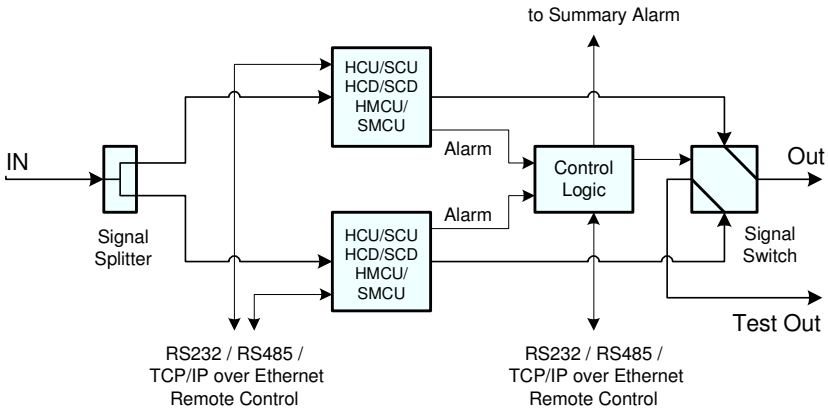
Redundancy Switch 1:1
Redundancy Controller 1:1

The WORK Microwave Redundancy Switch is used for 1:1 redundancy configurations for upconverters, downconverters, DVB modulator-upconverters. It includes typically a coaxial signal splitter for the input signal and a coaxial signal switch for the output signal. Also LNAs or even HPAs can be included within the system, as the switch is capable to control external waveguide transfer switches as option. DC power to LNAs can be provided also as option. The switch accepts alarm signals from 2 types of equipment, so that it can be used for redundancy configurations with e.g. a video encoder and a modulator within one chain.

The units can be controlled from the front panel or remotely via RS 232, RS422/485 or IP over Ethernet.

The unit can operate in automatic mode, were an automatic switchover to the stand by unit is performed upon detection of an alarm of the active unit. Also a manual switchover to the standby unit can be initiated. Two power supplies and two AC input connectors guarantee very high availability of the unit.

The 1:1 redundancy is also available in an outdoor version, where the signal splitter and the signal transfer relay is mounted within an outdoor switch box. The control unit is similar to the indoor redundancy controller, but does not include any signal splitters or signals switches The outdoor switch box also includes interfaces for alarms and M&C of outdoor units. A control cable runs from the outdoor switch box to the indoor redundancy controller.



1:1 redundancy with signal splitter

Redundancy Switch 1:1

Model	**RSCM1-xx-xx** Redundancy Switch 1:1	**RSCM1-OD** Redundancy Controller 1:1 for outdoor switch box RSB1-xx-xx
Control Interface to Outdoor Switch Box RSB1-xx-xx:	-	Alarm inputs, control outputs (Connector DSUB15 female)
Signal Splitter RSCM1-50K-xx	Connector type: SMA female Impedance: 50 Ω Power handling: 3 W Frequency Range: 6-18 GHz Insertion loss: < 1.2 dB (above 3dB) Return Loss: > 14 dB Amplitude balance: 0.4 dB	
Signal Splitter RSCM1-50C-xx	Connector type: SMA female Impedance: 50 Ω Power handling: 3 W Frequency Range: 4-8 GHz Insertion loss: < 1.2 dB (above 3dB) Return Loss: > 15 dB Amplitude balance: 0.4 dB	
Signal Splitter RSCM1-50L-xx	Connector type: SMA female Impedance: 50 Ω Power handling: 3 W Frequency Range: 950-2000 MHz Insertion loss: < 1.0 dB (above 3dB) Return Loss: > 17 dB Amplitude balance: 0.3 dB	
Signal Splitter RSCM1-50V-xx	Connector type: BNC female Impedance: 50 Ω Power handling: 1 W Frequency Range: 5-300 MHz Insertion loss: < 1.0 dB (above 3dB) Return Loss: > 15 dB Amplitude balance: 0.4 dB	
Signal Splitter RSCM1-75V-xx	Connector type: BNC female Impedance: 75 Ω Power handling: 1 W Frequency Range: 5-300 MHz Insertion loss: < 1.0 dB (above 3dB) Return loss: > 15 dB Amplitude balance: 0.4 dB	
Signal Transfer Switch RSCM1-xx-50K	Connector type: SMA female Impedance: 50 Ω Power handling: 1 W (switching) Frequency Range: 0-18 GHz Insertion loss: < 0.1 dB (0-1 GHz) < 0.2 dB (1-4 GHz) < 0.3 dB (4-8 GHz) < 0.4 dB (8-12 GHz) < 0.5 dB (12-18 GHz) Isolation: > 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) Return loss: > 26 dB (0-1 GHz) > 21 dB (1-4 GHz) > 16 dB (4-8 GHz) > 15 dB (8-12 GHz) > 14 dB (12-18 GHz)	

