

# **Circulation Pumps**

**Guidlines towards choice and substitution** 

Up date to: 05/2023

# Diagrams and drawings for compatibility and substitution





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This booklet means to offer a guideline towards a choice of product suitable with ones needs and for the substitution of various models of various boiler manufacturers. For prices and sales conditions please see the general sales catalogue or our website: **www.antaresint.com** 

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<sup>\*</sup> Trademarks mentioned in this brochure belong to their legitimate owners and are used only and for the sole purpose of describing the application and compatibility with the defined articles.

## High energy efficiency circulators

#### **MODULEX frequency conversion circulator with controller and PWM socket**



# MODULEX UPM HYBRID CIRCULATOR

# ANTARES universal circulator for all applications and replacements

## Multiple interchangeability:

meaning that it can easily replace failed or low energyefficient circulators without stocking unnecessary spare parts, saving space, time and money.

## **High energy efficiency:**

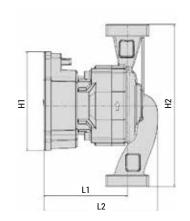
Not only it is suitable for replacing faulty circulators, but it is also equipped with high energy efficiency, which makes it ideal for new systems and renovations. It has a compact energy-efficient motor, which absorbs less energy than older generation models and therefore allows a reduction in heating system costs.

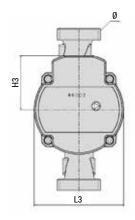
## **Multiple applications:**

- Boilers
- Traditional heating systems
- Radiant panel floor heating systems
- Mixing and heat exchange unit
- Biomass heating

- ► Universal circulator for all applications.
- ► Universal circulator for all replacements.
- ► Intelligent frequency conversion circulator with electronic control of:
  - PP Proportional Pressure
  - CP Constant Pressure
  - CS Constant Speed
  - Self Adapt Automatic Control
- ► Complies with European directives Eup/Erp with energy efficiency index ≤ 0.21.
- ► Equipped with PWM controller for external regulation.
- ► Structural quality: rotating parts made of ceramic bearings, resistant to wear.

The ANTARES MODULEX UPM- circulation pump is an intelligent frequency conversion circulator with integrated electronic differential pressure control, with the possibility of setting the regulation module and the head (differential pressure). The differential pressure is controlled by the pump speed.





#### Models and reference codes

	and reference	00400			
A	Madal	Head	Max Flow	Thread	Height
Art. code	Model	mt	m³/h	Ø	H2
P.110.69	UPMH 15-60-130		2.9	1" M.	130
P.110.60	UPMH 25-60-130	1-6	3.2	1 1/2" M.	130
P.110.68	UPMH 25-60-180		3.2	1 1/2" M.	180
P.110.89	UPMH 15-80-130		2.9	1" M.	130
P.110.84	UPMH 20-80-130		-	1 1/4" M.	130
P.110.80	UPMH 25-80-130	1-8	3.4	1 1/2" M.	130
P.110.88	UPMH 25-80-180		3.6	1 1/2" M.	180
P.110.82	UPMH 32-80-180		4.0	2" M.	180

## **Control panel**



#### **Performance curves**

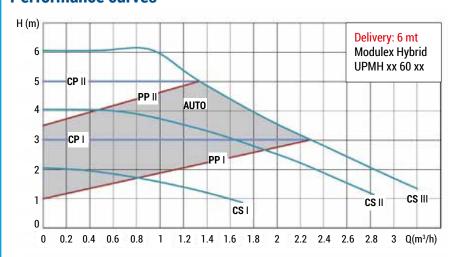
Pump performance symbols:

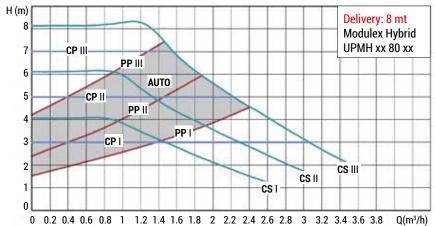
- **PP**= Proportional Pressure
- **CS**= Constant Speed
- CP= Constant Pressure
- AUTO = Self Adapt Automatic Control

Possibility to set the control mode and the delivery (differential pressure).

The differential pressure is regulated by the pump speed.

#### **Performance curves**





## **Working conditions**

- Liquid temperature: 2°C ~ 110°C
- Room temperature: 0°C ~ 40°C
- Max. system pressure: 10 bar
- Protection level: IP44
- Rated voltage/frequency:
   220 V ~ 240 V / 50 Hz
- Insulation class: E
- Characteristics of the pumped liquid: clean, free from solids and mineral oils, non-toxic, chemically neutral
- Installation: the motor shaft must be kept in the horizontal direction

More detailed technical data sheets can be requested or downloaded from our website:

www.antaresint.com



Our technical department is available for any further details

THE CIRCULATOR CAN BE INSTALLED ON PLASTIC COMPOSITE BODIES (FOR OEM)

#### **Functions of the different models**

Model		External control		
MODULEX	Proportional Pressure	Constant Pressure	Constant Curve	PWM
	I	I	I	
HYBRID	П	П	П	D1
UPMH	Ш	Ш	111	P1
	AUTO	-	-	
	1	I	I	
SOLAR UPMS	П	П	11	D2/D1
(P.023)	Ш	Ш	111	P2/P1
	AUTO	-	-	

## Universal motors with impeller for high energy efficiency replacements

### MODULEX type in frequency conversion with PWM control and socket - EEI coefficient < 0,21



Universal spare motor with high efficiency frequency conversion impeller and inverter for replacements on GRUNDFOS UPM and ALFA domestic circulators, ANTARES models and other brands with ANTI-CLOCKWISE rotation (CCW). With PWM control socket and equipped with SELF ADAPT, PP, CP, CS functions. Self-regulating with or without connecting the cable to the PWM regulator.

Distance between fixing holes 68 mm - complete with gaskets and power cables. Max head: 8 mt. - 4-year warranty.

