

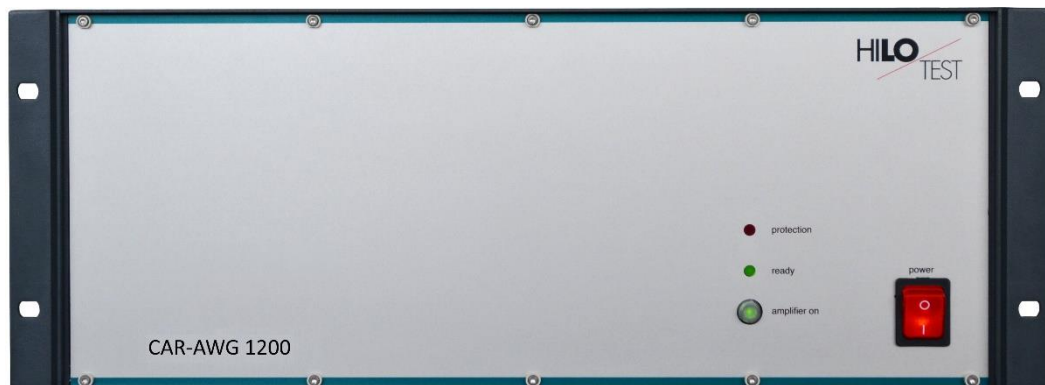
CAR - Arbitrary-Waveform-Generator

CAR - AWG 1200/3000/6000

EMC-Test Equipment for electrical installation of vehicles

- Battery simulator
- Bandwidth DC-200kHz
- Signal Bandwidth DC-1MHz (small signal -3dB)
- 4 quadrant amplifier
- Fast rise time up to 70V/μs
- Sense lines
- Arbitrary waveform up to 16MSa / 20MSa/s
- Selectable output impedance 0-200mΩ
- Over voltage protection

- | | |
|---------------------|--------------------------------------|
| CAR-AWG 1200 | • Max. 75V Vpeak / 40A (100A short) |
| CAR-AWG 3000 | • Max. 70V/-30V Vpeak / 100A |
| CAR-AWG 6000 | • Max. 70V/-30V Vpeak / 200A |



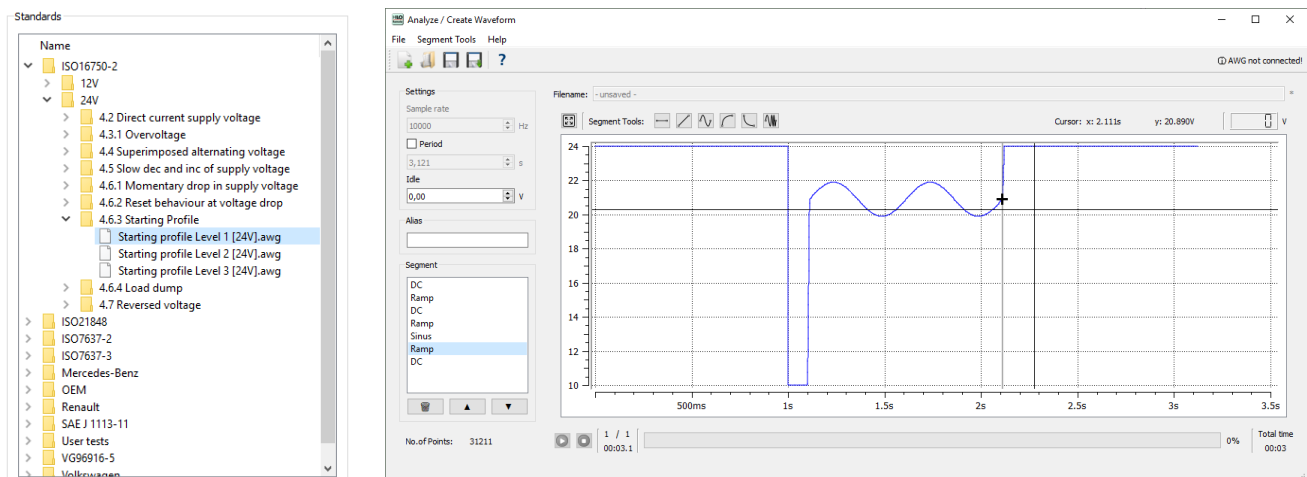
According to
ISO 7637: 2011
ISO 7637-4:2020
ISO 16750-2
ISO 21848-2
SAE J1113
LV124 (VW80000)
LV148
VDA 320
ISO 21780
... many manufacturer standards, GM, Ford, Chrysler, Mercedes, BMW, VW, PSA, Renault, Fiat

