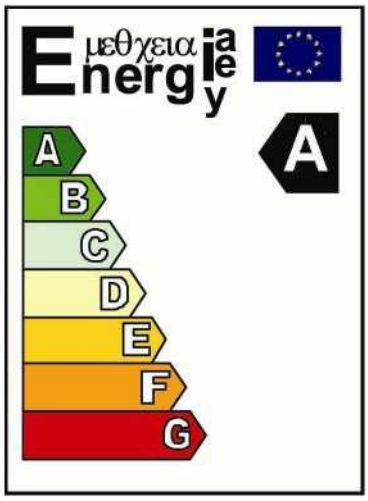
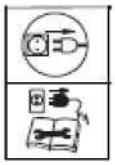


Instruction manual for electronic circulation pump:
BETA

reading the instruction manual is obligatory

device damage hazard

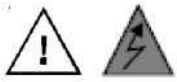


electrocution hazard

NOTE: read the manual prior to commencement of use. For safety reasons, the pump can only be operated by persons well-familiarised with the manual.

NOTE: the manual is a primary part of the purchase and sale contract. The user's failure to observe the instructions included in the manual is a breach of the contract and excludes any complaints arising from potential device failure caused by the use that is inconsistent with instructions of its use.

NOTE: failure to observe the instructions included in the manual can result in hazard for persons, properties in which they are installed, environment and the pump itself.



CAUTION! This equipment is not intended for use by persons (including children) with reduced motor, sensory or mental capacities, or persons without experience or not familiarised with the equipment, unless it is performed under supervision or according to the instruction regarding operation provided by persons responsible for their safety.

Attention should be paid so that children do not play with the equipment.

APPLICATION:

Pumps described in this manual are intended for forcing circulation in central heating installations with constant or variable flow in which the temperature of heating medium does not exceed 110 ^{o}C, and pressure in the installation does not exceed 1 Mpa (1,000,000 Pa). The maximum temperature of the surroundings where the pump will be installed cannot exceed 40 ^{o}C, and relative moisture at the installation site must be lower than 90%.

⚠ The pumped water cannot contain any mechanical contamination. The pump is intended for pumping of clean water, with no solid or abrasive particles. Pumping water containing mechanical contamination results in fast wear and tear of the pump and, in consequence, it its failure. In such a case, only paid repair is available.

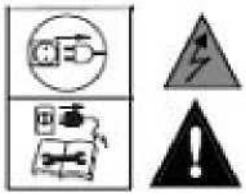
⚠ The pump is not adjusted to pump caustic, flammable, destructive or explosive substances (e.g. petrol, nitro, oil, etc.), foodstuffs or salty water. Failure caused by pumping of the same type of liquid is not subject to warranty repair.

⚠ The maximal temperature of the pumped water is 110 ^{o}C.

⚠ The pump is not adjusted to pump water containing excessive amounts of mineral elements causing deposition of scale on the pumping elements. Using the pump in such conditions results in premature wear and tear of the operating elements of the pump. In such a case, only paid repair of the pump is available.

⚠ The pump cannot pump water containing oils and petroleum derivatives. Pump operation in such water can lead to destruction of rubber elements, e.g. cables or sealing, and result in leakage in the pump and motor failure. In such a case, only paid repair of the pump is available.

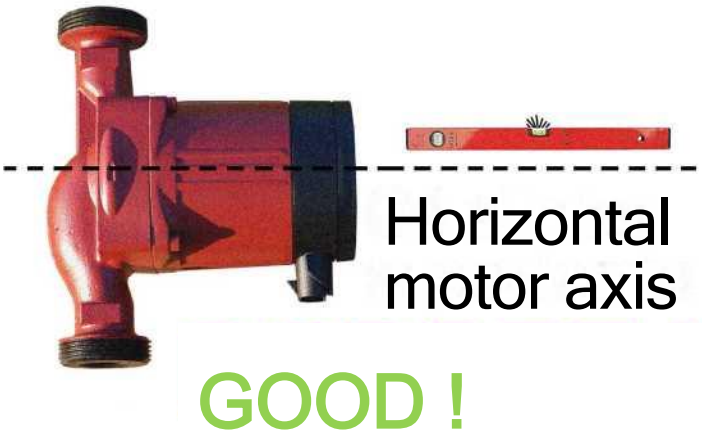
PUMP INSTALLATION:



Prior to any installation works, power supply must be disconnected. Provide security against accidental switch-on.

