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CP-721-FPV

Voltage relay
for photovoltaic systems



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.



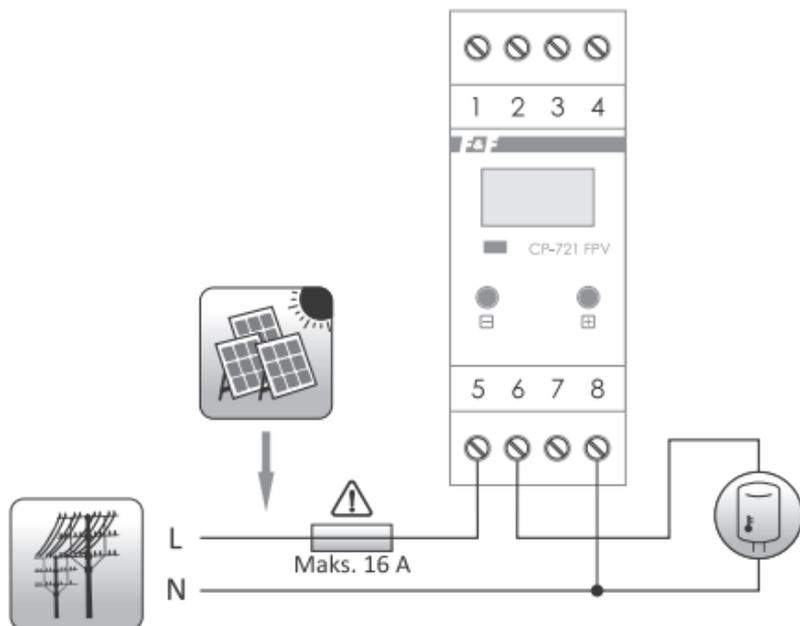
Purpose

The CP-721-FPV 1-phase voltage relay is dedicated for photovoltaic systems. In the event of detecting an excess of the preset voltage level, the output relay will switch on, with the help of which it is possible to switch on an additional consumer (e.g. a boiler), thus increasing the self-consumption of energy in the domestic installation and reducing the risk of the photovoltaic inverter switching off due to excessively high mains voltage.

Functions

- » Output circuit switched on when voltage is exceeded, switched off when voltage decreases;
- » Precise adjustment of switching voltage;
- » Programmable delay for relay activation and deactivation;
- » Programmable voltage hysteresis for relay deactivation;
- » Direct control of loads up to 16 A;
- » LED display for continuous voltage monitoring.

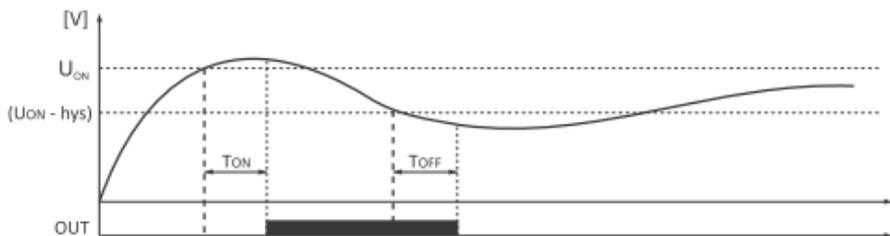
Functioning



The CP-721-FPV relay continuously monitors the voltage in the mains supply, the measured voltage value is indicated on the display on the front of the device. If the voltage is detected to exceed the preset level "Uon", the overvoltage time countdown starts. If the voltage is exceeded for a time longer than the preset "Uon" value, the built-in relay will switch on. Activation of the relay is signalled by lighting up the yellow LED located below the display.

The condition for switching off the relay is that the mains voltage drops below the value ("Uon" – hys), while this voltage must remain below the preset level for the time set in the "tof" parameter.

A diagram of how the relay works is shown in the figure below:



The relay is equipped with thermal protection to prevent the device from exceeding a safe internal temperature (e.g. due to excessive load current). If this is triggered, the internal relay switches off and the display shows the message:



888

The condition for returning to normal operation is:

- the temperature inside the enclosure decreases to a safe level,
- 10 minutes have elapsed since the temperature dropped (this state is signalled by alternating display of an error message and the time remaining until the alarm is cancelled).

Settings

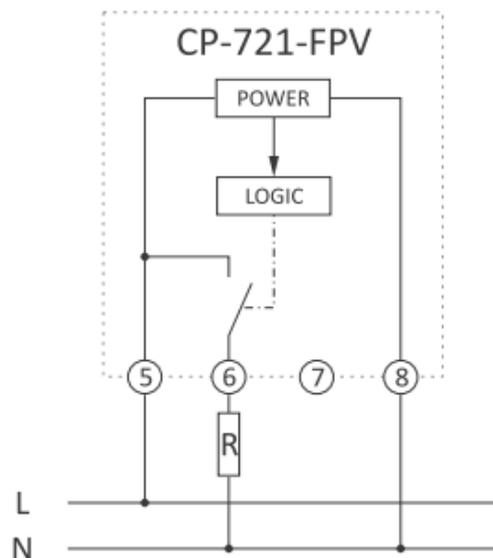
The CP-721-FPV relay allows 4 parameters to be set by the user:

Parameter	Function	Settings		
		Min	Max	Step
888	Relay activation voltage	245 V	265 V	1 V
899	Relay deactivation voltage hysteresis	1 V	10 V	0.5 V
888	Delay from overvoltage to relay activation	0 s	999 s	1 s
888	Delay from voltage drop to relay deactivation	0 s	999 s	1 s

Change of settings scheme

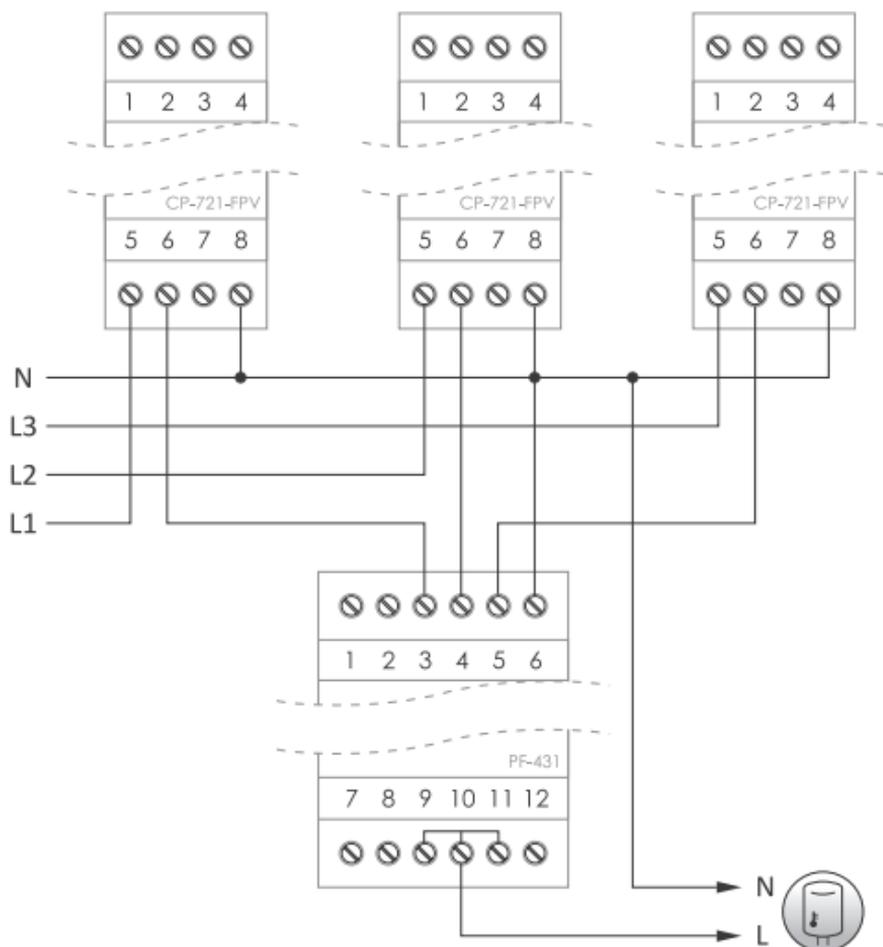
- » To enter the settings mode of the relay, press and hold down simultaneously the "+" and "-" buttons located on the front of the relay. The entry into the settings mode is signalled by the display of the name of the first parameter to be edited (Uon).
- » Use the "+" or "-" buttons to select the correct parameter and press both buttons simultaneously once more, until the value of the edited parameter is displayed.
- » Use the "+" or "-" buttons to set the new value of the parameter.
- » Confirmation of the new value takes place after pressing both buttons simultaneously, or after leaving the entered value unchanged for a few seconds.

Wiring diagram





When installing the relay for 3-phase photovoltaic installations, it is recommended to connect the CP-721-FPV relay to the phase with the highest voltage overshoot, or to use a separate relay for each phase and control the load via an additional phase switch. An example wiring diagram is shown in the figure below:





If there is a risk of simultaneous overvoltage on more than one phase, it is advisable to use a separate CP-721-FPV relay for each phase to be monitored and for each relay to switch its own load.

Technical data

power supply	150÷300 V AC
contact	1×NO (COM connected to terminal 5)
maximum load current (AC-1)	16 A
contact activation voltage	245÷265 V/step 1 V
contact deactivation hysteresis	1÷10 V/step 0.5 V
contact activation delay	0÷999 s/step 1 s
contact deactivation delay	0÷999 s/step 1 s
measurement accuracy	±1 V
display	3× segment LED 5×9 mm
power indication	yellow LED
power consumption	0.8 W
terminal	2.5 mm ² screw terminals (cord) 4.0 mm ² screw terminals (wire)
tightening torque	0.5 Nm
working temperature	-25÷50°C
dimensions	2 modules (35 mm)
mounting	on TH-35 rail
ingress protection	IP20

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.

CE declaration

F&F Filipowski sp. j. declares that the device is in conformity with the essential requirements of The Low Voltage Directive (LVD) 2014/35/EU and the Electromagnetic Compatibility (EMC) Directive 2014/30/UE.

The CE Declaration of Conformity, along with the references to the standards in relation to which conformity is declared, can be found at www.fif.com.pl on the product page.