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ATAC Solutions is known for its state-of-the-art liquid collection fleet and its expertise in providing bespoke turnkey wastewater process solutions.

With a focus on sustainability and accreditation in ISO 9001 & ISO 14001, the company serves domestic and industrial clients across the South-East and London.

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ELECTRONIC CIRCULATORS

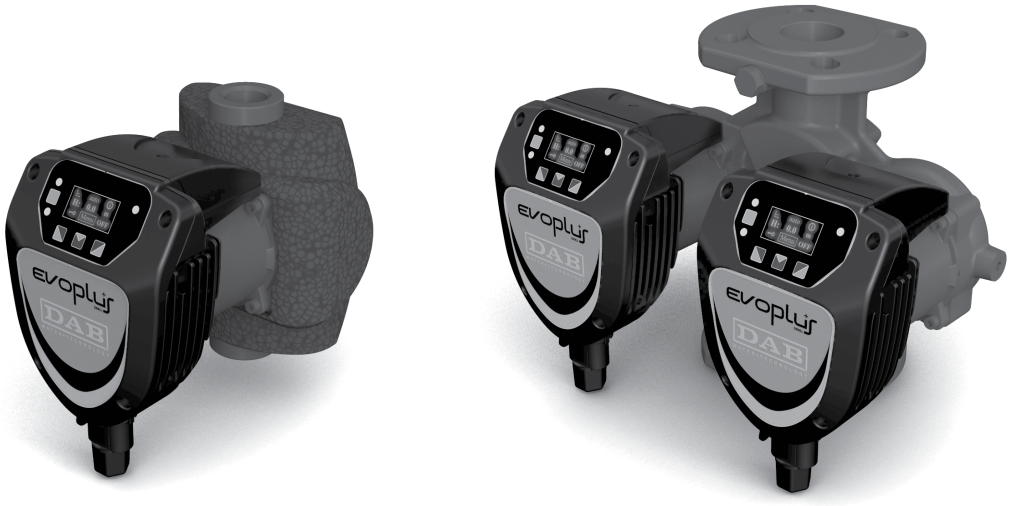
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Technical Sheet

ELECTRONIC CIRCULATORS FOR SMALL COMMUNITY HEATING AND AIR CONDITIONING SYSTEMS



compliant with the 2013 and 2015 european directive ErP 2009/125/EC (ex EuP)

GENERAL DATA

APPLICATIONS

EVOPLUS electronic circulators can be used in heating, ventilation, and air conditioning systems for residential and commercial buildings including:

- Large residential buildings
- Clinics and Hospitals
- Real Estate Assets
- Condominiums and apartment blocks
- Schools
- Homes
- Office buildings

Single version is available with threaded ports from 1 ½" and 2" and flanged DN 32, DN 40, PN 6 / PN 10 / PN 16.
The twin version is available with flanged pump body DN 32 and DN 40, PN 6 / PN 10 / PN 16.
Special version with bronze pump body for sanitary water circulation.

APPLICATIONS IN HEATING

The heating required in various applications changes significantly during the day/night due to the ambient temperature and changing occupancy levels. This situation is compounded by the different requirements of the various rooms and opening or closing of the various circuit branches in complex installations. Electronically controlled wet rotor pumps constantly ensure, in almost all correctly sized installations, sufficient power and, simultaneously, lower noise emissions, greater comfort and a significant reduction in running costs.

APPLICATIONS IN AIR CONDITIONING

Unlike conventional electronic pumps, EVOPLUS electronic circulators can also be used in air conditioning systems where the temperature of the liquid pumped is lower than the ambient temperature. In these conditions condensate tends to form on the outer surface of the circulator although this does not impair proper operation of either the electronic or mechanical sections. The unit is designed and sized in such a way as to allow the condensate to drain without damaging the construction components.

APPLICATIONS FOR HOT WATER CIRCULATION

The SAN version pump with bronze body has been developed specifically for the circulation of secondary hot water. The constant temperature operating mode controls the water temperature in the circulation pipe without needing to use thermostatic valves, thus maintaining required water temperature for user.

DAB PUMPS si riserva il diritto di apportare modifiche senza obbligo di preavviso

CONSTRUCTION FEATURES

Enbloc circulator composed of cast iron hydraulic section and wet rotor synchronous motor. Motor casing in aluminium. Scroll type pump body featuring high hydraulic efficiency thanks to highly precise design and smooth internal surfaces. In-line suction and discharge ports. The single version is supplied as standard with insulating covers to avoid heat loss and/or the formation of condensate on the pump body. Insulation of the twin version is to be provided by the installer. Use special caution to avoid obstructing the condensate drainage labyrinths in order to avoid impairing operation.
EVOPLUS circulators for small community systems are connected to the power supply line by means of a convenient connector with relative plug supplied as standard that makes the operation simple and fast.
Impeller in technopolymer, motor shaft in alumina held in graphite bearings lubricated by the pumping medium. Rotor protective jacket in stainless steel. Ceramic thrust ring, ethylene propylene seals and stator jacket in carbon fiber composite. Permanent magnet synchronous motor. The twin version features an automatic swing check valve incorporated in the discharge port to avoid water recirculating through the unit when it is not running; moreover, a blank flange is supplied as standard to allow either of the two motors to be removed for servicing. Standard execution of the pump body is PN 16; the flanged version features 4 slots compatible with PN 6 / PN 10 / PN 16 counter-flanges for interchangeability of pumps in existing systems.
Circulator protection rate: IP 44
Insulation Class: F
Standard voltage: single-phase 220/240 V, 50/60Hz
This product complies with European standards EN 61800-3 – EN 60335-1 – EN 60335-2-51

EVOPLUS CONSTRUCTION FEATURES FOR SMALL COMMUNITY SYSTEMS (ELECTRONIC DEVICE)

EVOPLUS circulators are controlled by means of an IGBT-based device in NPT-technology of the latest generation for higher efficiency and robustness.
Specific features includes:

- Sensorless motor control
- Sine wave modulated PWM
- High carrier frequency to eliminate all audio band noise
- Dedicated 32-bit Processor
- Optimised space vector algorithm

An intuitive and functional user interface ensures ease of calibration for all users. The easy to read OLED display on the control panel, 4 easy navigation keys, a drop down menu in line with the latest trends in the field of mobile telephony and a very wide range of functions mean that EVOPLUS circulators are truly revolutionary products. A reliable and robust construction combined with a modern and innovative design completes the product also from an aesthetic point of view.
This range is prearranged for operation with the remote controls having the following expansion modules:

BASIC MODULE

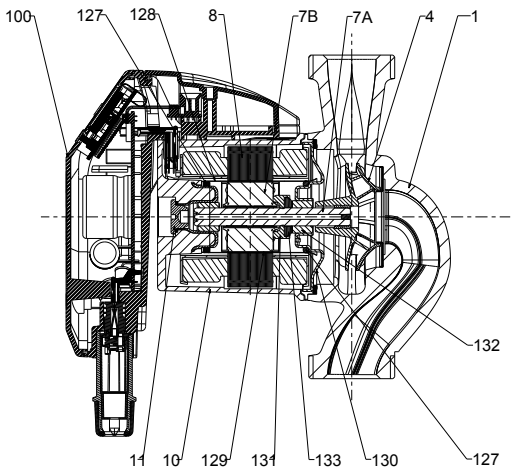
- Economy Function
- Circulator Start/stop
- Alarms system availability
- Indication pump running

MULTIFUNCTION MODULE

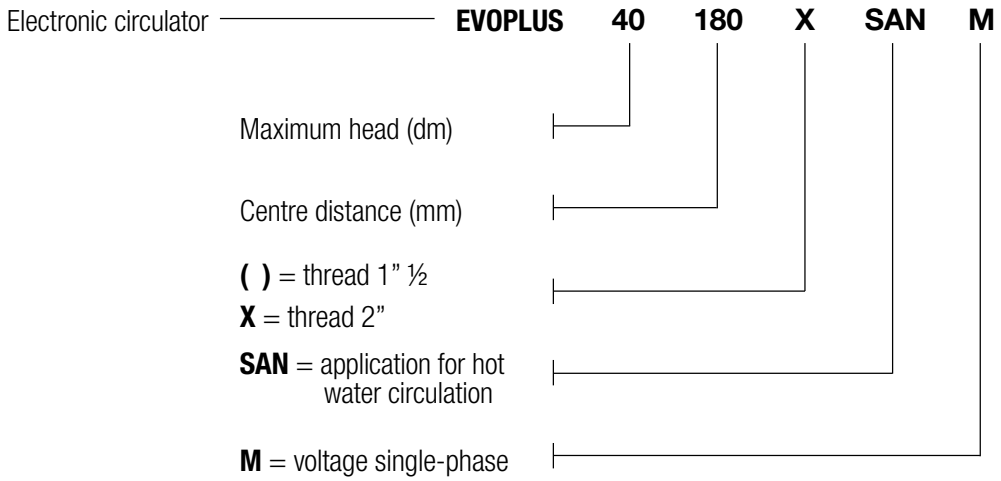
- 2 analogue signals 0-10V
- 1 PWM signal
- 1 analogue signal 4-20 mA
- 1 analogue signal ΔT from temperature sensor
- Connection to ModBus control systems.
  Optional Lonbus with relative module.
- Alarms system availability
- Indication pump running

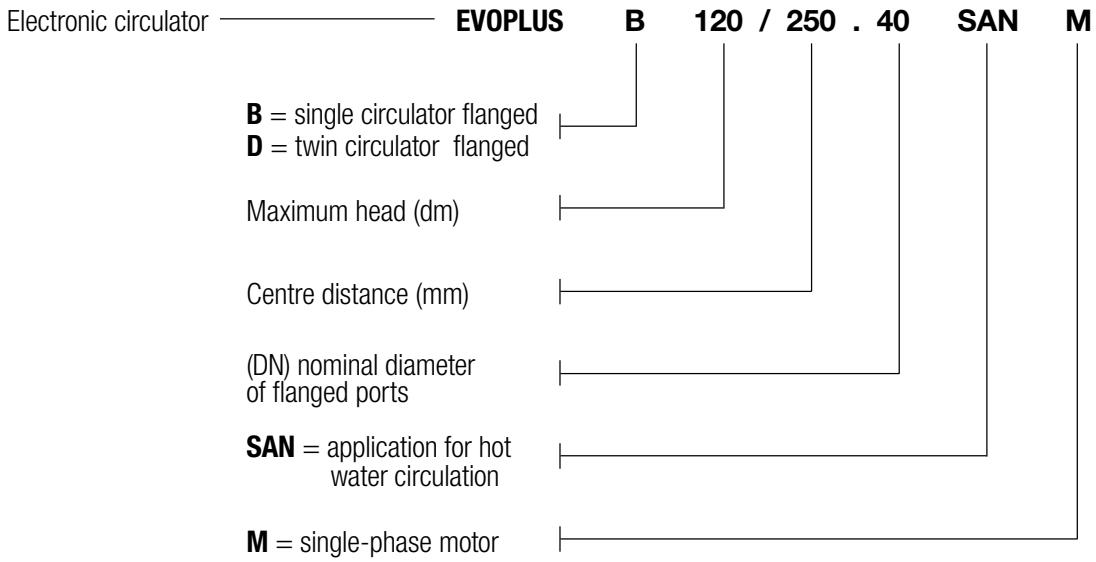
TECHNICAL DATA

N°	PARTS	MATERIAL
1	PUMP BODY	CAST IRON 250 UNI ISO 185 - CTF BRONZE (for SAN version)
4	IMPELLER	TECHNOPOLYMER
7A	MOTOR SHAFT	ALUMINA
7B	ROTOR	STAINLESS JACKET
8	STATOR	- -
10	MOTOR HOUSING	DIE CAST ALLUMINIUM
127	O-RING	RUBBER EPDM
128	STATOR SLEEVE	STAINLESS STEEL
130	CLOSING FLANGE	STAINLESS STEEL
131	THRUST RING SUPPORT	RUBBER EPDM
132	BUSHINGS	GRAPHITE



DESIGNATION INDEX:





Operating range: 2 to 12 m^3/h with head up to 11 meters;

Liquid temperature range: from -10 °C to +110 °C.

Pumped liquid: clean, free of solid contaminants and mineral oils, non-viscous, chemically neutral, close to the properties of water. (max. glycol contents 30%).

Maximum working pressure: 16 bars (1600 kPa)

Standard flanging: DN 32, DN 40 PN 6 / PN 10 / PN 16 (4 slots)

Maximum ambient temperature: +40°C.

Minimum suction pressure: the values are given in the relevant tables.

Accessories: ½"F, ¾"F, 1"F, 1"¼F, 1"¼M unions DN 32 PN 6 and DN 40 PN 10 threaded counter flanges.

Electromagnetic compatibility: EVOPLUS circulators comply with standard EN 61800-3, in category C2, in terms of electromagnetic compatibility.

Electromagnetic emissions: Residential environment (containment measures may be necessary in certain cases).

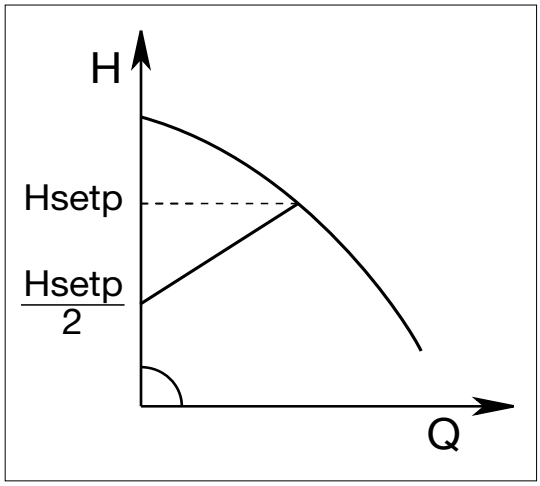
Conducted emissions: Residential environment (containment measures may be necessary in certain cases).

OPERATING MODES

All functions listed below can be consulted by all users (irrespective of the level of expertise) simply by scrolling through the EVOPLUS menu. Calibration and parameter editing are protected and reserved for expert users. The EVOPLUS range is factory-set to the control mode with differential pressure proportional to the curve that guarantees the best energy efficiency index (EEI).

1 - ΔP-v proportional differential pressure control mode

Control mode ΔP-v provides linear variation of the head delivery value from Hsetp to Hsetp/2 in accordance with changes in flow rate.



This control mode is particularly useful in the following types of installations:

a. two-pipe central heating systems with thermostatic valves and with:

- head of more than 4 metres;
- very long circuit piping;
- valves with broad operating range;
- differential pressure regulators;
- high pressure drops in sections of the system carrying the entirety of the water flow rate;
- low differential temperature.

b. Under-floor central heating systems and systems with thermo static valves and significant pressure drops in the boiler circuit.

c. Installations having primary circuit pumps with high pressure drops

Examples of set-point input with ΔP-v

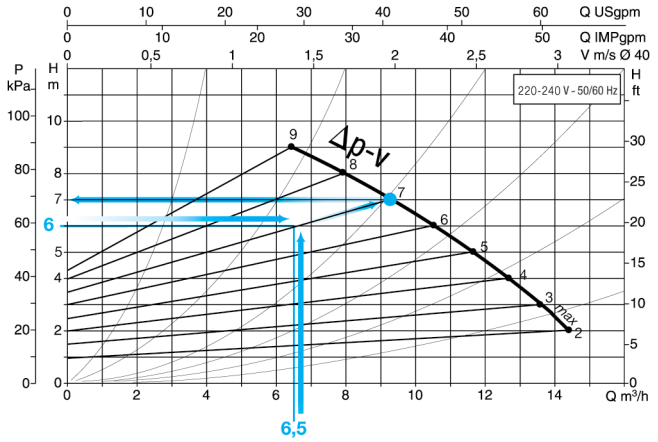
The following operating point is required:

Q = 6,5 m3/h

H = 6 m

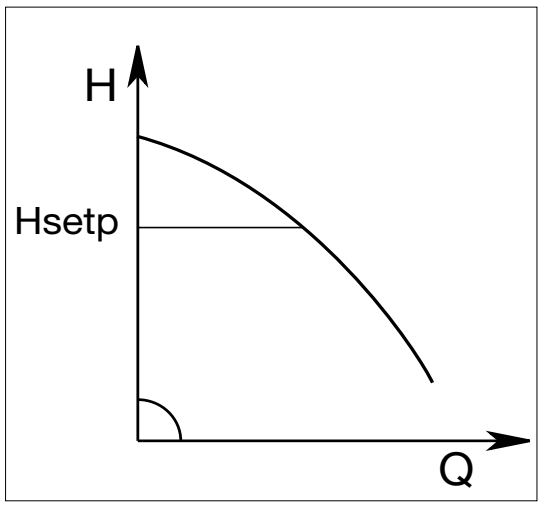
PROCEDURE:

1. In the graph, find the required operating point and then find the nearest EVOPLUS curve to it (in this case the point lies precisely on the curve)
2. Follow the curve until intersecting the circulator limit curve.
3. The head reading found at this limit point will be the set-point head to be entered to obtain the required operating point.



2 - ΔP-c constant differential pressure control mode

Control mode ΔP-c keeps system differential pressure constant at the user-settable value of H setp despite changes in flow rate.



This control mode is particularly useful in the following types of installations:

a. two-pipe central heating systems with thermostatic valves and with:

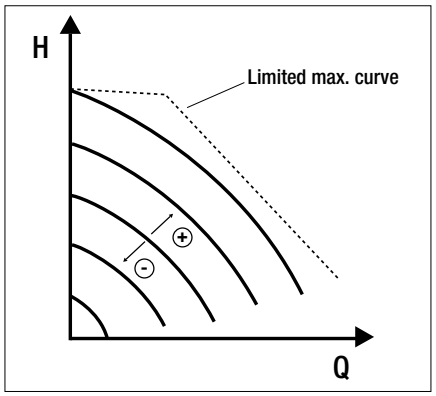
- head of less than 2 metres;
- natural circulation;
- low pressure drops in sections of the system carrying the entirety of the water flow rate;
- high differential temperature (central heating).

b. Under-floor central heating systems with thermostatic valves

c. Single-pipe central heating systems with thermostatic valves and calibration valves

c. Installations having primary circuit pumps with low pressure drops

3 - Constant curve control mode

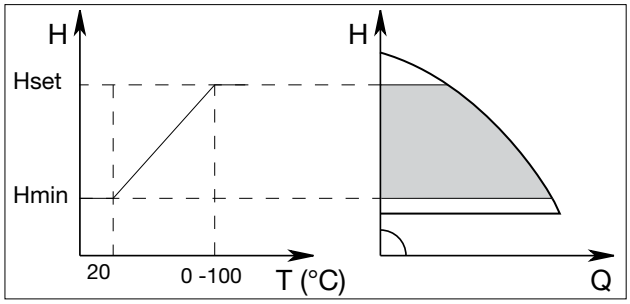


This control setting shows the curve of the circulator at constant speed. The operation curve is selected by setting the rotation speed on a percentage factor. Reaching 100% indicates the curve maximum. The speed of rotation may depend on power restriction and difference in pressure subject to model of circulator. The rotation speed can be set from the display or from an external signal 0-10V or PWM using the multifunction module.

The control setting is ideal for heating and air conditioning applications that require constant flow.

4 - Constant and proportional differential pressure control mode depending on water temperature.

(Function can be activated with multifunction module)



The circulator head set-point is reduced in accordance with the water temperature.

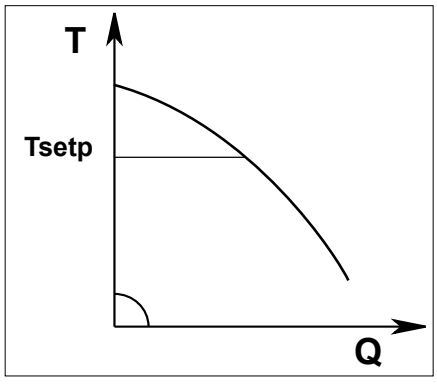
Liquid temperature can be set from 0°C to 100°C.

This control mode is particularly useful in the following types of installations:

a. - in variable flow rate installations (two-pipe central heating systems), in which a further reduction of circulator performance is provided in accordance with lowering of the circulating liquid temperature, in the presence of reduced heating demand.

b. - in constant flow rate installations (single-pipe and under-floor central heating systems), where the performance of the circulator can be adjusted only by activating the temperature influence function.
This function is set on EVOPLUS control panel.

5 – ΔT-c constant differential temperature control mode (Function can be activated with multifunction module)



ΔT-c control mode keeps the differential temperature of the pumped liquid constant, changing the flow rate to the user-settable value Tsetp.

(Function can be activated with multifunction module)

This control mode is particularly useful in the following types of installations :

- Under-floor central heating systems
- Installations having primary circuit pumps
- Installations having circuit pumps with heat exchanger
- Solar energy systems with storage tanks
- Swimming pool heating systems with solar panels

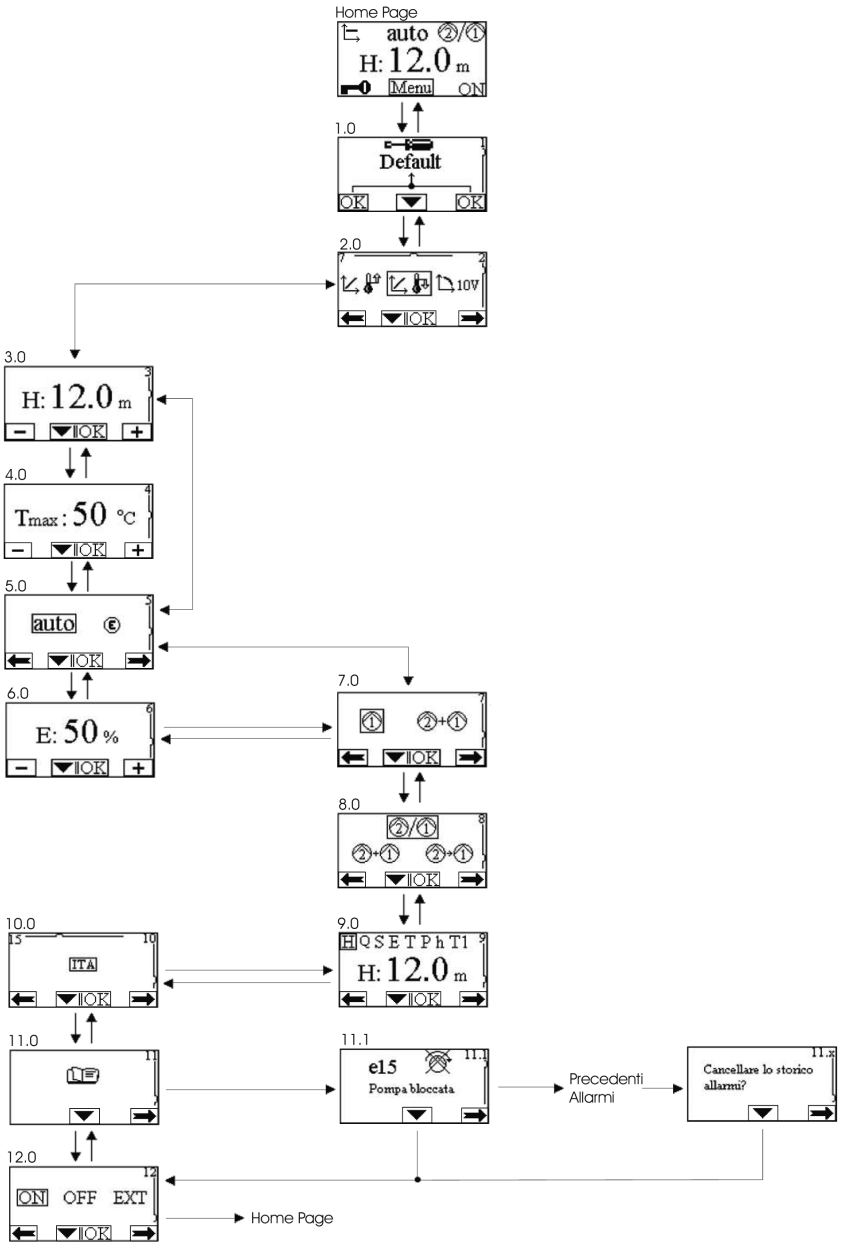
* Available from 2013

ECONOMY FUNCTION

The economy function can be set directly on the control panel, by setting a reduction value (f.rid) the maximum value of which is 50%.
In all settings listed above the Hset value must be replaced with a Hset x f.rid value

EVOPLUS MENU CONFIGURATIONS

The settings are made when passing from one page to another, in the circulator configuration menu.



DESCRIPTION OF SYMBOLS DISPLAYABLE QUANTITIES

Symbol	Description
H Q S E T P h T1	Shows parameters
H	Head in metres
Q	Flow rate in m³/h $Q<Q_{min}$ when Q is less than 30% of Q_{max} Q=0 only when the Evoplus is switched off.
S	Speed in revs/minute (rpm)
E	Analog input 0-10V or PWM
T	Liquid temperature in °C – input D
P	Power in kW
h	Working hours
T1	Liquid temperature in °C – input C
TMAX	Maximum liquid temperature in °C depending on regulation

CIRCULATOR STATUS

Symbol	Description
①	Single circulator or nr. 1
②	Circulator nr. 2
②/①	Alternate twin circulators
②←①	Principal/reserve twin circulators (24 hours one motor / 24 hours the other motor)
②+①	Simultaneous twin circulators
ON	Circulator on
OFF	Circulator off
EXT	Circulator controlled by remote signal (ref. terminals 1-2)

TYPE OF OPERATION

Symbol	Description
auto	Auto function
Ⓔ	Economy function

TYPES OF CONTROL MODE

Symbol	Description
	Δp-c control mode (constant pressure)
	Δp-c control mode depending on temperature with positive increase
	Δp-c control mode depending on temperature with negative increase
	Δp-v control mode (variable pressure)
	Δp-v control mode depending on temperature with positive increase
	Δp-v control mode depending on temperature with negative increase
	Servomotor control mode with speed set on the display.
10V	Servomotor control mode with speed set by remote signal 0-10V
ΔT-c	ΔT-c ontrol mode (constant temperature)

VARIOUS

Symbol	Description
	Control panel blocked
▼‖OK ▲‖OK	Multifunction key for confirming parameters and scrolling pages

FACTORY SETTINGS

Parameter	Value
Control mode	Display of parameters
Hs (Differential Pressure Set-point)	Δp-v
Fs (Frequency Set-point)	auto
Set-point percentage reduction	50 %
Twin operating mode	②/① = Alternating every 24h
Pump start control	EXT (from remote signal on input I1)

TYPES OF ALARMS AND HOW TO DEAL WITH THEM

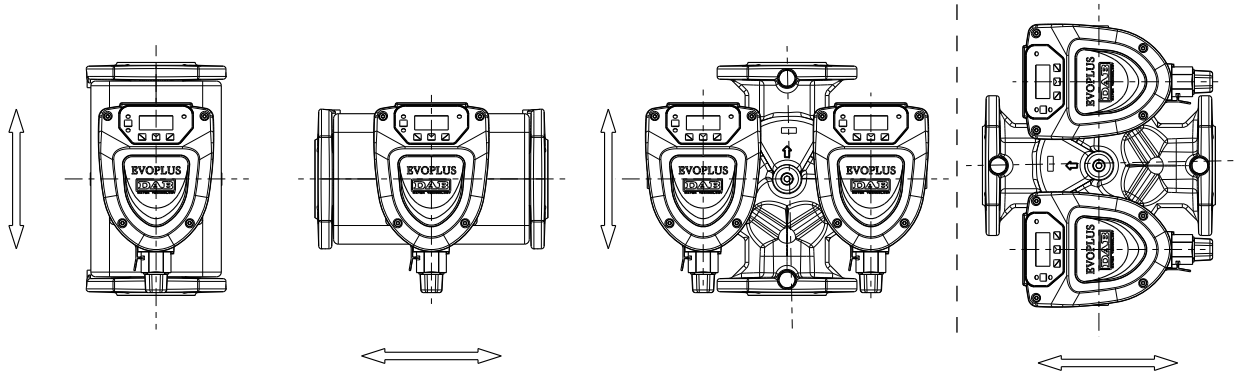
Alarm code	Alarm symbol	Alarm description
e0 - e16; e21		Internal Error
e17 - e19		Short circuit
e20	max	Voltage Error
e22 - e30		Voltage Error
e31		Protocol Error
e32 - e35	max	Overheating
e37	min	Low voltage
e38	max	High voltage
e39 - e40		Overcurrent
e43; e44; e45; e54		Pressure sensor
e46		Pump Disconnected

TROUBLESHOOTING

Error condition		
Display indication	**Description**	**Reset sequence**
E0 - E16	Internal Error	- Switch off power to EVOPLUS - Wait 5 minutes then restore power to the EVOPLUS. - If the error persists, replace the EVOPLUS.
E37	Mains voltage too low (LP)	- Switch off power to EVOPLUS - Wait 5 minutes then restore power to the EVOPLUS. - Check that the mains system voltage is correct; if necessary, restore it to the device's rated level.
E38	Mains voltage too high (HP)	- Switch off power to EVOPLUS - Wait 5 minutes then restore power to the EVOPLUS. - Check that the mains system voltage is correct; if necessary, restore it to the device's rated level.
E32-E35	Overheating of key electronic parts	- Switch off power to EVOPLUS - Wait 5 minutes then remove the EVOPLUS from the pump and clean the motor casing. - Clean the heat sink.
E43-E45; E54	No signal from sensor	- Check the sensor connection - If the sensor has failed, replace it.
E39-E40	Overload cutout tripped	- Check that the circulation pump turns freely. - Check that the level of antifreeze does not exceed the maximum level of 30%
E21-E30	Voltage Error	- Switch off power to EVOPLUS. - Wait 5 minutes then restore power to the EVOPLUS. - Check that the mains system voltage is correct; if necessary, restore it to the device's rated level.
E31	Twin connection failure	- Inspect the twin connection cable for damage. - Check that both circulation pumps can be supplied with power.

