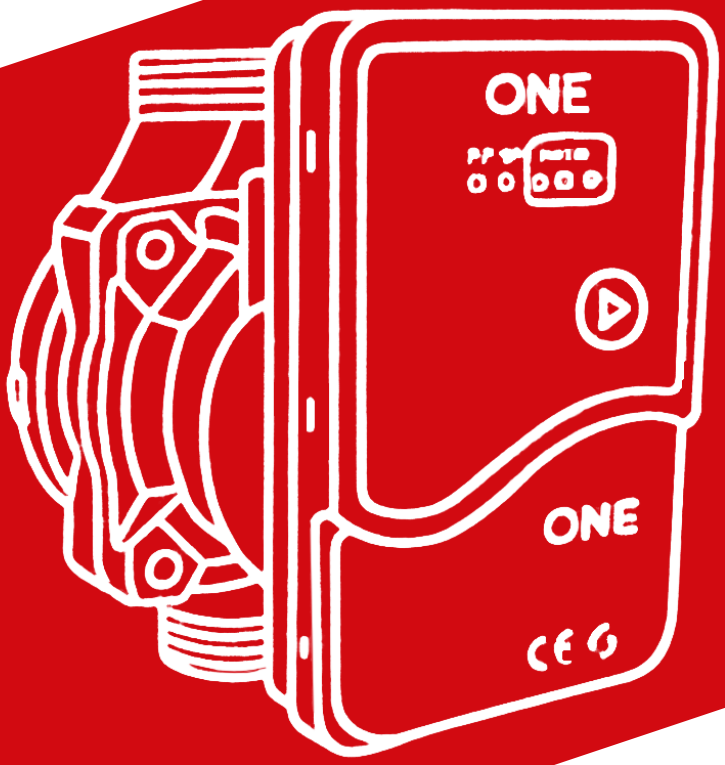
ONE PUMP

CATALOGUE · 1/2026



HEATING·CONDITIONING·SOLAR·HEALTHCARE·DRAINAGE









In recent years, One Pump has consolidated its presence in the circulator market for Plumbing and heating systems, thanks to a concrete, reliable technical offering that meets industry needs. With the introduction of the new OPE 10 with encapsulated motor and Neos 3F with electronic three-phase motor, One Pump continues to invest in technological solutions designed to simplify the work of installers and OEMs. This focus on quality, combined with ongoing testing and development, has allowed us to build a trusting relationship with installers, designers, and distributors in the residential and professional sectors.

The range of circulators is designed to offer high performance in applications ranging from boilers and heat pumps to central heating systems and spare parts. Each product is developed to rigorous standards and subjected to constant checks throughout the production cycle, with solutions designed to simplify integration and increase reliability: from the advanced protection of the OPE 10 encapsulated motor to the efficient and stable management of the Neos 3F three-phase electronic control unit.

Complete testing in One Pump laboratories in Italy:

- Environmental and climatic tests
- High humidity (85–95% RH at 40°C ambient temperature with fluid at 7°C): check the reliability of the motor and electronics.
- Cyclic condensation: thermo-hygrometric variations for testing insulating and electrical materials.
- Prolonged stress (up to 95% RH at 55°C for 48–96 h): continuous humidity resistance.
- Rapid thermal shock (IEC 60068-2-14): mechanical and electrical resistance in the presence of strong temperature changes.
- Electrical and electronic tests
- Insulation and dielectric strength: testing on motors and electronic components.
- Electromagnetic Compatibility (EMC): for stable operation in any environment.
- Resistance to overvoltages and electrical disturbances.
- Burn-in test: operation under load to identify any initial defects.

These tests guarantee the reliability of the circulators even in the presence of glycol-based fluids and in operating conditions from -5°C to +110°C, typical of boilers, heat pumps and refrigeration circuits, ensuring continuity of service even in the most critical applications and in OEM supplies.

RELIABILITY AND ASSISTANCE EVERYWHERE

One Pump is supported by a network of over 400 points of sale distributed throughout Italy, where you can find spare parts, accessories and specialized technical support.

The product is covered by a comprehensive warranty, with directly managed support by qualified technicians, without external call centers or intermediaries.

CONSTRUCTION QUALITY AND DURABILITY OVER TIME

Quiet operation, energy efficiency, robustness, and long-term reliability are the result of careful and methodical design. One Pump circulators are not simply components, but technical solutions that improve system performance, reduce operating costs over time, and—with the OPE 10 and Neos 3F—further raise the bar in terms of motor protection, electronic control, and integration for installers and manufacturers.

One Pump is a registered trademark of One Pump srl
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One Pump offers a complete range of high-efficiency electronic circulators, designed to guarantee optimal performance and significant energy savings.
Ideal for heating, cooling and circulation of domestic water,
Our circulators are the perfect solution for applications in both residential and commercial buildings, ensuring reliability, advanced technology and compliance with regulations.
most recent.

INDEX

RESIDENTIAL HEATING CONDITIONING

ERP READY

ONE PUMP

GPA 7.5 III PRO

Standard single wet rotor circulator with threaded connections, self-protected high-efficiency motor with EC technology for electronic performance regulation.

Fluid temperature from:**+5°C**to**+95°C**
Max Power Consumption (W):**60 watt**

SPECIAL FEATURES
PRODUCT BENEFITS:

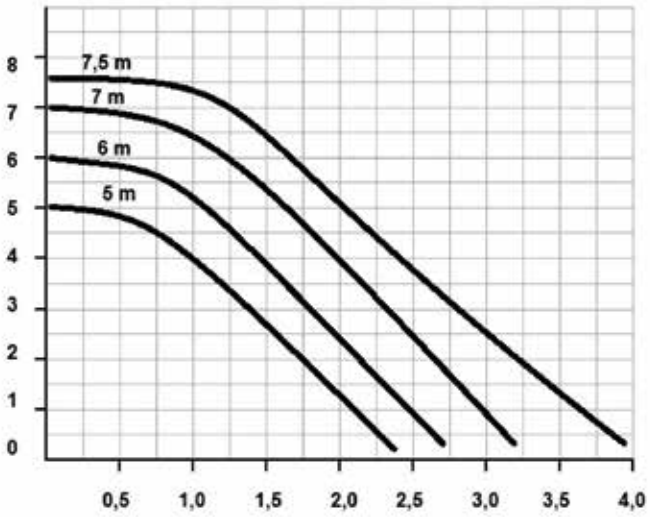
- One button for adjustment
- 4 selectable curves: 5m, 6m, 7m and 7.5m
- External regulation possibility PWM1/A EEI ≤ 20
- Superseal Cable 1.5m
- Minisuperseal PWM1/A cable

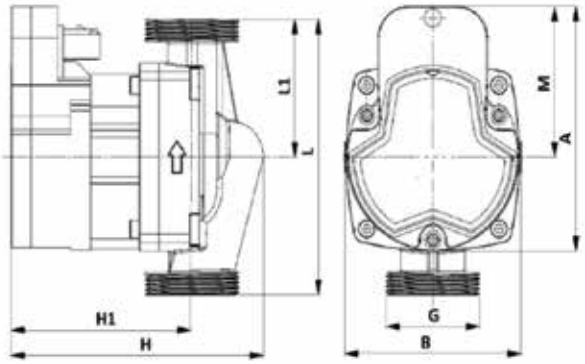
TECHNICAL DATA SHEET
Pump body:**Grey Cast Iron**
Impeller:**Composite material**
Tree:**Stainless Steel**
Standard high efficiency circulator:**GPA**
Nominal diameter of the connection (Rp/DN):**20/25/32**
Version:**III Pro**
Prevalence field:**7.5m**
Wheelbase:**130/180 mm**

TECHNICAL DATA	
Allowed fluids	
Heating water according to VDI 2035 and UNI 8065. Mixture of water and glycol Max 1:1	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	from +5°C to +95°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Protection level	IP 44
Insulation class	H

Standard single wet rotor circulator with threaded connections, self-protected high-efficiency motor with EC technology for electronic performance regulation.

- Min. and max. range: from 0.4 m3/ha 4 m3/h
- Head: up to 7 m - 4 selectable curves + PWM1
- Type of liquid: clean, free from solids and/or minerals, non-viscous, chemically neutral, close to the characteristics of water
- Maximum percentage of glycol: 50%
- Min. and max. liquid temperature: from +5° to +95°C
- Maximum working pressure bar/kPa: 10 bar /1000kPa
- Thread: 1" - 1" ½ and 2" - Center distance 130 or 180 mm
- Efficiency index (ERP standard): EEI ≤ 0.21
- Motor insulation class: IP X4
- Energy efficiency index: F
- Impeller construction material: technopolymer
- Hydraulic construction material: cast iron with cataphoresis treatment
- Single-phase power supply: 230 V 50/60 Hz
- Possible installation type: fixed with horizontal motor axis





MODEL	G	THE	B	M	TO	L1	H	H1
GPA 20-7.5-III-PRO-130	1"	130	89.5	71	115	65	128.9	93.4
GPA 25-7.5-III-PRO-130	1" 1/2	130	89.5	71	115	65	130.5	93.4
GPA 25-7.5-III-PRO-180	1" 1/2	180	89.5	71	115	65	130.5	93.4
GPA 32-7.5-III-PRO-180	2"	180	89.5	71	115	65	130.5	93.4

GPA III PRO /1 ~ 230V / PN10 / EE ≤0.20 / 50/60Hz

THREADED AND FLANGED CONNECTIONS / Heating

MODEL	CODE	LIST	ATTACK	WEIGHT (KG)	N. CURVES	PWM1/A		Flow rate m3/h								
								0	0.5	1	1.5	2	2.5	3	3.5	4
GPA 20-7.5-III-PRO-130	4CI0001C		1"	1.9	4	YES	Meters	8	8	7.9	6.5	5	3	1		
GPA 25-7.5-III-PRO-130	4CI0002C		1" 1/2"	1.9	4	YES		8	8	7.9	6.5	5	3	1	0.6	
GPA 25-7.5-III-PRO-180	4CI0003C		1" 1/2"	2	4	YES		8	8	7.9	6.5	5	3	1	0.6	
GPA 32-7.5-III-PRO-180	4CI0021C		2"	2	4	YES		8	8	7.9	6.5	5	3	1.2	0.8	0.4

RESIDENTIAL | HEATING | CONDITIONING | SOLAR

ONE PUMP

OPE 6 IPWM1-2
OPE 8 IPWM1-2

Standard single wet rotor circulator with threaded connections, self-protected high-efficiency motor with EC technology for electronic performance regulation.

Fluid temperature from:**-20°C**to**+110°C**
Max Power Consumption (W):**95 watt**

DEGASSING function

SPECIAL FEATURES
PRODUCT BENEFITS:

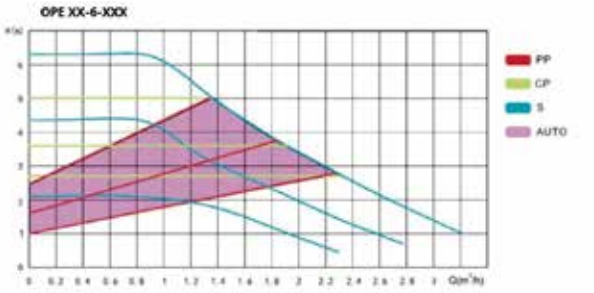
- One button for adjustment
- 9 CURVES - PWM1 - PWM2 - Auto
- 3 dP/V - 3 dP/C - 3 fixed speeds
- EEI ≤ 0.20
- 1.5m power cable
- PWM1/A - PWM2/A Signal Cable

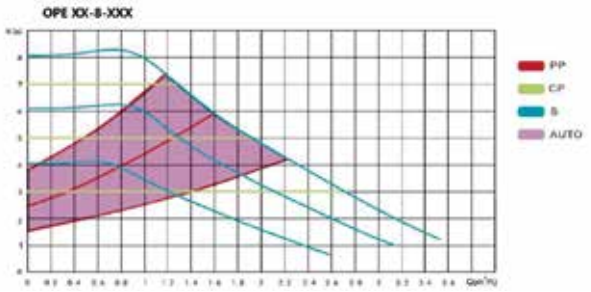
TECHNICAL DATA SHEET
Pump body:**Grey Cast Iron**
Impeller:**Composite material**
Tree:**Stainless Steel**
Standard high efficiency circulator:**OPE**
Nominal diameter of the connection (Rp/DN):**20/25/32**
Version:**OPE**
Prevalence field:**6 - 8m**
Wheelbase:**130/180 mm**

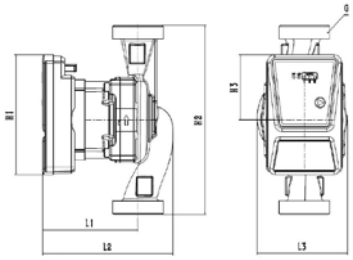
TECHNICAL DATA	
Allowed fluids	
Heating and cooling water according to VDI 2035 and UNI 8065. Mixture of water and glycol Max 1:1	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	from -20°C to +110°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Protection level	IP 44
Insulation class	H

Standard single wet rotor circulator with threaded connections, self-protected high-efficiency motor with EC technology for electronic performance regulation.

- Min. and max. range: from 0.4 m3/ha 4 m3/h
- Head: up to 8 m - 4 selectable curves + PWM1
- Type of liquid: clean, free from solids and/or minerals, non-viscous, chemically neutral, close to the characteristics of water
- Maximum percentage of glycol: 50%
- Min. and max. liquid temperature: -20° to +110°C
- Maximum working pressure bar/kPa: 10 bar /1000kPa
- Thread: 1-1" ½-2"- Center distance 130 or 180 mm
- Efficiency index (ERP standard): EEI ≤ 0.20
- Motor insulation class: IP X4
- Energy efficiency index: F
- Impeller construction material: technopolymer
- Hydraulic construction material: cast iron with cataphoresis treatment
- Single-phase power supply: 230 V 50/60 Hz
- Possible installation type: fixed with horizontal motor axis







MODEL	L1	L2	L3	L4	H1	H2	H3	Net Weight	Gross weight
OPE 20-6-130-IPWM 1-2	93	126	86	114	130	62	1" GAS	1.4	1.8
OPE 25-6-130-IPWM 1-2	93	126	86	114	130	62	1" 1/2	1.5	2.0
OPE 25-6-180-IPWM 1-2	93	126	86	114	180	62	1" 1/2	1.7	2.2
OPE-32-6-180-IPWM 1-2	93	126	86	114	180	62	2"	1.9	2.5
OPE 20-8-130-IPWM 1-2	93	126	86	114	130	62	1" GAS	1.4	1.8
OPE 25-8-130-IPWM 1-2	93	126	86	114	130	62	1" 1/2	1.5	2.0
OPE 25-8-180-IPWM 1-2	93	126	86	114	180	62	1" 1/2	1.7	2.2
OPE-32-8-180-IPWM 1-2	93	126	86	114	180	62	2"	1.9	2.5

OPE /1 ~ 230V / PN10 / EE ≤0.21 / 50/60Hz

THREADED CONNECTIONS / Heating - Air Conditioning - Solar

MODEL	CODE	LIST	ATTACK	WHEELBASE (MM)	WEIGHT (KG)	N. CURVES	AUTO FUNC.	PWM1/A	PWM2/A		Flow rate m3/h							
											0	0.5	1	1.5	2	2.5	3	3.5
OPE 20-6-130-IPWM 1-2	4CI0070C		1"	130	2	9	YES	YES	YES	Meters	6.2	6.2	6	5	3.4	2.5	1.5	1
OPE 25-6-130-IPWM 1-2	4CI0071C		1" 1/2	130	2.2	9	YES	YES	YES		6.2	6.2	6	5	3.4	2.5	1.5	1
OPE 25-6-180-IPWM 1-2	4CI0072C		1" 1/2	180	2.3	9	YES	YES	YES		6.2	6.2	6	5	3.4	2.5	1.5	1
OPE-32-6-180-IPWM 1-2	4CI0073C		2"	180	2.3	9	YES	YES	YES		6.2	6.2	6	5	3.4	2.5	1.5	1
OPE 20-8-130-IPWM 1-2	4CI0074C		1"	130	2	9	YES	YES	YES		8	8.1	8	6	4.9	3.5	2.4	1.5
OPE 25-8-130-IPWM 1-2	4CI0075C		1" 1/2	130	2.2	9	YES	YES	YES		8	8.1	8	6	4.9	3.5	2.4	1.5
OPE 25-8-180-IPWM 1-2	4CI0076C		1" 1/2	180	2.3	9	YES	YES	YES		8	8.1	8	6	4.9	3.5	2.4	1.5
OPE-32-8-180-IPWM 1-2	4CI0077C		2"	180	2.3	9	YES	YES	YES		8	8.1	8	6	4.9	3.5	2.4	1.5

OPE 10

Standard single wet rotor circulator with threaded connections, self-protected high-efficiency motor with EC technology for electronic performance regulation.
3 dP/V - 3 dP/C - 3 fixed speeds
Auto

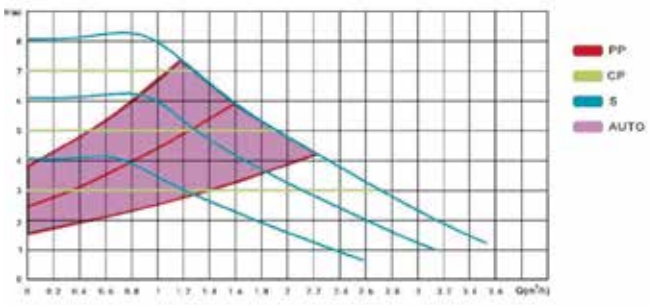
Fluid temperature from:**-20°C**to**+95°C**
Max Power Consumption (W):**180 watt**

SPECIAL FEATURES
PRODUCT BENEFITS:
- One button for adjustment
- 3 dP/V - 3 dP/C - 3 fixed speeds - Auto
- EEI ≤ 23
- 1.5m Molex cable

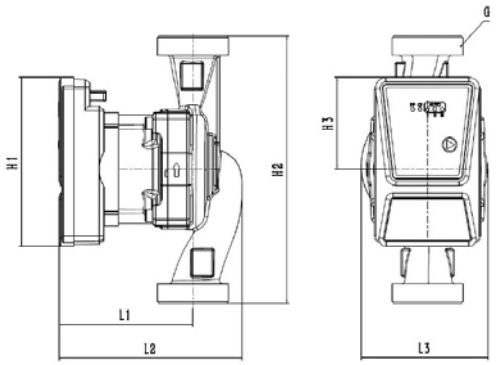
TECHNICAL DATA SHEET
Pump body:**Grey Cast Iron**
Impeller:**Composite material**
Tree:**Stainless Steel**
Standard high efficiency circulator:**OPE**
Nominal diameter of the connection (Rp/DN):**25/32**
Version:**10**
Prevalence field:**10m**
Wheelbase:**180 mm**

TECHNICAL DATA	
Allowed fluids	
Heating and cooling water according to VDI 2035 and UNI 8065. Mixture of water and glycol Max 1:1	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	from -20°C to +110°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Protection level	IP 44
Insulation class	H

Standard single wet rotor circulator with threaded connections, high-efficiency self-protected motor with EC technology for electronic performance regulation, and internally encapsulated motor in gel ("Gel-Seal") with high dielectric stability: the gel fills the internal volumes, eliminating air pockets and dew points, creating a continuous barrier that makes the motor sealed against condensation generated by the differential between external and internal temperatures. This solution increases reliability over time by protecting the windings and electronics, improves dielectric insulation, reducing the risk of leakage, and helps dampen micro-vibrations, benefiting structural noise.



- Min. flow rate and max.: from 1 m3/h to 10.0 m3/h
- Head: up to 10 m
- 4 Types of regulation (3 dP/V-3 dP/C
- 3 Fixed Speeds - Auto-
- Type of liquid: clean, free from solids and/or minerals, non-viscous, chemically neutral, close to the characteristics of water
- Maximum percentage of glycol: 50%
- Min. and max. liquid temperature: -20° to +95°C
- Maximum working pressure bar/kPa: 10 bar / 1000kPa
- Thread: 1" ½ and 2"
- Wheelbase 180 mm
- Efficiency index (ERP standard): EEI ≤ 0.23
- Motor insulation class: IP X4
- Energy efficiency index: F
- Impeller construction material: technopolymer
- Hydraulic construction material: cast iron with cataphoresis treatment
- Single-phase power supply: 230 V 50/60 Hz
- Possible installation type: fixed with horizontal motor axis



Model	L1	L2	L3	H1	H2	H3	G
OPE 25-10-180	121	171.5	96	137	180	66	G 1 1/2"
OPE 32-10-180	121	171.5	96	137	180	66	G 2"

OPE 10 /1-230V- PN10 - EEI≤0.23 / 50/60 Hz

THREADED CONNECTIONS / Heating - Air Conditioning

MODEL	CODE	LIST	WEIGHT (KG)	WHEELBASE (MM)	PWM1/A PWM2/A		Flow rate m3/h								
							0	1	2	3	4	5	6	7	8
OPE 25-10-180	4CI0087C		6.9	180	NO	Meters	10.0	10.0	9.8	7.7	6.3	4.9	3.5	2.4	1.0
OPE 32-10-180	4CI0088C		6.9	180	NO		10.0	10.0	9.8	7.7	6.3	4.9	3.5	2.4	1.0

RESIDENCE

SOLAR

GPA 11 H

Standard single wet rotor circulator with threaded connections, self-protected high efficiency motor with EC technology for electronic performance regulation and external regulation via PWM1/a, PWM2 signal.