## Compatible and interchangeable with Grundfos UPM3 and other brands



#### **Old GRUNDFOS models and other brands**

- UPM3 (all types with or without PWM controller)
- UPM2 (all types with or without PWM controller)
- ALFA2 (all types with or without PWM controller)



Old models
Grundfos UPS xx xx xxx
and other brands

# CLOCKWISE FOR WILO and other brands PWM PP CP CP CS SA 4-year warranty

Art. P.122.80

Universal spare motor with high efficiency frequency conversion impeller and inverter for replacement on WILO domestic circulators and other brands with CW rotation (CW). With PWM control socket and equipped with SELF ADAPT, PP, CP, CS functions. Self-regulating with or without connecting the cable to the PWM regulator.

Distance between fixing holes 69 mm - complete with gaskets and power cables. Max head: 8 mt. - 4-year warranty.

## Compatible and interchangeable: WILO



- PARA (all types with or without PWM controller)
- PICO (all types with or without PWM controller)
- YONOS (all types with or without PWM controller)



Old models
RS xx / X and other brands

## High energy efficiency AlfaMax and AlfaMaior circulators







#### Use:

- Boilers
- Heating and cooling systems.
- Solar systems.
- Mixing and heat exchange unit
- Biomass heating

#### **Technical characteristics:**

- Working temperature: +2°C ~ +110°C.
- Max pressure: 10 bar.
- Wet rotor pump.
- Protection class: IP42 Isolation class: F.

#### **Details:**

- Ratio of energy efficiency inferior to: 0,20.
- Electronic protection incorporated.
- Employable with water and anti-freeze liquids.

#### **Functions:**

Controlled by two buttons on front panel.

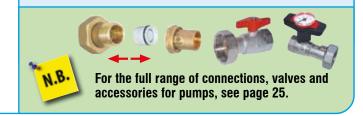
When tension is present the display lights up and shows instant power absorption.

The buttons are for:

- Setting the work mode
- Activating night reduction power

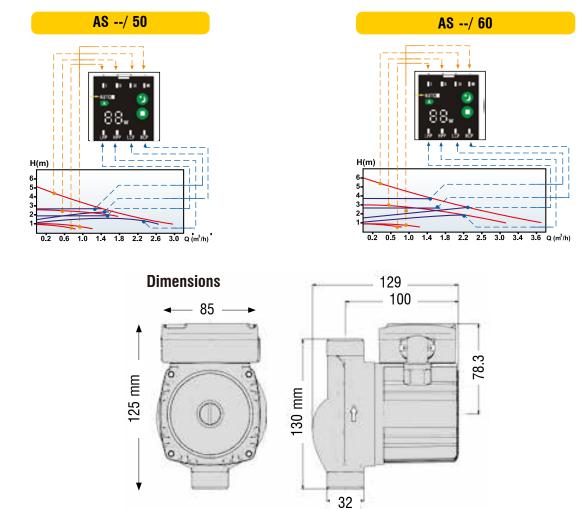
## **Setting function mode:**

- Automatic functioning in relation to the delivery required by the system so as to optimise power consumption.
- Three selectable speeds.
- · Constant pressure.
- Proportional pressure.



## Small range "AlfaMax" 5-6 mt. with sideward electronic device





AlfaMax circulating pump with wet rotor high energetic efficiency, certified in class A and with coefficiency factor EEI inferior to 0.20. With sideward electronic equipment.

Wet rotor - 2 year warranty, Already in conformity with new european leg. Erp 200/125/EC. For the insulating shell see art, P.070 page 25.

Tyber Warrandy, Findady in Comonney with now Caropolaring, Elp 200, 120, 20. Tot the including offen coc art. 1.510 page 20.						
Order code	Type AlfaMax	Max delivery mt.	Max flow lt./min.	Height H	Connections Ø	W
P.065.59	AS 15/50	5	5 50,5		1" M.	32
P.065.50	AS 25/50	3	30,3	130	1 1/2" M.	32
P.065.69	AS 15/60	6	60	130	1" M.	45
P.065.60	AS 25/60	0	00	130	1 1/2" M.	45

## Small-scale series "Alfamax" 5-6-8 mt with frontal electronic equipment





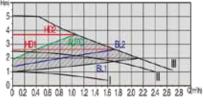
**CIRCULATION PUMP** energy class A Coefficient EEI < 0.20

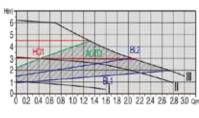


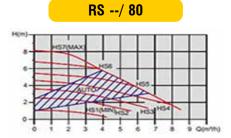
Art. P.064

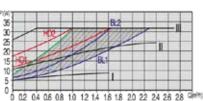
RS --/ 60

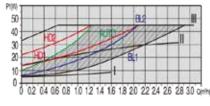
RS --/ 50





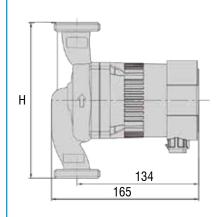






For the insulating shell see art. P.070 page 25.

#### **Dimensions**



**---88**1





with an energy efficiency coefficient EEI lower than 0.20. With display of electrical consumption. Wet rotor - 2 year warranty. Already compliant with new European directive ERP200/125/CE.

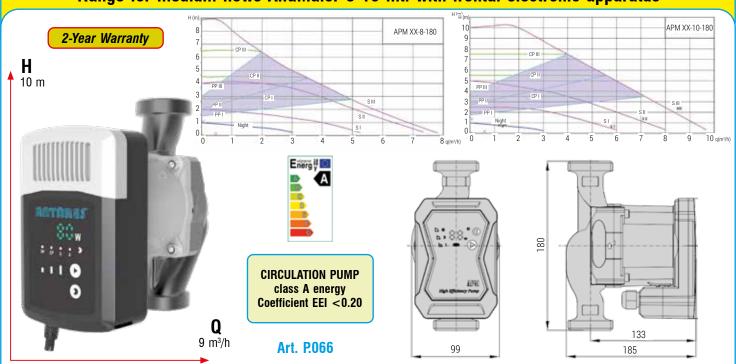


AUTO BL1 BL<sub>2</sub>



Order code Type AlfaMax Max delivery mt Max flow lt./min. Height H Connections Ø W P.064.59 RS 15/50 130 1" M. 32 P.064.50 RS 25/50 5 50 130 1 1/2" M. 32 P.064.58 RS 25/50 50 180 1 1/2" M. 32 P.064.69 RS 15/60 46 130 1" M. 45 1 1/4" M. P.064.64 RS 20/60 46 130 45 P.064.60 RS 25/60 6 53 130 1 1/2" M. 45 P.064.68 RS 25/60 1 1/2" M. 45 53 180 P.064.62 RS 32/60 180 2" M. 45 66 P.064.89 RS 15/80 70 130 1" M. 70 RS 25/80 130 1 1/2" M. P.064.84 70 70 8 P.064.80 RS 25/80 70 180 1 1/2" M. 70 P.064.82 RS 32/80 180 2" M.

