NFP-R - Neutral Failure Protection Relay

Phasor
Power Supply Reliabilty

Description

NFPR of Phasor (neutral failure protection relay) is a compact and accessible device
Designed for mounting on a standard 35mm DIN rail in any electrical panel, and provides
Protection of consumers from disconnection of the main neutral line conductor (N).
In electrical systems, disconnecting the main neutral conductor causes heavy damage.
for equipment and instruments and may result in considerable expenses caused by downtime
The equipment and costs of repair and return to use. The NFPR is used for power gride monitoring the electricity and alerting or disconnecting the device from the electricity grid in the event of a malfunction.

Application

The unit is intended to be used to detect and protect on facilities frome dameges caused by disconnect of main neutral line or over-voltage issue without to be afected by cause phases lost.
In systems of two-phase and three-phase where the failure may cause heavy damage.

How It Works

The device regularly samples the correctness of the voltage in the facility. in case of disconnection
Unpredictability of the main neutral line supply causes over-voltage (integrated voltage) cause to
NFPR immediately detects the fault and immediately disconnect
the power supply to the facilities that are protected by the NFPR.
Through this reaction, we
prevent damage to all connected equipment.
When the fault is solved, the NFPR counts 10 seconds of correct voltage and then connects automatically the power supply to the contactor and thereby to the entire facility.
The NFPR is not affected by phase loss as long as one, two, or three phases are supplied
the NFPR will provide voltage at points A1/A2.

light indications

During the activity, the LED on the NFPR displays the following information:
1. Steady green - normal, normal operation
2. Green flashing 10 seconds - boot after activation
3. Red flashing - overcurrent
4. Double red flashing – a disconnection of the neutral line (N) or overvoltage
5. Blinking red three times - Undervoltage
6. Blinking red four times - device failure
7. Blinking red five times - the input voltage fluctuation is greater than 20% (yes).
reset voltage supply

