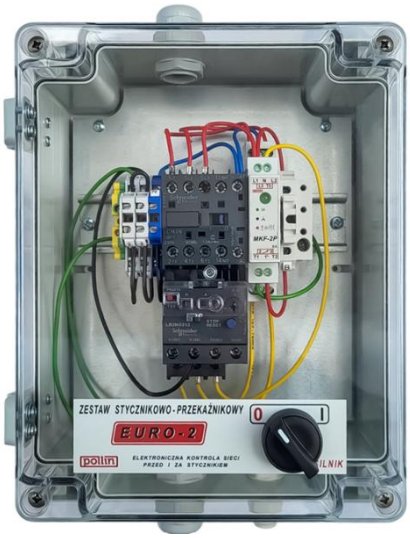
Protection of a 3-phase motor with a power of up to 11.0 kW
EURO-2-1100

Description

The EURO-2-1100 kit is a solution for protecting and controlling three-phase motors in domestic, industrial, and agricultural installations. The device is supplied in a sealed IP65 enclosure, equipped with glands for dust and moisture resistance. Internal rail connectors marked 1-2 and 3-4 allow for convenient connection of additional sensors, such as a pressure sensor, water level sensor, or any other device with a potential-free contact.

NOTE!
The EURO-2 kit does not protect against short circuits - for this purpose, appropriately selected circuit breakers or fuse links should be used.



Illustrative photo – depending on the power, the EURO-2 set differs in the contactor and thermal bimetal relay used.

Elements of the EURO-2 set

The main elements of the set

- **Contactor** – is an actuator that cooperates with the protection system and is responsible for switching the engine on and off.
- **Thermal bimetallic relay** – protects the contactor and motor from overloads. It responds to excessive current flow in the circuit, which can occur, for example, due to a blocked rotor, excessive load, or mechanical malfunction. It prevents overheating of the motor windings and sticking of the contactor contacts, which could lead to damage.
- **MKF-2P relay** – monitors phase loss, voltage drops and contactor contact damage.
- **Control circuit switch** – allows the engine to be turned on and off manually.
- **IP65 housing** – ensures tightness and durability of the set, equipped with elements for easy assembly.

Principle of operation

When properly connected, EURO-2 monitors the status of the three-phase network regardless of the position of the switch on the device cover (0-1).

Switch in the "0" position – monitoring the status of the three-phase network **upstream of the contactor** . In the event of a phase loss, phase asymmetry, or a voltage drop on any of the phases below the 175 V threshold, the engine will not be able to start.

Switch position "1" activates the contactor, starts the motor, and monitors the status of the three-phase mains **upstream and downstream of the contactor** . After setting the switch on the cover to position "1," the EURO-2 operates fully automatically. If a phase loss, phase asymmetry, or voltage drop below 175 V occurs on any phase during motor operation, the EURO-2 will wait approximately three seconds and then disconnect the motor power. The motor will restart automatically once the mains parameters return to normal.

Benefits of automatic operation:

- Motor protection against the effects of phase loss and voltage asymmetry.
- Automatic restart when power is restored.
- LED signaling informing about operating status and faults.
- Safe operation without the need for constant supervision.

The correct operation of the EURO-2 set is ensured by the Pollin MKF-2P relay installed in it, which controls the following network parameters:

- phase loss,
- phase asymmetry,
- phase voltage drop below approximately 175 V,
- break behind the contactor (contactor contacts check).

How does the MKF-2P relay control the contactor contacts?

If a fault occurs upstream of the contactor, such as a phase failure or voltage imbalance, the MKF-2P's LED turns off and the built-in relay contact disconnects the contactor coil (the contactor is turned off). When the system voltage parameters return to normal, the LED turns green and the MKF resumes normal operation and re-connects the contactor coil.

If the fault occurs only downstream of the contactor, meaning the MKF registers correct voltage values upstream of the contactor but incorrect values downstream of the contactor, for example, a phase failure, voltage asymmetry, or voltage appearing on one of the phases after the contactor is disconnected (indicating contact sticking), then the contactor, if currently engaged, is disconnected. The LED will illuminate red, and the contactor coil will be permanently disconnected until the MKF device is restarted (power is disconnected and reconnected).

If the failure does not occur after restarting, the LED will change color from red to green, which means that MKF has returned to normal operation.