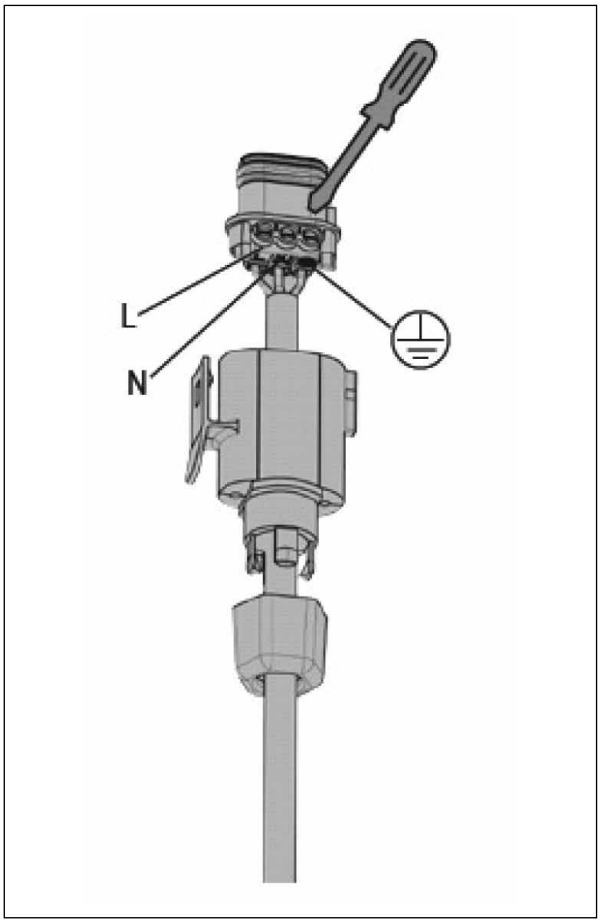
INSTALLATION:

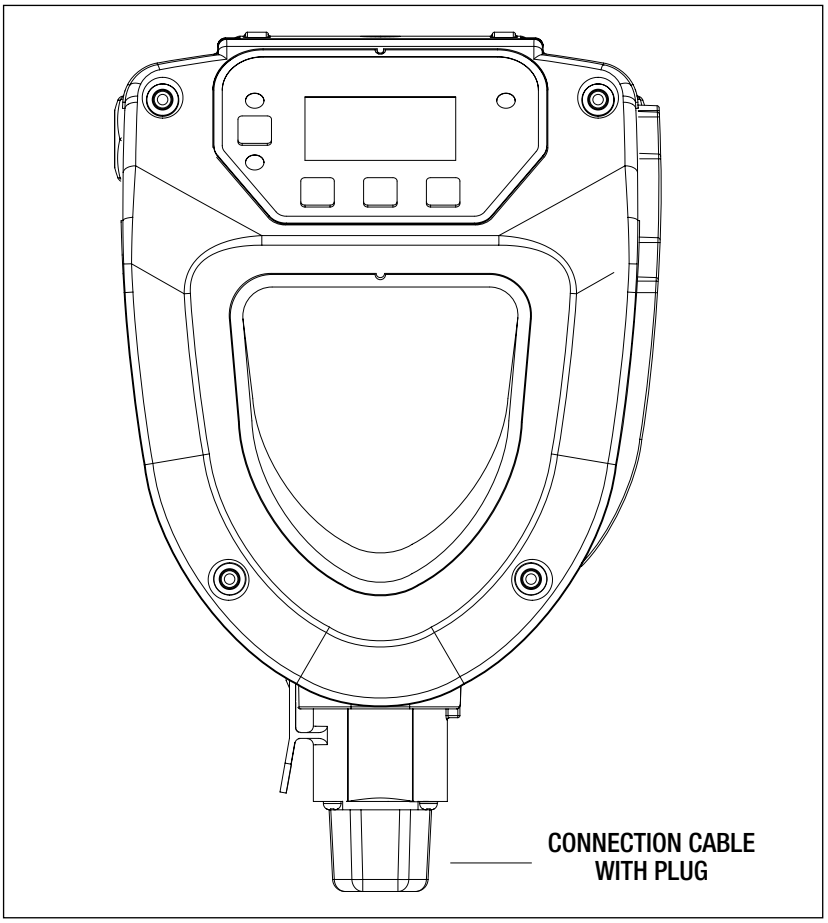
HEATING AND CONDITIONING **ONLY HEATING**



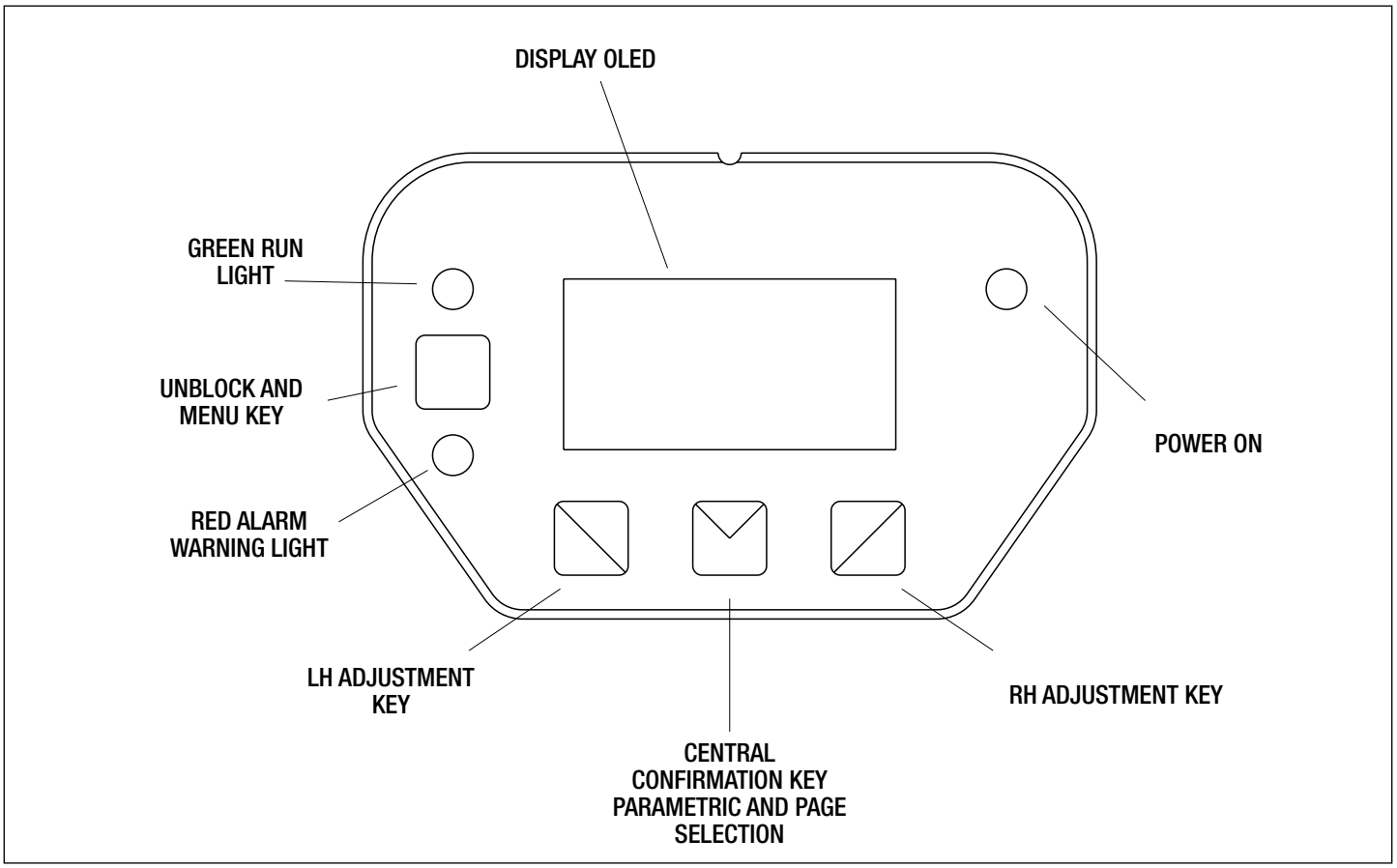
SINGLE **TWIN**

CONNECTION DIAGRAM

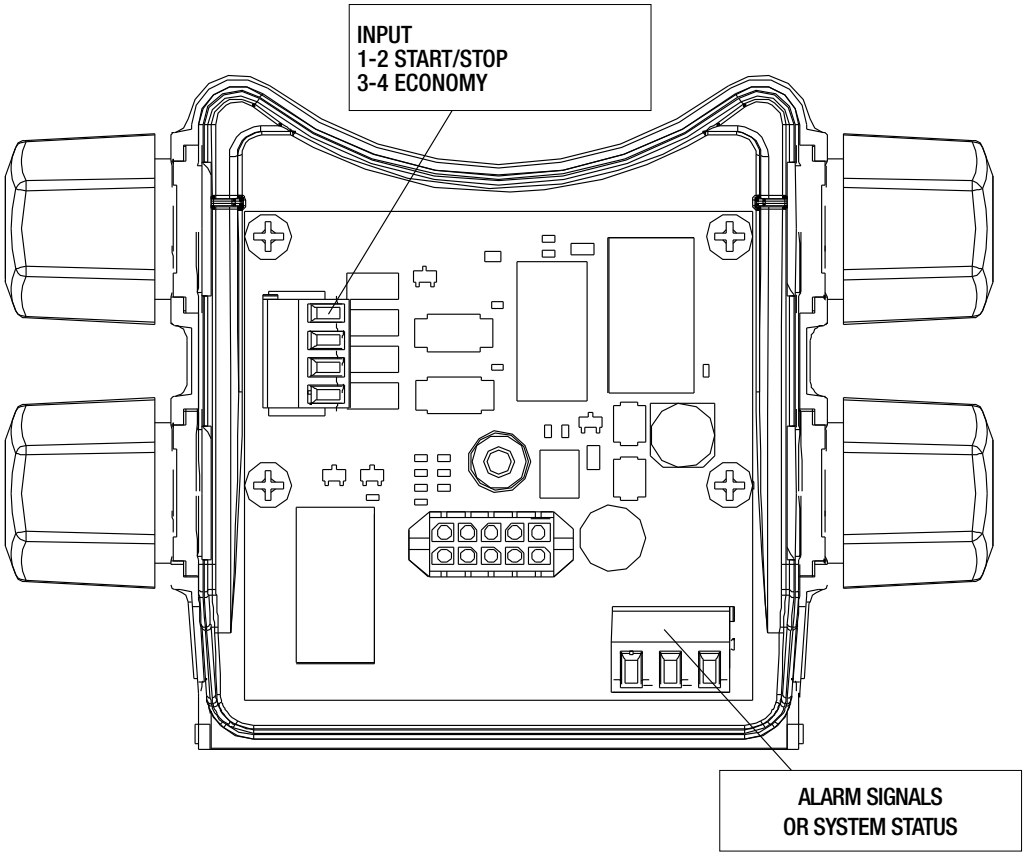




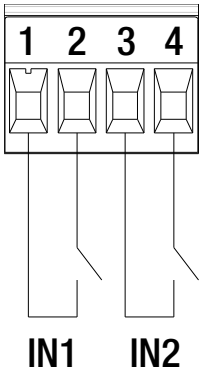
CONTROL PANEL DESCRIPTION



BASIC MODULE



Digital inputs



Input:
1-2 STAT/STOP
3-4 ECONOMY

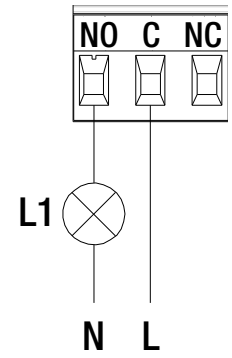
INPUT	TERMINAL NO.	TYPE OF CONTACT	ASSOCIATED FUNCTION
IN1	1	Clean contact	**EXT:** If it is activated from the control panel it will be possible to command the switching on and off of the pump in remote mode.
	2		
IN2	3	Clean contact	**Economy:** If it is activated from the control panel it will be possible to activate the set-point reduction function in remote mode.
	4		

If the **EXT** and **Economy** functions have been activated from the control panel, the system will behave as follows:

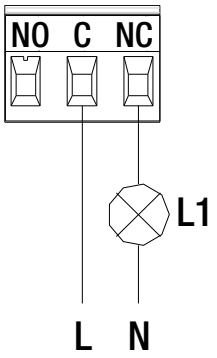
IN1	IN2	SYSTEM STATUS
Open	Open	Pump stopped
Open	Closed	Pump stopped
Closed	Open	Pump running with set-point set by the user
Closed	Closed	Pump running with reduced set-point

Digital outputs

Alarm signals or system status



The function associated with the output OUT1 is "alarms present" and L1 lights up when there is an alarm in the system and switches off when no type of malfunction is found.



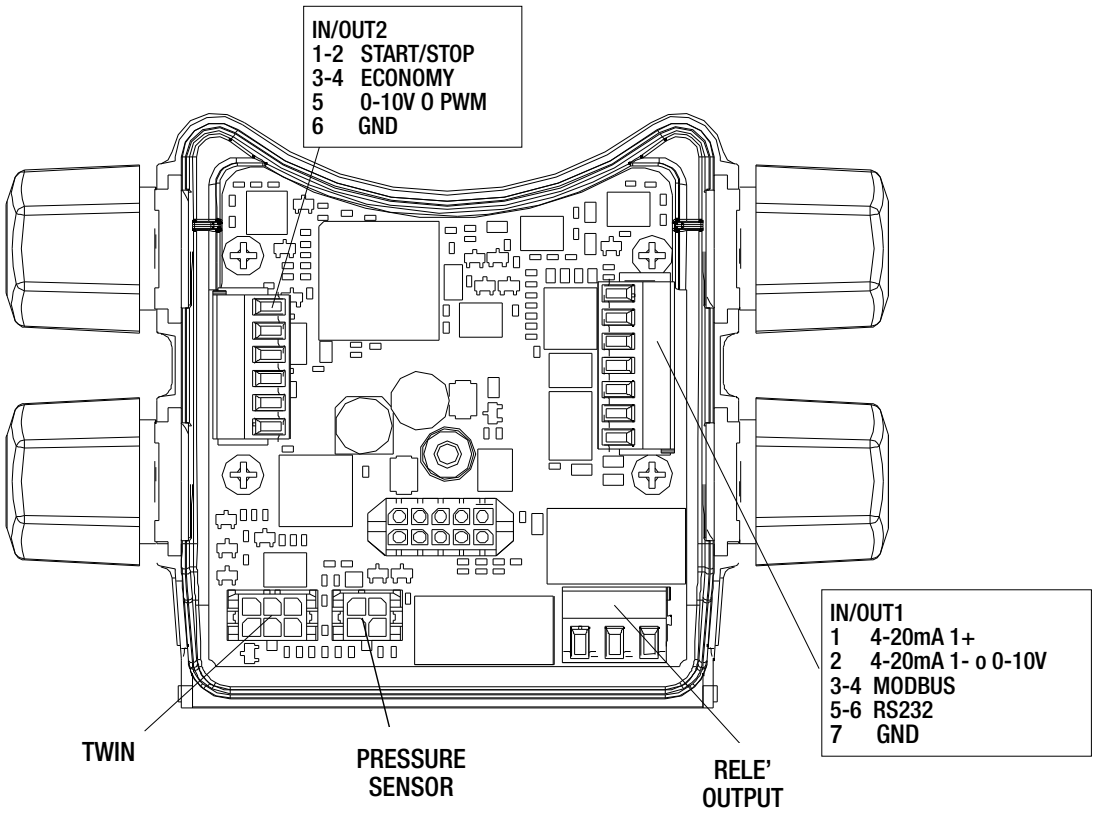
The function associated with the output OUT1 is "pump status" and L1 lights up when the pump is running and switches off when the pump is stopped.

OUTPUT	TERMINAL NO.	TYPE OF CONTACT	ASSOCIATED FUNCTION
OUT1	NC	NC	• Presence/Absence of alarms in the system • Pump running/Pump stopped
	C	COM	
	NO	NO	

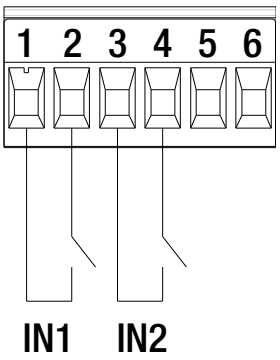
Output OUT1 is available on the pull-out 3-pole terminal board as specified in Table 3: Output OUT1 which also shows the type of contact (NC = Normally Closed, COM = Common, NO = Normally Open).

CHARACTERISTICS OF THE OUTPUT CONTACTS	
Max. bearable voltage [V]	250
Max. bearable current [A]	5 - If resistive load 2,5 - If inductive load
Max. accepted cable section [mm²]	1,5

MULTI-FUNCTION MODULE



Digital inputs



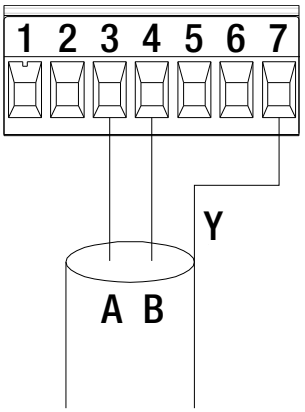
IN/OUT2
1-2 START/STOP
3-4 ECONOMY
5 0-10V O PWM
6 GND

INPUT	TERMINAL NO.	TYPE OF CONTACT	ASSOCIATED FUNCTION
IN1	1	Clean contact	**EXT:** If it is activated from the control panel it will be possible to command the switching on and off of the pump in remote mode.
	2		
IN2	3	Clean contact	**Economy:** If it is activated from the control panel it will be possible to activate the set-point reduction function in remote mode.
	4		

If the **EXT** and **Economy** functions have been activated from the control panel, the system will behave as follows:

IN1	IN2	SYSTEM STATUS
Open	Open	Pump stopped
Open	Closed	Pump stopped
Closed	Open	Pump running with set-point set by the user
Closed	Closed	Pump running with reduced set-point

MODBUS

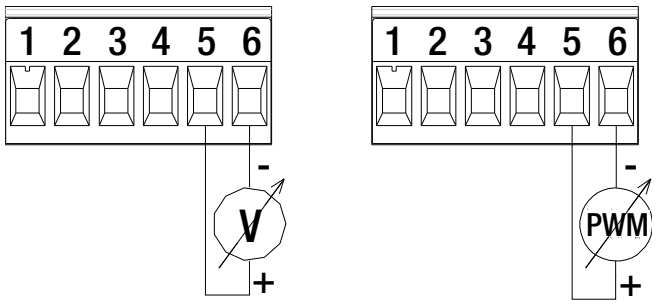


IN/OUT1
1 4-20mA 1+
2 4-20mA 1- o 0-10V
3-4 MODBUS
5-6 RS232
7 GND

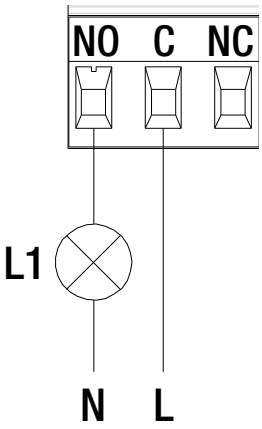
The multifunction expansion module provides serial communication through an input RS-485. The communication is achieved according to MODBUS specifications.
With MODBUS it is possible to set the circulator operating parameters in remote mode such as, for example, the desired differential pressure, the regulating mode, etc. At the same time the circulator can provide important information on the system status.

MODBUS TERMINALS	TERMINAL NO.	DESCRIPTION
A	3	Terminal not inverted (+)
B	4	Terminal inverted (-)
Y	7	GND

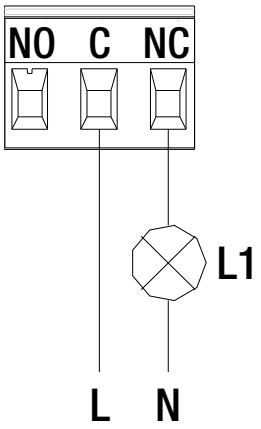
Analogue Input and PWM



Digital outputs



The function associated with the output OUT1 is "alarms present" and L1 lights up when there is an alarm in the system and switches off when no type of malfunction is found.



The function associated with the output OUT1 is "pump status" and L1 lights up when the pump is running and switches off when the pump is stopped.

OUTPUT	TERMINAL NO.	TYPE OF CONTACT	ASSOCIATED FUNCTION
OUT1	NC	NC	• Presence/Absence of alarms in the system • Pump running/Pump stopped
	C	COM	
	NO	NO	

L'uscita OUT1 è disponibile sulla morsettiera estraibile a 3 poli dove è riportata anche la tipologia di contatto (NC = Normalmente Chiuso, COM = Comune, NO = Normalmente Aperto).

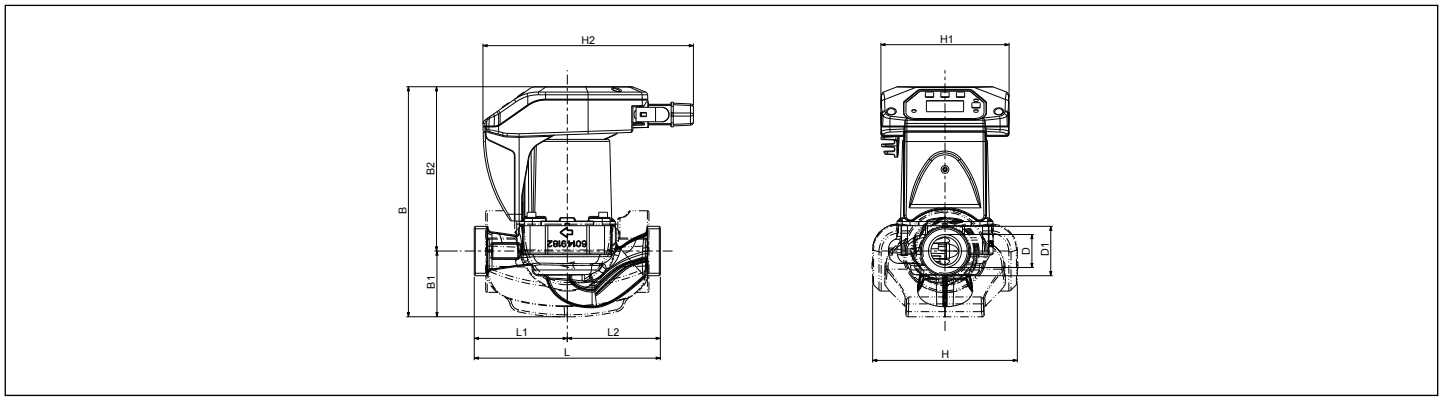
CHARACTERISTICS OF THE OUTPUT CONTACTS	
Max. bearable voltage [V]	250
Max. bearable current [A]	5 - If resistive load 2,5 - If inductive load
Max. accepted cable section [mm²]	1,5

The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

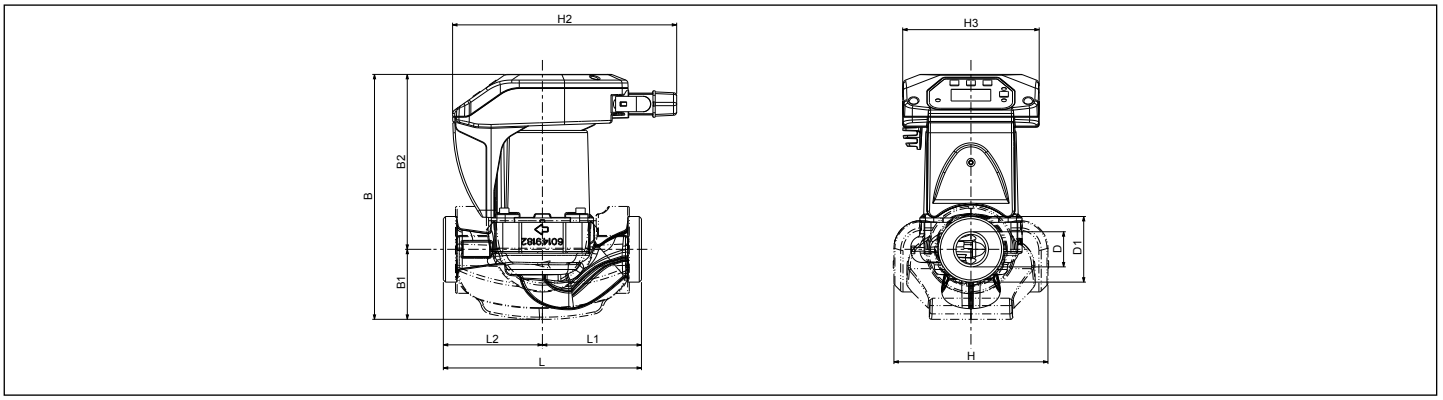
MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	UNIONS ON REQUEST		ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
			STANDARDIZED	SPECIAL	P1 MAX W		t°	90°	100°
EVOPLUS 40/180 M	220/240 V	180	1" F	¾" F - 1¼" M	70	EEI ≤ 0,23	m.c.a.	20	25
EVOPLUS 60/180 M	220/240 V	180	1" F	¾" F - 1¼" M	100	EEI ≤ 0,22	m.c.a.	20	25
EVOPLUS 80/180 M	220/240 V	180	1" F	¾" F - 1¼" M	135	EEI ≤ 0,22	m.c.a.	20	25
EVOPLUS 110/180 M	220/240 V	180	1" F	¾" F - 1¼" M	170	EEI ≤ 0,22	m.c.a.	20	25



Dimensions and weight

L	L1	L2	B	B1	B2	D	D1	H	H1	H2	WEIGHT (Kg)
180	90	90	223	64	159	32	1"½	140	124	204	2,8

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	UNIONS ON REQUEST		ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
			STANDARDIZED	SPECIAL	P1 MAX W		t°	90°	100°
EVOPLUS 40/180 XM	220/240 V	180	2" G	1¼" F	70	EEI ≤ 0,21	m.c.a.	20	25
EVOPLUS 60/180 XM	220/240 V	180	2" G	1¼" F	100	EEI ≤ 0,21	m.c.a.	20	25
EVOPLUS 80/180 XM	220/240 V	180	2" G	1¼" F	135	EEI ≤ 0,21	m.c.a.	20	25
EVOPLUS 110/180 XM	220/240 V	180	2" G	1¼" F	170	EEI ≤ 0,21	m.c.a.	20	25



Dimensions and weight

L	L1	L2	B	B1	B2	D	D1	H	H1	H2	WEIGHT (Kg)
180	90	90	223	64	159	32	2"	140	124	204	2,8

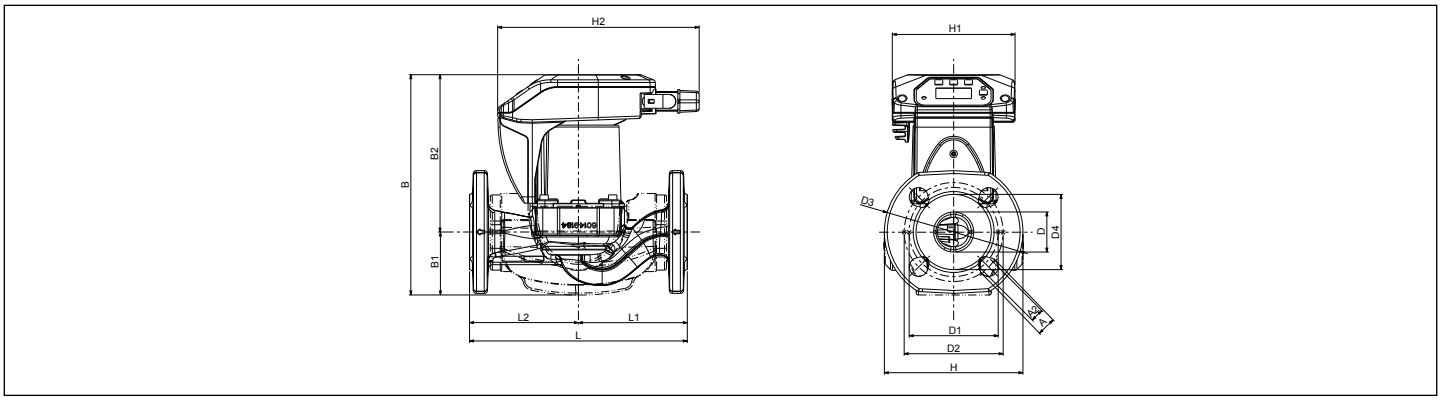
The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS B 40/220.32 M *	220/240 V	220	DN 32 PN 6	75	EEI ≤ 0,22	m.c.a.	20	25
EVOPLUS B 60/220.32 M *	220/240 V	220	DN 32 PN 6	105	EEI ≤ 0,22	m.c.a.	20	25
EVOPLUS B 80/220.32 M *	220/240 V	220	DN 32 PN 6	140	EEI ≤ 0,22	m.c.a.	20	25
EVOPLUS B 110/220.32 M *	220/240 V	220	DN 32 PN 6	190	EEI ≤ 0,22	m.c.a.	20	25

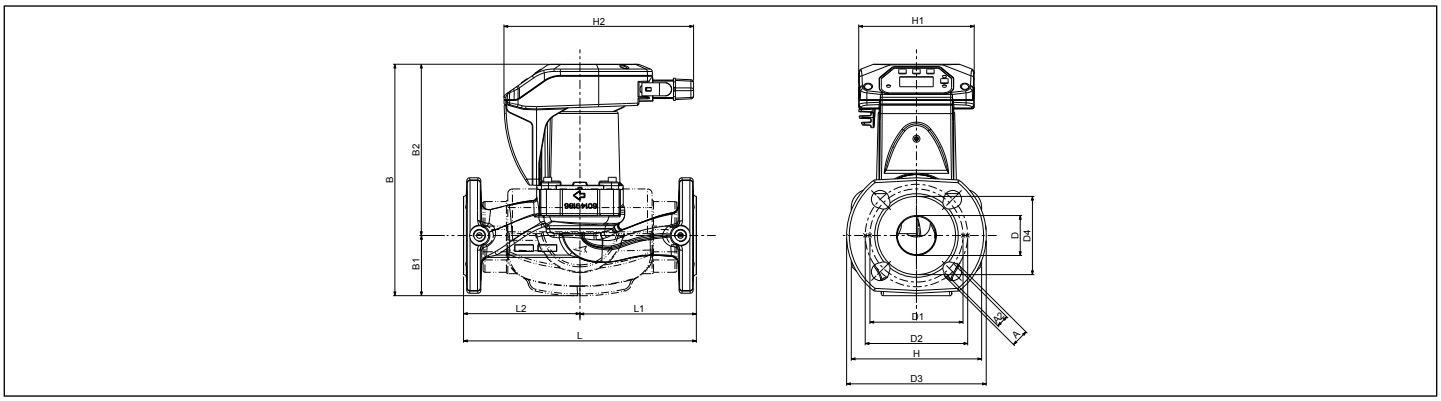
* Available from 2013



Dimensions and weight

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
220	110	110	14	248	64	184	40	90	100	140	76	140	124	204	6,9

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS B 40/250.40 M	220/240 V	250	DN 40 PN 10	75	EEI ≤ 0,21	m.c.a.	20	25
EVOPLUS B 60/250.40 M	220/240 V	250	DN 40 PN 10	105	EEI ≤ 0,21	m.c.a.	20	25
EVOPLUS B 80/250.40 M	220/240 V	250	DN 40 PN 10	140	EEI ≤ 0,21	m.c.a.	20	25
EVOPLUS B 110/250.40 M	220/240 V	250	DN 40 PN 10	190	EEI ≤ 0,21	m.c.a.	20	25



Dimensions and weight

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
250	125	125	14	248	64	184	43	100	110	150	84	140	124	204	6,9

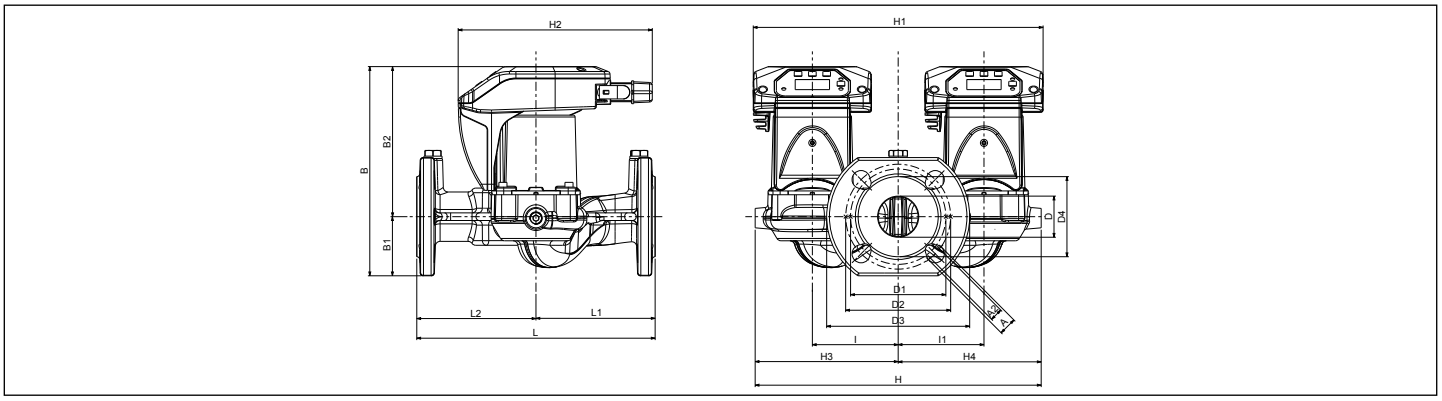
The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS D 40/220.32 M *	220/240 V	220	DN 32 PN 6	75	EEI ≤ 0,23	m.c.a.	20	25
EVOPLUS D 60/220.32 M *	220/240 V	220	DN 32 PN 6	100	EEI ≤ 0,23	m.c.a.	20	25
EVOPLUS D 80/220.32 M *	220/240 V	220	DN 32 PN 6	135	EEI ≤ 0,23	m.c.a.	20	25
EVOPLUS D110/220.32 M *	220/240 V	220	DN 32 PN 6	190	EEI ≤ 0,23	m.c.a.	20	25

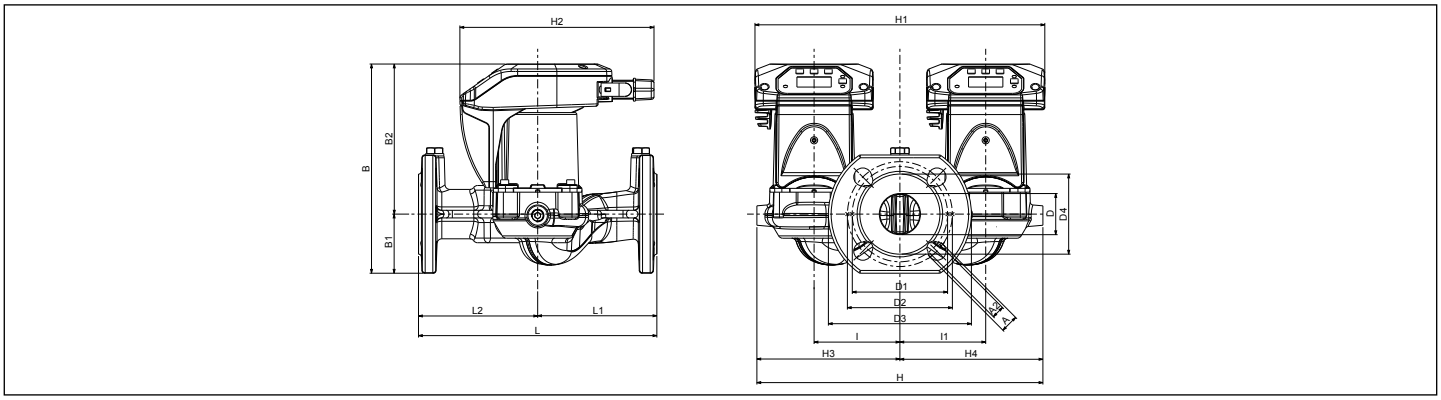
* Available from 2013



Dimensions and weight

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	H	H1	H2	H3	H4	WEIGHT (Kg)
220	110	110	14	220	62	158	43	100	110	150	84	90	90	300	304	204	150	150	12,7

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS D 40/250.40 M	220/240 V	250	DN 40 PN 10	75	EEI ≤ 0,22	m.c.a.	20	25
EVOPLUS D 60/250.40 M	220/240 V	250	DN 40 PN 10	100	EEI ≤ 0,22	m.c.a.	20	25
EVOPLUS D 80/250.40 M	220/240 V	250	DN 40 PN 10	135	EEI ≤ 0,22	m.c.a.	20	25
EVOPLUS D110/250.40 M	220/240 V	250	DN 40 PN 10	190	EEI ≤ 0,22	m.c.a.	20	25



Dimensions and weight

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	H	H1	H2	H3	H4	WEIGHT (Kg)
250	125	125	14	220	62	158	43	100	110	150	84	90	90	300	304	204	150	150	12,7

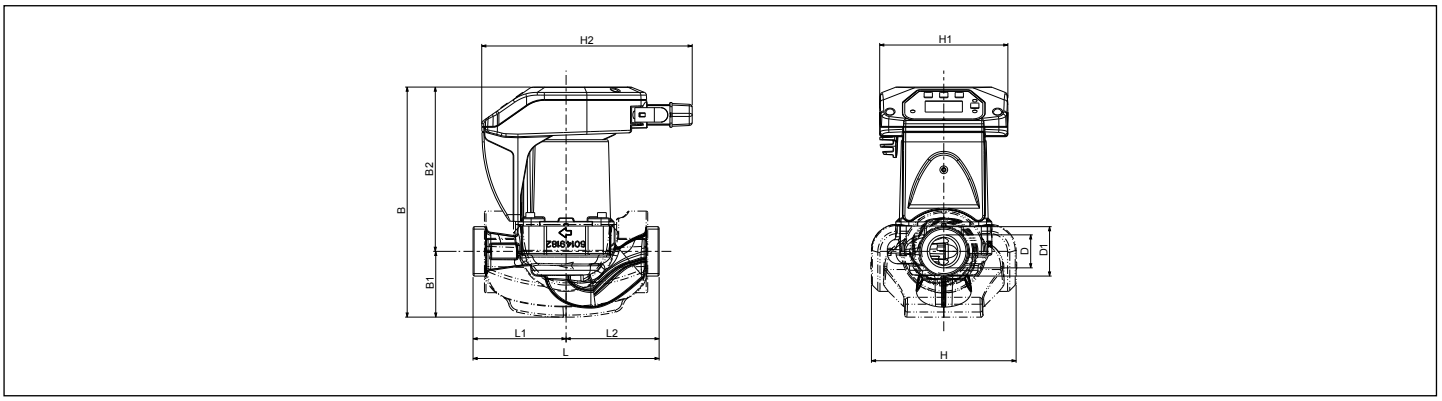
The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR SMALL HOT WATER APPLICATIONS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	UNIONS ON REQUEST		ELECTRICAL DATA	MINIMUM HEAD PRESSURE		
			STANDARDIZED	SPECIAL	P1 MAX W	t°	90°	100°
EVOPLUS 40/180 SAN M *	220/240 V	180	1" F	¾" F - 1¼" M	70	m.c.a.	20	25
EVOPLUS 60/180 SAN M *	220/240 V	180	1" F	¾" F - 1¼" M	100	m.c.a.	20	25
EVOPLUS 80/180 SAN M *	220/240 V	180	1" F	¾" F - 1¼" M	135	m.c.a.	20	25
EVOPLUS 110/180 SAN M *	220/240 V	180	1" F	¾" F - 1¼" M	170	m.c.a.	20	25