The CAR arbitrary waveform generator 1200/ 3000 /6000 is a compact EMC testing system for performing voltage variations on supply lines of vehicles. The system strictly complies with the international standards and manufacturer standards that describe phenomena on the power supply of vehicles.

Thus, the CAR arbitrary waveform generator 1200 / 3000 / 6000 is the optimal voltage power source for battery simulation up to 70V. It can simulate pulse 2b, pulse 4, starting profile, superimposed alternating voltage and others, up to a battery current of 40A/ 100A/ 200A.

The software program CAR-remote permits the PC control of the generator via Ethernet and allows the standardized documentation according to IEC 17025 and the evaluation of test results.

The user can use the PC software to call up standard test procedures (ISO, VG, vehicle manufacturer specific) or define and execute individual test procedures on a point-by-point basis. Voltage curves up to 16MSa can be generated.



It is equipped with an Impulse Recording Function (IRF) to record definite impulses (with oscilloscope).

Control	Description
CAR-REMOTE-AWG	Remote software with Impulse Recording Function (IRF) (XP, WIN7, WIN10) incl. Ethernet switch

Optionally it can be expanded to fulfil further international and manufacturer standards:

Configurations for the fulfilment of various standards:

Setup	CAR-SYS + Battery	CAR-SYS + PS xx-xx	CAR-SYS + CAR-AWG	CAR-AWG
ISO 7637 ²⁾	✓ ⁵⁾	✓	✓	✗
ISO 16750 ¹⁾	✗	✓ ⁴⁾	✓	✓
ISO 21848	✗	✓	✓	✓
LV 124/148 ³⁾	✗	✗	✓	✓
MBN 1028-4	✓	✓	✓	✗
Renault 36.00.808 ¹⁾	✗	✗	✓	✗
Nissan 280401ND02	✗	✗	✓	✗
SAEJ 1113-111 ¹⁾	✗	✗	✓	✗
VW TL81000 ¹⁾	✓	✓	✓	✗
...and many other standards				

1) + Load dump (PG2804 / PS-LD)

