

PCI - Short pulse Portable generator



This portable generator is used to verify the performance of protective devices at the electrical point-of-entry of fixed ground-based facilities or transportable systems against high-altitude electromagnetic pulse (HEMP) according to MIL-STD-188-125 (PCI: pulse current injection).

The pulse generator is battery powered, especially designed for tests onsite, where power is not always available. The generator is remote controlled through USB optic link, ensuring a total galvanic insulation of the operator, for safe operation.

It has a wide operating range from 50 A to 1.2 kA. Test accessories are available, including current probes, capacitive and inductive couplers, decoupling networks, broadband fibre optic links, etc.

A dedicated control software application takes care of the configuration of the generator and the measurement equipment. It displays and records the injected and residual current pulse shapes and parameters, that reduces to almost zero the risk of measurement errors.

The system is delivered with a ruggedized transportation case on wheels for easy deployment on site.

SPECIFICATIONS

Type	PPG-E1-1200
Standard	MIL-STD-188-125-1 and -2 / short pulse (E1)
Peak current (short circuit)	50 A to 1.2 kA
Peak voltage (open circuit)	3 kV to 80 kV
Output waveform	double exponential
Source impedance	$\geq 60 \Omega$
Pulse rise-time (short circuit)	≤ 20 ns
Pulse length (FWHM, short circuit)	500 - 550 ns
Charging time	< 15 s
Output interface	8 meters HV coaxial cable with a termination resistor
Insulation	oil
Control Interface	USB over fibre optic
Power rating - to be specified at ordering, either:	<input type="checkbox"/> 220 – 240Vac, 50 / 60 Hz or <input type="checkbox"/> 110 – 130 Vac, 50 / 60 Hz
Autonomy (on internal battery)	more than 24 hours
Battery charging time	3 h (0-80%), 4h30 (0-100%)
Electrical safety	complies with EN61010-1. Interlock port + safety interlock switch
Working / storage temperature	0 to +45 °C / -10 to +60 °C
Generator dimensions	55 x 50 x 25 cm (L x W x H)
Transportation box dimensions	85 x 72 x 45 cm (L x W x H)
Weight	37 kg (generator + external HV cable) 62 kg (total incl. transport case and accessories)

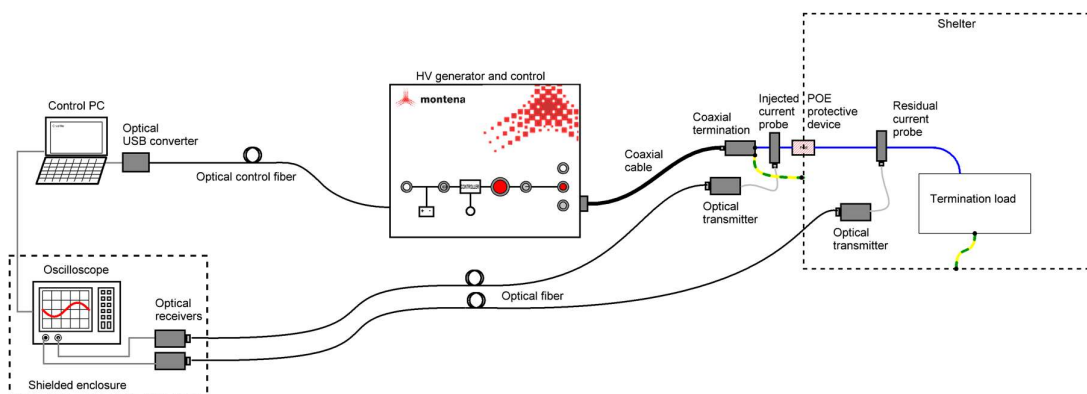
Example of test setup

Typical acceptance test with direct injection

The pulse generator delivers the high current pulses either directly or through coupling devices in the protective device under test. A residual part of the pulse enters the protected facility.

An oscilloscope measures the injected and residual pulse with current probes for display and eventually storage in the control PC.

In order to ensure correct measurement, the sensors are connected with fibre optic links and the measurement equipment is installed in a shielded enclosure.



Ordering information

TYPE	DESCRIPTION
PPG-E1-1200	Portable pulse generator for MIL-Std 188-125 1/2 - short pulse, pulse rise-time: <20 ns, pulse duration: 500 ns, short circuit current: 50 - 1200 A

Related products / accessories



TYPE	DESCRIPTION
CC-E1-1200-1	MIL-STD 188-125, short pulse capacitive / varistor coupler, single output, to be used with the PPG-E1-1200 generator, with a set of connecting cables
CC-E1-1200-4	MIL-STD 188-125, short pulse capacitive / varistor coupler, 4 outputs, to be used with the PPG-E1-1200 generator, with a set of connecting cables
IC-E1-1200	MIL-STD 188-125, short pulse inductive coupler, internal diameter 40 mm, transformation ratio 1:1, max 1200 A, to be used with the PPG-E1-1200 generator
IC-E1-2150	Special inductive coupler, internal diameter 40 mm, transformation ratio 1:2, max 2150 A, to be used with the PPG-E1-1200 generator
DL3	2-lines short pulse decoupling device, for max. 60A, screw connectors
TLB4	Dummy load resistor box containing 0.2, 0.5, 2.0 and 50 ohm resistors, banana + screw connectors
MOL2000T	Optical transmitter and receiver module, 50 ohm, 80 Hz to 3.5 GHz, remote controlled gain, SMA connectors
FO2C50	Dual fibre optic cable, 50 m long, with cable reel
SB3G	Shielded enclosure, dimensions: 61 x 52 x 73 cm, for the protection of the oscilloscope and accessories