Modular Redundancy Switch N:1
RSCM

The WORK Microwave Redundancy Switch System N:1 can be configured for redundancy configurations with a maximum of eight main units and one spare unit. The redundancy system can be used for Upconverters and Downconverters.

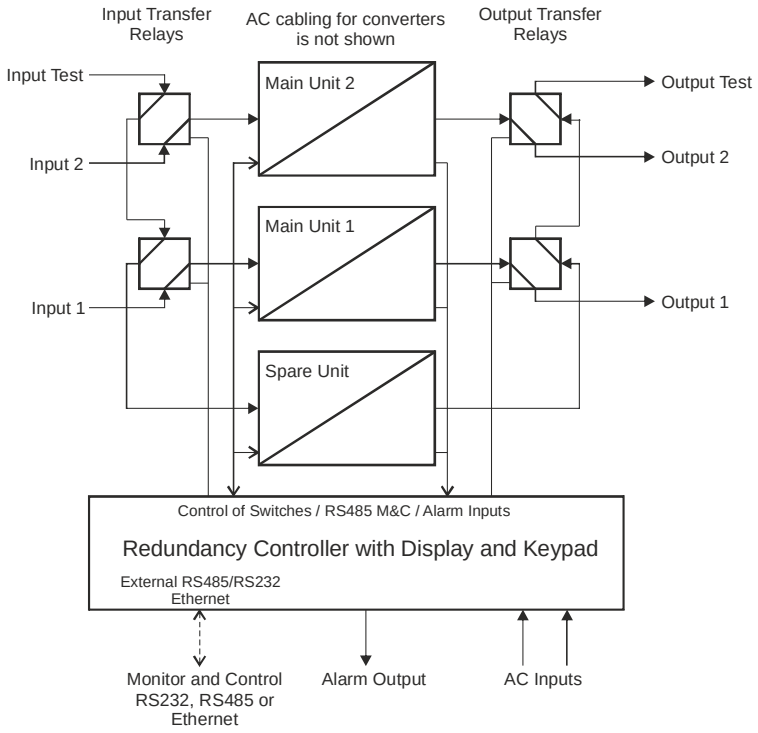
The core of the solution is based on a highly flexible control unit. The required coaxial transfer switches, waveguide transfer switches, and signal splitters are mounted on separate panels or within an outdoor housing. When used in a rack mount installation, redundant switching panels can be added to the system in a modular way if the number of required channels increases over time.

The system can be configured from the front panel of the controller or remotely via RS232, RS422/485, or TCP/IP over Ethernet.

The switching system can be set in automatic mode, whereby an automatic switchover to the spare unit is performed upon detection of an alarm generated by the main unit. In addition, a manual switchover to the spare unit and back can be initiated.

Two power supplies and two AC input connectors within the controller unit guarantee high availability.

The Redundancy Switch System is also available with integrated uplink power control (Option UPC). For functional details see separate datasheet for Remote Control Unit / Satellite Uplink Power Control Unit.