* Available from 2013

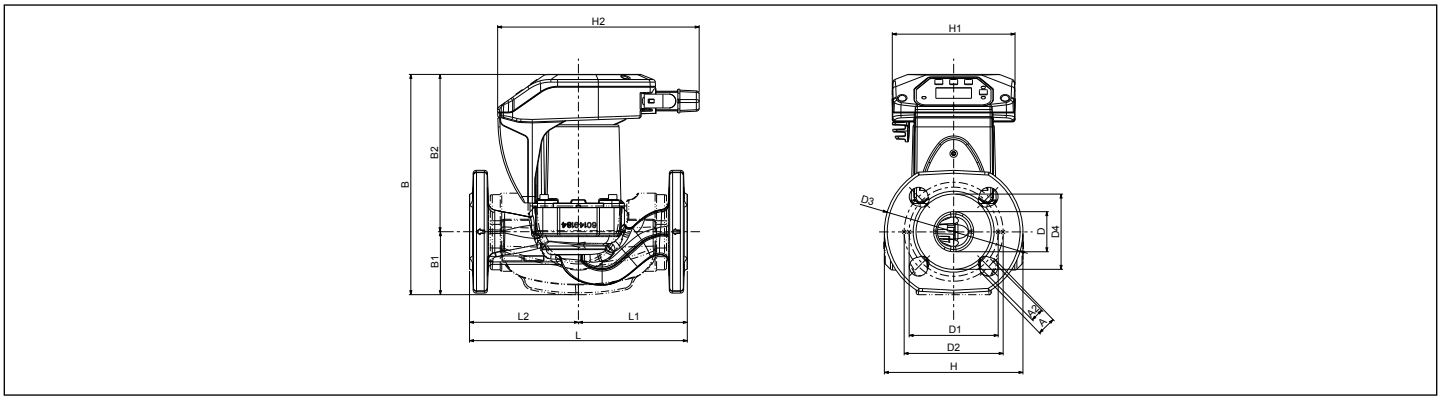


Dimensions and weight

L	L1	L2	B	B1	B2	D	D1	H	H1	H2	WEIGHT (Kg)
180	90	90	223	64	159	32	1"½	140	124	204	2,8

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	MINIMUM HEAD PRESSURE		
				P1 MAX W	t°	90°	100°
EVOPLUS B 40/220.32 SAN M *	220/240 V	220	DN 32 PN 6	75	m.c.a.	20	25
EVOPLUS B 60/220.32 SAN M *	220/240 V	220	DN 32 PN 6	105	m.c.a.	20	25
EVOPLUS B 80/220.32 SAN M *	220/240 V	220	DN 32 PN 6	140	m.c.a.	20	25
EVOPLUS B 110/220.32 SAN M *	220/240 V	220	DN 32 PN 6	190	m.c.a.	20	25

* Available from 2013



Dimensions and weight

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
220	110	110	14	248	64	184	40	90	100	140	76	140	124	204	6,9

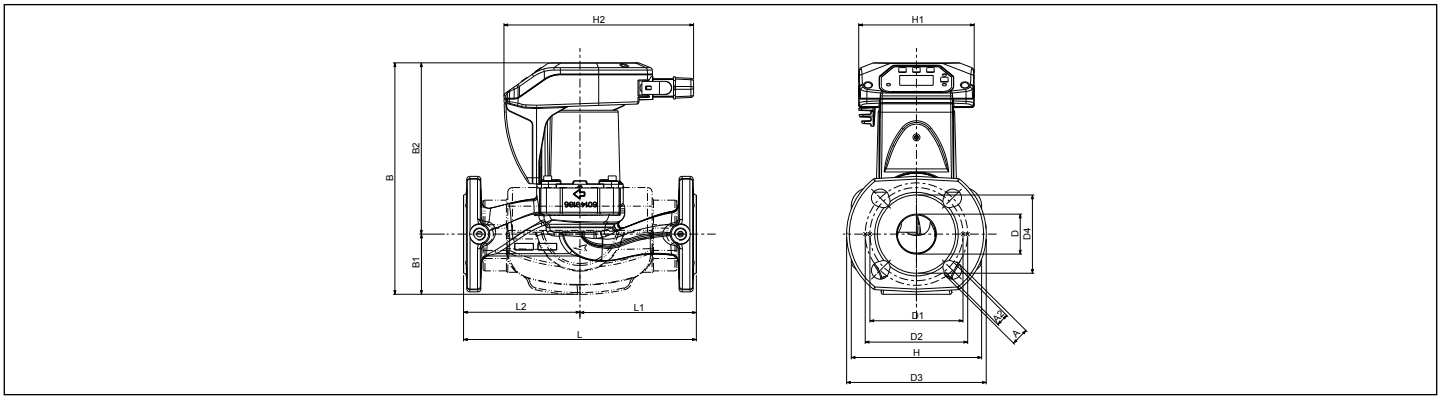
The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR SMALL HOT WATER APPLICATIONS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure:: 16 bar (1600 kPa)

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	MINIMUM HEAD PRESSURE		
				P1 MAX W	t°	90°	100°
EVOPLUS B 40/250.40 SAN M *	220/240 V	250	DN 40 PN 10	75	m.c.a.	20	25
EVOPLUS B 60/250.40 SAN M *	220/240 V	250	DN 40 PN 10	105	m.c.a.	20	25
EVOPLUS B 80/250.40 SAN M *	220/240 V	250	DN 40 PN 10	140	m.c.a.	20	25
EVOPLUS B 110/250.40 SAN M *	220/240 V	250	DN 40 PN 10	190	m.c.a.	20	25

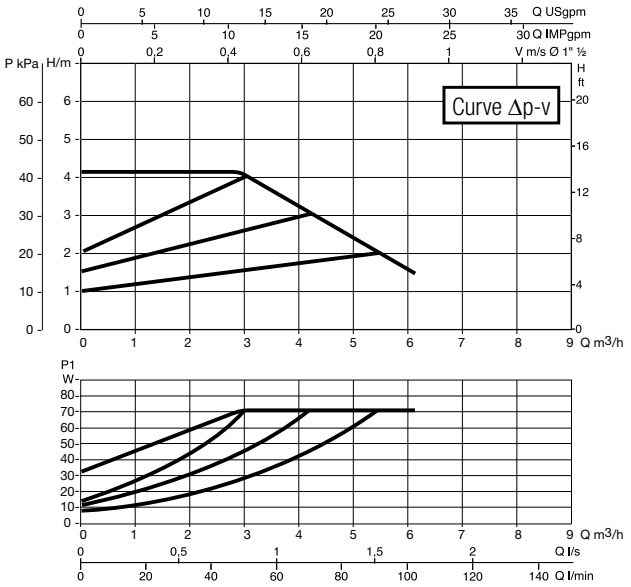
* Available from 2013

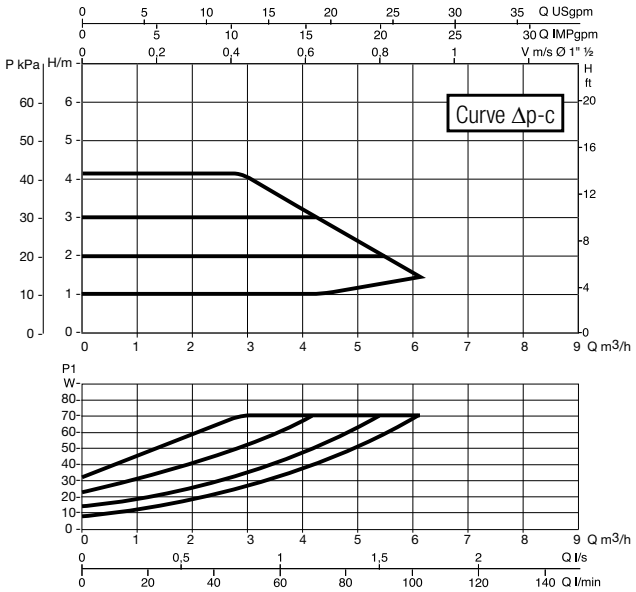


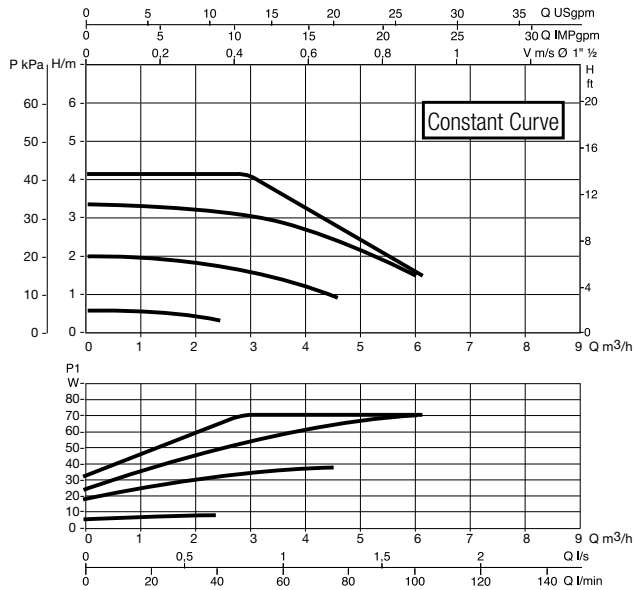
Dimensions and weight

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
250	125	125	14	248	64	184	43	100	110	150	84	140	124	204	6,9

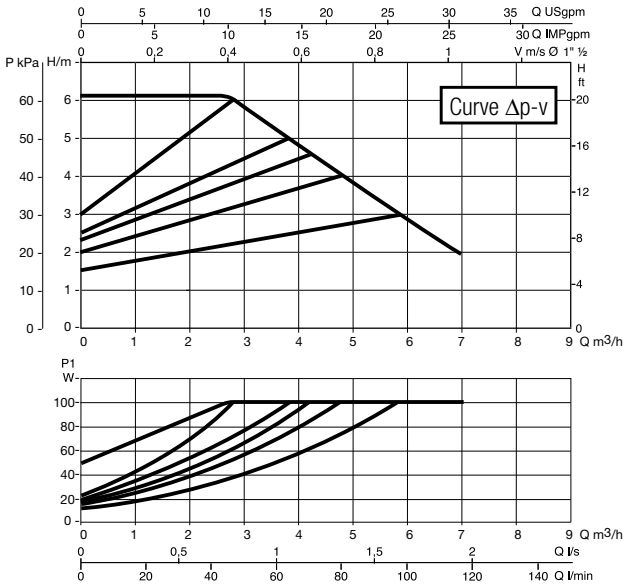
EVOPLUS 40/180 (SAN) M

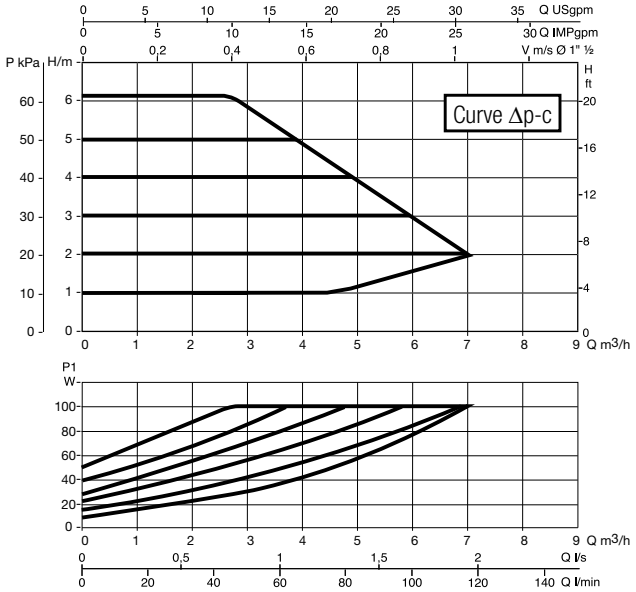


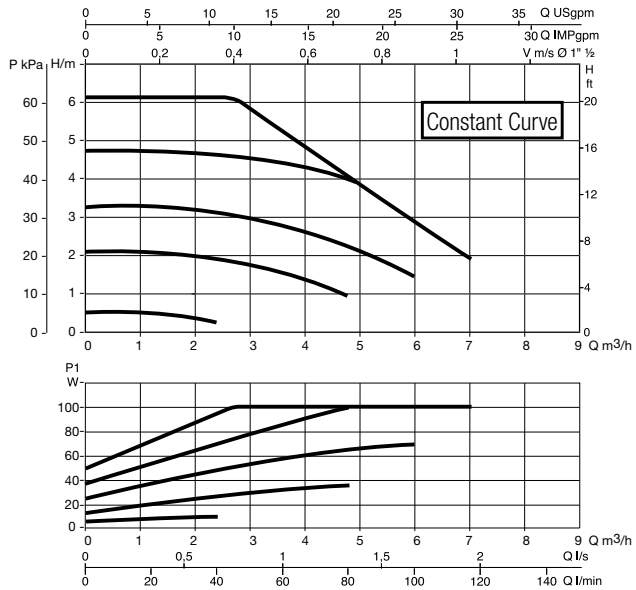




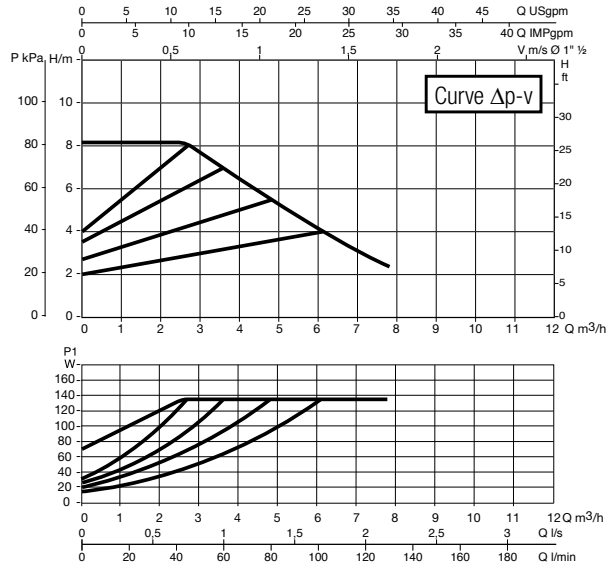
EVOPLUS 60/180 (SAN) M



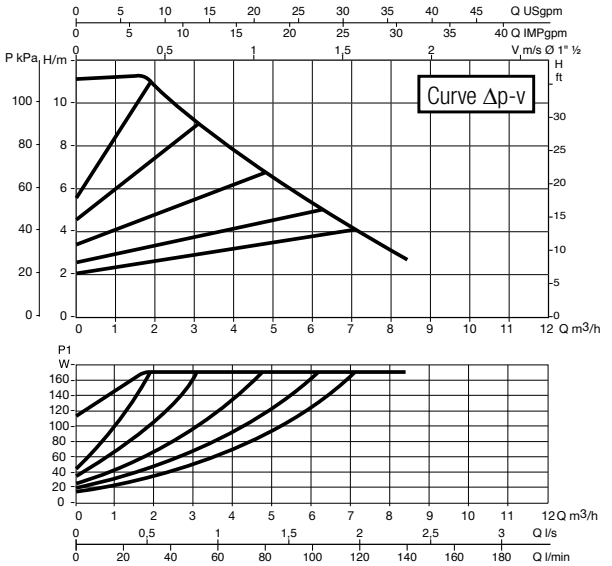


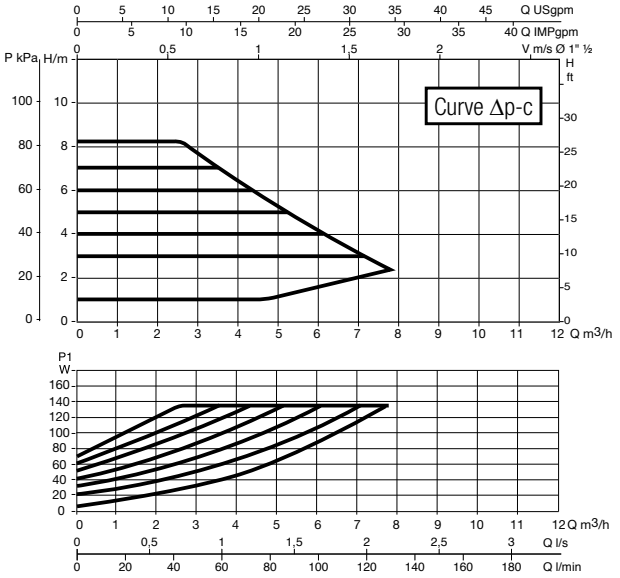


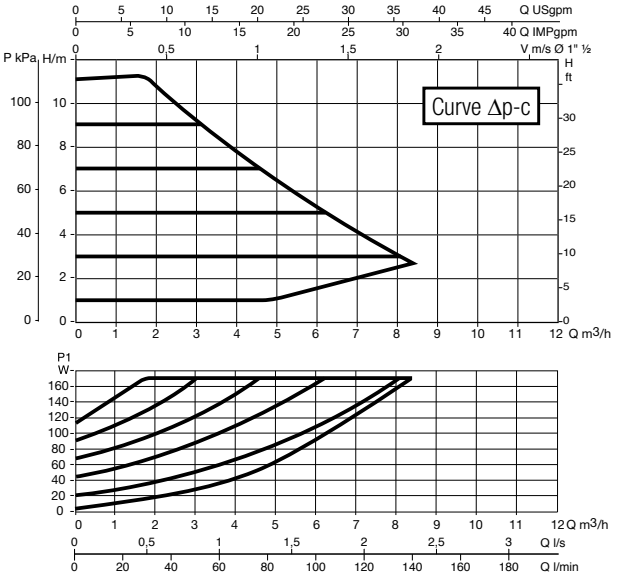
EVOPLUS 80/180 (SAN) M

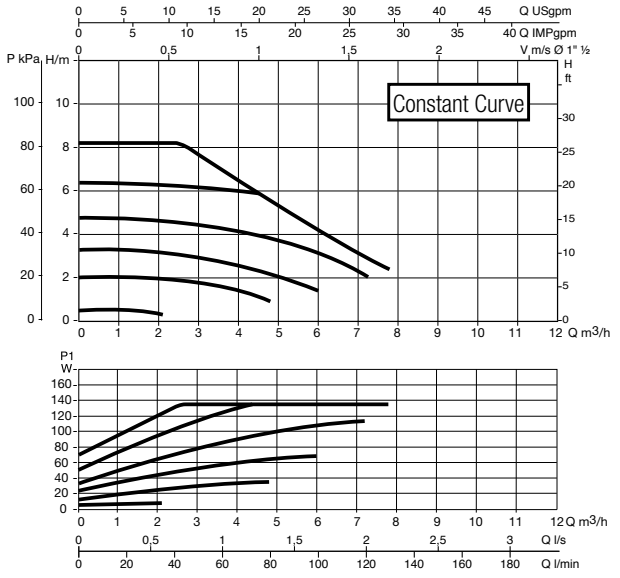


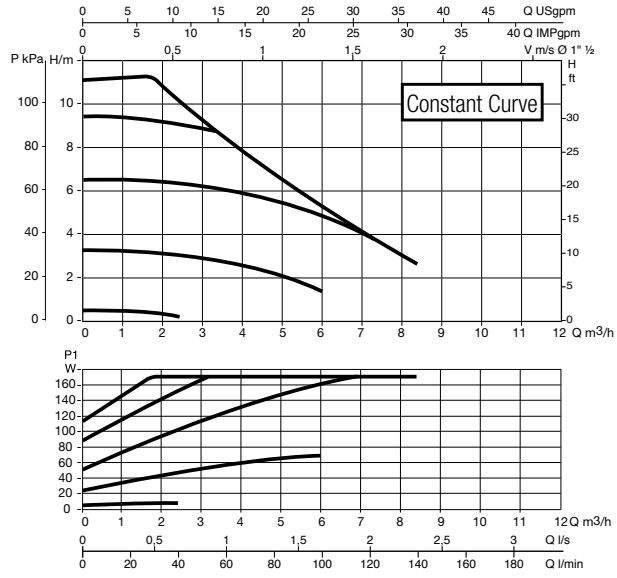
EVOPLUS 110/180 (SAN) M



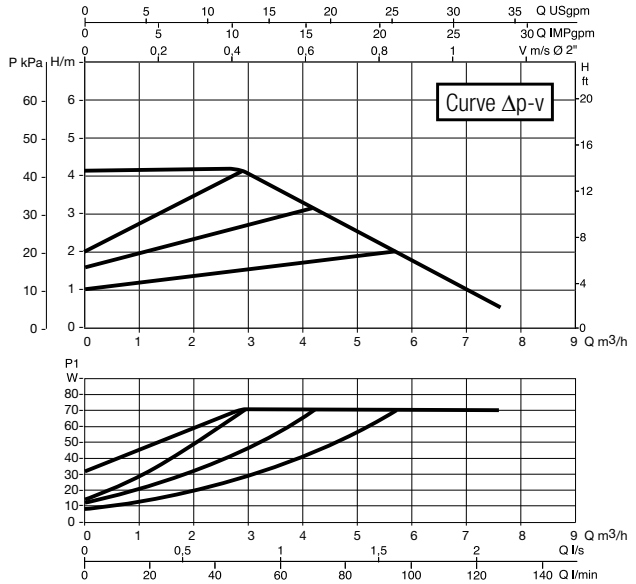


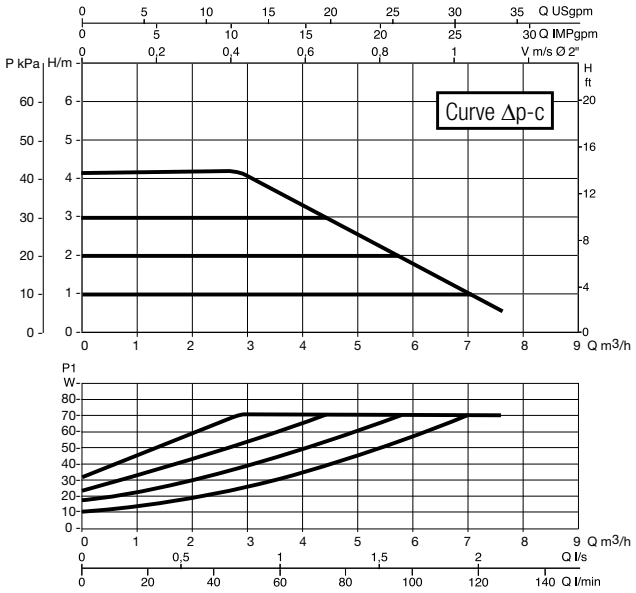


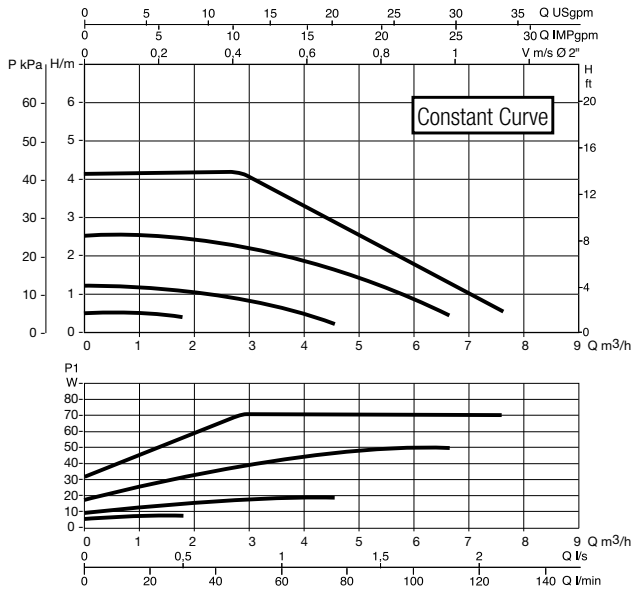




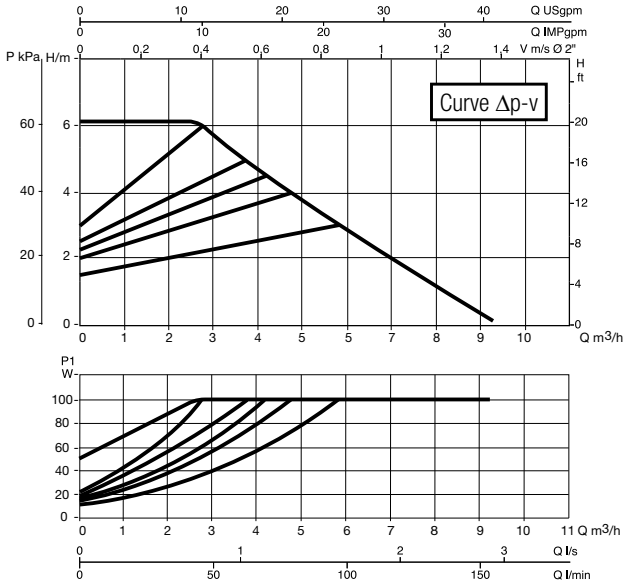
EVOPLUS 40/180 XM

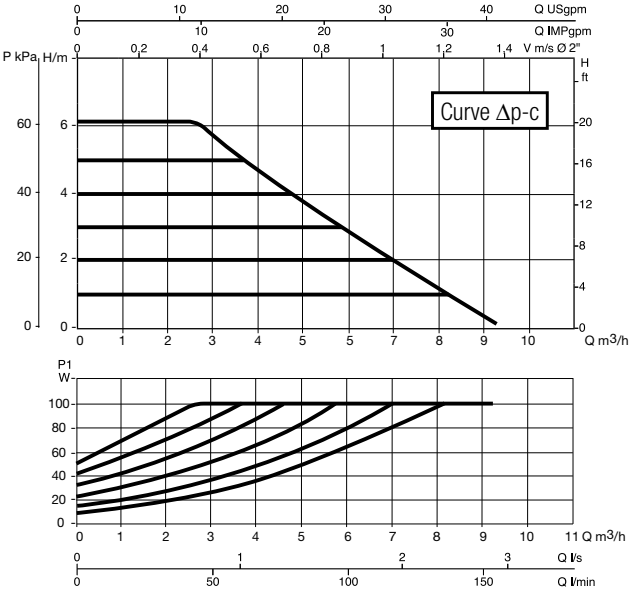


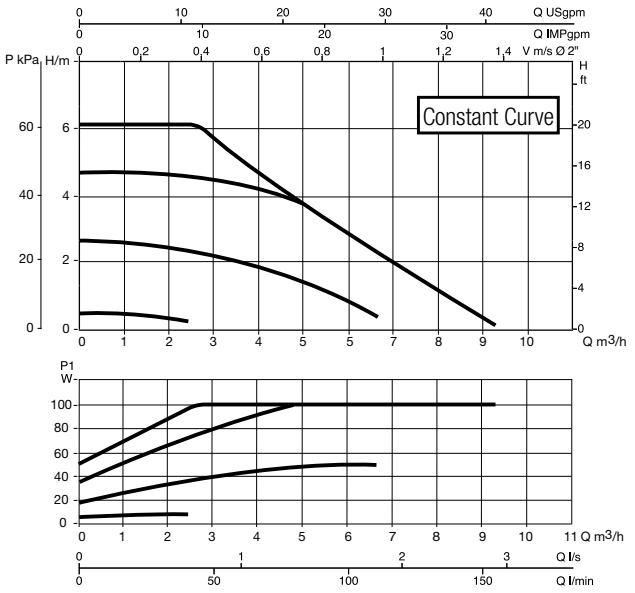




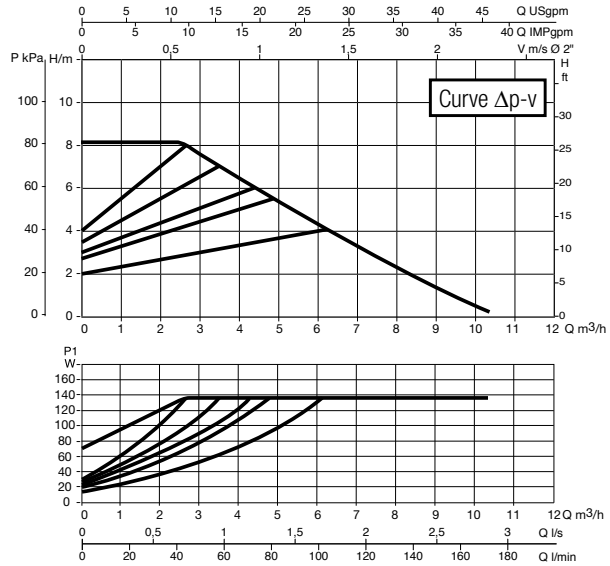
EVOPLUS 60/180 XM



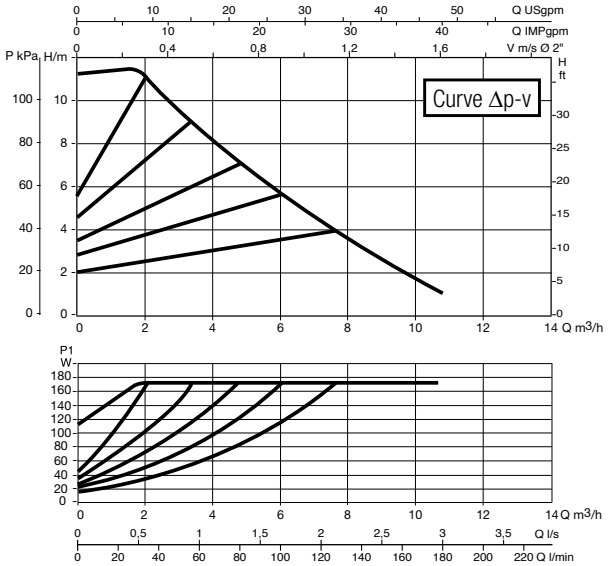


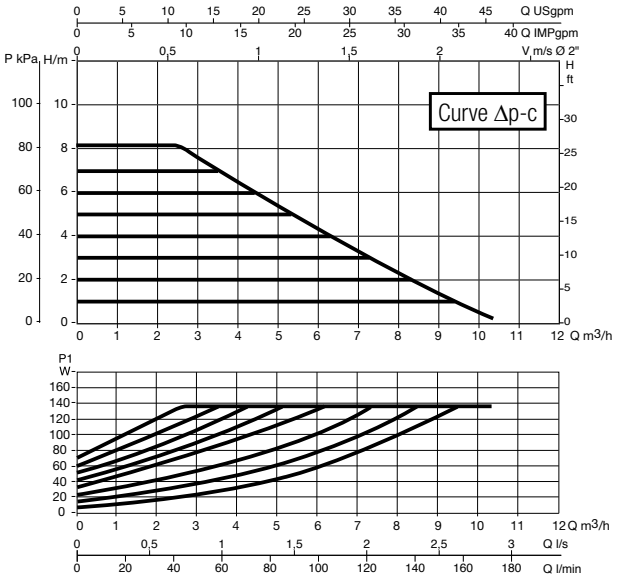


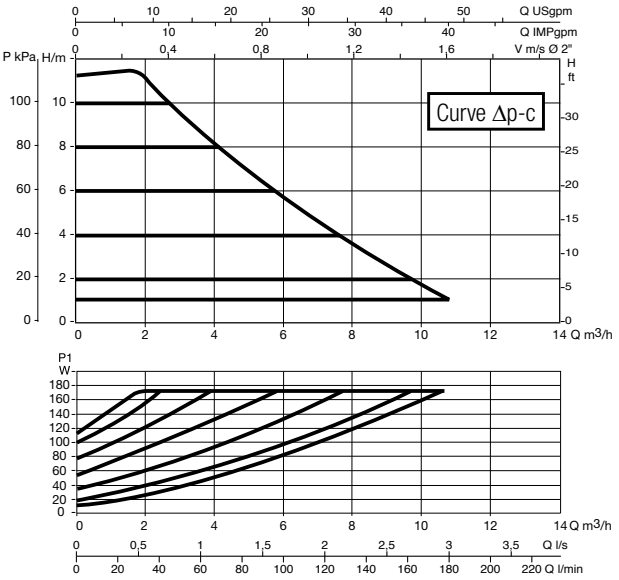
EVOPLUS 80/180 XM

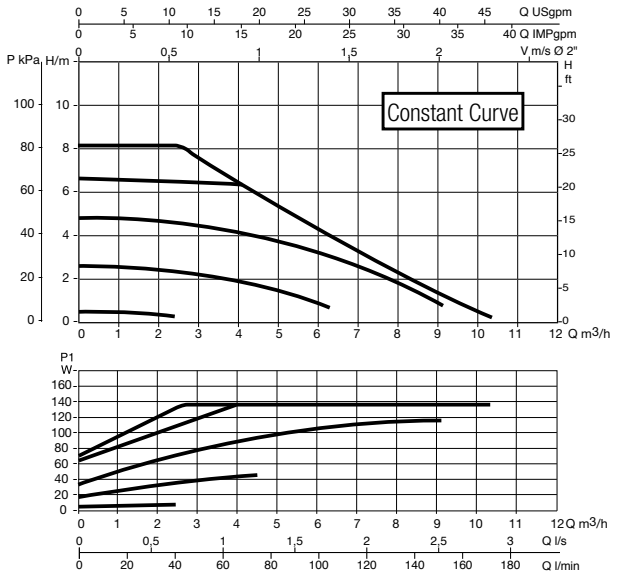


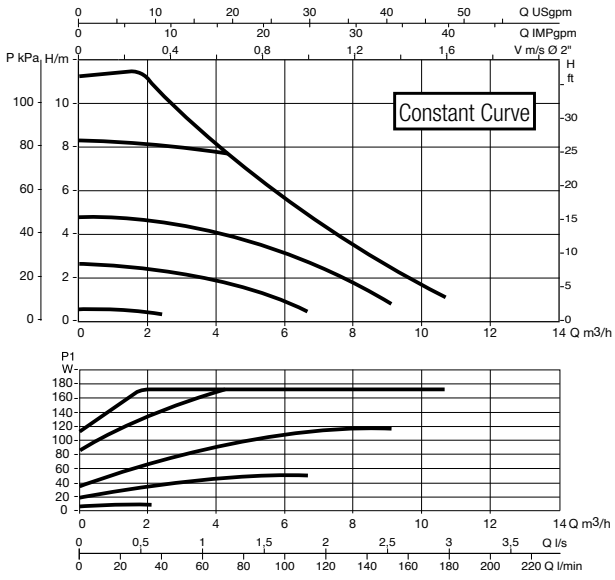
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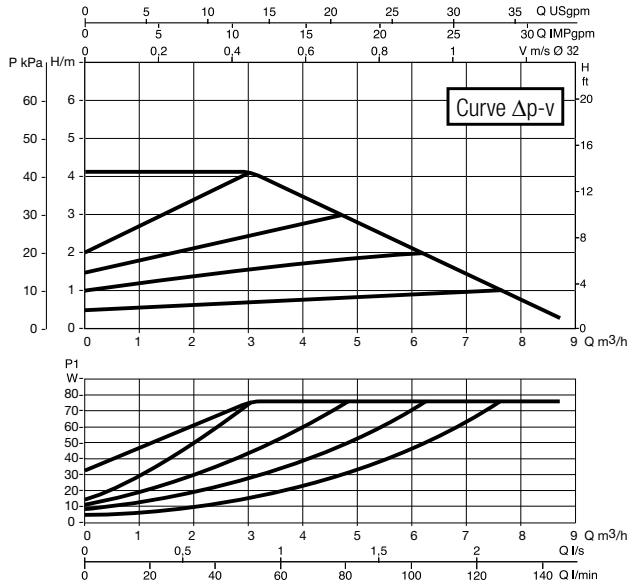


