

INSTRUCTIONS



MAXIMUM EXCITATION LIMIT 3S7932JA110

INTRODUCTION

The 3S7932JA110 Maximum Excitation Limit equipment, for use with type 3S7932SA225 voltage regulator equipment, is designed to protect an AC machine with automatic excitation from prolonged over-excitation due to abnormal system conditions or failure of a component of the voltage regulator.

RECEIVING AND HANDLING

Immediately upon receipt, the equipment should be carefully unpacked and examined for any damage that might have been sustained in transit. If injury or rough handling is evident, a damage claim should be filed immediately with the transportation company and the nearest General Electric Sales Office should be notified promptly.

DESCRIPTION

The following description of operation uses typical values of time and voltage. The values can be adjusted as described in the "Range of Adjustment" section.

The 3S7932JA110 maximum excitation limit equipment recalibrates the AC voltage regulator after 20 seconds of exciter operation at 120% or more of rated voltage. Exciter voltage is regulated at 100% rated voltage as long as the AC voltage is below normal. When AC voltage returns to normal the AC regulator resumes control. The regulator current limit must be reset by returning to manual with the control switch. Exciter overvoltage caused by failure of a regulator component will disable the entire regulator 10 seconds after the initial 20 second timing period, and return the machine to manual control.

The equipment is illustrated in Figure 1 and functions as follows:

1. J1K picks up at 120% VFFL de-energizing J3K.
2. J2K and J2KX contacts close 20 seconds after energization of J1K and seal in giving an alarm. (See 348HA210, Typical Capability Curve.)
3. Energization of J2KX recalibrates current limit circuit to hold 100% AFFL.

4. Reset of J2K and J2KX is done by operator after having checked reason for operation of J1K.

5. If regulator has failed, that is, J1K does not drop out within ten seconds after J2K is energized, J3K (N.C. contacts) energizes J4K, which causes #83 relay to seal in transferring system from "Auto" to "Man" mode.

6. Reset of #83 relay is accomplished when operator returns 43 switch to manual position.

RANGE OF ADJUSTMENT

The preceding periods of time and the per unit voltages are adjustable as follows:

1. Pickup of J1K is adjustable from 75% to 135% of rated exciter voltage.
2. Time delay of J2K is adjustable between approximate values of 10 seconds to 4 minutes or 30 seconds to 15 minutes depending upon the specific model furnished.
3. Time delay of J4K is adjustable from approximately 0.2 seconds to 30 seconds.
4. Regulated DC voltage can be adjusted with J1P from approximately 75% to 100% of rated exciter voltage.

INSTALLATION

The panel is usually supplied in an enclosing case with the voltage regulator which should be installed in a well ventilated, clean, dry location where the normal ambient temperature is not greater than 50C. The equipment should be readily accessible for adjustment and testing. Connections must be made in accordance with the diagrams supplied for each particular installation. Care must be exercised to determine that the connections are correct to avoid damaging the equipment.

TEST AND ADJUSTMENT

The time delay adjustment of J2K and J3K should be made with the regulator in the OFF position. Connect

These instructions do not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the General Electric Company

a jumper across the normally open contact of J1K to initiate the timing sequence.

J1K should be adjusted to pick up at the desired value of voltage by means of resistor J1RA. The regulator should be in the OFF position, the exciter operating under manual control, and the generator field breaker open. The total resistance in ohms of J1RA, J1RB, J1RC and the coil of J1K should be approximately twice the desired pickup voltage since the relay has a nominal 0.5 ampere coil.

DC voltage adjuster J1P should be adjusted next. Operate the exciter at normal voltage with manual control and with the generator field breaker open. Bypass the field breaker interlock in the regulator control circuit and also by-pass the regulator trip contact of J3K. Increase exciter voltage until J1K is energized. After J2K times out, the regulator should transfer AC regulator to DC regulator. Reduce the exciter voltage to approximately 80% of rated voltage, dropping out J1K. Clockwise rotation of J1P must cause the exciter to go in the boost direction and counterclockwise rotation must cause the exciter voltage to go in the buck direction. Adjust exciter voltage for zero volts and place the regulator in the "Auto" position. Check the ability of J1P to control exciter voltage. Set J1P and the manual control to hold the desired value of exciter voltage for prolonged maximum excitation with the exciter operating. Lock J1P in this position. This completes test and adjustment of the

various components of this equipment. Care should be exercised upon completion to insure that all jumpers used during the test have been removed and that all connections are tightened securely.