⚠ The pump can be connected upon completion of all installation works in the pipeline where it will operate. One should remember that, as a result of welding or soldering works, mechanical contamination can be accumulated

in the pipeline. It is recommended to flush the pipeline in which the pump is installed prior to installation.



⚠ The pump must be installed in such a manner that its shaft is in a horizontal position. Ports can be in a different position than shown in this picture, however, the motor shaft must always be in a horizontal position.

⚠ Installation of the pump in a manner where the shaft is in vertical position results in fast wear and tear of the bearings and failure of the pump. In such a case, only paid repair is available.

⚠ The arrow cast on the corpus indicates the direction of water flow.
The pump should be installed in such a manner which allows for cable inlet in the control panel box was placed in the bottom. This type of installation protects against water penetration into the cable box in case of leakage in the water installation. Device destruction caused by pouring water into the terminal box from the outside is not subject to warranty repair.
Despite the possibility of pump operation in water pumping in a vertical downward direction, the manufacturer recommends the installation which makes it pump water vertically upward or horizontally.

ELECTRIC CONNECTION:

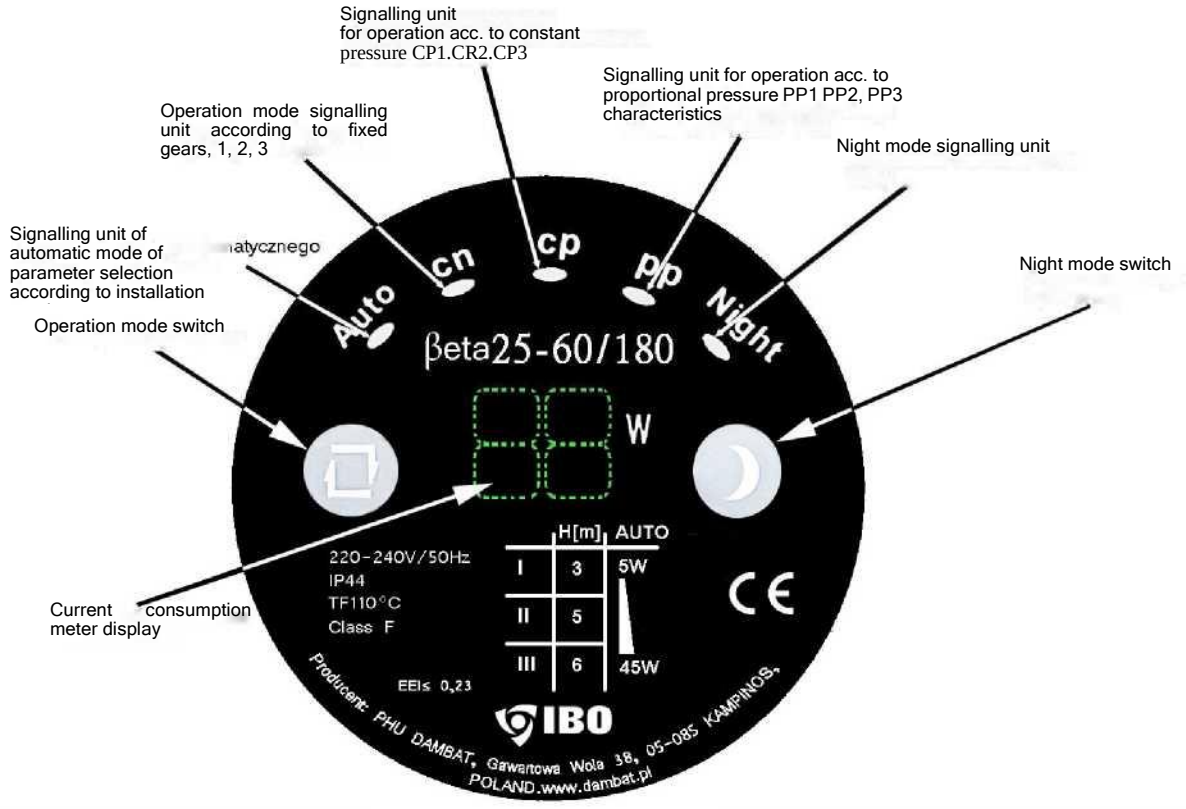
The electric network used to power the pump must be compliant with data provided on the rating plate. The pump is fitted with a cable with a plug intended for its connection to the socket with earthing.

