

GENERAL SPECIFICATIONS

"METRAVI" Relay Test Set, RNT -33 is suitable for testing distance relays. However other relays like over current, over voltage, under voltage, earth fault and relays having directional element can also be tested by this relay test set. The set is in two units.

- Current source, voltage source & measuring facilities.
- Phase shifter unit.

SPECIAL FEATURES

- Fault phase voltage adjustable at 80%, 90%,100%& 110%
- Fault current adjustable between 0 to 100%
- Phase angle adjustment & measurement 0° to 360° in current ckt.
- Digital time interval meter.
- Voltage & current indications by digital meters.

TECHNICAL FEATURES

Input Voltage Output (s)	415V ± 10%, 3phase, 4 wire 50HZ AC.
[a] Test Current	0 to 1,5,10,25A,50A having 0 to 100% regulation in each tap & each phase.
Rated maximum burden	250 VA.
Duty Cycle: i)	continuous upto 10A. ii) 25A & 50A outputs are rated for intermittent duty cycle i.e. 5mins "ON" , 10mins " OFF " .
[b] Test Voltages AC Voltage source	110 volts ,phase to phase, 63.5 volts phase to neutral, 3phase 50 HZ AC. Only one phase voltage (R-Phase) can be adjusted 0-220V by using one voltage rgulator that can be selectable.
Rated maximum burden	50VA / phase.
Fixed DC voltage source	Isolated fixed 30V/110V/ 220V DC of 100VA, with out metering
[c] Phase Angle Variation	0 to 360° in current ckt.
[d] Time Measurement	0-9.999 secs.& 0-99.99secs in two selectable ranges.
CURRENT CIRCUIT Loading Transformer	Double winding loading tran-sformer of suitable burden toprovide corresponding curre-nt output specified before.
Measuring C . T.	Multi ratio wound primary current transformer.
Ratio	1-5-10-25-50/1A with current range selectable rotary switch
Variable Auto-Transformer	[1 no for each phase] For smooth variation of current output at various ranges selected.



Tripping circuit	The current output will be cutoff incase of any overload or even if the relay under test actuates.
Metering	C. T. operated ammeter [1no for each phase]
Range	0 to 1AAC.
Scaled	0 to 100% for all the selected current ranges.
Accuracy	±1%
Resolution	0.1%
VOLTAGE CIRCUIT AC VOLTAGE CIRCUIT	3 phase autotransformer for rated output voltage selection 80%, 90%, 100% & 110% of 110Volts by selection switch.
METERING	Voltmeter with phase selector switch.
Range	0 to 300 V.
Accuracy	± 1%
Resolution	1V.

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DC VOLTAGE CIRCUIT	Double wound multitap isolated transformer is provided for fixed DC voltage sources 30V / 110V / 220V are selected one at a time by selector switch.
PHASE SHIFTER CIRCUIT	Static Type Phase Shifting Transformer:
Primary voltage	415V , 3phase, 50HZ. AC.
Secondary voltage	415 V, 3phase, 50HZ. AC . 0 to 360° phase angle variation by coarse and fine control. Coarse control will be in steps of 60° while fine control will be of $\pm 30^\circ$.
Capacity	50VA per phase .
METERING	
Phase Angle Meter	0 - 360° .
Resolution	1%. There will be provision for phase selection by selector switch.
BUILT-IN-TYPE DIGITAL TIMER	
Measuring Range	Resolution
9.999secs.	0.001sec.
99.99secs.	0.01sec.
Display	Seven segment LED.
Accuracy	$\pm 1\%$. Terminals to relay contacts. Reset push button. Selector for NO & NC contact. Potential free start timer for opening or closing of auxiliary contact of the contactor. When the relay under test actuates, there will be automatic tripping of the output current circuit. With the actuation of the relay under test, the timer will stop counting and the elapsed time will be latched in the display.
GENERAL ARRANGEMENT	
The set is in two units.	i) Current source, voltage source & measuring facilities. ii) Phase shifter unit.

Unit having current source, voltage source & measuring facilities.	Current circuit , AC & DC voltage circuits, protective circuit, contactors, measuring circuits etc. will all be housed within sturdy M.S. cabinet. Also meters, terminals, indicators, regulator knobs, timer display etc.will be fitted on the horizontal panel of the same cabinet which can be approached by opening the top hinged lid. Wheels will be provided for easy movement.
Phase shifter unit	Static type phase shifting transformer will be housed within this M.S. unit. Input output connection socket, phase shifting "Coarse" & "Fine" knobs are fitted on the horizontal plane of the sturdy M.S. cabinet which can be approached by opening the top hinged lid.
INTER CONNECTION CABLE	Necessary cables of 1 meter length along with plug will be provided for inter connection between two units.
MAINS INPUT CABLE	Four core cable of 5 meters length will be provided. All the meters will be digital type. Operational manual, Schematic Circuit Diagram, Works Test Report, Warranty Certificate will be supplied along with the set .

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