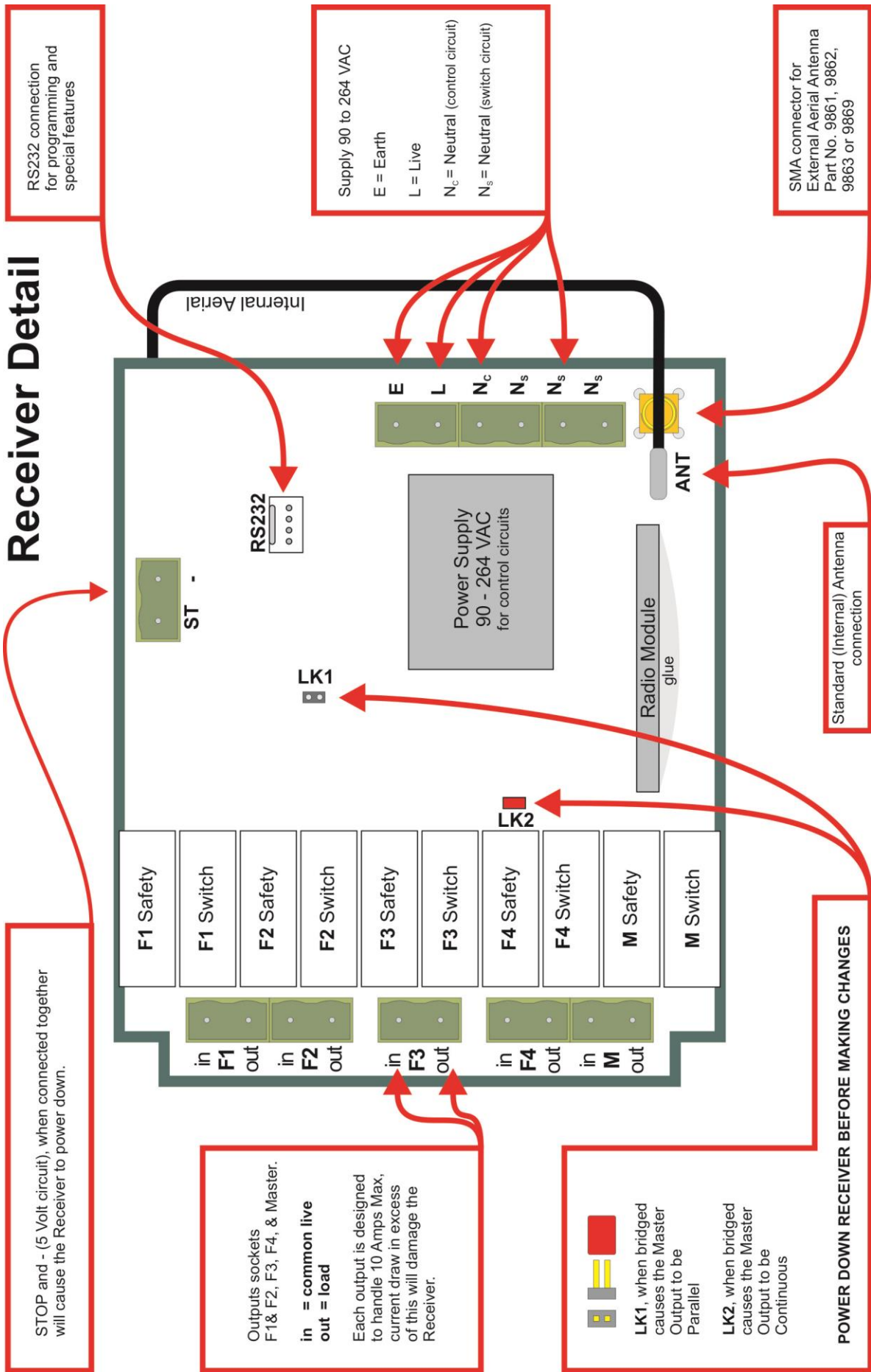
9861, 9862, 9863 and 9869	External Antenna with cable.
9010	SMA Connector, for external aerial
9011	ST, S+ & S- connector and RS232 connector

<b>97 Series</b>			<b>97000</b>	<b>97002</b>	<b>97004</b>	<b>97100</b>	<b>97102</b>	<b>97104</b>
BUILD SPECIFICATION TABLE FOR MODELS IN THIS RANGE								
Ident	Legend	Connection						
	E	Earth	S	S	S	S	S	S
	L	Live	S	S	S	S	S	S
	N	Neutral	S	S	S	S	S	S
	F1 & F2	Outputs to F1 & F2 (IN & OUT)	S	S	S	S	S	S
	F3 & F4	Outputs to F3 & F4 (IN & OUT)			S			S
	M	Master Output		S	S		S	S
	S-	Stop Circuit (5 Volts DC)		S	S	S	S	S
	ANT	Internal Antenna	S	S	S	S	S	S
	SMA	Connector for External Antenna		S	S		S	S
	LK1	Master Parallel		C	C		C	C
	LK2	Master Continuous		C	C		C	C
	RS232	RS232		S	S		S	S

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



E	Earth
-	Live 90-264 VAC
F1, F2, F3, F4	Outputs F1 to F4
M	Master Output
ST	STOP - grounding shuts down the Receiver
ANT	Blade Connector for Internal Antenna
SMA	Aerial Connection for 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
RS232	RS232 for interface with other RS232 modules and special programming

# Receiver Detail



STOP and - (5 Volt circuit), when connected together will cause the Receiver to power down.

Outputs sockets F1 & F2, F3, F4, & Master.  
**in = common live**  
**out = load**  
 Each output is designed to handle 10 Amps Max, current draw in excess of this will damage the Receiver.

  **LK1**, when bridged causes the Master Output to be Parallel  
**LK2**, when bridged causes the Master Output to be Continuous

**POWER DOWN RECEIVER BEFORE MAKING CHANGES**

RS232 connection for programming and special features

Supply 90 to 264 VAC  
 E = Earth  
 L = Live  
 N<sub>c</sub> = Neutral (control circuit)  
 N<sub>s</sub> = Neutral (switch circuit)

SMA connector for External Aerial Antenna  
 Part No. 9861, 9862, 9863 or 9869

Standard (Internal) Antenna connection