FE – 25500

CURRENT DIP GENERATOR

Brief Description:

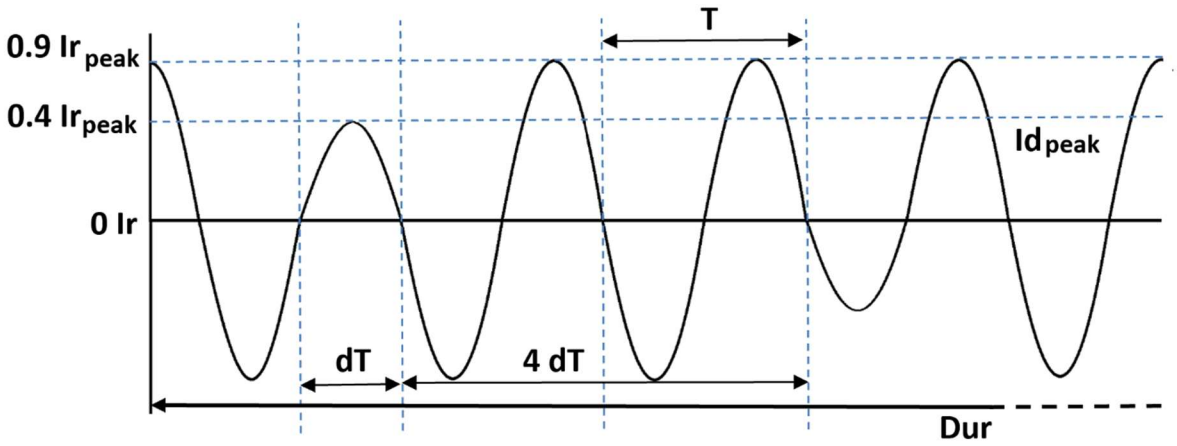
The Current Dip Generator is a specialized device, used to test the ability of EUT to withstand temporary and short interruptions in the supply. These generators are designed to simulate conditions found in the power grid due to faults or large load switching, helping to ensure the reliability of EUT in worst case scenarios.

The generator creates controlled current drops and short interruptions to mimic real – world scenarios that can occur in an electrical grid. The generator outputs a specific AC sine wave, with controlled current dip as per user specified time period, for a user specified test duration.

Features:

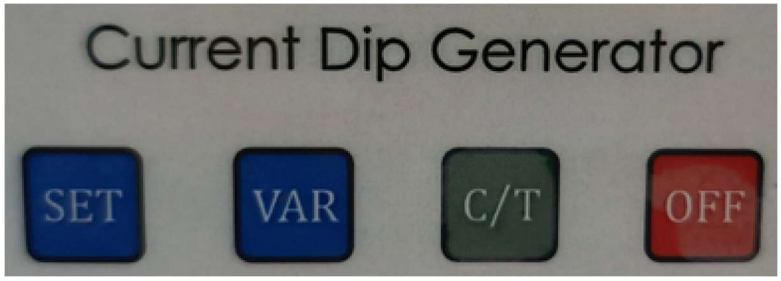
- Controlled sine wave profile generation of dip, with **user settable rated current**.
- Maximum rated current output up-to **500 A**.
- User settable **Dip current**, in fractions of rated current.
- Dip transition period measured **up-to 400µs**, less than required time frame of 1ms.
- User settable Dip duration up-to **1s**.
- User settable test duration up-to **999s**.
- **In-boxed** output current transformer. Easy to carry.
- **70 sq mm** heavy duty **stranded copper conductors** with heat resistant rubber insulation, crimped with copper cable lugs. Easy to screw-in at terminals.
- In-built **thermal protection** and fans, for power stage amplifier.
- **Power line filter** embedded in supply for interference protection.
- Input **AC mains supply** : 1Ø, 50 Hz/60 Hz, 230-250 Vac, 6 A.
- Signal output from CT terminals for observation on **oscilloscope**.
- In-built class-A **measurement CT** for the measurement of output current displayed on LCD.
- Easy push button configuration for setting the parameters, commencement of the test and end the test.
- Has a **dedicated memory** to remember last configured settings.

Output Terminologies :

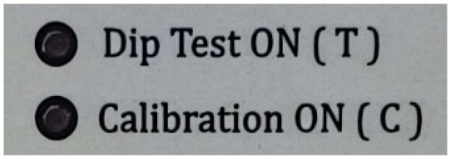


Ir : Setting rated current : 0 to 500 A
Id : Dip current : 0 Ir, 0.4 Ir, 0.7 Ir
T : Time period of profile wave : 20 ms for 50 Hz
dT : Dip time period : 0.5 T, 1 T, 5 T, 10 T, 25 T, 50 T
Dur : Total test duration in seconds : 0 to 999 s

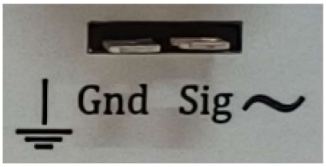
Control Settings:



