

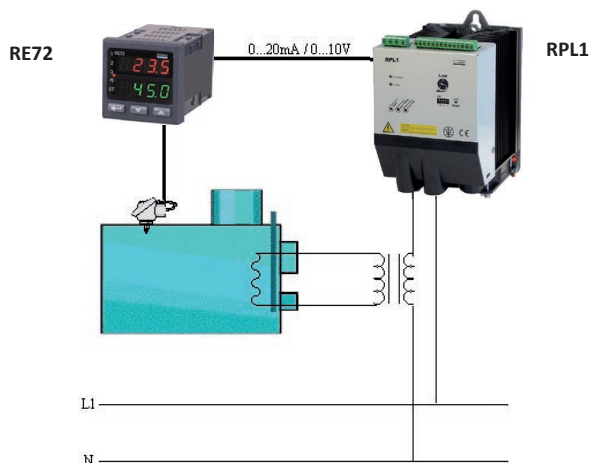
# RPL1 POWER CONTROLLER

## FEATURES:



- For power control of resistive and resistive-inductive load (transformer connected to resistive load or to rectifier circuit).
- Control mode: on/off (similar to solid state relay), pulse, phase.
- Amplification of input control signal (SPAN).
- Limitation of load current.
- Overload protection.
- Signalization of exceeding the maximum temperature of radiator.
- Control of 3-phase load (requires two RPL1 controller units).

## EXAMPLE OF APPLICATION



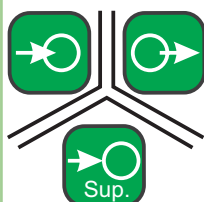
## INPUT:



## OUTPUT:



## GALVANIC ISOLATION:



## INPUTS

| Input type            | Quantity | Range                                                                                                   | Remarks                                                        |
|-----------------------|----------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Synchronization input | –        | 230 V a.c. – version RPL1-xx1xx,<br>400 V a.c. – version RPL1-xx2xx,<br>500 V a.c. – version RPL1-xx3xx | –                                                              |
| Control voltage input | 1        | 0...5 V<br>0...10 V                                                                                     | $R_{in} = 20 \text{ k}\Omega$<br>$R_{in} = 40 \text{ k}\Omega$ |
| Control current input | 1        | 0(4)...20 mA                                                                                            | $R_{in} = 125 \Omega$                                          |
| Control pulse input   | 1        | 0/4...32 V                                                                                              | $R_{in} = 20 \text{ k}\Omega$                                  |
| STOP signal input     | 1        | 4...8 V                                                                                                 | $R_{in} = 1 \text{ k}\Omega$                                   |

## OUTPUTS

| Output type            | Quantity | Range     | Remarks                                                               |
|------------------------|----------|-----------|-----------------------------------------------------------------------|
| Voltage (Master/Slave) | 1        | 6 ...12 V | non stabilized                                                        |
| Relay                  | 2        | NO        | 60 mA/350 V, $R_{on} = 35 \Omega$ , $U_{isol} = 1500 \text{ V}_{RMS}$ |

## ELECTRICAL PARAMETERS OF POWER CIRCUIT

| No. | Max. output current | Load supply voltage                             | Max. load                     | Loss power in thyristor |
|-----|---------------------|-------------------------------------------------|-------------------------------|-------------------------|
| 1   | 25 A                | 230 V / 50 Hz<br>400 V / 50 Hz<br>500 V / 50 Hz | 5.7 kW<br>10.0 kW<br>12.5 kW  | < 40 W                  |
| 2   | 40 A                | 230 V / 50 Hz<br>400 V / 50 Hz<br>500 V / 50 Hz | 9.2 kW<br>16.0 kW<br>20.0 kW  | < 65 W                  |
| 3   | 70 A                | 230 V / 50 Hz<br>400 V / 50 Hz<br>500 V / 50 Hz | 16.0 kW<br>28.0 kW<br>35.0 kW | < 120 W                 |
| 4   | 125 A               | 230 V / 50 Hz<br>400 V / 50 Hz<br>500 V / 50 Hz | 28.0 kW<br>50.0 kW<br>62.0 kW | < 215 W                 |

- Leakage current in the thyristor circuit: < 20 mA
- Load type: resistive or resistive-inductive ( $0.2 < \cos\phi < 1$ ), compatible with the category of operational use AC-51 acc. to EN 60947-4-3

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## EXTERNAL FEATURES

|                    |                                                                                |
|--------------------|--------------------------------------------------------------------------------|
| Overall dimensions | 135 x 201 x 199 mm<br>135 x 231 x 199 mm - ver. RPL1-x4xx (version with a fan) |
| Weight             | 4.5 kg<br>5.0 kg - ver. RPL1-x4xx (version with a fan)                         |

## RATED OPERATING CONDITIONS

|                          |                                   |
|--------------------------|-----------------------------------|
| Supply voltagea N-L1     | 195 ... <u>230</u> ... 253 V a.c. |
| Supply voltage frequency | 50 Hz                             |
| Power consumption        | ≤ 4.5 VA                          |
| Temperature: ambient     | 0 ... 40°C                        |
| Temperature: storage     | -25...55                          |
| Humidity                 | < 90 % , without condensation     |
| Operating position       | vertical                          |

