



TRACTION

EGT 75 – Portable partial discharge test system



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Current and voltage – our passion



General description

General

The EGT 75 test device is built to allow the safe partial discharge testing of shielded cables after assembling and mounting at site. It provides the full functionality of a laboratory for high voltage testing and partial discharge measuring. It consists of the following components:

- High voltage unit
- Control desk
- Partial discharge (PD) measuring device

High voltage unit

The fully shielded design of the high voltage unit allows performing the partial discharge measurement of assembled cables. The insulation medium is SF₆ at a pressure of 1.5 bar abs. The device is maintenance-free.

The high voltage unit is equipped with a Connex® socket of size 3. The connection to the high voltage cable is made using a jumper cable.

The high voltage unit is equipped with castors. Compensation coils are located in the con-

trol desk. Depending on the capacity of the cable to be tested, various inductivity values can be selected in order to minimize the supply current. This allows limiting the required power to less than 4 kVA.

The high voltage is measured directly by the PD measurement device using the capacitance value of the built-in coupling capacitor, and displayed together with the PD values. Furthermore, the device is equipped with an additional capacitive voltage divider and with a high-impedance voltmeter. This allows performing the high voltage check independently from the external power supply.

The following safety functions are included:

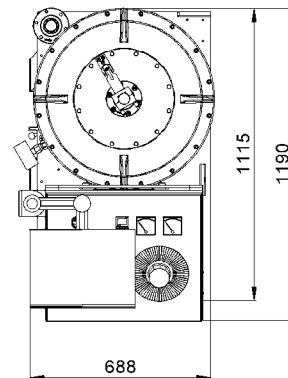
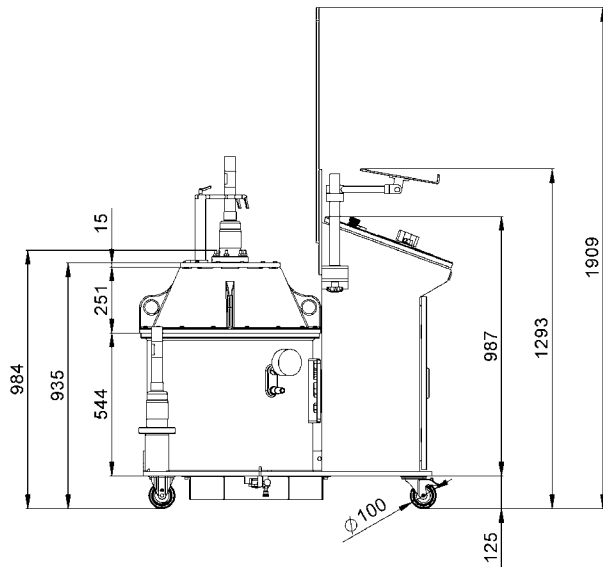
- Lockable main power switch.
- Lockable earth rod
- Relays to protect the high voltage device in the cases of overcurrent, overtemperature or low gas pressure.

- A breakdown detection device in order to reduce any electrical breakdown duration to max. 100 ms
- An interlock circuit to avoid unintentional switch-on at non-zero position of the autotransformer
- A foot-operated switch to ensure the continuous monitoring of the test by the operator
- A remote emergency shutdown pushbutton

Benefits EGT 75

- Performing the partial discharge measurement of assembled cables. Possibility of testing cables terminations after on-site assembly on the train.
- Maintenance free
- Safe and easy-to-handle test procedures

Technical data



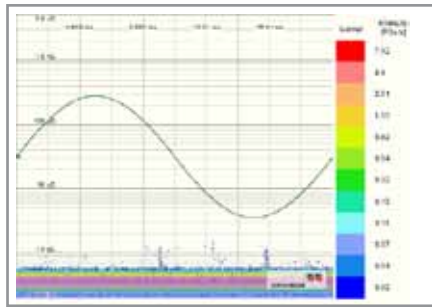
Type		EGT 75
Maximum test voltage	kV	75
Frequency	Hz	50 (60)
Maximum total cable capacity @ 50Hz	nF	10*
Maximum total cable capacity @ 60Hz	nF	7*
Maximum current at HV terminal	mA	300
Power supply		400 V 16 A 2(Phases)
Partial discharge measurement circuit		
Coupling capacitor		3 nF
Background noise		<2 pC
Auxiliary high voltage measurement tap		
Ratio of capacitive divider		1'000/1
Accuracy of voltage measurement		class 3
Typical test cycle (up/hold/down)		2 min / 1 min / 2 min
HV cable connection system		Connex® size 3
High voltage insulation system		
medium		SF ₆
gas pressure		1.5 - 1.8 bar abs

*) 10 nF correspond to the capacity of a 26/45 kV cable with a conductor of 240 mm² and a length of 30 m plus jumper cable.
higher capacitance values with reduced test voltage possible

Highlights



High voltage unit



Partial discharge measuring device



Control desk

The following components are integrated:

- High voltage transformer
- Coupling capacitor for the partial discharge measurement
- Capacitive voltage divider for auxiliary voltage measurement
- Manually operated, lockable earth rod to ensure the internal earthing of the high voltage terminal

The partial discharge measuring device type *Omicron MPD 500* uses an optical link between measuring unit and computer. As there is no galvanic connection between them, there is no ground loop, and the interference voltages are minimized. This results in a reduction of the PD background noise.

To control the PD measuring device and for visualization of the results, the device is connected via USB to a notebook PC. The appropriate software is included.

The control desk allows the safe operation of the high voltage unit.

The panel is equipped with:

- 1 lockable main power switch
- 2 Buttons to switch on and off the high voltage
- an autotransformer wheel
- Volt- and Ampere-meters to display the electrical status of the device
- 1 auxiliary digital voltmeter displaying the high voltage value
- switches to select the appropriate compensation inductivities
- an emergency shutdown pushbutton
- a status indicator for the safety relays



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DISCONNECTORS