# Range for medium flows AlfaMaior 8-10 mt. with frontal electronic apparatus

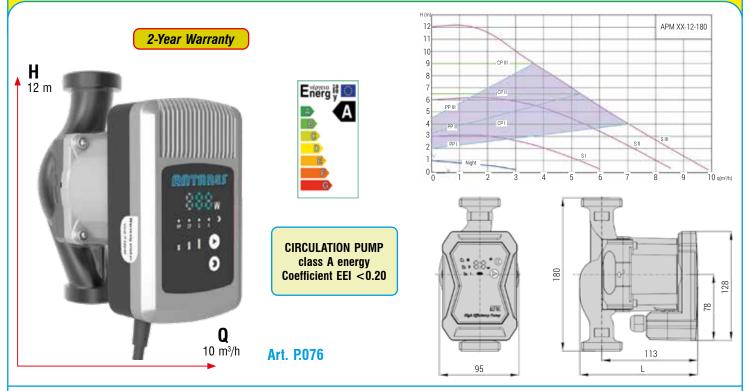


"AlfaMaior" circulation pump with wet rotor with high energy efficiency certified in class A and with coefficient of energy efficiency EEI less than 0.20. With front electronic device. For the insulating shell see art. P.070 page 25.

Complies with European directive 200/125/EC. Flow rates and head as shown in the table. 2 year warranty. Height 180 mm. Power 180 W.

To implied that European an octive 200, 120, 2011 on raced and near as one thin in the table. 2 year marrane, resigne 100 thin records					
Order code	Туре	Max delivery mt	Connections Ø	Max flow m <sup>3</sup> /h.	Power
P.066.12	APM 25/8	8	1 1/2"	8	80 W
P.066.20	APM 32/8	8	2"	8	OU W
P.066.52	APM 25/10	10	1 1/2"	9	120 W
P.066.70	APM 32/10	10	2"	9	120 W

## Range for medium flows AlfaMaior 12 mt. with frontal electronic apparatus



"AlfaMaior" circulation pump with wet rotor with high energy efficiency certified in class A and with coefficient of energy efficiency EEI less than 0.20. With front electronic device. For the insulating shell see art. P.070 page 25.

Complies with European directive 200/125 / EC. Flow rates and head as shown in the table. 2 year warranty. Height 180 mm. Power 180 W.

Order code	Туре	Max delivery mt	Connections Ø	Max flow m <sup>3</sup> /h.	Quote "L" mm.
P.076.12	APM 25/12	12	1 1/2"	10	138
P.076.20	APM 32/12	12	2"	10	143

#### Flanged series of large capacities



ANTARES circulation pump type "AlfaMega" 50-18 flanged DN 50 with high energy efficiency with rotor wet and with PWM control socket. Single-phase 240 Vac frequency modulation. Max flow rate: 31 m<sup>3</sup>/h. Max head: 18 mt.

With AUTO ADAPT function, proportional pressure control, constant pressure control, constant flow control. Body in cast iron, IP42 protection.



ANTARES circulation pump type "AlfaMega" 60-12 flanged DN 65 high energy efficiency with wet rotor and with PWM control socket, single-phase 240 Vac with frequency modulation. 750 W. - Max flow rate: 37 m<sup>3</sup>/h - Max head: 12 mt.

With AUTO ADAPT function, proportional pressure control, constant pressure control, constant flow control. Body in cast iron, IP 42 protection.

## Circulators for solar plants

4-Year Warranty



**Ethylene** Glycoles Max 50%

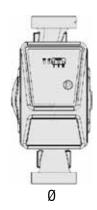
PWM1

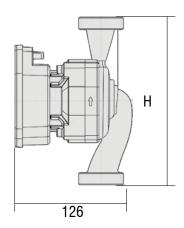
3,3 m<sup>3</sup>/h

**CIRCULATION PUMP** class A energy Coefficient EEI < 0.21 Flow rate and delivery head with reference art. P.110 on page 3



Art. P.023





ANTARES circulation pump type MODULEX SOLAR with high energy efficiency with frequency modulated inverter and with PWM2 or PWM1 parameterizable control socket, equipped with the SELF ADAPT self-adjusting function with and without PWM cable connection. Specifically suitable for solar systems.

Max flow rate: m3/h 3.3. Self-regulating. It satisfies all the needs of the circulator in a single product. Complete with gaskets and power cables. 230 Vac power supply. - 4 year warranty.

Order code	Type "Solar"	Max delivery	Height H	Connections Ø	W
P.023.89	UPMS 15-80-130	8 mt.	130	1" M.	65
P.023.80	UPMS 25-80-130	8 mt.	130	1 1/2" M.	65

## **HOW TO PLACE AN ORDER**



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#### Universal replacement motors with turbine for domestic circulators with coefficient $\geq 0.23$



These products are to be considered spare parts (components) of a circulator, therefore they can be installed because they do not come under the Eup 2016 legislation that referes to complete circulators, and not to spare parts of old circulators.

