Redundant systems increase system availability by including two or more of the same type of equipment (unit) in the signal path, where at least one unit serves as a backup for the others. The backup may be switched in to replace an on-line unit if a fault is detected in that unit.

Common types of redundant systems are 1:1, which consists of two units, one on-line and one backup; and 1:2, which consists of three units, two on-line carrying two separate channels, and one backup that can replace either of the on-line units. Less common Dual 1:1 systems consist of two pairs of 1:1 systems (four units total) in one installation, with one redundant pair on each channel.

The RSC series of redundant system controllers are capable of controlling various types of equipment in 1:1, 1:2, or Dual 1:1 systems. They can directly power most LNA or LNB units and monitor the output voltages and currents to detect faults. The RSC can also monitor external alarm signals, such as summary alarms from SSPA units, or a combination of output currents and external alarm inputs. Upon detecting a fault, the RSC drives an RF transfer switch to activate the spare unit.

The RSC offers monitoring and control of auxiliary RF hardware; remote monitor and control via network, serial interface, or parallel I/O; flexible configuration of the system behavior; remote disable of local controls for security; and the ability to detect and report certain failures within the controller itself.

1:2 Redundant System Controller, Model RSC12V1-AC

Remote Control Panel Option

A second RSC can be linked to a primary RSC to provide full system control from an alternate control site. When set up this way, the secondary RSC is referred to as a remote control panel, or RCP. The configuration and settings of the primary RSC are transferred to the RCP, which then mimics its controls and interfaces. This permits system operation from a location that is up to 4000 ft. (1200 m) distant from the primary controller.

Configuring an RSC to become an RCP (and the reverse) can be done through the front panel controls by the user.
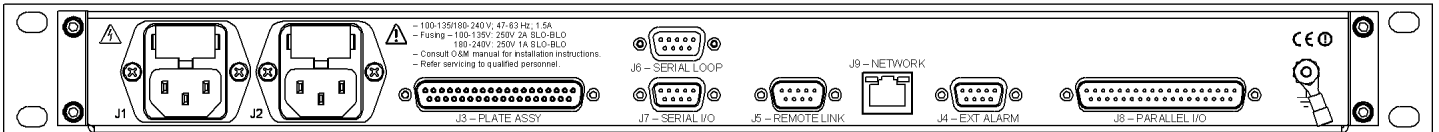
FEATURES:

- 10/100 Base T Ethernet network interface
- Internal webpage for configuration, monitor and control
- Supports SNMP v1, v2c, and v3
- Standard rack -mount chassis, 19" wide panel, 1¾"(1 RU) high
- Dual, redundant power supplies
- Manual or automatic operation
- Monitors unit currents, external alarms, or a combination of both
- Automatically switches RF path to standby unit when unit failure occurs
- User-selectable RS-232/-422/-485 serial I/O, and parallel I/O M&C interfaces
- Menu-driven user configuration of all options
- Mimic front panel graphically depicts switch positions and unit status
- Worldwide universal AC unit capability standard
- Audible alarm
- CE certified and RoHs compliant; EAR 99
- Monitor and Power Tracking Unit in monopulse systems

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Front Panel Controls and Indicators

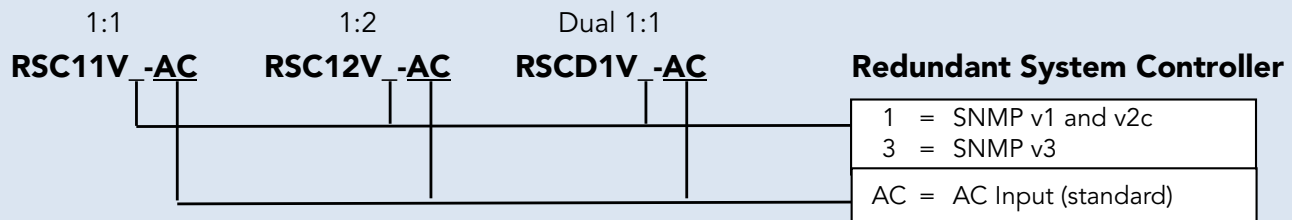|	
Unit Status Alarms	LED Indicators glow green when OK, red when a fault is detected.
PS Indicator	Glows red to show fault with either dual redundant power supply.
Panel Test	Pushbutton lights all indicators & tests audible alarm.
RF Switch Pushbuttons and Indicators	Pushbuttons are used to manually switch units. Front panel indicators show which units are on-line. Unit indicators light red to show faulted units.
	In a typical 1:1 system, Unit 1 is the primary unit and Unit 2 is on standby. In a 1:2 system, Unit 1 is the primary unit for Pol 1 and Unit 2 is the primary unit for Pol 2. Unit 3 is on standby and can be selected for either Pol. In a dual 1:1 system, Unit 1 is the primary unit and Unit 2 is on standby for Pol 1; Unit 3 is the primary and Unit 4 is on standby for Pol 2.
Auto/Manual Switch and Indicators	In Auto mode, a unit failure initiates automatic switchover to the standby unit. In manual mode, the on-line unit can be selected from the front panel or by serial I/O, parallel I/O or network command.
Remote/Local Switch and Indicators	Selects local (front panel) control, or remote control from serial I/O, parallel I/O, or network.
	An optional second RSC, configured as a Remote Control Panel, provides the means to operate the system from a physically distant, alternate location.