If the problem persists after restarting, after approximately three seconds the LED will light up red again and the contactor coil will remain permanently blocked and cannot be switched on until the fault is removed and the MKF is restarted again.

How to proceed in practice?

The user must manually check the situation:

- Turn off the power for about 15 seconds (restart the device).
- Turn the power back on and start the engine.
- If the LED lights up red after approximately 3 seconds, this indicates a break behind the contactor or that the contactor contacts are stuck together – the contacts or the entire contactor probably need to be replaced.

Technical data

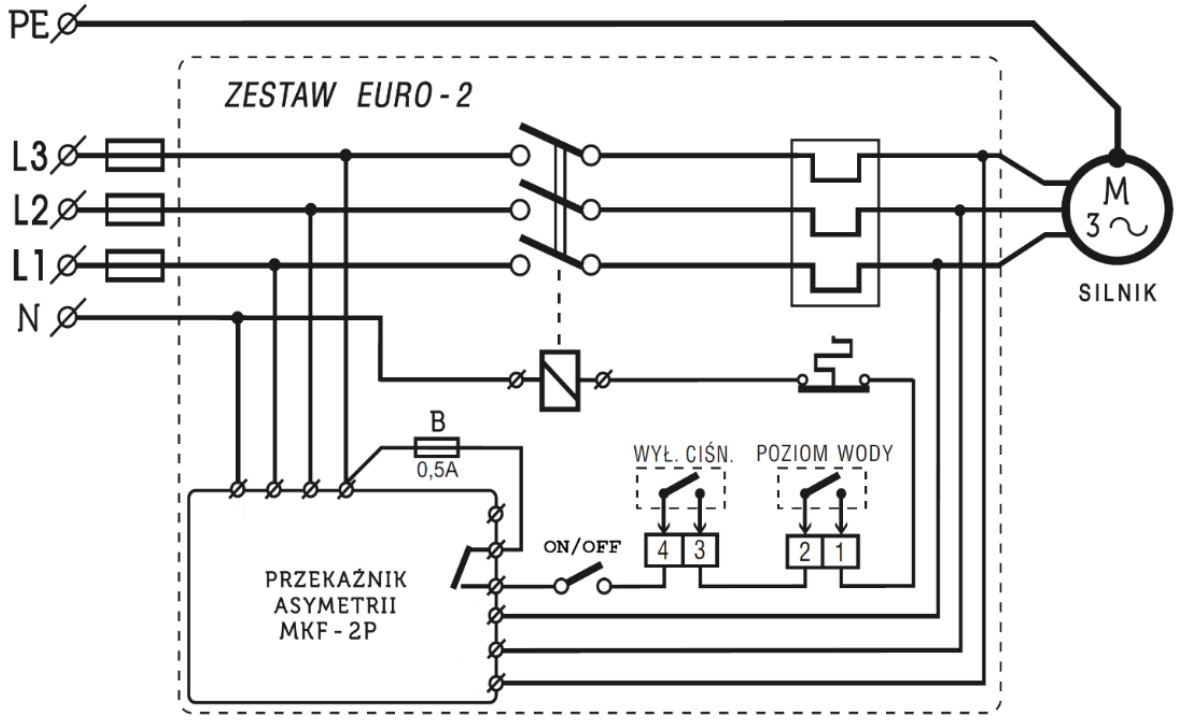
Parameter name	Value
Rated supply voltage	3 x 400 / 230 V AC + N
Operating supply voltages	170 to 253 VAC
Rated power supply frequency	50 Hz
Operating temperature range	-20 to 50 °C
Max power consumption when starting the contactor	77.4 VA
Max. power consumption contactor hold	14.4 VA
Current range	23.0 to 32.0 A
Lower Motor Disconnect Voltage Threshold	175V ± 5V
Voltage hysteresis	8V ± 2V
Measurement accuracy	±2%

Parameter name	Value
Engine shutdown delay	3 sec ± 0.5 sec
Time to return	< 1 sec
Case	Hermetic, made of polycarbonate
Degree of protection	IP65
Installation	Mounting to the ground (mounting holes) 203 x 300 x 135 mm
Maximum power of the protected engine	11.0 kW
Output circuit control protection	WTA 2.5A fuse (in fuse connector)
Protection against phase loss and asymmetry	Yes
Checking the contactor contacts	Yes
Additional information	Can work with a pressure sensor and a water level sensor

	POWER connection contactor terminal	Connecting **the ENGINE** thermal bimetal relay terminal
Max. tightening torque	2.5 Nm	2.5 Nm
Wire type conductor	1.5 to 10 mm²	2.5 to 10 mm²
Stranded wire without ferrule	2.5 to 10 mm²	2.5 to 10 mm²
Stranded wire with ferrule	1 to 10 mm²	1.5 to 6 mm²

Full technical specifications are available on the website www.pollin.pl/do-pobrania or by scanning the QR code provided in the warranty and guarantee section.