2) + CAR-TE 14 for 4.3. Transient Emission test

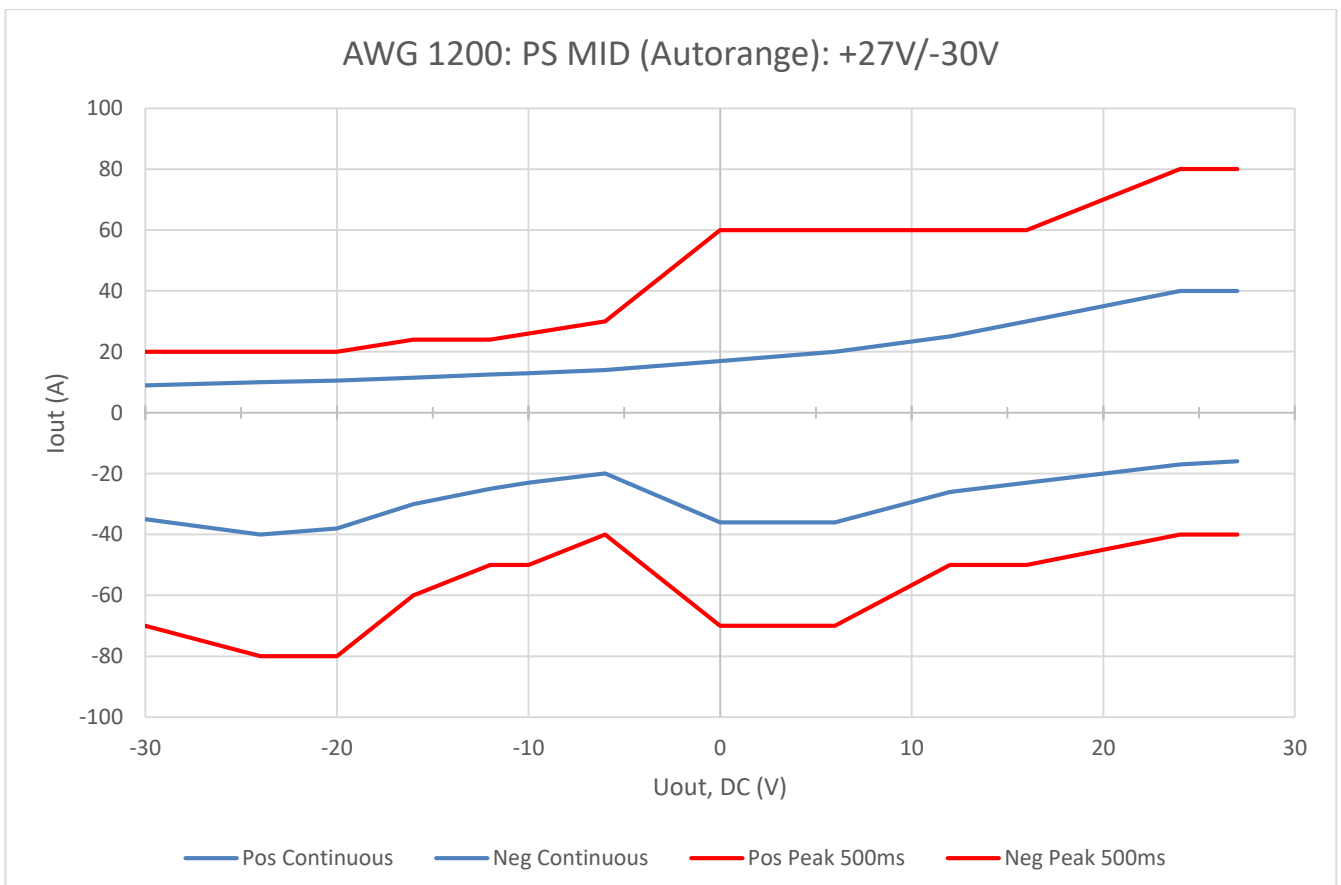