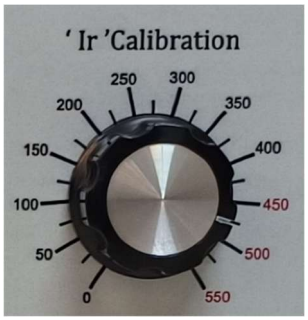
SET : To enter parameter menu settings and conforming it
VAR : To change the parameters while in parameter menu
C/T : To commence calibrating "Ir" and then starting the test
OFF : To stop the test



Calibration ON and Test ON Indicators



Measurement terminals for Oscilloscope



Knob for "Ir" Calibration

Parameters Configuring Procedure :

Home Page : After powering up device, following parameters will be seen at display.

To enter the parameter configuration menu press **SET** button.

After entering the menu user will first set the Id (Dip Current).

To vary the Id parameters press **VAR**.

User can select Id as **0 Ir, 0.4 Ir** and **0.7 Ir**.

Press **SET** to confirm the Id parameter and move to next setting.

After setting Id, now the user can configure **dip period dT**. To vary the dT, press **VAR**. The user can now vary dT between **0.5 T** (10 ms), **1 T** (20 ms) , **5 T** (100 ms), **10 T** (200 ms), **25 T** (500 ms), **50 T** (1000 ms).

Once the desired parameter is reached user can press **SET**, to move at next parameter.

After dip period, user can configure the total duration of test. Desired duration should be segregated in **ones**, **tenth** and **hundredth** decimal value.

To vary decimal value at desired places press **VAR**. Once the desired value is reached press **SET** to set the next decimal place.

After reaching hundredth decimal place, press **SET** to **save** all the parameters of the configuration menu. Meanwhile the display will have following message on screen while updating new parameters, asking to wait while updating. After this system will come back to **home page**, ready for testing with **new** parameters.

Testing Procedure :

After powering up the device, user will see home page as an indication that the system is ready to perform the test. If user wishes to change parameters, user can follow the procedure as mentioned before. Following is the testing procedure.

1. **Brush the connection terminals** of the EUT and cable clamps of generator with **scratch paper** to remove the oxidized layer and dust. The current output capacity of generator heavily depends on the **contact resistance** between the terminals.
2. **Tight the screwed terminals** completely, as the loose connections will result an increase in contact resistance, thus decreasing output current.
3. Calculate the **0.9 Ir value** of the desired **Ir** value required for testing the EUT.
4. If the parameters are as desired user can **press C/T** button to enter Ir calibration. As soon as you enter calibration, **"Calibration ON (C)"** indicator will glow **ON**.
5. While in calibration phase, output to the EUT will be **0.9 Ir sinusoidal continuous current**. To vary **0.9 Ir** value, use the **calibration knob**. The measured value of actual output current will be seen on display too. If the user wishes to **exit** the calibration phase, **OFF button** should be pressed and output will be zero.
6. After setting the required current, **press C/T** again to commence the test. The **Dip Test ON indicator will glow** for whole test duration. The test will output dip as per configured parameters and user can observe the dip on the oscilloscope if connected across the measurement terminals provided.

7. Now the test will be **ON** for user configured **Dur**. A **countdown** will also start on display, indicating the remaining time duration. Once the duration is complete the output will be zero automatically. If the user wishes to **stop** the test abruptly, **OFF button** should be pressed and output will be zero. Both the indicators for test and calibration will be off accordingly.
8. If user wishes to **repeat** the test, just press **C/T** and follow from **procedure No. 4**.

Precautions :

Following are the precautions to be taken while operating the device.

- Always keep the device in a cool and dry space. Ambient temperature lesser than 30°C is recommended.
- While performing the test at a current value greater than 350 A, temperature of the conductor cable should always be checked. As very high temperature might result in melting of insulation in current transformer primary winding.
- The Oscilloscope used for observing waveform should not have a shared common ground for different channels, with other devices connected. Use only single channel or use oscilloscope with isolated channels.
- In case of power amplifier overheating due to longer test durations of currents above 400 A, the system will OFF the output and display the message on screen to wait. Once cool, the system is ready for test again.
- AC mains supply voltage range of 230 to 250V is very critical as lower voltage will result in reduced current output.
- AC mains fuse rated 10A and CT primary fuse rated 20 A are provided in the device. Both are glass tube fuse 5 mm.
- Do not keep the generator ON in idle for long durations. Please OFF when not in use or when testing is completed.
- Do not open the lid, without any technical know-how.
- In case of any kind of failure or abnormality contact us immediately.

Contact Details :

For product development or other product inquiries please contact us.
Company Name : Finity Electronics
Website : www.finityelectronics.com
E-mail : finityelectronics@gmail.com
Mobile no. : +91-8140579445, 7990457165