Fluid temperature from:**-10°C**to**+110°C** Max
Power Consumption (W):**140 watt**

SPECIAL FEATURES

PRODUCT BENEFITS:

- One button for adjustment
- 9 Curves - PWM1A
- 3Dp/V- 3Dp/c-3 fixed speeds - Auto
- EEI ≤ 0.23
- 3 selectable curves per type
- Superseal cable 1.5 m
- Minisuperseal PWM1/A cable

TECHNICAL DATA SHEET
Pump body:**Grey Cast Iron**
Impeller:**Composite material**
Tree:**Stainless Steel**
Standard high efficiency circulator:**GPA** *electronically regulated standard*
Nominal diameter of the connection (Rp/DN):**25/32**
Version:**III Pro**
Max. prevalence range:**11m**
Wheelbase:**130/180 mm**

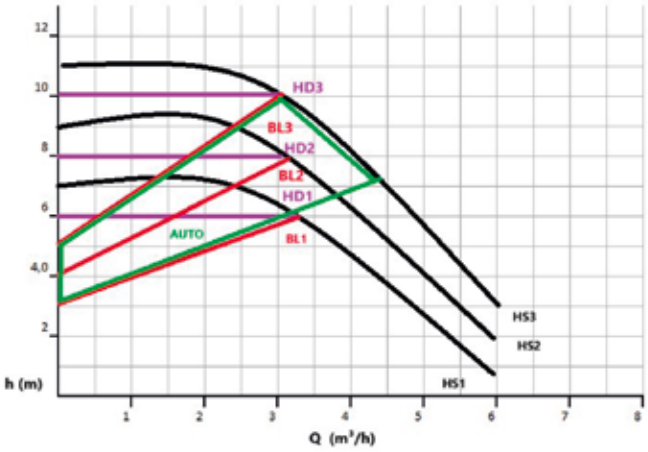
TECHNICAL DATA	
Allowed fluids	
Heating and cooling water according to VDI 2035 and UNI 8065. Mixture of water and glycol Max 1:1	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	from -10°C to +110°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Protection level	IP 44
Insulation class	H

Standard Circulator with High-Efficiency Motor and EC Technology. The standard circulator is equipped with a self-protected, high-efficiency motor using EC technology for electronic performance regulation and external control via a PWM1/A signal.

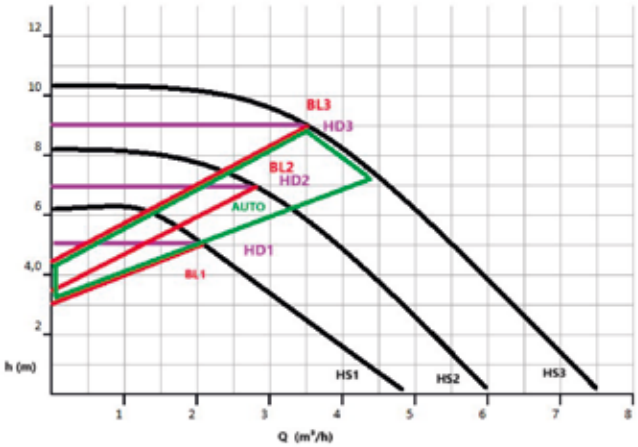
Features of the GPA-H Series High Efficiency Circulators: The GPA-H series high efficiency circulators comply with the EN 60335-2-40 standard relating to A3 refrigerant gases used in heat pump applications.

- Range: from 0.4 m3/ha 5.5 m3/h
- Head: up to 11 m
- Selectable curves: 9 (3DP/V - 3DP/C + 3 fixed speeds + AUTO + PWM1A - PWM2)
- Type of liquid: clean, free from solids and/or minerals, non-viscous, chemically neutral, similar to water
- Maximum percentage of glycol: 50%
- Liquid temperature: -10°C to +110°C
- Maximum working pressure: 10 bar /1000 kPa
- Thread: 1" ½ - 2"
- Efficiency index (ERP standard): EEI ≤ 0.23
- Motor insulation class: IP X4
- Energy efficiency index: F
- Impeller material: technopolymer
- Hydraulic material: cast iron with cataphoresis treatment
- Power supply: single-phase 230 V 50/60 Hz
- Installation type:
  fixed with the engine axis horizontal

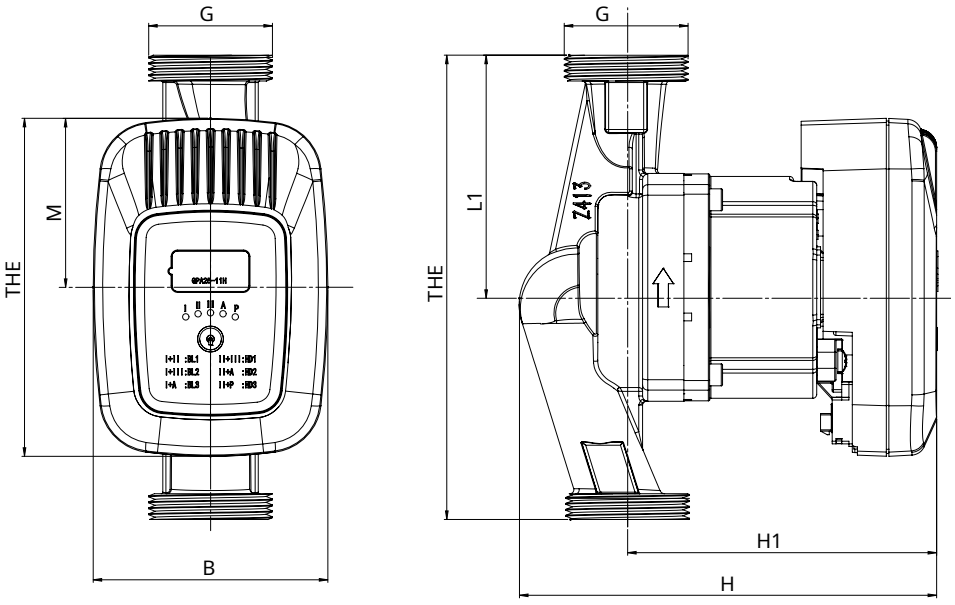
GPA 25-11H



GPA 32-11H



GPA 11 H



MODEL	G	THE	B	M	TO	L1	H	H1
GPA 25-11H-130	1" 1/2	130	91	65.8	131.5	65	162	120
GPA 25-11H-180	1" 1/2	180	91	65.8	131.5	65	162	120
GPA 32-11H-180	2"	180	91	65.8	131.5	65	162	120

GPA 11 H

LED AREA	MODALITY	LED ICON
HS3 (Factory Default)	Maximum speed	○ ○ ● ○ ○
CAR	Auto-adaptive function	○ ○ ○ ● ○
BL1	Low speed proportional pressure	● ● ○ ○ ○
BL2	Proportional pressure medium speed	● ○ ● ○ ○
BL3	High speed proportional pressure	● ○ ○ ● ○
HD1	Constant pressure low speed	○ ● ● ○ ○
HD2	Constant pressure medium speed	○ ● ○ ● ○
HD3	Constant pressure high speed	○ ● ○ ○ ●
HS1	Low speed	● ○ ○ ○ ○
HS2	Medium speed	○ ● ○ ○ ○
P	PWM1 Control	○ ○ ○ ○ ●
P	PWM2 Control	● ● ● ● ●

GPA 11 H/1 ~ 230V / PN10 / EE ≤0.21 / 50/60Hz

THREADED CONNECTIONS / Heating - Air Conditioning

MODEL	CODE	LIST	ATTACK	WHEELBASE (MM)	WEIGHT (KG)	N. CURVES	PWM1/A		Flow rate m3/h							
									0	1	2	3	4	5	6	7
GPA 25-11H-130	4CI0006C		1" 1/2	130	2.7	9	YES	Meters	11	11	11	8.8	6.4	5	4	
GPA 25-11H-180	4CI0007C		1" 1/2	180	2.8	9	YES		11	11	11	8.8	6.4	5	4	
GPA 32-11H-180	4CI0011C		2"	180	2.8	9	YES		11	11	11	8.8	6.4	5.2	4.1	3.2

COMMERCIAL | HEATING | CONDITIONING | SOLAR

AI | NIGHT MODE

ONE PUMP

GPA 25-12-180
GPA 32-12-180

Standard single wet rotor circulator with threaded connections, self-protected high-efficiency motor with EC technology for electronic performance regulation.

Adjustment:
3 dP/V - 3 dP/C
3 Fixed Speeds - Auto - PWM1 (Boiler-Heat pump) - PWM2 (Solar)

Fluid temperature from:**-5°C**to**+110°C** Max
Power Consumption (W):**200 watt**

SPECIAL FEATURES
PRODUCT BENEFITS:

- One button for adjustment
- 9 curves PWM1- PWM2 - 3 Fixed speeds 3 dP/V- 3 dP/C- Auto
- EEI ≤ 23
- Power Cable
- PWM1/A - PWM2/A Cable

TECHNICAL DATA SHEET
Pump body:**Grey Cast Iron**
Impeller:**Composite material**
Tree:**Stainless Steel**
Standard high efficiency circulator:**GPA**
Nominal diameter of the connection (Rp/DN):**25/32**
Version:**GPA**
Prevalence field:**12m**
Wheelbase:**180 mm**

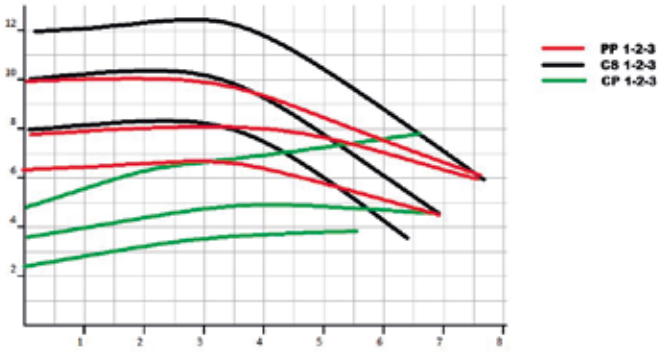
TECHNICAL DATA	
Allowed fluids	
Heating and cooling water according to VDI 2035 and UNI 8065. Mixture of water and glycol Max 1:1	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	from -5°C to +110°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Protection level	IP 44
Insulation class	H

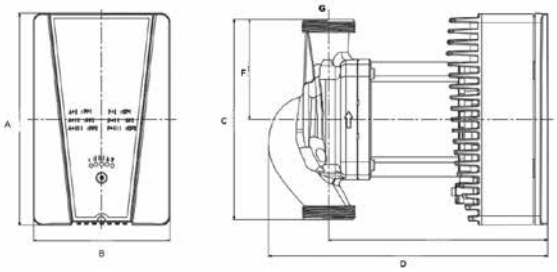
Standard Circulator with High-Efficiency Motor and EC Technology. The standard circulator is equipped with a self-protected, high-efficiency motor using EC technology for electronic performance regulation and external control via PWM1-PWM2 signals.

Features of the GPA Series High Efficiency Circulators: The GPA series high efficiency circulators can be used in multiple fields such as heating, air conditioning, solar and geothermal.

- Flow rate: from 0.4 m3/h to 11 m3/h
- Head: up to 12 m
- Selectable curves: 3DP/V - 3DP/C + 3 Fixed Speeds + AUTO + PWM1 + PWM2)
- Type of liquid: clean, free from solids and/or minerals, non-viscous, chemically neutral, similar to water
- Maximum percentage of glycol: 50%
- Liquid temperature: -5°C to +110°C
- Maximum working pressure: 10 bar /1000 kPa
- Thread: 1" ½ - 2"
- Wheelbase 180 mm
- Efficiency index (ERP standard): EEI ≤ 0.23
- Degree of protection: IP 44
- Insulation class: F
- Impeller material: technopolymer
- Hydraulic material: cast iron with cataphoresis treatment
- Power supply: single-phase 230 V 50/60 Hz
- Installation type: fixed with the engine axis horizontal

GPA 25/32-12-180





MODEL	TO	B	C	D	AND	F	G
GPA 25-12-180	190	123	180	215	197	90	1" 1/2
GPA 32-12-180	190	123	180	215	197	90	2"

GPA12 /1 ~ 230V / PN10 / EE ≤0.21 / 50/60Hz

THREADED CONNECTIONS / Heating - Air Conditioning - Solar - Geothermal

MODEL	CODE	LIST	WEIGHT (KG)	WHEELBASE (MM)	PWM1/A		Flow rate m3/h								
							0	1	2	3	4	5	6	7	8
GPA 25-12-180	4CI0052C		6.9	220	YES	Meters	12.0	12.0	12.0	12.3	11.5	10.0	9.0	7.0	6.0
GPA 32-12-180	4CI0053C		6.9	220	YES		12.0	12.0	12.0	12.3	11.5	10.0	9.0	7.0	6.0

COMMERCIAL | HEATING | CONDITIONING | SOLAR

ONE PUMP

GPA 17 HD

Standard single wet rotor circulator with threaded connections, self-protected high efficiency motor with EC technology for electronic performance regulation and external regulation via PWM1/A, PWM2 signal.

Fluid temperature from:**-10°C**to**+110°C** Max
Power Consumption (W):**350 watt**

SPECIAL FEATURES
PRODUCT BENEFITS:

- One button for adjustment
- 9 Curves - PWM1A
- 3Dp/V- 3Dp/c-3 fixed speeds - Auto
- EEI ≤ 0.23
- 3 selectable curves per type
- MOLEX cable
- FCI PWM1/A cable

TECHNICAL DATA SHEET
Pump body:**Grey Cast Iron**
Impeller:**Composite material**
Tree:**Stainless Steel**
Standard high efficiency circulator:**GPA** *electronically regulated standard*
Nominal diameter of the connection (Rp/DN):**25/32**
Max. prevalence range:**17m**
Wheelbase:**180 mm**

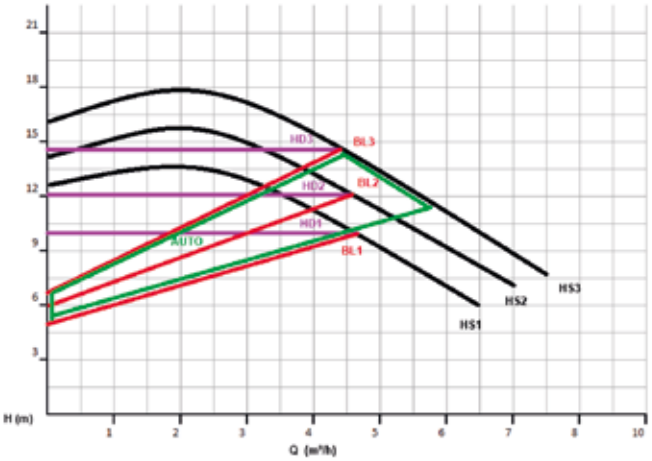
TECHNICAL DATA	
Allowed fluids	
Heating and cooling water according to VDI 2035 and UNI 8065. Mixture of water and glycol Max 1:1	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	from -10°C to +110°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Protection level	IP 44
Insulation class	H

Standard Circulator with High-Efficiency Motor and EC Technology. The standard circulator is equipped with a self-protected, high-efficiency motor using EC technology for electronic performance regulation and external control via a PWM1/A signal.

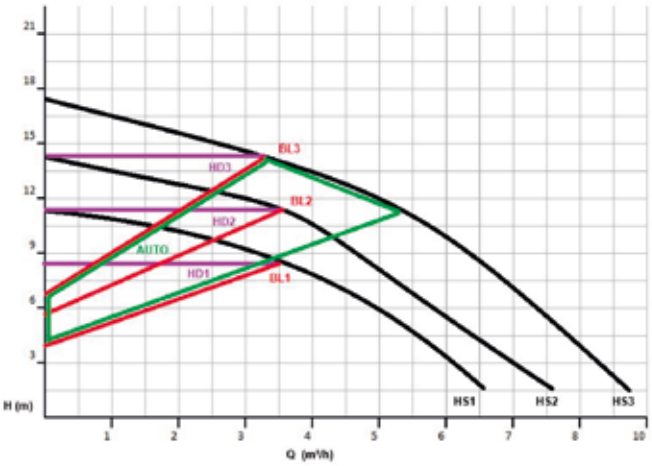
Features of the GPA-H Series High Efficiency Circulators: The GPA-H series high efficiency circulators comply with the EN 60335-2-40 standard relating to A3 refrigerant gases used in heat pump applications.

- Range: from 0.4 m3/ha 9.5 m3/h
- Head: up to 17 m
- Selectable curves: 9 (3DP/V - 3DP/C + 3 Fixed Speeds + AUTO + PWM1 - PWM2)
- Type of liquid: clean, free from solids and/or minerals, non-viscous, chemically neutral, similar to water
- Maximum percentage of glycol: 50%
- Liquid temperature: from +5°C to +110°C
- Maximum working pressure: 10 bar/1000 kPa
- Thread: 1" ½ - 2"
- Efficiency index (ERP standard): EEI ≤ 0.21
- Motor insulation class: IP X4
- Energy efficiency index: F
- Impeller material: technopolymer
- Hydraulic material: cast iron with cataphoresis treatment
- Power supply: single-phase 230 V 50/60 Hz
- Installation type: fixed with the engine axis horizontal

GPA 25-17HD

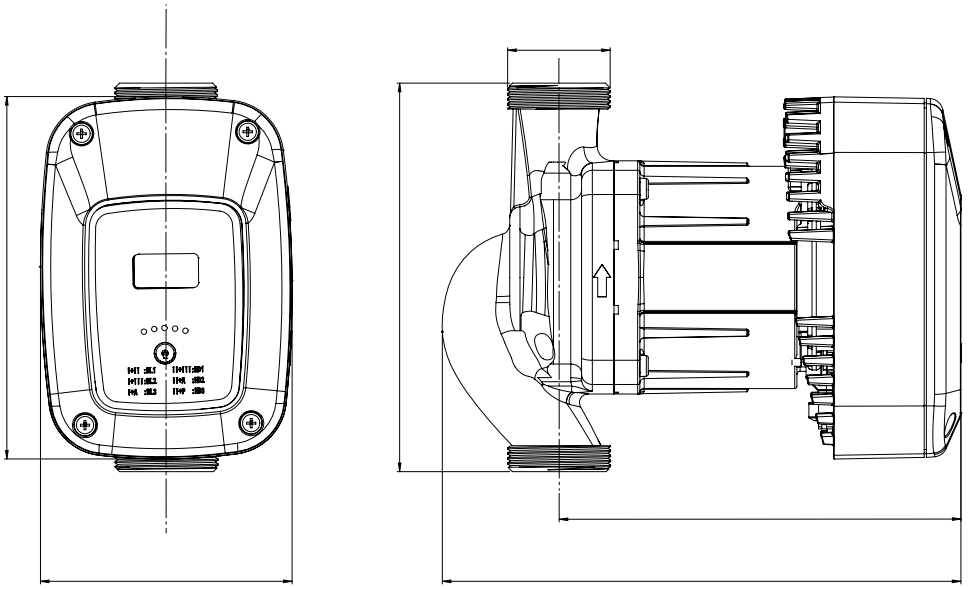


GPA 32-17-HD



COMMERCIAL HEATING CONDITIONING SOLAR

GPA 17 HD



MODEL	G	THE	B	TO	H	H1
GPA 25-17H D-180	1" 1/2	180	117	168	240	186
GPA 32-17H D-180	2"	180	117	168	240	186

GPA 17 HD

LED AREA	MODALITY	LED ICON
HS3 (Factory Default)	Maximum speed	○ ○ ● ○ ○
CAR	Auto-adaptive function	○ ○ ○ ● ○
BL1	Low speed proportional pressure	● ● ○ ○ ○
BL2	Proportional pressure medium speed	● ○ ● ○ ○
BL3	High speed proportional pressure	● ○ ○ ● ○
HD1	Constant pressure low speed	○ ● ● ○ ○
HD2	Constant pressure medium speed	○ ● ○ ● ○
HD3	Constant pressure high speed	○ ● ○ ○ ●
HS1	Low speed	● ○ ○ ○ ○
HS2	Medium speed	○ ● ○ ○ ○
P	PWM1 Control	○ ○ ○ ○ ●
P	PWM2 Control	● ● ● ● ●