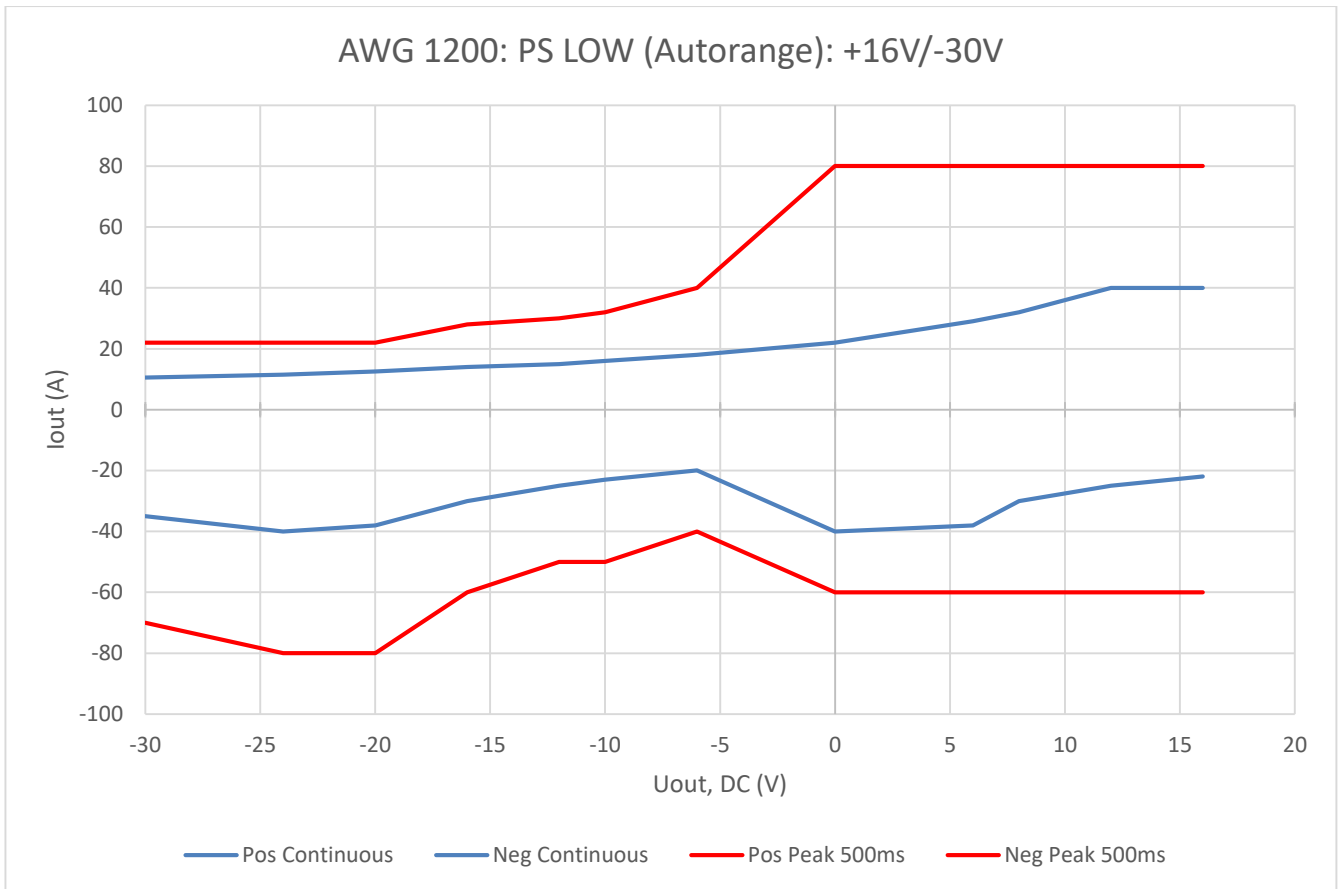
3) + CAR-PFS 80 for LV E-10, E-13 and E-14 Interruptions tests