Switching:	Manual or Automatic	
Remote M&C Interface:	Protocol: Connection:	SNMP UDP over Ethernet (10 or 100 Mbit/s, auto sensing), connector RJ-45
	Protocol: Connection:	HTTP (web browser interface) TCP/IP over Ethernet (10 or 100 Mbit/s, auto sensing), connector RJ-45
	Protocol: Connection:	Multipoint RS232 or RS422/RS485 (configurable), connector DSUB09 female or TCP/IP over Ethernet (10 or 100 Mbit/s, auto sensing), connector RJ-45
Summary Alarm Interface:	Two potential free contacts (DPDT, Connector DSUB09 female)	
Internal M&C Interface:	RS485 (Connector DSUB09 male)	
Configuration:	16 DIP switches on rear side / serial interface	
Temperature Range:	-30℃ to 60℃ operating -30℃ to 80℃ storage	
Relative Humidity:	< 95 % non condensing	
User Interface:	10 LEDs, 4 Function Keys	

Specifications continued next page

Redundancy Switch 1:1
Redundancy Controller 1:1

Specifications continued:

Power Input:	85…264 V AC, 40…70 Hz 0.9 A max Redundant Power Supply
Power Consumption:	typical 5 W / 10 VA
Mains Fuse:	2 x 3.15 A time-lag (per power supply unit)
Dimension and Weight:	483 x 44 x 270 mm³, 1 RU (19") appr. 3 kg

Specifications are subject to change

Order Information: **RSCM1-[Splitter Type]-[Switch Type] or**
RSCM1-OD
Examples:
RSCM1-75V-50K
RSCM1-OD

Outdoor Redundancy Switch Unit 1:1

Model	**RSB1-xx-xx** Outdoor Switch Box 1:1	
Signal Splitter RSB1-50K-xx	Connector type: N female Impedance: 50 Ω Power handling: 3 W Frequency Range: 6-18 GHz Insertion loss: < 2.0 dB (above 3dB) Return loss: > 13 dB Amplitude balance: 0.4 dB	
Signal Splitter RSB1-50C-xx	Connector type: N female Impedance: 50 Ω Power handling: 3 W Frequency Range: 4-8 GHz Insertion loss: < 2.0 dB (above 3dB) Return loss: > 14 dB Amplitude balance: 0.4 dB	
Signal Splitter RSB1-50L-xx	Connector type: N female Impedance: 50 Ω Power handling: 3 W Frequency Range: 950-2000 MHz Insertion loss: < 2.0 dB (above 3dB) Return Loss: > 17 dB Amplitude balance: 0.3 dB	
Signal Splitter RSB1-75V-xx	Connector type: BNC female Impedance: 75 Ω Power handling: 1 W Frequency Range: 5-300 MHz Insertion loss: < 1.5 dB (above 3dB) Retrun Loss: > 14 dB Amplitude balance: 0.4 dB	
Signal Transfer Switch RSB1-xx-50K	Connector type: N female Impedance: 50 Ω Power handling: 1 W (switching) Frequency Range: 0-18 GHz Insertion loss: < 0.5 dB (0-1 GHz) < 0.8 dB (1-4 GHz) < 1.0 dB (4-8 GHz) < 1.2 dB (8-12 GHz) < 1.5 dB (12-18 GHz) Isolation: > 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) Return Loss > 20 dB (0-1 GHz) > 17 dB (1-4 GHz) > 15 dB (4-8 GHz) > 14 dB (8-12 GHz) > 12 dB (12-18 GHz)	
Switching:	Controlled by RSCM1-OD	
Control Interface to Indoor Control Unit RSCM1-OD:	Alarms, control signals (Connector Type: MIL-C-26482: MS 3120 E 14-19 S)	
Alarm Interface to Converter Units:	2 Interfaces to sense contact closures at alarm outputs of converter units and for internal M&C (RS485) (Connector Type: MIL-C-26482: MS 3120 E 12-8 S)	
Temperature Range:	-30°C to 60°C operating -30°C to 80°C storage	
Relative Humidity:	100 %	
Dimension and Weight:	190 x 190 x 100 mm appr. 3 kg	
Degree of Protection:	IP 67 (acc. IEC 529)	

Specifications are subject to change

Order Information: **RSB1-[Splitter Type]-[Switch Type]**

Example:

RSB1-75V-50K