

VDS 200Qx.2 Series 4-Quadrant Amplifier



The models of the VDS 200Qx.2 series are bi-polar 4-quadrant power amplifiers. They are used to simulate the various battery supply waveforms required by international standards and by car manufacturer standards as well. Especially the manufacturer requirements are an important area with a large variety of diverse test phenomenon covered by the VDS 200Qx.2 series.

The VDS 200Qx.2 series also serve as powerful battery simulator for the DUT during automotive transient pulse testing. The VDS 200Q series covers all three main low voltage supply categories of 12 V, 24 V and 48 V. The current capability ranges up to 200 A depending on the model and your application.

High inrush current values of up to three times the continuous source current are provided.

Especially with the high current models, the voltage drop in the cabling becomes a remarkable issue. Using the offered sense lines, the voltage drop in the cabling can be compensated.

The autowave.control software tool with a large pre-programmed standard test library completes our offer. It also offers a reporting tool. External measuring equipment such as scopes are either already available to be selected or can be easily integrated.

MAIN FEATURES

- Output voltage -20 ... +80 VDC
- Current up to 200 A (600 A peak)
- Four quadrant, bipolar amplifier
- Fast step response time
- Very low default Ri: <10 mOhm (programmable 10 - 200 mOhm)
- Bandwidth 150kHz, full range
- Extended bandwidth up to 250 kHz, max. 40Vpp
- Temperature-controlled air cooling

Models

VDS 200Q25.2	-20 ... +80 Vpk, 0 ... 25 A continuous, up to 250 kHz
VDS 200Q50.2	-20 ... +80 Vpk, 0 ... 50 A continuous, up to 250 kHz
VDS 200Q100.2	-20 ... +80 Vpk, 0 ... 100 A continuous, up to 250 kHz
VDS 200Q150.2	-20 ... +80 Vpk, 0 ... 150 A continuous, up to 250 kHz
VDS 200Q200.2	-20 ... +80 Vpk, 0 ... 200 A continuous, up to 250 kHz

Applicable test standards (extract)

ISO 7637-2	BMW 95024-2
ISO 16750-2	Tesla TS-0000425-05
ISO 21780	Stellantis CS.00244
LV 124	Scania TB1901
LV 148	GMW 3172
VW 80000	CVS41
Ford FMC 1278	MBN 10567

Specifications

Parameter	VDS 200Q25.2	VDS 200Q50.2	VDS 200Q100.2	VDS 200Q150.2	VDS 200Q200.2
Output voltage (cont.)	-20 ... +80 VDC				
Output current (cont.)	0 ... 25 A	0 ... 50 A	0 ... 100 A	0 ... 150 A	0 ... 200 A
Inrush current max.	75 A for 200 ms	150 A for 200 ms	300 A for 200 ms	450 A for 200 ms	600 A for 200 ms
Bandwidth (-3dB)	DC ... 150 kHz, full signal / 150 ... 250kHz (40 Vpp max.)				
Slew rate	typical < 10us (STD mode) / < 3us (HF mode)				
Source impedance	< 10 mΩ				
Programmable source impedance *	10 ... 200 mΩ, in 10 mΩ steps				
Compensation Modes	CAP: DC ... 3kHz / STD: DC ... 40 kHz / HF: DC ... 150 kHz				
Recovery time	90 % of max. excursion within 25 μs				
Sense Lines	Yes, voltage drop compensation in cabling, max 8 VDC (AC up to to approx. 8 kHz)				
Ripple voltage (noise)	< 10 mVpp up to min. 400 Hz				
Safety	Circuit breaker				
Current limiter	3x I continuous / 3x I set / Peak off				
DC Voltage limiter	Yes				
Overvoltage Output protection circuit	Yes, power mains input monitoring. DUT output safe disconnection, accidentally switching on prevented.				
Interface (remote)	1x IEEE, 1 x USB, (ethernet pass-through AutoWave)				
Interfaces	1x trigger IN / 1x trigger OUT / 1 x ± 10 analogue input				
Cooling	Temperature- controlled air cooling				
Power Mains	120/230 VAC ± 10 % L, N, PE	200 / 400 VAC ± 10 % / 200 VAC : 3 x L + PE / 400 VAC: 3 x L + N + PE			
Power Mains (Input current per phase)	208 V: min. 40 A 400 V: min. 20 A	208 V: min. 20 A 400 V: min. 13 A	208 V: min. 40 A 400 V: min. 25 A	208 V: min. 63 A 400 V: min. 32 A	208 V: min. 80 A 400 V: min. 40 A
Power mains frequency	50 ... 60 Hz				
Housing	19" / 25 HU rack	19" / 25 HU rack	19" / 38 HU rack	19" / 2x34 HU rack	19" / 2x34 HU rack
Dimension	1320 x 550 x 800 mm	1320 x 550 x 800 mm	1940 x 550 x 800 mm	1850 x 1110 x 800 mm	1850 x 1110 x 800 mm
Weight	230 kg	275 kg	450 kg	700 kg	900 kg
Environment	Operating temperature: 10 ... 40 °C Humidity: 10 ... 90%, non-condensing Pressure: 860 mbar ... 1060 mbar				

* for DC up to 400 Hz

Accessories

AutoWave	ArbWave generator, up to 4 output channels, parameter iteration possible
PFM 200Nx	Power Fail Module for fast drop-out testing, rise time < 200 ns, incl. data line switches
AMP 200N2	Audio amplifier for magnetic field and ripple tests
CN 200N series	Coupling transformer, up to 300 A
RDS 200N1	2-Quadrant source, 0 ... 16V, 10 A
autowave.control	Windows remote control software