⚠ **The pump must be connected to a network with active earthing.** The manufacturer and guarantor are not liable for any damage to people or property resulting from lack of proper earthing.

The powering installation of the pump must be equipped with a residual current device, with rated making current In not exceeding 30 mA. The manufacturer and guarantor are not liable for any damage to people or property resulting from supplying the pump with power without a proper switch.

PUMP OPERATION CONTROL:

Upon launch of the pump the display of the power consumption meter will show the current power consumption of the pump. When the message "--" (two horizontal lines) is displayed, it means that the pump is blocked. In this case the pump must be disconnected from the electrical grid, unblocked (failure must be eliminated) and turned on again. Turing off and again on resets the failure message.



OPERATION MODE:

With the use of operation mode switch, the user can select one of eleven modes by consecutive pressing. The operation modes are classified into five setpoint groups. Selection of one group is displayed by the light of the appropriate signal lamp in the panel of the pump. By consecutive pressing of the operation mode switch, a user can go through all setpoints, and within them through different operation modes. The information on current active operation mode will be displayed for a short time on the screen of power consumption meter mode upon pressing the operation mode switch.

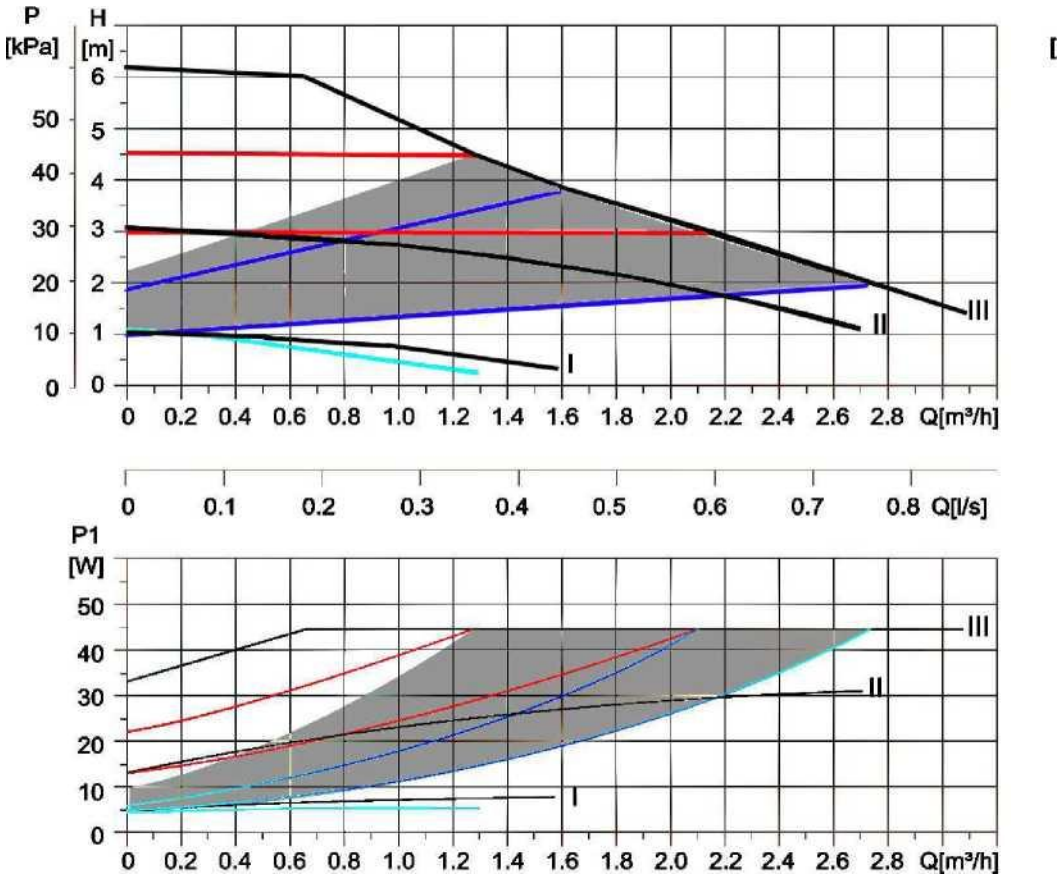
Information displayed on the screen of the meter:

AU - automatic pump parameter selection according to the installation needs (diagram - grey colour)

∩1- constant speed, the lowest first gear (diagram - black colour)

∩2 - constant speed, medium second gear (diagram - black colour)
∩3 - constant speed, highest third gear (diagram - black colour)
C1 - operation acc. to constant pressure characteristics (diagram - red colour)
C2 - operation acc. to constant pressure characteristics (diagram - red colour)
P1 - operation acc. to proportional pressure characteristics (diagram - blue colour)
P2 - operation acc. to proportional pressure characteristics (diagram - blue colour)

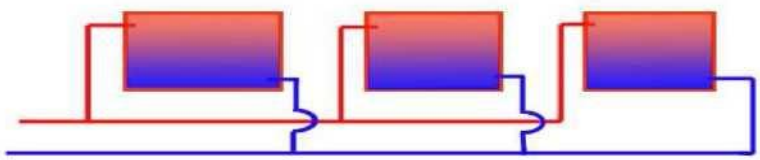
Parameters of pump operation depending on the selected operation mode are presented in the diagram (example diagram for pump BETA 25-60):



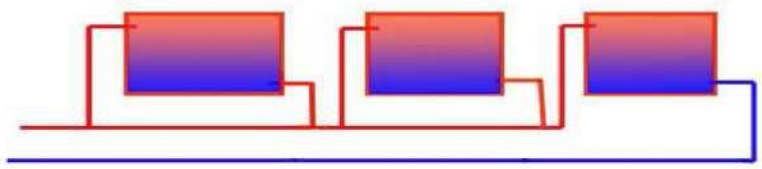
RECOMMENDED SETPOINTS DEPENDING ON THE TYPE OF CENTRAL HEATING (CO) INSTALLATION:

1)

If there is a “two-pipe” central heating installation routed in the house, i.e. one pipe serves as the supply line for all heaters in the loop, and the other, in parallel position, is used only for collection of cooled water from the heaters, choosing the AUTO function is most cost efficient. In such installation it is also possible to select higher setpoint from the characteristics of proportional pressure PP1.



2)



If there is a “disposable” CO installation in the house, i.e. water from the radiator is cooled down and drained into the pipe feeding hot water into the next radiator, and then, upon going through all radiators in an loop, it is drained to the boiler, the most economical setpoint is the lower setpoint from characteristics of proportional pressure PP_2. The higher setpoint can also be selected from the characteristics of proportional pressure PP_2.

3) In case of floor heating, an optimal choice is an AUTO or a potentially higher setpoint CP_1, or lower CP_2 from the characteristics of constant pressure.

NIGHT MODE:

Night pump operation mode can be used only when:

- CO installation with a furnace must be equipped with automatic temperature regulation of a heating medium - that is, it must have capacity to work in the night mode.
- The pump must be installed on the pipe exiting the furnace. The night mode does not operate on the entering pipe.
- CO installation with small volume of heating medium cannot cooperate with a pump operating in a night mode.

The principle of NIGHT MODE operation:

The use of the night mode switch will cause the automatic system of the pump will monitor the temperature changes in flowing water. If the temperature signalling unit detects temperature lowering of at least 0.1 ^{O}C/min in the period of about 2 hours, it will result in automatic switch the pump into night operation mode. In case of increase in temperature of the heating medium of about 10^{O}C, the pump will automatically switch back into standard operation mode.

⚠ Night operation mode can only be launched in the automatic mode of parameter selection of pump operation for installation parameters - AUTO mode.

Power cut results in deactivation of the night mode. Upon restoration of power it is necessary to switch the night mode on by pressing the proper button.

START-UP, OPERATION:

The pump can be started after the installation is filled with water.

⚠ CAUTION Attention must be paid to installation tightness, i.e. if the pump is not flooded with dropping or leaking water from the installation.

Pump flooding with water coming from the exterior can result in device destruction. In such a case, only paid repair is available.

