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8 Port Relay Receiver



8 port relay receiver with indicators



Model: FBXRX08R

110-220VAC to 12VDC Adapter

The 10 port relay receiver works in the latch mode. This implies that when the panic button (at the transmitter) is pressed the corresponding relay contactor gets activated and it remains ON till the time the panic button is not released. The state of the relays is lost once the power is turned OFF. If the transmitter power supply is turned off after pressing the panic button the receiver relay will remain activated. External light indicators or load upto 1KW can be connected to each relay contact points

Parameters	Specifications
Model	Wireless long range relay receiver with 8 ports, individual potential free contactor points **FBXRX08R**
Enclosure type	IP 65 (color black) for the receiver
Operating Voltage	12 VDC (110V-220VDC to 12VDC converter adapter)
Indicators at the receiver	Power supply – Yellow Signal – RED (for each port)) ON – Relay is activated and contactor points are joint OFF – Relay is deactivated and contactor points are open SYNC – Synchronizing signal to the receiver
Receiver reaction time	Less than 3 seconds
Dimensions	Enclosure: 240mm x 120mm x 65mm
Relay load	Max 5Amps @ 220VAC-50Hz (anything lower is acceptable)
How the receiver operates	1st turn ON the transmitter and then the receiver unit. Blue color SYNC signal light will blink on the receiver unit (indicating the transmitter is in range). Make sure the transmitter blue light is blinking. The transmitter sends the SYNC signal for 15 seconds to search for the receiver and then halts. When a panic button on the transmitter is pressed corresponding RED light indicator on the receiver is turned ON and contactor points are electrically connected (internally)

Precautions:

- Do not drop or apply jerk. Internal electronic circuits are fragile
- Do not open the enclosure or touch the internal electronic circuits with bare hands (electrostatic charge might damage the semiconductor components permanently)
- Do not connect adapters other than supplied by FORBIX SEMICON
- Keep in cool and dry place, away from moist climate and wet walls
- The enclosure is IP-65 but the antenna junction points are not water protected. If mounted outdoors, make sure to cover to avoid rain or thunderstorm

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Technical details

+20dBm (100mW) constant RF output
+14dbm high efficiency PA for the transmitter
Receiver sensitivity: – 148 dbm
168 dbm is the maximum link budget

Operating voltage of the transmitter: 12VDC
Operating voltage of the receiver: 12VDC
Operating temperature: 25 ^{o}C
CRC on data payload: Enabled
Packet Error Rate: PER (1%)
Redundancy packet feature: Enabled
fOsc = 32MHz
Radio IC used CC1100 (from Texas Instruments) [Sub-GHz frequency]

Following are the programmed parameters and vary from customer to customer:
• Operating data packet length and data format
• Internal data encryption logic
• FSK, GFSK, MSK, GMSK, OOK modulation techniques
• Operating frequency (380 – 480MHz). The transmitter hops multiple predefined frequencies for data transmission. Data packets are transmitted in all of the hopping frequencies. The receiver unit is aware of the predetermined hopping frequencies. It is thereby able to collect data from all these frequency channels and then formulate the complete packet
• Communication data rate 146/293/4688/9380 depending on range requirement
• Bandwidth (62.5 or 125KHz as per sensitivity settings)

Applications:
Long range wireless alarms and security systems
Industrial monitoring and control
Motor pump, gate motor, on/off logic

Range of communication of any RF wireless machine is primarily dependent on environmental conditions, viz. temperature, humidity, interference, cross talk and multipath fading. It achieve best range of communication, it is suggested to mount the machine at a height not less than 10-12 feet and open line of sight to the receiver. In such conditions the range of communication can reach upto 3.5Kms as well.

Sub-GHz antenna provided are of 2 types:
• Fixed cylindrical type
• Long wire extended type (with magnetic base)
• Receiver contactor relay maximum load capacity 5A @ 220VAC/50Hz or 110VAC/60Hz

Machine functionality (behavior)

• **The receiver can listen to maximum 8 transmitting points**
• External loads of max 5Amps (<1KWatt can be connected to each of the relay contactor port of the receiver)
•Transmitter blue SYNC indicator is blinking, implies receiver blue SYNC indicator should also blink (if the receiver is in range)
• Panic button on the transmitter is pressed and immediately transmitter power supply is turned OFF. In such a case the receiver corresponding relay turns and remains ON, since the transmitter is no longer transmitting the OFF signal (because it is powered OFF)
• When power is resumed to the transmitter, it will transmit the present state of the panic button. The relay will react to the same
• Receiver gets an opportunity window of 15 seconds to listen to the present state of the panic button from the transmitter
• Any other high / low voltage applied the operating voltage of the receiver (or the transmitter), will cause malfunction or even permanent damage to the machine

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