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PROTECTION + AUTOMATION + CONTROL

# MICRO PROCESSOR BASED NEUTRAL EARTH RESISTOR MONITORING RELAY JRV 402

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## FEATURES

- ◆ Solid state reliability
- ◆ Built in Trip test facility
- ◆ High sensitivity
- ◆ Low burden

## APPLICATION

The relay is used to monitor the neutral earthing resistor. Transformer neutral is earthed through a resistance. This resistor is called as Neutral Earthing Resistor (NER). Neutral Earthing resistors are used to restrict the fault current through the transformer during earth fault conditions. The healthiness of NER is important as an open resistor would render earth leakage protection in operative and hazardous.



## PRINCIPLE OF OPERATION

A very low DC current is passed through the NER and this is monitored in the relay. If there is an open circuit in resistor or considerable change in the resistor value, the same is detected in the monitoring circuit. After detecting the change, timer is started and output relay is deenergized at the end of internally set time delay ( 5 Sec ) The relay contact may be connected externally to Alarm/Trip circuit as required. Normally the output relay is kept energized. If there is a failure in Aux. Supply the output relay releases and extends the Alarm/Trip signal.

## TECHNICAL DATA

### SPECIFICATION

Auxiliary supply : 230V,  $\pm 10\%$ , 50Hz

### BURDEN

Aux. Supply : Less than 5VA

### OUTPUT RELAY

Relay : Two Changeover  
Relay ratings : 5A at 24V DC/230V AC, 50Hz.  
Working voltage of the system for which relay is designed : 565V, 3, 50Hz, with neutral earthed through a resistance of 435 ohms.  
Tripping Level : Resistance more than 150% of 435 ohms i.e., more than 653 ohms.

### CONTACTS DURABILITY

Loaded contact : 10,000 Operations min.  
Unloaded contact : 100,000 Operations min.

### **INSULATION**

1. 2KV RMS, 50 Hz for 1 minute / 2.5 KV for 1 sec . Between all terminals and cases .
2. 1KV RMS, 50 Hz for 1 minute across open contacts

### **MECHANICAL DESIGN**

Weight	:	Appx. 1000gms
Case size	:	83 x 148 sq mm, depth 125mm
Installation	:	Flush mounting
Panel cutout	:	73mm x 138mm

### **STANDARD COMPLIANCE**

Accuracy Test	:	IEC 60255-3
Insulation Test	:	IEC 60255-5

### **RELAY TERMINAL DIAGRAM**

Note: Wiring diagram of relay types are given on request

### **ORDERING INFORMATION**

Relay type	:	JRV 402
Auxiliary supply	:	230V AC 50Hz