



PAMEL

42-300 Myszków ul. Leśna 17 POLAND

POWER REGULATION

PRD1(+)



PLEASE READ THIS MANUAL CAREFULLY

OR AT LEAST LAST POINTS OF IT

YOU DON'T KNOW SOMETHING? CALL US! WE DON'T BITE

791-607-644 (OFFICE 9 A.M. – 2 P.M., weekday)

791-607-644 (SUPPORT 4 P.M. – 8 P.M., whole week)







www.pamel.pl pamel@pamel.pl

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Please read this manual carefully before connecting and use of this device.

In case of any problems with understanding its content please contact with the dealer. Own assembly and start-up of device is possible if fitter has basic knowledge. Nevertheless it is recommended to assembly this device by qualified staff. Manufacturer holds no responsibility for damages resulting from improper assembly or exploitation of device. Own repairs and modifications results in loss of warranty. Manufacturer reserves the right to change look, features and technical parameters of the device in order to increase product quality. Images, drawing and lines used in this manual are property of PAMEL company.

	<p>Do not dismantle or modify.</p> <ul style="list-style-type: none"> • It can cause breakdown • Contact authorized service if needed <p>We don't bite. It will be cheaper than own repair or modification</p>
	<p>If you don't use device for longer period of time then disconnect power.</p> <p>If you want to do electronic works e.g. change of wires then disconnect power.</p> <p>Electrician also can be shocked.</p>
	<p>Avoid leading power cable through spots where people walk.</p> <ul style="list-style-type: none"> • Someone can latch onto cable and throw device down causing its damage and hurting staff.
	<p>Don't touch with wet hands.</p> <ul style="list-style-type: none"> • Electrocuting possibility.
	<p>Do not use device in place when it is exposed to fluids.</p> <ul style="list-style-type: none"> • It can cause short circuit or electrocuting.
	<p>Do not place device in dusted areas.</p> <ul style="list-style-type: none"> • There is a risk of bad cooling and work of thermistor. <p>Nobody like dirt, especially fans.</p>

PRD1 POWER REGULATION

PURPOSE

PRD1 can be used for regulation of heat elements power or regulation of rotations. Depending on version maximum regulated power is 3.5kW or 5kW(PRD1+). Device can't be used to regulation of typically inductive circuits (transformers).

VIRTUES OF THE SYSTEM

It's easy in assembly and use, provides optimal control of devices power. Device offers possibility of choosing start mode:

- a) quick start of set power-driver momentarily turns set power on
- b) possibility of „soft start”. After starting increase of power comes from 0% to set value during maximum few seconds.
- c) possibility of „full start”. After starting decrease of power comes from 100% to set value during maximum few seconds. Mode used mainly with fans and pumps where engine needs to be started with full torque and next slowed down to demanded rotations.

It has possibility of setting minimum and maximum power thanks to what we can set limits of regulation of power with use of buttons. It has possibility of setting power value jump. User can chose if pushing means change of value by 1%, 5% or by any value.

MECHANISM OF ACTION

Thanks to two buttons user can regulate amount of power supplied to circuit. Current percentage setting of average power is displayed on LED display. E.g. „01” means 1% of power, „50” means 50% of maximum power of powered device. In case of decline in voltage circuit remembers set power.

TECHNICAL DETAILS

Power voltage:	230V -20% +10%, 50Hz
Temperature of work:	-10 do +60°C
Ampacity:	3,5kW (5,5kW PRD1+)
Maximum power consumption:	0,2W
Dimensions:	length - 80mm, width - 60mm, height - 60mm
Casing:	Self-extinguishing material
IP class:	IP20
Warranty:	24 months from the date of sale
Compliance with standards:	EN 60529
Product doesn't contain lead (Pb-Free)	

If device starts to display weird characters, e.g. „ee” then needs to be turned by 180 degrees. It will start to display „33”

SETTINGS



**PROVIDED DRIVER IS READY TO USE.
SETTINGS ARE NOT NECESARLY.**

BEFORE START OF SETTINGS READ SETTING MANUAL.

To set parameters you need to hold two buttons before plugging device in. Then plug it in (while holding buttons). Display will show „88” and go in setting minimum power Pmin mode. Values (between 0 and 99) can be chosen by „+” buttons. To go to available settings push „-”. Display will show “88” then goes to maximum power setting mode. Choice of Pmax value (between Pmin and 99) can be done by „+” buttons. To go to available settings push „-”. Display will show „88” then goes to setting of level of start mode (one digit blinks – 0, 1 or 2). Choice of values can be done by „+” buttons.

0 - soft start

1 – full power start (pumps, fans)

2 – start with set power

To go to set values push „-”. Display will show “88” then goes to power jump settings mode. Choice of values (between 0 and 50) can be done by „+” buttons. To go to available settings push „-”.

If driver doesn't react or reacts strangely to buttons (jumps only by few values, sets only in certain scope of values) then it means that user rearranged settings. In such cases it is recommended to follow above manual of change of settings. In case of sending broken driver to company you'll be charged for configuration and shipment (according to price table and 11 paragraph of warranty).

