

# WIRELESS

## SONNET WIRELESS RECEIVERS RF-RX SERIES

### DESCRIPTION

The **Sontay RF-RX Series** of SonNet wireless receivers collect data from all other devices on the wireless network, including measurements from sensors, link quality for all links formed in the network, battery levels for all battery powered devices, hours run for all devices and the current status of all devices.

Note: Each receiver can support a maximum of 16 'children', which can consist of a maximum of 12 battery powered nodes and 4 routers, or up to 16 routers if there are no battery powered nodes.

A USB socket is provided for connection to a PC or laptop running the Sontay SonNet CMS configuration software.

### FEATURES

- *Proven 802.15.4 low power network*
- *Encrypted data transmission*
- *20 or 40 output models*
- *Short-circuit protected analogue outputs*
- *Overvoltage protected analogue outputs to +36V*
- *Self-healing tree topology*
- *Lower installation costs*
- *Easy to install and commission*



RF-RX

Sontay®



### SPECIFICATIONS

#### DEVICE OPERATION

<b>Supply Voltage</b>	24V AC/DC ±15%, @300mA, 50/60Hz
<b>Transmitted Range Value</b>	All outputs are 0-10VDC
<b>Temperature</b>	14° to 158°F, (-10° to 70°C)
<b>Setpoint</b>	0 to 100%
<b>Sensor Override</b>	0V = Off, 10V = Open, (Latching-Toggles on every button push)
<b>Humidity</b>	0 to 100%
<b>CO2</b>	0 to 2000 PPM
<b>VFC type</b>	(DI) 0V = Off, 10V = Open, (Latching-Follows transmitter input on/off)
<b>Output</b>	Alarm contact, 24V @50mA max
<b>RF-RX20</b>	20, 0-10VDC outputs, 1KΩ impedance min
<b>RF-RX40</b>	40, 0-10VDC outputs, 1KΩ impedance min
<b>Accuracy Indication</b>	±2% of output range LED D603-Node has lost communication (Node Off-Line) LED D604- shows radio traffic Alarm contact- Low battery or Out-of-Limit sensors
<b>Controls</b>	Reset button
<b>A/D resolution</b>	10 bit resolution, (Pressure is 16 bit)
<b>Mounting</b>	DIN rail Bracket
<b>Wiring</b>	Four terminals for power and alarm SMA Antenna connection USB 2.0 for configuration set-up
<b>RF-RX20</b>	40 active (G/V) terminals, All (G) terminals are common
<b>RF-RX40</b>	80 active (G/V) terminals, All (G) terminals are common
<b>Operating Temperature</b>	14° to 122°F (-10° to 50°C)
<b>Operating Humidity</b>	0-90% RH non-condensing
<b>Construction</b>	Open board and terminals
<b>Enclosure Rating</b>	DIN Bracket w/o enclosure
<b>Dimensions</b>	8.0"W x 4.2"H x 1.8"D (20.2 x 10.5 x 4.5 cm)

<b>Weight</b>	1.21 lb (0.55Kg)
<b>Warranty</b>	3 year
<b>RADIO TRANSCIVER</b>	
<b>Protocol</b>	Proprietary Healing Mesh (Sontay), 128 encrypted
<b>Frequency</b>	2.4 GHz w/16 channels automatically selected
<b>Modulation</b>	Direct Sequence Spread Spectrum (DSSS)
<b>Transmit Power</b>	No transmitter
<b>Receiver Sensitivity</b>	-102dB
<b>Transmission Interval</b>	Not Specified
<b>Lost Comm. Fail Safe</b>	Stays in its last commaded stat
<b>Antenna</b>	6" Stick mounted to board, 360° pattern (included) Antenna extension CBL. 2m or 5m
<b>RF-AERIAL</b>	16 channels automatically selected
<b>Channels</b>	50 transmitters per receiver
<b>Device Addresses</b>	USB 2.0, for In field w/ laptop/Free (CMS) SW and USB Cable
<b>Programming</b>	Yes
<b>Repeater Capable</b>	Yes
<b>Compliance</b>	FCC ID: OA3MRF24J0MA IEEE 802.15.4-2006 CE, RoHs

