



## AUTOMATIC PHASE SWITCH with 400V phase voltage output

PF-452

**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/reklamacja](http://www.fif.com.pl/reklamacja)



Do not dispose of this device to a garbage bin with other unsorted waste! In accordance with the Waste Electrical and Electronic Equipment Act any household electro-waste can be turned in free of charge and in any quantity to a collection point established for this purpose, as well as to the store in the event of purchasing new equipment (as per the old for new rule, regardless of brand). Electro-waste thrown in the garbage bin or abandoned in the bosom of nature pose a threat to the environment and human health.

### Purpose

Automatic phase switch is used for maintaining the power supply continuity of the two-phase circuit in case one of the power supply phases fail or its parameters drop.

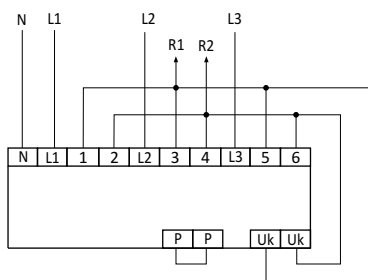
Optional it may serve as a controller that allows to power the selected circuits connected to one or two phases.

### Features

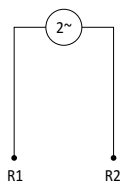
- \* 400 V interfacial voltage output
- \* phase voltages output 2x230 V AC
- \* priority control function - maintaining power of the selected receivers with the one correct phase with simultaneous power disconnection for secondary receivers.

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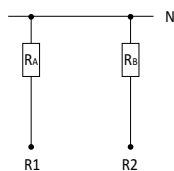
### Connection scheme



### Receiving modes



two-phase  
(400V AC interfacial)



2x 230V AC  
phase

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### Operation

A three-phase voltage (3x230V + N) is applied at the input of the switch (L1, L2, L3, N). The electronic system of the switch controls values of the applied phase voltages. Two phases with the correct parameters are directed at the outputs of the switch. The order of phases switching is not specified. When the parameters of one phase drop, the system switches to the next good phase. The switching time (the emergence of voltage at the output) after the currently activated phase failure ranges from 0.5 to 0.8 seconds (during this time the receivers have power supply). The Uk input is designed to control contacts switching while protecting against

the situation when two phases are directed at one output (in case the relay contacts stick together).

The switch can operate in two receiving modes: 400 V AC interfacial voltage or 2x230 V AC phase voltages.

If only one correct phase remains, the controller operates according to the selected function:

#### Mode A (no P-P jumper)

Good phase is directed both to the R1 and R2 output. This means no 400 V power supply for two-phase receiving mode.

#### Mode B (P-P jumper)

The good phase is directed only at the R1 exit.

Application: priority controller – if, due to the load, it is not possible to simultaneously connect all your devices to a single phase, then the single-phase receivers of a key importance will be connected to the R1 output and they will have power as long as there is at least one good phase. Secondary receivers will be connected to the R2 output and will operate only when there are at least two good phases. Operation mode is set via jumper on the P-P terminals.

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### Installation

1. Turn off the power.
2. Connect the input voltages to terminals L1, L2, L3 and N.
3. Connect inputs 1, 3 and 5 to one of the Uk terminals. Connect inputs 2, 4 and 6 to the other Uk terminal.
4. Set operating mode on P-P terminals:
  - for mode A leave the terminals open;
  - for mode B close the terminals with a jumper.
5. Connect the output circuits to R1(3) and R2 outputs according to the selected operating mode.
6. Turn on the power supply and check the continuity of the voltage by the consecutive disconnections of voltage in L1, L2 and L3 phases.

### Specifications

power voltage	3x[50÷450V]+N
output voltage	400V AC / 2x230V+N
load current	16A
switching threshold	
regulated lower	150V÷210V
regulated upper	230V÷270V
hysteresis	5V
triggering time - regulated	2÷10s
voltage measurement error	±1%
switching time	0,5÷0,8s
operating temperature	-25÷50°C
power indication	green LED
selected phases indication	3x yellow LED
outputs indication	2x red LED
power consumption	≤2W
terminal	2,5mm <sup>2</sup> screw terminals
tightening torque	0,4Nm
dimensions	5 modules (85mm)
mounting	on TH-35 rail
ingress protection	IP20

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