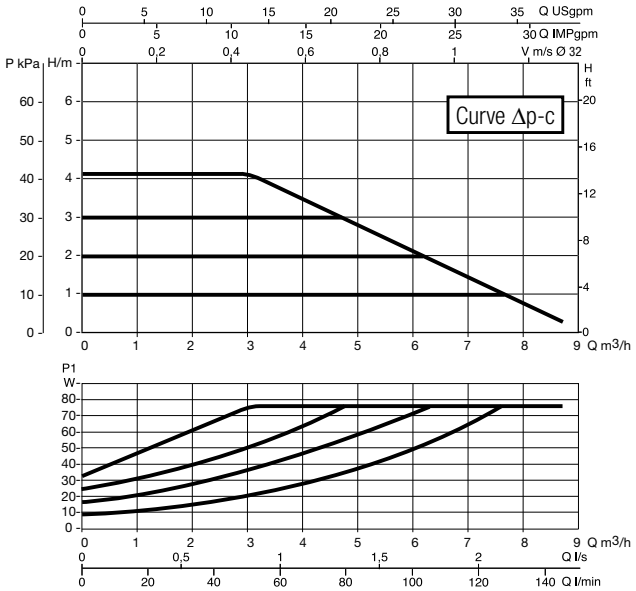


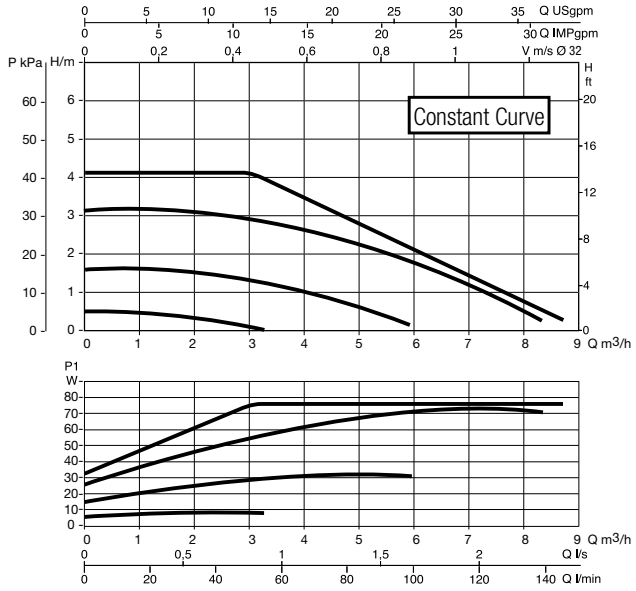


DAB PUMPS si riserva il diritto di apportare modifiche senza obbligo di preavviso

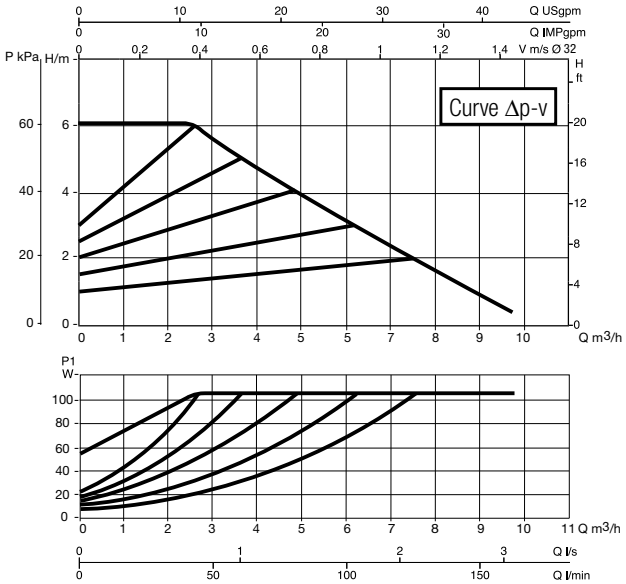
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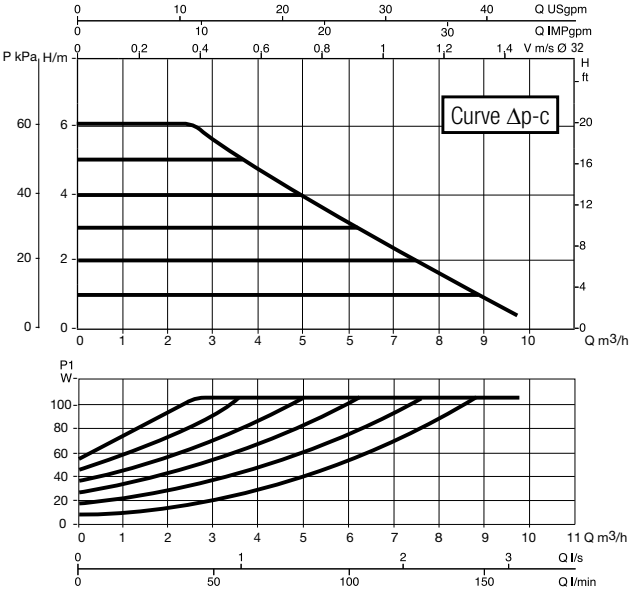


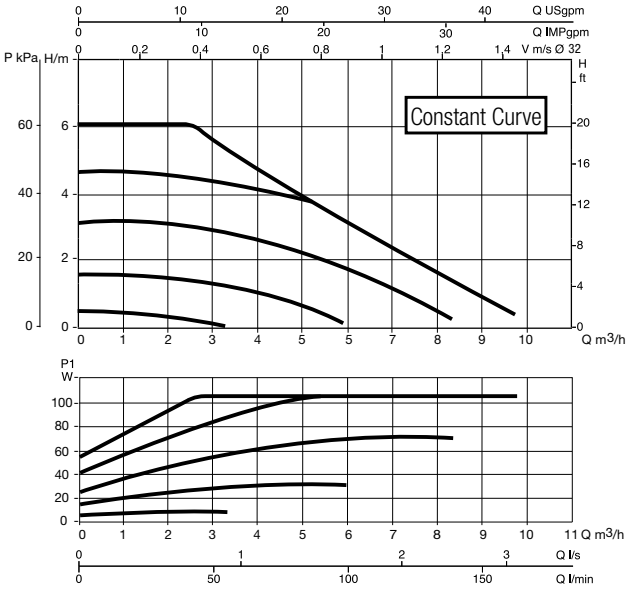




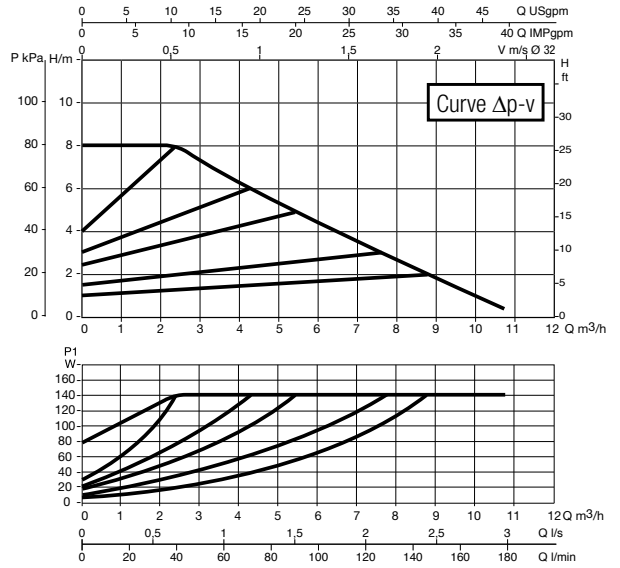
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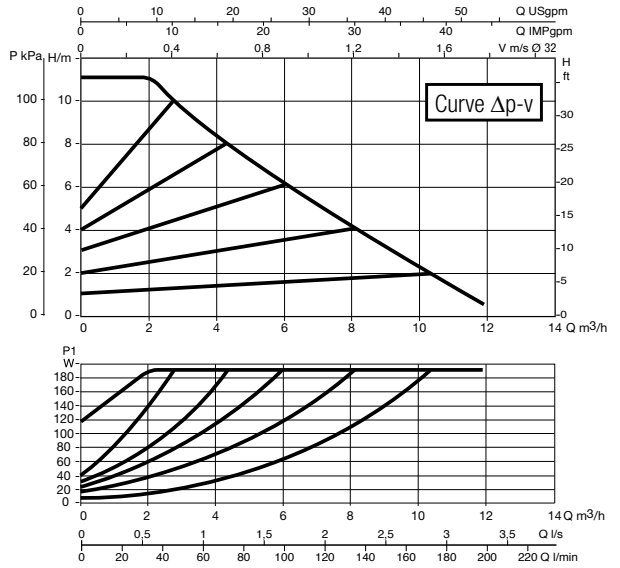


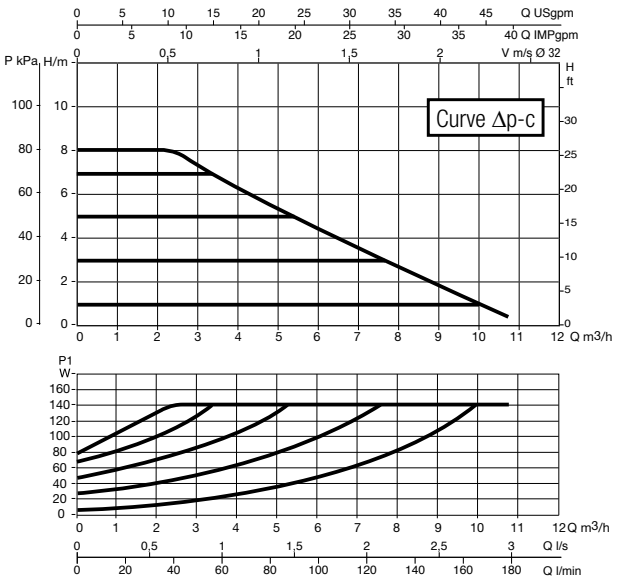


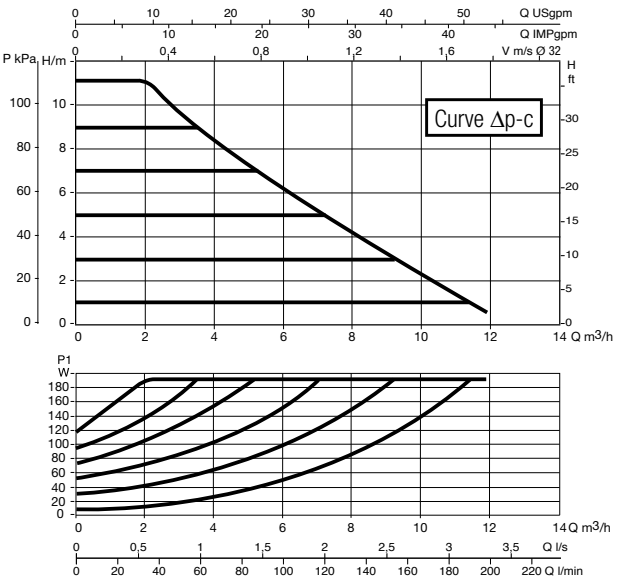
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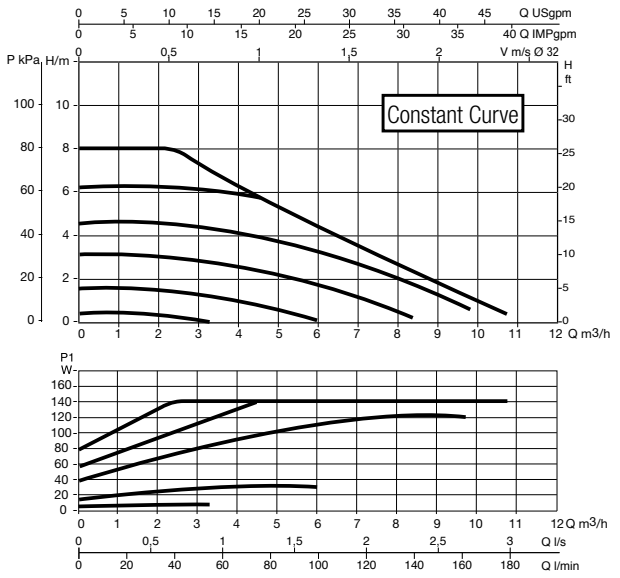


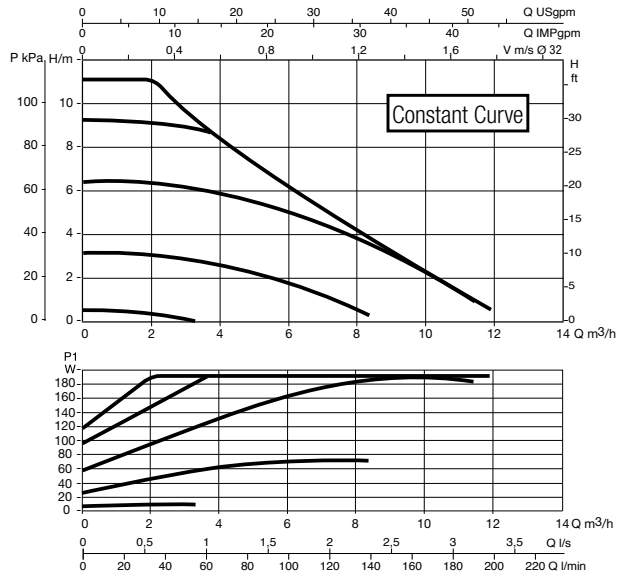
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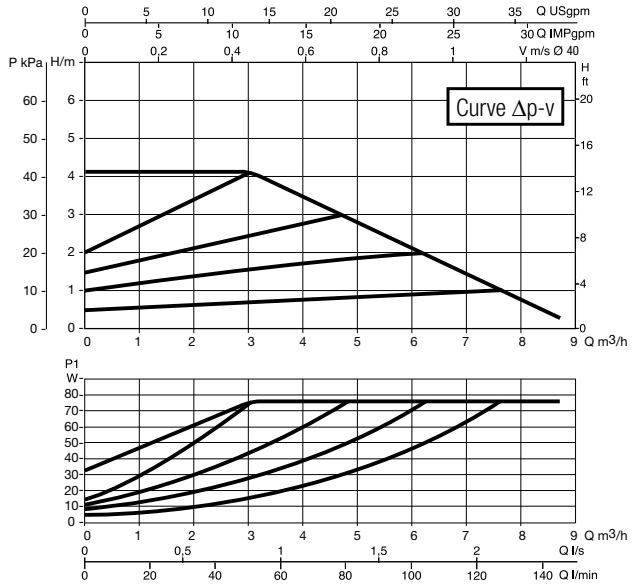


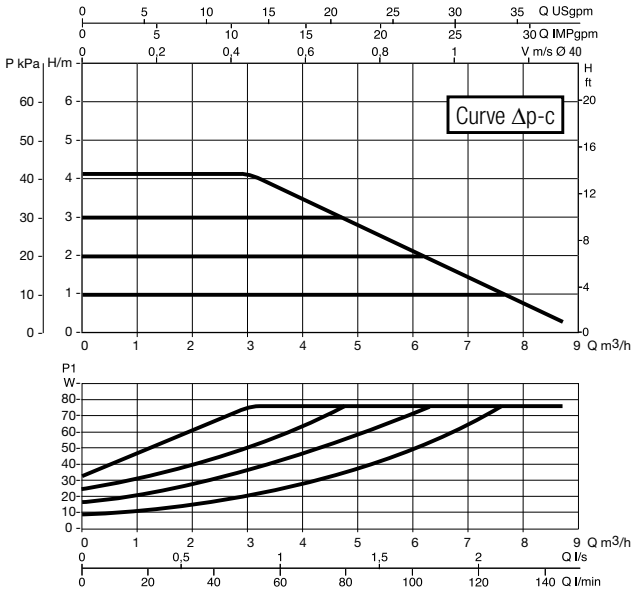


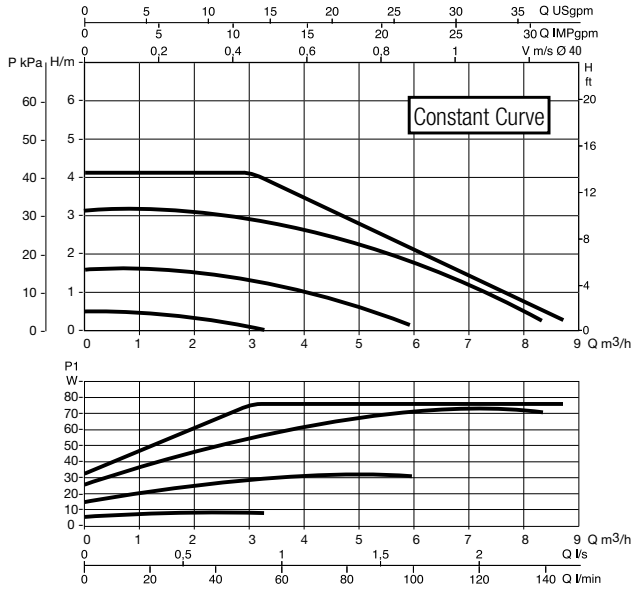




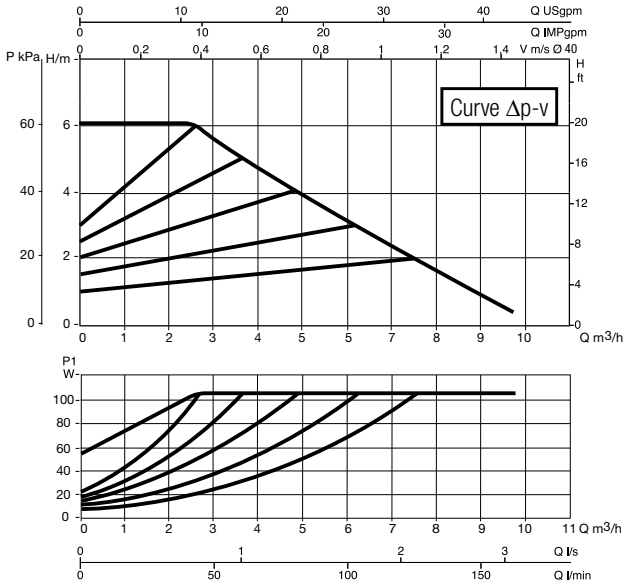
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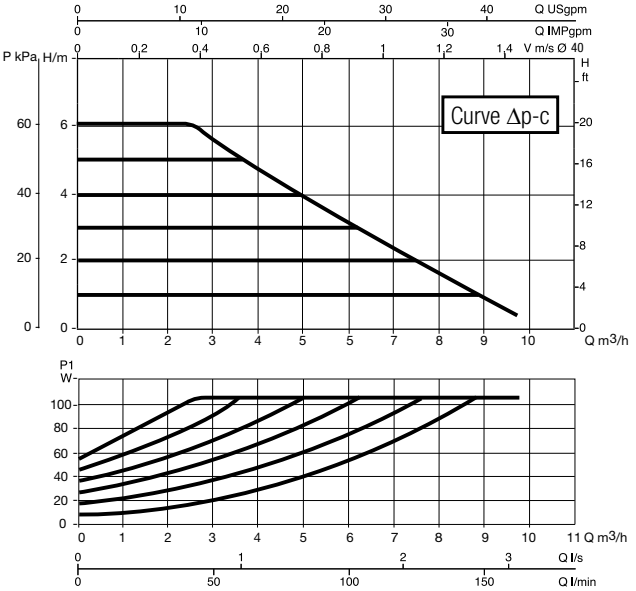


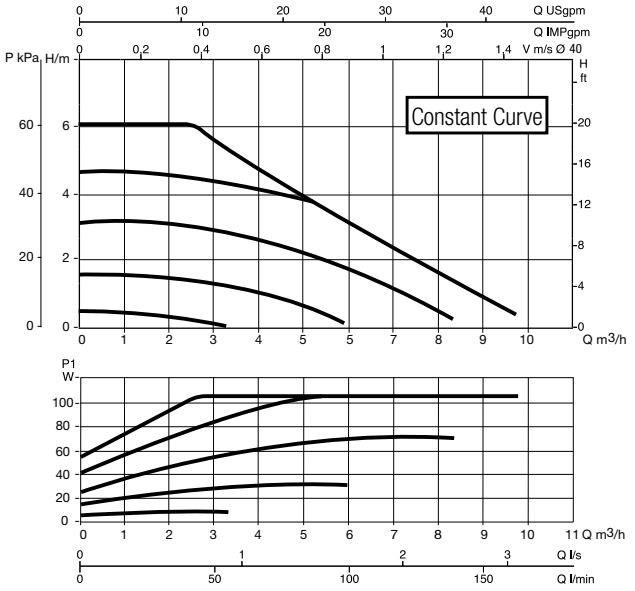




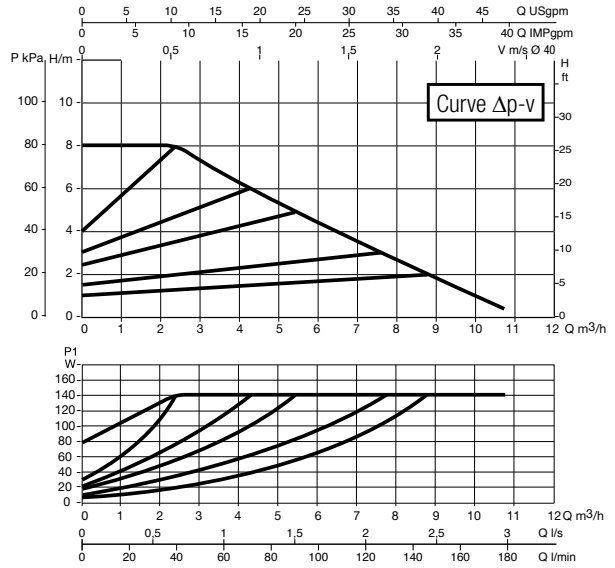
EVOPLUS B 60/250.40 (SAN) M - EVOPLUS D 60/250.40 M



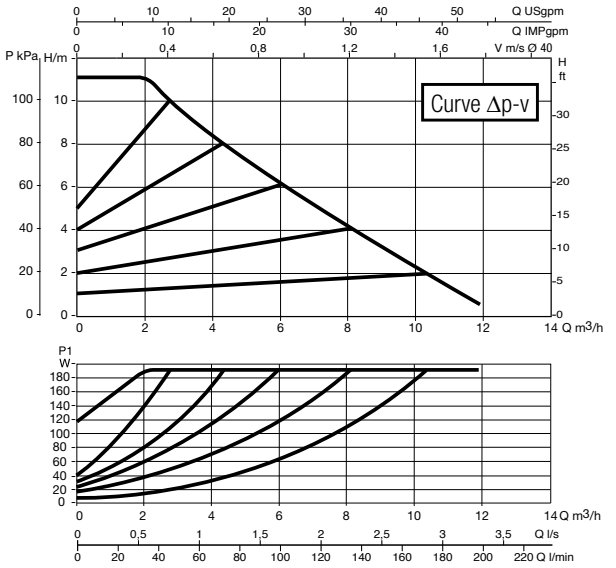


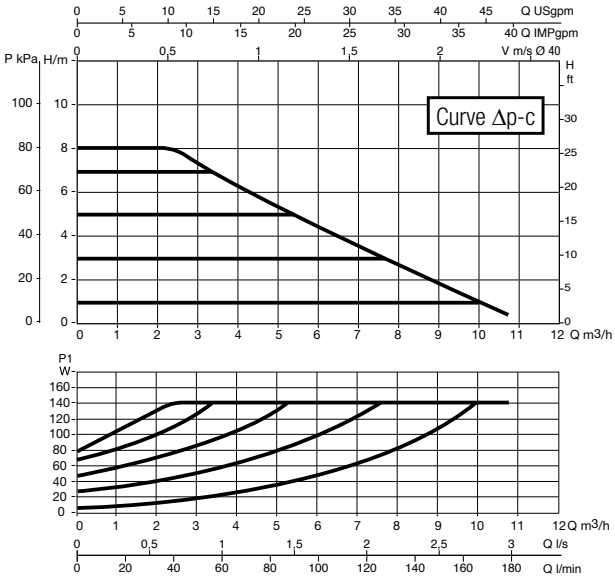


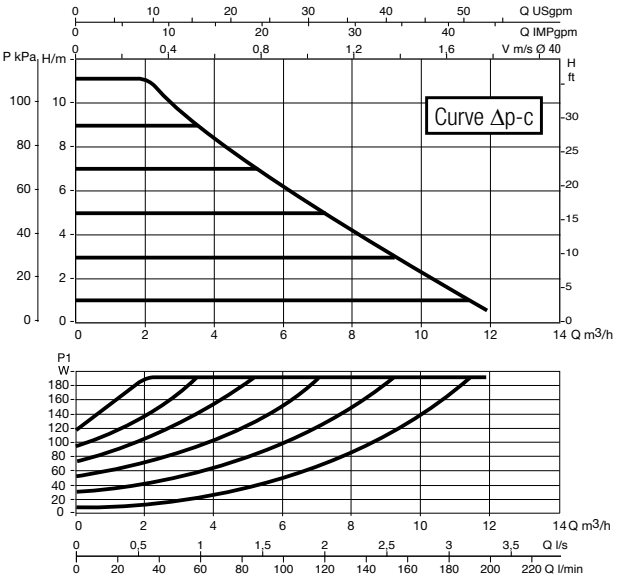
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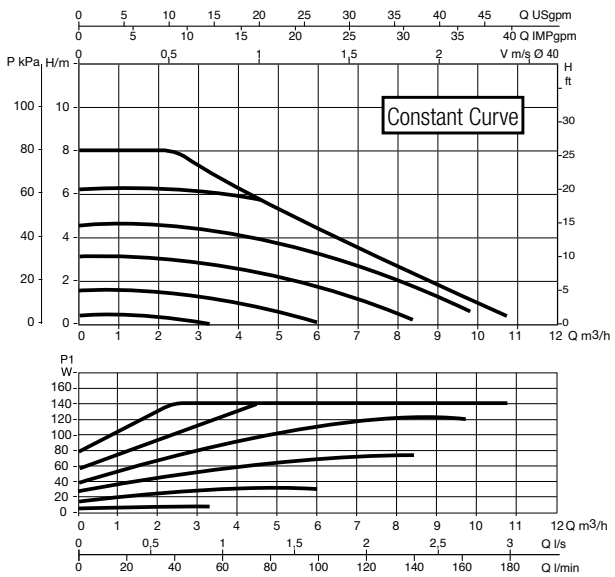


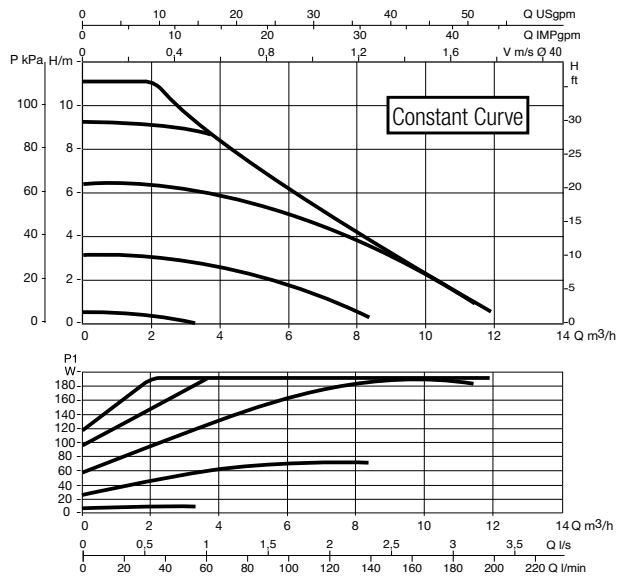
EVOPLUS B 110/250.40 (SAN) M - EVOPLUS D 110/250.40 M











ELECTRONIC CIRCULATORS FOR COMMUNITY HEATING AND AIR CONDITIONING SYSTEMS





compliant with the european directive ErP 2009/125/EC (ex EuP)

GENERAL DATA

APPLICATIONS

EVOPLUS electronic circulators can be used in heating, ventilation and air conditioning systems for residential and commercial buildings including:

-Large residential buildings - Condominiums and apartment blocks - Homes
-Clinics and Hospitals - Schools - Office buildings
-Real Estate Assets

All models are available in both the single and twin version.
Made with bronze pump body for secondary hot water circulation. Available in single version with 1 ½" threaded connection as well as DN 32 and DN 40 flanged connection.

APPLICATIONS IN HEATING

The heating required in various applications changes significantly during the day/night due to the ambient temperature and changing occupancy levels. This situation is compounded by the different requirements of the various rooms and opening or closing of the various circuit branches in complex installations. Electronically controlled wet rotor pumps constantly ensure, in almost all correctly sized installations, sufficient power and, simultaneously, lower noise emissions, greater comfort and a significant reduction in running costs.

APPLICATIONS IN AIR CONDITIONING

Unlike conventional electronic pumps, EVOPLUS electronic circulators can also be used in air conditioning systems where the temperature of the liquid pumped is lower than the ambient temperature. In these conditions condensate tends to form on the outer surface of the circulator although this does not impair proper operation of either the electronic or mechanical sections. The unit is designed and sized in such a way as to allow the condensate to drain without damaging the construction components.

APPLICATIONS FOR HOT WATER CIRCULATION

The SAN version pump with bronze body has been developed specifically for the circulation of secondary hot water. The constant temperature operating mode controls the water temperature in the circulation pipe without needing to use thermostatic valves, thus maintaining required water temperature for user.

CONSTRUCTION FEATURES

Enbloc circulator composed of cast iron hydraulic section and wet rotor synchronous motor. Motor casing in aluminium. Scroll type pump body featuring high hydraulic efficiency thanks to highly precise design and smooth internal surfaces. Flanged suction and discharge ports equipped with threaded fittings for pressure and temperature readings.
The single version is supplied as standard with insulating covers to avoid heat loss and/or the formation of condensate on the pump body.
Insulation of the twin version is to be provided by the installer. Use special caution to avoid obstructing the condensate drainage labyrinths in order to avoid impairing operation.

Impeller in technopolymer, motor shaft in hardened stainless steel held in ceramic bearings lubricated by the pumping medium. Rotor protective jacket in stainless steel. Ceramic thrust ring, ethylene propylene seals and stator jacket in carbon fiber composite. Permanent magnet synchronous motor. The twin version features an automatic swing check valve incorporated in the discharge port to avoid water recirculating through the unit when it is not running; moreover, a blank flange is supplied as standard to allow either of the two motors to be removed for servicing. Standard execution of the pump body is PN 16. Both the DN 80 and the DN 100 PN 6 (4 holes) versions can be supplied on request

Circulator protection rate: IP 44
Insulation Class: F
Standard voltage: single-phase 220/240 V , 50/60Hz
This product complies with European standards EN 61800-3 – EN 60335-1 – EN 60335-2-5151

EVOPLUS CONSTRUCTION FEATURES FOR SMALL COMMUNITY SYSTEMS (ELECTRONIC DEVICE)

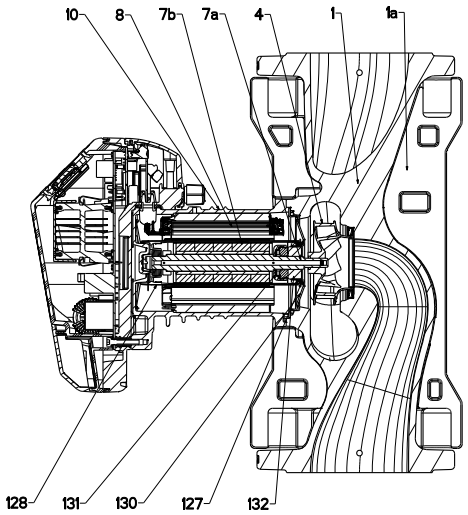
EVOPLUS circulators are controlled by means of an IGBT-based device in NPT-technology of the latest generation for higher efficiency and robustness. Specific features includes:

- Sine wave modulated PWM
- High carrier frequency to eliminate all audio band noise
- 2 dedicated 32-bit processors:
  one dedicated to motor control
  one dedicated to the user interface allowing the following functions:
  - start/stop control
  - Economy control
  - 0-10V analogue signal control
  - PWM signal control
  - 4-20 mA analogue signal control
  - ΔT Temperature sensor signal control
  - Connection to ModBus control systems. Optional Lonbus with relative module.
- Optimised space vector algorithm
- Alarms system availability
- Indication pump running

An intuitive and functional user interface ensures ease of calibration for all users. The easy to read OLED display on the control panel, three easy navigation keys, a drop down menu in line with the latest trends in the field of mobile telephony and a very wide range of functions mean that EVOPLUS circulators are truly revolutionary products. A reliable and robust construction combined with a modern and innovative design completes the product also from an aesthetic point of view.

