

RV-N55-3 RAZN Data Sheet

RV-N55-3 RAZN
RV-N58 PAIRs

Remote Controller for **LIGHTS, VALVES, PUMPS ...**

A Remote Autonomous Zone Node (RAZN) is an Automated Peripheral for controlling

things in remote areas with a compact, cost-effective, package.

Works over many miles. Flexible inputs and outputs and secure communications.



Together: These are a complete Autonomous Solution. Depends on needs for solid state relays.

Product Overview

Automated Irrigation Management

RAZN was created to optimize water use for agriculture, farms, campuses, and large areas. The RAZN system has a long-range wireless network of remote controllers and is useful in isolated areas of water-limited geographical areas.

Long Range Wireless Operation

Many RF options, super long-range communication. 1/2W to 5W UHF, VHF; 50mW-1W ISM LoRa. Verify operation and quality of connection in the field from 1 to 50 miles.

High Performance Interfaces

The master controller has a number of interface options.

- A. **Ethernet.** Connect to a LAN, the Internet, Cloud, or PC/Server. The device can be a TCP client or server.
- B. **Serial Port.** RS485.
- C. **WebGIU.** HTML website server built in to use a Web Browser to access statistics, settings, and control IOs.

Turn Things On and Off

Use Buttons, Switches, or WEBGUI to turn things on and off. And the remote Servant outputs DC or AC power from pins on Terminal port A. Turn lights, pumps, valves, alarms, relays, or whatever you want to remotely control. Each **SV** Switched Voltage output is controlled in real-time by the **BI** Button inputs.

Reliable Wireless Connection

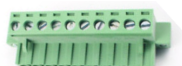
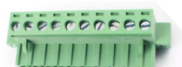
This communicates wirelessly over many miles, and the RAZN confirms messages and shows the status of remote Servant on the LEDs of the master.

8 **SV** Switch Voltage Outputs,

Terminals to output voltages to control lights, valves, pumps,... in isolated areas. LEDs show output status on or off.

8 **BI** Button Inputs,

Most have 8 button inputs to connect buttons to to control the local **SV** terminals or remote RAZNs with **SV** terminals in isolate areas.



Autonomous Operation Also

Along with all remote control features, you can setup the RAZN to also run Autonomously, so this peripheral will reliably do what you want it to do, and if your computer, network, cell service, or whatever fails, the RAZN will work autonomously and save your isolated things.

A Myriad of Ways to Use This:

Point-to-Point: Two RAZNs can work together by themselves and control what you want in isolated areas.

You can use 2-200 of these RAZNs to do what you need to control in isolated areas.

Social Distancing

RAZN's Autonomous Wireless Man-Machine interface helps promote remote social distancing (due to Covid-19) while connecting it to the Internet of Things

Secure Data

Data encryption is in wireless communication that uses encrypt transmissions with AES128.

STATUS LEDs

The RAZN has power LED and Communication LED to show what is working. The master's LEDs show the status of the remote RAZN, and the remote RAZN with SV outputs has LEDs to show its own output status.

Other Notes

The IO pins have great ESD and over-voltage protection. DC power in is reverse and over-voltage protected. Very robust. Internal temperature and voltage monitoring for diagnostics.

The next page shows the architecture of several ways to use the RAZN.

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Version B5

General Specifications

Model Part Number: **RV-N55-3V-MBB-O**

V: Variations of the X version. A, B, C, G, U

M: Radio Modem version 5,6,8 (M50, M6, M8)

BB: Radio band code.

O: Options, sensors, and Accessories included

Power Consumption 1-2W.

Maximum **SV** Input Voltage: 50V DC. (2.4A)
(without damage)

Negative **SV** Input Voltage: -50V DC. (2.0A)
(without damage)

Additional Power required. Wireless Links utilized 1-10W,
varies by radio model utilized.
Idle, TX, and RX modes vary.

Over-Voltage Protection 31-50V input, no damage.

Operating Temperature: -30C to +60C

Weight 0.40lbs + RF Modem weight.

Security

Encryption Method..... **AES128**

Electronic Serial Number..... Silicon ESN

RF Electrical Specifications

See the appropriate RV-M8, RV-M6, RV-D50 or RV-Z50 data sheet for specific details regarding the wireless performance specifications for the optional radio modems.

Input / Output Connection Functions

Terminal A (Switched Voltage)

8 **SV** Switch Voltage Outputs

Terminal B (Button & Digital Input)

8 **BI** Button Inputs to turn SV on/off local or remote.

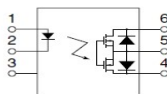
IO Terminals Electrical Specifications

SV Switched Voltage DC Input 3-30V DC

SV Switched Voltage AC Input 2-32V AC

Maximum SV current Draw 1.1 continuous, 2.5 peak

SV Switched Voltage Controllers are Optically Isolated switches rated at 2.5A DC and 2.5A peak AC. On resistance < 0.15A. Max load voltage rates 55V. DC isolation is 450V. Optical isolation is > 500Mohm and < 5pF



SW Switch Input. 1K Ω pull up, pull to GND for ON.

Device Electrical Specifications

DC supply Voltage 7.5VDC – 29VDC

Max. power consumption at 24V

Product less RF modem 110mA

RV modem consumption See data sheets for modem power

DC Power Cable 2.5mm X 11mm plug. 6M cable

Interface Option Connections

RS-485 / RS-422 Interface Port in N55

Connector Type Phoenix 5-pin

IO Voltage Levels RS-485

Ethernet TCP in N55

Connector Type RJ45f, 10/100

IP Address Static, dynamic, port selectable

RS-485 / RS-422 Port with no Ethernet

In the **RV-N54** there is no Ethernet Interface.