Connection diagram



Installation

The installation of EURO-2 engine protection must be performed in accordance with applicable standards and regulations for electrical installations. The following guidelines are intended to ensure the safety of the installer and the proper operation of the device:

1. **Authorizations** - The device may only be installed by a person with appropriate qualifications and authorizations to work on electrical installations.
2. **Disconnecting the power supply** - Before starting any work, it is essential to disconnect the power supply at the distribution board and make sure that the circuit is voltage-free (e.g. using a voltage indicator).
3. **Personal Protection** - The installer should use personal protective equipment such as electrically insulating gloves and safety glasses.
4. **Mechanical installation** - The device must be mounted to ensure a stable fit.
5. **Wiring** - Connections should be made according to the wiring diagram provided by the manufacturer. Ensure that the terminals are tightened with the correct torque and that the wires used have the appropriate cross-section.
6. **Checking the connections** - After completing the installation, carefully check the correctness of all connections, make sure that the terminals are securely tightened and that there are no exposed wires that could cause a short circuit or a shock hazard.
7. **Restoring Power** - After completing the installation and inspection, turn on the power and check the operation of the device according to the instructions.
8. **Testing** - After installation, verify the device's proper operation by simulating individual phase failures. In all cases of phase failure, the protection should automatically disconnect the protected circuit.

No Modifications - Any modifications to the device or its components are prohibited. This may result in malfunctions and a safety hazard.

Warranty and guarantee – short information

The warranty applies to every purchaser, including consumers. Warranty claims should be directed to the seller from whom the purchase was made.

If a defect is found in the device, the customer has the right to choose: he or she can use the statutory warranty (in accordance with the provisions of the Civil Code) or the manufacturer's warranty.

Pollin Guarantee

Pollin devices are covered by a 10-year manufacturer's warranty – Zakład Elektroniczny POLLIN Wojciech Polak. The warranty applies only to devices purchased by businesses and covers material and manufacturing defects.

Warranty claims should be submitted by e-mail to: pollin@pollin.pl , in accordance with the procedure described in the full version of the document.

The warranty does not cover, among other things, mechanical damage, unauthorized modifications, installation by unqualified persons and natural wear and tear of consumables.

The full text of the warranty terms is available at: https://pollin.pl/do-pobrania or via the attached QR code.

Markings

This symbol on a device indicates that the used equipment should not be disposed of with other household waste. Used equipment should be taken to one of the designated electronic waste collection points or returned to the store when purchasing new equipment. Improper disposal of electronic waste poses a threat to the environment and human health.

The CE marking confirms that the product meets the essential requirements of all applicable European Union directives and regulations.

This marking indicates that installation, connection and all servicing of the device may only be performed by qualified personnel with electrical qualifications.

Technical support – the fastest help from Pollin experts

If you have any questions regarding the operation, configuration or installation of the device, **please contact us by email – this is the fastest way to obtain technical support** .

Send a message to: support@pollin.pl , describe the problem in detail and leave your contact number and the hours when we can call you.

Our engineers will review your request and make every effort to provide you with professional assistance as quickly as possible.

Want to talk to the sales department?

Use the telephone contact – the number can be found at https://pollin.pl/ .

Discover the world of Pollin automation – more than one product!

Thank you for your trust and for choosing Pollin technology – solutions that work for you. This is just the beginning of the possibilities Pollin technology offers! Our brand is synonymous with reliability, innovation, and safety in electrical installations.

On the website https://www.pollin.pl you will find:

- **A full product catalog** – from automation and security to modern solutions supporting renewable energy sources and Smart Home installations.
- **Downloadable materials** – manuals, diagrams, catalog cards and warranty documents in one place.

Don't wait – scan the QR code from the manual or visit our website and discover solutions that are changing industry standards.

Pollin is more than just a product

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