

LVA 1000 4-quadrant amplifier

**AUTOMOTIVE SUPPLY SIMULATION
AT IT'S BEST**



Example: LVA 1000 Front panel

- ✓ Extremely low harmonic distortion - even under very non-linear load conditions
- ✓ Very fast slew rate > 10V/μs
- ✓ Operates from DC up to 50kHz large signal bandwidth (-3dB)
- ✓ Small signal bandwidth up to 300kHz
- ✓ High short-term overload characteristic (for 30s)
- ✓ Very high peak-load ability (up to 200ms)
- ✓ Programmable internal resistance 0 ... 200mΩ
- ✓ Sink operation mode can be disabled
- ✓ Touch panel operation 7" 800x480
- ✓ Optional overvoltage protection device OPD

The relating standards:

ISO 7637-2/-3

ISO 16750-2

ISO 21848

LV 124

VDA 320 (LV 148)

SAE J 1113-11

BMW GS 95002

BMW GS 95024-2-2

BMW GS 95026

Ford FMC 1278

General Motors GMW 3097

JLR-EMC-CSv1.2

Mercedes MBN LV124-1

PSA B21 7110

Renault 36-00-808/--M

VW TL 81000

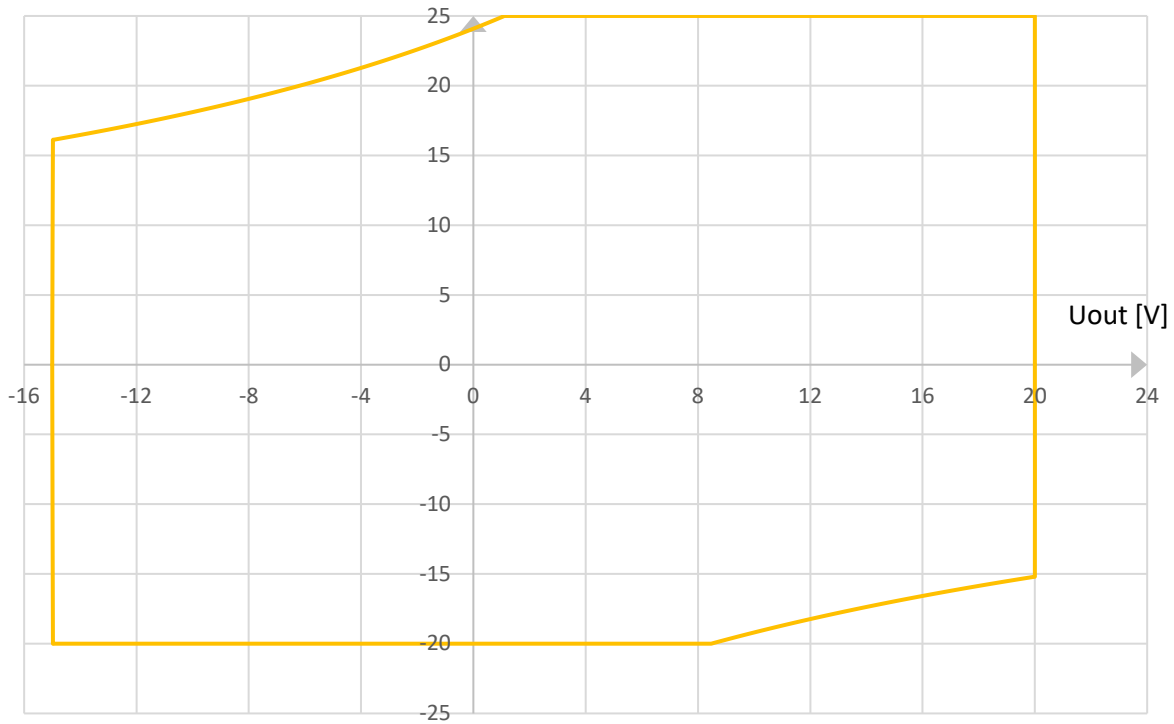
VW 80000

VW 82148

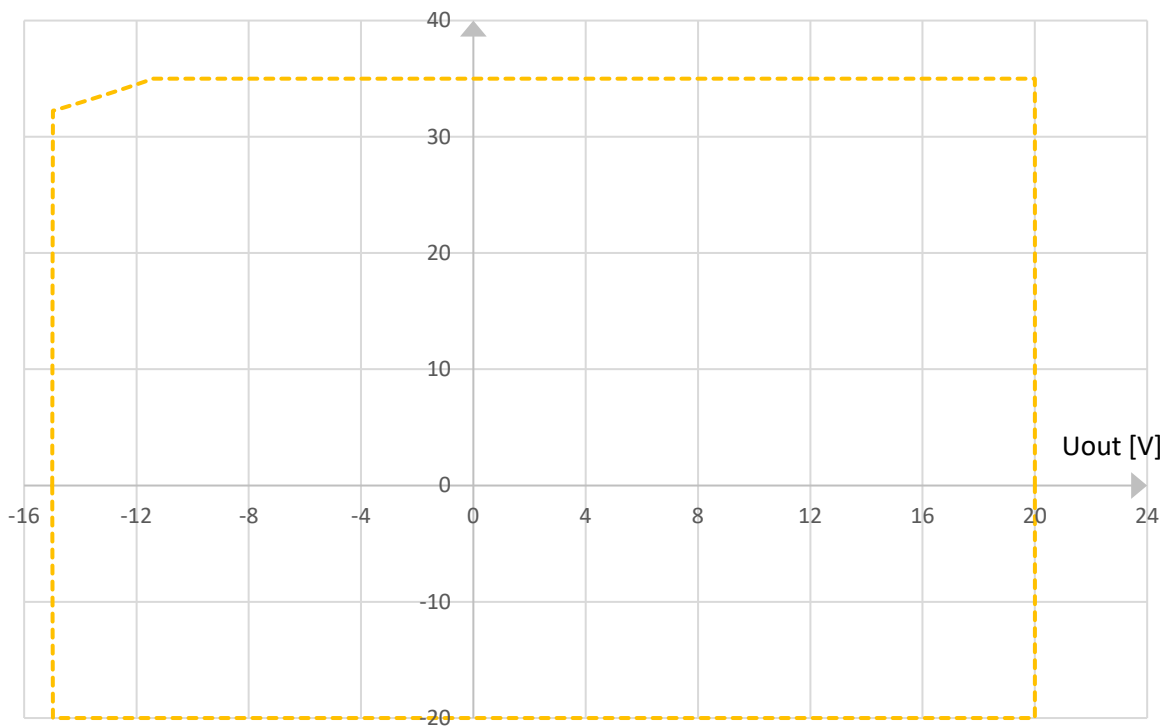
THE REFERENCE SOURCE FOR AUTOMOTIVE APPLICATIONS

