

Current and Voltage Controls

3-Phase Voltage Sequence Control

Type H 470

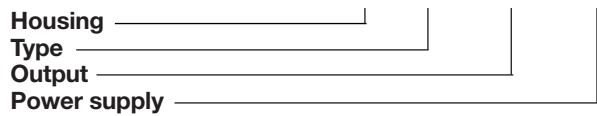


- 3-phase monitoring relay for phase sequence/phase loss
- Measures when all 3 phases are present and have the correct phase sequence
- Output: 10 A SPDT relay
- For mounting on DIN-rail in accordance with DIN/EN 50 022
- H4-housing
- LED-indication for power supply and output ON
- Power supply is the 3-phase measuring voltage

Product Description

3-phase monitoring and phase sequence/phase loss relay for DIN-rail mounting. Frequently used to secure the right phase sequence when connecting a load to a 3-phase electrical system.

Ordering Key **H 470 156 400**



Type Selection

| Plug | Output | Supply: 230 VAC | Supply: 400 VAC |
|-----------------|--------|-----------------|-----------------|
| Screw terminals | SPDT | H 470 156 230 | H 470 156 400 |

Input Specifications

| Input | |
|-------------|-------------------------------|
| Terminal 21 | Neutral (optional connection) |
| Terminal 22 | Phase L1 |
| Terminal 23 | Phase L2 |
| Terminal 24 | Phase L3 |
| | measures on own supply |

Supply Specifications

| | |
|--------------------------------|--|
| Power supply AC types | Overvoltage cat. III (IEC 60664) |
| Rated operational voltage | (IEC 60038) |
| Through term. 21, 22, 23 & 24 | 3 x 230 VAC ± 15%, 45 to 65 Hz |
| | 400 3 x 400 VAC ± 15%, 45 to 65 Hz |
| Voltage interruption | ≤ 40 ms |
| Dielectric voltage | None (supply/elect.) |
| Rated impulse withstand volt. | 4 kV (1.2/50 μs) (line/neutral, line/line), direct connection to electronics |
| Rated operational power | 2.5 VA |

Output Specifications

| | |
|--------------------------------|---|
| Output | SPDT relay |
| Rated insulation voltage | 250 VAC (rms) (cont./elect.) |
| Contact ratings (AgCdO) | μ (micro gap) |
| Resistive loads | AC 1 10 A/250 VAC (2500 VA) DC 1 1 A/250 VDC (250 W) or 10 A/25 VDC (250 W) |
| Small inductive loads | AC 15 2.5 A/230 VAC DC 13 5 A/24 VDC |
| Mechanical life | ≥ 30 x 10 ⁶ operations |
| Electrical life | AC 1 ≥ 2.5 x 10 ⁵ operations (at max. load) |
| Operating frequency | ≤ 7200 operations/h |
| Dielectric strength | |
| Dielectric voltage | ≥ 2 kVAC (rms) (cont./elect.) |
| Rated impulse withstand volt. | 4 kV (1.2/50 μs) (cont./elect.) (IEC 60664) |

General Specifications

| | |
|-----------------------|---|
| Reaction time | $\tau = 0.5$ s, worst case reaction time may be up to $5 \times \tau$ |
| Indication for | |
| Power supply ON | LED, green |
| Output ON | LED, red |
| Environment | (IEC 60947-1) |
| Degree of protection | IP 20 B/front IP 40 D (IEC 60529) |
| Pollution degree | 3 (IEC 60664) |
| Operating temperature | -20° to +50°C (-4° to +122°F) |
| Storage temperature | -50° to +85°C (-58° to +185°F) |
| Weight | 300 g |
| Approval | SEV |

Mode of Operation

The relay measures on its own 3-phased power supply and operates when all phases are present and the phase sequence is correct.

interruption of one of the phases, provided that the voltage regenerated by electric motors on the interrupted phase does not exceed 70% of the nominal voltage. If it exceeds this value the connection cannot be recommended (see description ex. 3).

Example 1 Own power supply monitoring

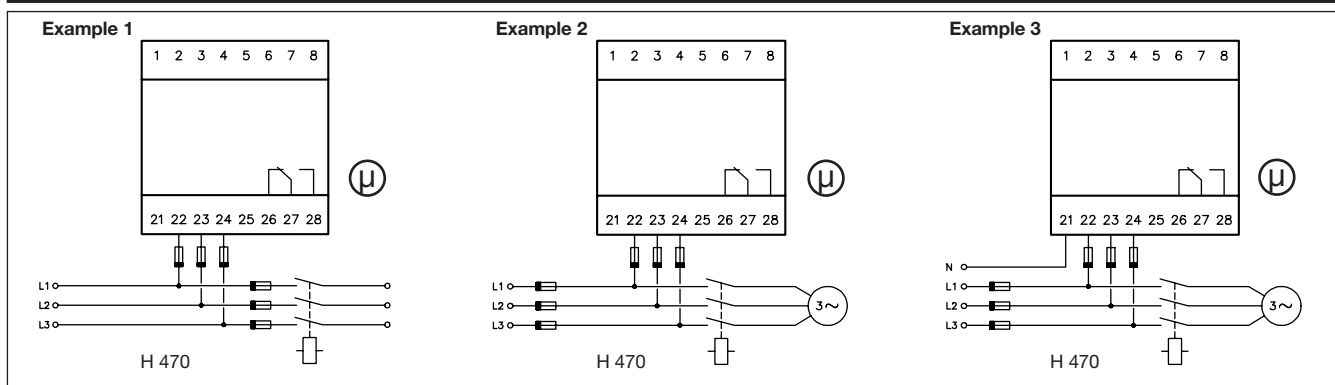
The relay is for monitoring that the power supply has correct phase sequence and that all phase voltages are present. The relay shall be mounted in front of the fuses of each load.

Example 3
If the value of the regenerated voltage is slightly higher than 70% of the nominal voltage, the relay releases when neutral is connected to terminal 21 as sensitivity is improved.

Example 2 Load monitoring

The relay releases in case of

Wiring Diagrams



Operation Diagram