TECHNICAL DATA

N°	PARTS	MATERIAL
1	PUMP BODY	CAST IRON 250 UNI ISO 185 - CTF BRONZE (for SAN version)
4	IMPELLER	TECHNOPOLYMER
7A	MOTOR SHAFT	STAINLESS STEEL
7B	ROTOR	STAINLESS JACKET
8	STATOR	- -
10	MOTOR HOUSING	DIE CAST ALLUMINIUM
127	SEAL RING	RUBBER EPDM
128	STATOR SLEEVE	COMPOSITE WITH CARBON FIBRE
130	CLOSING FLANGE	STAINLESS STEEL
131	THRUST RING SUPPORT	STAINLESS STEEL
132	BUSHINGS	ALLUMINA



DESIGNATION INDEX:

Electronic circulator — **EVOPLUS B 120 / 250 . 40 SAN M**

B = single circulator flanged
D = twin circulator flanged

Maximum head (dm)

Centre distance (mm)

(DN) nominal diameter of flanged ports

SAN = application for hot water circulation

M = single-phase motor

Operating range: 3 to 75,6 m^3/h with head up to 18 meters;
Liquid temperature range: from –10 °C a +110 °C
Pumped liquid: clean, free of solid contaminants and mineral oils, non-viscous, chemically neutral, close to the properties of water. (max. glycol contents 30%).
Maximum working pressure: 16 bar (1600 kPa)
Standard flanging: DN 32, DN 40, DN 50, DN 65, PN 6 / PN 10 / PN 16 (4 slots), DN 80 and DN 100, PN 6 (4 slots)
Maximum ambient temperature: +40°C.
Minimum suction pressure: the values are given in the relevant tables.
Special executions on request: DN 80 , DN 100 PN 10 / PN 16 (8 holes)
Accessories (Counterflanges): PN 6 DN 32
PN 10 da DN 40 - DN 50 - DN 65, PN 6 da DN 80
DN 100
Electromagnetic compatibility: EVOPLUS circulators comply with standard EN 61800-3, in category C2, in terms of electromagnetic compatibility.
Electromagnetic emissions - Residential environment (containment measures may be necessary in certain cases).
Conducted emissions - Residential environment (containment measures may be necessary in certain cases).

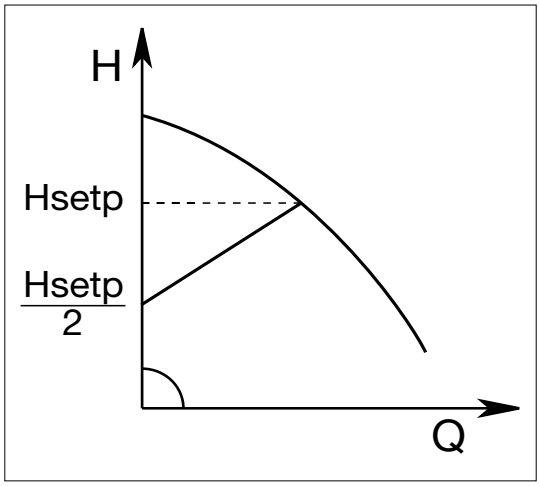
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OPERATING MODES

All functions listed below can be consulted by all users (irrespective of the level of expertise) simply by scrolling through the menu. Calibration and parameter editing are protected and reserved for expert users. The EVOPLUS range is factory-set to the control mode with differential pressure proportional to the curve that guarantees the best energy efficiency index (EEI).

1 - ΔP-v proportional differential pressure control mode

Control mode ΔP-v provides linear variation of the head delivery value from Hsetp to Hsetp/2 in accordance with changes in flow rate. This control mode is particularly useful in the following types of installations:



a. two-pipe central heating systems with thermostatic valves and with:
- head of more than 4 metres;
- very long circuit piping;
- valves with broad operating range;
- differential pressure regulators;
- high pressure drops in sections of the system carrying the entirety of the water flow rate;
- low differential temperature.

b. Under-floor central heating systems and systems with thermostatic valves and significant pressure drops in the boiler circuit.

c. Installations having primary circuit pumps with high pressure drops.

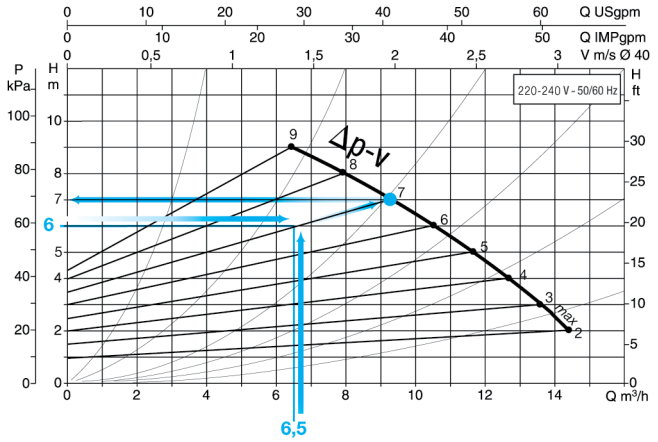
Examples of set-point input with ΔP-v

The following operating point is required:

Q = 6,5 m³/h
H = 6 m

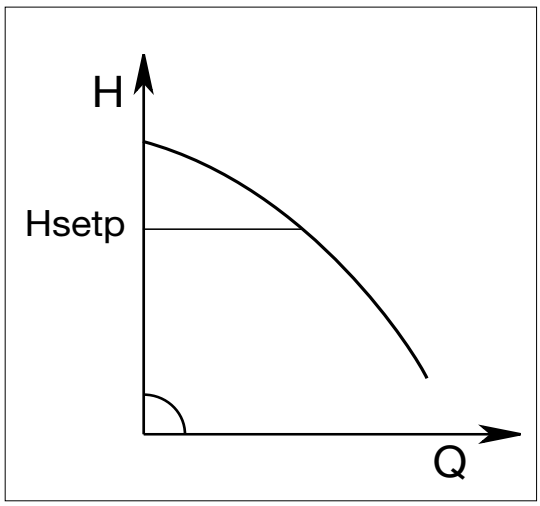
PROCEDURE:

1. In the graph, find the required operating point and then find the nearest curve to it (in this case the point lies precisely on the curve)
2. Follow the curve until intersecting the circulator limit curve.
3. The head reading found at this limit point will be the set-point head to be entered to obtain the required operating point.



2 - ΔP-c constant differential pressure control mode

Control mode ΔP-c keeps system differential pressure constant at the user-settable value of H setp despite changes in flow rate.



This control mode is particularly useful in the following types of installations:

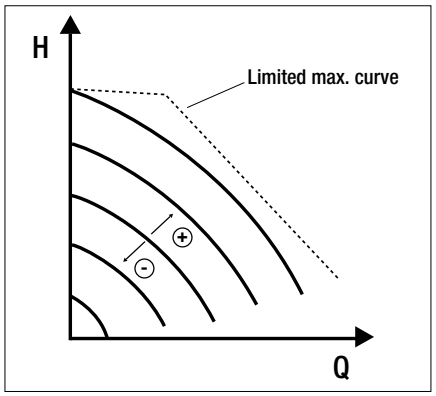
a. two-pipe central heating systems with thermostatic valves and with:
- head of less than 2 metres;
- natural circulation;
- low pressure drops in sections of the system carrying the entirety of the water flow rate;
- high differential temperature (central heating).

b. Under-floor central heating systems with thermostatic valves

c. Single-pipe central heating systems with thermostatic valves and calibration valves

d. Installations having primary circuit pumps with low pressure drops.

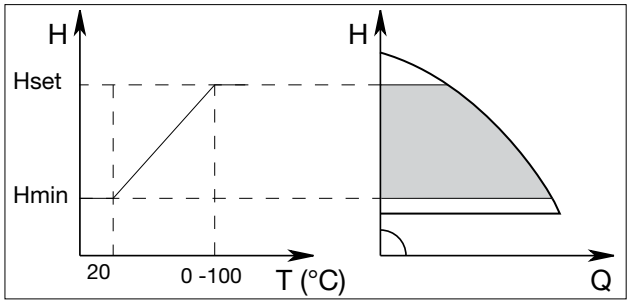
3 - Constant curve control mode



This control setting shows the curve of the circulator at constant speed. The operation curve is selected by setting the rotation speed on a percentage factor. Reaching 100% indicates the curve maximum. The speed of rotation may depend on power restriction and difference in pressure subject to model of circulator. The rotation speed can be set from the display or from an external signal 0-10V or PWM using the multifunction module.

The control setting is ideal for heating and air conditioning applications that require constant flow.

4 - Constant and proportional differential pressure control mode depending on water temperature.



The circulator head set-point is reduced in accordance with the water temperature.

Liquid temperature can be set from 0°C to 100°C.

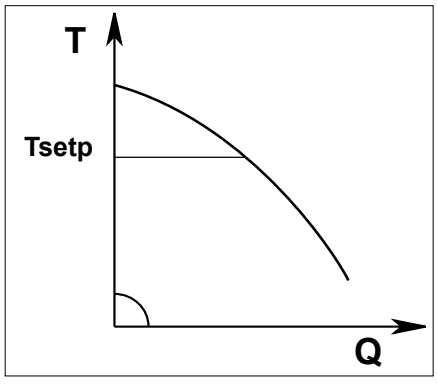
This control mode is particularly useful in the following types of installations:

a. - in variable flow rate installations (two-pipe central heating systems), in which a further reduction of circulator performance is provided in accordance with lowering of the circulating liquid temperature, in the presence of reduced heating demand.

b. - in constant flow rate installations (single-pipe and under-floor central heating systems), where the performance of the circulator can be adjusted only by activating the temperature influence function.

This function is set on EVOPLUS control panel.

5 - ΔT-c constant differential temperature control mode



ΔT-c control mode keeps the differential temperature of the pumped liquid constant, changing the flow rate to the user-settable value Tsetp.

This control mode is particularly useful in the following types of installations:
- Under-floor central heating systems
- Installations having circuit pumps with heat exchanger
- Solar energy systems with storage tanks
- Swimming pool heating systems with solar panels

* Available from 2013

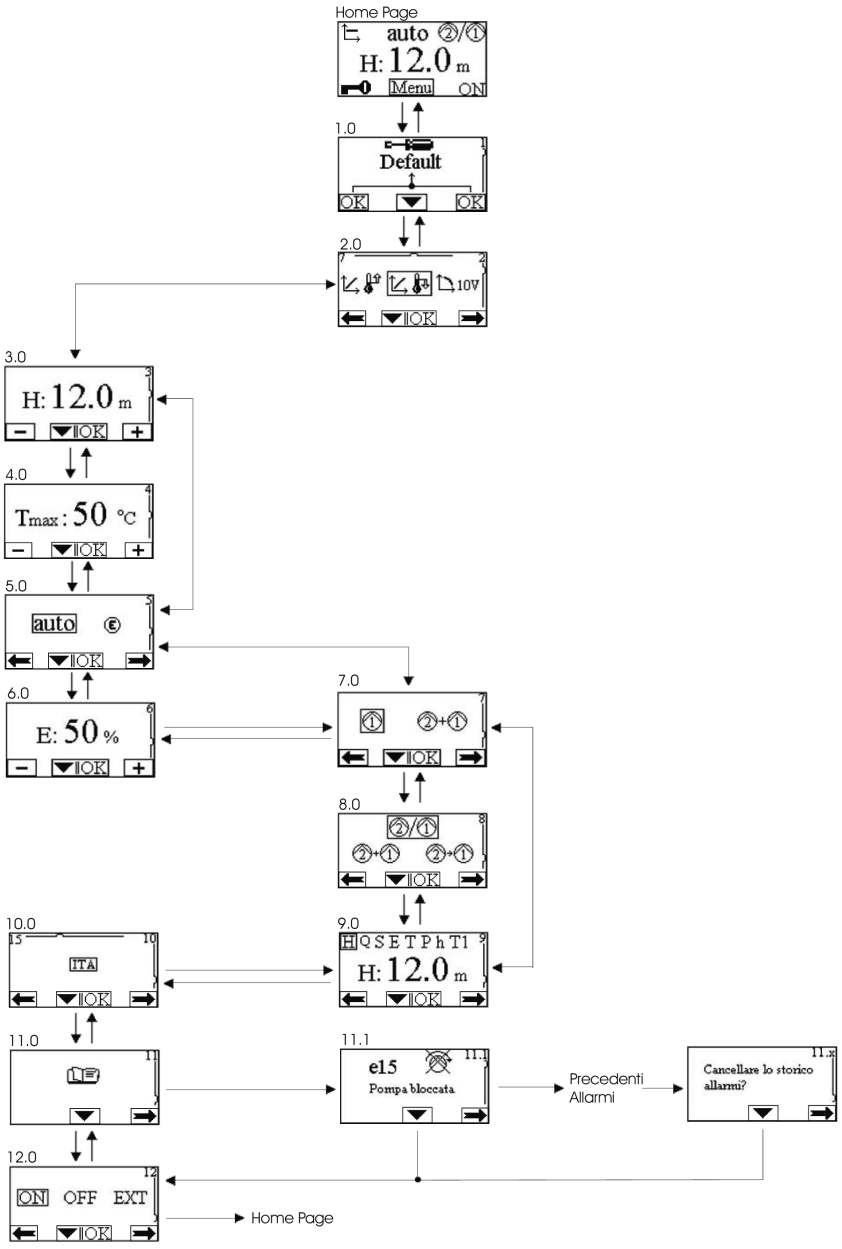
ECONOMY FUNCTION

The economy function can be set directly on the control panel, by setting a reduction value (f.rid) the maximum value of which is 50%.
In all settings listed above the Hset value must be replaced with a Hset x f.rid value.

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EVOPLUS MENU CONFIGURATIONS

The settings are made when passing from one page to another, in the circulator configuration menu.



DESCRIPTION OF SYMBOLS DISPLAYABLE QUANTITIES

Symbol	Description
H Q S E T P h T1	Shows parameters
H	Head in metres
Q	Flow rate in m³/h — $Q<Q_{min}$ when Q is less than 30% of Q_{max}; $Q=0$ only when the Evoplus is switched off.
S	Speed in revs/minute (rpm)
E	Analog input 0-10V or PWM
T	Liquid temperature in °C – input D
P	Power in kW
h	Working hours
T1	Liquid temperature in °C – input C
T_{MAX}	Maximum liquid temperature in °C depending on regulation

CIRCULATOR STATUS

Symbol	Description
①	Single circulator or nr. 1
②	Circulator nr. 2
②/①	Alternate twin circulators
②←①	Principal/reserve twin circulators (24 hours one motor / 24 hours the other motor)
②+①	Simultaneous twin circulators
ON	Circulator on
OFF	Circulator off
EXT	Circulator controlled by remote signal (ref. terminals 1-2)

TYPE OF OPERATION

Symbol	Description
auto	Auto function
Ⓔ	Economy function

TYPES OF CONTROL MODE

Symbol	Description
	Δp-c control mode (constant pressure)
	Δp-c control mode depending on temperature with positive increase
	Δp-c control mode depending on temperature with negative increase
	Δp-v control mode (variable pressure)
	Δp-v control mode depending on temperature with positive increase
	Δp-v control mode depending on temperature with negative increase
	Servomotor control mode with speed set on the display.
10V	Servomotor control mode with speed set by remote signal 0-10V
ΔT-c	ΔT-c ontrol mode (constant temperature)

VARIOUS

Symbol	Description
	Control panel blocked
▼‖OK ▲‖OK	Multifunction key for confirming parameters and scrolling pages

FACTORY SETTINGS

Parameter	Value
Control mode	Display of parameters
Hs (Differential Pressure Set-point)	Δp-v
Fs (Frequency Set-point)	auto
Set-point percentage reduction	50 %
Twin operating mode	②/① = Alternating every 24h
Pump start control	EXT (from remote signal on input I1)

TYPES OF ALARMS AND HOW TO DEAL WITH THEM

Alarm code	Alarm symbol	Alarm description
e0 - e16; e21		Internal Error
e17 - e19		Short circuit
e20	max	Voltage Error
e22 - e30		Voltage Error
e31		Protocol Error
e32 - e35	max	Overheating
e37	min	Low voltage
e38	max	High voltage
e39 - e40		Overcurrent
e43; e44; e45; e54		Pressure sensor
e46		Pump Disconnected

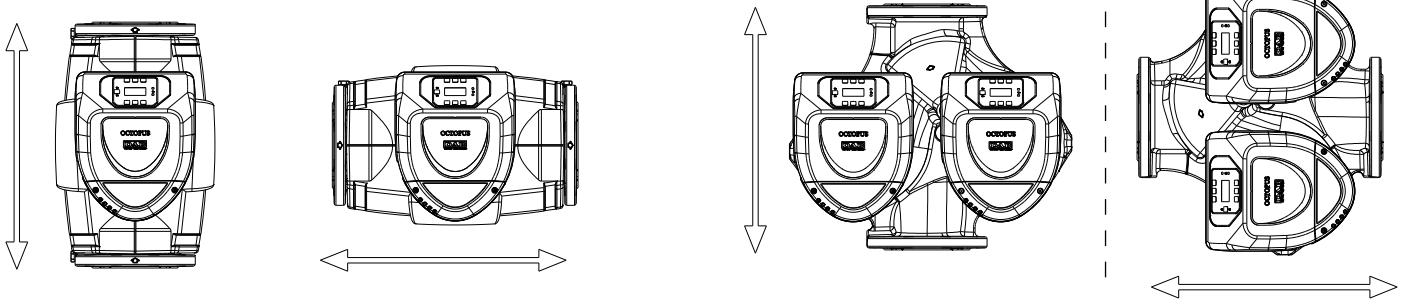
TROUBLESHOOTING

Error condition		
Display indication	**Description**	**Reset sequence**
E0 - E16	Internal Error	- Switch off power to EVOPLUS - Wait 5 minutes then restore power to the EVOPLUS. - If the error persists, replace the EVOPLUS.
E37	Mains voltage too low (LP)	- Switch off power to EVOPLUS - Wait 5 minutes then restore power to the EVOPLUS. - Check that the mains system voltage is correct; if necessary, restore it to the device's rated level.
E38	Mains voltage too high (HP)	- Switch off power to EVOPLUS - Wait 5 minutes then restore power to the EVOPLUS. - Check that the mains system voltage is correct; if necessary, restore it to the device's rated level.
E32-E35	Overheating of key electronic parts	- Switch off power to EVOPLUS - Wait 5 minutes then remove the EVOPLUS from the pump and clean the motor casing. - Clean the heat sink.
E43-E45; E54	No signal from sensor	- Check the sensor connection - If the sensor has failed, replace it.
E39-E40	Overload cutout tripped	- Check that the circulation pump turns freely. - Check that the level of antifreeze does not exceed the maximum level of 30%
E21-E30	Voltage Error	- Switch off power to EVOPLUS. - Wait 5 minutes then restore power to the EVOPLUS. - Check that the mains system voltage is correct; if necessary, restore it to the device's rated level.
E31	Twin connection failure	- Inspect the twin connection cable for damage. - Check that both circulation pumps can be supplied with power.

INSTALLATION:

HEATING AND CONDITIONING

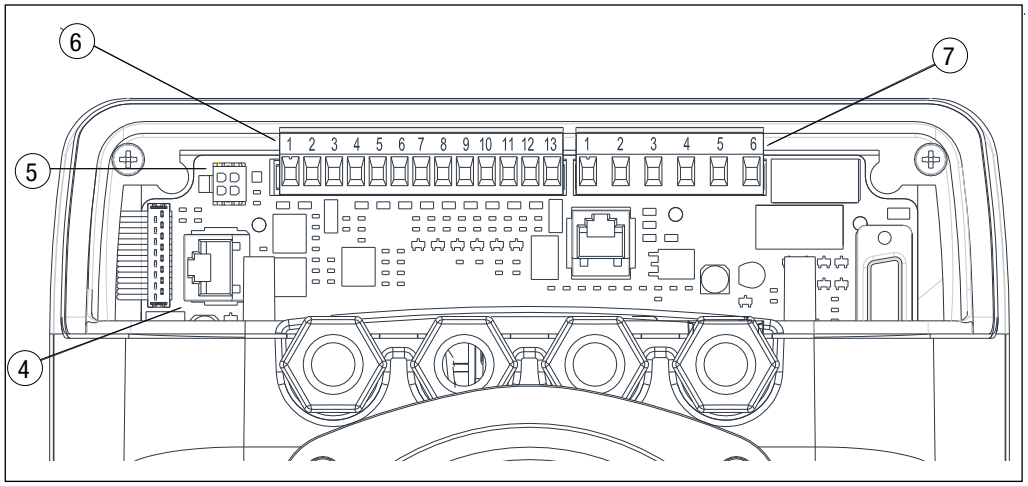
ONLY HEATING

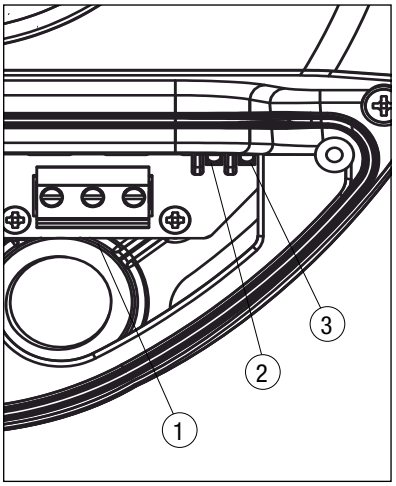


SINGLE

TWIN

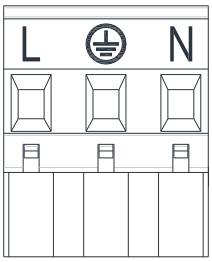
CONNECTION DIAGRAM





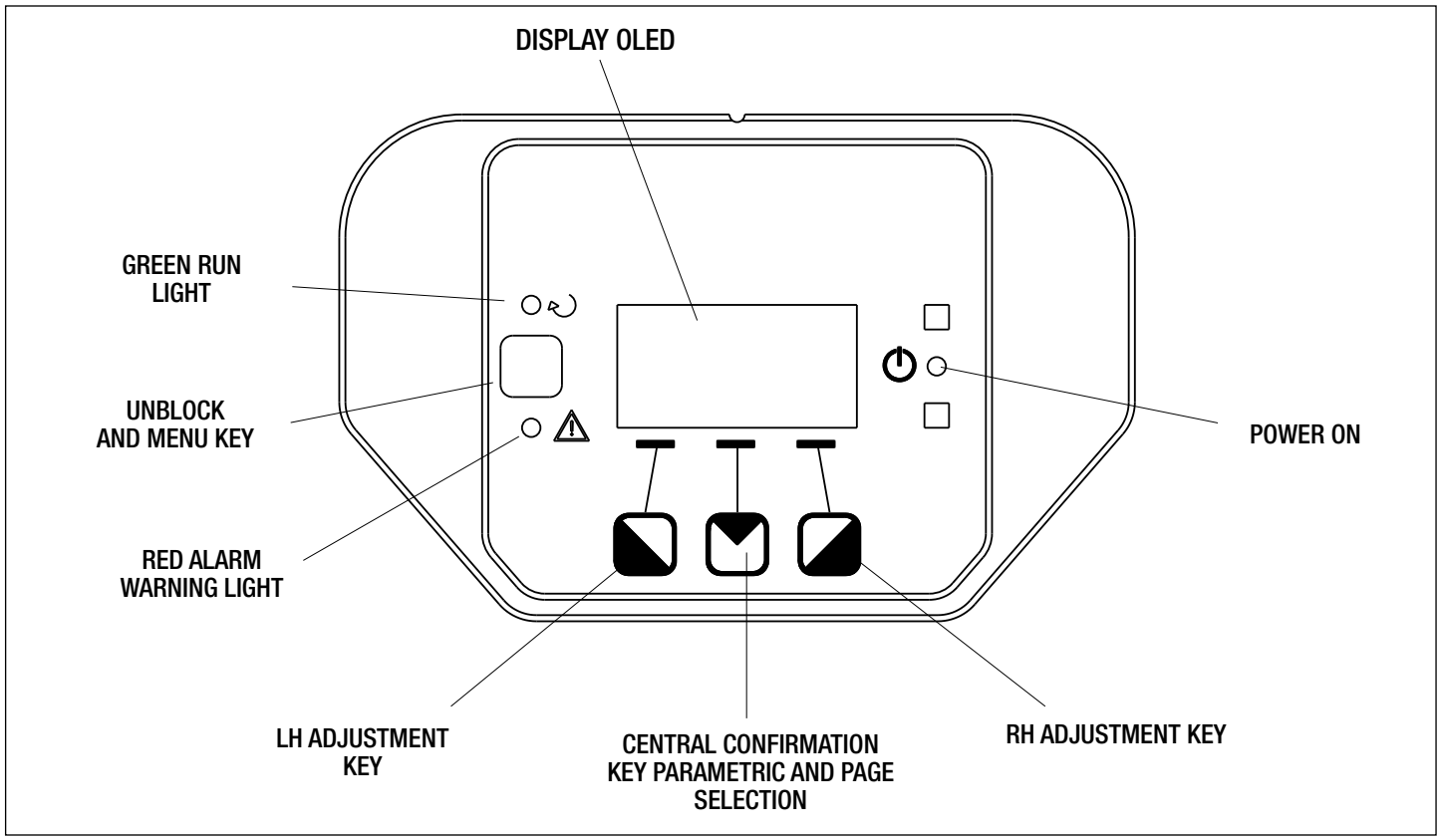
1	Pull-out terminal board for connection of the supply line: 1x220-240 V, 50/60 Hz
2	Auxiliary LED
3	System live indicating LED
4	Connector for connecting twin circulators
5	Connector for connecting the pressure and temperature sensor on the circulator (standard)
6	Pull-out 13-pole terminal board for connecting the inputs and the MODBUS systems
7	Pull-out 6-pole terminal board for alarm signals and system status

Power supply connection

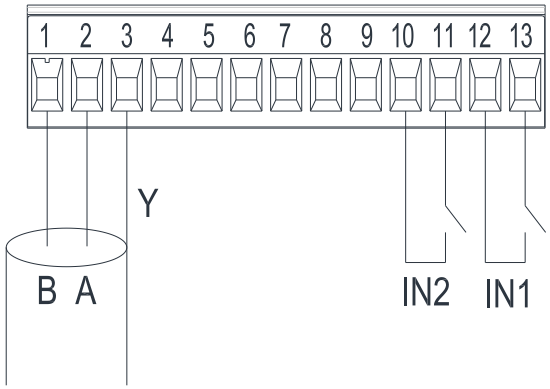


Pull-out terminal board for supply

CONTROL PANEL DESCRIPTION



Digital inputs



INRESSO	TERMINAL NO.	TYPE OF CONTACT	FUNZIONE ASSOCIATA
IN1	12	Clean contact	**EXT:** If it is activated from the control panel it will be possible to command the switching on and off of the pump in remote mode.
	13		
IN2	10	Clean contact	**Economy:** If it is activated from the control panel it will be possible to activate the set-point reduction function in remote mode.
	11		

If the **EXT** and **Economy** functions have been activated from the control panel, the system will behave as follows:

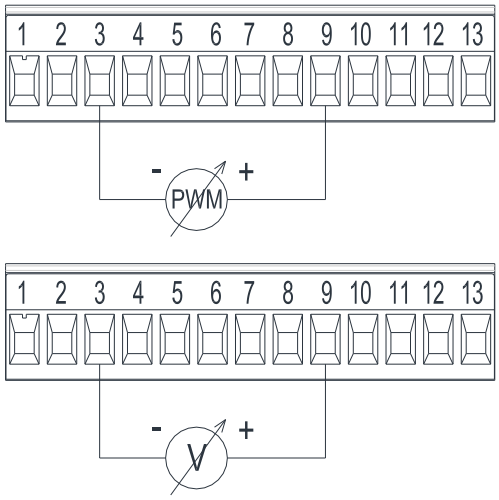
IN1	IN2	SYSTEM STATUS
Open	Open	Pump stopped
Open	Closed	Pump stopped
Closed	Open	Pump running with set-point set by the user
Closed	Closed	Pump running with reduced set-point

MODBUS

EVOPLUS circulators provide serial communication through an input RS-485. The communication is realised according to MODBUS specifications.
With MODBUS it is possible to set the circulator operating parameters in remote mode such as, for example, the desired differential pressure, the influence of temperature, the regulating mode, etc. At the same time the circulator can provide important information on the system status.

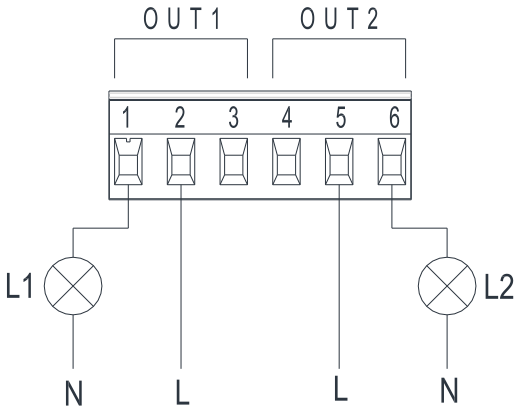
MODBUS TERMINALS	TERMINAL NO.	DESCRIPTION
A	2	Terminal not inverted (+)
B	1	Terminal inverted (-)
Y	3	GND

Analogue Input and PWM



The wiring diagram of the external signals 0-10V and PWM. The 2 signals share the same terminals on the terminal board, so they are mutually exclusive.

Digital outputs



The light L1 is lit when there is an alarm in the system and it goes off when no kind of malfunction is found, whereas the light L2 is lit when the pump is running and goes off when the pump is stopped.

OUTPUT	TERMINAL NO.	TYPE OF CONTACT	ASSOCIATED FUNCTION
OUT1	1	NC	Presence/Absence of alarms in the system
	2	COM	
	3	NO	
OUT2	4	NC	Pump running/Pump stopped
	5	COM	
	6	NO	

The outputs OUT1 and OUT2 are available on the pull-out 6-pole terminal board which also shows the type of contact (NC = Normally Closed, COM = Common, NO = Normally Open).

