

Relay Switching Unit KRE-4150-ESUL

MTS-No.: 30225

Application

The Relay Switching Unit series KRE-4000 can be used for several applications, f.e.:

- Switching Unit for RF-generators, amplifiers and antennas at EMC test laboratories
- RF matrix
- Filter, diplexer attenuator etc. selection unit
- Any automated routing of measurement equipment at test benches

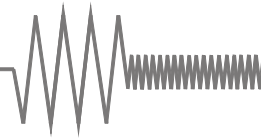
Description

The Relay Switching Unit series KRE-4000 is for the switching of almost every kind of signals. Due to the modular design, the electrical characteristics of the switches can be adapted to versatile demands. In combination with attenuators, splitters and other modules the usability can be extended.



Characteristics

- ▶ Configuration:
 - 3x SP5T relay (R573.F03.510 Radiall) switched synchronously and each position is internal wired with one diplexer
 - 1x Diplex filter (path 1)
WDK11+10-DC-900/1000-3000-40S3
 - 1x Diplex filter (path 2)
WDKX11+10-DC-1600/1800-15000-40S3
 - 1x Diplex filter (path 3)
WDKX11+10-DC-2850/3200-15000-40S3
 - 1x Diplex filter (path 4)
WDKX11+10-DC-5100/5700-15300-40S3
 - 1x Diplex filter (path5)
WDNX9+6-DC-8500/10000-26000-40C3
- ▶ Integrated power supply 100 V - 240 V AC
- ▶ Remote control by USB and LAN (other interfaces, colour display with touchpanel or web control on request)
- ▶ 19" rack mount case with 3 HU
- ▶ Windows control programs can be offered
- ▶ High quality materials and components for extended durability
- ▶ On request user blocking of separate components (with name / name and keyword available)
- ▶ On request switching cycles of every relay position can be requested
- ▶ Relay Switching Units can be designed according to customer's individual requirements



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3x SP5T relay (R573.F03.510 Radiall), 1x diplexer WDK11+10-DC-900/1000-3000-40S3 (path 1), 1x diplexer WDKX11+10-DC-1600/1800-15000-40S3 (path 2), 1x diplexer WDKX11+10-DC-2850/3200-15000-40S3 (path 3), 1x diplexer WDKX11+10-DC-5100/5700-15300-40S3 (path 4), 1x diplexer WDNX9+6-DC-8500/10000-26000-40C3 (path 5) (all diplexer internal wired)

Technical data:

1 RF-specifications:

1.1 Impedance	50 Ω
1.2 Input power	5 W CW in both passbands into a 2:1 VSWR
1.3 Frequency range	DC – 26.0 GHz in detail: Path 1: Band 1 DC – 900 MHz Band 2: 1000 – 3000 MHz Path 2: Band 1: DC – 1600 MHz Band 2: 1800 – 15000 MHz Path 3: Band 1: DC – 2850 MHz Band 2: 3200 – 15000 MHz Path 4: Band 1: DC – 5100 MHz Band 2: 5700 – 15300 MHz Path 5: Band 1: DC – 8500 MHz Band 2: 10000 – 26000 MHz

1.4 RF-connections SMA female

1.5 Switching time max. 15 ms

1.6 Operating life min. 5 000 000 cycles (for internal relays)

	min.	typ.	max.
1.7 VSWR			
@ Path 1: Band 1		1.20	1.60
Band 2		1.30	1.70
@ Path 2: Band 1		1.20	1.60
Band 2		1.45	1.80
@ Path 3: Band 1		1.25	1.70
Band 2		1.45	1.80
@ Path 4: Band 1		1.30	1.70
Band 2		1.50	2.00
@ Path 5: Band 1		1.25	1.60
Band 2 ¹		1.45	2.00
1.8 Passband loss			
@ Path 1: Band 1	0.80 dB		1.70 dB
Band 2	1.40 dB		2.50 dB
@ Path 2: Band 1	1.20 dB		2.30 dB
Band 2	2.50 dB		4.00 dB
@ Path 3: Band 1	1.30 dB		2.60 dB
Band 2	2.50 dB		4.00 dB
@ Path 4: Band 1	1.60 dB		3.30 dB
Band 2	2.80 dB		4.30 dB
@ Path 5: Band 1	1.80 dB		3.70 dB
Band 2 ¹	3.80 dB		5.50 dB

	min.	typ.	max.
1.9 Stopband attenuation			
@ Path 1: Band 1	40.0 dB	100 dB	
Band 2	40.0 dB	100 dB	
@ Path 2: Band 1	40.0 dB	100 dB	
Band 2	40.0 dB	100 dB	
@ Path 3: Band 1	40.0 dB	100 dB	
Band 2	40.0 dB	100 dB	
@ Path 4: Band 1	40.0 dB	100 dB	
Band 2	40.0 dB	100 dB	
@ Path 5: Band 1	40.0 dB	100 dB	
Band 2 ¹	40.0 dB	100 dB	

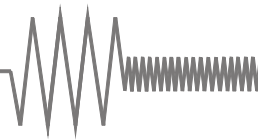
2 Connections:

2.1 Front side	Power switch with integrated control lamp
2.2 Rear side	RF-connections Control card with control interfaces Appliance plug with the integrated fuses F1 and F2 Ground connector

3 General specifications:

3.1 Power supply	100 V - 240 V 50 Hz / 60 Hz
3.2 Internal voltage	+5 V DC, +28 V DC
3.3 Control displays	Control lamp in the power switch
3.4 Control interfaces	USB LAN
3.5 Power consumption primarily	100 mA max. @ 230 V (no relay switched) 150 mA max. @ 230 V (all relays switched)
3.6 Voltage supply	Standard rubber connector

Notes: 1. Minimum and maximum values @ 26 GHz were estimated by measuring real s-parameters up to 20 GHz (R&S@ZNB20) and using linear extrapolation.



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 (all diplexer internal wired)

Technical data:

3 General specifications:

3.6 Operating temperature	+15 °C - +45 °C
3.7 Reference temperature for specifications	+25 °C
3.8 Dimensions	19"-unit x 3 HU x 310 mm (dimensions without handles and connections)
3.9 Colour	Front side colourless anodized Rear side colourless anodized
3.10 Weight	7.2 kg

4 Delivered parts:

KRE-4150-ESUL
 Power cable
 CD with operating manual

5 Comments:

Warranty 12 months
 RoHS-compliant Yes

6 Recommended accessories:

RF-cables
 Terminations
 Attenuators

Views:

