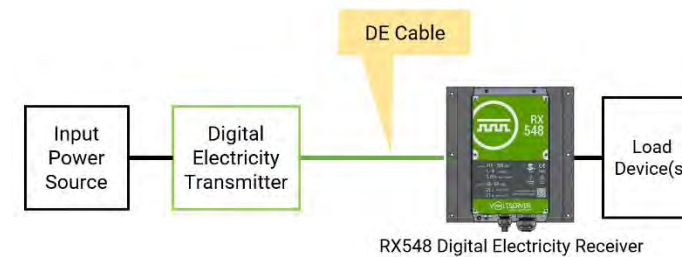


**LED CODES & TROUBLESHOOTING**

NORMAL STATES	LED PATTERN	NOTE
Normal Operation	GRN  OUTPUT  ON RED  FAULT  OFF BLU  SYSTEM  BRIEF BLINK(heartbeat)	
Boot-up	GRN  OUTPUT  OFF RED  FAULT  OFF BLU  SYSTEM  BLINK (booting up)	Start-up sequence occurs when power is first applied to the receiver.
Pre-charge DE	GRN  OUTPUT  BLINK (slow) RED  FAULT  OFF BLU  SYSTEM  OFF	Part of normal start-up sequence
Pre-charge Load	GRN  OUTPUT  BLINK RED  FAULT  OFF BLU  SYSTEM  OFF	Part of normal start-up sequence

FAULTS	LED PATTERN	FAULT CODE	TROUBLESHOOTING
LOAD CONNECTION	GRN   OFF RED   BLINKS = FAULT CODE BLU   OFF	2 Blinks	Connection problem between receiver output and load. <ul style="list-style-type: none"> <li>Check receiver output polarity</li> <li>Check connections to load</li> </ul>
OVERLOAD		3 Blinks	Load Current too high <ul style="list-style-type: none"> <li>Reduce Load</li> <li>Check wiring</li> </ul>
TRANSMITTER		4 Blinks	Transmitter Power Problem <ul style="list-style-type: none"> <li>Check transmitter card(s)</li> <li>Check wiring from transmitter</li> </ul>
TEMPERATURE		5 Blinks	Receiver over temperature <ul style="list-style-type: none"> <li>Reduce ambient temp surrounding receiver</li> <li>Reduce Load</li> </ul>
SHORT CIRCUIT		6 Blinks	Short Circuit detected between receiver and load <ul style="list-style-type: none"> <li>Check wiring</li> <li>Check load for short circuit or ground fault</li> </ul>
INTERNAL FAILURE		8 Blinks	Internal hardware Failure <ul style="list-style-type: none"> <li>Contact Voltserver</li> </ul>

The RX548 Receiver is a component in a Digital Electricity™ line powering system. When paired with a Voltserver transmitter unit, a Digital Electricity™ (DE) system is formed (see diagram). If a person or foreign conductor comes in contact with the DE wiring, power is disconnected; preventing fire, equipment damage and personal injury. The RX548 provides up to 1200W for nominal 48V systems.



RX548 Receiver

Digital Electricity™ is a **Limited Power Source** which allows it to utilize standard 12-18AWG multi-conductor cabling, without conduit, while conforming to the National Electric Code standards for building installations (NOTE: Always follow local codes). The RX548 is a **listed** product, certified to safety and EMC standards by a **Nationally Recognized Test Laboratory**.

Specifications			
Input	Voltage	310-350V (336V Nominal)	Must be supplied by listed Voltserver transmitter shelf
	Number of Channels	4	
Output	Current Per Input Channel	3.75A MAX	
	Voltage	49.2V-54.7V	For 48V nominal systems
	Current	25A Max @ 45C 21A Max @ 55C	
Environment	Operating Temperature	-40C (-40F) to 55C (131F)	Cold Start limited to -20C (-4F)
	Altitude	Up to 2000m	
Mechanical	IP Rating	IP65	
	Dimensions	10.04" x 9.45" x 3.99" 255mm x 240mm x 101.35mm	Without cables
Approvals	Weight	9.5lbs (4.3kg)	Without cables installed
	Safety	60950-1	
	EMC	EN 55032:2012 EN 300 386 v2.1.1	
Environmental	RoHS, 60950-22		
General	CE		



**WARNING!**

This unit has internal voltages that are hazardous when energized. Ensure that the source power is de-energized before making connections. Do not open the unit while it is running; or before the internal capacitance has had enough time (up to one minute) to discharge. Up to 350VDC is present inside the RX548 while running. There are no field serviceable parts inside the unit.

**WARNING!**

The allowable line capacitance specified by IEC-60950-21 is 3µF. The Design Authority of the deployment must confirm that the line capacitance listed in the cable specifications for a single pair does not exceed 2.97 µF over the total distance between the transmitter and receiver units.

**WARNING!**

The voltage rating of the transmission wiring between VoltServer Transmitter and RX Receiver(s) must be a minimum of 300Vrms.

**WARNING!**

The minimum wire gauge for use with VoltServer GEN2 Transmitters is 18AWG copper conductors. Mutual conductor capacitance shall be no more than 40pF per foot or 164 pF per meter.

**WARNING!**

VoltServer RX Receiver inputs are intended to be powered by VoltServer TX Transmitter products only. Ensure that only VoltServer TX Transmitter products are used as sources of power for this RX Receiver unit.

**Symbols**



Hazardous Voltages present when energized. Do not open the unit while it is running.

The surface of this unit may become hot while running. Shut down the unit and allow to cool before servicing.



This symbol indicates the main earth ground terminal for the device. See "Grounding" section below.