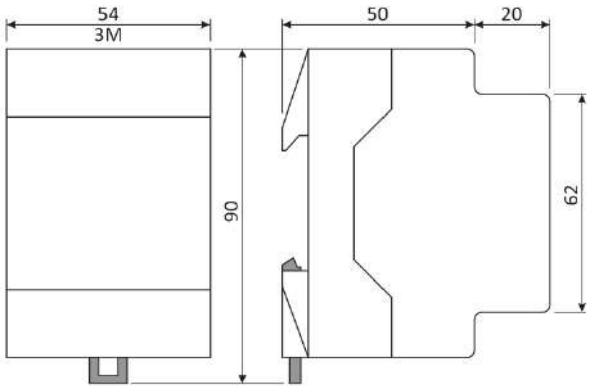
EU standards

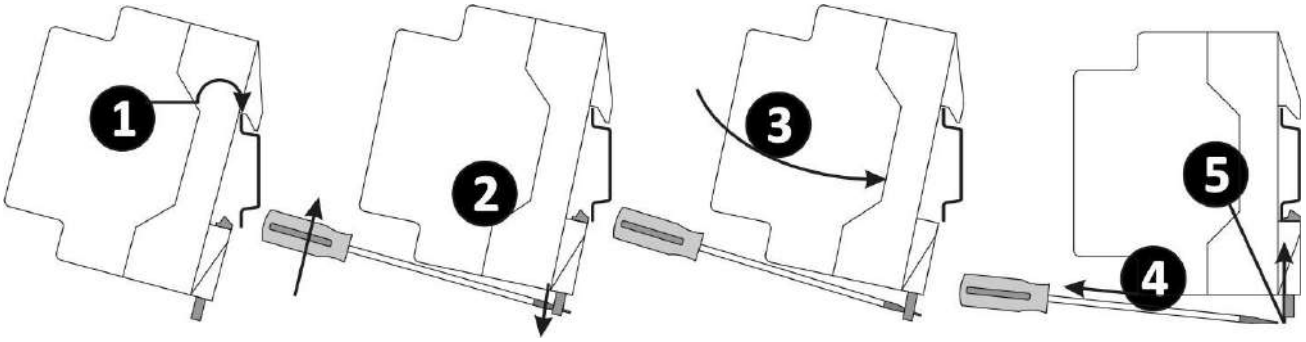
IEC60947-5-1 .1
IEC60947-1 .2

Characteristics

- Regular and continuous monitoring
- Low power consumption
- not affected cause phase loss
- Self-correctness check
- Super fast response
- Specific trouble indication
- Built-in short circuit protection
- Standard dimensions for electrical cabinets
- Mounting on a standard 35 mm DIN rail

External dimensions in millimeters:



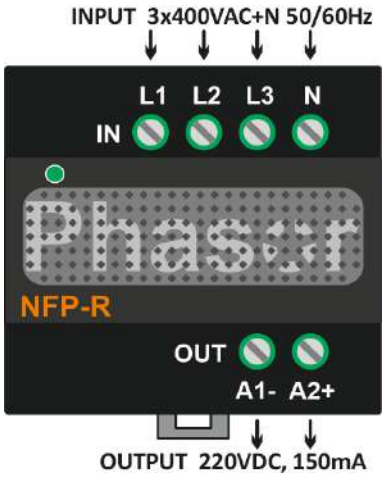


Technical information

Input	
Operating voltage Ue (V)	Three-phase 4-wire 400VAC
Insulation voltage (V) Ui	See operating voltage
Rated impulse withstand voltage Uimp(kV)	4kV
Frequency	50/60Hz (Hz)
Maximum current consumption	mA250
Overvoltage disconnection action threshold	(N-Ph) V250
Undervoltage cut-off action	V190 threshold in all three phases

Output	
output voltage	Vdc220 Uo(V)
Ie (A) operation current	150mA
starting current load (100mSec)	Max mA700
Thermal current	(mA) mA200
overcurrent threshold	mA200
Short circuit protection	Built-in electronic protection
Rated conditional short- circuit current (kA)	1kA
Voltage drop Ud(V)	220VDC
Off-state current Ir(A)	0A
Utilization category	DC-13

All devices	
Working temperature range	C60°÷C-5°
Connector type	Terminal block screw type 2 14÷22AWG, 0.5÷2.5mm
Length of removing insulation from the conductor	8 mm
Screw tightening torque	Nm0.6÷0.5
Weight	Max weight. 160 gr
Installation/mounting	Standard 35mm DIN rail
Case material - self-off	UL94V-0
Resistance	IP-20 IP
Pollution degree	2
Overvoltage category	III
This is a Class A product. In a domestic environment, this product may cause radio interference. In this case. The user must take measures Adequate.	
Electromagnetic compatibility, EMC	

Connection diagram	**Side lable**
	

Danger! The installation of the device and its connection, service, and repair of the device will be performed exclusively by a skilled and qualified electrician.
During Installation, disconnect the power source. Never attempt to open or disassemble the NFPR device by yourself, under any circumstances case.
Opening the device case may expose it to dangerous voltages.
For any repair or service, please contact a distributor of Phasor.

A suitable type and size of the contactor must be chosen, depending on the size of the main electrical connection of the facility you want to protect.
Select a contractor with a command voltage of 220**VDC** (A1/A2) suitable to be fed by the NFPR device.
The maximum power of the contactor command should not exceed >150mA
When connecting above 125A, a protective relay must be installed before the NFPR or with a unit called PCM by phasor

