

UVR, OVR, CVR and PFR series AC Voltage Relays



Features

- Under/over voltage monitoring and tripping
- Single or 3 phase operation
- Adjustable trip/reset voltages
- DPCO relay contacts
- DIN rail/ surface mount case

The Murphy range of voltage relays provide monitoring of single or three phase AC mains/generator supplies. Relay outputs give controlled signalling/tripping at customer set voltage levels. Our range includes:

| | |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UVR100 / OVR100 series | Under and over voltage relays for single phase AC connection |
| UVR500 / OVR500 series | Under and over voltage relays for three phase and neutral AC connection |
| CVR500 series | Under and over voltage relays (combined in one case) for 3 phase and neutral AC connection |
| PFR500(-R) / POR500 series | Phase failure (under voltage) and over voltage relays for 3 phase, 3 wire (no neutral) systems. PFR models have optional phase rotation check circuit (R option). |

Each relay circuit includes:

- a double pole change-over relay, configured to be energised at normal AC voltage.
- an LED to indicate the relay state: the LED lights when the relay is energised (when AC voltage is healthy)
- a front facia 'set volts' adjustment control, for setting the under/over trip voltage. UVR, OVR and CVR units also have a 'differential volts' adjuster, allowing independent setting of the relay reset voltage

On **UVR and CVR units**, the under voltage relay de-energises if any of the phase to neutral input voltages fall below the 'set volts' level. The relay does not energise (or the UVR LED light) until all phase to neutral voltages are restored to above the set volts *plus* the (adjustable) differential voltage.

On **OVR and CVR units**, the over voltage relay de-energises if any of the phase to neutral voltages rises above the 'set volts' level. The relay does not energise (or the OVR LED light) until all the phase to neutral voltages return below the set voltage *minus* the differential voltage. The over voltage relay also de-energises on total loss of supply.

On **PFR units**, two phase voltages are compared with the third phase. The relay de-energises if either phase to phase voltage falls below the set level. The relay does not energise until the phase to phase voltages rise above the set volts level *plus* the (fixed) differential voltage. On 'R' option units, the relay only energises if the correct phase sequence is connected.

On **POR units**, two phase voltages are compared with the third phase. The relay de-energises if either phase to phase voltage rises above the set level. The relay does not energise until the phase to phase voltages falls below the set volts level *minus* the (fixed) differential voltage.

Electrical connection to all units is via screw terminals (accepting stripped wires or narrow blade crimps). Each unit has a robust polycarbonate casing, designed for DIN rail or surface mounting.

Specifications

AC input/power supply

under voltage trip range: see 'model codes' section
over voltage trip range: see 'model codes' section
trip point differential volts: see 'model codes' section
maximum input voltage: see 'model codes' section
power consumption: 20 VA
operating frequency: see 'model codes' section

Relay output

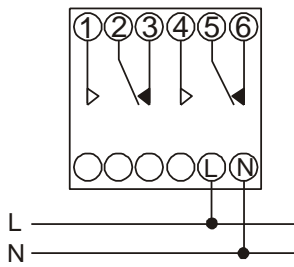
Contact type: 2 x DPDT contacts, volt-free
Contact rating: 5A max @ 240VAC (resistive)
Rated operations: 2 x 10⁵ operations at rated load
Trip time: approx. 500ms

Physical

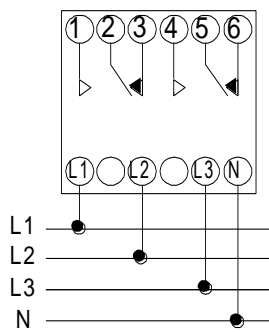
ambient operating temperature: -10 to +55°C / 14 to 131 °F
dimensions: see 'dimensions' section diagrams
weight: UVR/OVR,PFR - 360g; CVR - 775g