GPA 17 HD /1 ~ 230V / PN10 / EE ≤0.21 / 50/60Hz

THREADED CONNECTIONS / Heating - Air Conditioning

MODEL	CODE	LIST	ATTACK	WHEELBASE (MM)	WEIGHT (KG)	N. CURVES	PWM1/A		Flow rate m3/h										
									0	1	2	3	4	5	6	7	8	9	10
GPA 25-17H-180	4CI0008C		1" 1/2	180	3.0	9	YES	Meters	17	17	16.9	16	15.9	14	12	10			
GPA 32-17H-180	4CI0009C		2"	180	3.2	9	YES		17	16.5	16	15	14.4	13	11.5	9	6	4	1.9

COMMERCIAL HEATING CONDITIONING SOLAR

AI NIGHT MODE

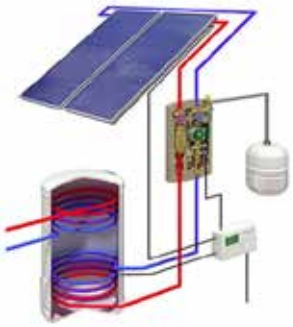
AVAILABLE FROM JULY 2026

ONE PUMP

NEOS M 32-10-220F

Standard single wet rotor circulator with threaded connections, self-protected high-efficiency motor with EC technology for electronic performance regulation.
Regulation 3 dP/V - 3 dP/C 3 Fixed Speeds - Auto - PWM1 (Boiler - Heat pump) - PWM2 (Solar)

Fluid temperature from:**-10C**to**+110°C** Max
Power Consumption (W):**200 watts**



SPECIAL FEATURES
PRODUCT BENEFITS:

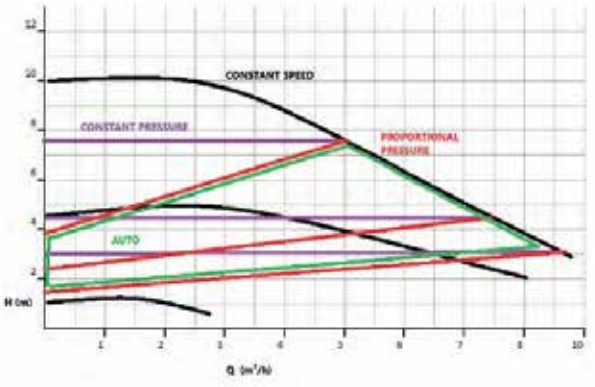
- One button for adjustment
- 9 Curves PWM1- PWM2
- 3 dP/V- 3 dP/C- 3 fixed speeds - Auto
- EEI ≤ 23
- Power Cable
- PWM1/A - PWM2/A Cable

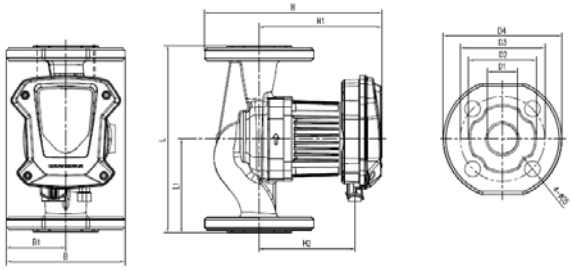
TECHNICAL DATA SHEET
Pump body:**Grey Cast Iron**
Impeller:**Composite material**
Tree:**Stainless Steel**
Standard high efficiency circulator:**NEOS M**
Nominal diameter of the connection (Rp/DN):**32**
Version:**NEOS M**
Prevalence field:**10m**
Wheelbase:**220 mm**

TECHNICAL DATA	
Allowed fluids	
Heating and cooling water according to VDI 2035 and UNI 8065. Mixture of water and glycol Max 1:1	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	from -20°C to +110°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Protection level	IP 44
Insulation class	H

Standard Circulator with High-Efficiency Motor and EC Technology. The standard circulator is equipped with a self-protected, high-efficiency motor using EC technology for electronic performance regulation and external control via PWM1/A signal. The NEOS series high-efficiency circulators can be used in a variety of fields, including heating, air conditioning, solar, and geothermal energy.

- Flow rate: from 0.4 m3/h to 11 m3/h.
- Head: Up to 12 m. Selectable curves: 3DP/V - DP/C + 3 fixed speeds + AUTO + night mode + PWM1A + PWM2).
- Type of liquid: clean, free from solids and/or minerals, non-viscous, chemically neutral, similar to water.
- Maximum glycol percentage: 50%.
- Liquid temperature: -5°C to +110°C.
- Maximum working pressure: 10 bar /1000 kPa.
- Flange DN 32
- Wheelbase 220 mm
- Efficiency index (ERP standard): EEI ≤ 0.23
- Degree of protection: IP 44.
- Insulation class: F
- Impeller material: technopolymer
- Hydraulic material: Cast iron with cataphoresis treatment.
- Power supply: Single phase 230 V 50/60 Hz.
- Installation type: fixed with horizontal motor axis.





MODEL	DN	the	l1	b	b1	h	h1	h2	d1	d2	d3	d4	d5	GW (Kg)
NEOS M 32-10-220F	32	220	110	140	70	210	145	113	32	80	100	140	19	7.3

AVAILABLE FROM JULY 2026

NEON M /1 ~ 230V / PN10 / EE ≤0.21 / 50/60Hz

FLANGED CONNECTIONS / Heating - Air Conditioning - Solar - Geothermal

MODEL	CODE	LIST	WEIGHT (KG)	WHEELBASE	PWM1 PWM2		Flow rate m3/h										
							0	1	2	3	4	5	6	7	8	9	10
NEOS M 32-10-220F	3CI9060C		6.9	220	YES	Meters	10.0	10.0	10.0	10.0	8.8	7.5	6.2	5.2	4.2	3.1	2.1

COMMERCIAL HEATING CONDITIONING

ONE PUMP

GPA 40-10F

Standard wet rotor circulator with flanged connections, motor
High efficiency self-protected with EC technology for electronic performance regulation; 27 types of regulation, 9DP/V, 9DP/c - 9 Fixed Speeds - Auto - 0/10V.

Fluid temperature from:**-10°C**to**+110°C**
Max Power Consumption (W):**185 watt**

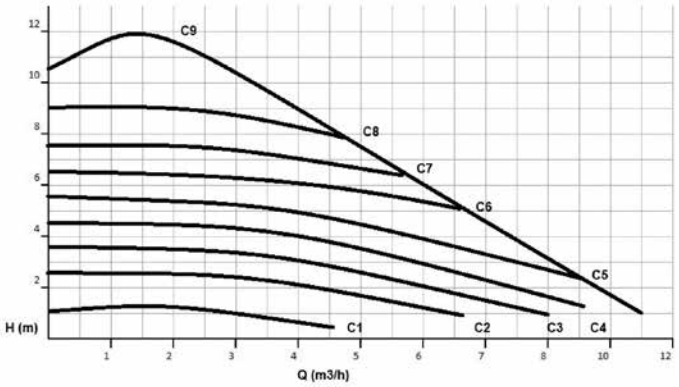
SPECIAL FEATURES
PRODUCT BENEFITS:

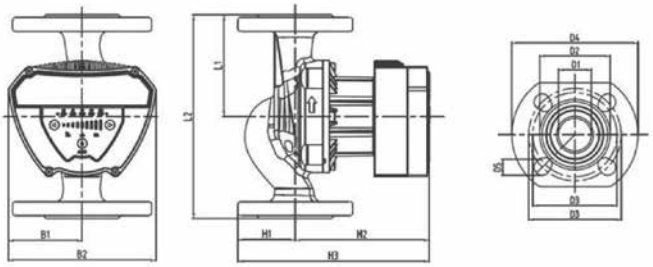
- Easy adjustment via panel
- 27 curves - 0/10V
- 9Dp/V - 9Dp-c - 9 Fixed Speeds - Auto
- EEI ≤ 0.23
- 9 selectable curves per type
- 0/10 Volts

TECHNICAL DATA SHEET
Pump body:**Grey Cast Iron**
Impeller:**Composite material**
Tree:**Stainless Steel**
Standard high efficiency circulator:**GPA** *electronically regulated standard*
DN Flange:**40**
Max. prevalence range:**11m**
Wheelbase:**220 mm**

TECHNICAL DATA	
Allowed fluids	
Heating and cooling water according to VDI 2035 and UNI 8065. Mixture of water and glycol Max 1:1	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	from -10°C to +110°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Protection level	IP 44
Insulation class	H

- Min. and max. range: from 0.4 m3/ha 10 m3/h
- Head: up to 11 m
- 9 Curves selectable in various ways + 0-10V
- Type of liquid: clean, free from solids and/or minerals, non-viscous, chemically neutral, close to the characteristics of water
- Maximum percentage of glycol: 50%
- Min. and max. liquid temperature: -10°C to +110°C
- Maximum working pressure bar/kPa: 10 bar / 1000 kPa
- Flanging: DN 40
- Efficiency index (ERP standard): EEI ≤ 0.23
- Motor insulation class: IP X4
- Energy efficiency index: F
- Impeller construction material: technopolymer
- Hydraulic construction material: cast iron with cataphoresis treatment
- Single-phase power supply: 230 V 50/60 Hz
- Possible installation type: fixed with horizontal and vertical engine axis





MODEL	L1	L2	B1	B2	H1	H2	H3	D1	D2	D3	D4	D5	NW (Kg)
GPA 40-10F	110	220	80	160	62	144	206	40	84	100/110	150	19	7.6

GPA F /1 ~ 230V / PN10 / EE ≤0.21 / 50/60Hz

FLANGED CONNECTIONS / Heating - Air Conditioning

MODEL	CODE	LIST	WEIGHT (KG)	N. CURVES	0/10V		Flow rate m3/h										
							0	1	2	3	4	5	6	7	8	9	10
GPA 40-10F	4CI0060C		7.9	9	YES	Meters	10.2	11.0	11.1	9.5	8.0	7.0	6.0	4.9	4.0	3.0	2.0

COMMERCIAL HEATING CONDITIONING SOLAR

AI ERP READY

ONE PUMP

NEOS B 32/12F 220
NEOS B 40/12F 220
NEOS B 40/12F 250*
NEOS B 40/18F 220
NEOS B 40/18F 250*
NEOS B 50/12F 280
NEOS B 50/18F 280
NEOS B 65/15F 340
NEOS B 80/15F 360

High-efficiency wet rotor circulator with flanged connections, self-protected motor with EC technology for electronic performance regulation.

Fluid temperature from:**-10°C**to**+110°C** Max
Power Consumption (W):**1300 watt**

PRODUCT FEATURES / BENEFITS:

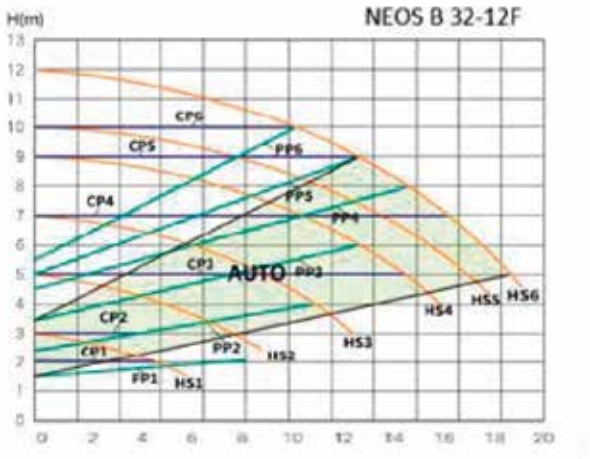
- Easy adjustment via panel
- 9 curve
- 6Dp/V - 6 Dp/C - 6 fixed speeds - Auto Night shift - Wi-Fi - 0-10V (with optional module) - PWM1 - PWM2
- Dedicated Android - iOS app for remote connection
- EEI ≤ 0.23

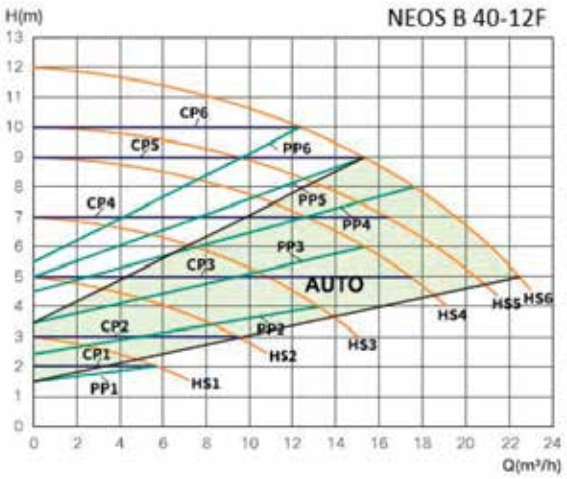
Available in Google Play
Upload to App Store
Download the mobile app to your smartphone

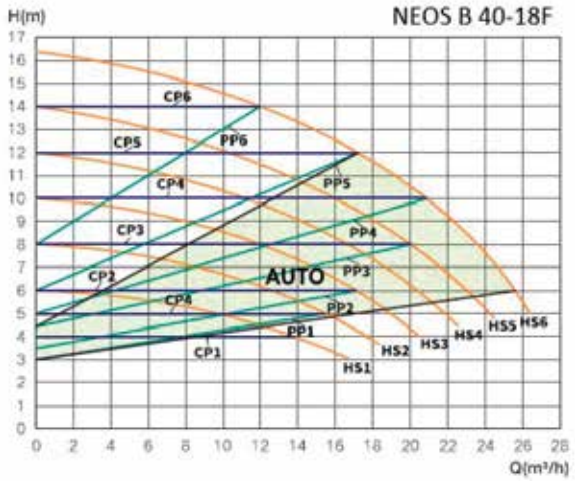
WiFi

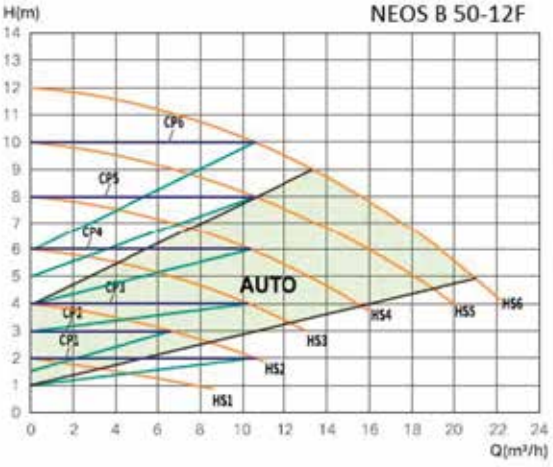
TECHNICAL DATA SHEET
Pump body:**Grey Cast Iron**
Impeller:**Composite material**
Tree:**Stainless Steel**
Standard electronically regulated high efficiency circulator
Max. delivery head range (m):**18**
Wheelbase:**220-240-250-280-340-360 mm**

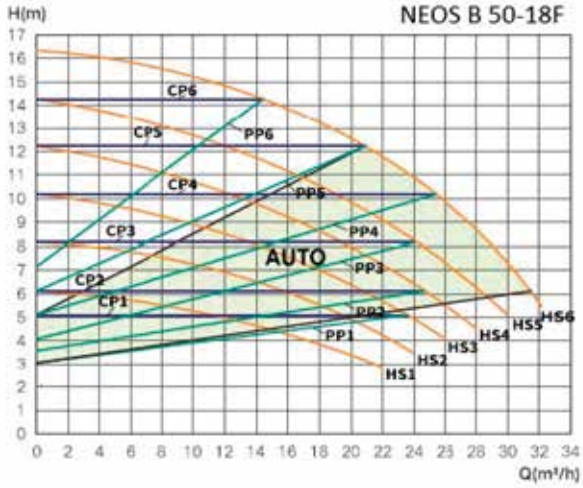
TECHNICAL DATA	
Allowed fluids	
Heating and cooling water according to VDI 2035 and UNI 8065. Mixture of water and glycol Max 1:1	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	from -5°C to +110°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Protection level	IP 44
Insulation class	H

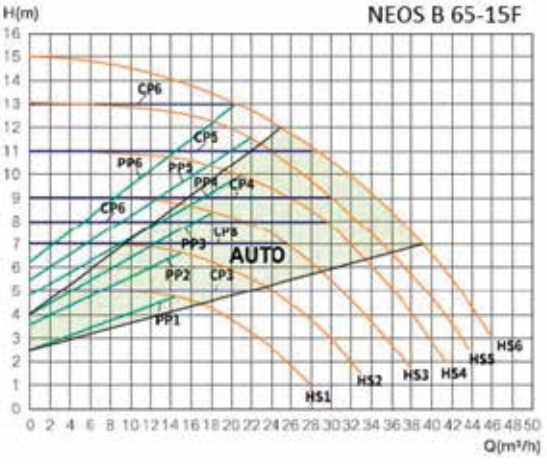

NEOS B 32-12F
H(m)
AUTO
CP1
CP2
CP3
CP4
CP5
CP6
PP1
PP2
PP3
PP4
PP5
PP6
HS1
HS2
HS3
HS4
HS5
HS6

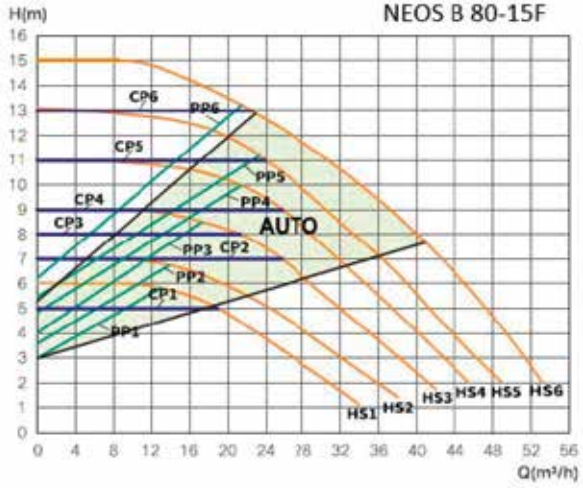

NEOS B 40-12F
H(m)
Q(m³/h)
AUTO
CP1
CP2
CP3
CP4
CP5
CP6
PP1
PP2
PP3
PP4
PP5
PP6
HS1
HS2
HS3
HS4
HS5
HS6


NEOS B 40-18F
H(m)
Q(m³/h)
AUTO
CP1
CP2
CP3
CP4
CP5
CP6
PP1
PP2
PP3
PP4
PP5
PP6
HS1
HS2
HS3
HS4
HS5
HS6

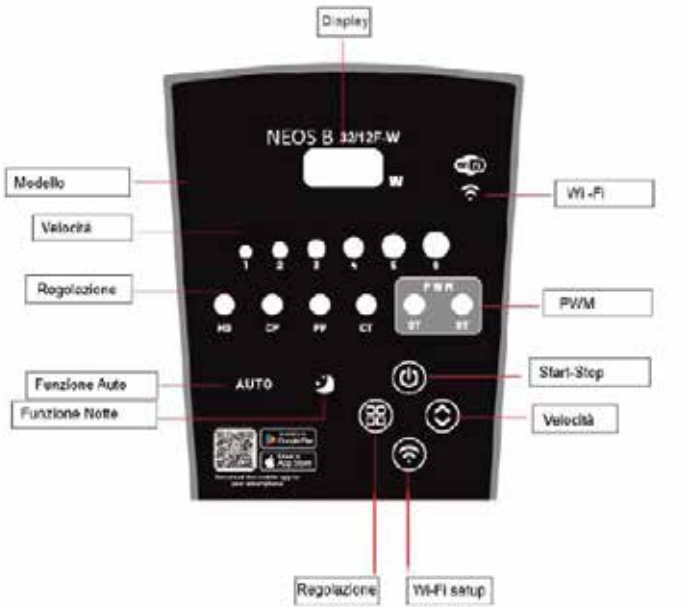

NEOS B 50-12F
H(m)
Q(m³/h)
AUTO
CP1
CP2
CP3
CP4
CP5
CP6
HS1
HS2
HS3
HS4
HS5
HS6


NEOS B 50-18F
H(m)
Q(m³/h)
AUTO
CP1
CP2
CP3
CP4
CP5
CP6
PP1
PP2
PP3
PP4
PP5
PP6
HS1
HS2
HS3
HS4
HS5
HS6


NEOS B 65-15F
H(m)
Q(m³/h)
AUTO
CP1
CP2
CP3
CP4
CP5
CP6
PP1
PP2
PP3
PP4
PP5
PP6
HS1
HS2
HS3
HS4
HS5
HS6


NEOS B 80-15F
H(m)
Q(m³/h)
AUTO
CP1
CP2
CP3
CP4
CP5
CP6
PP1
PP2
PP3
PP4
PP5
PP6
HS1
HS2
HS3
HS4
HS5
HS6

NEOS B Series



Download the app for iOS/Android

The QR code above right allows you to download the international appSmart Life.

Download the Smart Life app on your phone before connecting to Wi-Fi.