#### ANTICLOCKWISE ROTATION FOR GRUNDFOS and other brands



Art. P.084

#### **UNIVERSAL MOTORS WITH TURBINE:** (holes distance 68)

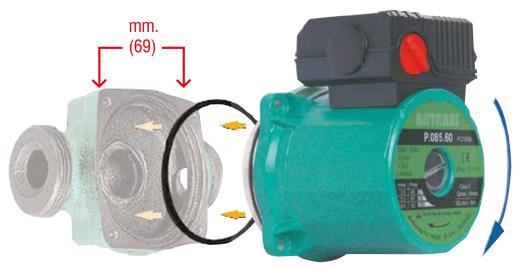
2 MODELS (ANTICLOCKWISE and CLOCKWISE) can be used in an interchangeable way on almost all the domestic circulation pumps available now on the market. With the speed control switch one can obtain the delivery according to the needs of the system.

Universal spare motor with turbine for the substitution of domestic circulation pumps "GRUNDFOS", "ANTARES" and other brands, complete with set of washers and screws. Anticlockwise rotation.

Fixing distance mm 68. Complete with adjustable speed control to obtain delivery head according to the needs of the system.

Max delivery	5 mt.	6 mt.
Order code	P.084.50	P084.60

#### **CLOCKWISE ROTATION FOR WILO and other brands**



Art. P.085

#### THE SUBSTITUTION OF THE MOTOR OFFERS MULTIPLE ADVANTAGES:

 More rapid and easier due to only the substitution of the motor.

· Less stock and financial commitment.

Universal spare motor with turbine for the substitution of domestic circulation pumps "WILO", "WSC" and other brands, complete with set of washers and screws. Clockwise rotation.

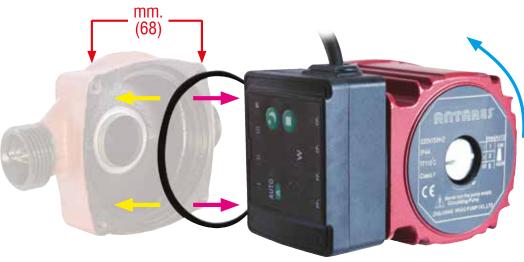
Fixing distance mm	69. Complete with adjustable speed control to obta	in delivery head according to the needs of the system.

Max delivery	5 mt.	6 mt.
Order code	P.085.50	P.085.60

#### Motors with impeller for replacements with high efficiency side inverter electronic circuit



#### **ANTICLOCKWISE ROTATION for GRUNDFOS and other brands**



#### Art. P.074

#### UNIVERSAL MOTORS WITH TURBINE: (distance between holes 68)

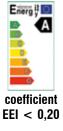
2 MODELS (ANTICLOCKWISE and CLOCKWISE) can be used in an interchangeable way on almost all the domestic circulation pumps available now on the market. The incorporated electronic inverter will automatically adjust the delivery with the system's requirements.

Universal spare motor in class "A" energy with turbine for substituting domestic circulators "GRUNDFOS", "ANTARES", and other brands. Complete of set of washers and screws. Anticlockwise.

Fixing axis 68 mm. Complete of selectionable adjustable speed, that allows for 4.5 and 6 mt delivery. 230 Vac.

Delivery mt	5	6
Order code	P.074.50	P.074.60

**CLOCKWISE ROTATION for WILO and other brands** 



# mm. (69)



#### THE SUBSTITUTION OF THE MOTOR OFFERS MULTIPLE ADVANTAGES:

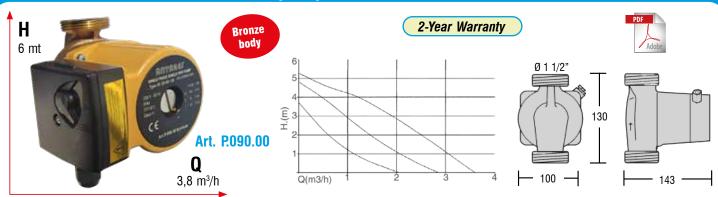
- · Quicker and easier due to just the substitution of the motor.
  - · Less stock and less financial commitment.

Universal spare motor in class "A" energy with turbine for substituting domestic circulators "WILO", "ANTARES", and other brands. Complete of set of washers and screws. Clockwise.

Fixing axis 69 mm. Complete of selectionable adjustable speed, that allows for 4, 5 and 6 mt delivery. 230 Vac.

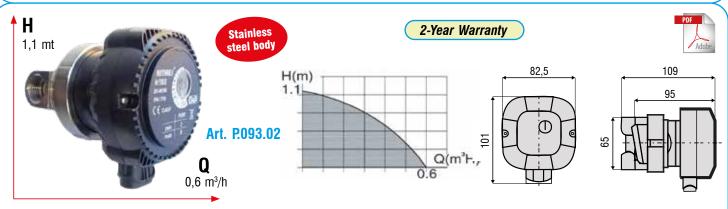
Delivery mt	5	6
Order code	P.075.50	P.075.60

## Circulation pumps for domestic hot water



Antares circulation pump for domestic hot water, with bronze body. - 230 V - 50 Hz - 2 years warranty.

Connections: 1 1/2" M. - 96 W. - Max. Pressure 10 bar.



High energy efficiency circulation pump for domestic hot water W = 9 - 230 V. - 50 Hz. Stainless steel body.

Connections: 1/2 "F. - Maximum pressure 10 bar - Head: 1.1 mt. - Flow rate: 10 lt./min.



ANTARES circulation pump for domestic hot water type HOTMATIC 15-1.5 with high energy efficiency with brass body. Consumption: 5 W - 230 Vac.

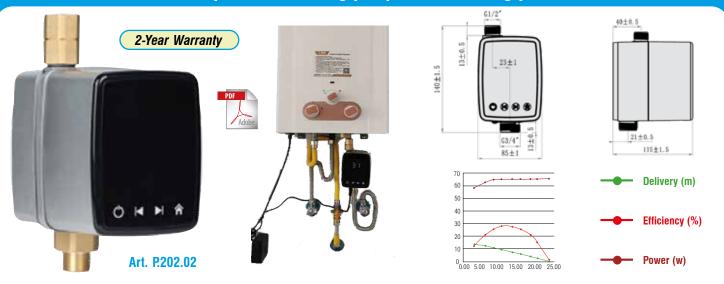
Connections: 1 "F. - Complete with insulating shell. Capacity: 0,9 m<sup>3</sup>/h - Head 1,5 mt.