AMPLIFIER CHARACTERISTIC – OUTPUT CURRENT CAPABILITY

20V Range continuous current I_{cont} : **LVA1000**

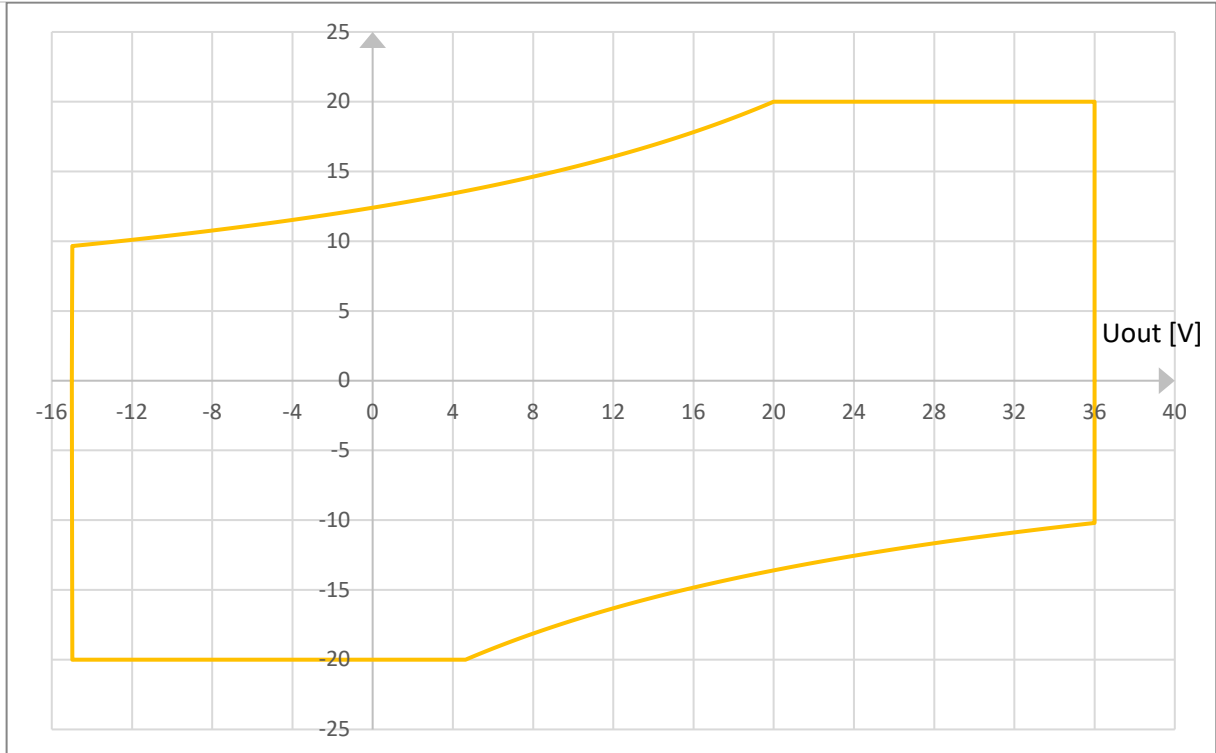


20V Range short-time current I_{short} : **LVA1000**

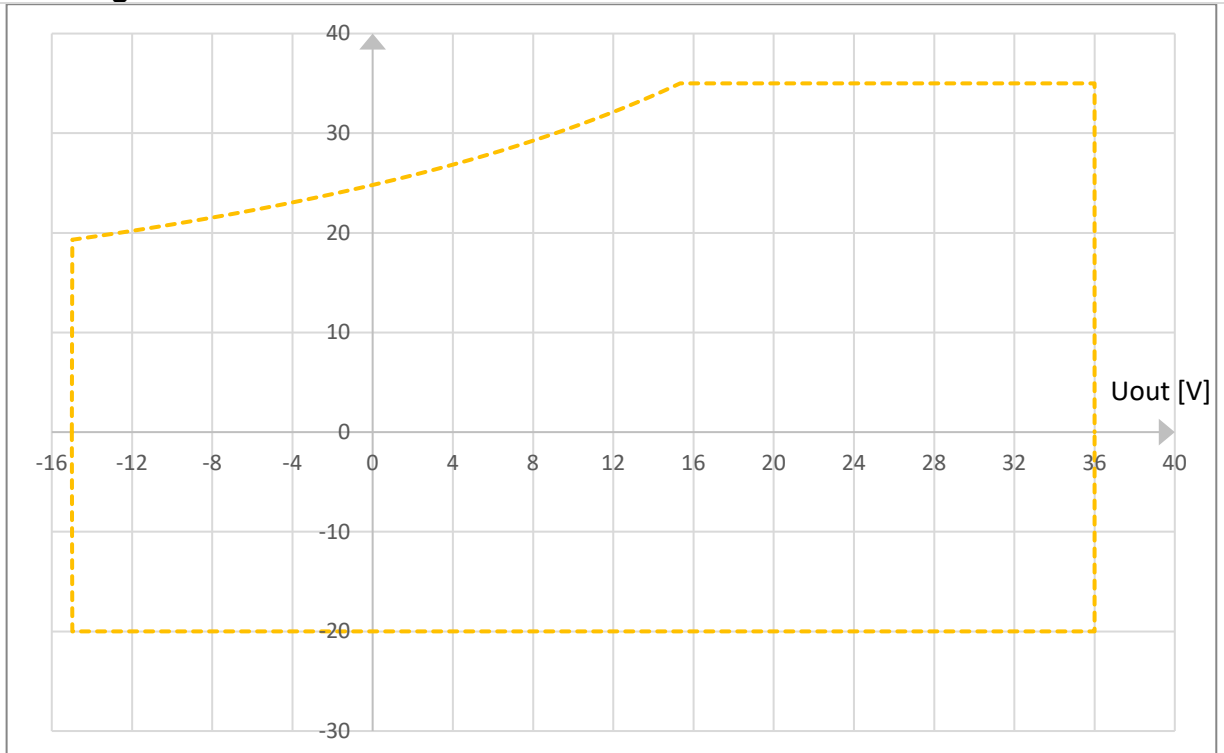


AMPLIFIER CHARACTERISTIC – OUTPUT CURRENT CAPABILITY

36V Range continuous current I_{cont} : LVA1000

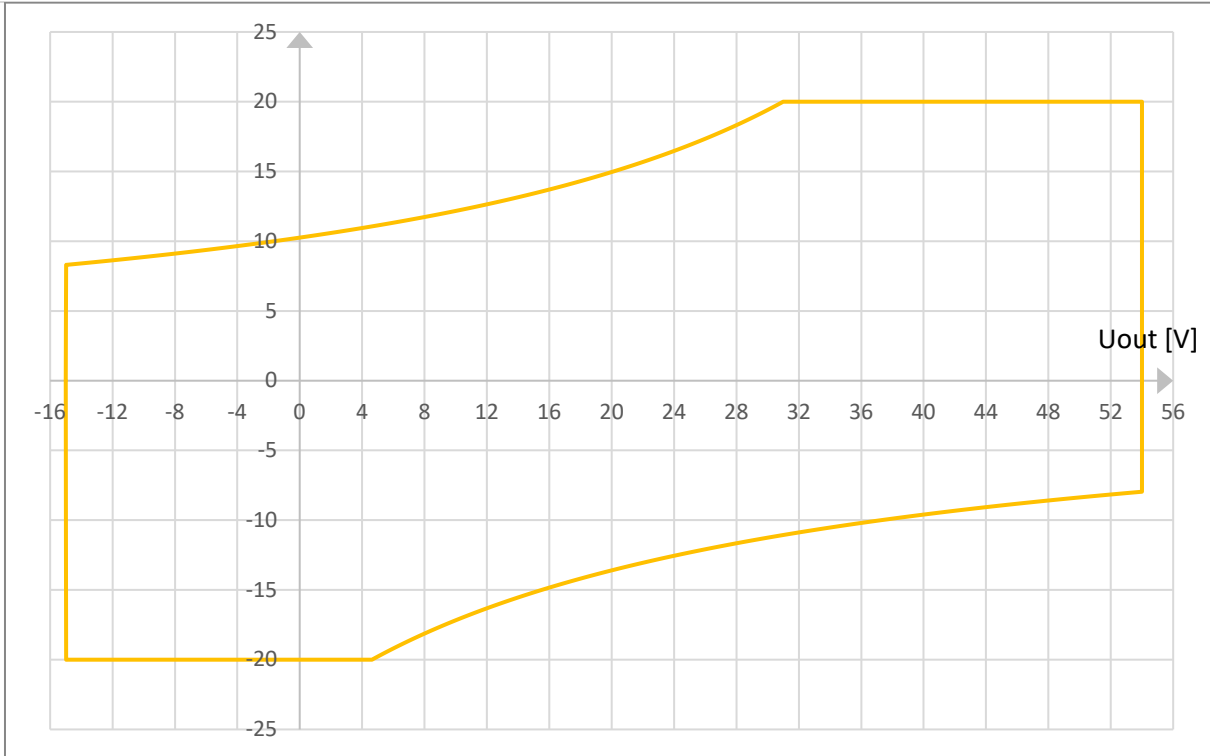


36V Range short-time current I_{short} : LVA1000

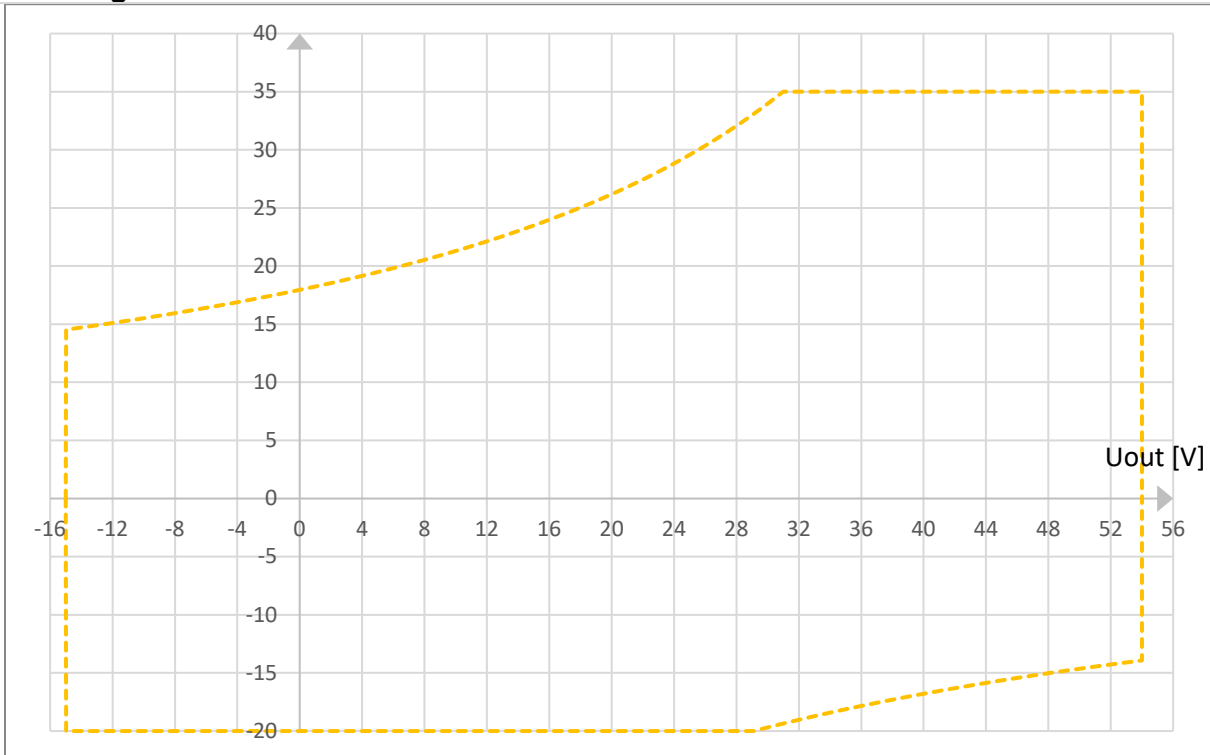


AMPLIFIER CHARACTERISTIC – OUTPUT CURRENT CAPABILITY

54V Range continuous current I_{cont} : LVA1000

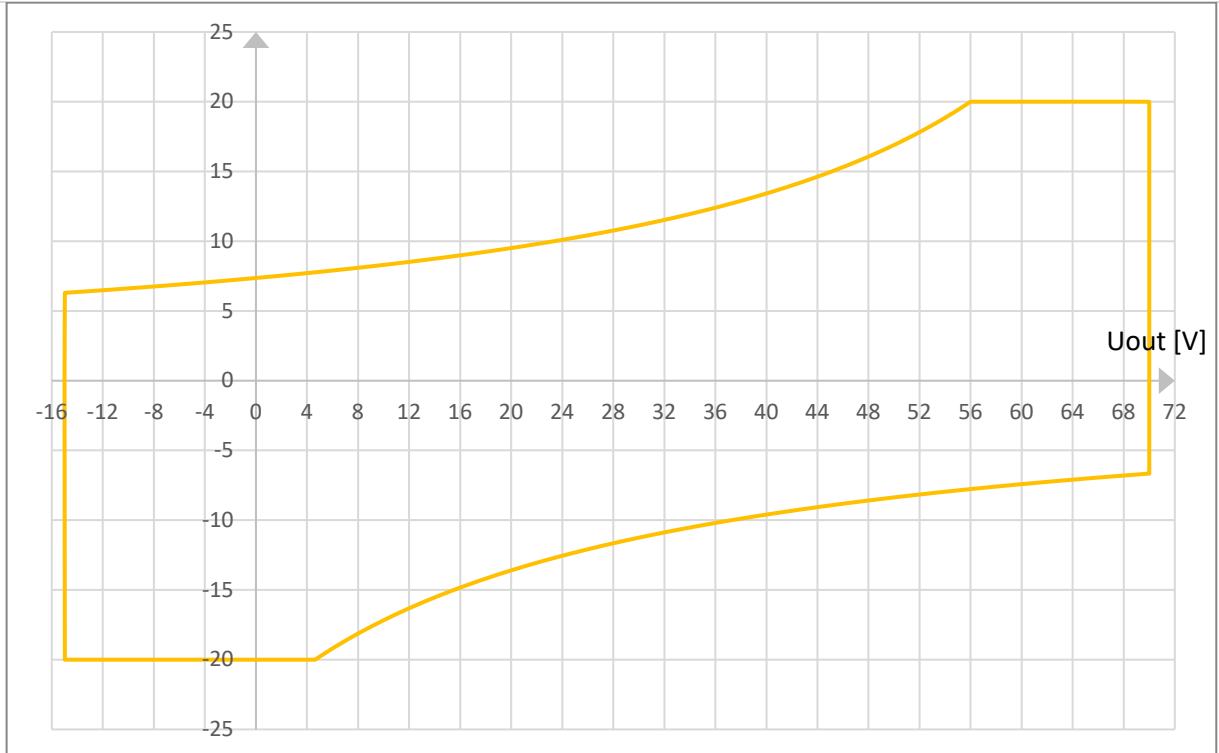


54V Range short-time current I_{short} : LVA1000

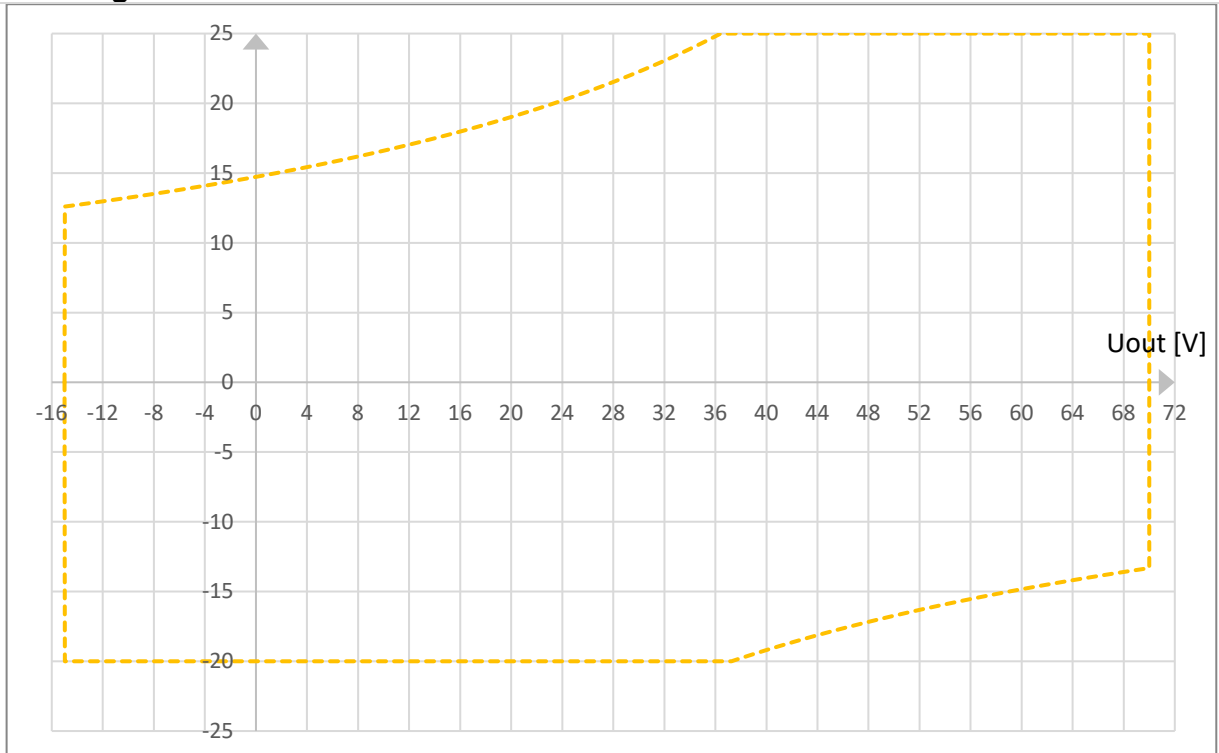


AMPLIFIER CHARACTERISTIC – OUTPUT CURRENT CAPABILITY

70V Range continuous current I_{cont} : **LVA1000**