Wi-Fi Connection:
Short press the Wi-Fi button, the NEOS B Wi-Fi indicator
It will flash and flash faster as the connection progresses.

When the NEOS B Wi-Fi indicator flashes, open the Smart Life app.
If you haven't added a device yet, you can click directly
on "Add Device" in the center or click on "+" first, then on "Add Device".

After adding the device, wait for it to be detected.
Once detected, add it directly and enter your phone information.

Super Efficiency and Energy Saving

Equipped with neodymium permanent magnet technology, NEOS B circulators significantly reduce energy consumption, with an Energy Efficiency Index (EEI) of less than 0.23.

This makes them extremely eco-friendly and economical.

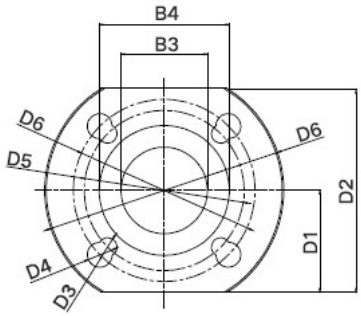
- Total control, wherever you are: manage your pump conveniently from your smartphone thanks to the dedicated professional app (compatible with iOS and Android) and the integrated Wi-Fi function. You have full control at your fingertips, no matter where you are.
- Easy Installation: The standard flange connection design simplifies installation, eliminating the need for tools or special skills.
- Quick, easy and permanent installation.
- Built-in Multiple Protections: Equipped with multiple protection mechanisms (overload, overheat, etc.) to safeguard the equipment and ensure safety.
- Quiet Operation: Built-in control technology reduces noise, helping to create a more comfortable and quiet environment.
- Temperature Control: advanced function to set and detect the temperature of the circulating liquid.

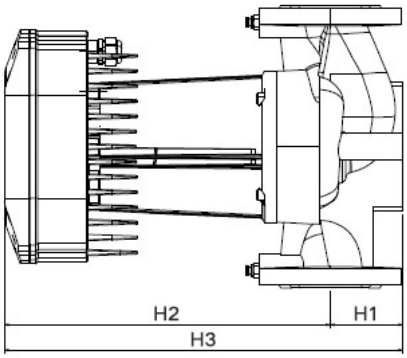
Key Technical Features:

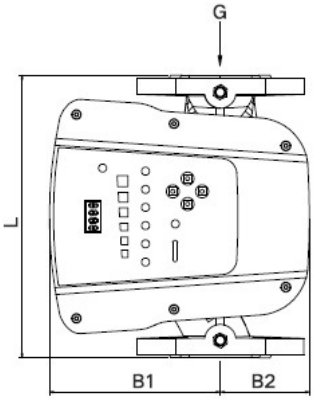
- Complete Range: available in a wide range of sizes (from DN32 to DN80), with maximum heads from 10 to 18 metres and maximum flow rates from 0 to 61 m^3/h, to adapt to any type of system.

NEOS B Series

The NEOS B series is an intelligent high-efficiency circulation pump.
It is equipped with a permanent magnet motor and an intelligent pressure control system. It adopts a hermetic structure, with the stator motor being completely sealed and the rotating parts immersed in the transport fluid.
The fluid cools the motor and lubricates the bearings.
The product has features such as no leakage, low noise, energy saving, high efficiency.







MODEL	Wheelbase L	H1	H2	H3	B1	B2	B3	B4	D1	D2	D3	D4	D5	D6	G	DN
NEOS B 32/12F 220	220	65	321.5	386.5	170	88.5	32	78	61	122	14	19	90	100	DN32	DN32 to 1 1/4"
NEOS B 40/12F 220	220	65	321.5	386.5	170	88.5	40	83	63	126	14	19	100	110	DN40	DN40 to 1 1/2"
NEOS B 40/12F 250*	250	65	321.5	386.5	170	88.5	40	83	63	126	14	19	100	110	DN40	DN40 to 1 1/2"
NEOS B 40/18F 220	220	65	321.5	386.5	170	88.5	40	83	63	126	14	19	100	110	DN40	DN40 to 1 1/2"
NEOS B 40/18F 250*	250	65	321.5	386.5	170	88.5	40	83	63	126	14	19	100	110	DN40	DN40 to 1 1/2"
NEOS B 50/12F 280	280	72	323.5	395.5	170	88.5	50	95	70	140	14	19	110	125	DN50	DN50 to 2"
NEOS B 50/18F 280	280	72	323.5	395.5	170	88.5	50	95	70	140	14	19	110	125	DN50	DN50 to 2"
NEOS B 65/15F 340	340	80	330	410	170	92	65	118	70	140	14	19	130	145	DN60	DN65 to 2 1/2"
NEOS B 80/15F 360	360	102	330	432	170	100	80	130	100	192	1	18	160	200	DN80	DN80 to 3"

* With compensating flanges included

NEOS B /1 ~ 230 V / 50/60 Hz

FLANGED CIRCULATORS

MODEL	CODE	LIST	WEIGHT (KG)	DN FLANGE	POWER (W)	AMPERAGE (A)	IMPELLER		Flow rate m3/h															
									0	4	8	12	16	20	24	28	32	36	40	44	48	52
NEOS B 32/12F 220	4CI0061C		13	32	400	2.6	Polymer		12	11.5	10.5	9	7	4								
NEOS B 40/12F 220	4CI0062C		15.4	40	600	2.9	Polymer		12.0	11.6	11.0	10.0	8.7	6.8	4							
NEOS B 40/12F 250*	4CI0063C		17.2	40	600	2.9	Polymer		12.0	11.6	11.0	10.0	8.7	6.8	4							
NEOS B 40/18F 220	4CI0064C		17.2	40	900	3.5	Polymer	Meters	16.5	15.9	15.0	14.0	12.5	10.5	7.5	4						
NEOS B 40/18F 250*	4CI0065C		17.4	40	900	3.5	Polymer		16.5	15.9	15.0	14.0	12.5	10.5	7.5	4						
NEOS B 50/12F 280	4CI0066C		19	50	560	6.0	Polymer		12.0	11.5	10.8	9.5	7.9	5.5	3.0							
NEOS B 50/18F 280	4CI0067C		20.4	50	1000	3.5	Polymer		16.3	16.0	15.5	14.6	13.5	12.3	10.6	8.5	5.5					
NEOS B 65/15F 340	4CI0068C		23.1	65	1300	6.0	Polymer		15	14.9	14.6	14.4	13.8	13	12.2	11.1	10	8.5	6.5	3.3		
NEOS B 80/15F 360	4CI0069C		30.6	80	1300	6.0	Polymer		15.0	15.0	15.0	14.8	14.2	13.5	12.5	11.8	10.6	9.5	8.0	6.5	4.5	2.5

* With compensating flanges included

For threaded flanges see accessories page

COMMERCIAL | HEATING | CONDITIONING

TECNOLOGIA TRIFASE
ELETTRONICO CON INVERTER

3~

PER RISCALDAMENTO
E CONDIZIONAMENTO

INVERTER
TECHNOLOGY

SINGLE-PHASE NEOS 1F 32/12F 220
THREE-PHASE NEOS 3F 40/12F 220
THREE-PHASE NEOS 3F 40/12F 250*
THREE-PHASE NEOS 3F 40/18F 220
THREE-PHASE NEOS 3F 40/18F 250*
THREE-PHASE NEOS 3F 50/12F 280
THREE-PHASE NEOS 3F 50/18F 280
THREE-PHASE NEOS 3F 65/12F 340
THREE-PHASE NEOS 3F 80/15F 360

High-efficiency wet rotor circulator with flanged connections, self-protected motor with EC technology for electronic performance regulation.

Fluid temperature from:**-10°C**to**+110°C** Max
Power Consumption (W):**1300 watt**

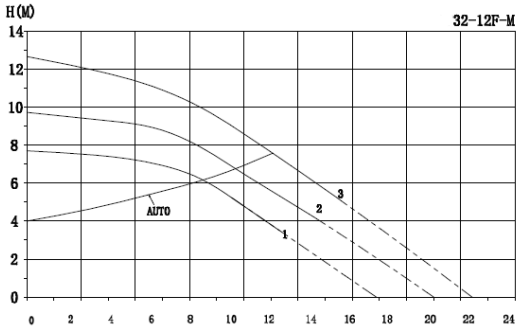
PRODUCT FEATURES / BENEFITS:

- Easy adjustment via panel
- 3 fixed curves
- Auto Dp/V
- EEI ≤ 0.23

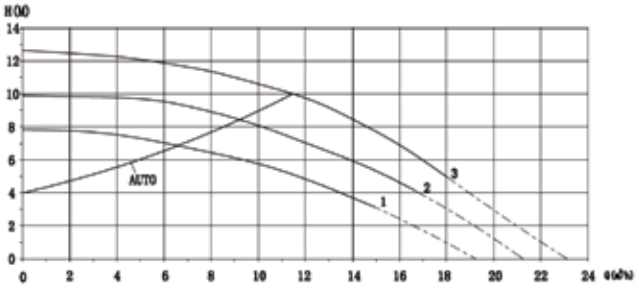
TECHNICAL DATA SHEET
Pump body:**Grey Cast Iron**
Impeller:**Composite material**
Tree:**Stainless Steel**
Standard electronically regulated high efficiency circulator
Max. delivery head range (m):**18**
Wheelbase:**220-240-250-280-340-360 mm**

TECHNICAL DATA	
Allowed fluids	
Heating and cooling water according to VDI 2035 and UNI 8065. Mixture of water and glycol Max 1:1	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	from -5°C to +110°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Protection level	IP 44
Insulation class	H

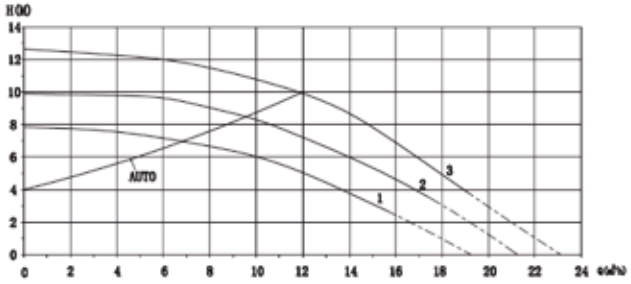
1. NEOS 1F 32-12 (220)



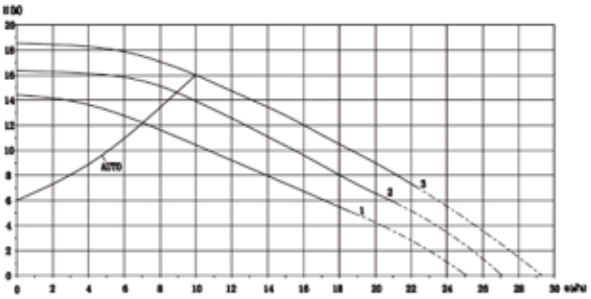
2. NEOS 3F 40-12 (220)



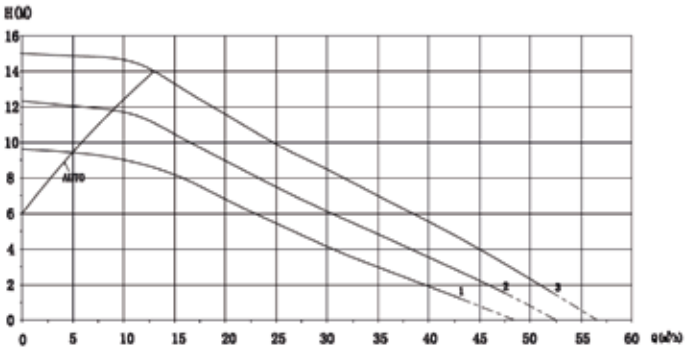
3. NEOS 3F 40-12 (220-250)



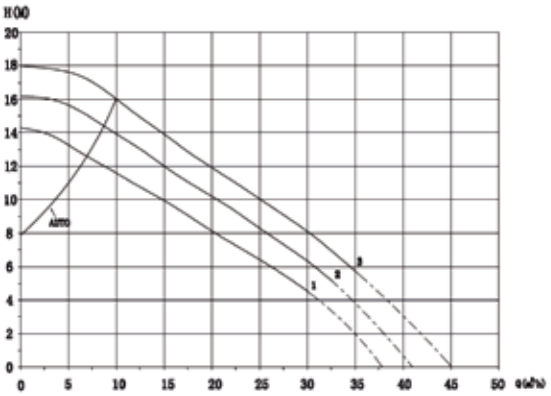
4. NEOS 3F 40-18 (220)



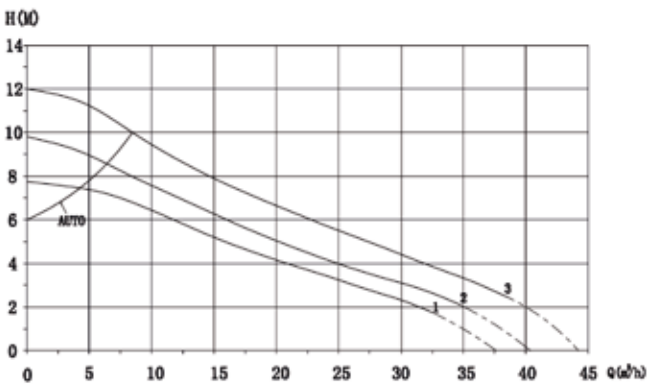
5. NEOS 3F 50-12 (280)



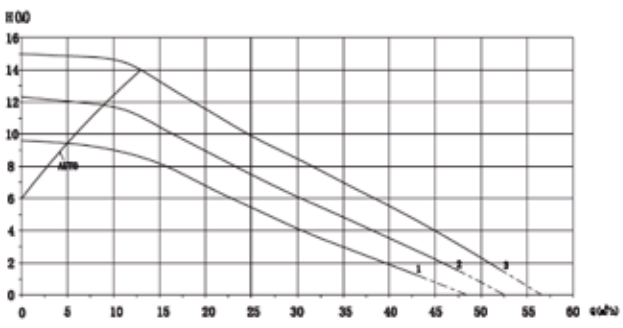
6. NEOS 3F 50-18 (280)



7. NEOS 3F 65-12 (340)



8. NEOS 3F 80-15 (360)



NEOS 1F/3F Series

One Pump high-efficiency three-phase circulators

In modern chillers, the hydraulic system is a key lever for reducing consumption and increasing reliability. One Pump's high-efficiency three-phase circulators are designed for "on-machine" HVAC applications, where the pump must integrate with the system's control system and operate steadily even at partial loads.

Historical background and regulatory framework (Ecodesign/ErP)

For years, fixed-speed (or multi-speed) pumps were used in chillers, often with mechanical seals and requiring regular maintenance. The turning point came with the European Ecodesign (ErP) requirements for glandless/wet rotor circulators: Regulation (EC) 641/2009 and subsequent amendments (including Regulation (EU) 622/2012) introduced the Energy Efficiency Index (EEI) and imposed thresholds of up to EEI ≤ 0.23 (from 1 August 2015).

Since 2015, non-compliant circulators have effectively disappeared from the market, replaced by solutions with high-efficiency motors, optimized hydraulics, and speed regulation, particularly effective at partial loads. This transition, however, has had little impact on three-phase systems: to achieve EEI 0.23, motor and control systems needed to be redesigned, and many manufacturers have already covered this segment with three-phase fan-cooled pumps in their product range. One Pump fills this gap by redesigning the three-phase motor and optimizing hydraulics and control, resulting in a truly efficient and modulating solution, suitable for new installations and retrofits on three-phase chillers.

Technology: three-phase “machine-ready” and seal-less design

The One Pump solution is based on two pillars:

· Wet rotor architecture (seal-less): absence of mechanical seal, with reduction of leak points and maintenance typical of traditional pumps.

· Three-phase power supply: ideal for chiller/OEM context (robustness, reliability, compatibility with speed regulation), with natural integration with the machine's on-board electronics.

Chiller applications: new installation and replacement

The One Pump high-efficiency three-phase circulators can be used as a replacement alternative or for first installation on chillers built with three-phase pumps, in particular on:

Chilled water circuit (evaporator): primary/secondary, single circuit, constant or variable flow rate.
Water-cooled condenser circuit (condenser): water-cooled chiller with tower or dry cooler.
Glycol circuits: process cooling, free-cooling, outdoor applications (depending on fluid specifications). Heat recovery and auxiliary circuits: thermal stabilization and fine flow regulation.

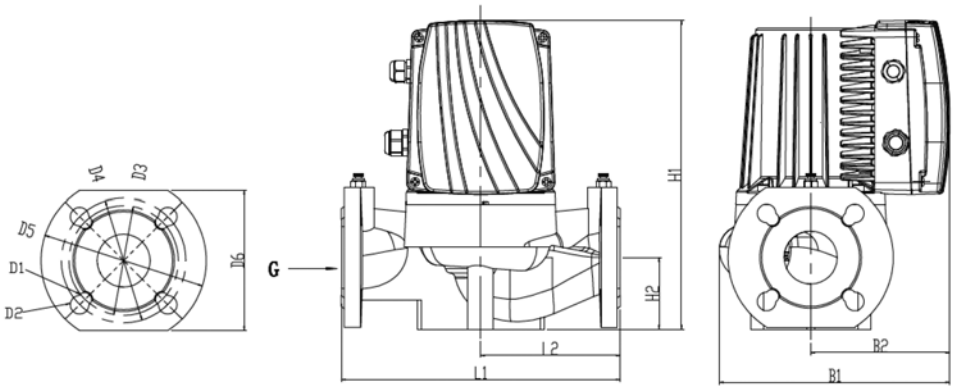
Main advantages

No mechanical seal→fewer losses, less maintenance, more operational continuity.
Management with machine inverter→Centralized control, optimized logic, and alarm/diagnostic integration.
Reduced consumption at partial loads.→Speed modulation avoids waste typical of “always at 100%” operation.

Three-phase reliability and robustness→solution consistent with chillers and industrial environments.
Lowest total cost of ownership (TCO)→fewer interventions, more efficiency, greater system availability.

NEOS 3F Series

The NEOS 3F series is a highly efficient intelligent circulation pump with single-phase and three-phase motors. It is equipped with a permanent magnet motor and an intelligent pressure control system. It adopts a hermetic structure, with a fully sealed motor stator and rotating parts immersed in the fluid. The fluid cools the motor and lubricates the bearings.
The product has features such as no leakage, low noise, energy saving, high efficiency.



MODEL	Wheelbase mm	L1	L2	H1	H2	B1	B2	D1	D2	D3	D4	D5	D6
SINGLE PHASE NEOS 1F 32/12F 220	220	110	300	65	217	140	14	19	90	110	140	120	DN 32 to 1 1/4"
THREE-PHASE NEOS 3F 40/12F 220	220	110	300	65	217	140	14	19	100	110	150	126	DN 40 to 1 1/2"
THREE-PHASE NEOS 3F 40/12F 250*	250	110	300	65	217	140	14	19	100	110	150	126	DN 40 to 1 1/2"
THREE-PHASE NEOS 3F 40/18F 220	220	110	300	65	217	140	14	19	100	110	150	126	DN 40 to 1 1/2"
THREE-PHASE NEOS 3F 40/18F 250*	250	110	300	65	217	140	14	19	100	110	150	126	DN 40 to 1 1/2"
THREE-PHASE NEOS 3F 50/12F 280	280	140	309	72	232	140	14	19	110	125	165	140	DN 50 to 2"
THREE-PHASE NEOS 3F 50/18F 280	280	140	309	72	232	140	14	19	110	125	165	140	DN 50 to 2"
THREE-PHASE NEOS 3F 65/12F 340	340	170	324	80	244	140	14	19	130	145	185	156	DN 65 to 2 1/2"
THREE-PHASE NEOS 3F 80/15F 360	360	180	342	102	244	140	14	19	130	160	200	193	DN 80 to 3"

* With compensating flanges included

NEOS 1F/3F /1-230V / 3-380V / 50/60 Hz

FLANGED CIRCULATORS

MODEL	CODE	LIST	WEIGHT (KG)	DN FLANGE	POWER (W)	AMPERAGE (A)	V (Power)	IMPELLER		Flow rate m3/h														
										0	4	8	12	16	20	24	28	32	36	40	44	48	52
SINGLE PHASE NEOS 1F 32/12F 220	4CI0090C		13	32	450	2.50	230 V (Single Phase)	Polymer		12.5	11.5	10	7	4.5									
THREE-PHASE NEOS 3F 40/12F 220	4CI0091C		15.4	40	500	1.43	380 V (Three-phase)	Polymer		12.5	12.1	11.0	10.0	7.0	3.0								
THREE-PHASE NEOS 3F 40/12F 250*	4CI0092C		17.2	40	500	1.43	380 V (Three-phase)	Polymer		12.5	12.1	11.0	10.0	7.0	3.0								
THREE-PHASE NEOS 3F 40/18F 220	4CI0093C		17.2	40	900	2.30	380 V (Three-phase)	Polymer		18.5	18.3	17.0	15.0	12.0	9.0	5.8							
THREE-PHASE NEOS 3F 40/18F 250*	4CI0094C		17.4	40	900	2.30	380 V (Three-phase)	Polymer	Meters	18.5	18.3	17.0	15.0	12.0	9.0	5.8							
THREE-PHASE NEOS 3F 50/12F 280	4CI0095C		19	50	650	1.70	380 V (Three-phase)	Polymer		15.0	14.9	14.8	14.0	13.0	11.5	10.0	9.0	7.0	6.5	5.5	4.1	3.0	1.5
THREE-PHASE NEOS 3F 50/18F 280	4CI0096C		20.4	50	1200	2.53	380 V (Three-phase)	Polymer		18.0	17.8	17.0	15.0	13.0	12.0	10.8	8.3	7	5				
THREE-PHASE NEOS 3F 65/12F 340	4CI0097C		23.1	65	800	2.55	380 V (Three-phase)	Polymer		12	9	9.8	8.4	7	6.5	5.8	4.3	3.8	3	2			
THREE-PHASE NEOS 3F 80/15F 360	4CI0098C		30.6	80	1300	2.74	380 V (Three-phase)	Polymer		15.0	14.8	14.8	14.0	12.8	9.5	9.0	8.8	7.0	6.7	5.5	2.5	2.3	

* With compensating flanges included

For threaded flanges see accessories page

RESIDENTIAL COMMERCIAL SANITARY WATER

ONE PUMP

OPS 4-6/SN

Standard single wet rotor circulator with threaded connections, self-protected asynchronous motor for domestic hot water recirculation circuits.

