PRODUCT CATALOG

POWER FACTOR CONTROLLERS

LRM001
LRM002

INTERNATIONAL SUCCCES!
Bronze medal
at Concours Lépine
International Paris

AN INNOVATIVE SOLUTION!
Gold medal
at INTARG Cracow

Operating in the induction and capacitive range

Designed for symmetrical and asymmetric networks

Remote parameter reading

FIRMA RODZINNA

- REACTIVE POWER COMPENSATION
- INDUSTRIAL AUTOMATION
- POWER DISTRIBUTION
- MACHINE DESIGN AND CONSTRUCTION

LRM001

INNOVATIVE POWER FACTOR CONTROLLER
SIMPLE AND ECONOMIC SOLUTION FOR MANY APPLICATIONS

Technical data:

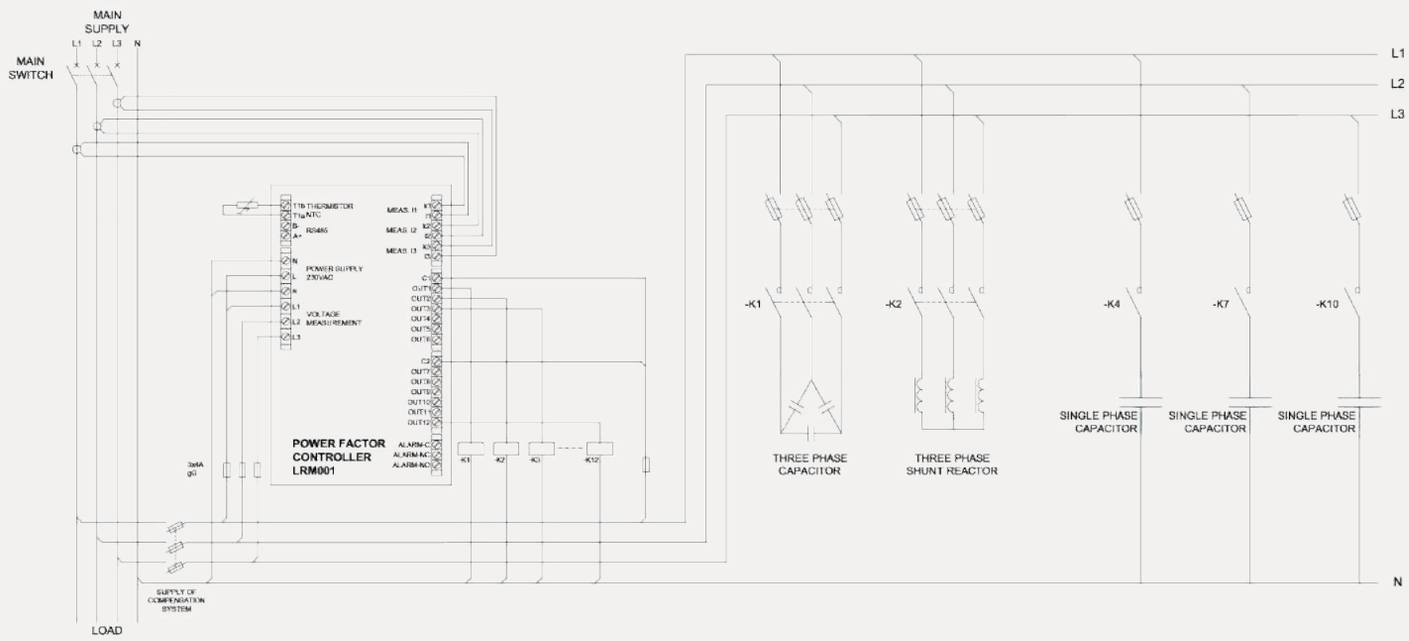
Parameter	Value
Power supply voltage	230VAC ±10% , 50Hz
Power consumption	maximally up to 10 VA
Measurement of current	possibility of connection of 1 or 3 current transformers with rated secondary current of 5 A
Current circuit capacity	<0,5VA
Range of measured currents	0,02A- 5,5A (max 10A)
Measurement of voltage	L-N 230 VAC, 50Hz
Frequency of sampling	64 times per period
Analysis of harmonics	up to 15th
Outputs	12 relay outputs 250 V / 5 A or OPTO-MOSFET
Actuators	capacitor or compensation reactor, single- or three-phase
Alarm	relay output 250 V / 5 A
Ambient temperature	-20°C ÷ 60°C
Enclosure protection rating	IP54 front/ IP20 back
Display	LCD 2 x 16 characters
Dimensions	144x144x70 mm
Communication	1 x RS485 Modbus/RTU
Temperature measurement	-40°C ÷ 80°C