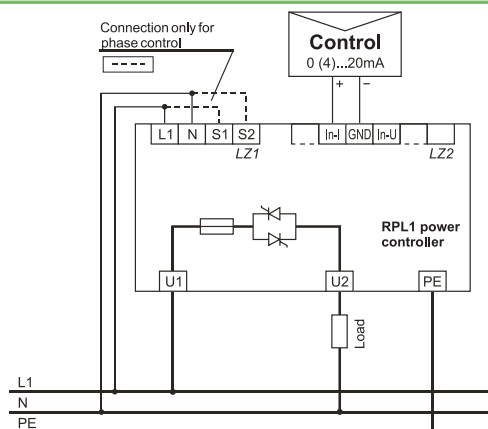
## SAFETY AND COMPATIBILITY REQUIREMENTS

|                                     |                                                                 |                      |
|-------------------------------------|-----------------------------------------------------------------|----------------------|
| Electromagnetic compatibility       | noise immunity                                                  | acc. to EN 60947-4-3 |
|                                     | noise emissions                                                 |                      |
| Pollution level                     | 2                                                               |                      |
| Installation category               | III                                                             |                      |
| Protection grade from terminal side | IP10 acc. to EN 60529                                           |                      |
| Protection grade from casing side   | IP20 acc. to EN 60529                                           |                      |
| Noise immunity                      | EN 60947-4-3                                                    |                      |
| Maximal phase-to-earth voltage      | 320 V for power circuits and supply,<br>50 V for other circuits |                      |

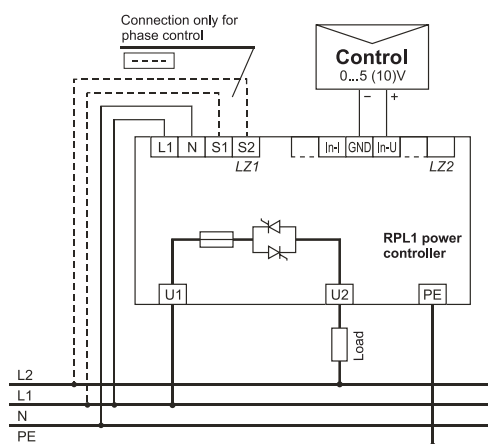
Power controller RPL1 meets the requirements of the norm EN 60947-4-3.

**Caution:** In the case of phase control, the controller meets the requirements of electromagnetic compatibility in terms of noise emissions, only when working near the transition of the supply voltage across zero.

## CONNECTION DIAGRAMS



a) load supply  $U_{LOAD} = 230 V$ ,  
supply  $U_{UWB} = 230 V$ .



b) load supply  $U_{LOAD} = 400 V$ ,  
supply  $U_{UWB} = 230 V$ .

## ORDERING

| RPL1 -                                             |   | X | X | X | XX | X  | X |
|----------------------------------------------------|---|---|---|---|----|----|---|
| <b>Control:</b>                                    |   |   |   |   |    |    |   |
| phase                                              | 1 |   |   |   |    |    |   |
| pulse / on/off                                     | 2 |   |   |   |    |    |   |
| <b>Current range:</b>                              |   |   |   |   |    |    |   |
| maximal output current 25 A                        | 1 |   |   |   |    |    |   |
| maximal output current 40 A                        | 2 |   |   |   |    |    |   |
| maximal output current 70 A                        | 3 |   |   |   |    |    |   |
| maximal output current 125 A*                      | 4 |   |   |   |    |    |   |
| <b>Load voltage:</b>                               |   |   |   |   |    |    |   |
| supply voltage - 195... <u>230</u> ...253 V a.c.   | 1 |   |   |   |    |    |   |
| supply voltage - 340... <u>400</u> ...440 V a.c.   | 2 |   |   |   |    |    |   |
| supply voltage - 425... <u>500</u> ...550 V a.c.   | 3 |   |   |   |    |    |   |
| <b>Version:</b>                                    |   |   |   |   |    |    |   |
| standard                                           |   |   |   |   |    | 00 |   |
| custom-made**                                      |   |   |   |   |    | XX |   |
| <b>Language:</b>                                   |   |   |   |   |    |    |   |
| Polish                                             |   |   |   |   |    |    | P |
| English                                            |   |   |   |   |    |    | E |
| other**                                            |   |   |   |   |    |    | X |
| <b>Acceptance tests:</b>                           |   |   |   |   |    |    |   |
| without additional quality inspection requirements |   |   |   |   |    |    | 0 |
| with an extra quality inspection certificate       |   |   |   |   |    |    | 1 |
| other requirements**                               |   |   |   |   |    |    | X |

\* the version RPL1- x4xx has a fixed fan

\*\* after agreeing with the manufacturer

### Ordering example:

The code: **RPL1 - 1 - 1 - 2 - 00 - E - 0** means:

- RP1** - power controller of RPL1 type
- 1** - phase control
- 1** - output current maximal 25 A
- 2** - supply voltage - 340...400...440 V a.c.
- 00** - standard version
- E** - English
- 0** - without additional quality inspection requirements.

## SEE ALSO:



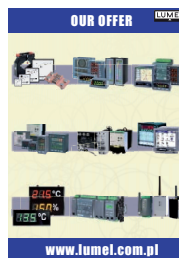
3-phase power controller - RP3.



Controllers of RE72 and RE82 type.



Temperature sensor.



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