Fluid temperature from:**+2°C**to**+65°C**
Max Power Consumption (W):**100 watt**

SPECIAL FEATURES
PRODUCT BENEFITS:

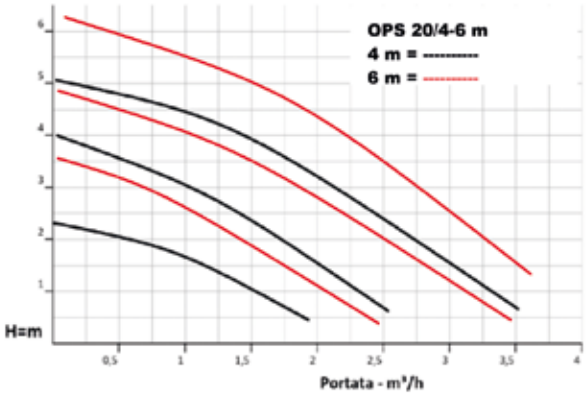
- Self-protected engine
- All fluid components comply with regulatory requirements
- Body in stainless steel or bronze

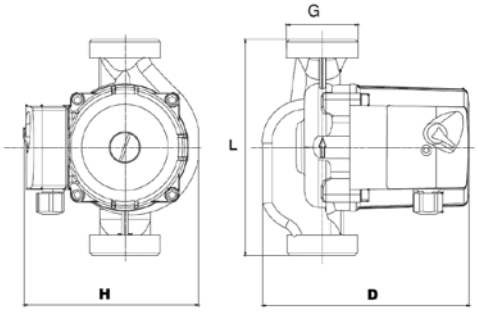
TECHNICAL DATA SHEET
Pump body:**Stainless Steel**
Impeller:**Composite material**
Tree:**Stainless Steel**
Recycling circulator:**OPS**
Nominal diameter of the connection (Rp/DN):**20/25**
Max. delivery head range (m):**4 m - 6 m SN**
Wheelbase:**130/150 mm**

TECHNICAL DATA	
Allowed fluids	
Domestic hot water up to 3.57 mmol/l (20° dH): from +2°C to +65°C	
Field of application	
Fluid temperature with sanitary water up to 20°dH (for a limited time of 2 hours)	+65°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Protection level	IP 44
Insulation class	H

Standard single wet rotor circulator with threaded connections, self-protected asynchronous motor for domestic hot water recirculation circuits.

- Min. and max. range: from 0.5 m3/ha 3.5 m3/h
- Head: up to 6 m
- Curves selectable in 3 positions via speed selector
- Type of liquid: clean, free from solids and/or minerals, non-viscous, chemically neutral, close to the characteristics of water
- Min. and max. liquid temperature: from +2°C to +65°C
- Maximum working pressure bar/ kPa: 10 bar/ 1000 kPa
- Thread: 1”- 1” 1/4 - 1” 1/2
- Wheelbase 130 mm, 150 mm
- Motor insulation class: IP 44
- Energy efficiency index: H
- Impeller construction material: technopolymer
- Hydraulic construction material: stainless steel or bronze
- Single-phase power supply: 230 V 50/60 Hz
- Possible installation type: fixed with horizontal and vertical engine axis





MODEL	G	THE	D	H	H1
OPS 20-4SN-130	1"	139	137	133	109.3
OPS 20-4SN-130 (Extension to 150 mm - 1" 1/4)	1" 1/4	139	137	133	109.3
OPS 20-4SN-130 (Extension to 150 mm - 1" 1/2)	1" 1/2	139	137	133	109.3
OPS 25-4SQ-130	1" 1/2	139	137	133	109.3
OPS 20-6SN-130	1"	139	137	133	109.3
OPS 20-6SN-130 (Extension to 150 mm - 1" 1/4)	1" 1/4	139	137	133	109.3
OPS 20-6SN-130 (Extension to 150 mm - 1" 1/2)	1" 1/2	139	137	133	109.3
OPS 25-6SQ-130	1" 1/2	139	137	133	109.3

OPS ACS/1 ~ 230 V / PN10 / 50/60 Hz

THREADED CONNECTIONS / Sanitary ACS

MODEL	CODE	LIST	ATTACK	WHEELBASE (MM)	WEIGHT (KG)	N. CURVES	MATERIAL		Flow rate m3/h							
									0	0.5	1	1.5	2	2.5	3	3.5
OPS 20-4SN-130	4CI0080C		1"	130	2.3	3	Steel	Meters	5	4.8	4.5	3.9	3.2	2.5	1.5	0.7
OPS 20-4SN-130 (Extension to 150 mm - 1" 1/4)	4CI0081C		1" 1/4	150	2.5	3	Steel		5	4.8	4.5	3.9	3.2	2.5	1.5	0.7
OPS 20-4SN-130 (Extension to 150 mm - 1" 1/2)	4CI0082C		1" 1/2	150	2.5	3	Steel		5	4.8	4.5	3.9	3.2	2.5	1.5	0.7
OPS 25-4SQ-130	4CI0083C		1" 1/2	130	2.5	3	Steel		5	4.8	4.5	3.9	3.2	2.5	1.5	0.7
OPS 20-6SN-130	4CI0110C		1"	130	2.3	3	Steel		6	6.3	6	5.4	4.7	4	3	2.2
OPS 20-6SN-130 (Extension to 150 mm - 1" 1/4)	4CI0111C		1" 1/4	150	2.5	3	Steel		6	6.3	6	5.4	4.7	4	3	2.2
OPS 20-6SN-130 (Extension to 150 mm - 1" 1/2)	4CI0112C		1" 1/2	150	2.5	3	Steel		6	6.3	6	5.4	4.7	4	3	2.2
OPS 25-6SQ-130	4CI0113C		1" 1/2	130	2.5	3	Steel		6	6.3	6	5.4	4.7	4	3	2.2

RESIDENTIAL COMMERCIAL SANITARY WATER

ONE PUMP

GPD 7SN/SQ

Single standard circulator
wet rotor with threaded connections, self-protected asynchronous motor for domestic hot water recirculation circuits.

Fluid temperature from:**+2°C**to**+65°C**
Max Power Consumption (W):**100 watt**

SPECIAL FEATURES
PRODUCT BENEFITS:

- Self-protected engine
- All fluid components comply with regulatory requirements
- Body in stainless steel or bronze

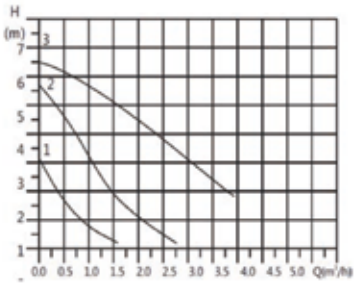
TECHNICAL DATA SHEET
Pump body:**Stainless Steel / Bronze**
Impeller:**Composite material**
Tree:**Stainless Steel**
Recycling circulator:**GDPR**
Nominal diameter of the connection (Rp/DN):**20/25/32**
Max. delivery head range (m):**7SN**
Wheelbase:**130/150/180 mm**

TECHNICAL DATA	
Allowed fluids	
Domestic hot water up to 3.57 mmol/l (20° dH): from +2°C to +65°C	
Field of application	
Fluid temperature with sanitary water up to 20°dH (for a limited time of 2 hours)	+65°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Protection level	IP 44
Insulation class	H

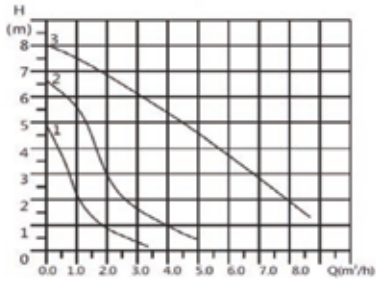
Standard single wet rotor circulator with threaded connections, self-protected asynchronous motor for domestic hot water recirculation circuits.

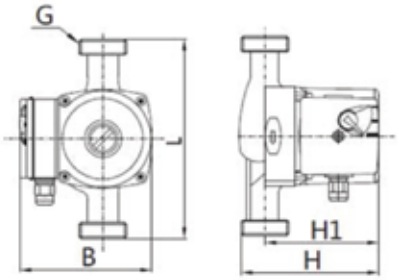
- Min. and max. range: from 0.5 m3/ha 8 m3/h
- Head: up to 7 m. Curves selectable in 3 positions via speed selector
- Type of liquid: clean, free from solids and/or minerals, non-viscous, chemically neutral, close to the characteristics of water
- Min. and max. liquid temperature: from +2°C to +65°C
- Maximum working pressure bar/ kPa: 10 bar/ 1000 kPa
- Thread: 1”- 1” 1/4” - 1” 1/2” - 2”
- Center distance 130 mm, 150 mm, 180 mm
- Motor insulation class: IP 44
- Energy efficiency index: H
- Impeller construction material: technopolymer
- Hydraulic construction material: stainless steel or bronze
- Single-phase power supply: 230 V 50/60 Hz
- Possible installation type: fixed with horizontal and vertical engine axis

GPD XX-7SNB



GPD 32-8SN





MODEL	G	THE	H	H1	B
GPD 20-7SN-130	1”	130	130	105	130
GPD 20-7SN-130 (Extension to 150 mm - 1” 1/4)	1” 1/4	150	130	105	130
GPD 20-7SN-130 (Extension to 150 mm - 1” 1/2)	1” 1/2	150	130	105	130
GPD 25-7SQ-130	1” 1/2	130	130	105	130
GPD 25-7SQ-130 (Extension to 180 mm - 1” 1/2)	1” 1/2	180	130	105	130
GPD 25-7SQ-130 (Extension to 180 mm - 2”)	2”	180	130	105	130
GPD 32-8SN-180	2”	180	170	130	150

GPD ACS /1 ~ 230 V / PN10 / 50/60 Hz

THREADED CONNECTIONS / Sanitary ACS

MODEL	CODE	LIST	ATTACK	WHEELBASE (mm)	WEIGHT (KG)	N. CURVES	Function CAR		Flow rate m3/h									
									0	1	1	2	2	3	3	4	4	5
GPD 20-7SN-130	4CI0031C		1”	130	2.3	3	Steel	Meters	8	7	7	6	6	5	4	3	3	2
GPD 20-7SN-130 (Extension to 150 mm - 1” 1/4)	4CI0034C		1” 1/4	150	2.5	3	Steel		8	7	7	6	6	5	4	3	3	2
GPD 20-7SN-130 (Extension to 150 mm - 1” 1/2)	4CI0032C		1” 1/2	150	2.5	3	Steel		8	7	7	6	6	5	4	3	3	2
GPD 25-7SQ-130	4CI0036C		1” 1/2	130	2.5	3	Bronze		8	7	7	6	6	5	4	3	3	2
GPD 25-7SQ-130 (Extension to 180 mm - 1” 1/2)	4CI0035C		1” 1/2	180	2.5	3	Bronze		8	7	7	6	6	5	4	3	3	2
GPD 25-7SQ-130 (Extension to 180 mm - 2”)	4CI0044C		2”	180	2.5	3	Bronze		8	7	7	6	6	5	4	3	3	2
									0	1	2	3	4	5	6	7	8	9
GPD 32-8SN-180	4CI0051C		2”	180	3	3	Steel		8	8	7	6	6	4	4	4	2	1

ERP READY

ONE PUMP

GPA 15-1.5 B

Single wet rotor circulator with threaded connections, permanent magnet motor technology, available in a version with integrated timer and thermostat, for domestic hot water recirculation circuits.

Fluid temperature from:**+2°C**to**+65°C**
Max Power Consumption (W):**8 watt**

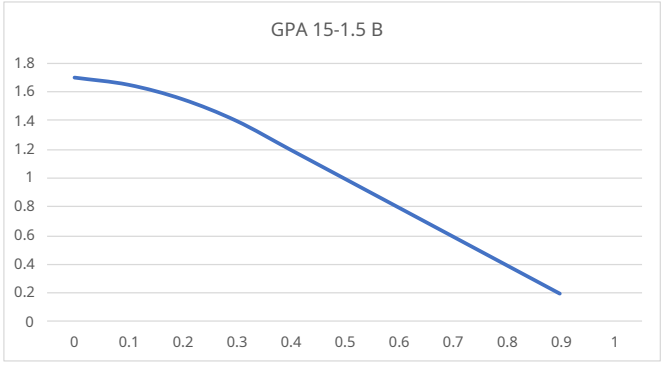
SPECIAL FEATURES
PRODUCT BENEFITS:

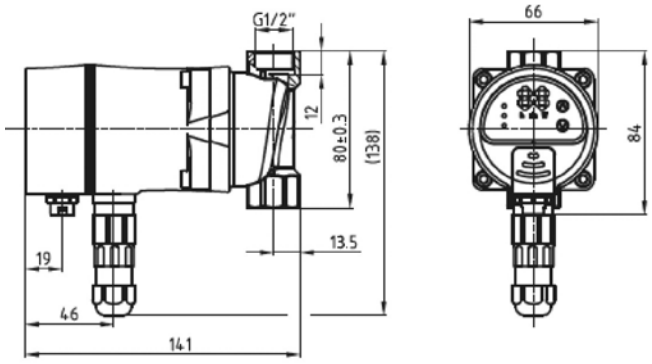
- Self-protected engine
- All fluid components comply with regulatory requirements
- Bronze body

TECHNICAL DATA SHEET
Pump body:**Bronze**
Impeller:**Composite material**
Tree:**Stainless Steel**
Circulator for ACS recycling:**GPA**
Nominal diameter of the connection (Rp/DN):**15**
Max. delivery head range (m):**1.5**

TECHNICAL DATA	
Allowed fluids	
Domestic hot water up to 3.57 mmol/l (20° dH): from +2°C to +65°C	
Field of application	
Fluid temperature with sanitary water up to 20°dH (for a limited time of 2 hours)	+65°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Protection level	IP 44
Insulation class	H

- Min. and max. range: from 0.1 m3/ha 0.9 m3/h
- Head: up to 1.5 m
- Type of liquid: clean, free from solids and/or minerals, non-viscous, chemically neutral, close to the characteristics of water
- Maximum working pressure bar/ kPa: 10 bar/ 1000 kPa
- Thread: 1/2”
- Motor insulation class: IP 42
- Energy efficiency index: F
- Impeller construction material: technopolymer
- Hydraulic construction material: bronze
- Single-phase power supply: 230 V 50/60 Hz
- Possible installation type: fixed with horizontal and vertical engine axis





GPA ACS /1 ~ 230 V / PN10 / 50/60 Hz

THREADED CONNECTIONS / Domestic hot water

MODEL	CODE	LIST	ATTACK	WHEELBASE (mm)	WEIGHT (KG)	N. CURVES	PWM1/A		Flow rate m3/h									
									0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
GPA 15-15.5 B	4CI0033C	€262.00	1/2”	84	1.2	Car	NO	Meters	1.58	1.58	1.5	1.4	1.2	1	0.8	0.6	0.4	0.2

1	Indicates the constant speed operating mode
2	Indicates the automatic operating mode
3	Indicates the temperature control mode
4	1. Indicated power 2. Running (or stopping) time shown in timing mode
5	Operating (or stopping) hours set in timing mode for display
7	Power unit displayed in normal operation
8	1. Activate various speed modes 2. Increase time in timing mode
9	Decrease the time in timing mode. Press buttons 8 and 9 to switch between control modes.

RESIDENTIAL HEATING CONDITIONING

RELAUNCH GROUPS

Modular and Innovative Thermo-hydraulic Distribution System. Our modular, combinable distribution system is the ideal solution for efficient centralized heating systems. Thanks to its advanced design, it allows for optimal management of heat transfer fluid distribution, ensuring maximum efficiency.

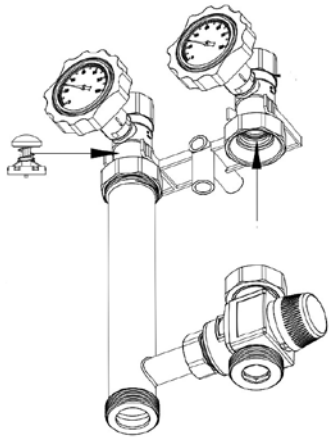
energy efficiency, rationalization of spaces and simplification of installation.

TECHNICAL DATA SHEET
Nominal diameter:**DN25**
Upper Attack: G1":**Female thread** Lower connection G1-1 ½":**Male thread (flat gasket)**
Distance between the attachments:**125 mm**
Maximum working temperature:**110°C**
Working pressure:**PN6**
Pump connection centre distance:**180 mm**
Thermometer range:**0-120°C**

Modular and combinable structure. Adaptable to different system configurations for customized solutions. Thermally insulated components. Manifold, separator, piping, and pump units with EPP shells for high thermal efficiency and reduced heat loss.

- *Space optimization* Compact structure for intelligent management of the heating plant, reducing overall dimensions.
- *Advanced thermoregulated management* Provision for the installation of one or more thermoregulations, ideal for mixing units with sliding temperatures.
- *More thermal zones* High flexibility for managing multiple independent circuits.
- *High flow rates* Ideal for systems with significant thermal demands.

This system is the perfect solution for efficient, adaptable, and easy-to-install centralized systems. Choose innovation for optimal thermohydraulic management!

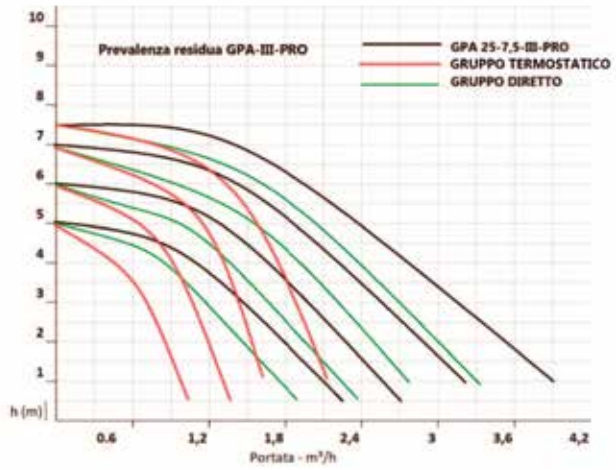


RELAUNCH GROUPS SIZING METHOD

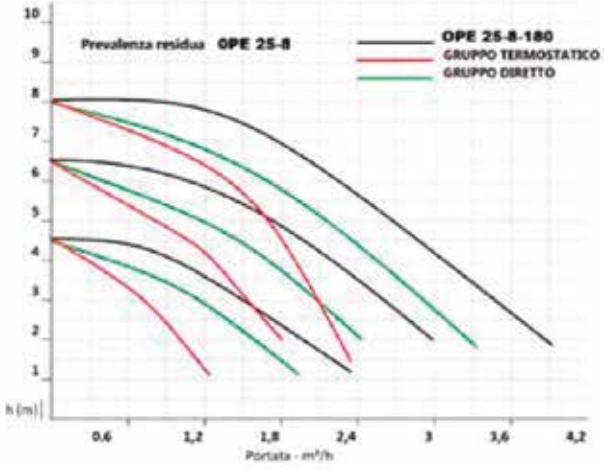
The selection of the most suitable circulator depends on the need to ensure a sufficient flow rate in the system to exchange the power established during the design. Once this data is known and considering the temperature difference Δt between the flow and return lines, we can determine the flow rate in m_3/h. Once the system's pressure drops have been calculated, they must be subtracted from the booster group curves. At this point, verify that the residual head at the design flow rate is sufficient. Proceed as described below.