ANTARES circulation pump for domestic hot water type HOTMATIC 15-1.5 with high energy efficiency with brass body. Consumption: 5 W - 230 Vac.

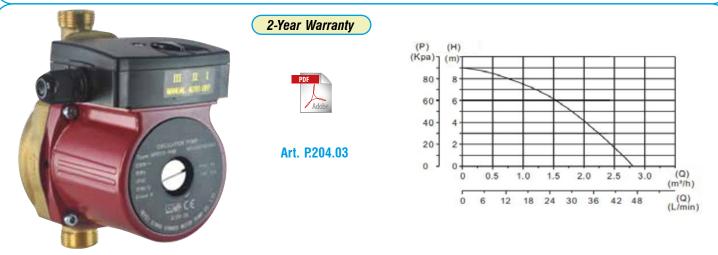
Connections: 1 "F. - Complete with insulating shell. Capacity: 0,9 m<sup>3</sup>/h - Head 1,5 mt. With electronic control display with programming for: - operation at hourly intervals over 24 hours - operation with temperature control - function washing to avoid the formation of bacterial colonies.

#### **Automatic pressure boosting pumps for increasing pressure**



#### Pressure boosting pump for ANTARES sanitary water type PLUSPRESSION with high energy efficiency, with brass body.

Complete with integrated flow switch that allows automatic start and stop. Particularly suitable for increasing the inlet pressure of boilers when the available pressure is low and does not allow adequate pressure for the use of hot water in the shower. Connection: 1/2". With electronic control display. Dimensions: 140 x 115 x 85 mm. -Power supply: 230 Vac. - Flow rate: 10 I / min Head: 10 m.

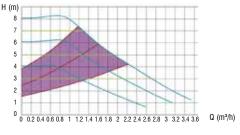


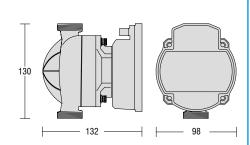
#### Pressure boosting pump for ANTARES sanitary water type BOOSTER PRESSION 15-9AB with brass body.

3/4" connections, complete with brass unions. Distance between the fixing holes: 160 mm. With titration valve and flow switch integrated, which allows automatic start and stop. Power: 120 W - 230 Vac. Delivery: 9 mt. - Flow rate: 1.78 m³/h. Conceived for increase the pressure of the domestic water supplied by an external source and make it available for showers, taps and other withdrawal points.

## Circulators with plastic bodies for customized boilers







Art. P.061.80 - High energy efficiency domestic hot water recirculation pump 230 V. Anti-clockwise rotation (CCW).

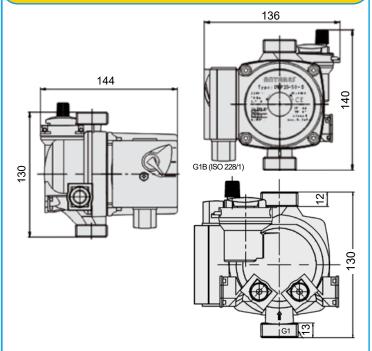
Plastic body. Connection 1" M. Height of the connections: 130.

## Plastic body standard connections: H 130 - Ø 1" - Compatible with WILO type Ku - Grundfos type Cacao

## Not modulating

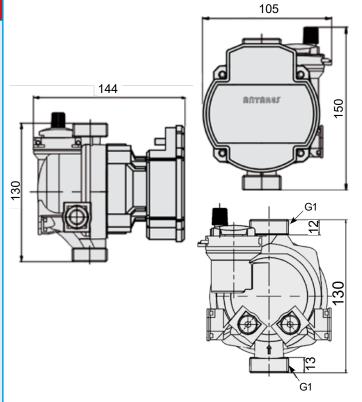


With EC amendment (October 2019) the use of circulators with EEI coefficient higher than 0.23, replacing the integrated ones in boilers is still allowed until 01 January 2022. Therefore, ANTARES will continue to produce them for the extra EU market and a distribute them until that date in the EU market.



## **Modulating with PWM control**





## Antares circulation pump with air separator and automatic deaerator. Plastic composite body. Compatible with Wilo type Ku and GRUNDFOS type Cacao.

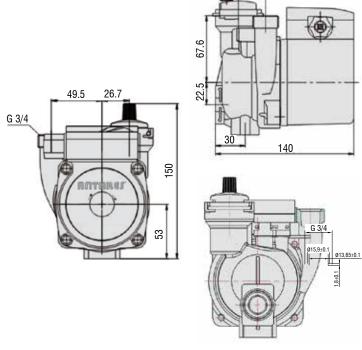
Connections: 1 "M. - Height of connections: 130. - 230 V - 50 Hz - Complete with cables for modulating models.

Order code	Туре	Max delivery mt	
P.062.98	Modulating - EEI < 0,20	8 self-regulating with PWM socket	
P.062.63 Until stocks last	Not modulating - EEI > 0,20	6	

### Compatible: Wilo NFSL12/6 - Ariston MTS, Arca, Biasi, Savio and others.

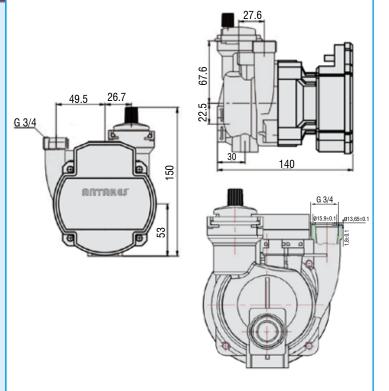
## Not modulating





## **Modulating with PWM control**



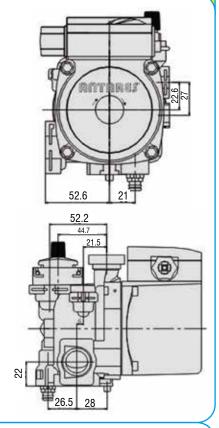


#### Antares circulation pump with air separator and automatic deaerator. Plastic composite body. Compatible with Wilo and Grundfos.

