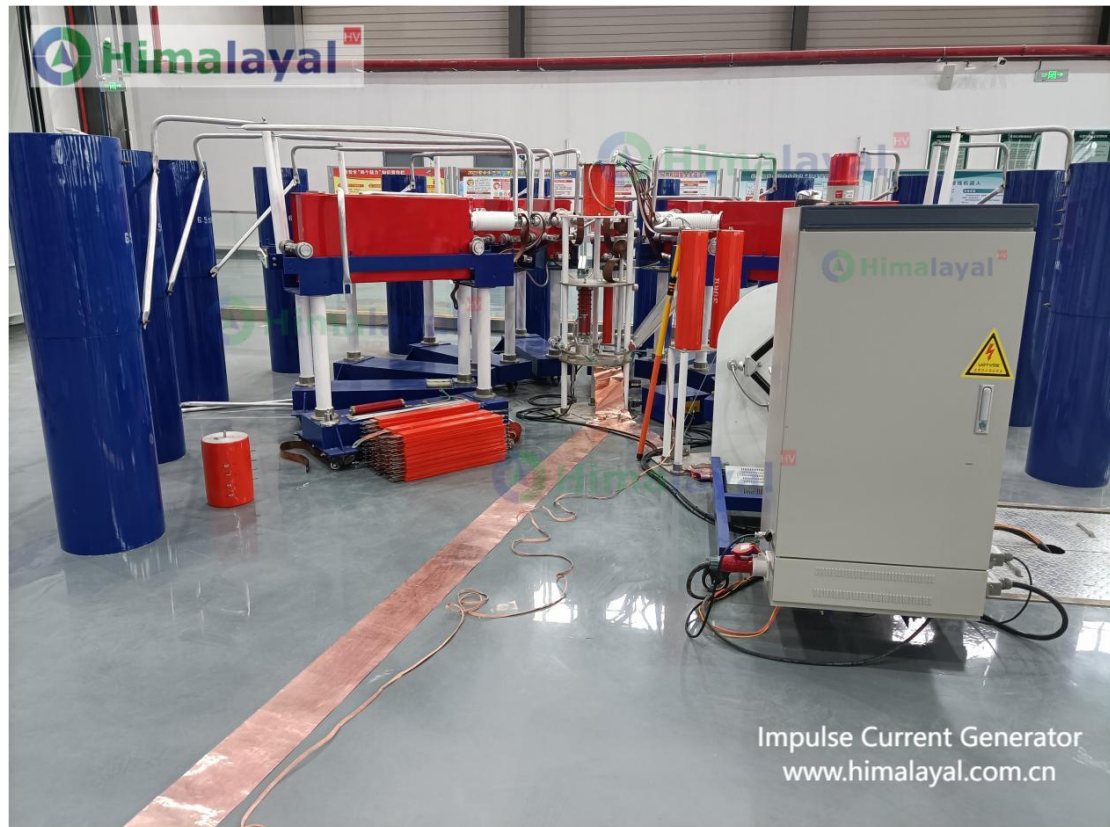


# Impulse Current Generator



Impulse Current Generator  
[www.himalaya.com.cn](http://www.himalaya.com.cn)

## Multiple Waveform Impulse Current Generator:

- 8/20 $\mu$ s
- 4/10 $\mu$ s
- 30/80 $\mu$ s
- 2/20 $\mu$ s
- 1/2.5 $\mu$ s

... ..

*Impulse Current range: 2kA ~ 200kA*

*With residual voltage range from 10kV to 900kV or higher...*

## Rectangular Impulse Current Generator:

- Current range from 100A - 15000A (High current for research)
- Time: 2ms - 4ms

**Application:**

- ◆ Surge Arrestors
- ◆ Metal Oxide Varistor
- ◆ Aeroplanes, helicopters
- ◆ High Voltage/Current Research
- ◆ HV breakers testing
- ◆ EMP & NEMP tests
- ◆ Military applications
- ◆ Other applications