Heads and flow rates of pumps and booster units

GPA 25-7.5-III-PRO-180



OPE 25-8-180



PHASE 1

Calculation of theoretical flow rate (G)

Example: for a system that requires a power P=30kW with a temperature difference Δt=10K, we calculate the flow rate:

The following Δt are indicative:

· Δt=20K= Radiators - Low insulation

· Δt=15K= Radiators - Medium Insulation

· Δt=10K= Radiators - High insulation

· Δt=7K= Radiant panels

· Δt=5K= Heat pumps

$$\frac{30kW \times 860}{10K} = 2580\ L/h = 2.58\ m_3/h$$

PHASE 2

Pressure drop calculation

Once the flow rate (G) has been determined, the system pressure losses must be calculated.

PHASE 3

Pump validation

Subtract the system pressure drops from the booster group curve and check that the residual head at the design flow rate is sufficient.

PHASE 4

Optimization

If the head is insufficient, change the pump's operating mode, choose a more powerful pump, or reconsider the radiator/panel layout. This approach ensures that the booster unit is properly sized for the heating system.

Disclaimer: The calculations and information in this document are purely indicative and for illustrative purposes. It is recommended to always consult a qualified heating engineer for an accurate and personalized assessment, taking into account all the specific system variables. The installation and management of heating systems must be performed by competent professionals, in compliance with current regulations.

All units are supplied complete with high density, shaped EPP (expanded polypropylene) insulation, consisting of three separable pieces.

This configuration allows access to components for adjustment, control, and maintenance without having to completely remove the insulating coating. The structure is designed to adhere to the geometry of the hydraulic unit, ensuring continuous insulation and component protection even during maintenance.

Technical characteristics of the EPP

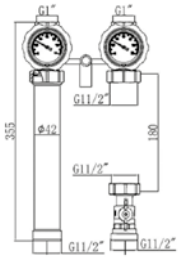
The EPP used for this type of insulation has technical characteristics that make it particularly suitable for pre-assembled hydraulic units and manifold kits:

- low thermal conductivity, useful for limiting heat loss and improving the energy efficiency of the unit;
- closed cell structure, which reduces moisture absorption and contributes to stable performance over time;
- good mechanical resistance to compression and impacts, with adequate protection of internal components;
- low weight, which facilitates installation, handling and assembly operations;
- dimensional stability, even in the presence of thermal variations typical of heating and distribution systems;
- good resistance to humidity and condensation, with limited deterioration of the insulating characteristics;
- resistance to aging, with performance maintained over time under normal operating conditions;
- workability and precise shaping, which allow the creation of technical shells shaped to the group's components;
- ease of assembly and disassembly, thanks to the division into combinable and removable elements;
- compact and easily cleanable technical surface, suitable for installation in heating plants and technical rooms;
- suitability for use in booster units, mixing units, manifolds and pre-assembled hydraulic modules.

MIXED, DIRECT AND ANTI-CONDENSATION RELAUNCH GROUPS

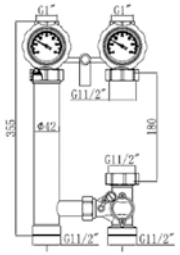
DIRECTED GROUP

The pre-assembled high-temperature booster unit is designed to distribute the heating system's flow fluid while maintaining the same temperature as the primary circuit of the boiler, heat pump, or district heating system. Depending on the available manifold or other system requirements, the flow can be configured to be on the right or left: simply reverse the flow and return pipes.



3-WAY MANUAL GROUP

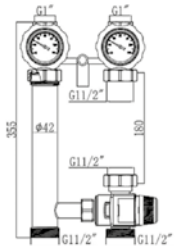
The pre-assembled high-temperature booster unit with three-way valve and bypass is designed to distribute the heating system's flow fluid, regulating the flow temperature of the boiler, heat pump, or district heating system. Depending on the available manifold or other system requirements, the flow can be configured on the right or left: simply reverse the flow and return pipes. The unit can be motorized by removing an actuator (or servomotor). You can find the component on page 37 with the code: 5CI0213D.



THERMOSTATIC GROUP

LOW AND HIGH TEMPERATURE

The pre-assembled booster unit with fixed-point mixing is designed to distribute the heating system's flow fluid at a temperature regulated by the thermostatic mixer, which allows for precise adjustment of the water temperature between 20°C and 45°C in the low-temperature unit and between 45°C and 60°C in the high-temperature unit. Depending on the available manifold or other system requirements, the flow can be configured on the right or left: simply reverse the flow and return pipes.



ANTICONDENSATION GROUP

MOTORIZED WITH ADJUSTABLE SETPOINT

It is a hydraulic unit with a motorized anti-condensation valve where the return temperature can be adjusted directly from the display via a temperature probe. The anti-condensation valve keeps the return temperature sufficiently high, preventing excessively cold water from returning to the boiler. This reduces the risk of condensation, corrosion, and thermal shock, especially in biomass, pellet, or wood-fired systems. The electronic circulator ensures water movement and adapts the flow rate to the circuit's needs, resulting in lower electricity consumption and more stable operation than a traditional pump. In short, this unit protects the generator from cold returns and ensures efficient and controlled circulation throughout the system.

MODEL		DESCRIPTION	CODE	MEASURE	PRICE
RELAUNCH GROUP DIRECT		DIRECT RELAUNCH GROUP WITHOUT CIRCULATION PUMP	5CI0200C	1 1/2"	
		DIRECT RELAUNCH GROUP WITH GPA 25-7.5-III-PRO-180 CIRCULATOR	5CI0204C	1 1/2"	
		DIRECT RELAUNCH GROUP WITH HYBRID CIRCULATOR OPE 25-6-180 IPWM1-2	5CI0223D	1 1/2"	
		DIRECT RELAUNCH GROUP WITH HYBRID CIRCULATOR OPE 25-8-180 IPWM1-2	5CI0219D	1 1/2"	
RELAUNCH GROUP WITH THREE-WAY VALVE MANUAL REGULATION		BOOST GROUP WITH THREE-WAY VALVE, MANUAL REGULATION WITHOUT CIRCULATOR	5CI0201C	1 1/2"	
		BOOST UNIT WITH MANUALLY REGULATED THREE-WAY VALVE WITH GPA 25-7,5-III-PRO-180 CIRCULATOR	5CI0205D	1 1/2"	
		BOOST UNIT WITH THREE-WAY VALVE, MANUAL REGULATION AND HYBRID CIRCULATOR OPE25-6-180 IPWM1-2	5CI0224D	1 1/2"	
		BOOST UNIT WITH THREE-WAY VALVE, MANUAL REGULATION AND HYBRID CIRCULATOR OPE 25-8-180 IPWM1-2	5CI0220D	1 1/2"	
RELAUNCH GROUP THERMOSTATIC LOW TEMPERATURE		LOW TEMPERATURE THERMOSTATIC BOOST GROUP WITHOUT CIRCULATION PUMP	5CI0202C	1 1/2"	
		LOW TEMPERATURE THERMOSTATIC BOOST GROUP WITH CIRCULATOR GPA 25-7,5-III-PRO-180	5CI0206C	1 1/2"	
		LOW TEMPERATURE THERMOSTATIC BOOST GROUP WITH HYBRID CIRCULATOR OPE 25-6-180 IPWM1-2	5CI0225D	1 1/2"	
		LOW TEMPERATURE THERMOSTATIC BOOST GROUP WITH HYBRID CIRCULATOR OPE 25-8-180 IPWM1-2	5CI0221D	1 1/2"	
RELAUNCH GROUP HIGH THERMOSTATIC TEMPERATURE		HIGH TEMPERATURE THERMOSTATIC RELAUNCH GROUP WITHOUT CIRCULATOR	5CI0203C	1 1/2"	
		HIGH TEMPERATURE THERMOSTATIC BOOST GROUP WITH CIRCULATOR GPA 25-7.5-III-PRO-180	5CI0207C	1 1/2"	
		HIGH TEMPERATURE THERMOSTATIC BOOST GROUP WITH HYBRID CIRCULATOR OPE 25-6-180 IPWM1-2	5CI0226D	1 1/2"	
		HIGH TEMPERATURE THERMOSTATIC BOOST GROUP WITH HYBRID CIRCULATOR OPE 25-8-180 IPWM1-2	5CI0222D	1 1/2"	
ANTICONDENSATION GROUP MOTORIZED WITH ADJUSTABLE SETPOINT		ANTICONDENSATION GROUP MOTORIZED WITH ADJUSTABLE SETPOINT WITHOUT CIRCULATOR	5CI0230D	1 1/2"	
		ANTICONDENSATION GROUP MOTORIZED WITH ADJUSTABLE SETPOINT WITH HYBRID CIRCULATOR OPE 25-6-180 IPWM1-2	5CI0231D	1 1/2"	
		ANTICONDENSATION GROUP MOTORIZED WITH ADJUSTABLE SETPOINT WITH HYBRID CIRCULATOR OPE 25-8-180 IPWM1-2	5CI0232D	1 1/2"	

MODEL		DESCRIPTION	CODE	MEASURE	PRICE
COLLECTOR		2-ZONE COLLECTOR	5CI0000C	1 1/2"*4WAY	
		3-ZONE COLLECTOR	5CI0001C	1 1/2"*6WAY	
		4-ZONE COLLECTOR	5CI0002C	1 1/2"*8WAY	
COLLECTOR WITH SEPARATOR		COLLECTOR WITH 2-ZONE SEPARATOR - 4 WAYS	5CI0003C	1 1/2"*4WAY	
		COLLECTOR WITH 3-ZONE SEPARATOR - 6 WAYS	5CI0004C	1 1/2"*6WAY	
SEPARATOR HYDRAULIC		1" HYDRAULIC SEPARATOR	5CI0100C	1"	
		HYDRAULIC SEPARATOR 1 1/2"	5CI0101C	1 1/2"	
BRACKETS		COLLECTOR BRACKETS WITH SPACER	5CI0011C		
VALVE ACTUATOR		VALVE ACTUATOR MIXER	5CI0213D		
VALVE ACTUATOR SET MIXER ADJUSTABLE POINT		VALVE ACTUATOR ADJUSTABLE SET POINT MIXER 5°-90°	5CI0219C		

COMMERCIAL RESIDENTIAL

ONE PUMP

QDX INOX STEEL

Drainage pump for lifting water in the countryside, with a recessed steel Vortex impeller for sewage, water supply and drainage of agricultural land, gardens and daily life, drainage of industrial ponds, construction sites and livestock farms.

Fluid temperature:**<40°C** Max Power Consumption (W):**750 watt**

CABLE LENGTH
10 METERS

SPECIAL FEATURES
PRODUCT BENEFITS:

- Plug and Play
- Dry run - 1 min
- 10 meter cable (No chains)
- IP 68
- Max depth 5 m

TECHNICAL DATA SHEET
Pump body:**Steel**
Impeller:**Steel**
Tree:**Steel**
Mechanical Seal:double silicon carbide in oil chamber
Cable length:10 M

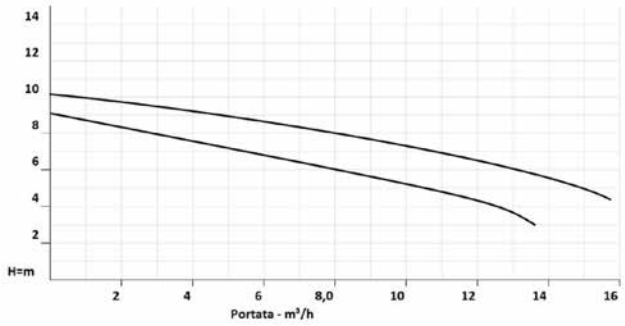
TECHNICAL DATA	
Allowed fluids	
Drainage water for black water with solids - Vortex impeller set back	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	< 40°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Insulation class	IP 68

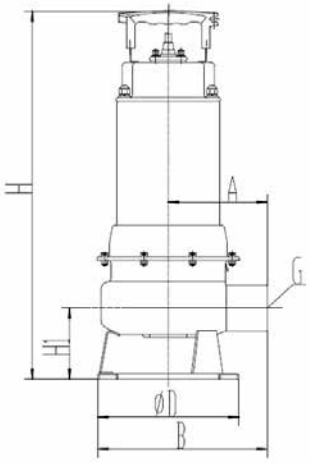
QDX Steel Inox submersible pump in AISI 304 stainless steel, designed to guarantee reliability and durability over time, available with single-channel or vortex impeller, perfect for both fixed and mobile installations.

The QDX Steel Inox range connects to pipes via a threaded connection for standard versions up to 0.75 Kw Hydra Inox Steel 1" ½ GAS

The pump features a high-strength stainless steel impeller, ideal for handling contaminated liquids, even those containing suspended solids and filaments. The hydraulics are entirely computer-controlled to maximize hydraulic efficiency and reduce the risk of blockages.

The pump features a double silicon carbide seal in the oil chamber, which provides excellent protection against infiltration and allows for safe, continuous operation even under harsh conditions. Each pump comes with a power cord and, depending on the version, is also available with a float switch for automatic operation.





Main applications:

- Drainage of civil and industrial wastewater
- Draining of wells, excavations or flooded rooms
- Emptying of seepage water or rainwater
- Drainage of below-grade areas
- Handling of liquids containing suspended solids or filaments
- Discharge of wastewater from sanitary facilities

MODEL	Power (kW)	DIMENSIONS (mm)					
		TO	B	D	H	H1	G
HYDRA INOX 550 M (220)	0.55	124	209	day 170	424	85	1" 1/2
HYDRA INOX 750 M (220)	0.75						

QDX INOX STEEL /1 ~ 230 V / 50/60 Hz

DRAINAGE OF SOILED WATER / n = 3000 r/min

MODEL	CODE	LIST	WEIGHT (KG)	DIAMETER (INCH)	POWER (Kw)	HORSEPOWER	AMPERAGE (A)	VOLTAGE	IMPELLER		Flow rate								
										M3/H	0	2	4	6	8	10	12	14	16
										L/min	0	33.3	66.7	100.0	133.3	166.7	200.0	233.3	266.7
QDX INOX STEEL 0.55	4CI1100C		10.3	1" 1/2	0.55	0.75	3.8	230	Steel Backward Vortex	Meters	9.0	8.0	7.5	7.0	6.0	5.5	5.0	3.8	
QDX INOX STEEL 0.75	4CI1101C		12	1" 1/2	0.75	1	5.2	230	Steel Backward Vortex		10.0	9.0	8.5	8.0	7.0	6.5	6.0	4.8	4.5

COMMERCIAL RESIDENTIAL

QDX CAST IRON

Pump for use in industry, agriculture, mining, construction, environmental protection, With recessed steel Vortex impeller for waste water.

Suitable for conveying sewage, grout, sanitary wastewater, and sewage containing flakes, paper, mud, sand, and other solid particles. Impeller prevents clogging and blockages.

Fluid temperature:**<40°C** Max Power Consumption (W):**750 watt**

CABLE LENGTH
10 METERS

SPECIAL FEATURES
PRODUCT BENEFITS:

- Plug and Play
- Dry run - 1 min
- 10 meter cable
- IP 68
- Max depth 8 m

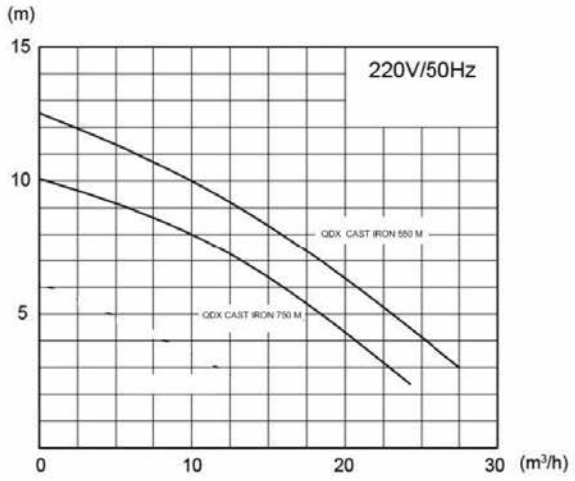
TECHNICAL DATA SHEET
Pump body:**Cast iron**
Impeller:**Cast iron**
Tree:**Steel**
Mechanical Seal:double silicon carbide in oil chamber
Cable length:10 M

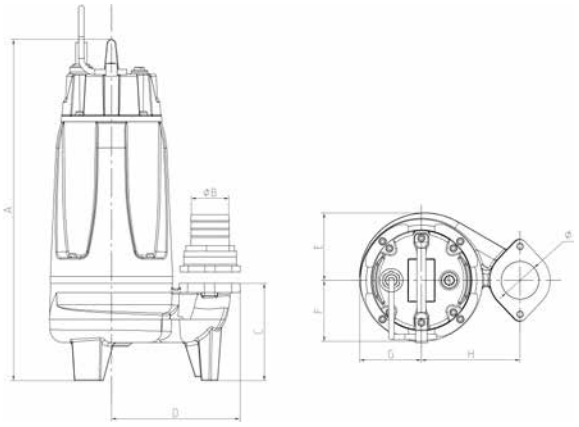
TECHNICAL DATA	
Allowed fluids	
Drainage water with sand and solids	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	< 40°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Insulation class	IP 68

The QDX is a submersible pump with a cast iron body and recessed Vortex impeller that allows for rapid drainage in construction sites, excavations, wells, and water storage basins. In both residential and industrial settings, it is an indispensable tool in the event of accidental flooding, from construction sites to residential applications such as cellars, garages, and laundries.

To operate it, follow these steps: attach a delivery hose (not included) to the universal connector; submerge the pump, placing it on the floor or on the base of the container to be emptied; and connect it to the power supply. When the float switch rises due to the presence of water, the pump will automatically begin emptying the room or tank to the desired level (minimum residue of 20 mm). The QDX's maximum immersion depth is 5 m.

Since it's designed for gray water, it's not important to ensure the water is free of debris, dirt, or solid particles smaller than 35 mm in diameter. The pump's construction, with a cast iron body, cast iron impeller, and stainless steel motor shaft, ensures durability and resistance. All versions feature a double silicon carbide seal in the oil chamber with built-in thermal protection, allowing the pump to run dry for up to a minute without damage.





MODEL	DIMENSIONS (mm)									GW	PKG
	TO	B	C	D	AND	F	G	H	THE	KGS	mm
QDX CAST IRON 550 M	413	2"	110	160	81.5	74.5	74.5	120	43	18.6	485*265*180
QDX CAST IRON 750 M	452	2"	129	170	89.5	80.5	82.5	130	44	23.9	485*265*195

QDX /1 ~ 230 V / 50/60 Hz

DRAINAGE OF SOILED WATER / n = 3000 r/min

MODEL	CODE	LIST	WEIGHT (KG)	DIAMETER (INCH)	POWER (Kw)	HORSEPOWER	AMPERAGE (A)	VOLTAGE	IMPELLER		Flow rate											
										M3/H	0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0	27.5
										L/min	0	41	83	125	166	208	250	291	333	375	416	458
QDX CAST IRON 550 M	4CI1055C		18.6	2"	0.55	0.75	4.1	230	Steel	Meters	10.0	9.5	9.0	8.8	8.0	7.1	6.2	5.1	4.1	3.0		
QDX CAST IRON 750 M	4CI1056C		23.9	2"	0.75	1.0	5.2	230	Steel		12.5	12.0	11.5	10.8	10.0	9.1	8.1	7.2	6.2	5.1	4.0	3.0

COMMERCIAL RESIDENTIAL

CABLE LENGTH
10 METERS

ONE PUMP

WQD QGF

Pump for civil and industrial use, from construction to livestock farming. Equipped with motors ranging from 0.55 kW to 1.5 kW. The pumps are equipped with a grinder made of high-hardness chrome steel to ensure effective, long-lasting cutting for conveying liquids containing flakes, diapers, paper, mud, sand, and other solid particles. Equipped with a double oil-bath seal. Single-phase 230V motor.

Fluid temperature:**<40°C** Max Power Consumption (W):**1500 watt**

PRODUCT FEATURES / BENEFITS:

- Plug and Play
- Dry run - 1 min
- 10 meter cable
- IP 68
- Max depth 8 m

TECHNICAL DATA SHEET
Pump body:**Steel**
Impeller:**Steel/Cast Iron**
Tree:**Steel**
Mechanical Seal:double silicon carbide in oil chamber
Cable length:10 M

TECHNICAL DATA	
Allowed fluids	
Drainage water with suspended solids Grinder impeller for draining waste water	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	< 40°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Insulation class	IP 68

The special grinder series. The WQD QGF models are designed to meet the most demanding wastewater treatment challenges. These models employ a grinder impeller, which offers superior anti-clogging and anti-winding performance compared to conventional centrifugal impellers and is not easily blocked by large particles present in wastewater. In addition to a certain amount of sand and silt, treated wastewater may contain fibrous products, tissue, and other solid particles that require a special impeller.