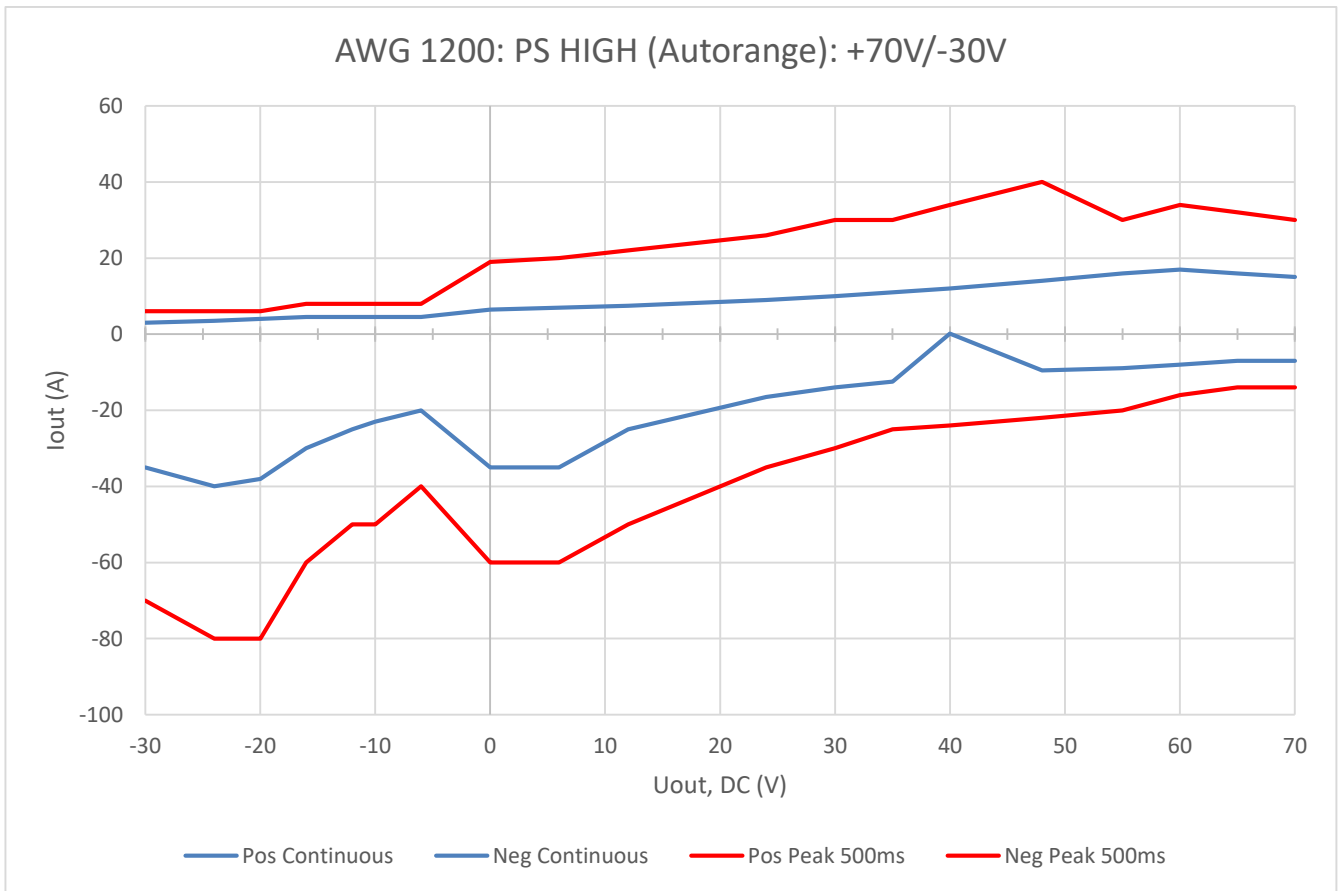
4) without Superimposed alternating voltage test