**Standard:**

- IEC 60099-4 (2014)
- IEC 61643-1 2011
- IEC 61083-1
- IEC 61083-2
- IEC 60060-1
- GB/T16927.1-1997
- VDE 50164

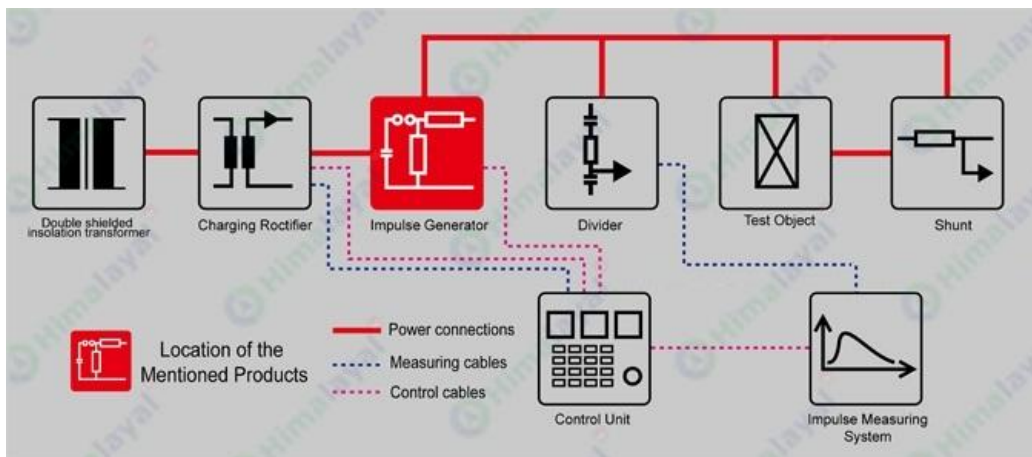
**System Components:**

- DC Charging transformer
- Impulse Current Generator
- Discharge Gap
- Test Cabinet
- Control System & Measuring System
- Waveform Adjusting Resistors / Inductors
- Residual Voltage Divider
- Rogowski coil
- Primary Switchgear Cabinet
- Control & Measuring Cable
- Grounding Rod
- Grounding Copper foil

**System output Waveform:**

Multiple Waveform:	Waveform	Peak Current
Steep current impulse 2/20 $\mu$ s	$2\mu\text{s} \pm 0.1\mu\text{s}$ 20 $\mu$ s	20kA
High current impulse 4/10 $\mu$ s	$4\mu\text{s} \pm 0.5\mu\text{s}$ , 10 $\mu$ s $\pm 1\mu\text{s}$	100kA
Lightning current impulse 8/20 $\mu$ s	$8\mu\text{s} \pm 1\mu\text{s}$ , 20 $\mu$ s $\pm 2\mu\text{s}$	40kA
Switching current impulse 36/90 $\mu$ s	$T_1 > 30\mu\text{s}$ , $T_2 \text{ app. } 2.5\mu\text{s} \times T_1$	2kA
High current impulse ( 30/80 $\mu$ s ) for Operating Duty Test	$30\mu\text{s} \pm 5\mu\text{s}$ , $80\mu\text{s} \pm 10\mu\text{s}$	40kA

\*Residual voltage: depends on requirement: 1kV ~900kV.



Testing for Metal Oxide Varistors (MOV)

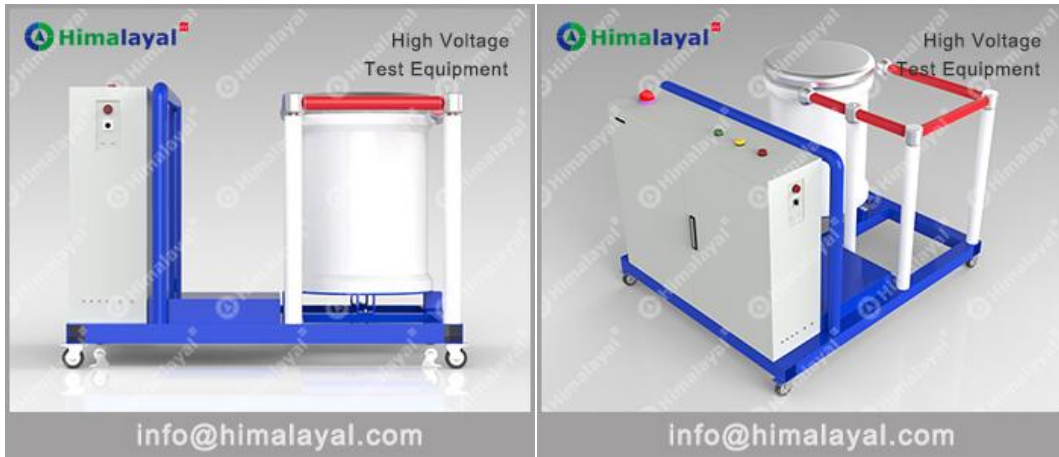
Rectangular Waveform:	Waveform	Residual Volt.
Line discharge test	2ms ~ 4ms	12kV

