

# CAR – Artificial Network - HV

EMC-Test Equipment for electrical transient conduction along shielded high voltage supply lines only

## CAR HV-C:

- Trigger able load switch
- Load for high voltage battery included (Resistor extern mounted)
- 100 $\mu$ F Capacitor included
- Security due residual voltage control and ground switch



## CAR AN4

External artificial network:

- 2x artificial network separated shielded; mounted together
- According to ISO7637-4
- 50 $\Omega$  Terminator



**According to  
ISO 7637-4: 2020**

CAR AN-HV is used to simulate various types of transients appear on the high voltage supply lines generated by the switching of various devices according to ISO 7637-4.

It consists of two parts: The CAR HVC is the high voltage control and the CAR AN4 is the artificial network.

Waveform A represents ringing caused by switching operations of high voltage semiconductors. Waveform B represents sinusoidal waves generated by harmonics from the grid and revolutions from, for example, electric propulsion motors.

The device includes a switchable input ports for a battery or a Power Supply CAR-PS1500, which is also available as an option. Therefore also a load for high voltage battery is included as well as a 100 $\mu$ F Capacitor. Furthermore, two artificial networks offer connection ports for the DUT as well as for Measurement equipment and the sin wave generator, which is also available. For additional equipment check the options list below.

A microprocessor-controlled 7" touch screen display unit is integrated and permits an easy operation of the generator.

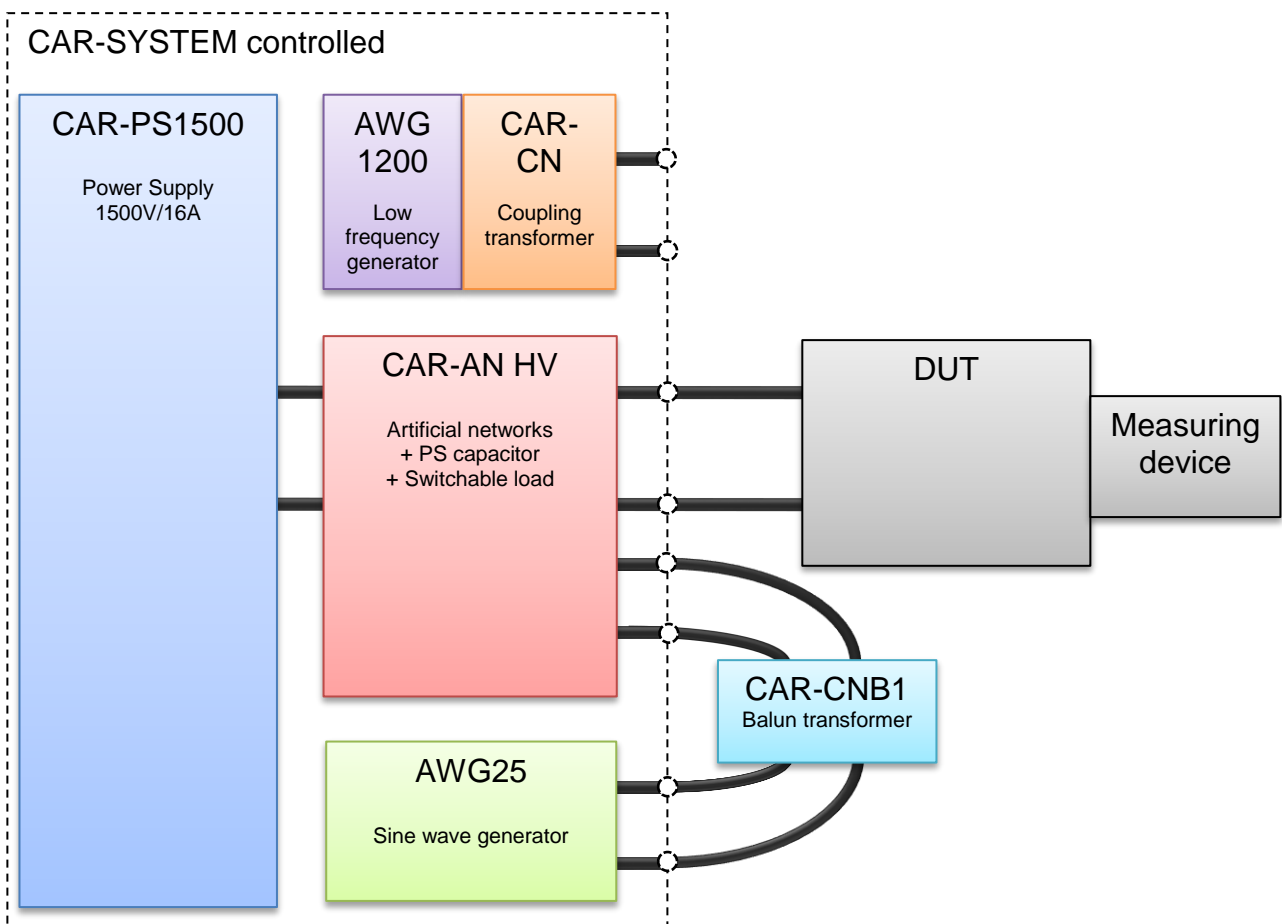
The software program CAR-remote permits the PC control of the generator via Ethernet and also allows the standardized documentation according to IEC 17025 and the evaluation of test results.