MAINTENANCE

The equipment should be kept relatively clean and dry. If vibration is present, all screw type connections should be checked regularly to determine that they are properly tight. Normally, the static component should require no further attention; however, since the equipment is not used in normal operation, the installation tests should be repeated periodically to insure that the equipment is in operating condition.

RENEWAL PARTS

When ordering renewal parts, the following information should be given:

1. Catalog number stamped on the part, with a complete description, including use and location.
2. Complete nameplate data appearing on the assembly of which the part is a component.
3. If possible, data on original order on which equipment was first supplied, including all numerical references.

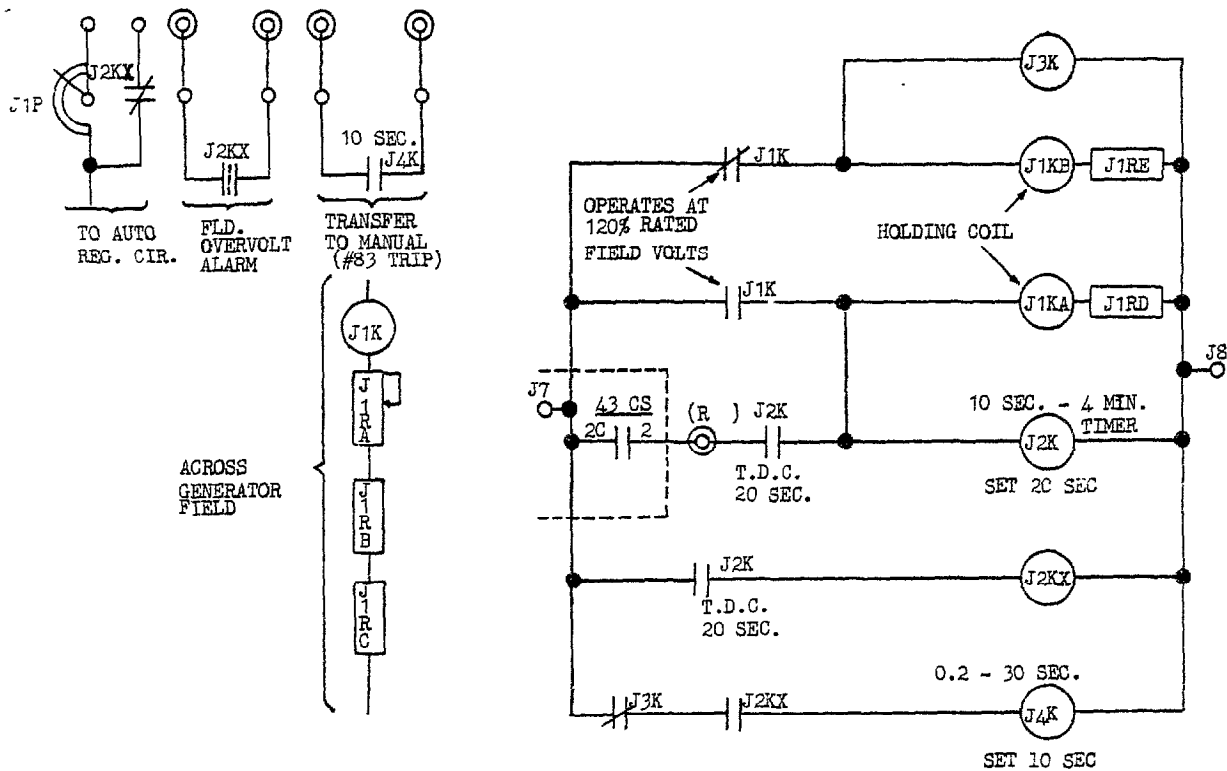


Fig. 1. Maximum Excitation Limit Elementary of 3S7932JA110.