Testing on building protection elements:

Waveform:	Waveform	Peak Current
Impulse Current	10us, 350us	100kA

❖ **Charging Transformer:**

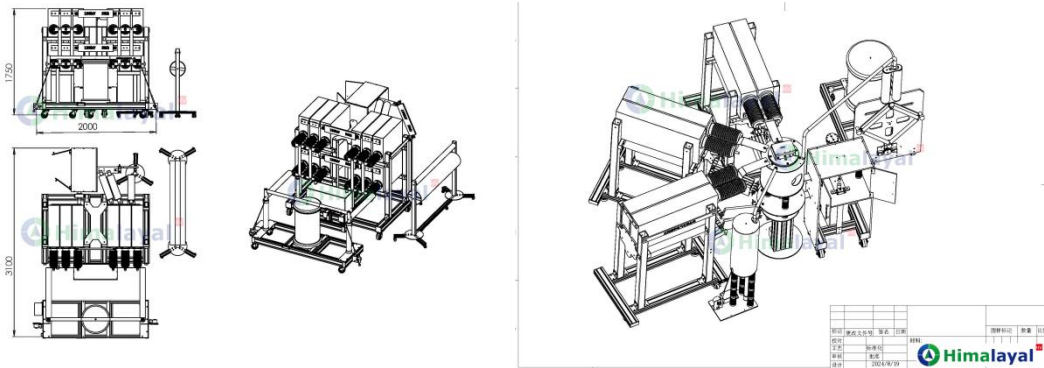
We have oil immersed charging transformer and dry type charging transformer for selection, which will depend on the system power and the structure of charging device will also has multiple selection. The control cabinet can located inside the control system, or, located in the same basement with charging transformer.



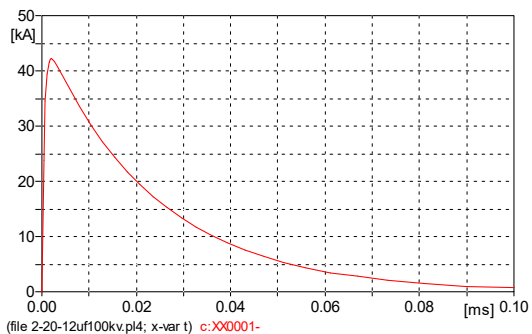
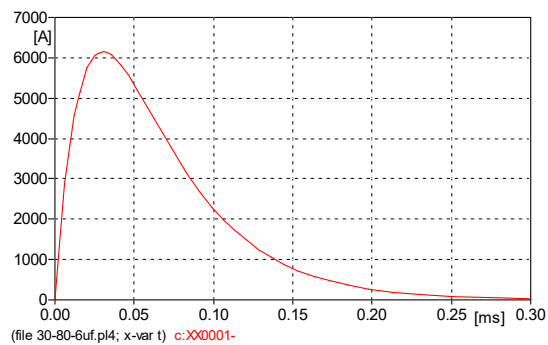
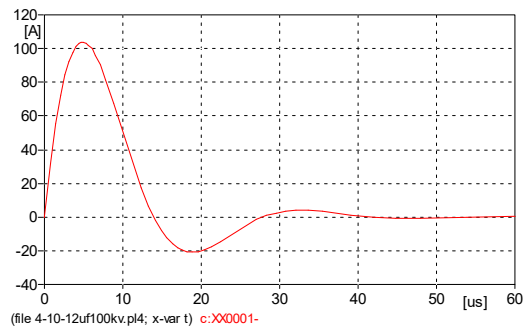
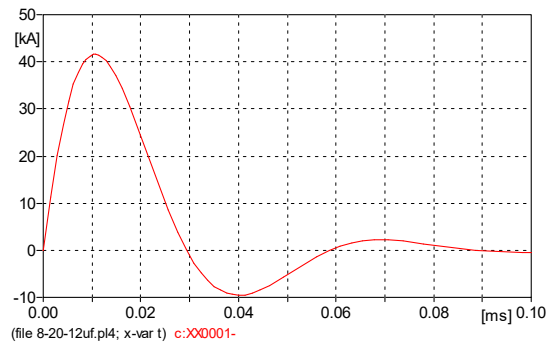
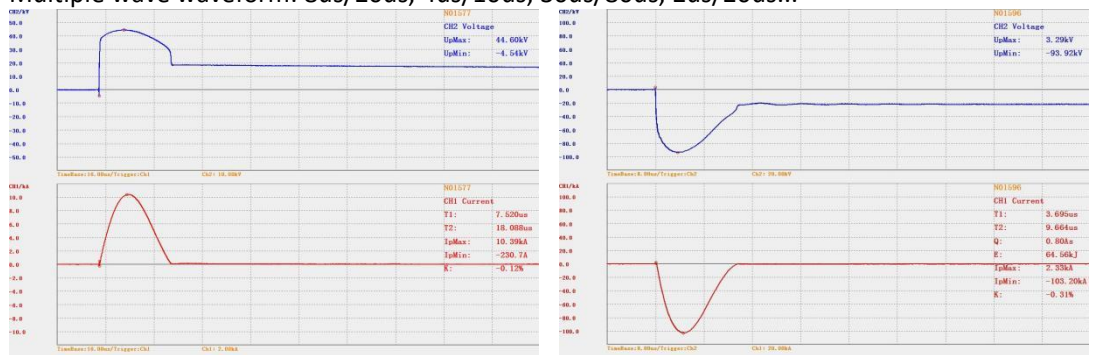
❖ **Impulse Current Generator**