70V Range short-time current I_{short} : **LVA1000**



TECHNICAL DATA

Max. peak current capability (up to 200ms)		35A _p	
Continuous and short-time output current capability		<i>range depending (see diagrams)</i>	
Nominal voltage ranges		U_1 : -15V _{DC} ... 20V _{DC} U_2 : -15V _{DC} ... 36V _{DC} U_3 : -15V _{DC} ... 54V _{DC} U_4 : -15V _{DC} ... 70V _{DC}	
Digital instrument	Voltage range	Autoranging (20/40/80V _{DC} Ranges)	
	Current range	12.5A / 25A / 50A / 100A	
Accuracy Voltage		DC: 1000ppm of reading / 200ppm of range value	
Accuracy Current		DC: 2000ppm of reading / 400ppm of range value	
Protection circuits		Overload / Short circuit / Overtemperature	
Interface		Ethernet	
Supply	Power Supply	230V (±10%, 50/60Hz)	
	Protection	10A	
	Connector type	Safety plug	
Housing		19"-Desktop unit, colour light grey (RAL 7035)	
Dimensions (mm)		5U: 222x483x700	
Weight		approx. 70kg	
General	Voltage adjustment	Touch panel / Remote / External input	
	Load regulation: 0 ... nominal load	max. 0.2%, typ. <0.1%	
	Internal resistance compensation	DC ... 1kHz (-3dB)	
	Frequency range (no load)	DC ... 50kHz large signal bandwidth (-3dB) DC ... 300kHz small signal bandwidth (10% of range, -3dB)	
	Noise at output	<5mV _{rms} (<100kHz), <10mV _{rms} (100kHz - 20MHz)	
Slew rate		SR: >10V/μs	
Adjustable current limitation		Accuracy see current measurement unit response time < 20μs	
Floating output		<i>Max. voltage between earth and amplifier output ground:</i> 300V _{rms}	
Internal control oscillator	Type	4-channel synthesizer	
	Wave form	DC, Sine, Rectangle, Triangle, DC Offset, Arbitrary	
	Amplitude resolution	17Bit	
	Frequency range	DC ... 1MHz	
	Frequency resolution	1μHz	
