

20 Function and IP Extend Transmitter

SYSTEM PART NUMBER

92320 1 x 20 Function Receiver & 1 x 10 Function Extend Transmitter
(20 Function in Extend Mode)

CONTENTS

1 x Receiver
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REPLACEMENT TRANSMITTER

92310TX - 10 Function IP Transmitter with Extend Buttons.(20 Function in Extend Mode)

REPLACEMENT RECEIVER

9220RX - 20 Function Receiver

TRANSMITTER SPECIFICATION

ENCLOSURE

Material ABS
Switch Type Tactile Dome on PCB Keypad
Functions 10 (20 with dual function buttons)
Identification Pockets for printed text or image insertion

RF

Modulation 2-GFSK. Gaussian Frequency Shift Keying
Frequency 433.050 MHz to 434.790 MHz
Channels 1
Channel Selection Fixed
Technology Hand-held Transmitter
Temperature Range -10°C to $+40^{\circ}\text{C}$ (13°F to $+104^{\circ}\text{F}$). Use Lithium for lower temperatures
Range 60m (200ft)
Aerial Internal – printed on PCB
Transmitted power 1mW Typical

POWER

Batteries 4 x AAA Alkaline Manganese in holder (6 Volts)
Quiescent Current $15\mu\text{A}$
Current Transmitting 20mA

PROTECTION

IP Rating 65
Registration codes Over 16 million

INDICATOR

Type 1 x Red LED
Off Transmitter is OFF and in standby mode
Slow flash Transmitter is 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
Enclosure Slow Flash ON and ready for use with Receiver 2. The SET button has been pressed and released

COMPLIANCE

FCC FCC CFR 47-part 15.231
433.9MHz
IC ISSED RSS-210 Issue 8
433.9MHz
RoHS Directive 2011/65/EU

RECEIVER SPECIFICATION

ELECTRICAL

Voltage Nominal	12/24V DC
Voltage Min/Max	8 to 36V DC
Switch Type	MOSFET (Positive Switching)

RF

Modulation	2-GFSK. Gaussian Frequency Shift Keying
Frequency	433.050 MHz to 434.790 MHz 902.025 MHz– 927.975 MHz
Channels	32
Channel Selection	Fixed Channel hopping
Technology	Fixed Receiver
Temperature Range	-40 ^o C to + 80 ^o C (-40 ^o F to + 176 ^o F).
Range	60m (200ft)

CURRENT CAPACITY

FET Rating	10A
System Rating	10A
Quiescent Current	31mA 12V/ 17mA 24V on Standby (Not SET)
Overload Protection	10A (Auto Shutdown)

AERIAL

Internal Antenna	Yes	Supplied and fitted
External Antenna	Optional	AC9860/ AC9861/ AC9862/ AC9863 & AC9869 – order separately

OUTPUTS

Master	Yes	Parallel or Continuous
Function	20	Supply to Receiver is switched

CONFIGURATION

RS232 Programming to users' requirements	Yes	For programming interlocks, push/push latch, parallel master inhibit, timeout, channel timeout delay, master on delay, radio button de-latching and output allocation.
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PERFORMANCE

Simultaneous Outputs	Yes	Programmable (Modify through configuration)
Instant TX response	Yes	Programmable (Modify through configuration)

DIAGNOSTICS

LED's	Yes	Confirm 5 Volts, SET, Fault and all Outputs.
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PROTECTION

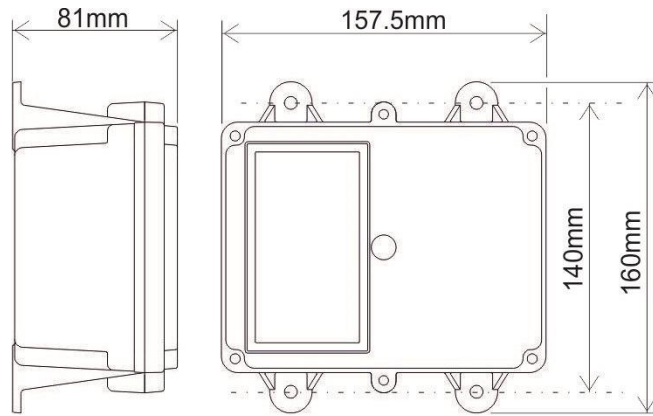
Back EMF	Yes	Diode protection on all outputs
Registration codes	Yes	Over 16 million
STOP Connection	Yes	Internal Emergency Stop Connection

WIRING

Wiring Loom	No	Upon Request
Cable Gland	Yes	Supplied (Not fitted)
Connections		Screw terminal into plug and socket on PCB, for easy "swap out"

ENCLOSURE

- Weight 0.5 lbs (335gms)
- Lid Clear PC/FR V0 and UV stabilised
- Base Black PC V0 and UV stabilised
- Breather Gortex fitted in base
- Mounting 4 external lugs
- Fixings 5mm (3/16") not supplied
- IP Rating IP55



92 Series			92320
BUILD SPECIFICATION TABLE FOR MODELS IN THIS RANGE			
Ident	Legend	Connection	
	+ -	Positive, Negative,	S
	M, F1, F2, F3	Master F1, F2 and F3	S
	F4, F5, F6, F7	F4, F5, F6 & F7	S
	F8, F9 & F10	F8, F9 & F10	S
	F11, F12, F13, F14	F11, F12, F13 & F14	S
	F15, F16, F17, F18	F15, F16, F17, F18	S
	F19, F20	F19, F20	S
	S+, S-	Safety Solenoid S+ and S-	S
	STOP, 0Volts	STOP connections	S
	ANT	Internal Antenna	S
		SMA (external antenna)	S
LK1	LK1	Master - Parallel	C
LK2	LK2	Master - Continuous	C
	RS232	RS232	S
		Number of Receivers	1
		Number of Transmitters	1

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

- + Positive 8-36V 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 (Parallel)
- LK2 Master Selection by Jumper (Continuous)
- Factory Settings 418/915MHz configured Parallel, 433.92MHz configured Continuous
- RS232 RS232 for Wired Remote and interface to access special programmes

COMPLIANCE

REG 10	EC Type-approval mark E11 037601 EC Type-approval No: e11/72/245*2009/19*7601*00
FCC	FCC CFR 47 Part 15.109 433.050MHz to 434.790MHz FCC CFR 47 Part 15.109 902.025MHz to 927.975MHz
IC	ICES-003 Issue 6. 433.050MHz to 434.790MHz ICES-003 Issue 6. 902.025MHz to 927.975MHz
CE	RED Directive ETSI EN 300 220-2 v3.2. ETSI EN 300 220-1 v3.1.1. ETSI EN 301 489-17 V3.1.1., ETSI EN 301 489-1 V2.1.1 433.050MHz to 434.790MHz
Australia/NZ	ETSI EN 300 220-2 v3.2.1 ETSI EN 301 489-1 V2.1.1 433.050MHz to 434.790MHz 915.025MHz to 927.975MHz
RoHS	Directive 2011/65/EU

RECEIVER PCB – Component Side

This is viewable through the clear 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

EXPLANATION OF “SHIFT” & “EXTEND” 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.