The LRM001 microprocessor power factor controller is designed for applications in automatic low voltage reactive power compensation systems.
It was created on the basis of many years of experience in the construction and selection of compensation systems.
It has a friendly and functional software, giving many operator capabilities also for demanding users.
It allows you to control the stages of single- and three-phase capacitors and reactors connected to one controller.
The controller ensures an efficient minimisation of reactive energy fees.

Applications:

- **Inductive reactive power compensation:** cooperation with capacitive stages
- **Capacitive reactive power compensation:** cooperation with inductive stages
- **Reactive power compensation in case of its variable capacitive and inductive nature**
- **Compensation in electricity networks with symmetric and asymmetric load** – single- and three-phase measurement and control of single- and/or three-phase elements
- **Clock-based control**
- Displaying the **cosφ coefficient** and the **Power Factor** coefficient
- **Transformer idle power compensation**
- **Freely programming of type and power of each output individually (no imposed sequences)**
- **Quick algorithms** of reaching the given cosφ coefficient
- **Individually adjustable discharge** (reconnection) times of stages
- **The ability to control the cabinet ventilation**

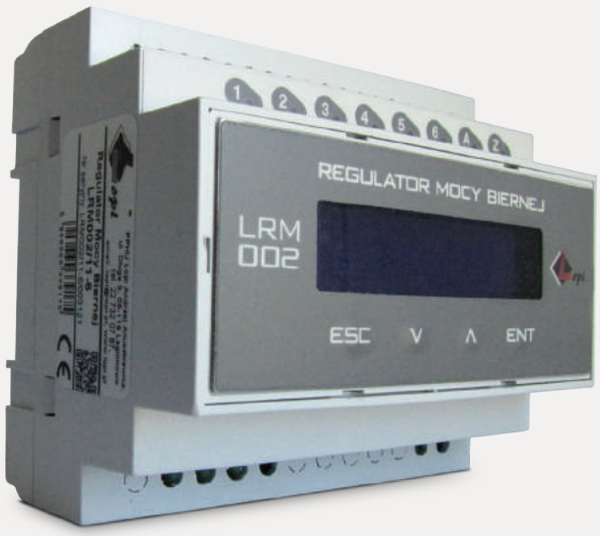
EXAMPLE CONFIGURATION OF LRM001
CONTROLLER CONNECTIONS FOR
Measurement 3PH Regulation MIX



*Details of solutions in the device's manual

LRM002

INNOVATIVE POWER FACTOR CONTROLLER
SIMPLE AND ECONOMIC SOLUTION FOR MANY APPLICATIONS



Technical data:

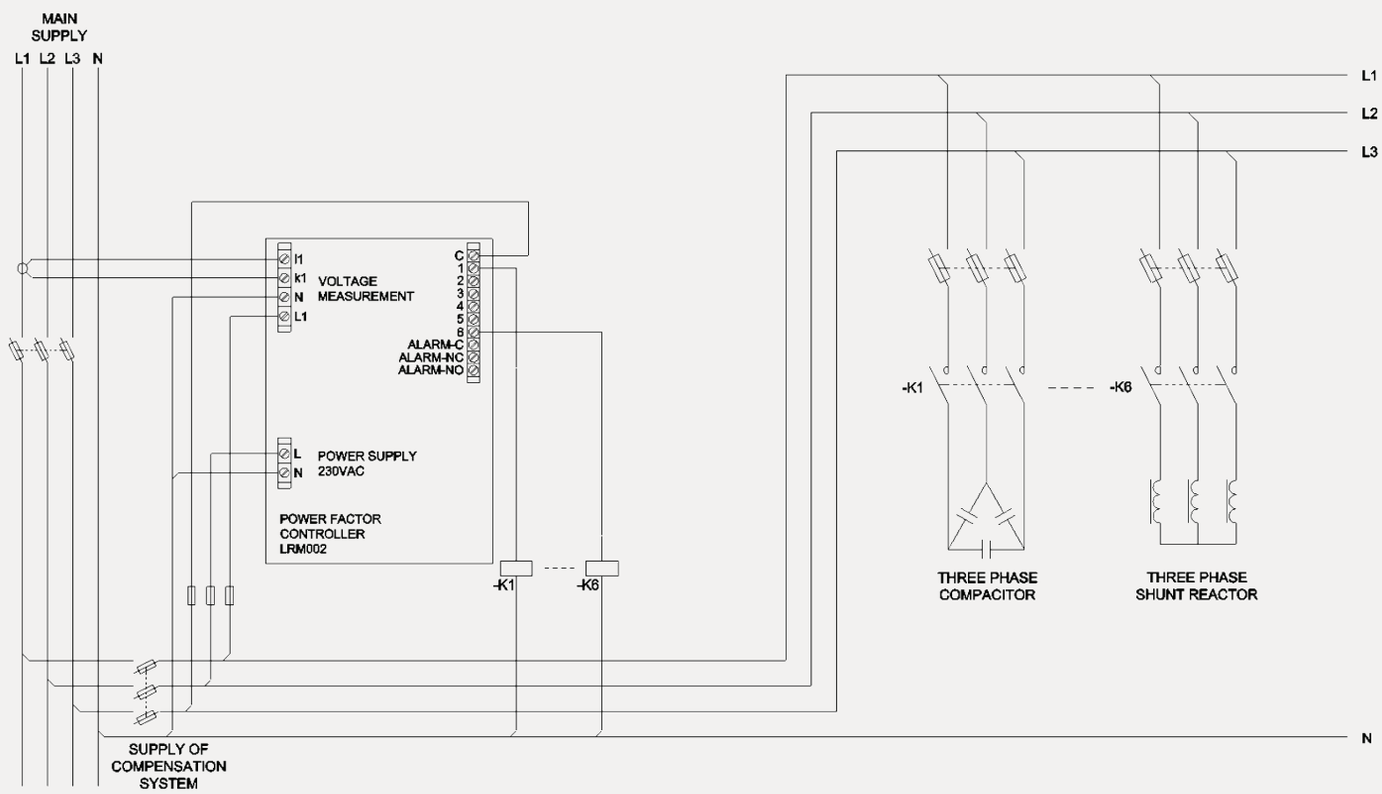
Parameter	Value
Power supply voltage	230VAC ±10% , 50Hz
Power consumption	maximally up to 10 VA
Measurement of current	possibility of connecting 1 current transformer with a rated secondary current of 5 A
Current circuit capacity	<0,5VA
Range of measured currents	0,02A- 5,5A (max 10A)
Measurement of voltage	L-N 230 VAC, 50Hz
Frequency of sampling	64 times per period
Analysis of harmonics	up to 15th
Outputs	6 relay outputs 250 V / 5 A
Actuators	capacitor or compensation reactor three-phase
Alarm	relay output 250 V / 5 A
Ambient temperature	-20°C ÷ 60°C
Enclosure protection rating	IP20
Display	LCD 2x 16 characters
Dimensions	130x90x65mm

The LRM002 microprocessor power factor controller is designed for applications in automatic low voltage reactive power compensation systems.
It was created on the basis of many years of experience in the construction and selection of compensation systems
It has a friendly and functional software, giving many operator capabilities also for demanding users.
The controller ensures an efficient minimisation of reactive energy fees.
Version for internal installation on a DIN mounting rail.

Applications:

- **Inductive reactive power compensation:** cooperation with capacitive stages
- **Capacitive reactive power compensation:** cooperation with inductive stages
- **Reactive power compensation in case of its variable capacitive and inductive nature**
- **Compensation in symmetrical load networks -** single-phase measurement and control of three-phase elements
- **Clock-based control**
- Displaying the **cosφ coefficient** and the **Power Factor coefficient**
- **Transformer idle power compensation**
- **Freely programming of type and power of each output individually (no imposed sequences)**
- **Quick algorithms** of reaching the given cosφ coefficient
- **Individually adjustable discharge times** (blockages) of stages

EXAMPLE CONFIGURATION OF LRM002
CONTROLLER CONNECTIONS



*Details of solutions in the device's manual

ADDITIONAL ACCESSORIES

LRM Control

GSM / GPRS MODEM FOR COMMUNICATION OF POWER FACTOR CONTROLLER LRM001 WITH A SERVER

Technical data:

Parameter	Value
Power supply voltage	230VAC±10%, 50Hz
Power consumption	4VA
Ambient temperature	-20°C ÷ 60°C
Enclosure protection rating	IP20
Dimensions	130x90x65mm
Communication with LRM001	RS485 Modbus/RTU
Communication with the server	Ethernet (RJ-45), GSM
Communication and configuration with a PC	RS232
Built-in location	GPS

It provides the transmission of parameters of electrical network measured by the controller, such as current, voltage, powers and enables supervision over the correct operation of the reactive power compensation system. It allows a quick action to be taken to prevent reactive energy fees increase due to capacitor bank failure or change of the load profile. It makes easier the energy management of the facility. Access to measurement data is possible from any place by a web browser.

Device functions:

- Communication with LRM001 controllers (max. 4) by RS485, MODBUS protocol
- Data transfer by a GSM modem or Ethernet connection connected to a router with Internet access
- Sending of alarm SMS to any 4 numbers configured at exceeding the set tg (φ) and set capacitive energy
- Analysis of tg (φ) and capacitive energy consumption in a indicated period
- Version for internal installation on a DIN mounting rail
- Identification of the device installation location based on GPS data
- Automatic communication with the server

TEMPERATURE SENSORS

CONVENIENT CONTROL OF CABINET VENTILATION IN COOPERATION WITH LRM001

CT1LRM - Temperature measurement sensor with 1 m cable

CT2LRM - Temperature measurement sensor with 2 m cable

CT3LRM - Temperature measurement sensor with 3 m cable

AVAILABLE TYPES OF LRM CONTROLLERS:

Type	Measurement U	Measurement I	RS	Number of outputs	Modes of operation	CT1LRM CT2LRM CT3LRM	LRMCTRL
LRM001 /11-6	x1	x1	-	6	1PH	yes	-
LRM001 /11-12	x1	x1	-	12	1PH	yes	-
LRM001 /11-6 RS	x1	x1	yes	6	1PH	yes	yes
LRM001 /11-12 RS	x1	x1	yes	12	1PH	yes	yes
LRM001 /33-6	x3	x3	-	6	1PH, 3PH	yes	-
LRM001 /33-12	x3	x3	-	12	1PH, 3PH	yes	-
LRM001 /33-6 RS	x3	x3	yes	6	1PH, 3PH	yes	yes
LRM001 /33-12 RS	x3	x3	yes	12	1PH, 3PH	yes	yes
LRM002 /11-6	x1	x1	-	6	1PH	-	-

LRM001 /11-6
current measurement 1 phase, 6 stages - intended for symmetrical networks with inductive or capacitive load

LRM001 /11-12
current measurement 1 phase, 12 stages - intended for symmetrical networks with inductive or capacitive load

LRM001 /11-6 RS
current measurement of 1 phase, 6 stages, equipped with RS485 Modbus / RTU port, intended for symmetrical networks with inductive or capacitive load

LRM001 /11-12 RS
current measurement of 1 phase, 12 stages, equipped with RS485 Modbus / RTU port, intended for symmetrical networks with inductive or capacitive load

LRM001 /33-6
current and voltage measurement of 3 phases - the ability to work with single-phase elements, 6 stages, adapted to asymmetric networks with inductive or capacitive load

LRM001 /33-12
measurement of current and voltages 3 phases - the ability to work with single-phase elements, 12 stages, adapted to asymmetric networks with inductive or capacitive load

LRM001 /33-6 RS
measurement of current and voltages 3 phases - the ability to work with single-phase elements, 6 stages, equipped with RS485 Modbus / RTU port - adapted to asymmetric networks with inductive or capacitive load

LRM001 /33-12 RS
current and voltage measurement 3 phases - the ability to work with single-phase elements, 12 stages, equipped with RS485 Modbus / RTU port - adapted to asymmetric networks with inductive or capacitive load

LRM002 /11-6
current measurement 1 phase, 6 stages - designed for symmetrical networks with inductive or capacitive load, DIN rail mounting

Welcome

PPHU "Lopi"
Andrzej Anuszkiewicz

ul. Długa 3
05-119 Legionowo
tel. +48 22 772 95 08
+48 22 732 07 87
+48 22 766 37 00
fax +48 22 772 95 09
NIP 536-002-08-98
e-mail: kompensacja@lopi.pl

www.lopi.pl

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