	· · · · · · · · · · · · · · · · · · ·		
Order code	Туре	Max delivery mt	
P.030.90	Modulating - EEI < 0,20	8 self-regulating with PWM socket	
P.030.60 Until stocks last	Not modulating - EEI > 0,20	6	

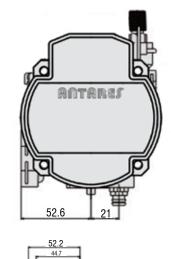
## Compatible: Wilo FRSL15/6 - FERROLI: Domitech, Domiproject, Divatop and others.

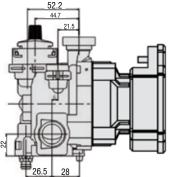




## **Modulating with PWM control**







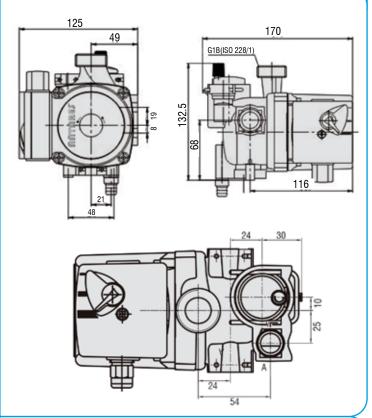
#### Plastic composite body circulator with built-in automatic deaerator.

Order code	Туре	Max delivery mt		
P.032.90 Modulating - EEI < 0,20		8 self-regulating with PWM socket		
P.032.60 Until stocks last	Not modulating - EEI > 0,20	6		

## Compatible: GRUNDFOS CAOD - WILO KSL 15/6 - VAILLANT, VIESSMANN and others.

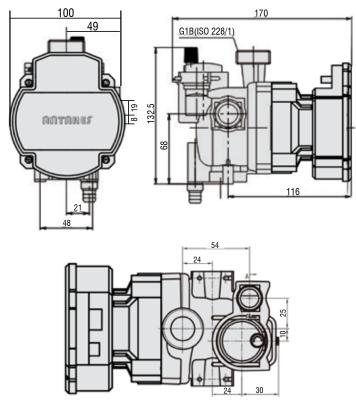
## Not modulating





## **Modulating with PWM control**



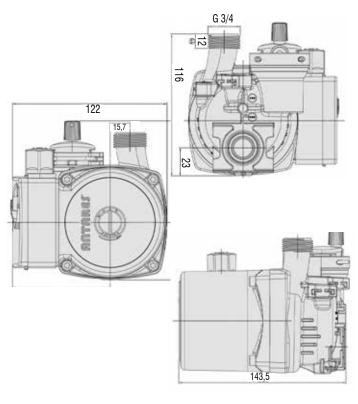


#### Plastic composite body circulator with built-in automatic deaerator.

Order code	de Type			
P.034.90	Modulating - EEI < 0,20			
P.034.60 <i>Until stocks last</i>	Not modulating - EEI > 0,20	6		

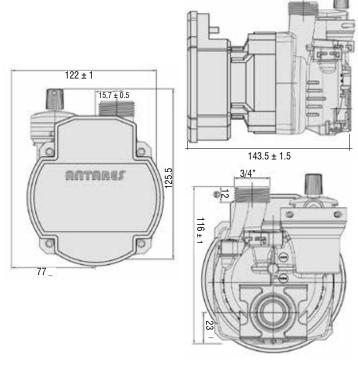
## Compatible: GRUNDFOS CESAO2 - JUNKERS BOSCH - DE DIETRICH and others.





## **Modulating with PWM control**





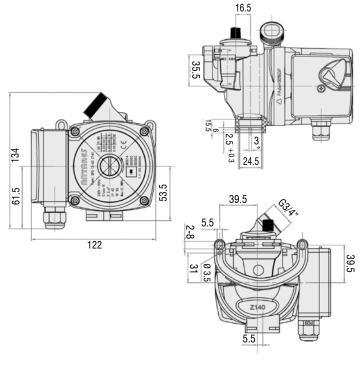
#### Plastic composite body circulator with built-in automatic deaerator.

	7			
Order code	Туре	Max delivery mt		
P.036.90	Modulating - EEI < 0,20	8 self-regulating with PWM socket		
P.036.00 Until stocks last	Not modulating - EEI > 0,20	6		

## Compatible: RIELLO - BERETTA - VOKERA (Family Residence) and others.

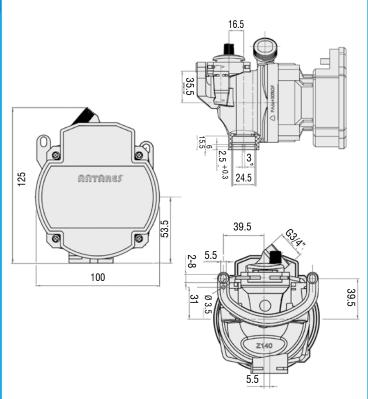
## Not modulating





## Modulating with PWM control





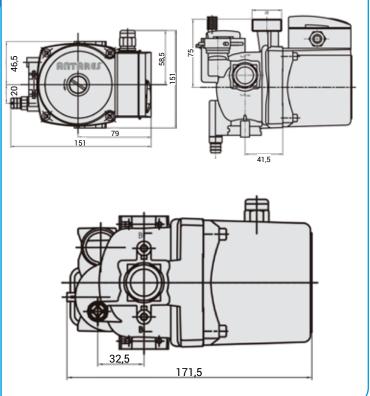
#### Plastic composite body circulator with built-in automatic deaerator.

