

AUTOMATIC
PHASE SWITCH

PF-431i
True RMS

WARRANTY. The F&F products are covered by a warranty of the 24 months from the date of purchase. Effective only with proof of purchase. Contact your dealer or directly with us. More information how to make a complaint can be found on the website: www.fif.com.pl/reklamacje



Do not dispose of this device in the trash along with other waste! According to the Law on Waste, electro coming from households free of charge and can give any amount to up to that end point of collection, as well as to store the occasion of the purchase of new equipment (in accordance with the principle of old-for-new, regardless of brand). Electro thrown in the trash or abandoned in nature, pose a threat to the environment and human health.

Purpose

The PF-431i True RMS automatic phase switch is used to maintain the continuity of power supply of single-phase receiver. In the event of supply phase loss or if the phase exceeds the correct voltage values, a different phase with the correct parameters will be directed to the output.



The "i" version of the device is equipped with a contact adapted to work with receivers with a large starting current, such as: LED lamps, ESL fluorescent lamps, electronic transformers, discharge lamps, etc.

Functioning

A three-phase voltage is applied to the input of the switch. Voltage from one of the phases is directed at the output of the switch.

The electronic circuit of the switch controls the RMS voltages of the supplied phases so that the output voltage is not lower than 190 V or higher than 280 V. The phase with the correct parameters is directed to the output of the switch. The appropriate LED indicates that the given phase is switched on the output of the switch. The L1 phase is the priority phase, which means that if its parameters are correct, then this phase will always be switched to the output. In the event of a voltage drop in the L1 phase below 190 V, total loss of voltage or its rise above 280 V (the green L1 LED goes out), the electronics will switch the L2 phase to the output (if its parameters are correct). In the case of simultaneous lack of correct voltages in L1 and L2 phases (green LEDs L1 and L2 go out), the L3 phase will be switched on to the output. If the correct supply voltage returns in the L1 phase (voltage from 190 to 280 V), the system will switch on this phase to the output. After connecting the supply voltage the system blinks once with all LEDs, which indicates the appearance of voltage on the device (but not on the output). Then the device analyzes the network parameters and switches to the appropriate phase output. If the power supply N wire is connected to the wrong place, instead of switching one of the phases to the output, the device will signal an incorrect connection by lighting the LEDs in the order L1, L2, L3 ("passing" diode). In this case, disconnect the power supply from the device and connect the input wires correctly.



Prolonged operation with incorrectly connected neutral wire can cause irreparable damage to the controller

The device also monitors the voltage at the output contact, which allows you to detect the "gluing" of the internal relay contacts. If this situation is detected, all 3 LEDs will flash cyclically.

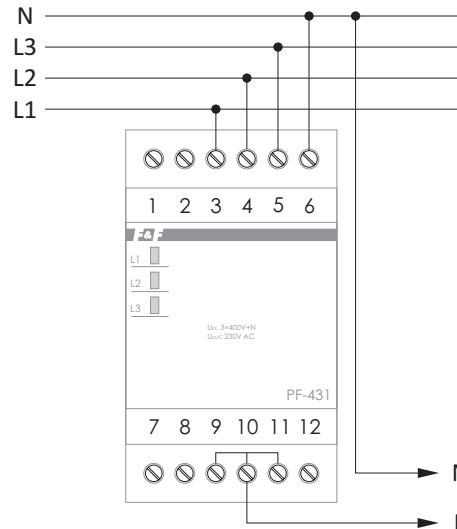


The protection works only when switching from a lower priority phase to a phase with a higher priority (for example from L2 to L1). It does not work when switching to a lower priority phase (for example from L1 to L2).

Assembly

1. Turn the power off.
2. Connect the input voltages to terminals 3, 4, 5 and the neutral wire to terminal 6. The phase with the most variable parameters should be connected to terminal 5, whereas the phase with stabilized parameters to terminal 3 as the priority phase.
3. Connect the supplied single-phase circuit to terminal 10 (phase) and the neutral wire of the network.
4. Turn on the power supply and check the continuity of power supply of the connected single-phase circuit by successive voltage disconnections in L1 and then L2 phases.

Connection diagram



The outputs 9, 10, 11 are connected in parallel, which means that the output signal is available on each of them.

Technical data

| | |
|------------------------------|---|
| input voltage | 3×400 V+N |
| output voltage | 230 V AC |
| maximum load current (AC-1)* | 16 A (160 A/20 ms) |
| L1, L2, L3 minimum voltage | 190 V |
| L1, L2, L3 maximum voltage | 280 V |
| return hysteresis | 10 V |
| voltage measurement error | ±1% |
| switching time | 1.0÷1.5 s |
| output voltage indication | 3×LED |
| power consumption | 1.6 W |
| terminal | 4.0 mm ² screw terminals (wire) 2.5 mm ² screw terminals (cable) |
| tightening torque | 0.5 Nm |
| working temperature | -25÷40°C |
| dimensions | 3 modules (52.5 mm) |
| mounting | on the TH-35 mm rail |
| protection level | IP20 |

* The actual permissible load depends on the nature of the receivers.

In the case of powering large appliances, heating or a large number of, for example, LED lamps, it is recommended to use the PF-441 switch with additional contactors.