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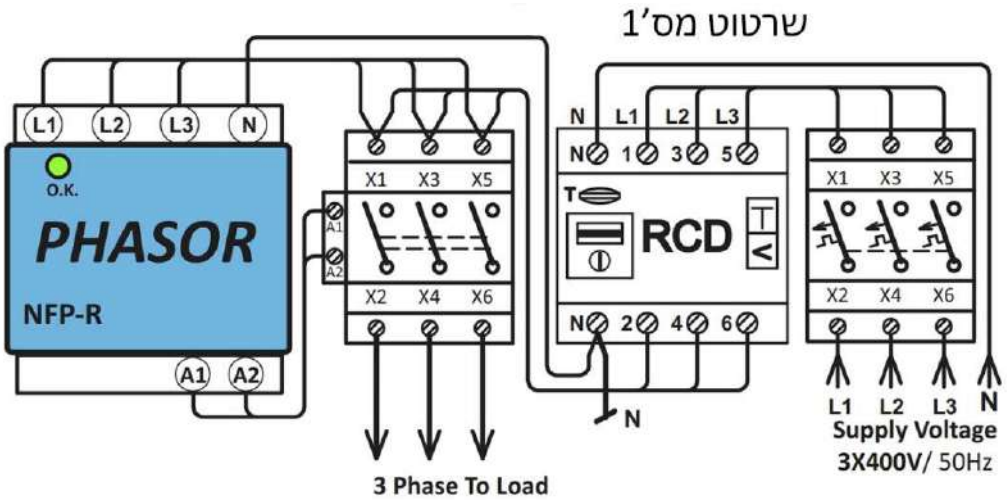
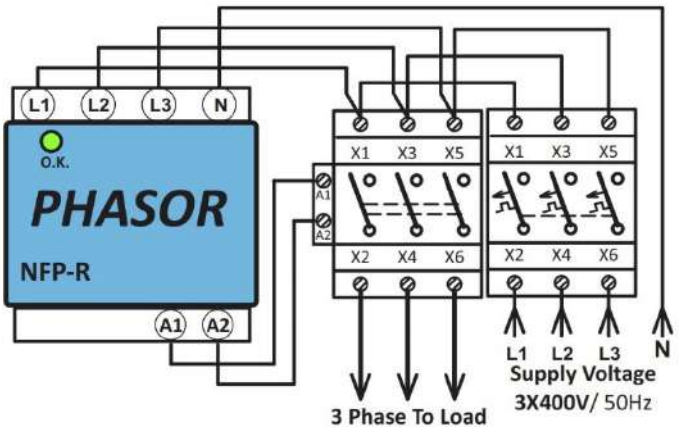
It is recommended to connect the voltage source to NFPR as shown in drawing version No. 1:



An alternative but less recommended connection option is to connect the voltage source to the NFPR before the reduction, as described in drawing 2:

שרטוט מס'2



Important: after initial installation and before connecting the device to the voltage and feeding the switching board, **You must first download all the fuse on the switching board**, and only then to check the correct operation of the NFPR, by disconnecting the main neutral (N) conductor and verifying correct operation and by disconnection the contactor.

Phasor does not assume any responsibility for possible errors or lack of information in this document.
Phasor is not responsible for any incorrect connection of the device, or for misunderstanding of this document, or any use of the device that is not Its intended use.

Limited Warranty

The manufacturer's warranty is limited to the quality of the material and the usability of this product for **two years** from the date of purchase. The warranty is valid in the event of a malfunction,
Provided that this product has been stored, handled, installed, and operated in accordance with the conditions accepted for this type of equipment, and no changes and/or attempts to repair
the device by anyone other than the manufacturer.
This manufacturer's warranty under this document is limited to the repair or replacement of a defective product, at the manufacturer's discretion, at the manufacturer's facilities.

Troubleshooting

- If the power supply is not restored, check that the power supply voltage does not exceed 256 volts (IEC) or 135 volts (UL)
-Make sure that the contactor coil command voltage is 220VDC (for Euro standard)
-Make sure that the command coil current does not exceed
150mA Check

Support: www.phasor.co.il
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Fire Prevention

The NFPR knows how to detect that the voltage rises, which causes electrical devices to burn.
In addition, in some cases, it also causes the fires of entire facilities, fire!
Planning an electrical installation with the help of NFPR you are more professional and safer, you and your customer. You are protected from the possibility of damage from an electrical voltage issue, perhaps one of the most serious!