On first launch, the installation and pump must be carefully deaerated. When the pump is deaerated, the level of the noise generated by the device motor drops.

⚠ Failure-free pump operation requires minimal inflow pressure of heating medium (water) on the suction side of the pump. The minimal inflow pressure depends on the heating medium temperature. The higher the temperature, the higher inflow pressure must be provided on the suction side of the pump.

Observe the following limitations:

Heating medium temperature [^{O}C]	Minimal inflow pressure on the suction side [bar] / [m] / [Pa]
≤ 75	0.05 bar / 0.5 m / 5 000 Pa
90	0.28 bar / 2.8 m / 28 000 Pa
110	1.08 bar / 10.8 m / 108 000 Pa

⚠ When the surrounding temperature and heating medium temperature ratio is incorrect, it can result in water steam condensation in the terminal box and motor stator. In order to avoid it, it is essential to observe the following rule at all times: the temperature of heating agent must be higher than the temperature of surroundings. Minimal temperature of heating medium is 2^{O}C.

The temperature of surroundings cannot exceed 30^{O}C, and the maximum temperature of heating medium is 110^{O}C. When the temperature of surroundings is 40^{O}C, the temperature of heating medium cannot exceed 70^{O}C. For 35^{O}C of surroundings, the max. temp. of medium is 90^{O}C.

Device destruction as a result of water steam condensation is not subject to warranty repair.

⚠ The temperature of pump surface can never exceed 120^{O}C. Device destruction as a result of installation overheating is not subject to warranty repair.

PUMP DISPOSAL:

The used product is subject to disposal as wastes only in selective waste collection systems organised by the Network of Communal Electric and Electronic Waste Collection Centres. The customer is entitled to return the used equipment to the network of the electric equipment distributor, at least for free and directly, if the returned device is of proper type and fulfils the same function as a newly purchased device. It is prohibited to dispose of electric equipment together with other household wastes.

POSSIBLE OPERATION PROBLEMS AND TROUBLESHOOTING

Sign:	Possible cause:	Problem solution:
The pump does not operate. The panel does not display anything.	No power supply. Pump damaged	Check if the electric plug of the pump is properly inserted into the electric socket. Check fuses at home and all other types of installation fuses that can cut off the power supply from the network Check if there is a power supply in your neighbourhood - power can be shut down by the power enterprise in the larger area Contact service.
The pump does not operate. The panel displays the following message: "--"	Incorrect parameters of supplying power.	Check parameters of supplying power. If they are incorrect, contact with the proper power plant
	Bearing or rotor is blocked with contamination.	Upon disconnection of the pump from power and water supply, remove the pump from the installation. Remove contamination.
Loud pump operation, noise in the installation Panel displays a number	Air pockets in installation	Deaerate the system, deaerate the pump.
	Suction pressure is too low	Increase suction pressure by adding more heating medium to the installation.
		Check the amount of air in the collecting container.
	Pump capacity is too high	Decrease pressure on the suction side of the device
Pump is operating but installation fails to supply enough heat. Panel displays a number	Too low pump operation parameters	Increase pressure on the suction side of the device Switch the pump setpoint into a higher operation mode.

EC DECLARATION OF CONFORMITY (Module A):

PHU Dambat

Gawartowa Wola 38, 05-085 KAMPINOS, POLSKA, e-mail: biuro@dambat.pl Under the Act of 30 August 2002 on the conformity system (Journal of Laws of 2004, No. 204, item 2087) we declare with full responsibility that BETA pumps to which this declaration refers to are consistent with the following guidelines of the Council on legal regulations unification in member states of EC:

- Low Voltage Directive LVD (2006/95/EC). Applied standard: EN 60335-2- 51:2003.
- Directive EMC (2004/108/EC) Applied norms: EN 55014-1:2006 and EN 55014- 2:1997.
- Eco-design Directive (2009/125/EC) Circulation pumps:

Regulation of the Commission (EC) no. 641/2009. Applied norms: EN 16297-1:2012 and EN 16297-2:2012. Gawartowa Wola 23.08.2011

Adam Jastrzębski

The reference criterion for most energy saving circulation pumps is EEI < 0.20.
For BETA pump, the coefficient EEI< 0.23 which means that BETA pump is an energy saving pump.