



# COMPUTERIZED RELAY TEST SYSTEMS (Automatic Test Equipment)

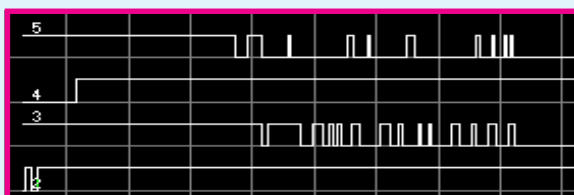
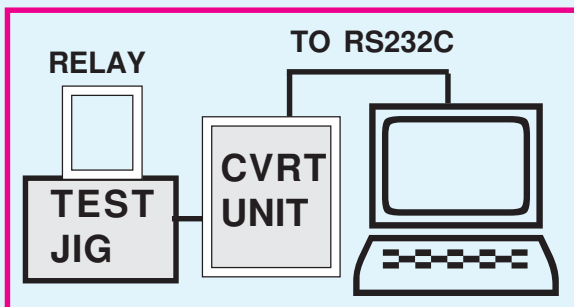
Ideal for fast and fool proof testing of Electromagnetic & Reed RELAYS for testing static and dynamic parameters. The system scans at one stroke, all the parameters and tests as per definition of pre-programmed test procedure under **User friendly menu driven software**. Any semiskilled and unskilled person can be engaged for testing.

**PC Control Software:** The instrument is controlled through external PC through RS232C port. The system stores the test results to database tables. The system software works on Windows 98/XP platforms. The system must be controlled by a PC-Pentium IV. The database table is compatible to fox-pro table. You can import these files to other softwares for creating graphs and other analysis.



**CVRT-S16** is custom designed for Railway Signaling Relays with maximum 16 Contacts.

**CVRT-S8** is designed for any Relays with maximum 8 contacts.



## User Friendly Menu driven software

The instrument not only tests and displays the results but also analyses the tested results against set limits on each parameter. Each test can be defined with different test parameters and different test conditions like Test frequency. After completing the tests as per defined procedure the results are dynamically displayed after each test on the monitor of the system.

**Password Requirement:** The control software expects two levels of users.

**Level-1 user - Person with Password:** A person who understands the transformer, its windings, drawings, specifications. This person will be provided with the password and will be able to access all menu items.

**Level-2 user - Person without Password:** This persons can select the test file, test the components and take reports.

## Contact Status LED

See a window with green LED's. This window is displaying status of the contacts while coil drive voltage is automatically increased or decreased for operate or release conditions. The increase or decrease of voltage takes place till the operate or release voltage is attained. The system will monitor all the active contacts

**Contact Timing Graphs:** Timing and bouncing graph for each contact while operate and release time.

# Test Results Display

See a sample test results window showing the results after testing is over.

CONTACT DATA							TRANSFER TIMES		COIL DATA	
	CON RES	DPT (mS)	RET (mS)	OPB (mS)	REB (mS)		OP Trav.T.	44.3 mS	OPERATE	17.21V
	[mOhms]	@24.0V	@24.0V				RE Trav.T.	38.6 mS		48.0mA
FCR-A12	15.5	162.2	26.0	0.0	0.0				OPCONGAP	0.43V
FCR-B12	16.3	170.7	16.7	8.1	0.0					
FCR-C12	20.8	162.0	27.9	0.0	0.0					
FCR-D12	13.6	162.2	26.9	0.0	0.0					
FCR-A34	15.1	162.2	28.5	0.0	0.0					
FCR-B34	15.5	170.6	15.5	8.0	0.0				RELEASE	10.66V
FCR-C34	14.9	162.2	24.0	0.0	0.0					29.7mA
FCR-D34	15.1	162.0	28.9	0.0	0.0				RECONGAP	0.90V
BCR-A56	18.2	136.7	38.6	0.0	0.0				% REL	61.91
FCR-B56	57.8	162.9	28.1	0.9	0.0					
FCR-C56	17.6	162.1	26.8	0.0	0.0				COIL R	358.380hm
BCR-D56	30.8	152.2	37.6	0.0	0.0				CLR@20dec	348.79
BCR-A78	15.1	151.1	38.1	0.0	0.0				COIL PWR	1.59 w
FCR-B78	18.3	162.0	27.9	0.0	0.0					
FCR-C78	15.8	162.1	27.5	0.0	0.0					
BCR-D78	42.2	155.6	37.3	0.0	0.0					
MAXIMUM	57.8	170.7	38.6	8.1	0.0					

START TEST

Testing - 12f4b

GRAPH

END TEST

PrintResult

SL. NO.

PASSED: 1

SLNO: 1

RESULTS

**PASS**

TEST OVER Replace Relay and Start Test

TEST OVER Replace Relay and Start Test

## Possible Test Parameters: (Resolution)

### Coil Resistance at Room Temperature & Evaluated to 20 degree C:

5 - 50 Ohms	+ 1% ± 1dgt	(0.01 Ohm)
50 - 500 Ohms	+ 0.5% ± 1dgt	(0.1 Ohm)
<10 K Ohms	+ 1% ± 1dgt	(1.0 Ohm)

### Coil Current at Room Temperature @ 20 degrees or other. Evaluated from Room temp test

50mA to 200mA	+0.5% ± 1 dgt	(0.01mA)
< 500mA	+ 1% ± 1dg	(0.1mA)

### PickUp & DropAway (Operate & Release) Voltage

Up to 24V	+ 0.5% ± 1dgt	(0.1V)
24V to 48V	+ 1.0% ± 1dgt	(0.5V)

### PickUp/DropAway Contact gap or Contact Sequence Test

Voltage.Cur variation between 1st to last conatct break. (FFB to LFB / FBB to LBB)

Percentage Release: ±0.1% ± 1dgt (0.1%)

Power Consumption: 10.0 Watt ± 1% ± 1dgt (0.01 Watt)

### Contact Resistance of All contacts Back Contacts / Front Contacts

500 m Ohms ± 0.5% ± 1 dgt (0.1 mOhm) Test Current : 100mA (Max.)

### Operate & Release Time @ Rating and other than rated value

< 50 mS	+ 0.05 mS	(0.01mS - CVRT-S8 0.02mS -CVRT-S16)
> 50 to 500 mS	+ 0.2 mS	(0.1mS)

### Operate - Release Time

Operate & Release Transfer Time (For relay with NC NO contacts)

Bridging / Non Overlap Test Contact Bounce Time for all Contacts

Contact Form test: To check contact form before further testing.

Warm-up Voltage with Specified Number of Cycles @ Specified Voltage.

## Specifications for CVRT-S8 only

**Contact Stabilization Time (Operate:OCST , Release:RCST):** The time required for contact resistance to stabilize below static contact resistance limit. Contact tested at 50mA and 50mV.

**Transient Voltage Suppression (EMF):** for inbuilt suppression diode maximum 50V ± 5%

**Series diode leakage current measurement:**DC Current measured when coil Voltage is reverse biased for polarized relays. Resolution + 0.1 micro A. Range: 100 micro A. Accuracy: ±5%

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