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Mod. **PSR**

## User Manual

### PHASE CONTROL RELAY

Read all the instructions carefully

- The phase sequence relay **PSR** is an electronic command device in a standardised **2-module DIN** container, to control voltage-asymmetry and phase-sequence in three-phase systems.

#### SAFETY WARNINGS

*During the installation and operation of the instrument, proceed in accordance with the instructions below:*

- The instrument should be installed by a competent operator following the installation diagrams carefully*
- The instrument should be installed in a panel from which no access can be gained to the terminals after installation*
- Do not power or connect the instrument if any part of it is damaged*
- The electrical system of the building in which the instrument is to be installed should have a switch and a protective device against over-currents*
- The instrument is designed for installations with over-voltage category III and pollution level 2, in accordance with the EN 61010-1 standard*

Code	Model	Description
VP807200	PSR	Phase-control relay

#### TECHNICAL SPECIFICATIONS

- Power supply: **400 V** ~ 50 Hz
- Absorption: 4 VA (3 W)
- Terminals: 6 mm<sup>2</sup> block
- Output:
  - relay with contact in exchange 8 A / 250 V ~
  - maximum switchable power 2000 VA  $\cos \varphi = 1$
- Sensitivity: 70% ÷ 95% of rated value
- Intervention time: 2s
- Reset time: 2s
- Hysteresis on reset: 2%
- Signalling: Red LED relay intervention
- Operating temperature:  $-5^{\circ}\text{C} \div +50^{\circ}\text{C}$
- Storage temperature:  $-10^{\circ}\text{C} \div +70^{\circ}\text{C}$
- Humidity: 20% ÷ 90% non-condensing-
- Insulation: power supply and command circuits galvanically isolated from each other at reinforced insulation level in accordance with the EN 61010 standard
- Container: 2DIN modules, colour RAL-7035
- Container material: self-extinguishing in class V0 in accordance with the UL-94 standard
- Degree of protection: IP20/IP40 when correctly installed in an electrical panel

#### USE

- Applications in every case where it is essential to adhere to the phase sequence upon wiring or to prevent significant oscillations of the power supply voltage in network.
- The relay detects the exact phase sequence in three-phase systems and voltage unbalance caused by the reduction or absence of a phase.

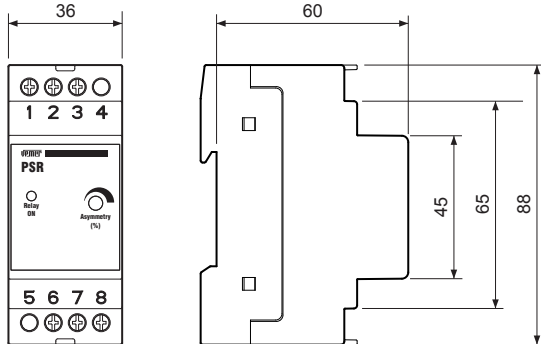
#### OPERATION

- The output relay is excited ("**Relay ON**" led on) only if all three phases are present and their sequence corresponds to the seal on the input terminals (see the "**Operating diagram 1**").
- When operative, the output relay drops out ("**Relay ON**" led off) if the sequence of the phases is altered, if a phase is absent or if the voltage unbalance of the phases exceeds the calibration value (see the "**Operating Diagram 1 and 2**").
- The sensitivity of the relay is adjustable by means of the "**ASYMMETRY (%)**" trimmer on the front of the device, from 95% to 70% of the rated value, to set it during installation for the unbalance value of the network voltage that may be tolerated by the unit or system to be protected (see the "**Operating diagram 2**").
- To avoid undesirable interventions by the device in the presence of slight voltage unbalance, we recommend starting the adjustments from the maximum asymmetry (70% of  $U_n$ ).
- The reset is automatic when the normal power supply conditions are restored or when the sequence error is corrected.
- After an intervention due to phase asymmetry, the reset has a hysteresis which makes it possible to re-excite the output relay when the voltage value returns above a certain fixed level of the Threshold of Asymmetry (see the "**Operating Diagram 2**").

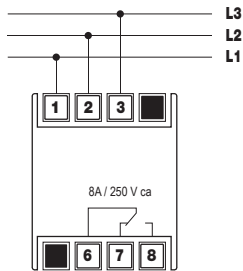
#### RIFERENCE STANDARDS

Conformity to the EU directives:  
 2006/95/EC (Low Voltage)  
 89/336/EEC modified by 92/31/EEC and 93/68/EEC (EMC)  
 is declared with reference to the following harmonised standards:  
**Safety:** EN 61010-1  
**Electromagnetic compatibility:** EN 61000-6-2, EN 61000-6-4

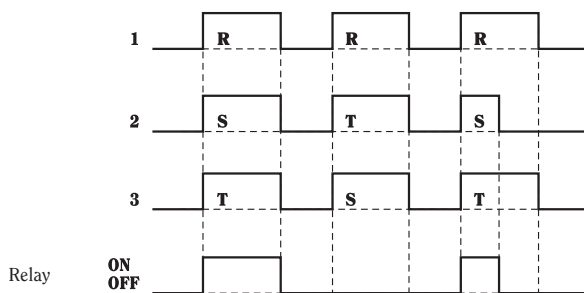
#### Dimension



#### Connection diagram



#### Operating diagram 1



#### Operating diagram 2