IO Voltage Levels RS-485

Mechanical Specifications

Dimensions Width, Height, Depth5.25" X 2.75" 1.25"

Accessories: Model Number Code: (x)

(P) AC/DC Power supply 12V. 2A P/N: PS-55-2

(D) DIN Rail Mount

LEDs

8 LEDs show the status of the 8 Digital Outputs

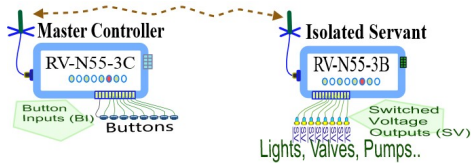
1 LED shows Power status On/Off

1 LED shows communication status

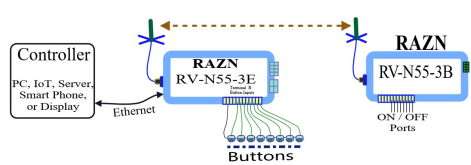
RV-N55-3B RAZN With Masters

RV-N55-3B has 8 switched power outputs. RV-N55-3C Master controls the Servant in isolated area with long-range wireless link.

RV-N58-2CB Pair



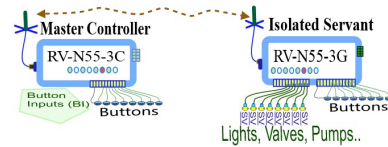
RV-N55-3B controlled by PC, IoT, Smart Phone.... RV-N55-3E Ethernet interface connects to servers or IoT, to remote control the RAZN and buttons will work also.



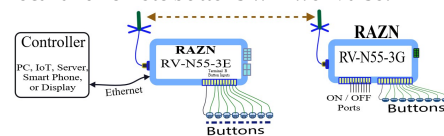
RV-N55-3G RAZN Versions

RV-N55-3G has 8 switched power outputs and 8 button inputs. Remotely control things and locally push buttons as needed. Master Controller connects to a RAZN in a remote Isolated area.

RV-N58-2CG Pair



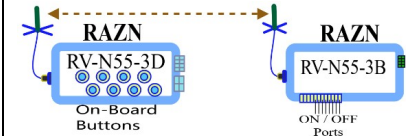
RV-N55-3G controlled by PC, IoT, Smart Phone.... RV-N55-3E Ethernet interface connects to servers or IoT, to remote control the RAZN and local and remote buttons will work also.



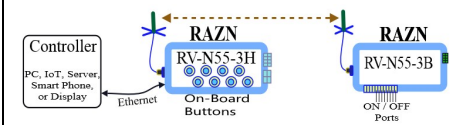
Master Controller Versions

RV-N55-3D has 8 buttons on top the enclosure. To remotely control things, locally push buttons as needed to turn remote SV terminals on or off.

RV-N58-2DB Pair



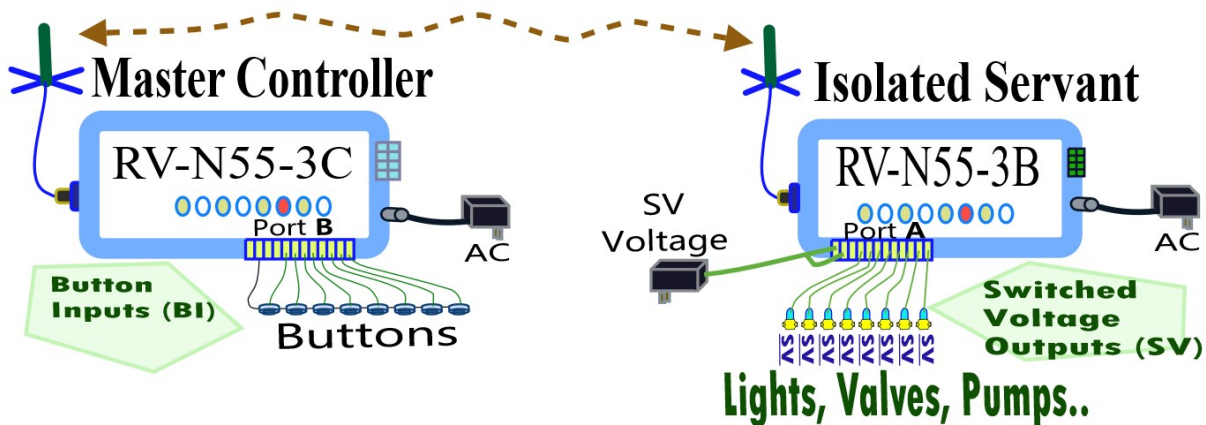
RV-N55-3H has 8 buttons built onto the enclosure. To remotely master control things, locally push buttons as needed. Your Controller and RAZN can connects to the RV-N55-3H via Ethernet to communicate to a RAZN in an isolated area.



Plug In Buttons to control what you want.

Preset Features on All Versions of the RV-N55-3

A Master RAZN Controller has inputs for buttons or switches, and each one controls the SV outputs on the Isolated Servant RAZN using the long-range RF connection. Pressing a master Button Input (BI), turns on Switched Voltage (SV) terminal outputs in the Servant. The RAZN is powered by a 12V AC power supply, and the SV output terminals are whatever the SV voltage input is on Port B. Put AC or DC input voltage in



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