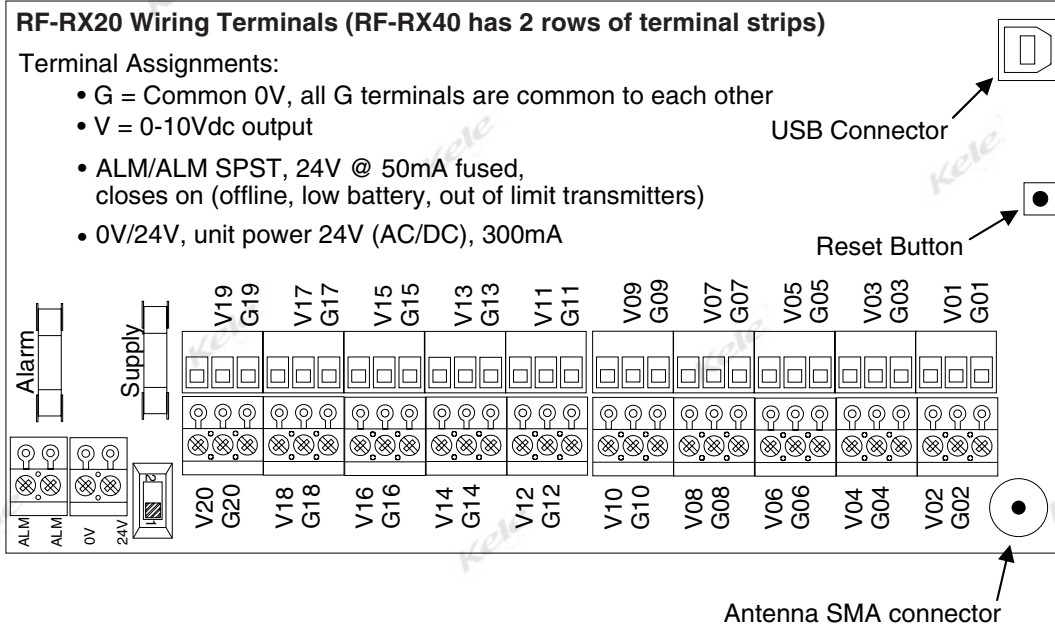


### WIRING

#### RF-RX20 Wiring Terminals (RF-RX40 has 2 rows of terminal strips)

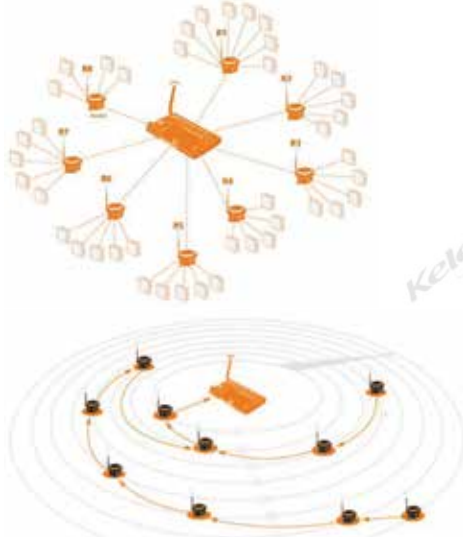
##### Terminal Assignments:

- G = Common 0V, all G terminals are common to each other
- V = 0-10Vdc output
- ALM/ALM SPST, 24V @ 50mA fused, closes on (offline, low battery, out of limit transmitters)
- 0V/24V, unit power 24V (AC/DC), 300mA



### NETWORK

Routers, though permanently powered, can also have sensing elements, accomplishing both router and sensors functions. Routers and sensors can either communicate directly with the receiver or via other routers. Routers are required to be permanently powered as they need to stay "awake" at all times to allow signals from "child" nodes to be instantly forwarded to their "parent" nodes. Battery powered sensors only "wake" for very short periods to send data.



In the schematic to the left, routers **R2 to R7** have 5 children each, all battery powered sensors. Their parent is the receiver. Router **R1** has 8 children and **R8** has 4 children, giving a total number of network devices of 51, including the receiver.

The receiver can support a **maximum** of 16 directly connected "child" devices, of which only 12 can be battery powered nodes, plus up to 4 routers.

Routers can support a **maximum** of 16 directly connected "child" devices, of which only 8 can be battery powered nodes, plus up to 8 routers.

There can be a maximum depth of 8 layers of routers in a network and a maximum of 50 nodes per network with the **RF-RX** series of receivers.

### ORDERING INFORMATION

MODEL	DESCRIPTION
<b>RF-RX20</b>	Receiver with 20 x 0-10VDC outputs and stick antenna (purchase remote antennas separately)
<b>RF-RX40</b>	Receiver with 40 x 0-10VDC outputs and stick antenna (purchase remote antennas separately)
ACCESSORIES	
<b>RF-AERIAL-PM2</b>	Aerial extension with bulk head fitting, 2M cable
<b>RF-AERIAL-PM5</b>	Aerial extension with bulk head fitting, 5M cable