- The impulse current generator layout can be horizontal type like above diagram, or, vertical type layout to get a less space occupation.
- The design of the holder structure, connection to get a low circuit inductance
- The impulse current generator can be single stage, double stages, or multiple stages, which will depends on the system energy and layout requirement.

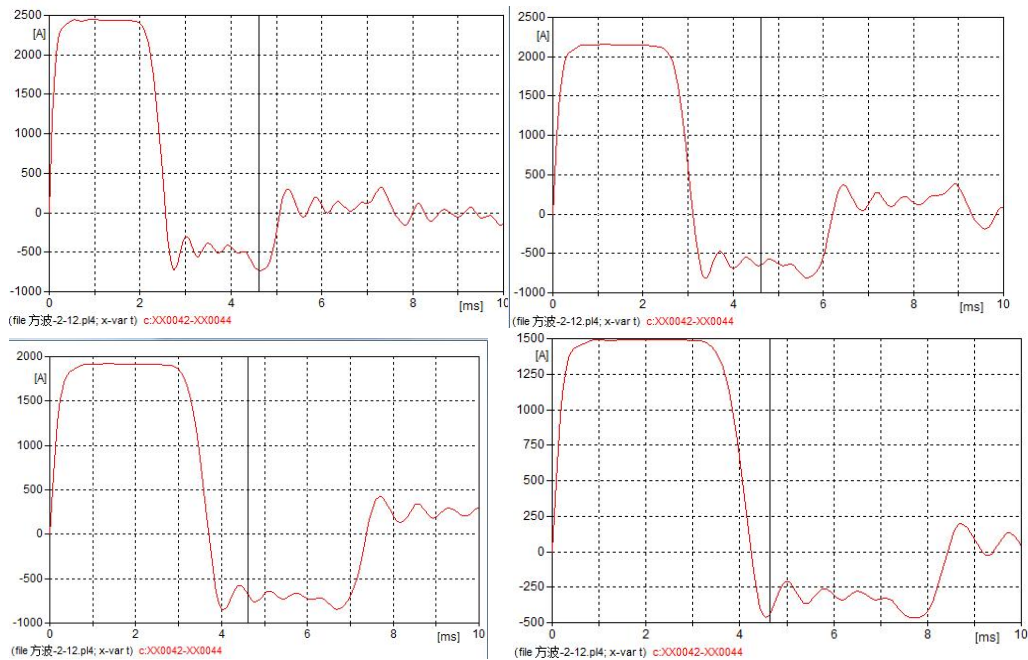


Multiple wave waveform: 8us/20us, 4us/10us, 30us/80us, 2us/20us...