5) without Puls 2b

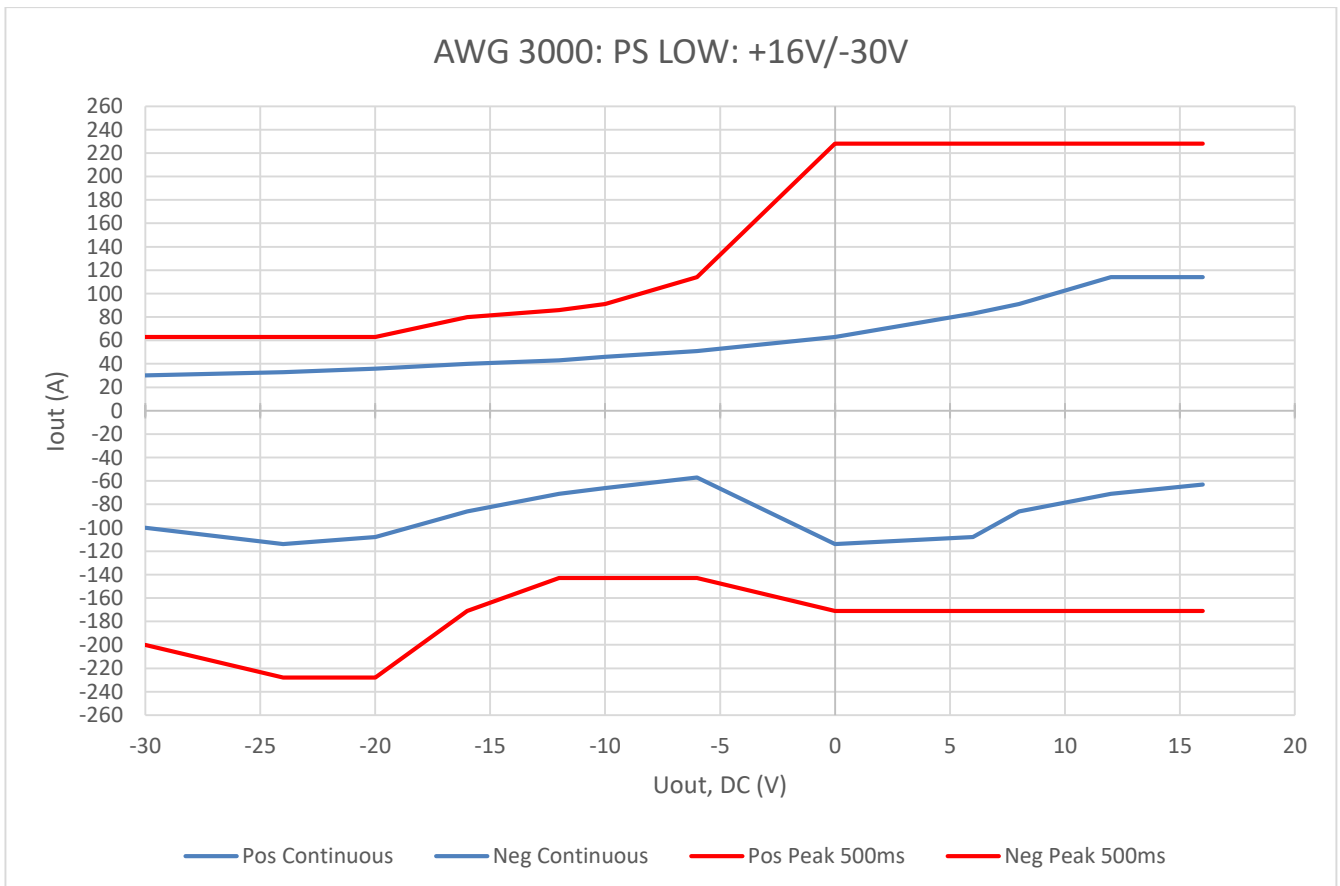
TECHNICAL SPECIFICATIONS:		CAR – AWG		
	1200	3000	6000	
Mainframe				
Ethernet Interface for remote control of the generator		Built-in		
Connector for external safety interlock loop		24 V=		
External red and green warning lamps acc. to VDE 0104		24 V=, 40 mA		
Mains power	230V, 50 Hz	400V, 50 Hz	400V, 50 Hz	
Dimensions, case, W * H * D	450*180*500 mm ³	20HE Rack	34HE Rack	
Weight	15kg	70kg	120kg	
Amplifier				
4-quadrant voltage and current amplifier				
Power bandwidth		200kHz		
Frequency range (small signal -3dB)		1MHz		
Max. Voltage	±75V	+70V/-30V	+70V/-30V	
Max. Current	±40A	+100A	+200A	
Max. Current /500ms	±100A	+200A	+400A	
Max. Power	1200W	3000W	6000W	
selectable output impedance	0-200mΩ	0-200mΩ	0-200mΩ	
Overvoltage protection	✓	✓	✓	
Slew Rate		70V/us		
Small Signal Bandwidth		DC-600kHz		
Residual Noise Output		<62dBV; 10Hz - 500kHz		
Signal / Noise Output		>97dBV; 10Hz - 200kHz		
Cooling		Controlled fans and heat sink		
Overcurrent Protection with CAR SYS		Magnetic and Thermic		
Triggering with CAR SYS		Software - Manual - Extern		
Trigger output with CAR SYS		For Oscilloscope		
Arbitrary				
Resolutuion		14 Bit		
Samplerate		20MSa/s		
Max. Points		16MSa		
Segmenttyps		DC, Sinus, Sinesweep, Ramp, Exponential function		

