

RCU101 1:1 Frequency Converter Redundancy Control Unit

Converters



Overview

The RCU101 1:1 Redundancy Control Unit provides a simple yet versatile low-cost solution for 1:1 circuit protection that makes sense. A unique feature of the RCU101 concept is the plug-and-play simplicity with which this system can be integrated. Interconnect the cables, instruct the backup converter to “learn” and the protection switch is activated. The backup converter learns the frequency and gain settings of the primary converter.

As the system controller, the designated backup converter communicates with the primary converter via the RS-485 equipment interface. Control and monitoring of the primary converter and switch can be performed through the operator RS-232/485 serial interface. The backup monitors the setting of the primary converter. If any changes are made to the primary converter, the backup converter will notify the user via the operator serial interface and will indicate it on the front panel of the backup converter. In the event of a failure of the primary converter, the backup converter will restore the circuit with the same settings that were identified during the last learning process. The switch provides complete isolation of primary and backup converters by providing transfer switching of both the RF and IF signal paths.

An online selection switch on the front panel of the RCU101 allows the operator to specify which converter is to be online. This allows for manual backup of the primary converter for maintenance or test purposes. This allows the primary or backup converter to be removed from the circuit without disrupting traffic.

Features

- Low-Cost Protection in a 1.75” High Chassis
- Plug-and-Play Simplicity
- Simultaneous IF and RF Transfer Switching
- Full Access to off-line Backup Converter via external removable terminations
- Lighted Front Panel Schematic Representation shows system configuration
- Remote Control and Status Monitoring of Protected System via single Serial Port

Specifications

Rear Panel Connectors

Online Modulators	1 unit
J4	RF In/Out SMA-F
J3	RF Primary SMA-F
J4	RF Backup SMA-F
J5	RF Term SMA/removable 50 ohm Termination
J9	IF In/Out BNC-F
J8	IF Primary BNC-F
J10	IF Backup BNC-F
J7	IF Term BNC-F/removable 75 ohm Termination
J1	D SUB-15 Socket Interface to Primary Converter
J2	D SUB-15 Socket Interface to Backup Converter
J11	D SUB-15 Socket Summary Fault/Status Port

Switched RF Ports

Bandwidth	DC-18 GHz
Insertion Loss	0.4 dB (C-Band), 0.5 dB (Ku-Band)
Impedance	50 Ohms
VSWR	1.4:1 (C-Band), 1.6:1 (Ku-Band)
Isolation	70 dB (C-Band), 60 dB (Ku-Band)

Switched IF Ports

Bandwidth	50-180 MHz
Insertion Loss	1.0 dB Maximum
Impedance	75 Ohms (50 Ohms Optional)
VSWR	1.5:1
Isolation	65 dB Minimum

Front Panel Control & Indicators

Primary LED Indicators	Online, Standby, Fault, Manual
Backup LED Indicators	Online, Standby, Fault, Manual
Transfer Switch Position	Controls Primary/Backup Unit Selection

Physical

Dimensions (height x width x depth)	1.75” x 19” x 20”
Weight	4 lbs



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