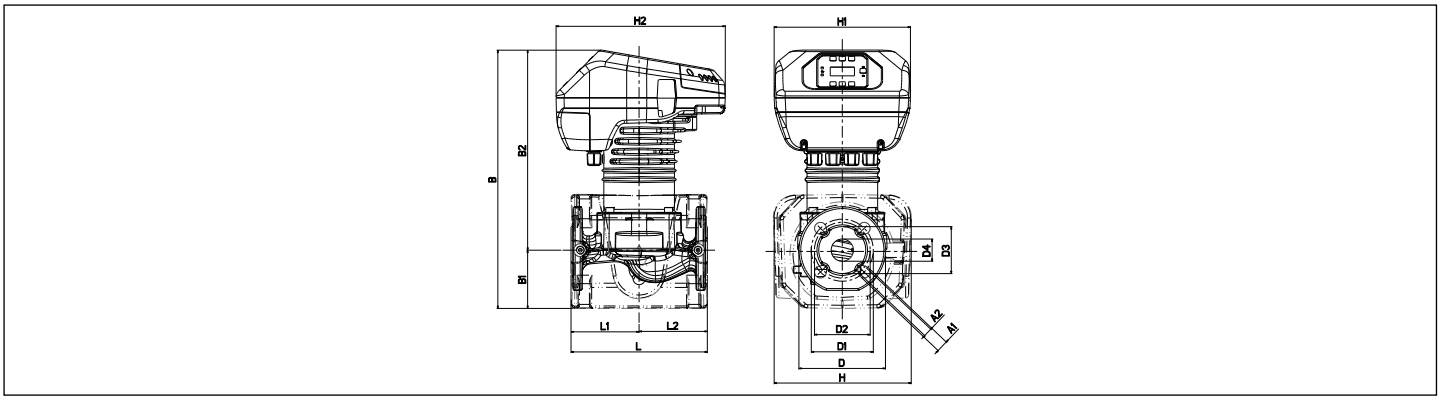
CHARACTERISTICS OF THE OUTPUT CONTACTS	
Max. bearable voltage [V]	250
Max. bearable current [A]	5 - If resistive load 2,5 - If inductive load
Max. accepted cable section [mm²]	1,5

The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

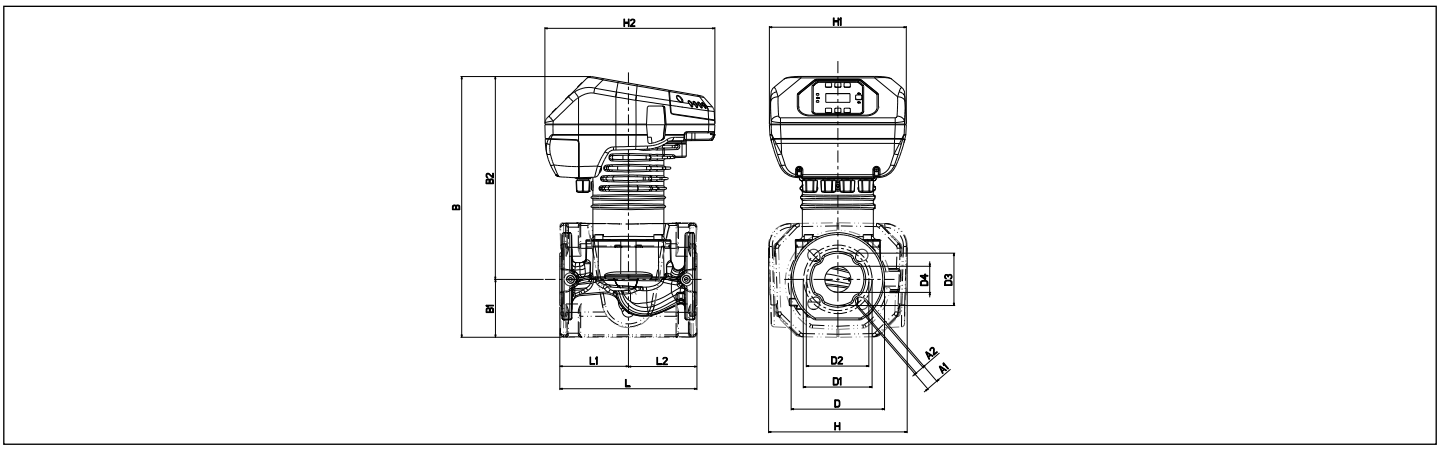
MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS B 120/220.32 M	220/240 V	220	DN 32 PN 6	340	EEI ≤ 0,22	m.c.a.	20	25



Dimensions and weight

L	L1	L2	A1	A2	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
220	110	110	19	14	417	94	323	140	100	90	76	36	222	220	273	14

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS B 40/220.40 M	220/240 V	220	DN 40 PN 10	90	EEI ≤ 0,24	m.c.a.	20	25
EVOPLUS B 60/220.40 M	220/240 V	220	DN 40 PN 10	175	EEI ≤ 0,23	m.c.a.	20	25
EVOPLUS B 80/220.40 M	220/240 V	220	DN 40 PN 10	260	EEI ≤ 0,21	m.c.a.	20	25
EVOPLUS B 100/220.40 M	220/240 V	220	DN 40 PN 10	350	EEI ≤ 0,20	m.c.a.	20	25



Dimensions and weight

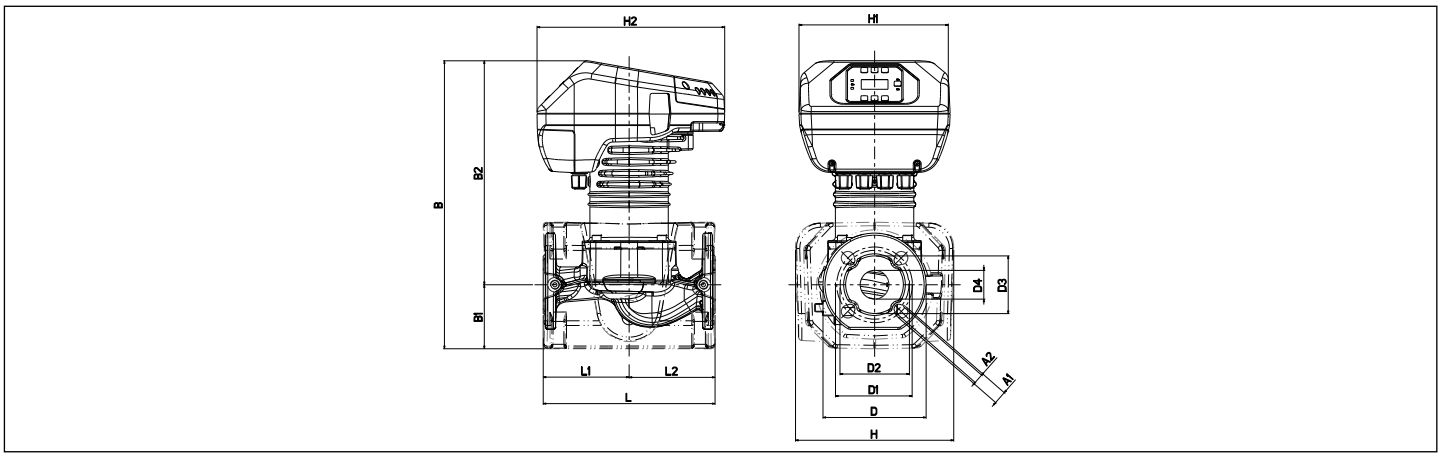
L	L1	L2	A1	A2	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
220	110	110	19	14	419	93	326	150	110	100	84	42	222	220	273	15,5

The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

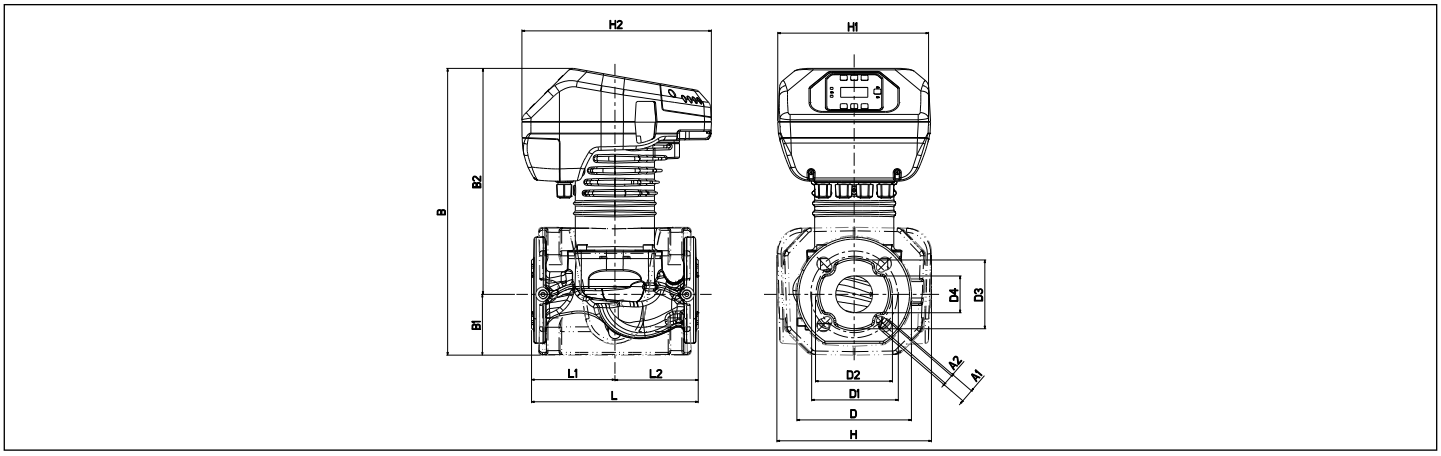
MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS B 120/250.40 M	220/240 V	250	DN 40 PN 10	465	EEI ≤ 0,20	m.c.a.	20	25
EVOPLUS B 150/250.40 M	220/240 V	250	DN 40 PN 10	610	EEI ≤ 0,20	m.c.a.	20	25
EVOPLUS B 180/250.40 M	220/240 V	250	DN 40 PN 10	610	EEI ≤ 0,20	m.c.a.	20	25



Dimensions and weight

L	L1	L2	A1	A2	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
250	125	125	19	14	419	93	326	150	110	100	84	42	230	220	273	16

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS B 40/240.50 M	220/240 V	240	DN 50 PN 10	140	EEI ≤ 0,23	m.c.a.	20	25
EVOPLUS B 60/240.50 M	220/240 V	240	DN 50 PN 10	260	EEI ≤ 0,21	m.c.a.	20	25
EVOPLUS B 80/240.50 M	220/240 V	240	DN 50 PN 10	330	EEI ≤ 0,21	m.c.a.	20	25



Dimensions and weight

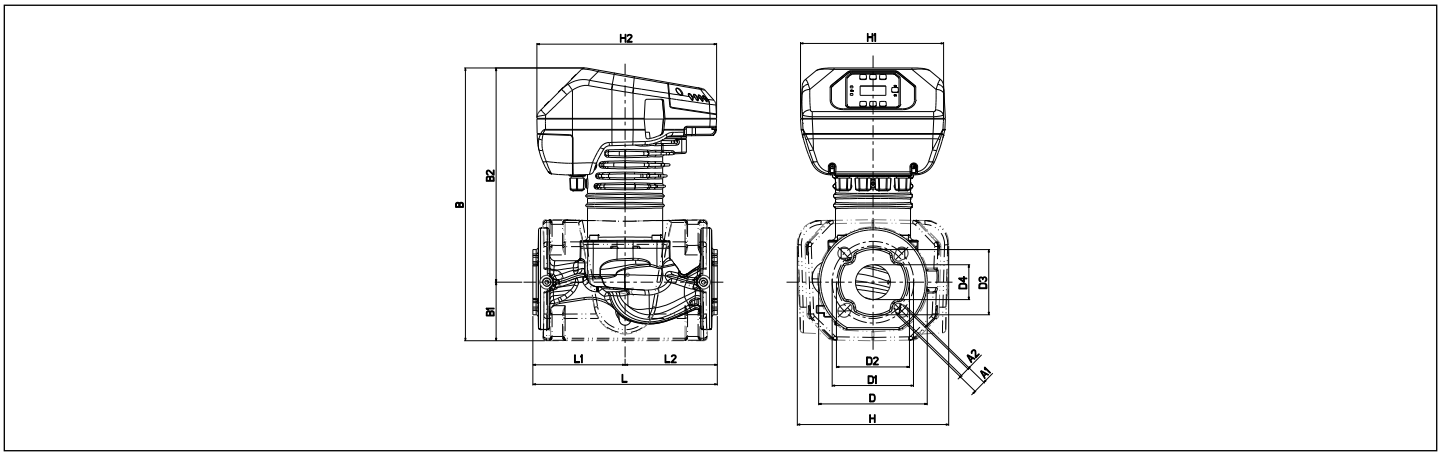
L	L1	L2	A1	A2	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
240	120	120	19	14	413	87	325	165	125	110	99	53	222	220	273	17

The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

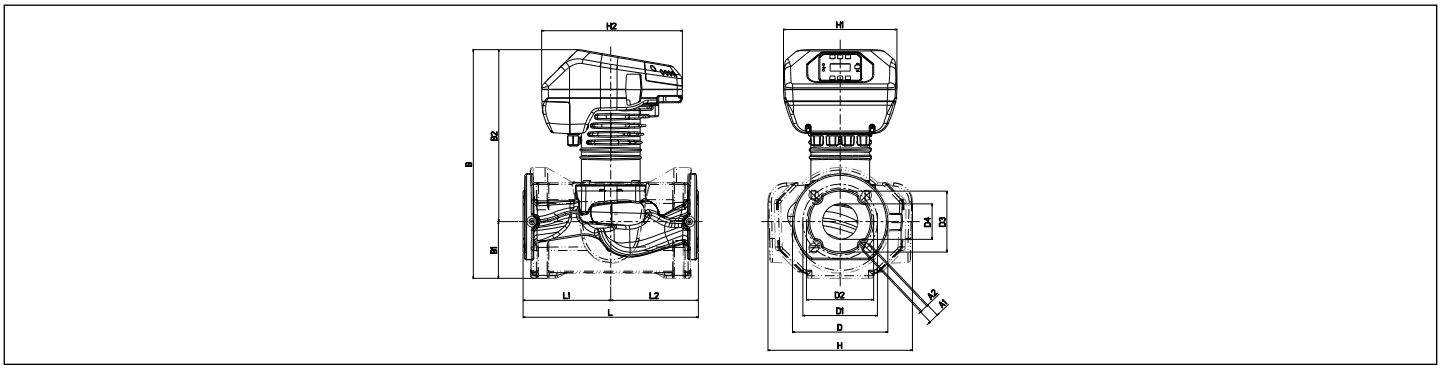
MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS B 100/280.50 M	220/240 V	280	DN 50 PN 10	430	EEI ≤ 0,20	m.c.a.	20	25
EVOPLUS B 120/280.50 M	220/240 V	280	DN 50 PN 10	530	EEI ≤ 0,19	m.c.a.	20	25
EVOPLUS B 150/280.50 M	220/240 V	280	DN 50 PN 10	640	EEI ≤ 0,19	m.c.a.	20	25
EVOPLUS B 180/280.50 M	220/240 V	280	DN 50 PN 10	750	EEI ≤ 0,19	m.c.a.	20	25



Dimensions and weight

L	L1	L2	A1	A2	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
280	140	140	19	14	413	87	325	165	125	110	99	53	230	220	273	18

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS B 40/340.65 M	220/240 V	340	DN 65 PN 10	190	EEI ≤ 0,21	m.c.a.	20	25
EVOPLUS B 60/340.65 M	220/240 V	340	DN 65 PN 10	355	EEI ≤ 0,20	m.c.a.	20	25
EVOPLUS B 80/340.65 M	220/240 V	340	DN 65 PN 10	465	EEI ≤ 0,19	m.c.a.	20	25
EVOPLUS B 100/340.65 M	220/240 V	340	DN 65 PN 10	590	EEI ≤ 0,18	m.c.a.	20	25
EVOPLUS B 120/340.65 M	220/240 V	340	DN 65 PN 10	730	EEI ≤ 0,18	m.c.a.	20	25
EVOPLUS B 150/340.65 M	220/240 V	340	DN 65 PN 10	1210	EEI ≤ 0,18	m.c.a.	20	25



Dimensions and weight

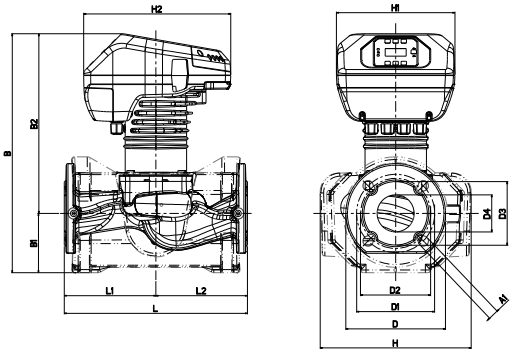
L	L1	L2	A1	A2	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
340	170	170	19	14	443	110	333	185	145	130	118	69	280	220	273	20

The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

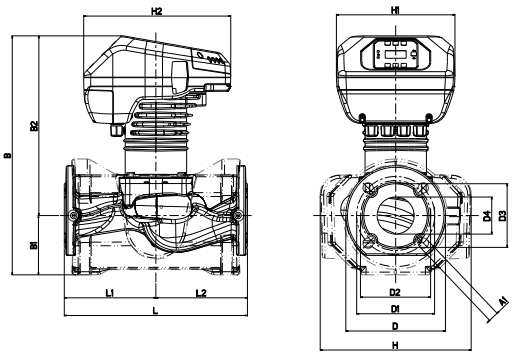
MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS B 40/360.80 M	220/240 V	360	DN 80 PN 16	330	EEI ≤ 0,19	m.c.a.	20	25
EVOPLUS B 60/360.80 M	220/240 V	360	DN 80 PN 16	535	EEI ≤ 0,20	m.c.a.	20	25
EVOPLUS B 80/360.80 M	220/240 V	360	DN 80 PN 16	670	EEI ≤ 0,20	m.c.a.	20	25
EVOPLUS B 100/360.80 M	220/240 V	360	DN 80 PN 16	1005	EEI ≤ 0,19	m.c.a.	20	25
EVOPLUS B 120/360.80 M	220/240 V	360	DN 80 PN 16	1235	EEI ≤ 0,19	m.c.a.	20	25



Dimensions and weight

L	L1	L2	A1	B	B1	B2	D	D1	D3	D4	H	H1	H2	WEIGHT (Kg)
360	180	180	19	446	106	340	200	160	132	80	279	220	273	25

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS B 40/450.100 M	220/240 V	450	DN 100 PN 16	530	EEI ≤ 0,19	m.c.a.	20	25
EVOPLUS B 60/450.100 M	220/240 V	450	DN 100 PN 16	760	EEI ≤ 0,18	m.c.a.	20	25
EVOPLUS B 80/450.100 M	220/240 V	450	DN 100 PN 16	1080	EEI ≤ 0,18	m.c.a.	20	25
EVOPLUS B 100/450.100 M	220/240 V	450	DN 100 PN 16	1380	EEI ≤ 0,19	m.c.a.	20	25
EVOPLUS B 120/450.100 M	220/240 V	450	DN 100 PN 16	1560	EEI ≤ 0,19	m.c.a.	20	25



Dimensions and weight

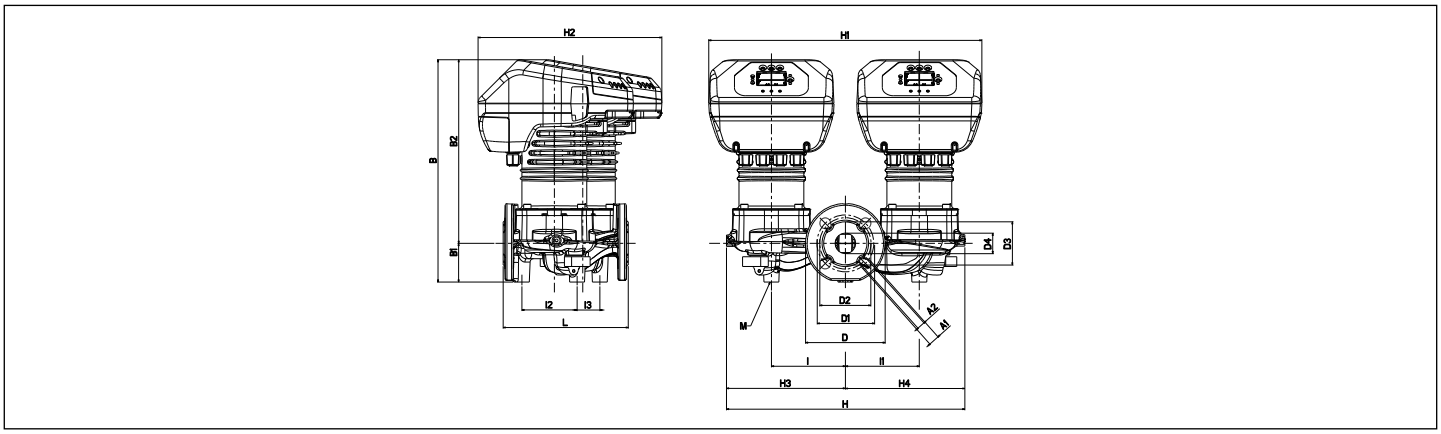
L	L1	L2	A1	B	B1	B2	D	D1	D3	D4	H	H1	H2	WEIGHT (Kg)
450	225	225	19	463	110	353	220	180	156	105	292	220	273	30

The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

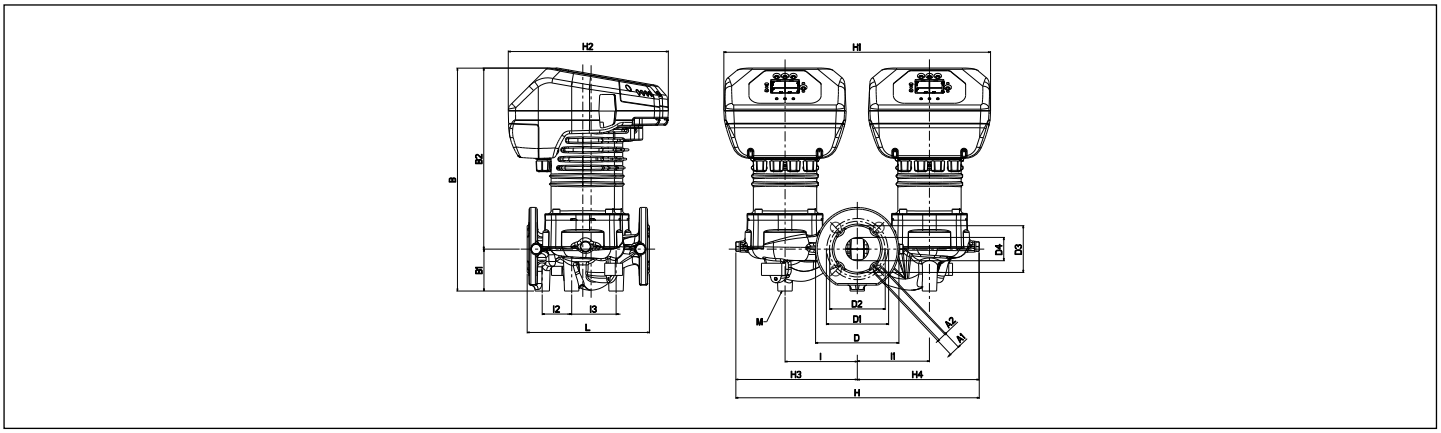
MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS D 120/220.32 M	220/240 V	220	DN 32 PN 6	340	EEI ≤ 0,22	m.c.a.	20	25



Dimensions and weight

L	A1	A2	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4	WEIGHT (Kg)
220	19	14	391	68	323	140	100	90	76	36	130	130	97	40	M12	419	480	323	209	210	29

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS D 40/220.40 M	220/240 V	220	DN 40 PN 10	90	EEI ≤ 0,25	m.c.a.	20	25
EVOPLUS D 60/220.40 M	220/240 V	220	DN 40 PN 10	175	EEI ≤ 0,25	m.c.a.	20	25
EVOPLUS D 80/220.40 M	220/240 V	220	DN 40 PN 10	260	EEI ≤ 0,25	m.c.a.	20	25
EVOPLUS D 100/220.40 M	220/240 V	220	DN 40 PN 10	350	EEI ≤ 0,25	m.c.a.	20	25



Dimensions and weight

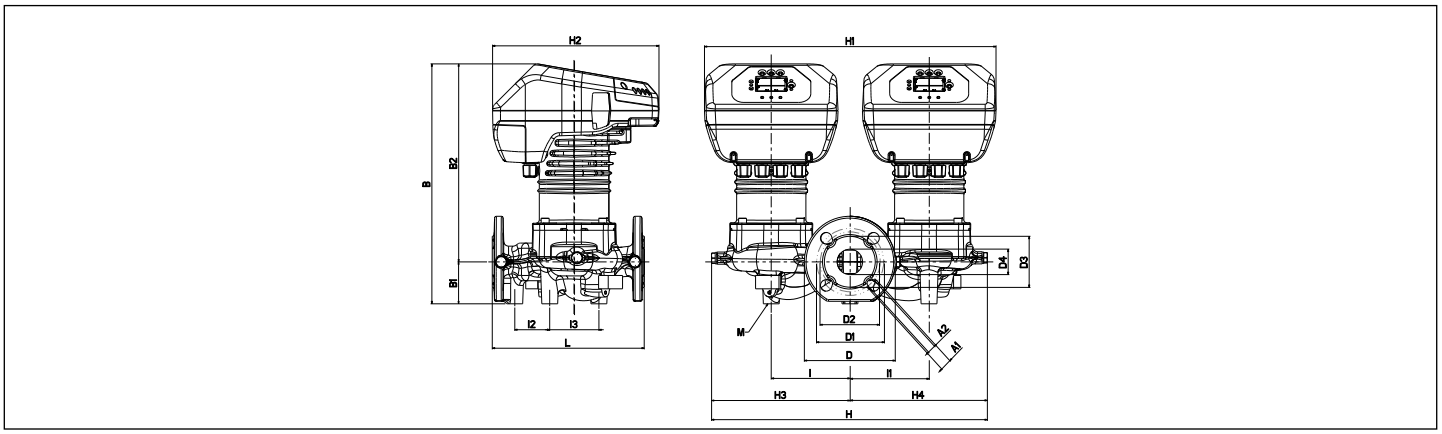
L	A1	A2	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4	WEIGHT (Kg)
220	19	14	436	75	361	150	110	100	84	42	130	130	53	80	M12	438	480	288	219	218	31

The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

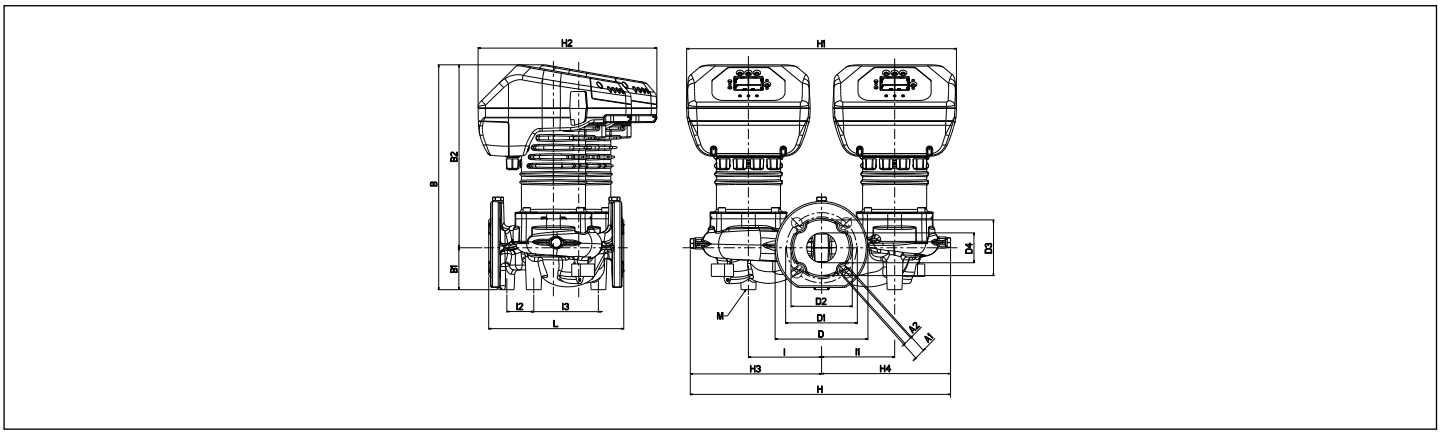
MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS D 120/250.40 M	220/240 V	250	DN 40 PN 10	465	EEI ≤ 0,23	m.c.a.	20	25
EVOPLUS D 150/250.40 M	220/240 V	250	DN 40 PN 10	610	EEI ≤ 0,23	m.c.a.	20	25
EVOPLUS D 180/250.40 M	220/240 V	250	DN 40 PN 10	610	EEI ≤ 0,23	m.c.a.	20	25



Dimensions and weight

L	A1	A2	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4	WEIGHT (Kg)
250	19	14	395	69	326	150	110	100	84	42	130	130	58	81	M12	454	480	274	228	226	32

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS D 40/240.50 M	220/240 V	240	DN 50 PN 10	140	EEI ≤ 0,23	m.c.a.	20	25
EVOPLUS D 60/240.50 M	220/240 V	240	DN 50 PN 10	260	EEI ≤ 0,22	m.c.a.	20	25
EVOPLUS D 80/240.50 M	220/240 V	240	DN 50 PN 10	330	EEI ≤ 0,22	m.c.a.	20	25



Dimensions and weight

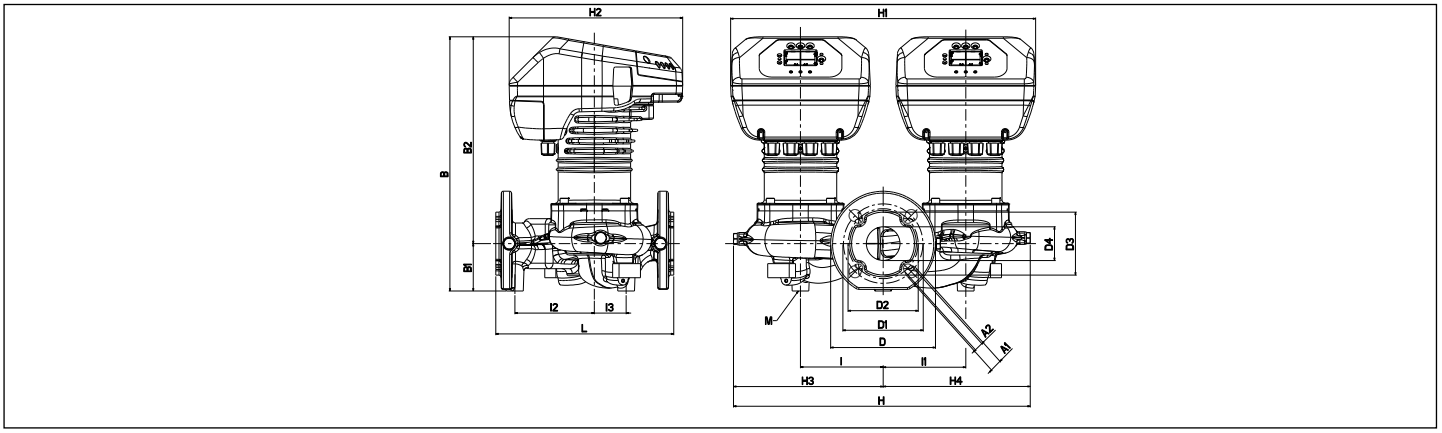
L	A1	A2	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4	WEIGHT (Kg)
240	19	14	400	75	325	165	125	110	99	53	130	130	48	115	M12	463	480	318	233	230	33

The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

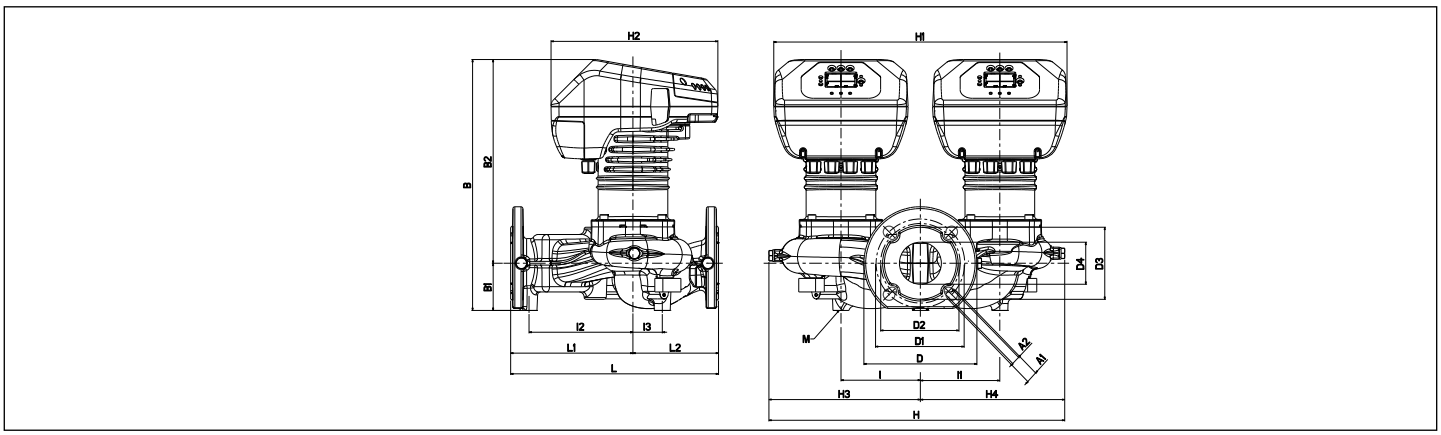
MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS D 100/280.50 M	220/240 V	280	DN 50 PN 10	430	EEI ≤ 0,22	m.c.a.	20	25
EVOPLUS D 120/280.50 M	220/240 V	280	DN 50 PN 10	530	EEI ≤ 0,22	m.c.a.	20	25
EVOPLUS D 150/280.50 M	220/240 V	280	DN 50 PN 10	640	EEI ≤ 0,21	m.c.a.	20	25
EVOPLUS D 180/280.50 M	220/240 V	280	DN 50 PN 10	750	EEI ≤ 0,21	m.c.a.	20	25



Dimensions and weight

L	A1	A2	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4	WEIGHT (Kg)
280	19	14	400	75	325	165	125	110	99	53	130	130	125	50	M12	467	480	273	235	232	34

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS D 40/340.65 M	220/240 V	340	DN 65 PN 10	190	EEI ≤ 0,21	m.c.a.	20	25
EVOPLUS D 60/340.65 M	220/240 V	340	DN 65 PN 10	355	EEI ≤ 0,21	m.c.a.	20	25
EVOPLUS D 80/340.65 M	220/240 V	340	DN 65 PN 10	465	EEI ≤ 0,21	m.c.a.	20	25
EVOPLUS D 100/340.65 M	220/240 V	340	DN 65 PN 10	590	EEI ≤ 0,20	m.c.a.	20	25
EVOPLUS D 120/340.65 M	220/240 V	340	DN 65 PN 10	730	EEI ≤ 0,20	m.c.a.	20	25
EVOPLUS D 150/340.65 M	220/240 V	340	DN 65 PN 10	1210	EEI ≤ 0,20	m.c.a.	20	25



Dimensions and weight

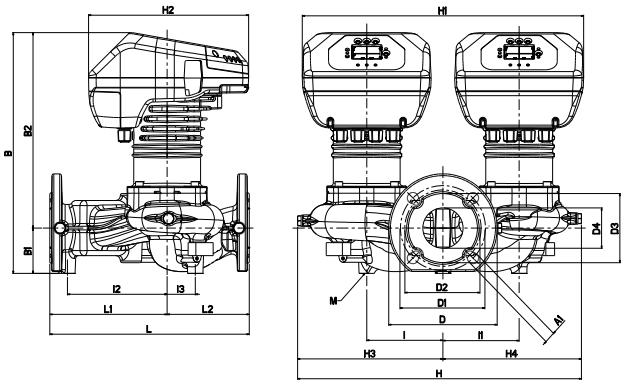
L	L1	L2	A1	A2	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4	WEIGHT (Kg)
340	200	140	19	14	411	77	334	185	145	130	118	69	130	130	170	48	M12	484	480	273	248	236	37

The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

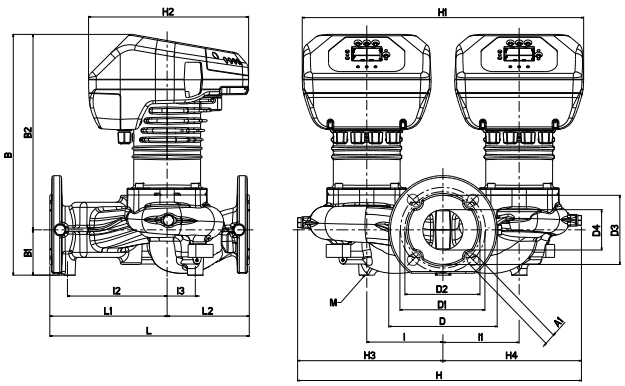
MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS D 40/360.80 M	220/240 V	360	DN 80 PN 16	330	EEI ≤ 0,20	m.c.a.	20	25
EVOPLUS D 60/360.80 M	220/240 V	360	DN 80 PN 16	535	EEI ≤ 0,20	m.c.a.	20	25
EVOPLUS D 80/360.80 M	220/240 V	360	DN 80 PN 16	670	EEI ≤ 0,20	m.c.a.	20	25
EVOPLUS D 100/360.80 M	220/240 V	360	DN 80 PN 16	1005	EEI ≤ 0,19	m.c.a.	20	25
EVOPLUS D 120/360.80 M	220/240 V	360	DN 80 PN 16	1235	EEI ≤ 0,19	m.c.a.	20	25