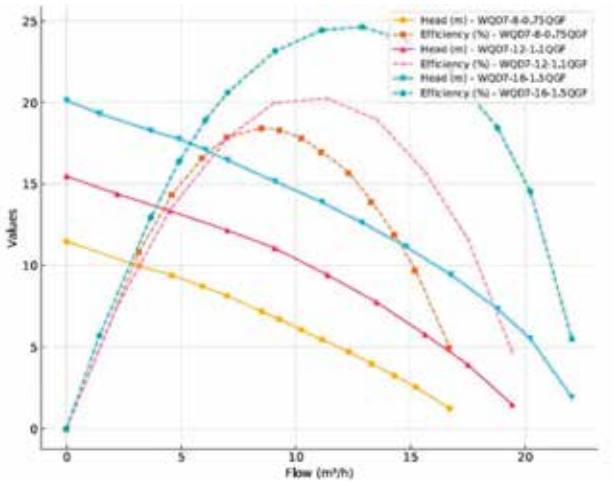
This variant is available with motors from 0.75 kW up to 1.5 kW

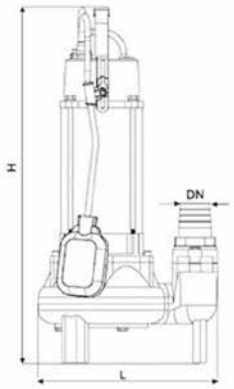
The impeller and diffusers are made of special steel with high abrasion resistance, allowing the shredder to operate continuously even under harsh conditions. The materials used, such as GG20 cast iron for the frame and impeller, and the AISI 416 stainless steel shaft with ceramic-graphite mechanical seal, give these units exceptional strength and durability, making them robust even for sudden relocation to different installations.

These electric pumps with grinder impellers can be used for pumping and grinding wastewater containing solids and fibrous particles. Emptying settling pits, cesspools, and sewage collection pits. Handling wastewater for domestic, industrial, and agricultural use.

Maximum immersion depth: 8 m. Maximum liquid temperature: +40%. Liquid pH value: 4-10

MOTOR: Copper motor winding. Built-in thermal protection. Stainless steel shaft. Double silicon carbide seal in oil chamber. Insulation class: B. Protection class: IP68. Dry running – 1 min. 10 m cable. Float switch included.





MODEL		Outlet	THE	W	H
	Weight (Kg)	DN	mm	mm	mm
WQD7-8-0,75QGF	23	G 2”	400	121.5	165
WQD7-12-1.1QGF	24	G 2”	445	121.5	165
WQD7-16-1.5QGF	27	G 2”	445	121.5	165

WDX /1 ~ 230 V / PN10 / 50/60 Hz

DRAINAGE WITH SHREDDER / n = 3000 r/min

MODEL	CODE	LIST	WEIGHT (KG)	DIAMETER (INCH)	POWER (Kw)	AMPERAGE	VOLTAGE	IMPELLER		Flow rate									
									M3/H	0	2.5	5	7.5	10	12.5	15	17.5	20	22.5
									L/min	0	42	83	125	167	208	250	292	333	375
WQD7-8-0,75QGF	4CI1052C		21	2”	0.75	5.2	230	Cast iron	Meters	11.5	10	9.2	8	6	4.6	2.5	1		
WQD7-12-1.1QGF	4CI1053C		23.5	2”	1.1	7.3	230	Cast iron		15.5	14.2	13.0	12.0	10.5	9.0	6.2	4.0	1.0	
WQD7-16-1.5QGF	4CI1054C		25	2”	1.5	9.8	230	Cast iron		20.1	19	17.8	16	14.5	13	11	8.7	5.5	1.5

ERP READY

ONE PUMP

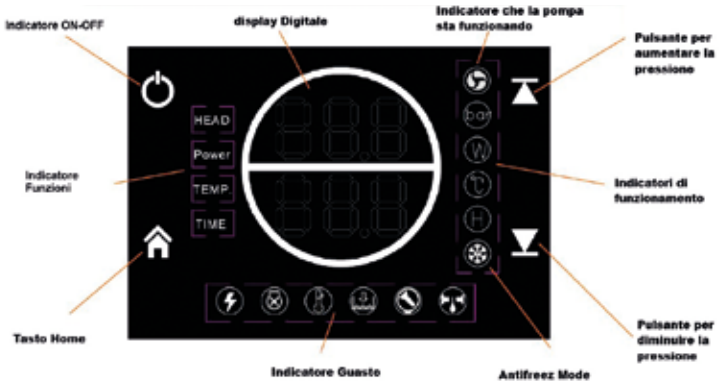
PFM 03-30EC

The PFM 03-30EC is an automatic inverter-controlled pressurization system that includes a high-efficiency self-priming pump, an expansion vessel, pressure and flow sensors, and a check valve. The PFM 03-30EC is a compact, self-contained, quiet, and high-performance pumping system. A sophisticated electronically controlled inverter is the heart of the system, which intuitively:

- maintains constant installation pressure by regulating the pump speed according to the required flow rate;
- monitors the hydraulic and electrical operating parameters and protects the pump from anomalies;
- fits any type of pressurization system, including existing ones;
- limits starting and operating currents to ensure greater energy savings.

All in a compact system that's easy to install, even for non-professionals, because you simply connect the supply and return hoses. Plug in the power cord and the system is ready to use, with functions easily adjusted via a simple control panel.

WRAS APPROVED PRODUCT



TECHNICAL DATA	
Allowed fluids	
Clean water for sanitary use	
Field of application	
Temperature range with a temperature max ambient temperature of +25°C	from +5°C to +40°C
Technical features	
Mains power supply	1 ~ 230 V
Frequency	50/60 Hz
Motor	
Insulation class	IP 68

The PFM 03-30EC is a domestic water pressure boosting system that combines an electric pump, inverter, valves, and a control panel for simple installation, even for non-professionals. It is suitable for use in residential and commercial settings where water mains need to be pressurized for various purposes, such as water distribution within homes, supplying irrigation systems, and drawing and distributing water from rainwater collection tanks.

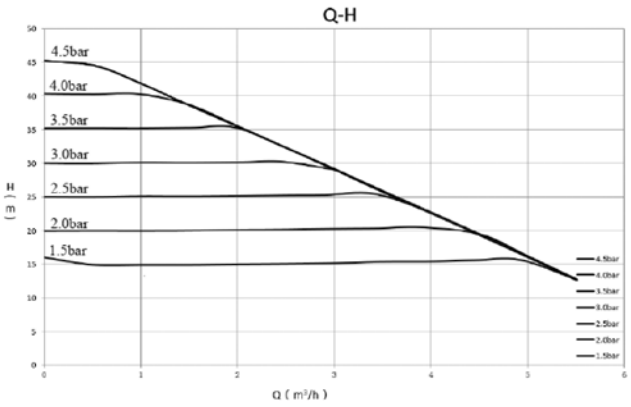
The system features a circulator motor with a multiple impeller, and since there is no mechanical seal, there are no problems with water leaks over time due to seal failure. Furthermore, the high-efficiency motor, equipped with an inverter, consumes much less than traditional motors. The pump is self-priming up to a depth of 11 meters, and the inlet is equipped with a check valve as standard. The system is suitable for use in up to three apartments, considering simultaneous use. For smaller applications, simply adjust the inverter to reduce the pressure. The system is fully automatic and detects when the tap is turned on. Ideally, a domestic hot water tank is used, but an internal expansion vessel is also included.

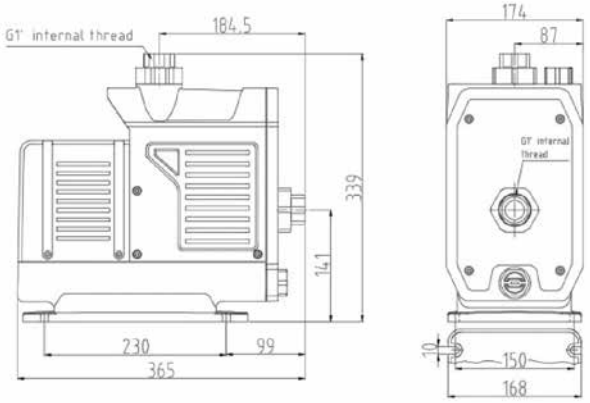
The PFM 03-30EC features an inverter that maintains constant pressure based on the system's actual needs, making the system very quiet and ideal for installation even indoors. When the pressure sensor detects a drop in system pressure due to the opening of one or more outlets, it activates the pump to restore the pressure to the setpoint value.

The inverter regulates the motor speed, modulating hydraulic performance based on the specific system requirements. Once pressure is restored, the flow sensor detects the lack of water flow and stops the pump until the next system start-up cycle.

The system's versatility and ability to adapt to the needs of the plant make it especially effective in reducing energy and water consumption and in solving problems caused by lowering water pressure.

The system also features dry-running protection, thermal protection against motor and inverter overheating, and electrical protection against sudden voltage and current variations.





PFM 03-30EC /1 ~ 230 V / 50 Hz

PRESSURE INCREASE BOOSTER / Max speed 5000 rpm/min

MODEL	CODE	LIST	WEIGHT (KG)	DIAMETER (INCH)	POWER (Kw)	AMPERAGE	VOLTAGE	IMPELLER		Flow rate						
										0	1	2	3	4	5	6
PFM 03-30EC	4CI0100C		9.2	1"	600	2.9	230	Steel	Meters	45	42	35	29	23	16	10

ACCESSORIES

CONTROL PANEL CONNECTIONS

The ONE PUMP GPA circulators are equipped with two electrical connectors in the control panel for electrical input and the connection signal (if required and/or necessary).

DIET

The installation connector is included with the pump and is available as a spare part. Adapters for the electrical cables are also available.

SIGNAL CONNECTION AND CONTROL

The control signal cable has three outputs: signal input, signal output, and signal reference. Connect the cable to the control panel using an FCI or TE Mini adapter. The signal cable can be supplied with the circulator as an accessory.

The PWM connection signal on GPA circulators is protected by a safety cap. It must be removed before connecting the cable.

ACCESSORIES FOR GPA/OPE/NEOS B/NEOS 1F/3F CIRCULATORS

ACCESSORY	Description	CODE	LIST	N. PIECES
Connectors and adapters diet (Power) and PWM (Signal) for cables Superseal, Molex, Minisuperseal and FCI	Superseal Power Connector 1500 mm for GPA	3CE7001B		1
	Minisuperseal PWM connector Length 1000 mm FOR GPA	3CE7002B		1
	OPE Power Connector	3CI5051C		1
	PWM connector for OPE	3CI5050C		1
	SUPERSEAL/MOLEX Adapter for GPA Cyclograph	3CI7000B		1
	MOLEX/superseal adapter for OPE	3CI5053C		1
	PWM Adapter for MINISUPERSEAL Cable OPE Circulators	3CI5054C		1
	PWM Adapter for FCI Cable for OPE Circulators	3CI5055C		1

ACCESSORIES FOR GPA/OPE/NEOS B/NEOS 1F/3F CIRCULATORS

ACCESSORY	Description	CODE	LIST	N. PIECES
Insulators	GPA 20-7,5/9-130 CIRCULATOR INSULATION	4CI6000B		1
	GPA 25-7,5/9-130 CIRCULATOR INSULATION	4CI6001B		1
	GPA 25-7,5/9-180 CIRCULATOR INSULATION	4CI6005B		1
	GPA 25-11H-180 CIRCULATOR INSULATION	4CI6006B		1
	GPA 25/32-17H-180 CIRCULATOR INSULATION	4CI6007B		1
	OPE 20/25-130 CIRCULATOR INSULATION	4CI0085C		1
	OPE 25/32-180 CIRCULATOR INSULATION	4CI0086C		1
	INSULATION NEOS SINGLE FLANGED CIRCULATOR DN 32	4CI6008B		1
	INSULATION NEOS SINGLE FLANGED CIRCULATOR DN 40	4CI6009B		1
	INSULATION NEOS SINGLE FLANGED CIRCULATOR DN 50	4CI6010B		1
	INSULATION NEOS SINGLE FLANGED CIRCULATOR DN 65	4CI6011B		1
	INSULATION NEOS SINGLE FLANGED CIRCULATOR DN 80	4CI6012B		1
Nozzles	PAIR OF BRASS UNIONS FOR CIRCULATOR 1" 1/2"F - 1" F	3CI9928B		2
	PAIR OF BRASS UNIONS FOR CIRCULATOR 1" F - 1/2" F	3CI9935B		2
	PAIR OF STEEL NOZZLES FOR CIRCULATOR 1" 1/2"F - 1" F	3CI9936B		2
Module communication signal	0-10V Module for GPA and NEOS B Pumps	4CI6050B		1
Extension kit	Extension kit (2 PCS) for 1" 1/2 circulator from 130 to 180 mm	3CI9944B		2
Counterflange kit DN 32 threaded Rp 1" 1/4 in Carbon Steel	Kit** consisting of 2 threaded flanges according to DIN EN 1092-1, thread according to EN10226 » In DN32 - Out Rp 1"1/4	4CI0072B		2
Counterflange kit DN 40 threaded Rp 1" 1/2 in Carbon steel	Kit** consisting of 2 threaded flanges according to DIN EN 1092-1, thread according to EN10226 » In DN40 - Out Rp 1"½	4CI0071B		2
Counterflange kit DN 50 threaded Rp 2" in Carbon Steel	Kit** consisting of 2 threaded flanges according to DIN EN 1092-1, thread according to EN10226 » In DN50 - Out Rp 2"	4CI0073B		2
Counterflange kit DN 65 threaded Rp 2" 1/2 in Carbon steel	Kit** consisting of 2 threaded flanges according to DIN EN 1092-1, thread according to EN10226 » In DN65 - Out Rp 2" 1/2	4CI0074B		2
Counterflange kit DN 80 threaded Rp 3" in carbon steel	Kit**consisting of 2 threaded flanges according to DIN EN 1092-1, thread according to EN10226 » In DN80 - Out Rp 3"	4CI0075B		2

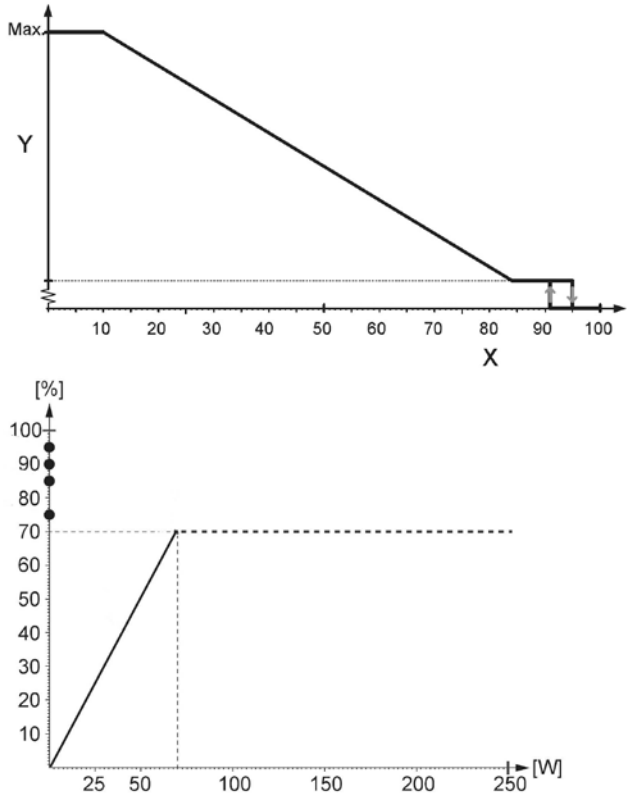
* * The counterflange kit includes: two counterflanges, nuts and bolts.

TECHNICAL APPENDIX

External signal PWM 1/A Heating

- In the high duty cycle area, if the PWM signal fluctuates at the critical point, there will be a delay area, to avoid frequent starting and stopping.
- In a low duty cycle area, the pump operates at a high rotational speed due to the safety factor. For example, if the boiler's signal cable is faulty, the pump will continue to operate to transfer heat through the main heat exchanger at maximum rotational speed. This also applies to the heat pump. It operates the pump and transfers heat through the disconnected signal cable to ensure system safety.

- When the PWM input signal is 0% 0r 100%, the pump switches to non-PWM mode. The system assumes there is no PWM signal input.



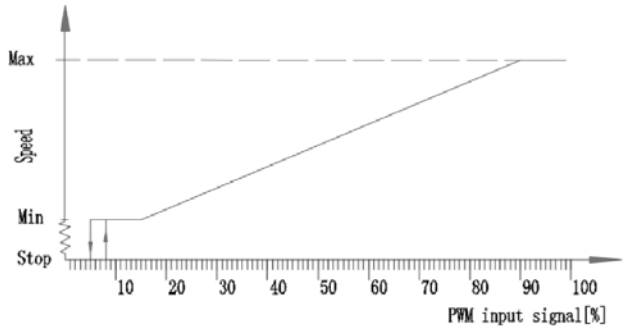
PWM OUTPUT SIGNAL (%)	PUMP STATUS	DESCRIPTION
95	Stand-By	The pump stops
90	The pump stops due to an alarm. Malfunctions (pump blocked)	The pump stops due to an alarm. Malfunctions (pump blocked)
85	The pump stops due to alarm, electrical malfunction	The pump does not work and will restart only after the problem has been resolved
75	Alarm	The pump is working, a problem has been detected.The problem/ malfunction not it is critical, and the pump can still work
0-70	0-70W (1W/% PWM slope)	

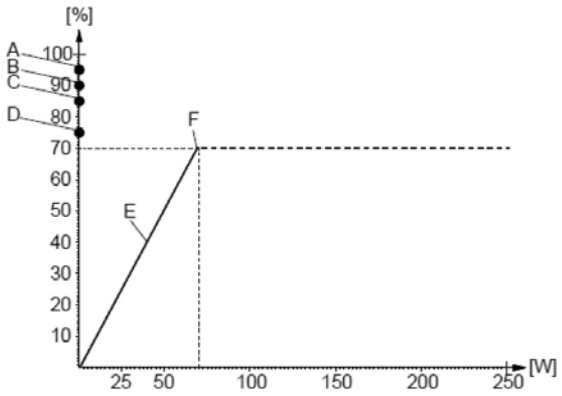
PWM INPUT SIGNAL %	PUMP STATUS
0	The pump switches to non-PWM mode and the system accepts that there is no PWM signal input
<10	The pump runs at maximum rotation speed
10 - 84	The rotation speed of the pump decreases from maximum to minimum
85 - 91	The pump runs at the lowest rotation speed
91 - 95	Low PWM signal, pump clock is avoided by a hysteresis function
96 - 99	Stand-by, the pump stops working
100	Stand-by, the pump stops working

External PWM signal 2 - Solar

- GPA circulators are controlled via a low-voltage digital pulse-width modulation (PWM) signal, which means that the rotation speed depends on the input signal. They can therefore be set for both internal and external control. The speed varies depending on the input profile.

- At low PWM signal percentages (duty cycles), a hysteresis prevents the pump from starting and stopping if the input signal fluctuates around the setpoint. If the PWM signal percentages are not present, the pump stops for safety reasons. If the signal is missing, for example, due to a cable break, the pump stops to prevent the solar thermal system from overheating.





PWM OUTPUT SIGNAL (%)	PUMP STATUS	DESCRIPTION
95	Stand-By	The pump stops
90	The pump stops due to an alarm. Malfunctions (pump blocked)	The pump stops due to an alarm. Malfunctions (pump blocked)
85	The pump stops due to alarm, electrical malfunction	The pump does not work and will restart only after the problem has been resolved
75	Alarm	The pump is working, a problem has been detected.The problem/ malfunction not it is critical, and the pump can still work
0-70	0-70W (1W/% PWM slope)	

PWM INPUT SIGNAL %	PUMP STATUS
≤ 5	Running indicator: 5 lights are fully on, indicating that it is in PWM2 mode Pump status: standby, the pump stops working (the signal line is not connected to the PWM signal, and the pump also stops working).
> 5/8	If the input signal fluctuates near the speed change point, the pump is prevented from starting and stopping.
> 8/15	The water pump is running at minimum speed.
> 15/90	The pump increases linearly from minimum to maximum speed.
> 90/100	Running indicator: 5 lights are fully on, indicating that it is in PWM2 mode Pump status: The pump is running at maximum speed.
Recognition accuracy	±1 (Example: When the PWM input signal is 20%, the actual duty cycle is between 19% and 21%).