BEFORE YOU CALL

Symptom	Hint
Display shows weird characters reminiscent of letters E S h and others.	You are holding device upside down. Turn it by 180 degrees. Don't worry it is often, and that's why we placed this in hints.
Device doesn't respond to buttons.	You probably set wrong values of minimum and maximum prices, e.g. the same values. Enter settings.
Power cannot be set to 0 or 100%.	You probably set wrong values of minimum and maximum prices, e.g. the same values. Enter settings.
One push causes big value jump.	It's the value jump that you had set. Enter settings.
Constant voltage on output (of power or valve).	<p>Unfortunately it is caused by inattention during connection or liquid spill.</p> <p>Driver outputs are at least twice bigger. It means that "plus" output has BTA41 triacs that are predicted for 40 AMPERES.</p> <p>Additionally outputs have galvanic isolation, and a triac foot has ONLY CONTACT you're your heater. It means that output circle in electric way reminds contactor.</p> <p>If you don't believe us, you can go to entrusted electronics service and ask about analogical situation with connecting speakers to amplifier, 99,99999% is caused by bad use of output and not by device.</p> <p>Repairs of such devices are due (flat rate 20 PLN + cost of componentry)</p>

Dear User,

In the beginning we want to thank you for choosing PAMEL. We are certain that you will be pleased with this choice. We design device in way that fulfill yours requirements and guarantees future trouble-free use.

Before start of using of device please became acquainted with montage procedures and conditions of exploitation described in Manual. In case of any questions please contact us.

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WARRANTY CONDITIONS

1. PAMEL makes warranty on area of Rzeczpospolita Polska for period of 24 months starting on date of beginning warranty period, but no longer than 40 months from production date placed on product that is under warranty under condition of use of device according with its destination and technical-exploitation conditions described in Manual.

2. Warranty does not cover movable equipment elements (accessories) design for self-assembly by user e.g. aerials, sensors, handles, heaters, cables or power batteries.

3. Guarantor is obligated to free removal of physical faults if these faults occur during warranty or to deliver faults-free equipment if in warranty period at least 4 repairs of equipment were made, and equipment remains faulty. In case of exchange, product will be exchanged for new one of the same model or of close, not worse technical parameters. If such exchange won't be possible, then Customer gets refund.

3. Warranty period described in paragraph 1 is extended by time of repair.

4. Time of repair is counted from the day of device submittal to service point to day of issuing device to shipper in order to handover it to Buyer.

5. In case of fault occurrence Buyer reports this fact to Guarantor via e-mail (pamel@pamel.pl) or via phone, then Guarantor tries to solve this problem remotely and point further route of complaint proceeding.

6. On request of Guarantor Buyer is obligated to honest impletion of Complaint Protocol given by Guarantor.

7. Guarantor is responsible only for faults resulting from causes in sales subject.

8. Warranty don't covers damages resulting from improper use, particularly from storing and maintenance incompatible with exploitation destination, use of improper exploitation materials, own repairs of upgrades, mechanical damages resulting from fault of user, exterior causes like contamination, inundation, steam condensation, atmospheric phenomena, random events. Warranty also doesn't cover damages of electronic subsystems resulting from crossing rated parameters.

9. Warranty doesn't cover claims in respect of technical parameters if they are consistent with ones given by manufacturer.

10. Condition of maintaining warranty permissions by Buyer is provision of device to service point stated in paragraph 5 in complete state in packet that decreases risk of its damage together with documentation, wires and other elements provided according to realization of agreement without violated seals or labels together with warranty card.

11. Warranty don't covers materials and actions belonging to regular exploitation like montage of equipment, programming, cleaning, maintenance, replacing bulbs and fuses, operation control. Services mentioned above are due. In case of unfounded complaint (complaint of working device or of damage caused by user) complainer will be charged for expertise and transportation.

12. Service point except situation mentioned in paragraphs 7-11 can refuse warranty repair in following situations:

- if data in documentation varies from device data,
- annotations in documents made by unauthorized persons.

13. Physical faults revealed during warranty period will be removed during 21 days, counted from the day following the day of submittal device to service point. In case of necessity of importing parts from abroad Guarantor reserves rights to extend warranty period for time needed for repair and each time will inform Customer about such situation via e-mail.

14. Device should be mounted according to required standards and technical requirements encapsulated in

- manual. If it is regulated by law, then device need to be mounted by person with relevant permission.
15. Right and responsibilities of parties under warranty are regulated only by provisions in this document.
 16. Equipment uncollected from service during 3 months from the end of repair becomes service property.
 17. In situation where warranty repair requires parts exchanged element becomes property of Guarantor.
 18. Guarantor holds no responsibility for damages caused by loss of user data saved in device, we also inform that device will be returned in production state.
 19. **Buyer by signing declares that is acquainted with warranty conditions and accepts them. Warranty card without Buyer's sign will be considered invalid.**

WARNING!

Number of repairs does not include particularly: cleaning, maintenance, bulb, filament or fuse exchange, repairs resulting from exploitation wear, e.g. wear of potentiometers, etc.

START OF WARRANTY PERIOD	DEALER STAMP	CUSTOMER SIGNATURE