Electrical Connection

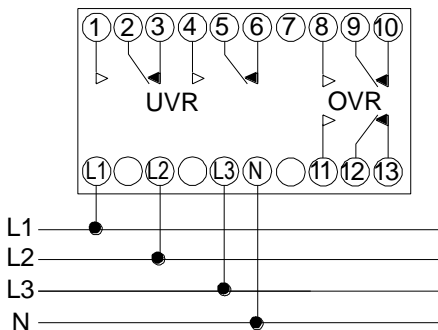
UVR/OVR 100 series



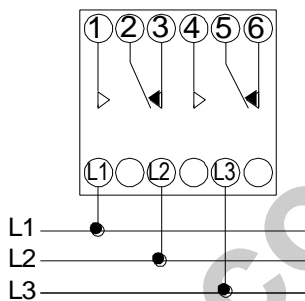
UVR/OVR 500 series



CVR 500 series

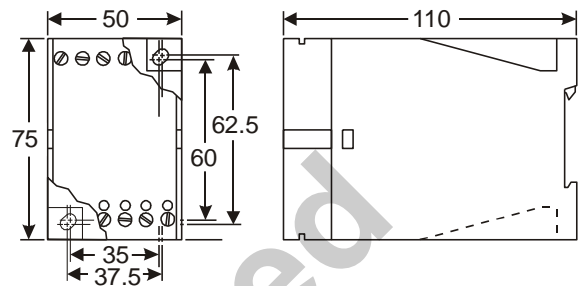


PFR/POR 500 series

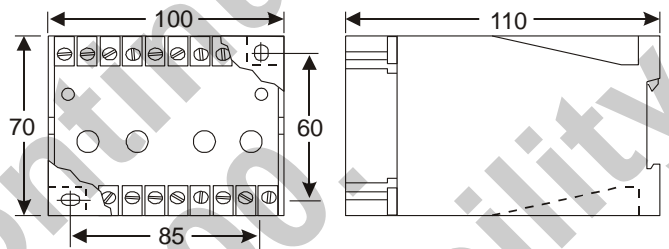


Dimensions

UVR, OVR, PFR and POR



CVR



Model codes

| Model | under (U) or over (O) volts relay operation | nominal operating frequencies (Hz) | single phase nominal (max.) voltage | 3 Phase and neutral nominal (max.) voltage, VAC ph-N | 3 Phase, no neutral nominal (max.) voltage, VAC ph-ph | set (trip) voltage adjustment range | (trip point) differential voltage |
|----------|---------------------------------------------|------------------------------------|-------------------------------------|------------------------------------------------------|-------------------------------------------------------|------------------------------------------|------------------------------------|
| UVR100 | U | 50/60/400 | 230 (280) | - | - | 160 - 240 VAC ph-N | 2 - 26 VAC ph-N |
| OVR100 | O | 50/60/400 | 230 (280) | - | - | 200 - 280 VAC ph-N | 2 - 26 VAC ph-N |
| UVR101 | U | 50/60/400 | 115 (150) | - | - | 90 - 130 VAC ph-N | 1 - 13 VAC ph-N |
| OVR101 | O | 50/60/400 | 115 (150) | - | - | 110 - 150 VAC ph-N | 1 - 13 VAC ph-N |
| UVR500 | U | 50/60/400 | - | 230 (280) | - | 160 - 240 VAC ph-N | 2 - 26 VAC ph-N |
| OVR500 | O | 50/60/400 | - | 230 (280) | - | 200 - 280 VAC ph-N | 2 - 26 VAC ph-N |
| UVR501 | U | 50/60/400 | - | 115 (150) | - | 90 - 130 VAC ph-N | 1 - 13 VAC ph-N |
| OVR501 | O | 50/60/400 | - | 115 (150) | - | 110 - 150 VAC ph-N | 1 - 13 VAC ph-N |
| CVR500 | U/O | 50/60/400 | - | 230 (280) | - | 160 - 240 VAC ph-N 200 - 280 VAC ph-N | 2 - 26 VAC ph-N 2 - 26 VAC ph-N |
| PFR500 | U | 50/60/400 | - | - | 400 (480) | 320 - 420 VAC ph-ph | 10 VAC ph-ph |
| PFR500-R | U | 50/60 | - | - | 400 (480) | 320 - 420 VAC ph-ph | 10 VAC ph-ph |
| POR500 | O | 50/60/400 | - | - | 400 (480) | 380 - 480 VAC ph-ph | 10 VAC ph-ph |
| PFR501 | U | 50/60/400 | - | - | 200 (280) | 170 - 230 VAC ph-ph | 5 VAC ph-ph |
| PFR501-R | U | 50/60 | - | - | 200 (280) | 170 - 230 VAC ph-ph | 5 VAC ph-ph |
| POR501 | O | 50/60/400 | - | - | 200 (280) | 210 - 270 VAC ph-ph | 5 VAC ph-ph |