2:1 Modular Redundancy Switch System with RSCM-2

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Remote M&C Interface:	Protocol: Connection:	SNMP UDP over Ethernet (10 or 100 Mbps, auto sensing), connector RJ-45
	Protocol: Connection:	HTTP (web browser interface) TCP/IP over Ethernet (10 or 100 Mbps, auto sensing), connector RJ-45
	Protocol: Connection:	Multipoint RS232 or RS422/RS485 (configurable), connector DSUB09 female or TCP/IP over Ethernet (10 or 100 Mbps, auto sensing), connector RJ-45
Maximum number of switches per each switch panel:	4 (Indoor switch panel)	
Signal Transfer Switches: **(Input and/or Output)** **RSCM-n-50K-xx** **RSCM-n-xx-50K**	Connector Type: Impedance: Power Handling: Frequency Range: Insertion Loss (max.): Isolation (min.): Return Loss (min.): (waveguide switches and other transfer switches on request)	4 x SMA female (Indoor switch panel) (N female on IF interfaces, SMA female on RF interfaces of outdoor switch unit) 50 Ω 1 W (switching) 0 … 18 GHz 0.2 dB (0 … 1 GHz) 0.3 dB (1 … 4 GHz) 0.3 dB (4 … 8 GHz) 0.4 dB (8 … 12 GHz) 0.6 dB (12 … 18 GHz) 85 dB (0 … 1 GHz) 80 dB (1 … 4 GHz) 70 dB (4 … 8 GHz) 65 dB (8 … 12 GHz) 60 dB (12 … 18 GHz) 26 dB (0 … 1 GHz) 20 dB (1 … 4 GHz) 17 dB (4 … 8 GHz) 15 dB (8 … 12 GHz) 14 dB (12 … 18 GHz)
Signal Transfer Switches: **(Input and/or Output)** **RSCM-n-75L-xx** **RSCM-n-xx-75L**	Connector Type: Impedance: Power Handling: Frequency Range: Insertion Loss (max.): Isolation (min.): Return Loss (min.):	4 x 1.6/5.6 female (Indoor switch panel) (Adapters to external BNC female connectors are provided) 75 Ω 1 W (switching) 0 … 2.5 GHz 0.2 dB (0 … 1 GHz) 0.3 dB (1 … 2.5 GHz) 80 dB (0 … 1 GHz) 70 dB (1 … 2.5 GHz) 20 dB (0 … 1 GHz) 18 dB (1 … 2.5 GHz)
Insertion loss compensation:	For each channel attenuation and equalization offsets can be set to compensate for influences of cable and relay differences in case of a replacement.	
Delay from unit alarm occurrence until IF/RF relay switching:	Typical 270 ms, max. 400 ms (depending on connected spare unit)	
Uplink Power Control Algorithm: **(only with Option UPC)**	Configurable parameters Monitors for	• Uplink power control on/off • Maximum gain increase in reference to clear sky gain • Sampling and update period in 0.1 seconds • Ratio between decrease of beacon signal and increase of transmission signal • Clear sky value of DC beacon receiver signal • Sustain period in seconds (up 3600 s) for which the uplink power control keeps the last gain increase value (in case of deep fade conditions where the beacon receiver can lose lock for some period of time) • DC signal from beacon receiver • Calculated attenuation of beacon signal • Current gain increase of transmission signal
Beacon Receiver Interface: **(only with Option UPC)**	connector DSUB9 male (on Y-cable connected to spare unit interface), inputs for Beacon receiver voltage 0 … 12 V and Beacon receiver alarm relay	
Temperature Range:	-30 °C … 60 °C operating -25 °C … 60 °C operating (for RSCM-n-75L…) (the LCD display is operational: -20 °C … 60 °C) -30 °C … 80 °C storage	
Relative Humidity:	<95% non condensing	
User Interface:	LCD (VFD as option), 2 x 40 characters, 4 cursor keys, 2 function keys, Status LED's	
Mains Power Input:	2 x 100 … 240 V AC nominal, 90…264 V AC max, 50…60 Hz, Redundant Power Supply, Hot swap	
Mains Power Consumption:	Max: 16 VA / 8 W Typ: 10 VA / 5 W	
Mains Power Input Connector:	2 x IEC C14	
Mains Fuse:	2 x 2 x 2.0 A time-lag fuse	
Dimension and Weight of Redundancy Controller:	483 x 44 x 270 mm³ or with option L 483 x 44 x 470 mm^3 (WxHxD), 1 RU (19") approx. 4 kg	

Specifications are subject to change

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Order Information:

RSCM-[Number of signal channels]-[Input Switch Type]-[Output Switch Type]-[Options]

Possible Options are:

OD	with outdoor switch unit, available only for two channels on RSCM
UPC	Uplink Power control included
VFD	VF Display
L	Controller housing depth 470 mm

Examples:

RSCM-2-50K50K-50K	Modular 2:1 System with two 50 Ω 18 GHz Input Transfer Switches and one 50 Ω 18 GHz Output Transfer Switch per channel for converters with two inputs
RSCM-2-50K-50K-OD	2:1 Outdoor system with 50 Ω 18 GHz Input and Output Transfer Switches