Order code	Туре	Max delivery mt	
P.038.90	Modulating - EEI < 0,20	8 self-regulating with PWM socket	
38.00 <i>Until stocks last</i> Not modulating - EEI > 0,20		6	

## Compatible: GRUNDFOS AOKR - WILO KSL - SIME and others.

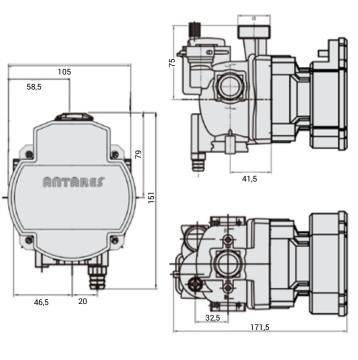
#### Not modulating





## **Modulating with PWM control**





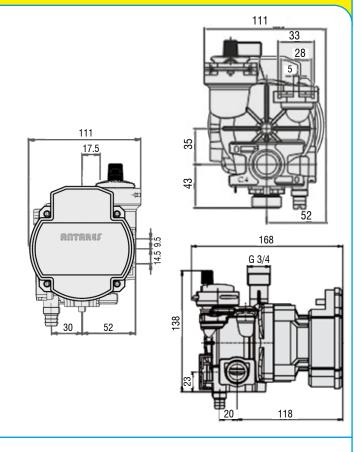
Antares circulation pump with air separator and automatic deaerator. Plastic composite body. Compatible with Wilo KSL and Grundfos.

Order code	Туре	Max delivery mt	
P.039.90	Modulating - EEI < 0,20	8 self-regulating with PWM socket	
P.039.00 Until stocks last	Not modulating - EEI > 0,20	6	

#### Compatible: ARCA boilers and others.

# **Modulating with PWM control**





#### Plastic composite body circulator with built-in automatic deaerator.

For the performance curves see Art. P.110. 230 V 50 Hz - Complete with cables for the modulating model.

Tot the performance during the 1.1770. 200 V 00 TIZ Obmptote with dubled for the modulating model.				
Order code	Туре	Max delivery mt		
P.040.90	Modulating - EEI < 0,20	8 self-regulating with PWM socket		

#### **Tools and accessories for circulators**

## Power cables and socket adapters



Art. P.160.01

Power cord plug adapter GRUNDFOS for socket MODULEX circulator Art. P.110.



Art. P.161.01

WILO power cable plug adapter for socket of the **MODULEX circulator Art. P.110.** 



PWM controller cable plug adapter **GRUNDFOS for socket MODULEX circulator** Art. P.110.

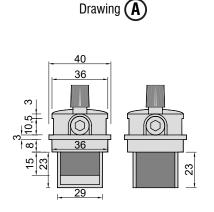


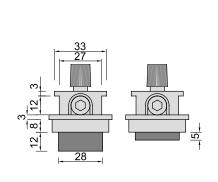
Art. P.164.01

PWM controller cable plug adapter WILO for socket MODULEX circulator Art. P.110.

#### Heads for built-in deaerator







Drawing (B)

Head for automatic vent valve, spare part for deaerators mounted on circulators.

Order code	Drawing	Туре		
P.088.00	А	CALEFFI - GRUNDFOS - WILO		
P088.01	В	SHINHOO and others		



COMPATIBLE WILO GRUNDFOS CALEFFI

Art. P.089.03

Brass head for relief valve automatic replacement for deaerators type CALEFFI - ANTARES and others.

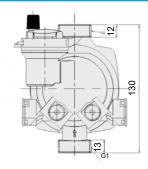


For the complete range of unions, valves and accessories for circulators, see the following pages.

#### **Bodies for circulators**



Art. P.151.68

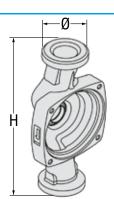


Replacement plastic composite body for circulator with automatic deaerator. Height: 130 mm - 1"M. connections.

Compatible for anticlockwise rotation with GRUNDFOS cacao-type models. Coupled to motors with impeller art. P.084.xx, P.074.xx or P.121.80 it can make up a complete circulator. Distance between fixing holes 68 mm.



Art. P.153



#### Spare cast iron body for circulator with anticlockwise rotation (CCW).

Compatible with GRUNDFOS, ANTARES, and other brands with 68 mm distance between the fixing holes. Coupled to motors with impeller Art. P.084. xx, P.074.xx, P.121.80 can make up a complete circulator.

Order code	Ø	Н		
P.153.10	1"	130		
P.153.12	1 1/2"	130		
P.153.20	1 1/2"	180		



Art. P.155.08

Kit for coupling the circulator body (P.151.xx and P.153.xx) on the engine.

Consisting of 1 NBR rubber gasket and 4 bolts for fixing



Art. P.070

Black polystyrene insulating shell for thermal insulation of bodies circulators.

Order code	Н	Suitable for series		
P.070.13	130	P.110 - P.023 - P.065		
P.070.24	130	P.020 - P.064		
P.070.18	180	P.110		
P.070.20	180	P.066 - P.076		
P.070.28	180	P.064		

## **Valves and Accessories for Circulation Pumps**



Art. P.001

Pair of unions for circulators, consisting of swivel, shank and gasket.

•						
Swivel F.	1" F.	1" F.	1 1/2" F.	1 1/2" F.	1 1/2" F.	2" F.
Spigot	1/2" F.	3/4" M.	1" M.	1" F.	1 1/4" M.	1 1/4" F.
Material	Brass	Brass	Brass	Steel	Steel	Steel
Order code	P.001.52	P.001.54	P.001.11	P.001.10	P.001.14	P.001.24

Art. P.002



Brass union with insertion check valve in nylon that can be positioned in both directions.

To ensure a single direction of flow to prevent possible contaminations. Complete with gasket.

Nut	3/4" F.	1" F.	1 1/4" F.	1 1/2" F.	1 1/2" F.
Spigot	1/2" M.	3/4" M.	1" M.	1" M.	1 1/4" M.
Order code	P.002.02	P.002.03	P.002.30	P.002.10	P.002.14





Art. P.003

Plastic check valve with internal insertion, equipped with stainless steel circular seal spring with 0-ring.

