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TESTING EUROPE

T3-61

IMPULSE GENERATOR 1,2/50 µs, 12 kV

KEYWORDS

IMPULSE GENERATOR 1,2/50 µs, IEC TEST EQUIPMENT, IEC 60335-1, IEC 60065, 60950, 61180-1, 61180-2, IEC 61010, EN, UL

COMPLIANCE

It is constructed in compliance with IEC 60335-1, IEC 60065, 60950, 61180-1, 61180-2, IEC 61010,...

INTRODUCTION

T3-61 1,2/50 IMPULSE GENERATOR is intended for performing dielectric tests with impulse voltage on low-voltage equipment. It creates impulses with a virtual front time of 1,2 µs and a virtual time to half-value of 50 µs. Samples are tested by (high) voltage surges.

It is constructed in compliance with the following standards:

IEC 60335-1: Household and similar electrical appliances – Safety – Part 1: General requirements: Clause 14 Transient overvoltages

IEC 60950-1: Information technology equipment – Safety – Part 1: General requirements: Annex N: Impulse test generators

IEC 61180-1: High-voltage test techniques for low-voltage equipment; Part 1: Definitions, test and procedure requirements

IEC 61180-2 High-voltage test techniques for low-voltage equipment - Part 2: Test equipment

We designed IMPULSE GENERATOR with the following goals:

- Safety
- Reliability
- Ease of operation
- Ergonomical design

The **BOLD** features below are some of advantages that were introduced to reach these goals.

MAIN FEATURES

- **Ergonomically designed.**
- **Transparent acrylic 10 mm thick door and side panels** enable observing of tested sample during the test, and protection of operator in case that due to the energy released during a surge a sample bursts (small explosion)
- **Test cabinet bottom is 20 mm thick**
- **Two voltage generators** – separate for each polarity
- **High voltage switching systems with electromagnets** for better safety
- **Two door safety protection switches** – surge can only be applied when doors are closed
- V-meter enables observing and adjusting surge voltage
- Internal voltage divider 10:1 with outside BNC (to connect a oscilloscope with HV probe)
- HV oscilloscope probe
- Variable ratio transformer with knob for voltage adjustment 400 – 12 000 V DC
- Push button CHARGE + for positive charging polarity
- Push button CHARGE - for negative charging polarity
- Illuminated push button DISCHARGE for activating the surge
- Mains switch with fuse
- Anodized aluminum front plate, with inscriptions that clearly explain the function of **each** component on the front plate
- Sample connection terminal sockets are located inside insulated protecting test cabinet
- Two port holes, with plugs, for possibility of connecting bigger samples in external test cabinets
- Auto-detect connector, for connecting external door (protection) switch if customer uses other/bigger external test cabinet

DESCRIPTION

Apparatus consists of control unit and test cabinet, which is mounted on top of control unit.

CONTROL UNIT

Control unit is built in compact case. Inside control unit is a mains transformer, variable ratio transformer, two voltage generators, voltage measuring system, 10:1 voltage divider for outside HV probe (with a ratio 100:1), high voltage switching systems and electric circuit as per standard requests.

On the front plate are located mains switch with fuse and appliance inlet, voltage adjustment knob, voltmeter, + charge push button, - charge push button, discharge push button and BNC measuring output.

TEST CABINET

On the top of control unit is located transparent test cabinet (isolated housing). Test cabinet has a body and a cover. The cover of test cabinet is protected with two safety door switches so that testing is not possible if the cover is opened. Due to the transparency of test cabinet monitoring of sample is enabled.

Test cabinet also provides eye protection in case that the sample bursts/explodes. Inside the test cabinet are located terminal sockets for connecting the sample. On the side of test cabinet are two blind plugs, that can be removed and through them the HV cables can routed to the bigger samples that would not fit inside the test cabinet (to external bigger test cabinet – not included, or to other protected area). On the front plate of control unit is also located auto-detect connector, for connecting external door (protection) switch(es), if customer uses other/bigger external test cabinet. for testing bigger samples.

WARNING

Only operators that understand the risks of HV testing can perform HV tests.

DESIGN

Table top apparatus, two units:

CONTROL UNIT: solid case, Non-sensitive, scratch-resistant surfaces through powder-coating, side panels, Al extrusion, RAL 7016, Frame, Al die-cast, RAL 7016, Base and cover, Al, 1.5 mm, RAL 9006, with GND/earthing connection, case feet with anti-slip protection, front plate and rear panel anodized aluminum 2,5 mm.

Internal and external dimensions in accordance with: IEC 60297-3. Type of protection IP 20 in accordance with IEC 60529, Protective GND/earthing connections in accordance with: IEC 61010, DIN EN 50178 / VDE 0160, DIN EN 60950 / VDE 0805, DIN EN 61010-1 / VDE 0411 part 1, DIN EN 61010-1A2 / VDE 0411 part 1/A1.

TEST CABINET: acrylic glass, bottom 20 mm thick, black, all other sides 10 mm thick, transparent. Cover transparent with acrylic handle, on two stainless steel hinges and protected by 2 safety switches. On the right side wall are two holes with insolating plugs that can be removed.

TECHNICAL SPECIFICATION

Supplying voltage	230V, 50Hz / other optional
Power consumption	650 VA
Output voltage	surge 400V-12kV, adjustable
V-meter	0-15 kV DC, 4 1/2 digit 2,5 % FS
HV oscilloscope probe	max. 1500 V, 300 Mhz bandwidth, ratio 100:1
Capacitor	1µF
Virtual impedance	12 ohms
Minimum charging time	3 seconds (as per standard request)
Waveform	1.2/50µs
BNC output	10:1

Dimensions

Control unit	WxDxH	470 x 490 x 285 mm
Test cabinet	WxDxH	420 x 300 x 250 mm

OTHER CONDITIONS

Warranty: 2 years
Support by E-mail: support@testing.si
On line Skype VIDEO Support: Testing_support, matejsimonic

We will be glad to help you solve your problems and to hear any feedback from you.