

INTRODUCTION

"METRAVI" brand Relay Test Set, ZNT-34 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.

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

SPECIAL FEATURES

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

TECHNICAL FEATURES

Input Voltage	415V±10%, 3phase, 4 wire 50HZ AC.
Output (s)	
[a] Test Current	0 to 1,5,10,25A,50A having 0 to 100% resolution in each tap.
Rated maximum burden	500 VA.per phase.
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	0-220 volts , phase to neutral, 50 HZ AC.
Rated maximum burden	150VA / phase.
DC voltage source	Isolated 0-240 volts D.C. with maximum capacity available 1A.
[c] Phase Angle Variation	0 to 360° in current ckt.
[e] Time Measurement	0-9.999secs. with resolution 1 msec. & 0-99.99sec. with resolution 10 msec.
CURRENT CIRCUIT	
Loading Transformer	Double winding loading transformer of suitable burden to provide corresponding current 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 in case of any overload or even if the relay under test actuates.
Metering	C.T. operated ammeter [1no for each phase]
Range	0 to 1A AC.
Scaled	0 to 100% for all the selected current ranges.
Accuracy	± 1.5%
Resolution	0.1%
VOLTAGE CIRCUIT	
AC VOLTAGE CIRCUIT	3 phase autotransformer for rated output voltage.
Variable Auto- transformer	[1no for each phase] For smooth variation of voltage output from zero to rated voltage.

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METERING	Voltmeter with phase selector switch.
Range	0 to 700 V.AC
Accuracy	± 1.5%
Resolution	1V.
DC VOLTAGE CIRCUIT	Double wound multitap isola-ted transformer is provided for 0- 240V with voltmeter.
PHASE SHIFTER CIRCUIT	Static Type Phase Shifting Transformer:
Primary voltage	415V , 3phase 4 wire, 50HZ. AC.
Secondary voltage	400 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 ± 30°.
Capacity	500VA 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	0-9.999secs. with regulation 1 msec. & 0-99.99sec. with regulation 10 msec.
Display	Seven segment
Accuracy	±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 on 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 with in 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 connect-ion 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, Gaurantee Certificate will be supplied along with the set .	

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