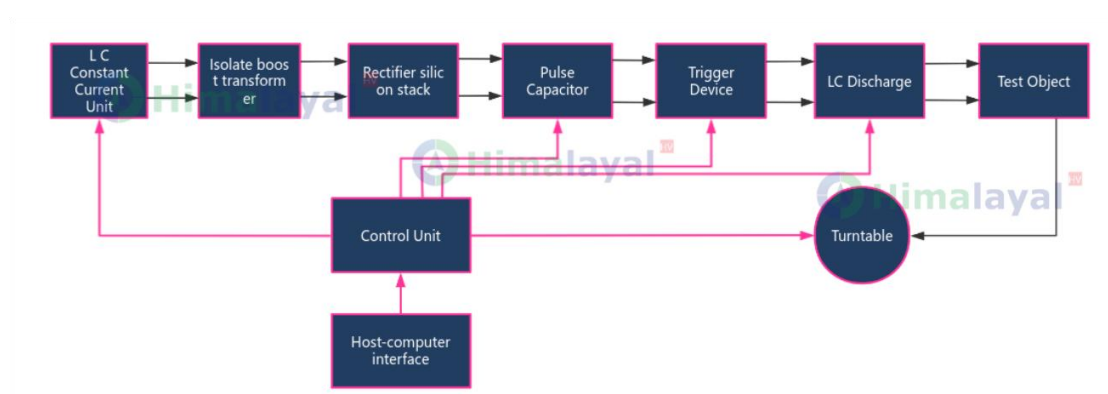


- When testing a complete arrester, residual voltage requirement will higher as 900kV, this way, we will need to use a impulse voltage generator to generate the voltage and current together. Such kind of ICG height will be much more than normal ICG. Please notice the test space when ordering the system.

Rectangular wave of 2ms, matching with different inductance and resistance:



The rectangular wave generator usually uses the concentrated parameter inductance L and capacitance C to simulate an artificial chain circuit to generate a rectangular wave.



- \*The turntable will customized according to requirement.
- \*Most of time, we equips the test cabinet.
- \*The impulse capacitor bank is charged with the charging transformer. The capacitor bank has one or two groups of 8 or 10 (depending of the relevant standard) HV impulse capacitors (castor oil insulated, no PCB) connected in series with inductances to form a L-C chain. The capacitor-inductance pairs are discharged via the spark gap through the test object. Both the current and voltage signals and values are measured @measuring system.

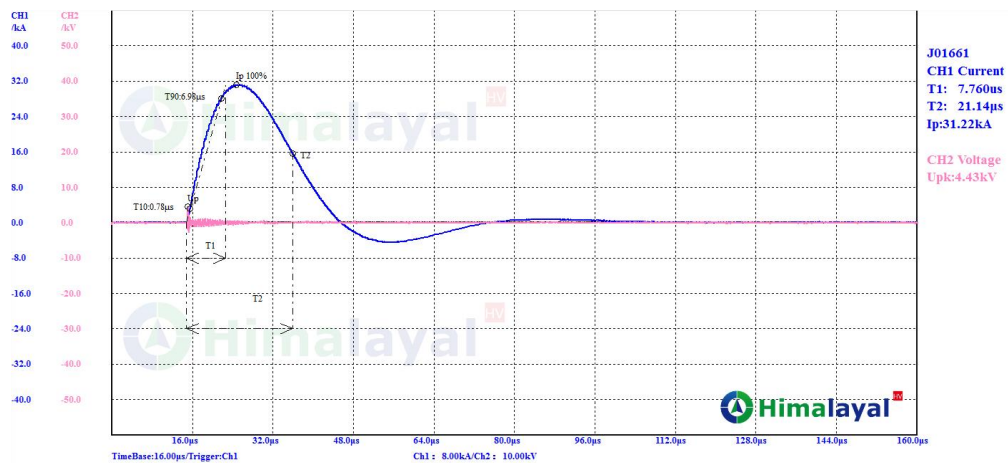
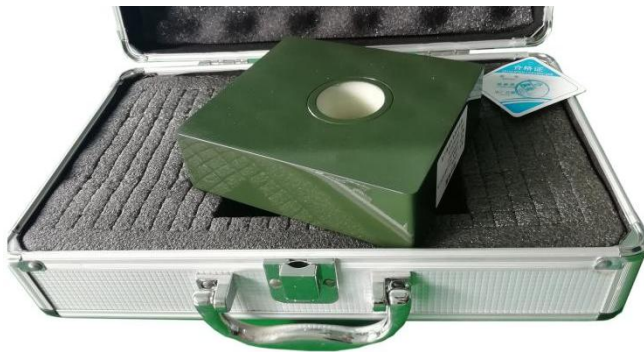
❖ Residual Voltage Divider:



Residual voltage range: 1kV ~200kV.

Voltage ratio: customized

❖ Rogowsky-style coi, current range depends by the rated current of the ICG.

