

EVR-415-A Multifunction Voltage Relay

Samwha



Application

- Pump station protection
- Mains failure protection/indication
- Reverse phase protection/indication
- Under and over voltage protection/indication

Features

- Adjustable over and under voltage settings
- Adjustable trip times for over and under voltage settings
- Trip Indication for up to 24 Hours without power applied
- Phase loss and phase reversal protection
- Remote or local reset
- Auto reset after 5 seconds when mains voltage returns to within set levels

Benefits

- User friendly
- Easy to apply
- Assists in fault finding
- Multiple protection in one relay
- Safe resetting
- Reduced down time

The Samwha EVR-415-A multi Function voltage relay has been designed to reduce the risk of damage to equipment due to a poor or unreliable 3 phase power supply. Advanced features such as adjustable over voltage and under voltage limits allows the user to tailor the relay operation to the prevailing conditions. The trip times for each of these functions are also adjustable therefore eliminating relay operation due to very short duration voltage fluctuations. This greatly decreases the possibility of nuisance tripping while providing a high degree of protection. Phase loss and Phase Reversal protection are standard functions removing the need for additional protection devices. Fault indication is provided by three LEDs mounted on the relay fascia. The cause of a trip can be determined for up to 24 hours by pushing the ascertain button.

Ordering Information

EVR-415-A

For further details please contact your Samwha distributor.

Specifications

VOLTAGE ADJUSTMENT

Overvoltage 415 - 500 Vac
Undervoltage 340 - 415 Vac

TIME ADJUSTMENT

Overvoltage 0.5 - 2 seconds
Undervoltage 1.0 - 5 seconds
Phase reversal 0.5 seconds Fixed
Phase loss 0.5 seconds Fixed

ACCURACY

Voltage +/- 2%
Time +/- 15%

AUTO RESET TIME

Factory set at 5 seconds

OUTPUT RELAY

1 changeover contact
5A/250 Vac resistive

FREQUENCY

50 or 60 Hz

MAXIMUM VOLTAGE

Surge 1000 volts ac
Continuous 500 volts ac

INDICATION

Over voltage LED
Phase loss/Phase reversal LED
Under voltage LED

TRIP MEMORY

24 Hours @ 25°C

RATED TEMPERATURE

In operation -10 to + 60°C
In storage -30 to + 70°C

RELATIVE HUMIDITY

45 - 85% non condensating

OPERATION LIFE

Mechanical 150,000 operations
Electrical 100,000 operations

INSULATION

10 M Ohm @ 500Vdc
between casings and circuits

DIELECTRIC STRENGTH

2kV @ 60Hz, 1 minute
between casing and circuits

MOUNTING

DIN rail or surface mounting.

WEIGHT

309 grams



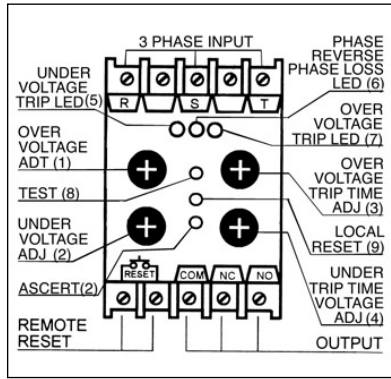
N2256

Adjustments

The relay has four adjustments:

- 1) Overvoltage
- 2) Undervoltage
- 3) Overvoltage Trip Time
- 4) Undervoltage Trip Time

Each adjustment is calibrated to indicate settings without the need for further test equipment.



Indication/Pushbuttons

- 5 Undervoltage trip (UVR) LED
- 6 Phase reversal, Phase loss (RPR) LED
- 7 Overvoltage trip (OVR) LED
- 8 Test button
- 9 Local reset button
- 10 Acert button

The 'Acert' is short for 'Ascertain' the cause of a trip.