Rear Panel Interfaces

J1, J2 – LINE 1, LINE 2 (IEC 320-C14)	Dual power entry modules contain the AC line input connectors. System can be powered from separate AC lines if desired. Either or both power supplies are capable of operating the system.
J3 – PLATE ASSY (37-pos D, Female)	Cable to plate assembly carries unit power (for line drivers, LNAs or LNBs) and switch drive signals. **Order cable separately.** Standard lengths are 100' (30 m) to 250' (75 m) in 50' (15 m) increments; other lengths are special order. An adapter cable mates the controller to legacy system cables.
J6 – SERIAL I/O and J7 – SERIAL LOOP (9-pos D Female)	RS-232/RS-422/RS-485 connector for user M&C System. Commands provide monitoring, controlling, and configuration. Interconnect cable lengths to 4000 ft (1200 m) with RS-422 or RS-485. A serial loop connector provides a convenient connection for daisy-chained systems.
J5 – REMOTE LINK (9-pos D Male)	For connection via a proprietary RS-422 link (up to 4000 ft/1200 m) to an optional, second RSC, which duplicates Local control functions at a secondary site.
J9 – NETWORK (RJ-45)	10/100 Base T Ethernet connection port via standard RJ-45 connector. Supports SNMP v1, v2c and v3.
J4 – EXT ALARM (9-pos D Female)	External Alarm inputs. Substitute for or combine with internal unit current monitor alarms. Allows an external signal to indicate unit failure. Unused inputs can be used as status inputs to M&C system.
J8 – PARALLEL I/O (37-pos D Male)	Parallel I/O (discrete logic) connection for limited control and monitoring of the system.
	Form 'C' relay contact outputs (1:2 system example; others are similar):
	• Unit 1 status • PS 1 status • Pol 1: Unit 1 or Unit 3
	• Unit 2 status • PS 2 status • Pol 2: Unit 2 or Unit 3
	• Unit 3 status • Local/Remote mode • Auto/Manual mode
	Control inputs—contact closure to ground (1:2 system example; others are similar):
	• Pol 1 Unit 1 select • Pol 2 Unit 2 select • Auto/Manual select
	• Pol 1 Unit 3 select • Pol 2 Unit 3 select

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Quality Management System - ISO 9001:2015

CE

Controller Specifications

Unit Status Monitor Methods	Controller monitors unit bias current; alarm is generated if current goes outside of allowed tolerance window (LNA or LNB systems). Controller also monitors external alarm inputs (SSPA and other systems) or combinations of both internal unit current and external alarm inputs.
Unit Current Window Width	±5% to ±25% of nominal; user selectable in 5% steps (applies to all monitored unit currents)
Switchover Time	100 ms maximum
Unit Power Outputs	+14.3 to +15.0 Vdc, 600 mA maximum
Switch Drive Outputs	-22 to -28 Vdc, 2 A maximum
External Alarm Inputs	Optionally up to one per unit; require sinking 5 mA at 5 Vdc to negate alarm
Serial I/O Interface	RS-232/RS-422/RS-485 2- or 4-wire; user selection
Parallel I/O Interface	Control inputs: Contact closures to ground; require sinking 20 mA at 15 Vdc Status outputs: Form 'C' dry contacts; 100 Vdc, 0.5 A, 3 W max (resistive load)
Controller Dimensions	19" (483 mm) W x 1.72" (43.7 mm) H x 17.5" (445 mm) D; 7.6 lb (3.4 kg)
Chassis Slides	Standard. Radio relay rack-mount brackets available on request.
Cable Length to Plate Assy	**Order cable separately.** 100 ft (30 m) to 250 ft (75 m) lengths in 50 ft (15 m) increments are standard; other lengths (up to 500 ft or 150 m) are available by special order.
AC Input (standard)	100-135 or 180-240 Vac, 47–63 Hz, 100 W; Dual AC inputs and dual redundant power supplies
Temperature Range	Operating: 0 to +50 °C (indoor equipment environment) Storage: -40 to +70 °C
Reliability	MTBF: 48,200 hours; MTTR: less than 30 minutes with spares and proper technical person

Part Number Ordering Information

1:1	1:2	Dual 1:1	
RSC11V_-AC	**RSC12V_-AC**	**RSCD1V_-AC**	**Redundant System Controller**

1 = SNMP v1 and v2c 3 = SNMP v3	
AC = AC Input (standard)	

Order control cable separately.

Previous products	Replacement product
RSC-1100 series 1:1 controllers and RCP-1100 remote control panels	RSC11 Series
RSC-1200 series 1:2 controllers and RCP-1200 remote control panels	RSC12 Series
RSC-1111 series 1:2 controllers and RCP-1111 remote control panels	RSCD1 Series

The RSCxxVx Redundant System Controller series replaces legacy RSC-1100, RSC-1200, and RSC-1111 controllers and remote panels.

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