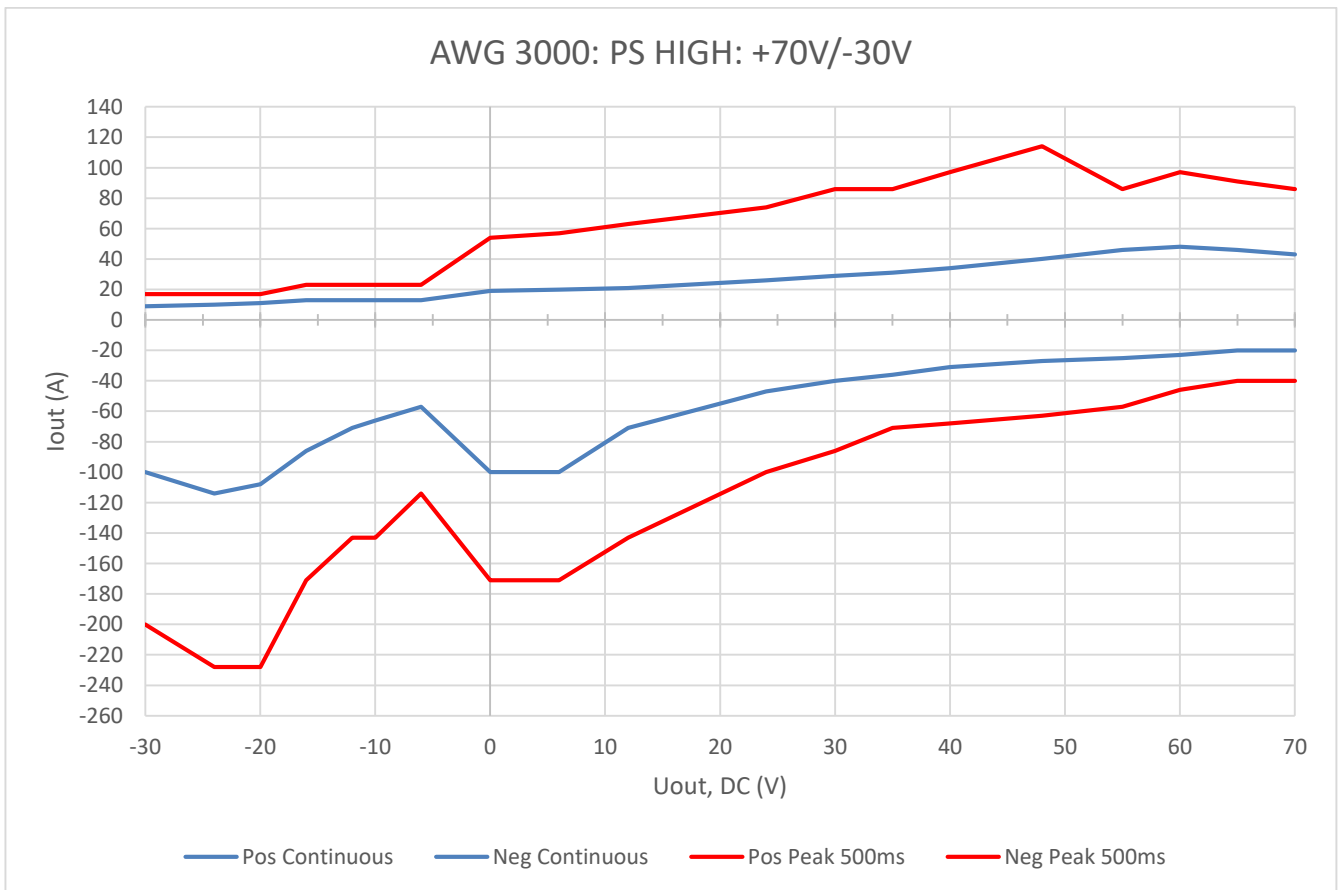
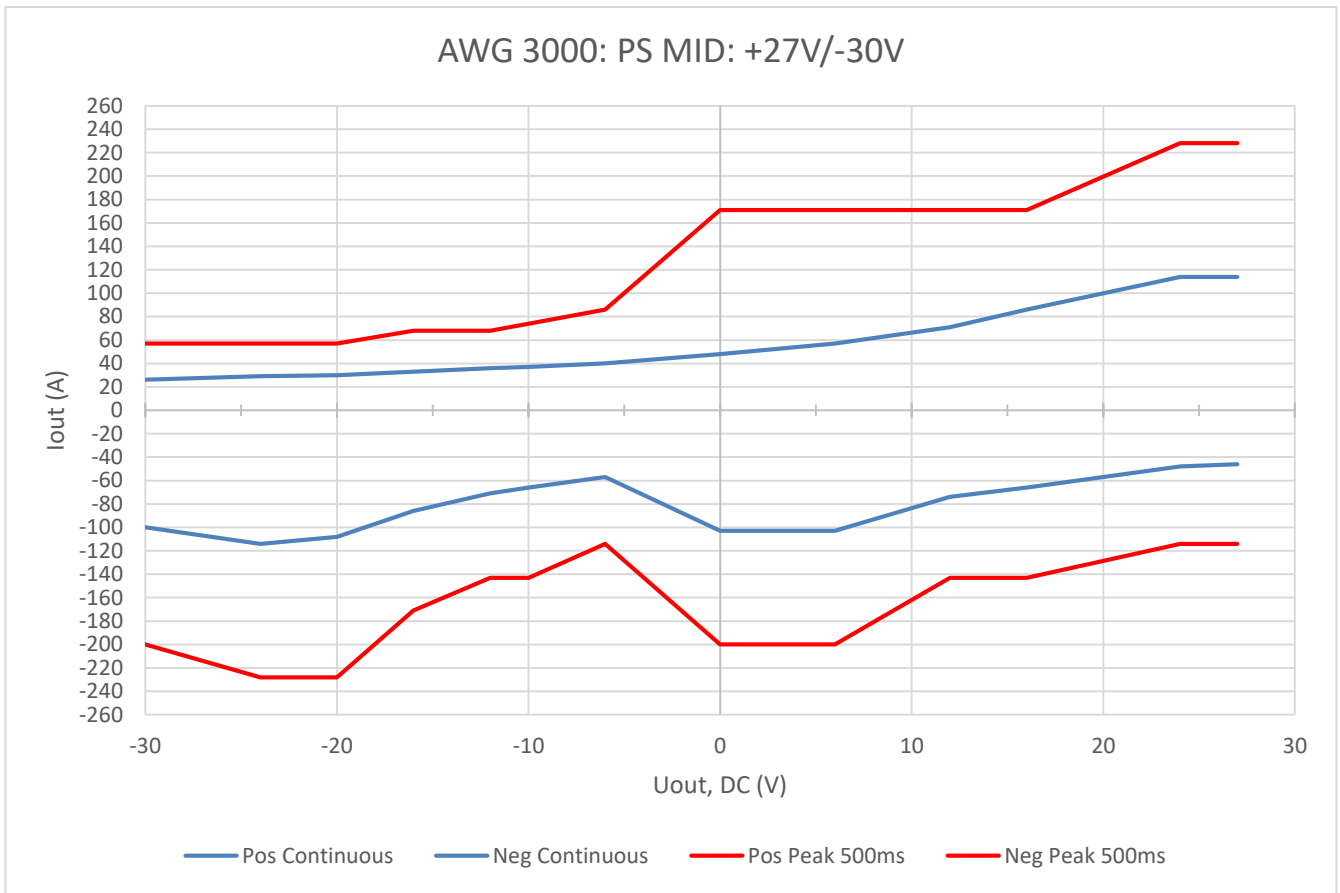
AWG 1200:





AWG 3000:





Example configuration of HILO-TEST system:

CAR-TEST-SYSTEM 14 I Puls #1, #2 und #3, Build in 19" Rack
+ Option CAR-AWG 1200 (75V/40A)
+ Option PG2804