GPA/OPE Power and Signal Cables

GPA POWER AND SIGNAL CABLES

SUPERSEAL CABLE

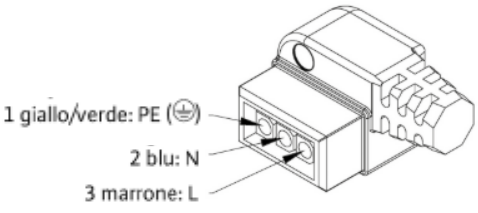
SUPERSEAL CONNECTOR

MINISUPERSEAL PWM CONNECTOR

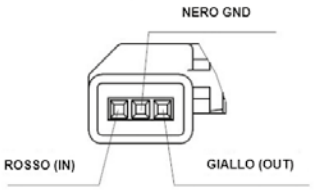
OPE POWER AND SIGNAL CABLES

MOLEX CABLE

MOLEX CONNECTOR



PWM CONNECTOR PHOTO

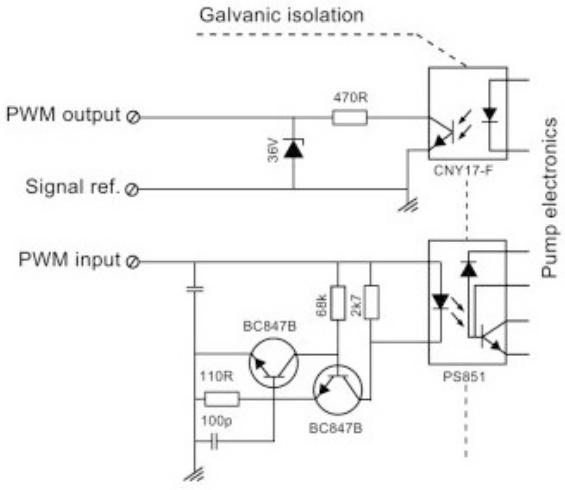


The pump is controlled by external electrical parts through interface.

The interface switches the external signal to indicate that the pump can operate.

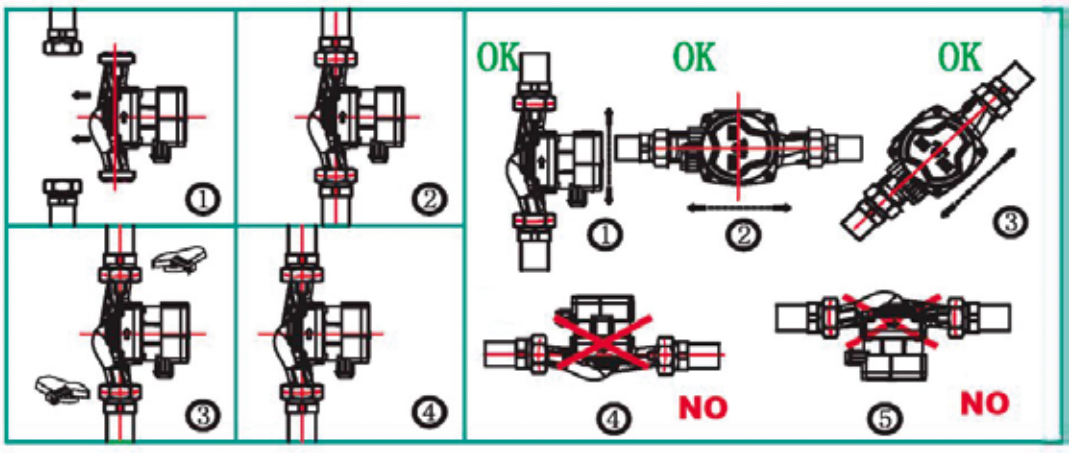
In addition, when the pump input voltage is between 220V and 240V, the interface ensures that the user meets the signal line without the risk of high-voltage electric shock.

“Signal ref” is a reference ground and is not connected to a protective ground.



FAQ

DESCRIPTION	RESTORATION
Internal error	1 - Remove power from the system 2 - Wait for the lights on the control panel to go off and then power up the system 3 - If the error persists, replace the circulator
Low voltage mains (LP)	1 - Remove power from the system 2 - Wait for the warning lights on the control panel to go out and then power up the system. 3 - Check that the mains voltage is correct and, if necessary, restore it to the rating plate data.
High Voltage Network (HP)	1 - Remove power from the system 2 - Wait for the warning lights on the control panel to go out and then power up the system. 3 - Check that the mains voltage is correct and, if necessary, restore it to the rating plate data.
Critical overheating of electronic parts	1 - Remove power from the system 2 - Wait for the lights on the control panel to go out and then power up the system. 3 - Check that the system ventilation ducts are not obstructed or that the ambient temperature is of the premises is specific
Sensor missing reported	1 - Check the sensor connection 2 - If the sensor is faulty, replace it
Overcurrent protection	1 - Check that the circulator turns freely 2 - Check that the glycol level is correct
Voltage error	1 - Remove power from the system 2 - Wait for the warning lights on the control panel to go out and then power up the system. 3 - Check that the mains voltage is correct and, if necessary, restore it to the rating plate data.
Dry running	1 - Indicated by the flashing of all LEDs 2 - Insert the liquid
Engine overtemperature	1 - Remove power from the system 2 - Wait for the engine to cool down 3 - Power the system again 4 - Check that the system ventilation ducts are not obstructed or that the ambient temperature is of the premises is specific
f <100 Hz; f> 5 kHz	1 - Check that the external PWM signal is working and connected as specified. 2 - In case of malfunction of the PWM control unit, the circular gear sets itself to maximum speed (PWM1/A). In the case of PWM2 the circulator remains stationary waiting for regulation
Circulator LED states	1 - Refer to the use and installation manual found in the circulator box with the instructions specifications of that circulator
Assistance	Contact customer service at +39 051 19616352



General Conditions of Salerev. 04.22

1. SUBJECT

1.1 The sale of products (hereinafter the "Products") by One Pump srl, with registered office at Via Tosarelli 67, 40055 Castenaso (BO) and operational headquarters: Via Pellegrino Matteucci, 4, 40057 Granarolo dell'Emilia (BO) (hereinafter the "Seller") is governed exclusively by these "General Conditions of Sale", also available and freely printable or permanently downloadable from the Seller's website https://www.onepump.it, and by any specific conditions agreed upon from time to time with the Buyer and reported in the Seller's offers or order confirmations, such as, by way of example only, the price, terms and methods of delivery and payment. In the event of a conflict between the provisions of these General Conditions of Sale and the specific conditions contained in the Seller's offers or order confirmations signed by the Buyer, the latter shall prevail.

1.2 The signing of the Seller's offer or order confirmation by the Buyer entails full and unconditional acceptance of all of these accompanying General Conditions of Sale which, unless expressly derogated, are always considered to be referred to and binding.

2. ORDERS AND COMPLETION OF SALES

2.1 Each order for Products by the Buyer, irrevocable for 30 (thirty) days from the date of its receipt by the Seller, must be drawn up in writing, with the stamp and signature of the same

Buyer and transmitted (i) to the Seller's local agent/reseller, who will receive such order subject to acceptance by the Seller, or (ii) directly to the Seller itself who always reserves the right to accept or not such order.

2.2 Each order must accurately indicate the types, models, quantities, technical characteristics, and any customizations of the Products ordered, as well as any other information requested by the order proposal forms prepared by the Seller or its agents/resellers. The Buyer assumes all liability arising from the inaccurate or incomplete indication of the above data in the orders placed by him.

2.3 After receiving the Buyer's order, the Seller - who is not bound by such order - reserves the right to send the Buyer a written order confirmation containing these General Conditions of Sale. The Seller reserves the right to modify any specific conditions included in the Buyer's order. Any specific conditions agreed upon verbally or by telephone between the parties will not be valid unless specifically stated in writing in the order confirmation.

2.4 The sales contract for the Products is deemed finalized upon the Seller's receipt of the offer or order confirmation signed for acceptance by the Buyer. The Seller's offer or order confirmation, and with it these accompanying General Conditions of Sale, are in any case deemed accepted by the Buyer if no written objections are received from the Buyer within 2 (two) days of their dispatch.

2.5 Once the sales contract has been finalized, the Buyer may not modify its subject matter or withdraw from the contract. However, upon written request from the Buyer, the Seller has the right to agree to partially or fully terminate the contract, without prejudice to the Buyer's obligation to pay a penalty equal to 20% of the price of the sale subject to termination, which will be retained by the Seller as compensation in addition to any deposit already received. In any case, it is understood that the Buyer must pay the Seller the amount due for the unresolved portion of the sale. The Seller reserves the right to seek compensation for any further damages. All information disclosed to the Buyer by the Seller must be considered confidential and not used for any purpose other than the execution of the sales contract.

3. DELIVERY

3.1 Unless otherwise agreed in writing between the parties, all sales of the Seller's Products are deemed to be made EXW loaded Granarolo dell'Emilia (Incoterms® 2020, ICC, Paris) at the Seller's registered office or at its warehouses or secondary offices, regardless of the Buyer's choice of carrier. Transport costs and any insurance are always borne by the Buyer, even if the Products travel on the Seller's vehicles or entrusted to carriers or freight forwarders other than those indicated by the Buyer. The Products always travel at the Buyer's risk.

3.2 Delivery times are always indicative and not binding for the Seller. Deliveries will be made in accordance with the Seller's production and shipping needs. The Seller reserves the right to divide the Products of a single contract into multiple deliveries, or to consolidate into a single delivery the Products indicated in different contracts with the same Buyer.

3.3 The order is considered fully processed by the Seller upon sending the Buyer the notice that the goods are ready for delivery. From that moment, the Seller will not be liable in any way for damage, loss, destruction, or deterioration of the Products, even if they are still physically available to it.

3.4 The Seller is not responsible for failure or delay in delivery of the Products due to force majeure, unforeseeable circumstances, or justified reasons such as, but not limited to, strikes, riots, civil unrest, acts of war, labor unrest, shortages of raw materials, power failures, fires, earthquakes, and natural disasters in general, or any other cause beyond the Seller's control. In any case of delayed delivery of the Products, the Buyer may not claim termination of the contract or compensation for damages.

3.5 The Seller reserves the right to suspend delivery of the Products sold in the event of non-payment of the price for previous supplies.

3.6 The Products are packaged in standard packaging suitable for loading onto ordinary means of transport and unloading on the ground with suitable, approved forks. The Seller declines all responsibility for any damage caused to the Products during unloading as a result of incorrect handling. The Buyer must advance to the Seller the cost of any special packaging requested in the order and listed in the order confirmation.

3.7 Unless otherwise agreed in writing between the parties, assembly and installation of the Products sold is always the responsibility of the Buyer. If the Buyer wishes the Products sold to be tested, he must communicate this to the Seller at the time of ordering, who will notify the additional costs, which are to be borne by the Buyer unless otherwise agreed in writing between the Parties. The Buyer must also specify the technical requirements for the requested tests and any information relating to the installation, climatic conditions of the location where the Products will be installed, in order to allow the Seller to (i) assess the feasibility of the requested tests and of the Products (ii) take any appropriate measures for testing the ordered Products (iii) calculate the additional costs. Once the tests are completed, if requested, the Seller may send the positive results to the Buyer. The results are considered positive and no complaint can be made by the Buyer if the test results satisfy the technical data and requirements indicated by the Buyer.

3.8 Following successful testing, the Products will be delivered according to the terms indicated in the order confirmation. If the expected delivery date is postponed due to tests requested by the Buyer, the delivery date will be postponed accordingly, and the Buyer must promptly collect the Products from the location indicated in the order confirmation. If the Buyer requests a final test to be performed upon installation of the Products, the Buyer must reimburse the Seller for the travel, board, and lodging expenses of the technicians sent by the Seller for the testing. Upon successful testing, the Buyer must sign the positive testing report, thereby fully and voluntaryly accepting the Products being sold.

3.9. Any delay by the Buyer in accepting delivery of the Products exceeding 10 (ten) working days from the Seller's notification that the goods are ready for delivery will automatically result in the Buyer being charged storage costs incurred by the Seller, amounting to 1% of the price of the Products sold for each day of delay. In any case, it is understood that from the day the notification of readiness for delivery is sent, the risk of loss or destruction of the Products passes to the Buyer.

4. PRICES

4.1 The prices indicated in the Seller's price list in effect from time to time are net of any taxes, duties, packaging, shipping, or insurance costs. Prices may be changed or modified by the Seller at its sole discretion and without notice in the event of changes in the tax regime or sudden and unexpected increases in the cost of labor or raw materials.

4.2 Upon request of the Buyer and upon reimbursement of the relevant expenses, the Seller reserves the right to consent to the execution of trials of the Products at its premises.

5. PAYMENTS

5.1 Unless otherwise indicated in the order confirmation, the Products sold will be invoiced upon delivery.

5.2 If, for the reasons indicated in the previous point 4.1, a sudden and unforeseen increase in price occurs, the Seller reserves the right to apply the thus modified price at the time of delivery.

5.3 Failure to make payment on time or incomplete payment within the agreed terms will constitute a serious breach by the Buyer and will give the Seller the right to terminate the contract by sending a registered letter to the Buyer, without the need for formal notice.

5.4 Where payment for the price of the Products is made by bank cheques, bills of exchange and/or other credit instruments, these will always be considered accepted subject to collection and excluding any novation of the original obligation.

5.5 In the event of a sale by installments, the Products sold remain the exclusive property of the Seller until they are paid in full by the Buyer. Failure to pay even one installment exceeding one-eighth of the price, or failure to pay two or more installments, even if not consecutive, will entitle the Seller, at its sole discretion, (i) to consider the Buyer as having immediately forfeited the benefit of the term and to demand immediate payment of the residual price, or (ii) to immediately terminate the sales contract, withholding the installments already paid by the Buyer as compensation, as well as to demand the fair compensation provided for by art. 1526 of the Civil Code and compensation for any further damages. Payment by check, bill of exchange, promissory note, bank receipt, or other credit instruments does not void the reserved title, as they are to be considered issued and accepted subject to collection.

Any granting of moratoriums or renewal of payment terms through the issuance of new securities or any other form of deferred payment will not under any circumstances result in a novation of the relationship, therefore the retention of title agreement and all other General Conditions of Sale agreed herein will maintain their full effectiveness.

5.6 Any payments made by the Buyer after the agreed terms will automatically accrue default interest in favor of the Seller, at the rate established by Legislative Decree 231/2002, without requiring the Buyer to be put in default; the Seller reserves the right to request further damages pursuant to art. 1224 of the Italian Civil Code.

5.7 In the event of any dispute arising between the parties, the Buyer may not, for any reason, suspend or delay the fulfillment of its payment obligation, as provided for by art. 1462 of the Italian Civil Code.

6. TECHNICAL AND CONSTRUCTION MODIFICATIONS

6.1 The Seller is not obliged to make any technical modifications to the Products being manufactured that may be requested by the Buyer after the conclusion of the contract pursuant to the previous point 2.4. 6.2 In any case, the Seller reserves the right, without prejudice to the essential characteristics of the Products, to modify, even after the conclusion of the contract pursuant to the previous point 2.4, construction and/or technical details of its Products without the obligation to notify the Buyer.

7 WARRANTY

7.1 The Seller grants the Buyer a warranty on the mechanical parts of the Products for a period of 12 (twelve) months from the date of delivery of the Products themselves, as identified pursuant to the previous point 3.3. The Seller guarantees that during this period the Products will be free from defects in materials and workmanship, provided however that the Products are in normal conditions of use and maintenance.

7.2 The warranty, which does not cover parts subject to normal wear and tear or damage caused by transport, constitutes the sole and exclusive warranty provided by the Seller on the Products, excluding any other warranty, whether express or implied, and consists in the free repair or replacement of the Products or their parts which, at the sole discretion of the Seller, are deemed defective. The warranty is subject to the timely reporting of defects to the Seller within 8 days of delivery for immediately detectable defects and within 8 days of discovery for hidden defects. In the event of uncertainty regarding the delivery date, the production date of the Product affixed to the identification plate installed on the same will be valid. To be valid, the report must be sent exclusively to the Seller's headquarters by registered mail.

7.3 Any delay in payments or even partial insolvency of the Buyer will result in the automatic forfeiture of this guarantee.

7.4 Warranty work will be performed at the Seller's premises or, at its sole discretion, at a service center of its choice. To be eligible for the warranty, the Products must be sent, at the Buyer's expense, to the Seller's premises or to the authorized service center indicated by the Seller. If the Product is deemed defective, the parties will agree on the least expensive and most effective method to eliminate such defects.

7.5 In addition to the case provided for in the previous point 7.3, the guarantee automatically lapses in the event that:

- technical interventions, dismantling or repairs have been carried out on the Products by persons not authorised by the Seller;
- the malfunction of the Products is due to incorrect installation and/or electrical connection, tampering, improper use, not in compliance with the instructions or beyond the limits of use indicated in the instructions in use;
- corrosive liquids, sandy water, chemically or physically aggressive liquids have been pumped without prior written authorization Seller's ta;
- insufficient electrical protection is used;
- the product has been subjected to overloads beyond the indicated limit;
- the damage complained of depends on normal wear and tear resulting from the attrition of materials: such as, by way of example only: mechanical seals, bearings, bushings, shafts, impellers, electrical components;
- maintenance has been omitted or insufficient or the defect results from installation that does not comply with current regulations;

7.6 In express derogation of art. 1494 of the Italian Civil Code, the Seller shall in no case be liable for damages caused by defective products or delayed warranty interventions.

8. EXPORT CONTROL COMPLIANCE

8.1 Buyer acknowledges and agrees that the export, sale or transfer of the Products to certain persons and/or entities or to certain end-uses/destinations may be subject to restrictive measures or prohibitions under United Nations (UN), European Union (EU), United States of America (USA) or United Kingdom (UK) export control legislation and/or international economic sanctions.

8.2 The Buyer undertakes not to export, resell or transfer, directly or indirectly, the Products to any natural or legal person, entity or body subject to restrictive measures, included in the United Nations Security Council Sanctions Consolidated List, the European Union List of Persons, Groups and Entities subject to EU Financial Sanctions, the Office of Foreign Assets Control (OFAC) Specially Designated Nationals and Blocked Persons List and/or the UK Consolidated List of Financial Sanctions Targets in the UK and/or to entities owned or controlled by persons or entities on such lists, or for uses prohibited by EU, United Nations, US or UK export control legislation and/or international economic sanctions.

8.3 The Buyer will not take any action that could cause One Pump srl to violate applicable export control and sanctions laws and regulations, including the restrictive measures imposed by the EU on Russia, Belarus and/or the EU restrictions for Crimea and Sevastopol, Donetsk and Lugansk; and specifically declares that it will not sell, supply, deliver, transfer or otherwise dispose of the Products to any natural or legal person, entity or body in the regions of Crimea and Sevastopol, Donetsk and Lugansk.

8.4 The Buyer may not sell the Products to any person or entity that the Buyer has reason to believe may be engaged in the production or use of military or nuclear explosive applications, in facilities for civil nuclear activities not covered by the IAEA (International Atomic Energy Agency) safeguard clause or in applications relating to the development and/or production of chemical weapons and weapons of mass destruction and missiles that may be used for such purposes.

8.5 The Buyer represents that the Products will be exported, re-exported or transferred to a third party only on condition that that third party accepts the same undertakings in this provision as binding on itself, and on condition that that third party is known to be reliable and trustworthy in complying with such undertakings.

8.6 The Buyer shall indemnify and hold One Pump srl harmless from and against any and all damages, direct and indirect, which may arise from any violation of the export control regulations of the United Nations, the European Union, Italy, the United States or the United Kingdom and international economic sanctions in relation to the Products and any sale or transfer thereof to sub-buyers or end users.

9. DOCUMENTATION

9.1 The illustrative or descriptive documentation of the Products, drawings, weight specifications, capacities, dimensions and similar, is for informational and indicative purposes only, therefore the Seller is not responsible for any inaccuracy or incompleteness of the information contained therein.

10. APPLICABLE LAW AND JURISDICTION

10.1 Each contract for the sale of the Products is subject exclusively to Italian law, with the express exclusion, in the case of international sales, of the applicability of the 1980 Vienna Convention on the International Sale of Goods.

10.2 For any dispute relating to or inherent in the interpretation, execution or termination of the sales contracts of the Products, the Court of Bologna shall have exclusive jurisdiction, without prejudice in any case to the Seller's right to take action before the judicial authority of the place where the Buyer has its headquarters, warehouses, depots or other attackable assets.

Pursuant to articles 1341 and 1342 of the Italian Civil Code, the Buyer declares to have read, understood and specifically accept the following clauses of the General Conditions of Sale: 1.2 (applicability of these General Conditions of Sale);
2.5 (penalty in the event of mutually agreed termination of the contract); 3.3 (time of order fulfillment); 3.9 (storage costs for uncollected goods)
5.3 (termination in the event of failure to make timely or incomplete payment); 5.5 (retention of title); 5.7 (prohibition of suspension of the performance of the Buyer's obligations); 7.2, 7.3, 7.5 and 7.6 (Warranty, limits and causes of forfeiture); 10.1 and 10.2 (applicable law and competent court).

AUTHORIZED DEALER

Beyond the original.

Electronic circulators designed to exceed the performance and durability of original equipment.

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