PSURGE 30.2

30kV SURGE TEST SYSTEM

PSURGE 30.2 generator rack (left) with FPSURGE 3010 coupling network (right)

To be used for high energy surge tests.

Energy surges are generated by atmospheric lightning discharge and switching in power circuits. A surge is characterised by high energy fast rise time impulses. Pulse durations are widely variable as are the coupling paths.

ONE SOLUTION

for

- ☑ **IEC 61010**
- ☑ **ITU K series (CCITT)**
- ☑ **IEC 61000-4-5**
- ☑ **IEC 664**
- ☑ **IEC 60-2**

FEATURES

- Automatic impulse calibration
- Impulse peak measurements
- Impulse voltage up to 30 kV
- Impulse current up to 30 kA
- Automatic polarity switching
- Microprocessor control
- RS232 interface
- Remote control software
- Integrated large test cabinet
- Supplied to ISO 9001
- Exchangeable impulse networks

BENEFITS

- Integrated high voltage measurement circuits.

HAEFELY EMC TECHNOLOGY

FLEXIBILITY

Impulse module back pack

Impulse modules can be exchanged quickly allowing PSURGE 30 to be used for different applications. Impulse module type is automatically detected by system software.

Standard impulse modules :

- CWG 1,2/50 (8/20) us
- 8/20 us current wave
- 10/1000 us current wave
- 10/350 us current wave

EASY OPERATION

The built-in Micro processor control unit serves as the user interfaces and controls all the internal functions.

- Test sequence programming
- Impulse triggering
- Peak Voltage monitoring
- Peak Current monitoring
- Pass-Fail controlling
- Auto calibration

When adding the Remote control option, it is possible to use PSURGE 30, with WinPATS Software. This unique windows software opens possibilities such as:

- Test program, sequences saving, recalling, running
- EUT failed limits control
- Test reporting
- EUT monitoring during test

An integrated test cabinet provides optimal and safe connections for component testing.

SAFETY & QUALITY

Built in a robust metallic rack PSURGE 30 satisfy all the latest personnel safety requirements.

The unit is designed according to EMC and LV directives.

Over the standard requirements, PSURGE 30 integrates the functions:

- Safety circuit
- Emergency switch
- Warning lamp indications
- EUT access protection
- Wave shape circuit access protection

PSURGE30 system is supplied with high visibility warning lamp and interlocked remote emergency stop switch.

Access to all operational high voltage circuits is safety interlock protected.

System components are selected for reliability and high impulse duty cycle.

TECHNICAL SPECIFICATION

Surge Test Voltage	3kV ... 30 kV	Parameter ramps	Voltage, Phase
Energy storage	5'090 Joules	Personnel safety	High Voltage safety circuit
Impulse synchronisation	0° to 360° in 1° steps	Impulse trigger	Auto, Manual, External
Impulse Polarity	Positive, Negative, Alternating	Weight	320 kg
Test cabinet	390x290x320mm (WxDxH)	Mains	230V, 50/60Hz, 1800VA

ORDERING INFORMATION

PSURGE 30.2	249320
PS30-CW	249321
PS30-8x20	249322
PS30-10x1000	249324
PS30-10x350	249323
FPSURGE 3010	249452

Issue 01/01

HAEFELY EMC TECHNOLOGY

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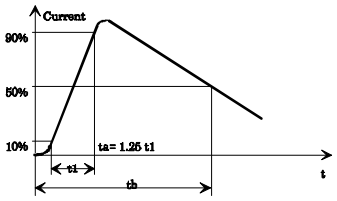
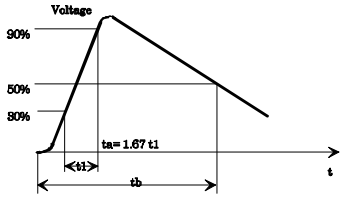
TECHNICAL DATA – "WAVE SHAPES" & "COUPLING"