Dimensions and weight

L	L1	L2	A1	B	B1	B2	D	D1	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4	WEIGHT (Kg)
360	200	160	19	437	96	341	200	160	132	80	130	130	160	58	M12	515	480	273	262	253	44

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	EEI	MINIMUM HEAD PRESSURE		
				P1 MAX W		t°	90°	100°
EVOPLUS D 40/450.100 M	220/240 V	450	DN 100 PN 16	530	EEI ≤ 0,19	m.c.a.	20	25
EVOPLUS D 60/450.100 M	220/240 V	450	DN 100 PN 16	760	EEI ≤ 0,19	m.c.a.	20	25
EVOPLUS D 80/450.100 M	220/240 V	450	DN 100 PN 16	1080	EEI ≤ 0,20	m.c.a.	20	25
EVOPLUS D 100/450.100 M	220/240 V	450	DN 100 PN 16	1380	EEI ≤ 0,20	m.c.a.	20	25
EVOPLUS D 120/450.100 M	220/240 V	450	DN 100 PN 16	1560	EEI ≤ 0,20	m.c.a.	20	25



Dimensions and weight

L	L1	L2	A1	B	B1	B2	D	D1	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4	WEIGHT (Kg)
450	260	190	19	456	103	353	220	180	156	105	135	135	200	43	12	517	490	273	265	252	53

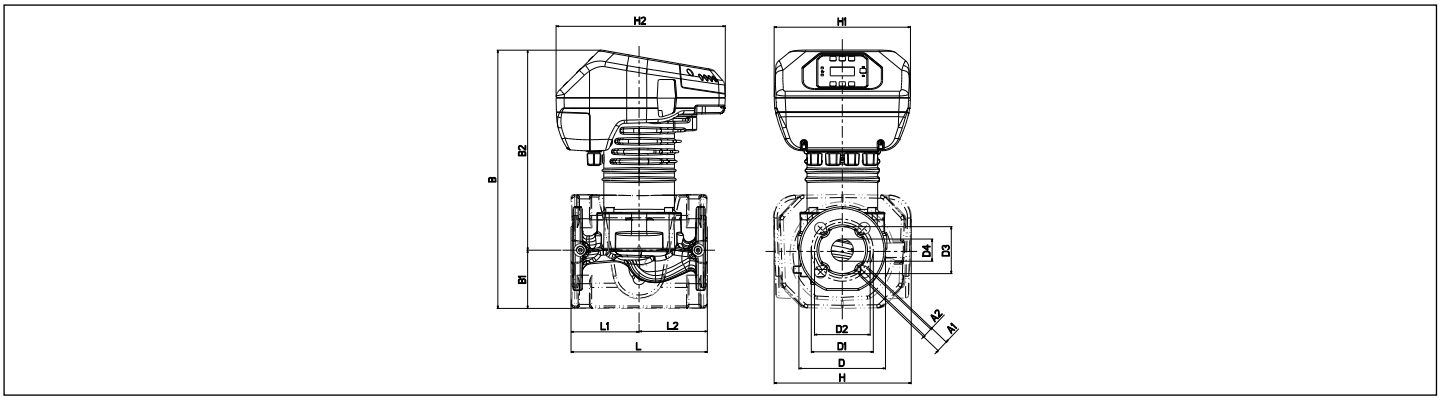
The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR SMALL HOT WATER APPLICATIONS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	MINIMUM HEAD PRESSURE		
				P1 MAX W	t°	90°	100°
EVOPLUS B 120/220.32 SAN M *	220/240 V	220	DN 32 PN 6	340	m.c.a.	20	25

* Available from 2013

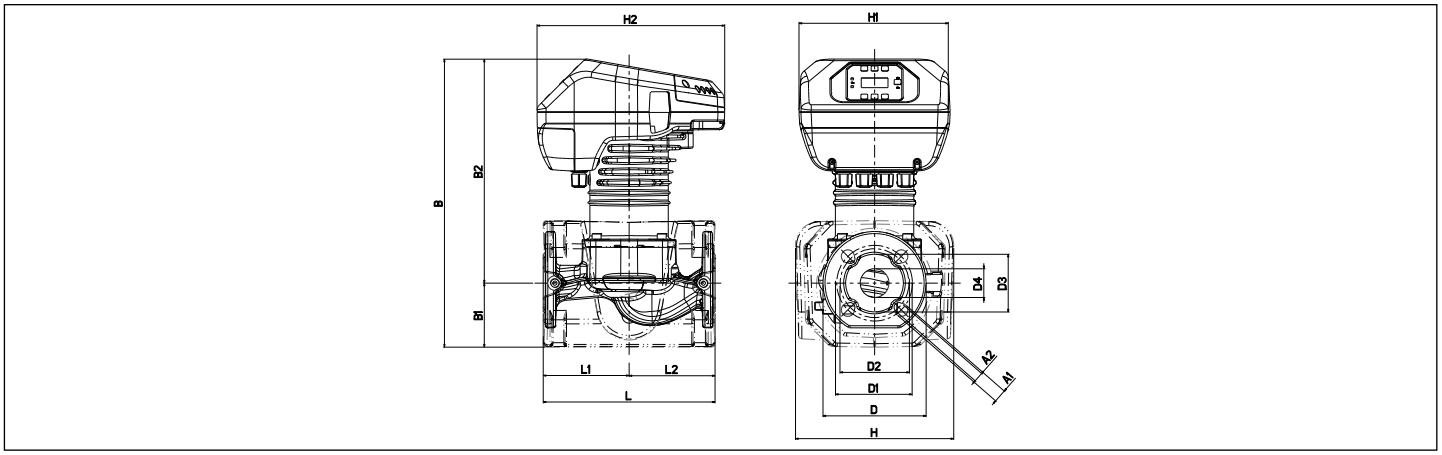


Dimensions and weight

L	L1	L2	A1	A2	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
220	110	110	19	14	417	94	323	140	100	90	76	36	222	220	273	14

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	MINIMUM HEAD PRESSURE		
				P1 MAX W	t°	90°	100°
EVOPLUS B 120/250.40 SAN M *	220/240 V	250	DN 40 PN 10	465	m.c.a.	20	25
EVOPLUS B 150/250.40 SAN M *	220/240 V	250	DN 40 PN 10	610	m.c.a.	20	25
EVOPLUS B 180/250.40 SAN M *	220/240 V	250	DN 40 PN 10	610	m.c.a.	20	25

* Available from 2013



Dimensions and weight

L	L1	L2	A1	A2	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
250	125	125	19	14	419	93	326	150	110	100	84	42	230	220	273	16

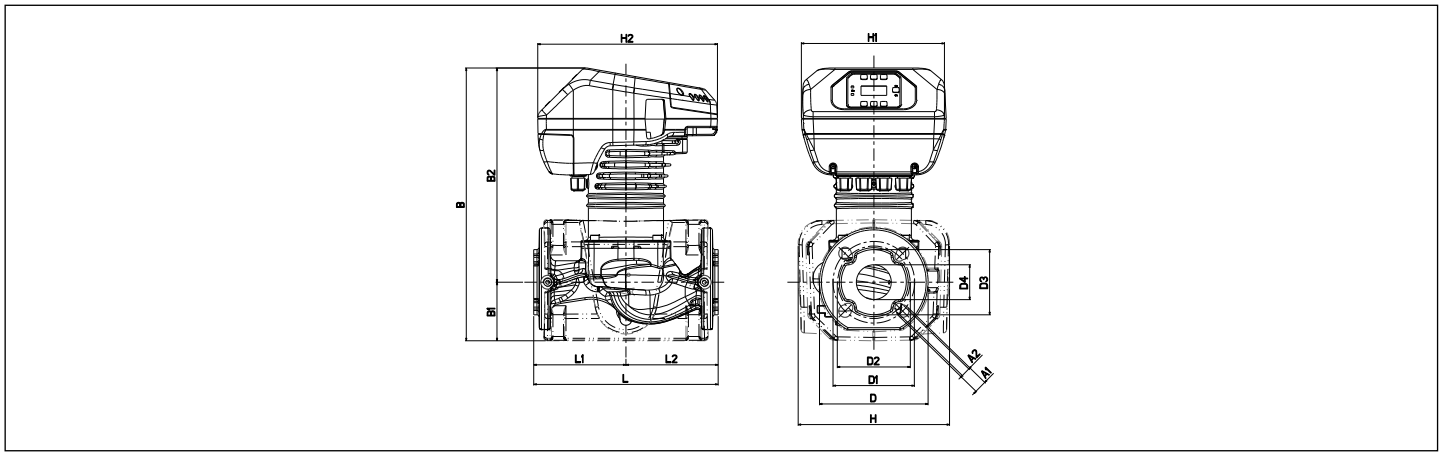
The performance curves are based on kinematic viscosity values = 1 mm2/s and density equivalent to 1000 kg/m3. Tolerance of curves to ISO 9906.

CIRCULATORS FOR SMALL HOT WATER APPLICATIONS

Liquid temperature range: da -10°C a +110°C
Maximum operating pressure: 16 bar (1600 kPa)

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	MINIMUM HEAD PRESSURE		
				P1 MAX W	t°	90°	100°
EVOPLUS B 100/280.50 SAN M *	220/240 V	280	DN 50 PN 10	430	m.c.a.	20	25
EVOPLUS B 120/280.50 SAN M *	220/240 V	280	DN 50 PN 10	530	m.c.a.	20	25
EVOPLUS B 150/280.50 SAN M *	220/240 V	280	DN 50 PN 10	640	m.c.a.	20	25
EVOPLUS B 180/280.50 SAN M *	220/240 V	280	DN 50 PN 10	750	m.c.a.	20	25

* Available from 2013

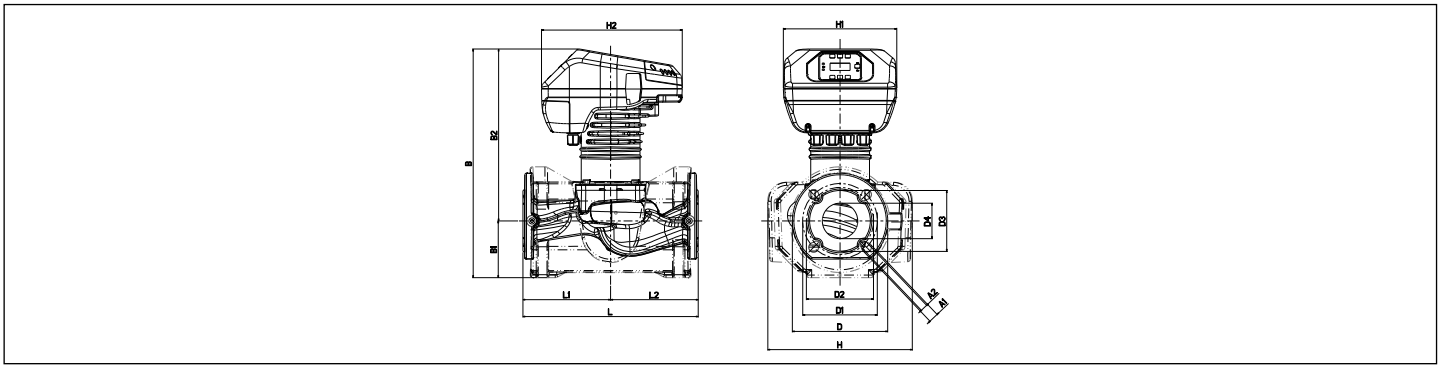


Dimensions and weight

L	L1	L2	A1	A2	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
280	140	140	19	14	413	87	325	165	125	110	99	53	230	220	273	18

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA	MINIMUM HEAD PRESSURE		
				P1 MAX W	t°	90°	100°
EVOPLUS B 40/340.65 SAN M *	220/240 V	340	DN 65 PN 10	190	m.c.a.	20	25
EVOPLUS B 60/340.65 SAN M *	220/240 V	340	DN 65 PN 10	355	m.c.a.	20	25
EVOPLUS B 80/340.65 SAN M *	220/240 V	340	DN 65 PN 10	465	m.c.a.	20	25
EVOPLUS B 100/340.65 SAN M *	220/240 V	340	DN 65 PN 10	590	m.c.a.	20	25
EVOPLUS B 120/340.65 SAN M *	220/240 V	340	DN 65 PN 10	730	m.c.a.	20	25
EVOPLUS B 150/340.65 SAN M *	220/240 V	340	DN 65 PN 10	1210	m.c.a.	20	25

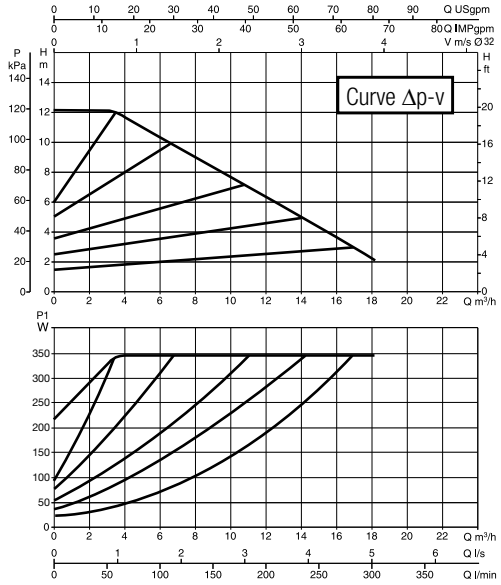
* Available from 2013



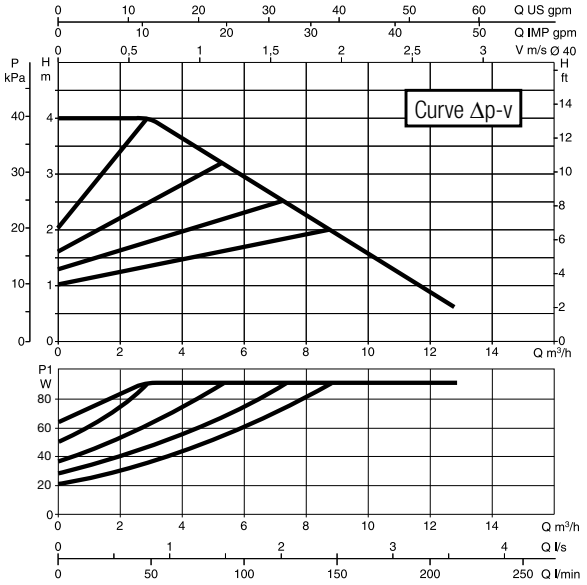
Dimensions and weight

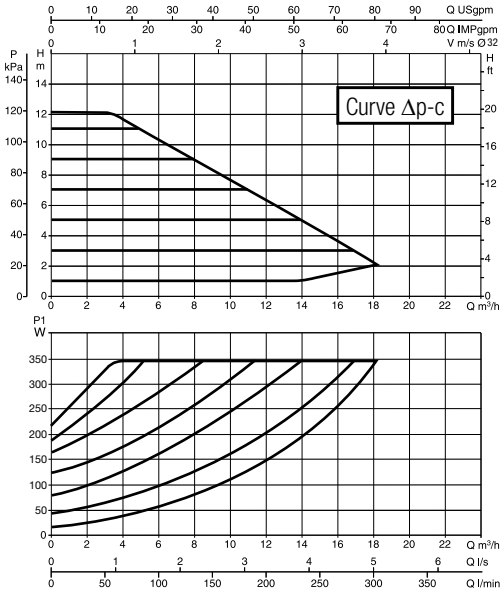
L	L1	L2	A1	A2	B	B1	B2	D	D1	D2	D3	D4	H	H1	H2	WEIGHT (Kg)
340	170	170	19	14	443	110	333	185	145	130	118	69	280	220	273	20

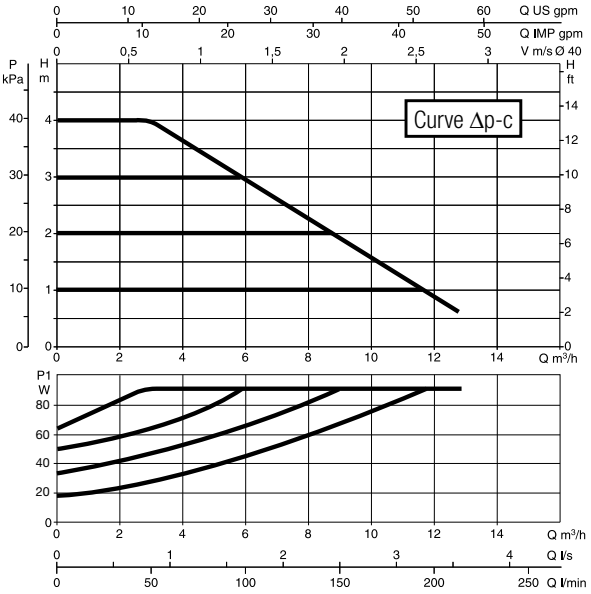
EVOPLUS B 120/220.32 (SAN) M - EVOPLUS D 120/220.32 M

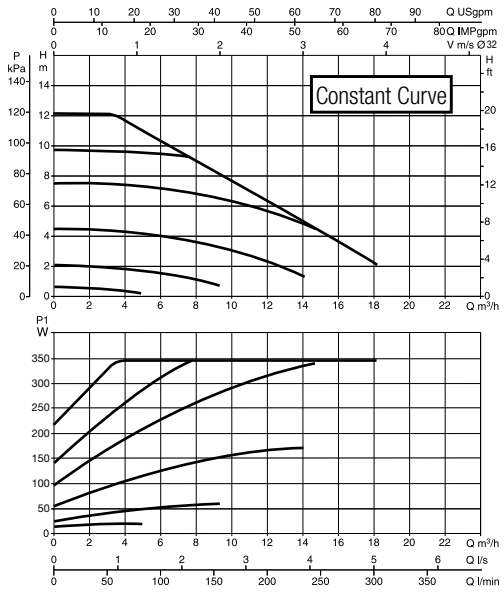


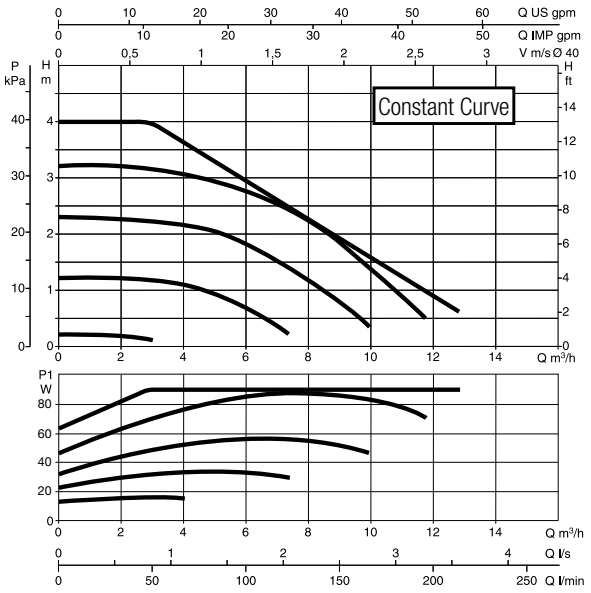
EVOPLUS B 40/220.40 M - EVOPLUS D 40/220.40 M



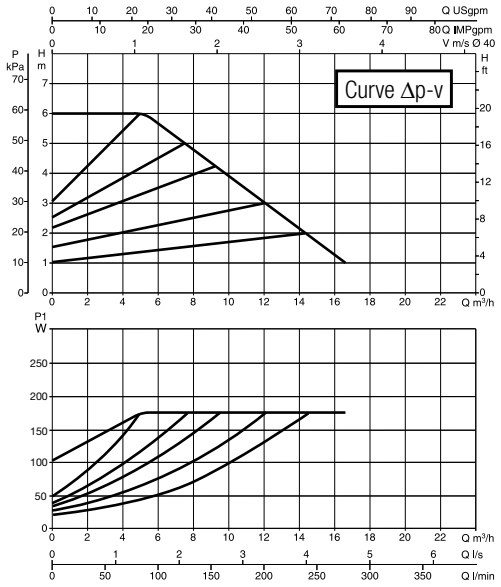




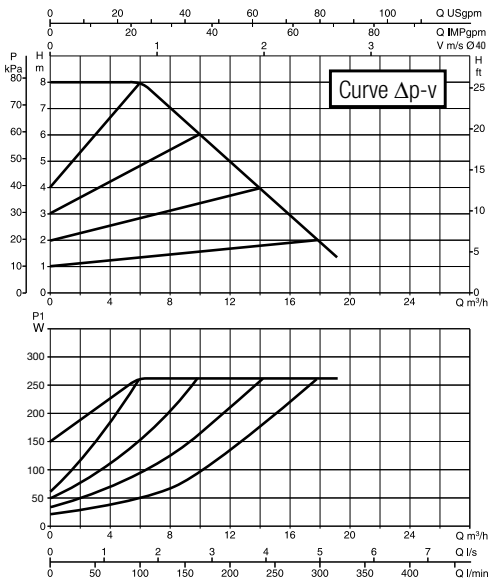


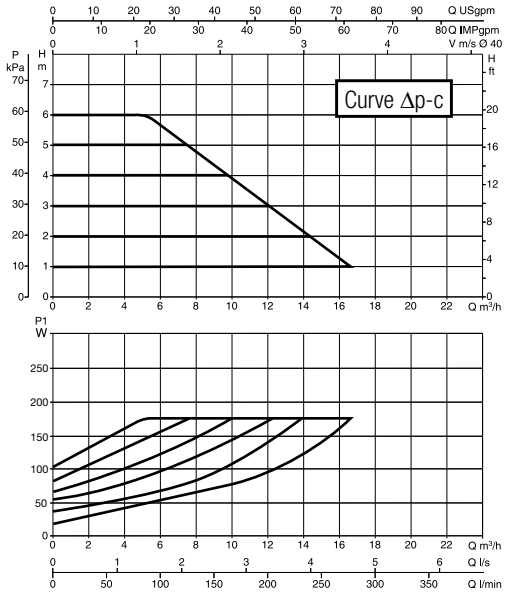


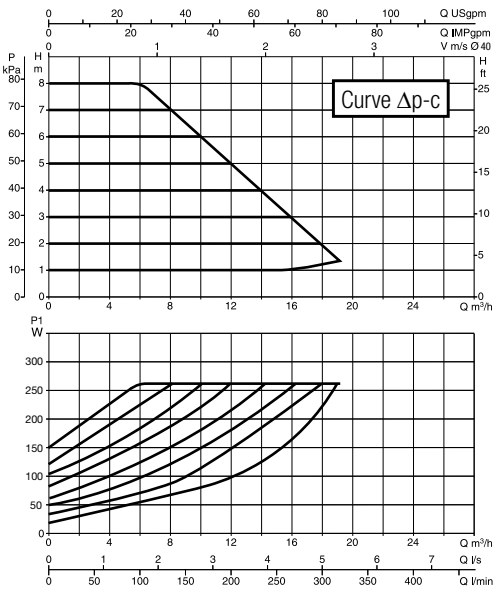
EVOPLUS B 60/220.40 M - EVOPLUS D 60/220.40 M

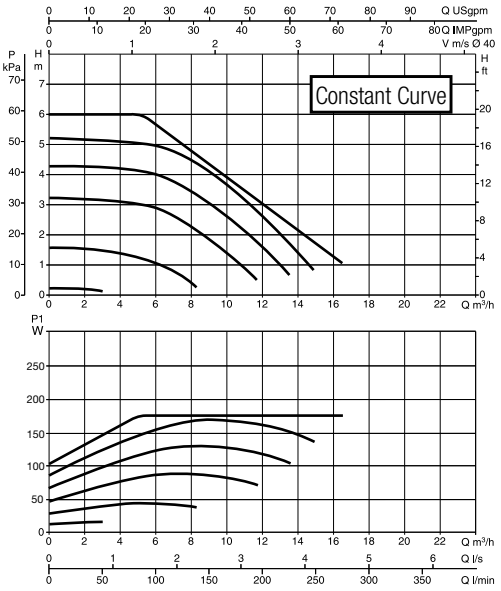


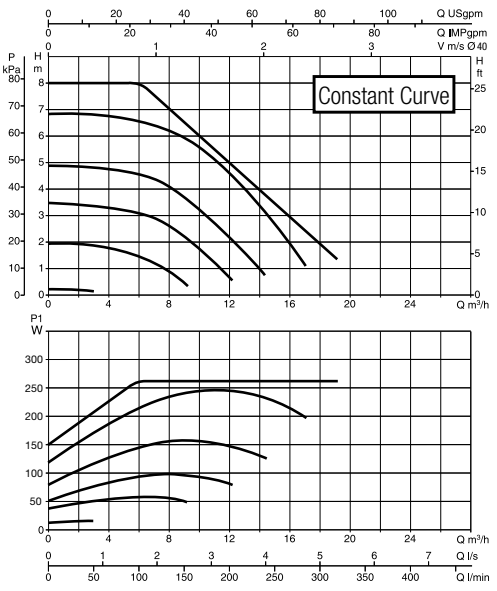
EVOPLUS B 80/220.40 M - EVOPLUS D 80/220.40 M



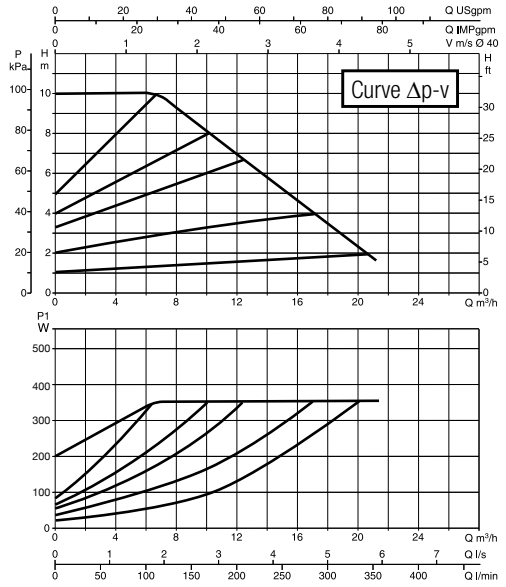


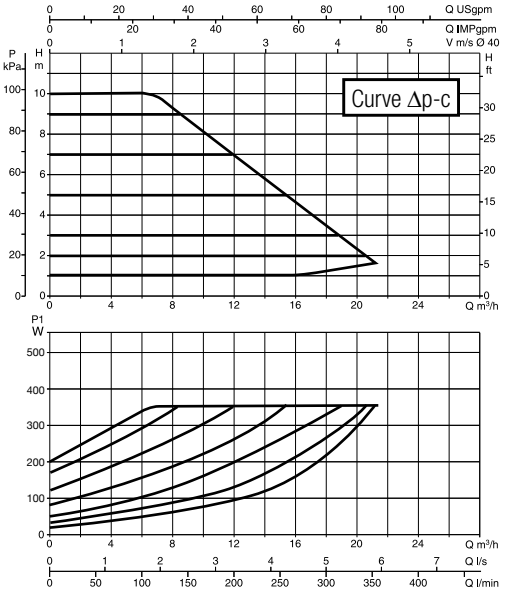


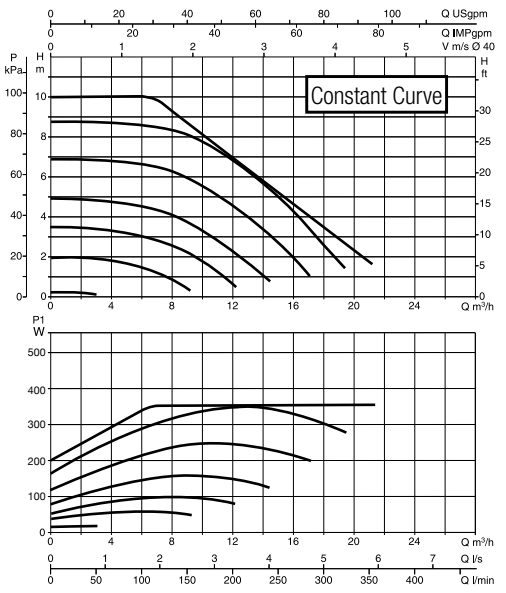




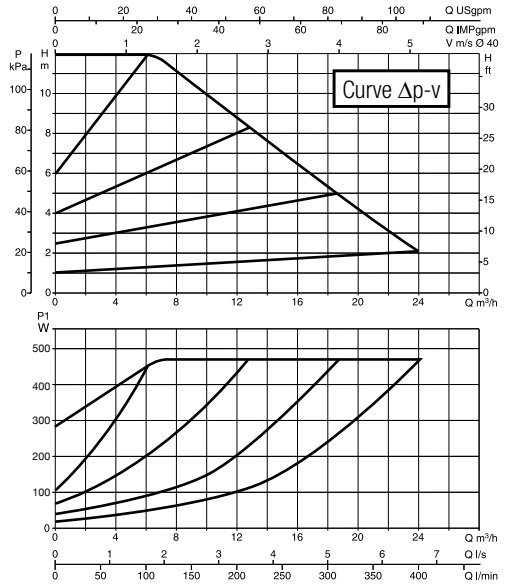
EVOPLUS B 100/220.40 M - EVOPLUS D 100/220.40 M

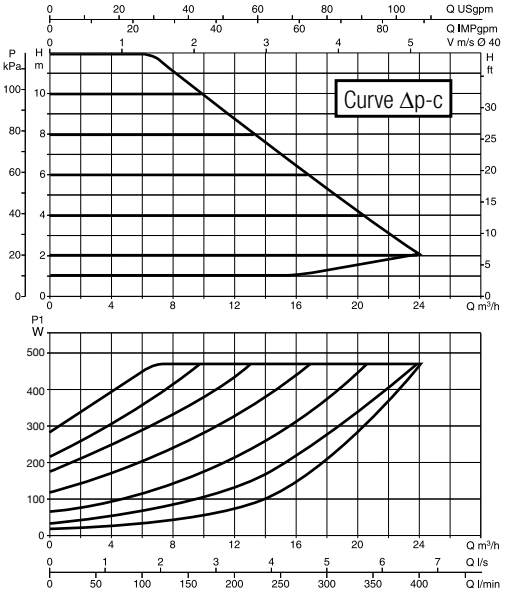


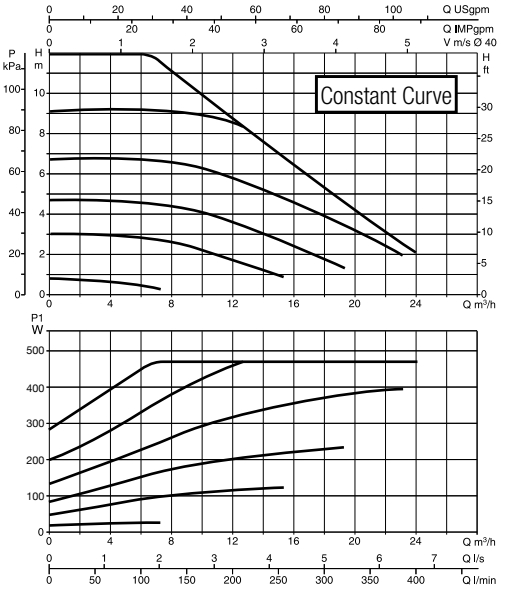




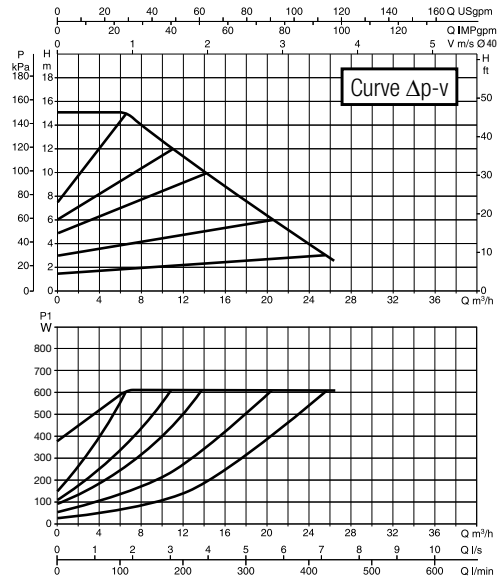
EVOPLUS B 120/250.40 (SAN) M - EVOPLUS D 120/250.40 M



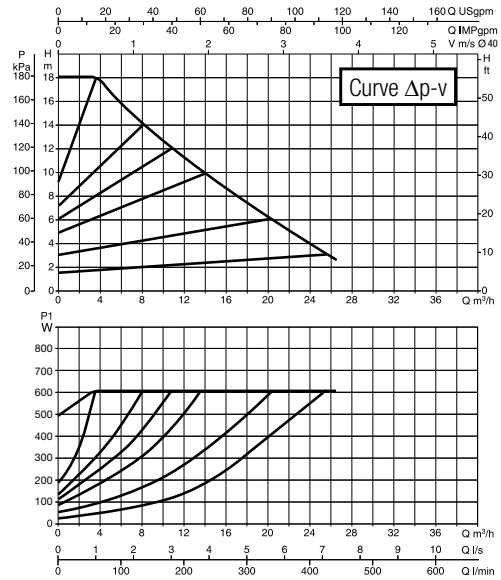


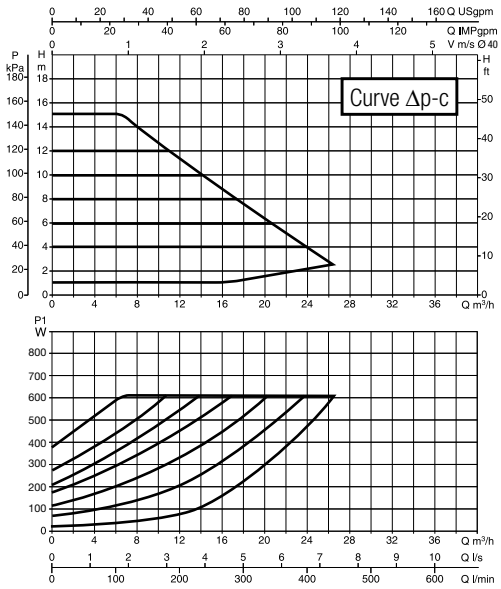


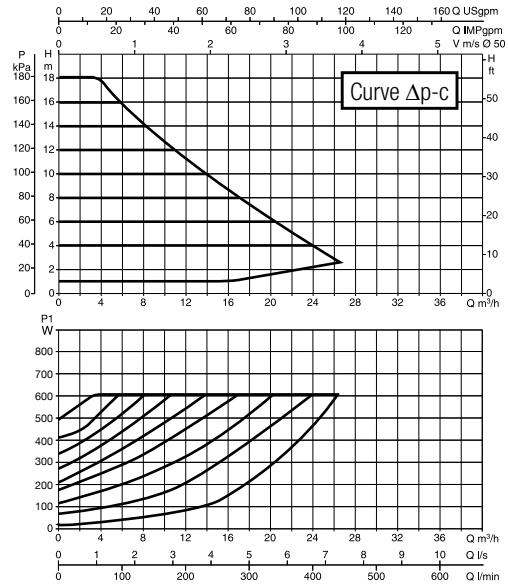
EVOPLUS B 150/250.40 (SAN) M - EVOPLUS D 150/250.40 M