	Frequency accuracy	25ppm	
	Memory depth	1MSample	
	Synth functions	ADD, AM, FM, PM	
	Sequence memory	1024 steps	
	External floating input	0 ... V _{ExtMax} (V _{ExtMax} is adjustable between ±2V _p ... ±25V _p)	
	Digital I/O	8 digital inputs +5V _{DC} ... +24V _{DC} 8 digital outputs +5V _{DC} , I _L =40mA (external V _{CC} input: +5V _{DC} ... +24V _{DC} , I _L =500mA)	

Monitoring unit ²⁾	voltage	current
<i>Max. output</i>		$\pm 10V_p$
<i>Scaling factor (adjustable)</i>	0.2 ... 1000	0.1 ... 1000
<i>Bandwidth</i>	300kHz	200kHz
<i>Accuracy</i>		0.3%
<i>Noise of ADC measurement</i>	<20mV _{rms} (DC ... 300kHz)	<1.5mA _{rms} (DC ... 300kHz)
<i>Noise DAC output</i>	<0.2mV _{rms} (DC ... 300kHz)	
<i>Delay time</i>	<1 μ s	
<i>Output impedance</i>	220Ohm	
<i>Isolation</i>	earth / remaining electronics / each other	
<i>Protection</i>	short circuit	
Insulation resistance	>1MOhm	
Withstand voltage	>2000V _{DC}	
Ambient temperature	0°C up to 40°C	
Relative Humidity (non-condensing)	max. 80% for temperatures <31°C, decreasing linearly to 50% at 40°C	
System of protection	IP20	

LVA 1000 AMPLIFIER – OPTIONS

OPT.01	IEEE 488 Interface
OPT.02	RS 232 Interface (instead of IEEE 488 Interface)
OPT.05	Output voltage and current monitor (electrically isolated) Probe ratio free adjustable
NT.11.70S.1K	Symmetrical voltage range (for magnetic field tests) V:0 ... $\pm 70V_{DC}$ / I _{DC,cont} :20 A _{DC} / I _{DC,short} :25 A _{DC}
OPT.24.01	Programmable internal resistance R:0m Ω ... 200.0m Ω / Accuracy: $\pm 1\%$ of range
OPT.25.01	Constant current mode
OPD.01	Overvoltage Protection Device

The LVA is also available as LVA 2500, LVA 5000 and LVA 7500 version.