**Installation Instructions**

**NOTE**

**Input and Output wiring and overcurrent protection must be installed in accordance with all local and national electric codes and requirements.**

**Physical Installation**

The RX548 is intended to mount vertically on a wall with the cable glands positioned at the bottom. The RX548 should have free air space around the unit and not be mounted directly above a heat source. The RX548 is mounted using the six supplied screws. Mounting holes are located in the RX548 heat sink flanges.

**IMPORTANT: Unit must be oriented with cable glands facing down.**

**Grounding**

The RX548 receiver must be properly grounded to the user's facility earth connection for safe operation. The ground for the receiver should be the same ground as the transmitter chassis it is being fed from, otherwise OVP is needed. The connection should be made to the building earth ground with a green/yellow 10AWG wire. A 10-32 screw, lock washer and TE Connectivity P/N 33460 ring terminal are provided with the RX548.

**General**

**DO NOT** connect a load while the RX548 Receiver is running, the load should be connected to the output of the RX548 prior to powering the unit from the DE input.

**Method of Disconnect from Power**

To disconnect the RX548 Digital Electricity Receiver unit from power, unplug ALL corresponding channels from the DE Transmitter Chassis either at the transmitter location or at the receiver. Due to the amount of capacitance in the RX548 Receiver, it may take up to one minute for the RX548 to drop to safe voltage levels.

**IMPORTANT: DO NOT attempt to "hot-plug" any load or device from the output of the RX548 receiver with the receiver energized. Disconnect input power first before connecting a load device to the output.**

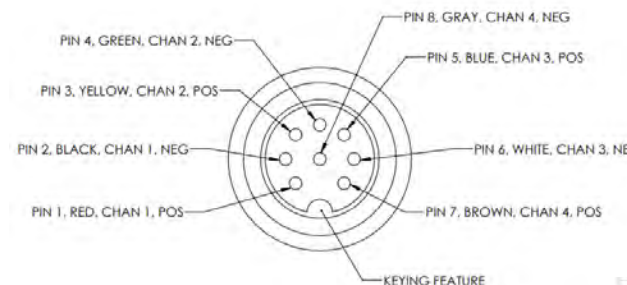
**NOTE**  
If not using factory pre-installed connectorized cables, a readily accessible disconnect device must be incorporated in the system design external to the RX548 receiver.

**Input Wiring**

**NOTE:** Units may ship with pre-installed 1ft connectorized 18AWG cable whips. This wiring should be terminated appropriately at the customer site. If unit has pre-installed cables, the instructions in *italics* directly below do not apply. Otherwise the following applies to customer installed input wiring.

- The RX548 input cabling must have 300V (RMS) or greater insulation. The minimum conductor size is 18AWG.*
- The input cable gland located on the bottom left of the RX548 accepts cable diameters between 0.24" - 0.47" (6-12mm). Cable diameter must be between these values to ensure proper strain relief, ingress and connection integrity. Use an appropriate jacketed, insulated cable and tighten cable glands such that input and output cables cannot be tugged free of connections.*
- J100 is a spring-cage style terminal block which accepts 10 – 18 AWG conductors. J100 is operated by pressing down on the orange levers for the appropriate connector slot. This will release the internal clamp. A small screw driver or fingernail can be used to operate the connector.*
- The wires should be stripped to 3/8" and the exposed stripped wire should not extend out of the connector.*

**Pre-terminate input cable whip pin-out**



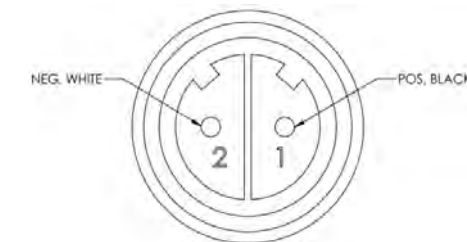
Pin	Color	Description
1	Red	DE Input Channel 1 Pos (+)
2	Black	DE Input Channel 1 Neg (-)
3	Yellow	DE Input Channel 2 Pos (+)
4	Green	DE Input Channel 2 Neg (-)
5	Blue	DE Input Channel 3 Pos (+)
6	White	DE Input Channel 3 Neg (-)
7	Brown	DE Input Channel 4 Pos (+)
8	Gray	DE Input Channel 4 Neg (-)

**Output Wiring**

**NOTE:** Units may ship with pre-installed 1ft connectorized 10AWG cable whips. This wiring should be terminated appropriately at the customer site. See back page for pin-out. If unit has pre-installed cables whips, the instructions directly below in *italics* do not apply. Otherwise the following applies to customer installed output wiring.

- The RX548 output cabling must have at least 60V (RMS) insulation and 12AWG conductors to handle up to 25A of current. 10AWG is recommended.*
- Maximum recommended output cable length is 9.84ft (3m).*
- The output cabling gland located on the bottom right of the RX548 accepts cable diameters between 0.51" - 0.71" (13mm-18mm). Cable diameter must be between these values to ensure proper strain relief, ingress and connection integrity. Use an appropriate jacketed, insulated cable and tighten cable glands such that input and output cables cannot be tugged free of connections.*
- J101 is a spring-cage style terminal block which accepts 10 – 18 AWG conductors. Wires are inserted by pulling the orange latch upward with a finger, inserting the wire, and pushing the latch down. The latch assembly should be flush with the top of the connector when properly latched. The wires should be stripped to 1/2" and the exposed stripped wire should not extend out of the connector.*

**Pre-terminate output cable whip pin-out**



**DO NOT "HOT PLUG" THE OUTPUT!**

Pin	Color	Description
1	Black	48V Out Pos (+)
2	White	48V Out Neg (-)