

Order Number

Serial Number

2V70K2 TEST PROCEDURE

ERROR VOLTAGE SENSING UNIT

Issue Level	Date	Summary of Changes
B	19/06/1997	Initial issue.

Due to RMS continuous product improvement policy this information is subject to change without notice.

Document updated	Checked	Registered	.pdf file created	.pdf uploaded to web site

1. DESCRIPTION

The 2V70 Bipolar Comparator is a solid state circuit which is used in an AC voltage regulator system. The circuit detects the difference between the required system voltage and the actual system voltage and by means of the output relays will select the next appropriate tap on a tapchanging transformer. The difference or 'error' voltage is adjustable by means of a potentiometer. Provision is also made to vary the 'input signal de-sensitising ratio' also by means of a potentiometer.

2. SPECIFICATIONS

Nominal Voltage	63.5V/110V RMS
Operating Voltage Range	65-115% of nominal
Range of Input Voltage	0.125 - 1.0 Volt
Intrinsic Error	1.0% of maximum setting
Setting Error	2 of maximum setting
Temperature Range	-10°C - +50°C
Output Contacts	
Continuous Rating - Resistive Load	5A @ 26V DC 3A @ 115V DC 2A @ 220V AC
Burden	Relay operated: 4.6VA Relay Not Operated: 2.5VA
Insulation	2KV RMS 1/50 Impulse 5KV

3. TEST EQUIPMENT REQUIRED

AC Adjustable power source
DC power source
Digital Voltmeter

4. ASSOCIATED DRAWINGS

660-030-202 Schematic Diagram
660-030-302 Loading

5. HIGH VOLTAGE TESTING

- Apply 3 pulses at 5KV of each polarity between all terminals and frame.
- Apply 2000 volts RMS between all terminals and frame.

6. CALIBRATION & TEST PROCEDURE

- Connect 110V AC between terminals 7 and 9.
- Connect a wire link between terminals 18 and 19.
- Connect a Digital Voltmeter which has been set to DC Volts, 20V range to test point B and terminal 18 (zero volts). Adjust R11 (1K) until the voltage at test point B is zero.

ACTUAL

6. CALIBRATION & TEST PROCEDURE (Cont)

- d) Disconnect the wire link and connect a DC power supply of less than 100 ohms output impedance across terminals 18 and 19, positive to terminal 19. Adjust trimpot R24 (10K) until the RAISE relay picks up at an input voltage of 1.000 Volts when the front panel potentiometer is set to 4%.

MINIMUM	MAXIMUM	NOMINAL	ACTUAL
980	1020	1000	<input type="text"/>

- e) With the front panel potentiometer set to 0.5%, adjust R29 (2K) until the RAISE relay picks up at 125mV.

MINIMUM	MAXIMUM	NOMINAL	ACTUAL
105	145	125	<input type="text"/>

- f) Repeat d) and e) until the required accuracy is reached.

- g) Check that the hysteresis is 50% \pm 7.5%.

MINIMUM	MAXIMUM	NOMINAL	ACTUAL
42.5	57.5	50	<input type="text"/>

- h) Reverse the DC power supply connections to terminals 18 and 19. Check that the LOWER relay picks up within the tolerances specified in d) and e) and that the hysteresis is within the tolerance stated in g).

ACTUAL

- i) Check operation and correct wiring out output contacts.

ACTUAL

- j) Check circuit operation at 99V (90%).

ACTUAL

- k) Remove AC supply from terminals 7 and 9 and connect 63.5V AC to terminals 6 and 9. Check circuit operation at 63.5V AC.

ACTUAL

- l) Check circuit operation at 57V (90%).

ACTUAL

6. CALIBRATION & TEST PROCEDURE (Cont)

- m) Actual Pick-Up Volts achieved on Test at nominal voltage.

SETTING	MINIMUM	MAXIMUM	NOMINAL	ACTUAL	UNIT
0.5%	105	145	125		mV
1.0%	230	270	250		mV
1.5%	355	395	375		mV
2.0%	480	520	500		mV
2.5%	605	645	625		mV
3.0%	730	770	750		mV
3.5%	855	895	875		mV
4.0%	980	1020	1000		mV

7. GENERAL & FUNCTIONAL

Check that the relay is electrically sound and mechanically robust as per Standard Inspection & Test Schedule 903-000-026.

PASS

TESTED BY : _____ DATE : _____

8. CONNECTION DIAGRAM

