



Two-Line V-Network R&S ENV216

for RFI voltage measurements on single-phase EUTs

- ◆ Frequency range 9 kHz to 30 MHz
- ◆ Power-handling capacity 16 A, constant current
- ◆ 150 kHz highpass filter, switch-selectable
- ◆ Built-in 10 dB attenuator and pulse limiter
- ◆ V-network to CISPR, EN, VDE, ANSI and MIL-STD-461 D and E; meets CISPR/A/413/CD
- ◆ Calibrated to CISPR 16-1:1999 and ANSI C63.4
- ◆ Air-core design
- ◆ Artificial hand
- ◆ Remote control with TTL levels via optocoupler



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Characteristics, use

The Two-Line V-Network R&S ENV 216 ($50 \mu\text{H} + 5 \Omega$)/ 50Ω satisfies the requirements of VDE 0876 and CISPR Publ. 16-1 for V-networks (incl. the requirements of the planned extension for CISPR/A/413/CD regarding the isolation between EUT and power port and the impedance with respect to magnitude and phase) in the frequency range 9 kHz to 30 MHz. It is based on air-core inductances and contains an artificial hand.

A 16 A female connector with earthing contact is provided for connecting the EUT. Various models with country-specific connector systems are available.

To prevent the test receiver from being overdriven by low-frequency spectra of high level, a 150 kHz highpass filter can be cut in. To ensure standard impedance irrespective of the receiver input attenuation, the R&S ENV 216 is equipped with a 10 dB attenuator. A built-in pulse limiter protects the receiver input.

TTL control inputs that can be driven by controllers and R&S test receivers are provided for remote control in automatic test systems (phase selection and activation of highpass filter). Optocouplers prevent pick-up of external RFI. In the case of AC supply operation, the operating voltage for the built-in logic circuit is obtained in a range from 90 V to 250 V and 47 Hz to 63 Hz. This covers all standard applications. If the EUT is operated with low AC voltages or DC voltages up to 50 V, the logic circuit is powered via an external

plug-in power supply. Owing to its compact design and low weight, the R&S ENV216 is ideal for frequently varying applications and especially for on-site RFI voltage measurements on single-phase EUTs. Note that high leakage currents are produced because of the standard design of these V-networks. The networks should therefore be connected to a low-impedance protective earth system. In questionable cases, an isolating transformer should be used.



Specifications

Frequency range	9 kHz to 30 MHz	
Impedance characteristic of V-network to CISPR 16-1:1999	$(50 \mu\text{H} + 5 \Omega) / 50 \Omega$	
Error limits (to CISPR 16-1)		
Impedance magnitude	$\pm 20\%$	
Phase	$\pm 11.5^\circ$	
Max. permissible constant current for plug and socket (dependent on country)		
Version 02	16 A	
Version 03	13 A	
Version 04	16 A	
Version 05	15 A	
Version 06	15 A	
Max. permissible AC supply voltage against reference ground	$V_{\text{rms}} = 255 \text{ V}$	
Max. permissible DC voltage against reference ground	$V_{\text{DC}} = 50 \text{ V}$	
Max. permissible RFI (from EUT)	1 W	
Highpass filter (integrated, switch-selectable)	150 kHz	
Attenuator (built-in)	10 dB	
Response threshold of built-in pulse limiter (output level)	140 dB(μV)	
AC supply frequency	0 to 63 Hz	
Connectors		
AC supply voltage input	plug with earthing contact and 1.8 m cable (country-specific models)	
AC supply voltage input for EUT	socket with earthing contact (country-specific models)	
RF output	N connector, female, 50Ω	
Remote control input	25-contact Sub-D connector, female	
Input for artificial hand	4 mm connector, female, with knurled clamp	
Reference ground connection	ground bar with 3 M4 threads	
Protective earth connection	threaded bolt with wing nut	
Connector for external power supply	DC hollow connector, 5.5/2.1 mm dia., 10 V to 18 V DC, 250 mA (met by supplied plug-in power supply)	
General data		
Operating temperature range	0°C to +45°C	
Storage temperature range	-25°C to +70°C	
Dimensions (W x H x D)	219 mm x 147 mm x 350 mm	
Weight	5.5 kg	
Order designation		
Two-Line V-Network	R&S ENV 216	3560.6550.yy
Model for Germany (earthing-type connector)	yy = 02	
United Kingdom	yy = 03	
France	yy = 04	
China, Australia	yy = 05	
USA	yy = 06	
Accessories supplied		
Manual, calibration record		
Plug-in power supply (country-specific)		
Recommended extras		
Remote control cable, 25-contact Control by receiver of R&S ESxS, R&S ESIBx, R&S ESPlx series (connector/connector, 1:1 wiring; two cables required for shielded rooms)		
Control Cable, 3 m	R&S EZ-21	1107.2087.03
Control Cable, 10 m	R&S EZ-21	1107.2087.10

Country-specific connector models

	Germany as well as Austria, Finland, the Netherlands, Norway, Russia, Sweden; occasionally: Portugal, Spain
	UK as well as Ireland, Hong Kong, Malaysia, Singapore
	France as well as Belgium and Czech Republic
	China as well as Australia and New Zealand
	USA as well as Canada, Japan, Korea, Taiwan, Mexico, Central America



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