200 A Four-Line V Network R&S ENV4200

for RFI voltage measurements at high currents

- Frequency range 150 kHz to 30 MHz
- V network to CISPR, EN, VDE, ANSI
- Impedance 50 µH || 50 Ω
- Artificial hand
- Continuous current up to 4 x 200 A
- Air-core design
- Remote control with TTL levels (compatible with Rohde&Schwarz test receivers)
- Calibrated to CISPR 16-1:1999 and ANSI C63.4

ROHDE&SCHWARZ

The Four-Line V Network R&S ENV4200 is used for measuring RFI voltages on AC supply connections of EUTs carrying very high currents. It uses air-core inductances and contains an artificial hand. The R&S ENV4200 satisfies the requirements of CISPR 16-1, VDE 0876 and ANSI C63.4 for V networks with an impedance of 50 µH || 50 Ω in the frequency range 150 kHz to 30 MHz.

CISPR 16-1 specifies two types of V networks for the frequency range 150 kHz to 30 MHz: one with an impedance of 50 µH || 50 Ω (1) and another with an impedance of (50 µH + 5 Ω) || 50 Ω (2). The second type is also suitable for the frequency range 9 kHz to 150 kHz, not however for very high currents, since it requires an isolating choke of 250 µH. The V Network R&S ENV4200 corresponds to type (1). The maximum attainable current of the V network is limited by the voltage drop at the standardized inductances (CISPR 16-1 prescribes the voltage drop at 5% of the AC supply voltage) and by unavoidable heat losses.

The maximum continuous current on all four connectors is 100 A with the fans switched off and 200 A with the fans switched on. If an additional power supply is used and the temperature limit is exceeded, the fans are automatically switched on.

For connection to the AC supply network and to the EUT, the R&S ENV4200 is provided with all-insulated screw terminals for taking up cable clamps of sufficient current-carrying capacity.

The phase can be manually selected by means of a front-panel switch or automatically via TTL control inputs which are compatible with the Rohde&Schwarz test receivers of the younger generation. Commercial standard cables (wired 1:1) with 25-pin Cannon connectors can be used as control cables for test receivers of the R&S ESxS family (ESHS, ESS, ESPC and ESCS), the R&S ESIBx family (ESIB7/26/40) and the R&S ESPIx family (ESPI3/7). Special control cables are required for test receivers of the R&S ESxI family (ESAI, ESBI and ESMI).

Specifications

Frequency range	150 kHz to 30 MHz
Impedance characteristic of V network	50 µH || 50 Ω
Max. permissible errors (to CISPR 16-1)	±20%
Test path (to EUT)	
Max. permissible continuous current	4 x 100 A with fans switched off 4 x 200 A with fans switched on operating time derated at higher currents
DC resistance per path	6.7 mΩ typ.
AC supply frequency range	0 Hz to 63 Hz
Max. permissible AC supply voltage	260 V (voltage to neutral; corresponds to 450 V line-to-line voltage in three-phase system)
Test path (to test receiver)	
Pulse limiter	to 150 dBµV (built-in)
Voltage attenuation between EUT and test receiver	10 dB (built-in attenuator pad; calibration data supplied with V network)
Cooling	with 4 built-in fans
AC supply voltage	115 V/230 V
AC supply frequency	47 Hz to 63 Hz
Power consumption	60 VA
Connectors	
AC supply voltage inputs (test path)	knob for 15 mm terminals
AC supply voltage input for fans and remote control	connector with mains filter
EUT connectors	knob for 15 mm terminals
Ground	M8 screw terminal
Reference ground	uninsulated busbars for screwing on connecting lines
RF connector	BNC female
Remote control	25-pin Cannon female

General data

Rated temperature range	+5 °C to +40 °C (derating at high currents)
Storage temperature range	–30 °C to +70 °C
Dimensions (W x H x D)	450 mm x 315 mm x 670 mm
Weight	43 kg

Ordering information

Four-Line V Network 50 µH || 50 Ω	R&S ENV4200	1107.2387.02
Accessories supplied	manual including calibration data, terminals (8 each), power cable for fans, BNC/BNC test cable, test fixture	
Recommended extras		
25-wire remote control cable Control by test receivers of R&S ESxS, R&S ESIBx, R&S ESPIx series (male-to-male, wired 1:1; 2 required for shielded room)		
Control Cable 3 m	R&S EZ-21	1107.2087.03
Control Cable 10 m	R&S EZ-21	1107.2087.10
Control by test receivers of R&S ESxI series (male-to-male; special wiring; combination with R&S EZ-21 required for shielded room)		
Control Cable 3 m	R&S EZ-22	1107.2235.03

Certified Quality System
ISO 9001
DQS REG. NO 1954

Certified Environmental System
ISO 14001
REG. NO 1954

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