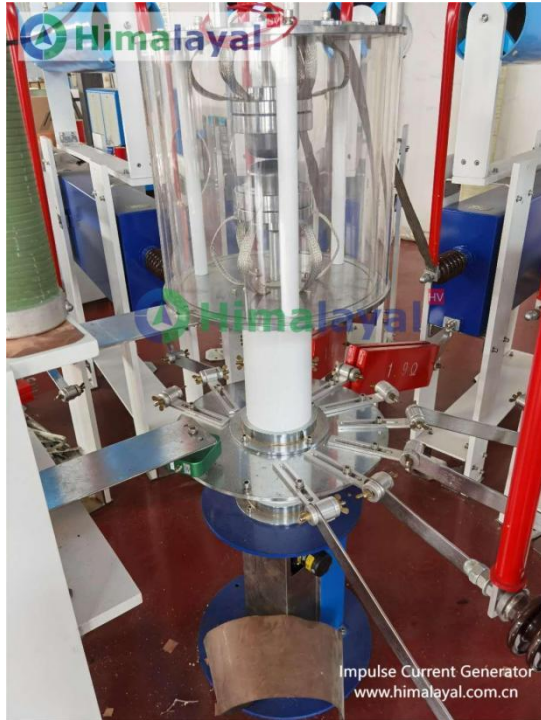


❖ Control System



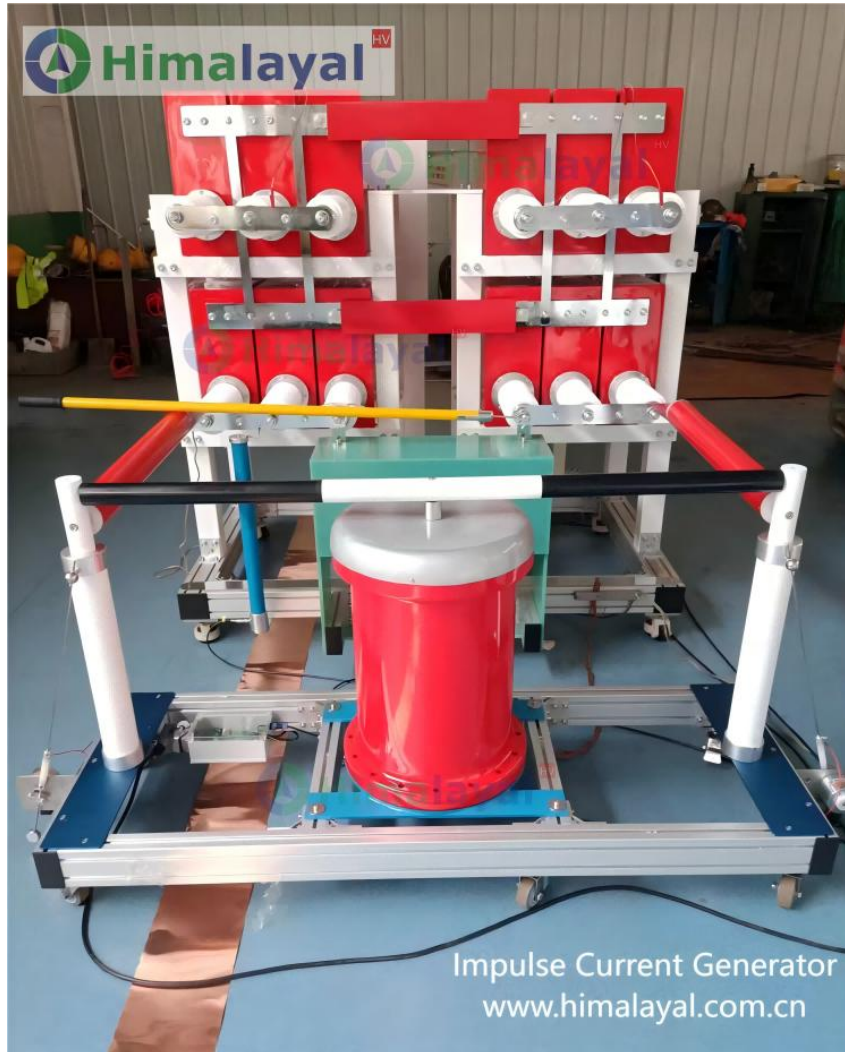
The waveform will record by the oscilloscope, which will install in the control desk. The display LCD will be two, one for control, one for measuring.







***IMPULSE CURRENT GENERATOR***



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