Diameter Ø	10 mm.	15 mm.	20 mm.	25 mm.	32 mm.
Order code	P.003.10	P.003.15	P.003.20	P.003.25	P.003.32

from 130 to 180 mm

Art. P.004.12



Brass extension 1 1/2 "M.F. to adapt the height of the 130 mm circulator, to 180 mm.

from H 130 to 180 mm - from Ø 1" to 1 1/2" M.





Art. P.005.18

Pair of extension fittings and increase of diameter to adapt circulators from Ø 1 "to Ø 1 1/2" M., extension from 130 to 180 mm.





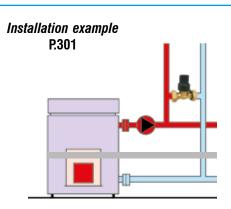
Art. P.008

Pair of thread oversize rings for replacement of the circulators that have smaller connections, complete with gaskets.

Diameter Ø	1 1/2" M. x 1" F.	1 1/2" M. x 1 1/4" F.	2" M. x 1" F.	2" M. x 1 1/2" F.
Order code	P.008.12	P.008.24	P.008.21	P.008.20



Art. P.301



Differential balancing module for the elimination of overpressure caused by the automatic closure of zones of the plant. Suitable to be applied on the prearranged connections of the ball valve outlets, in the modules of DN 25 re-launch (Art. E.321, E.623 and E.624).

Adjustment scale:  $2 \div 6.5$  mt. - The valve is calibrated by bringing the pointer in correspondence with the measured value on the graduated scale stamped on the valve.

Connections	3/4" F. swivel x 3/4" F. swivel	3/4" F. swivel x copper pipe 15
Order code	P301.03	P.301.05



Hex key with "T" handle. For easy replacement of circulation pump motors.

For easi	replacement replacement	nf	circulation	nıımn	motors
I UI UUUI	ιιοριασσιποπι	U1	unuanun	DUILID	milliotoro.

Order code	Size mm.
F.812.05	4
F.812.06	5



Ball valve with 1 1/2 "F. union connection with handle "ISO T" extended to "T" suitable for systems with insulation thermal. In nickel-plated brass CW617 UNI EN 12165. Color of the handle can be determined by two red and blue plates in equipment.

The nylon handle is designed and prepared for housing of the thermometer E.479.00. Max pressure 20 bar.

Prepared for	thermometer
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Туре	Without check valve		With che	eck valve
Connection	1"F1 1/2"F. swivel	1 1/4"F1 1/2"F. swivel	1"F1 1/2"F. swivel	1 1/4"F1 1/2"F. swivel
Order code	E.478.10	E.478.14	E.478.90	E.478.94

#### With thermometer, red color

Туре	Without check valve		With che	eck valve
Connection	1"F1 1/2"F. swivel	1 1/4"F1 1/2"F. swivel	1"F1 1/2"F. swivel	1 1/4"F1 1/2"F. swivel
Order code	E.478.50	E.478.54	E.478.80	E.478.84



Art. E.431.22

Brass gate valve with union connection Ø 22 x 1 1/2 "F. swivel and connection for copper pipe for pump or others appliances. Min temperature 0  $^{\circ}$  C, max + 90  $^{\circ}$  C.



Brass ball valve with union connection for pump.

Maneuver with butterfly lever. Fixed 1 "female for female 1 1/2 "F. swivel.

Туре	Without check valve	With check valve
Order code	E.432.10	E.432.90



**Art. E.430** 

Brass ball valve with union connection for pump with screwdriver adjustment.

Connections	1 1/2" F. swivel x 1" M.	1 1/2" F. swivel x 1" F.	1 1/2" F. swivel x copper pipe Ø 22	1 1/2" F. swivel x copper pipe Ø 28
Order code	E.430.10	E.430.00	E.430.22	E.430.28





Art. E.429

#### Full bore ball valve with female union.

Maximum pressure 30 bar - In nickel-plated brass with lever a butterfly.

Туре	Without d	rain cock	With dra	ain cock
Diameter Ø	3/4" F. x 1/2" F. 1" F. x 3/4" F.		3/4" F. x 1/2" F.	1" F. x 3/4" F.
Order code	E.429.02	E.429.03	E.429.92	E.429.93



Monobloc ball valve with pump connection and two connections side with colored thermometer holder handle and thermometer. Max pressure: 10 bar - Thermometer scale:  $0 \, ^{\circ} \, C \, \div \, 120 \, ^{\circ} \, C$ . Connections 1 "F. x 1 1/2" F. swivel.

Order code	Handle colour	Model with
E.435.10	Blue	Check valve + disconnection
E.435.12	Red	-



One-piece ball valve with pump connection, with handle colored thermometer holder. Max pressure: 10 bar. Connection 1 1/4 "F. x 2" F. swivel.

Order code	Handle colour	Model with
E.437.20	Blue	Thermometer: 0°C ÷ 120°C + check valve
E.437.22	Red	Thermometer: 0°C ÷ 120°C



Art. E.438.03

Module mounted ball valve with pump connection and red pocket handle for thermometer and thermometer. Thermometer scale: 0 ° C ÷ 160 ° C. Check valve and fixing holes.

Max pressure: 10 bar - Temp. max: 140 ° C - 3/4 "F. x connections 1 "F. swivel.



Art. E.439.03

Module mounted ball valve with pump connection side connection 3/4" F with blue coloured handle pocket thermometer and thermometer. Thermometer scale:  $0^{\circ}C \div 160^{\circ}C$ . Check valve and fixing holes.

Max pressure: 10 bar -Temp. max: 140°C - 3/4 "F connections. x 1 "F. swivel.



Art. E.606



Module consisting of 2 ball valves with screwdriver adjustment from 1 "M. x 1 1/2" F. swivel, complete with 4 gaskets and a tube 1 1/2 "M. x 1 1/2" M. to compensate for the pump distance.

Height of the compensation of the pump mm.	130	180	
Model	Without pocket	Without pocket	With n° 2 incorporated sheaths for probes of temperature: 1 with Ø int. 10 for thermal probe. 1 with Ø int. 7 for safety thermostat.
Order code	E.606.12	E.606.00	E.606.18