The device can be operated individually or in conjunction with the CAR TEST SYSTEM and can be controlled by the PC Remote software.

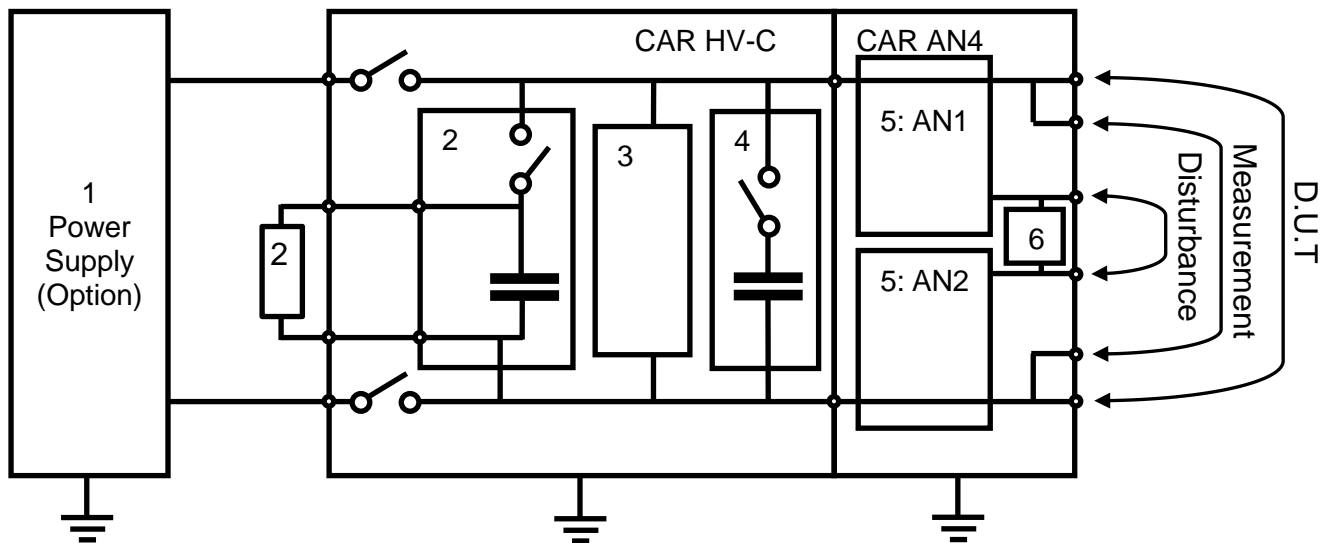
It is characterized by its compact design and an easy operation.

Setup for a full setup to fulfil standard ISO7637-4:2020:

In example for connection of waveform A:



Simplified diagram of CAR AN-HV:



- 1 Power Supply / Battery
- 2 Switchable load for high voltage battery (resistor external)
- 3 Residual voltage monitoring with ground switch
- 4 Switchable Capacitor 100 $\mu$ F
- 5 Artificial networks
- 6 50 $\Omega$  Termination

Option	Description
CAR-PS1500	Power Supply 1500V / -30A - 30A
CAR-AWG25	Disturbance source: sine wave generator for test pulse A
CAR-AWG1200	Disturbance source: low frequency generator for test pulse B
CAR-CN	Coupling module
CAR-CNB1	Coupling balun transformer
PC Software CAR-Remote (required for CAR-AWG)	To control CAR – AN-HV To control CAR-PS To control CAR-AWG

**Example of a CAR-ANHV System:**

CAR-AN-HV + AWG1200 + CAR-CN100 + AWG25 + CAR-PS1500:



<b>Technical specifications:</b>		<b>CAR AN-HV</b>
<b>Mainframe</b>		
Microprocessor controlled touch panel		7", capacitive
Ethernet Interface for remote control of the generator		built-in
Interface for saving reports		USB
External trigger input /output		Switch/ 10 V
Connector for external safety interlock loop		24 V=
External red and green warning lamps acc. to VDE 0104		24 V=, 40 mA
Mains power		90V - 264V, 50/60 Hz
Dimensions desk top case, W * H * D		450*180*500 mm <sup>3</sup>
Weight		25kg
<b>Electrical transient conduction, according to DIN/ ISO 7637-4</b>		
Max. operating voltage		1500V
Load Resistor, external		500Ω
Load Capacitor		10μF
Battery Capacitor		100μF
Residual voltage monitoring		Build - in
Ground switch		Build - in
Battery switchable		On / off
<b>Artificial network</b>		
Series inductance		5 μH, 50 A
Load impedance		0.1 μF + 50 Ω
Connectors for external load resistor, > 2.0 Ω		build in
Impedance acc. to ISO7637-4		type test