

Darrah's Portable De-excitation and Crowbar Tester for Static Exciters



AVOID COSTLY DOWN TIME

Be confident that your overvoltage and safety circuits are protecting your Thyristor Bridges and Generator Field Insulation.

Darrah's Model DX5K-115A Tester is designed to test solid state crowbar and de-excitation modules.

The portable tester is used to verify the crowbar and de-excitation voltage protection levels.

Features of the DX5K-115A Tester

- AC Input: 120 Volt, 1 Phase, 50/60 Hertz, 18 Amp
- Manually adjustable 0-5000 volt DC output, to initiate operation of de-excitation and crowbar modules, with analog voltmeter and output jacks for remote DVM.
- 100 Amp DC follow through current to verify the module is conducting, measured with analog ammeter.
- Remote safety switch
- Remote 4" red safety strobe
- Rugged wheeled case with handle
- 24" wide x 14" deep x 25" high, 95 pounds

Made and supported in the USA



Darrah Electric Company

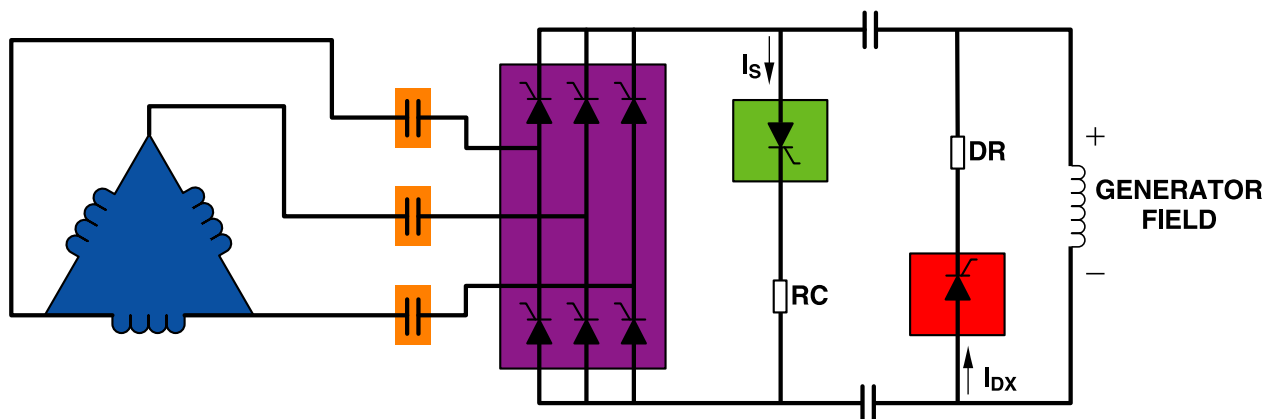
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The Importance of Testing Crowbar Circuits and De-excitation Circuits in Static Excitation Systems

Crowbar circuits protect the thyristor bridges in static excitation systems and the generator field (rotor) by providing an immediate path for negative field current. During a pole slip, the field current reverses and flows in the opposite direction (I_s). Under these conditions the generator field is a current source. It will develop voltages in excess of

the withstand capability of the thyristors in the bridges, and will damage the thyristors. The crowbar detects the pole slip voltage before it exceeds a damaging level. It provides a low impedance path for the current thereby limiting the voltage and protecting both the thyristor bridges and generator field insulation.



POWER TRANSFORMER **CONTACTOR** **SCR BRIDGE** **CROWBAR SCR** **DE-EXCITATION SCR**

De-excitation circuits provide a path for the field current to flow during a shut down or trip of the excitation system (I_{dx}). In systems that use a DC breaker or DC contactor(s), the de-excitation circuit is typically activated when the DC device is opened. When AC breakers are used, electronic signals fire the de-excitation circuits. The de-excitation circuit also operates when field voltage exceeds a safe

threshold. The energy in the generator field is dissipated in both the discharge resistor (DR) and generator field resistance.

If the de-excitation circuit fails to operate, field current will continue to flow through the AC breaker and/or DC device. Subsequent damage may be significant to the field insulation and excitation system.

Darrah's Portable tester insures that both the crowbar and de-excitation circuits are operating at intended voltage levels for bridge and generator field protection.



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