Operation

The EVR-415 is used to trip the 3 phase power to loads when mains voltage becomes unsuitable. An upper and lower voltage set point allows the user to nominate the voltage window in which the equipment should operate. Independent trip times for these upper and lower set points reduces the possibility of nuisance tripping due to short duration transients. The EVR-415-A will also trip if a phase reversal or phase loss on the 3 phase supply occurs.

Once a trip has occurred, the EVR-415-A will automatically reset when the supply returns to within voltage settings for 5 seconds. In the case of phase loss, the relay cannot be reset either locally or remotely until the lost phase is restored.

If the EVR-415-A is used to trip a circuit breaker or device which supplies the relay with 3 phase power, the ascertain pushbutton allows maintenance staff to determine what caused this trip before manually closing the device. Trip memory is stored for up to 24 hours @ 25° celsius.

Setting

Once the EVR-415-A has been installed and all connections have been checked, set the voltage and time adjustments to maximum limits to allow between 340v and 500v to be applied for maximum time. This will prevent nuisance tripping while adjustment is carried out. If the nominal system voltage is not known, it should be determined before applying power to the EVR.

- Apply 3 phase power to the relay
- Depress and hold the test button to verify the operation. (Output contact will change over and phase loss/phase reversal LED will light RPR)

- Release test button, after 5 seconds the RPR LED will go out and the relay resets.
- Set the over volt and the under volt adjustment to required levels.
- Set the over volt and under volt trip time adjustments.

Testing

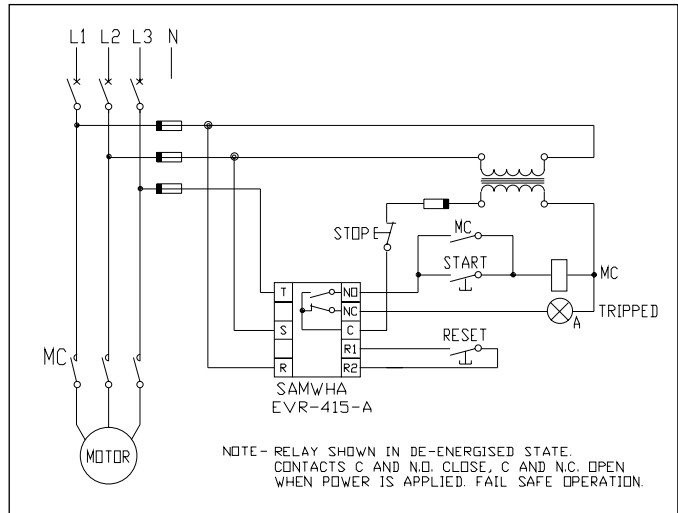
A test button is provided to confirm the correct operation of the relay. Once pressed, the relay trips indicating a phase loss. This should only be done if tripping the relay does not effect the process it is protecting.

Resetting

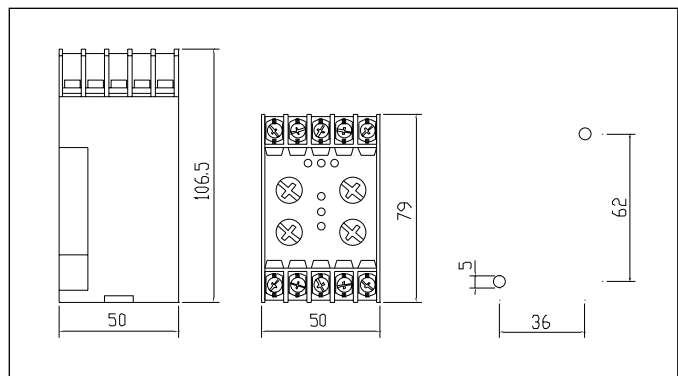
Resetting of the relay can be local by pressing the reset button or remotely by connecting a normally open contact across the reset terminals in the relay fascia.

Mounting

The EVR-415-A is DIN rail or surface mounting and can be installed in any plain without effecting the performance of the relay.



Typical wiring diagram



Dimensions

Details may be subject to change without notice.

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