Wave shape "PS30-CW"

Combination Wave (2 Ω)
U: 1.2/50µs, I: 8/20µs

(Impulse module back pack)



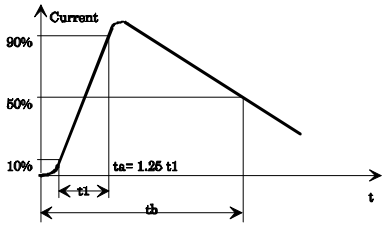


Voltage in open circuit (V_{OC})	1.2/50us ta 1.2us tb 50us	 ±30% ±20%
Test voltage (Impulse Output) Undershoot at the output of the coupling/decoupling network	3kV to 30kV less than 30%	±10%
Current in short circuit (I_{SC})	8/20us ta 8us tb 20us	 ±20% ±20%
Test current Undershoot at the output of the coupling/decoupling network	1.5 to 15kA less than 30%	±10%
Output impedance	2 Ω	
Stored energy	5000J at max. charging voltage	
Impulse Repetition Frequency	6 impulses/minute	at 30kV
Coupling on AC network	Possible	using FPSURGE 3010
External synchronisation	40Hz, 50Hz, 60Hz, 400Hz	

Wave shape "PS30-8x20"

Current waveshape 8/20µs

(Impulse module back pack)

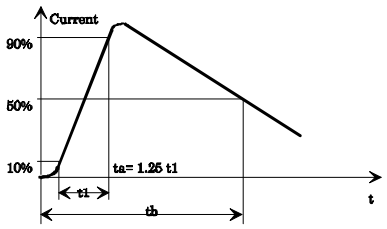


Current in short circuit (I_{SC})	8/20us ta 8us tb 20us	 ±20% ±20%
Test current	6kA to 30kA	±10%
Output Impedance	0.5 Ω	
Stored energy	5000J at max. charging voltage	
Impulse Repetition Frequency	2 impulses/minute	at max. charging voltage

Wave shape “PS30-10x1000”

Current waveshape 10/1000µs

(Impulse module back pack)

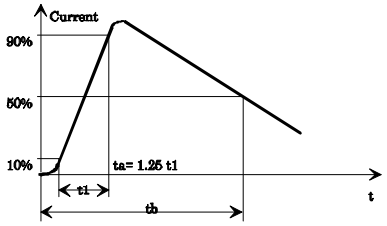


Current in short circuit (I_{SC})	10/1000us ta 10us tb 1000us	 ±20% ±20%
Test current	75A to 375A	±10%
Output Impedance	37 W	
Stored energy	5000J at max. charging voltage	
Impulse Repetition Frequency	2 impulses/minute	at max. voltage

Wave shape “PS30-10x350”

Current waveshape 10/350µs

(Impulse module back pack)



Current in short circuit (I_{SC})	10/350us ta 10us tb 350us	 ±20% ±20%
Test current	240A to 1200A	±10%
Output Impedance	12 W	
Stored energy	5000J at max. charging voltage	
Impulse Repetition Frequency	2 impulses/minute	at max. voltage

Coupling on Power Network with “FPSURGE 3010”

Super-imposing High Voltages and/or High Energy Impulses on AC or DC networks requires precautions for personnel as well as machine safety.
Used with the PSURGE 30.2 modular impulse generator, Coupling / Decoupling Network type FPSURGE 3010 (see picture on first page), allows the superimposition of voltage impulses via coupling capacitors and protection of the power supply on the input side with decoupling elements.

EUT powering	Single phase, AC: 480V / 10A , DC: 110V / 10A
Coupling capacitance	18uF or 9uF
Coupling modes	Line to Line, Line to Ground, Line & Line to Ground
Coupling wave shape	30kV / 15A (Combination wave ONLY)
Decoupling	15% attenuation, limited by varistor 1200V Inductors 2.5mH
Test Cabinet	400x400x800mm (WxDxH)