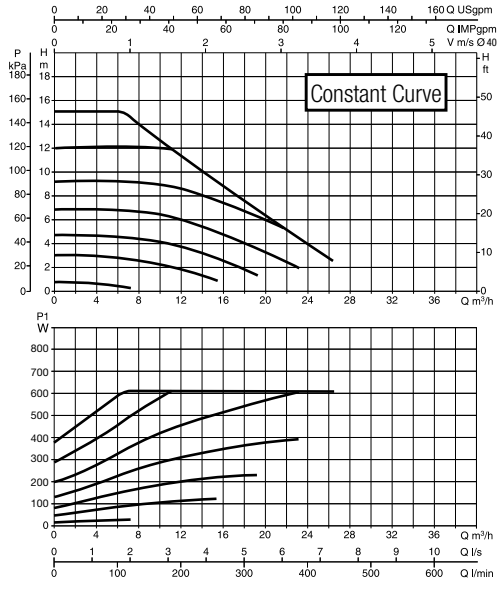


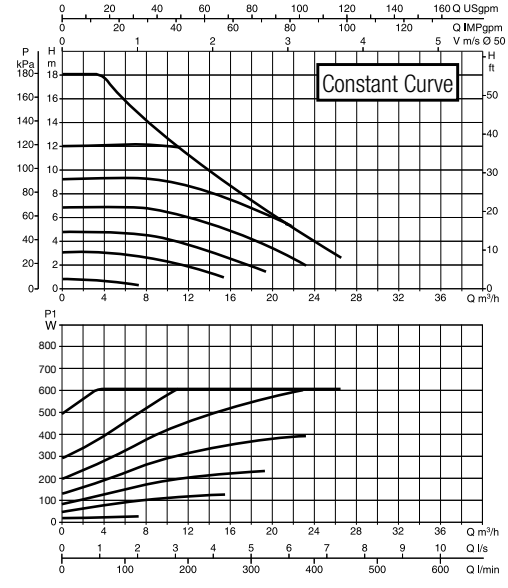
EVOPLUS B 180/250.40 (SAN) M - EVOPLUS D 180/250.40 M



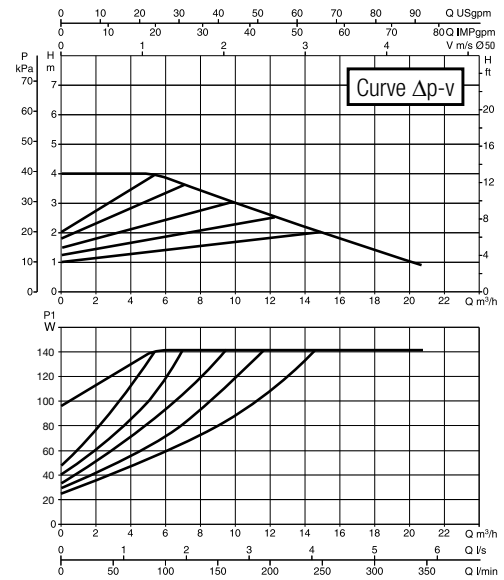




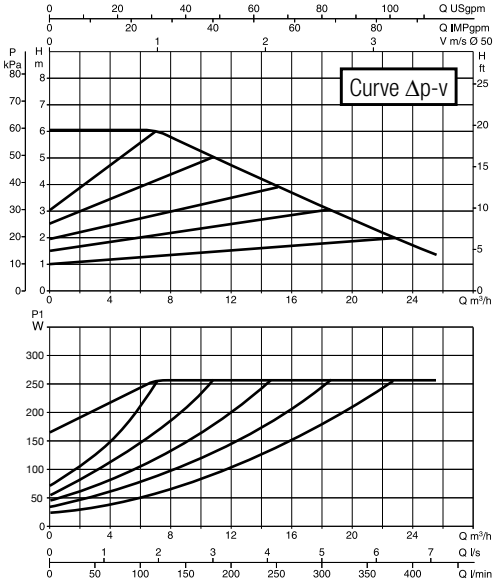


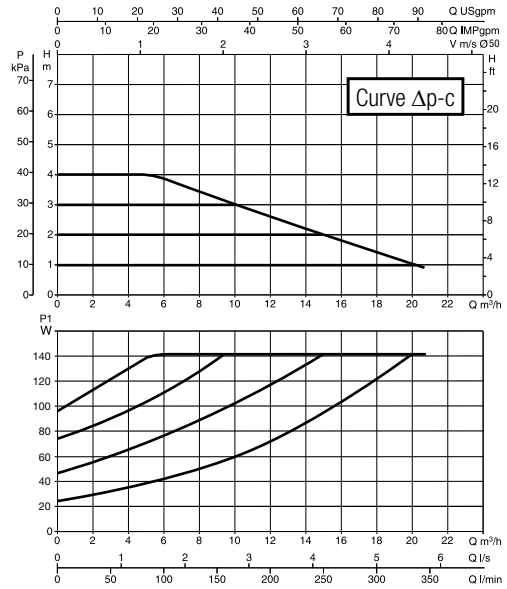


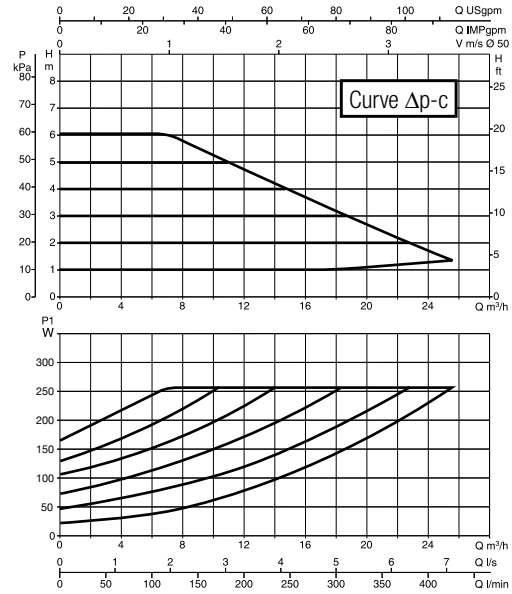
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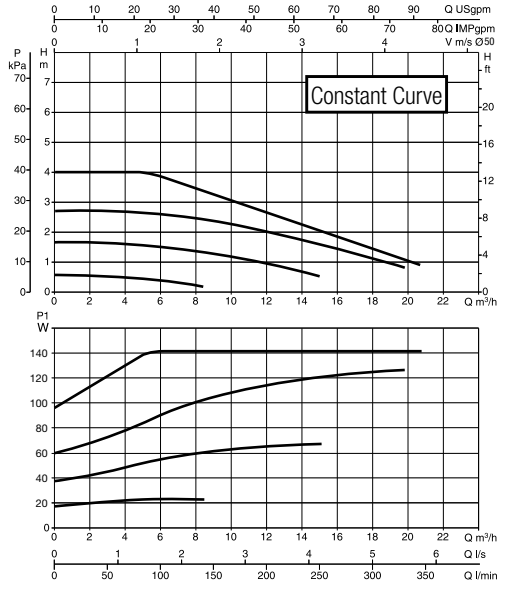


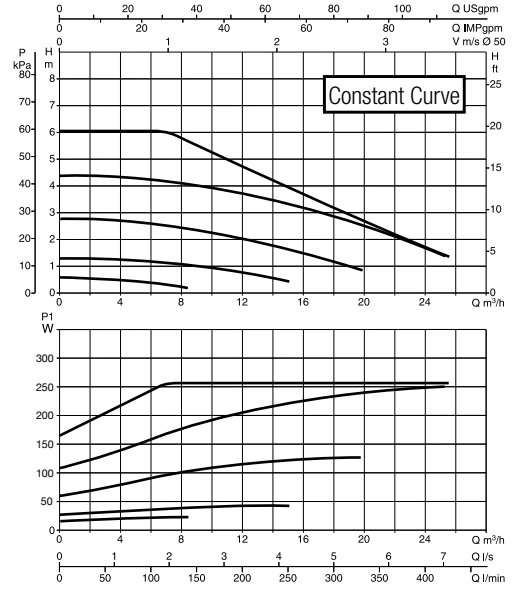
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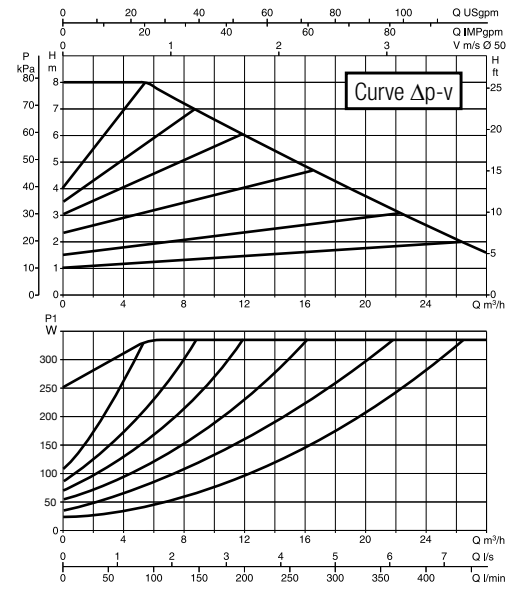


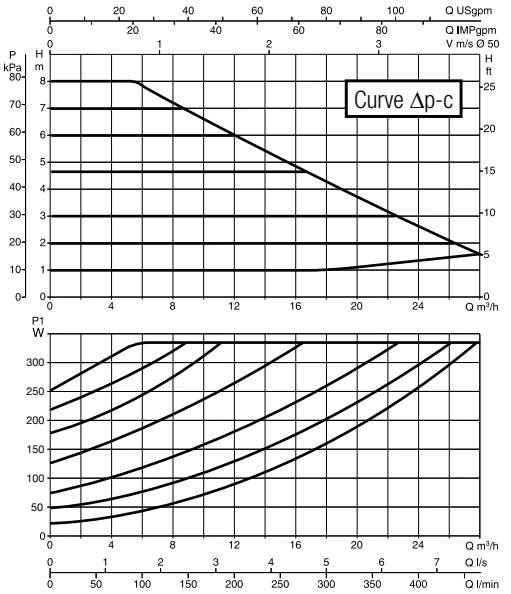


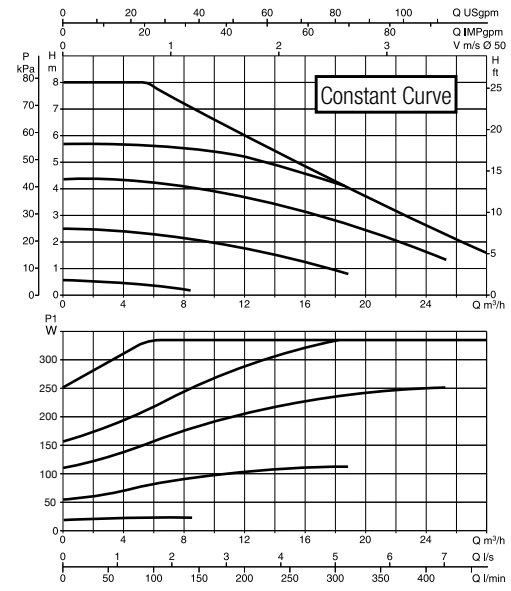




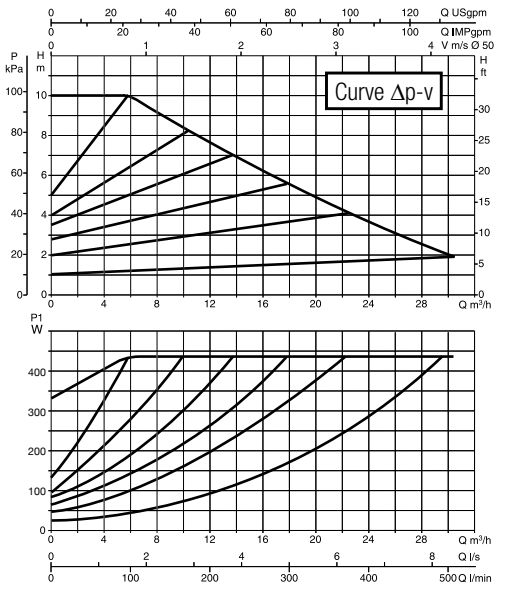
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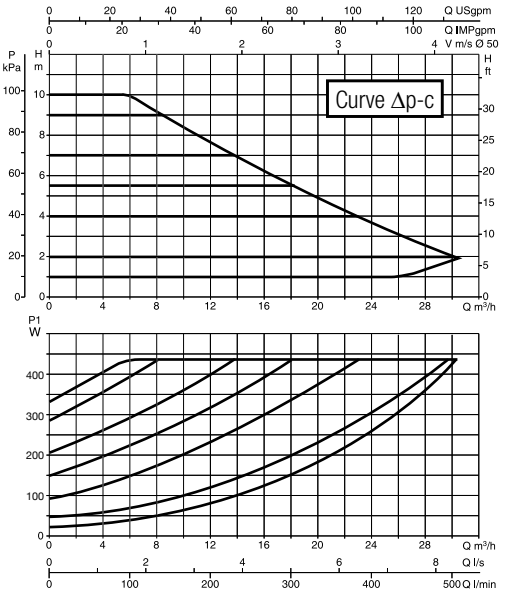


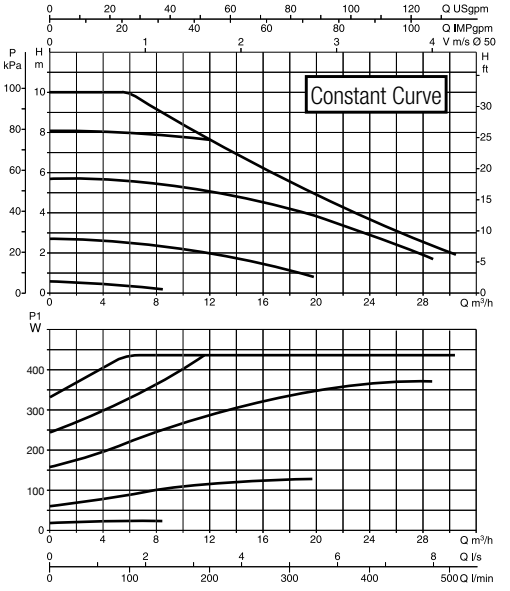




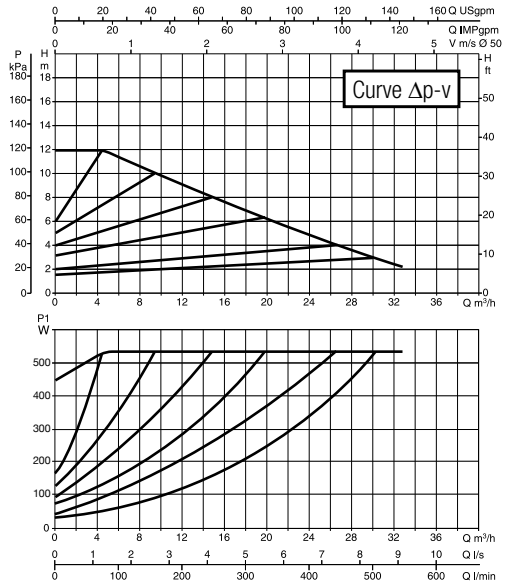
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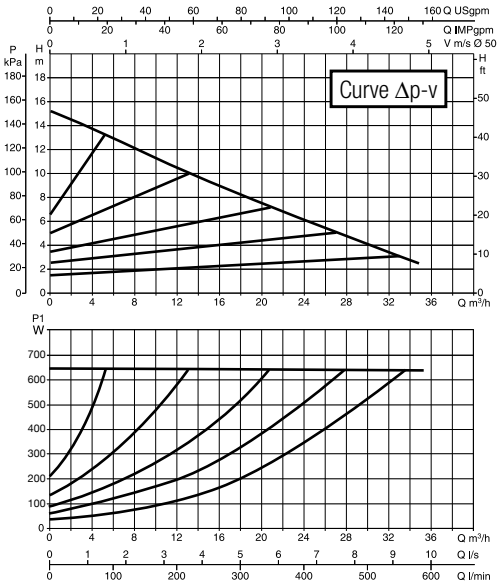


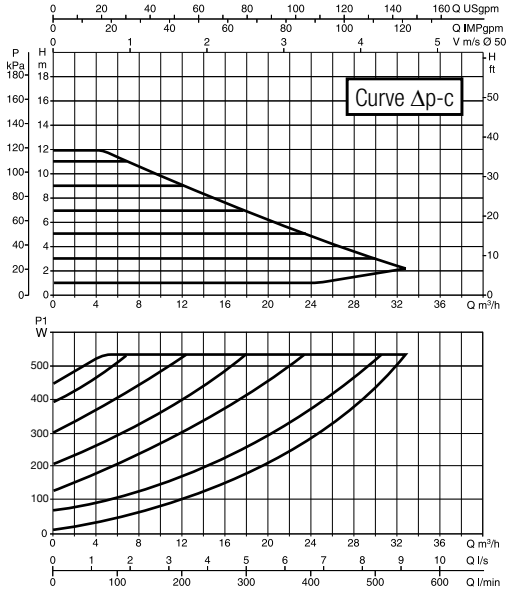


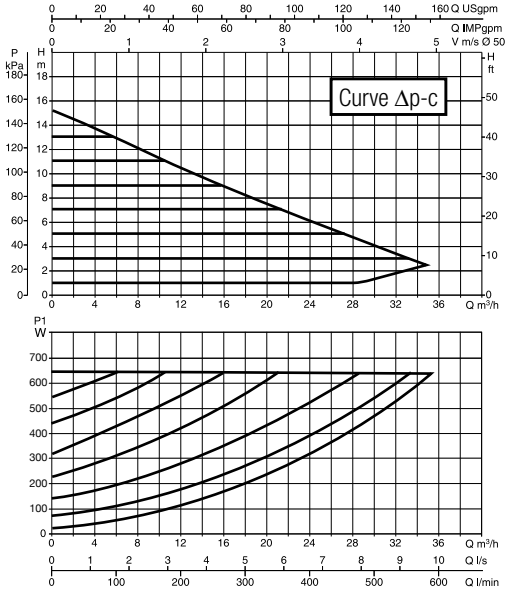
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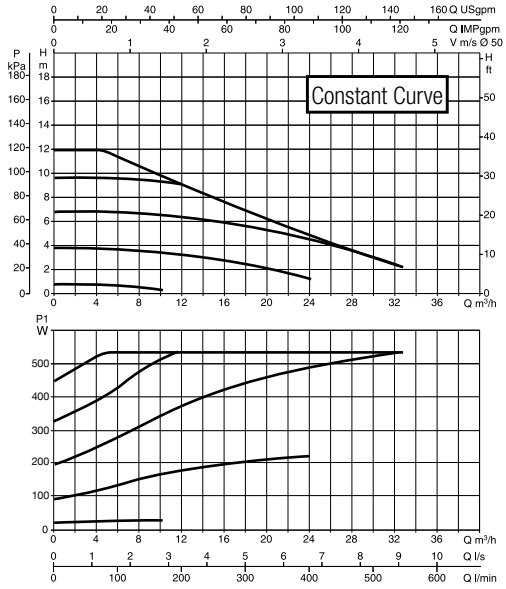


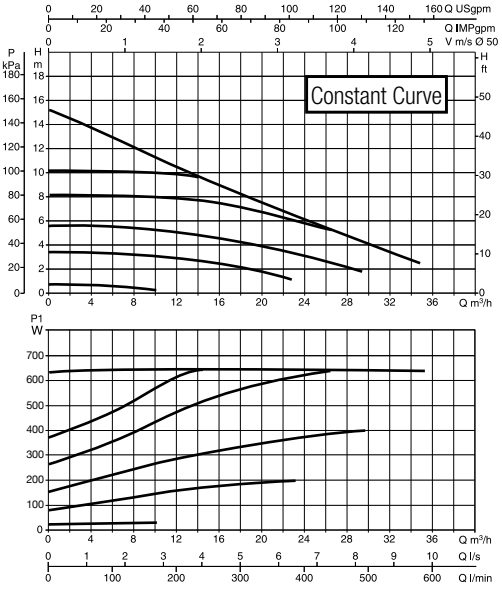
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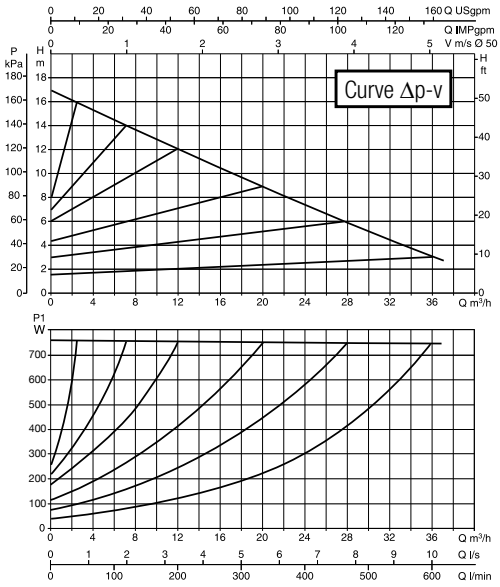




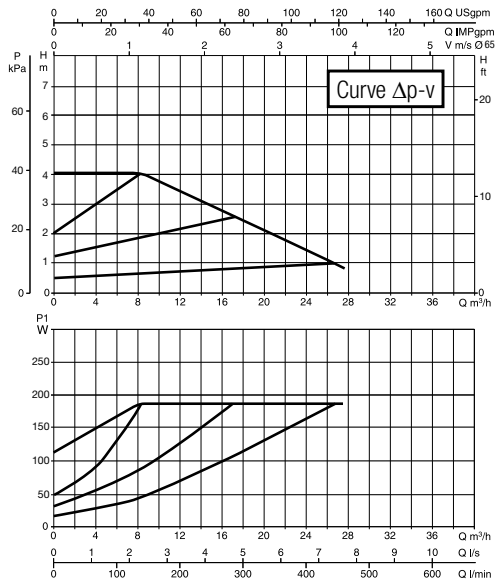


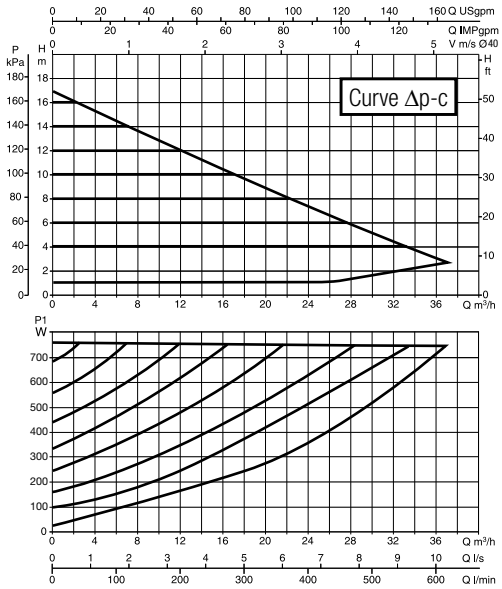


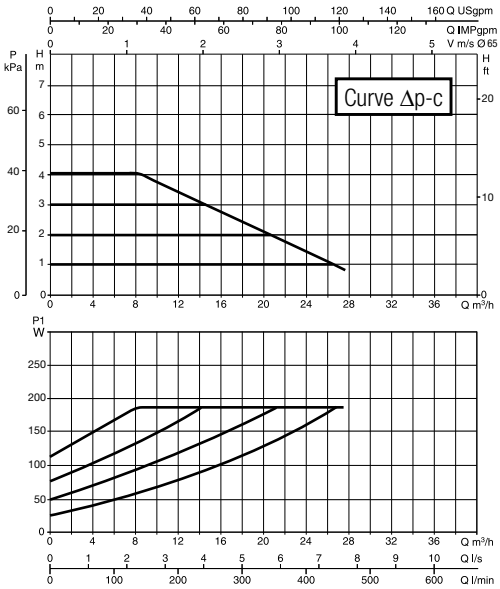
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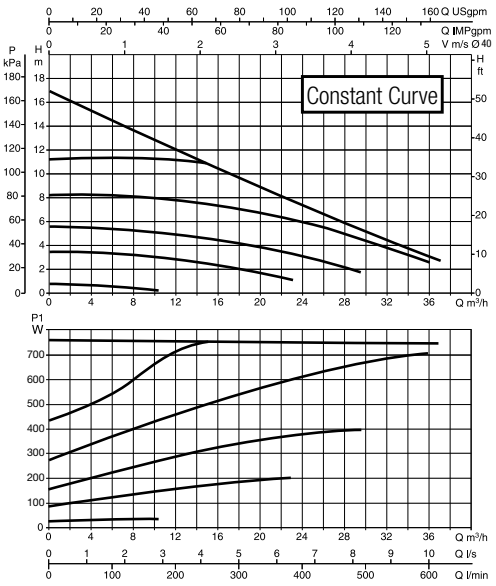


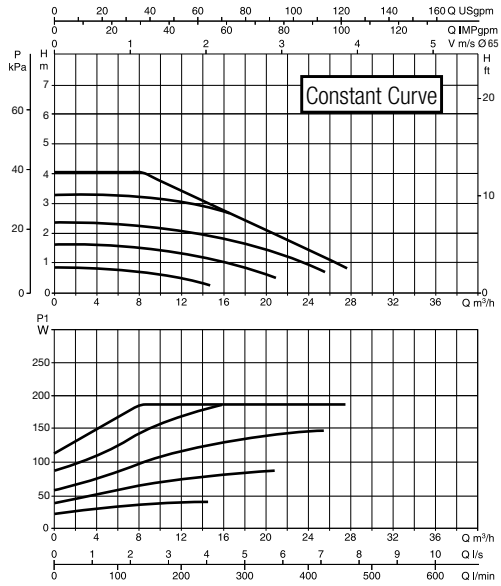
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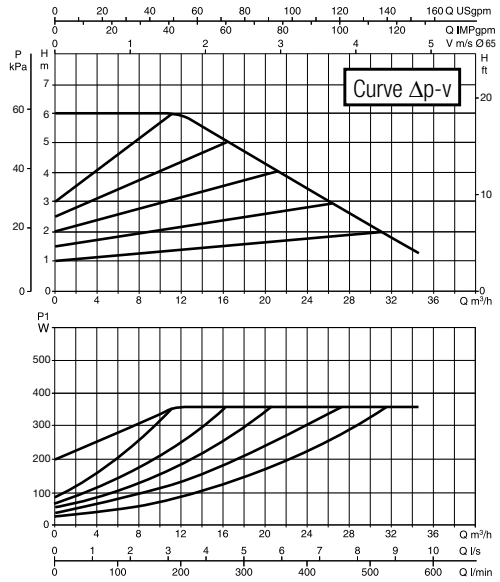


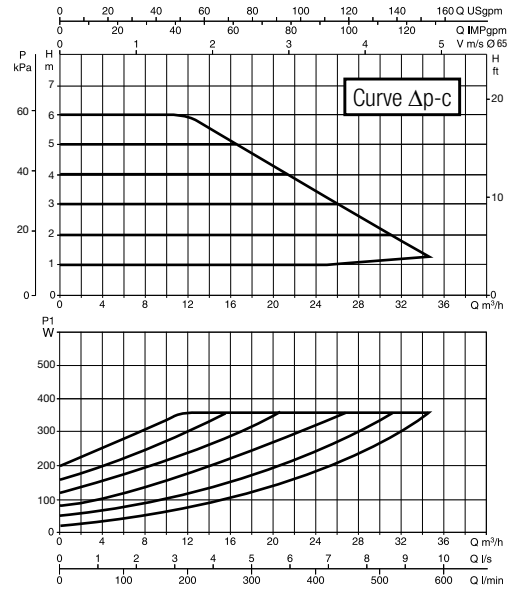


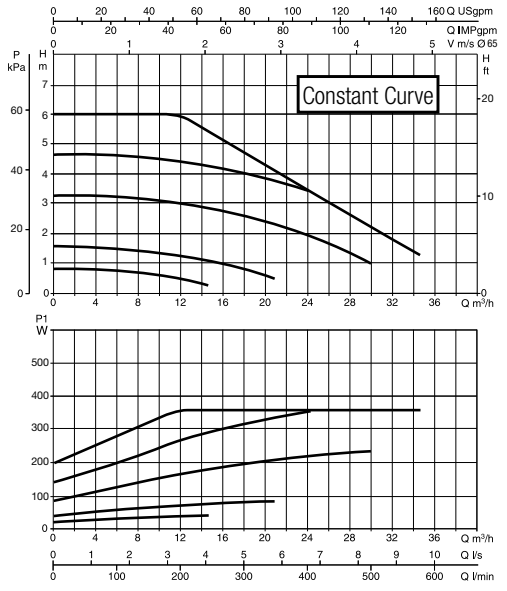




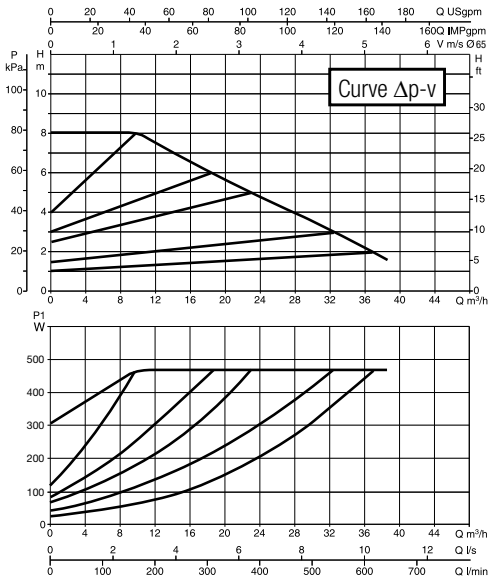
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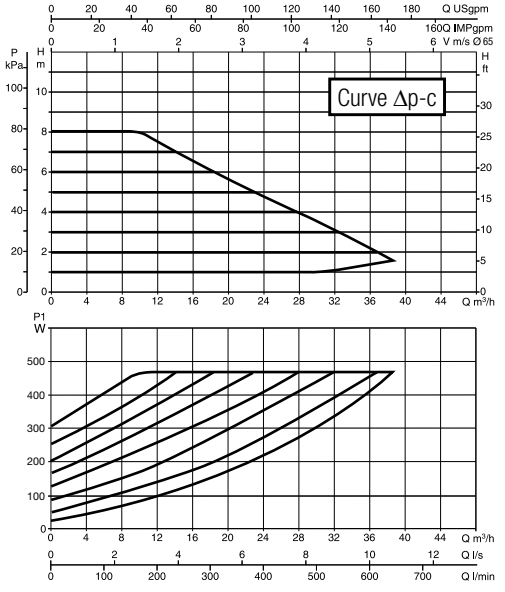


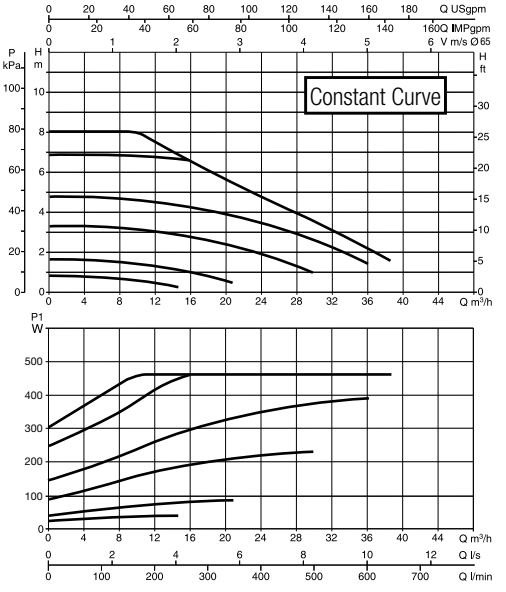




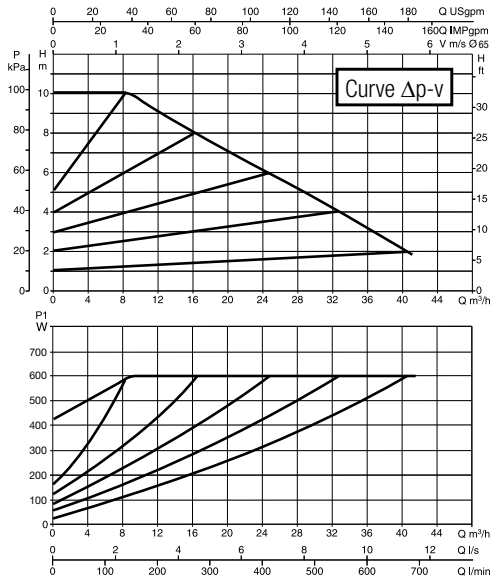
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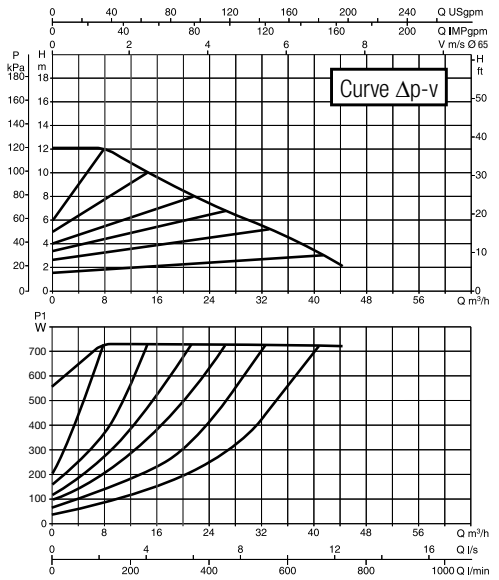


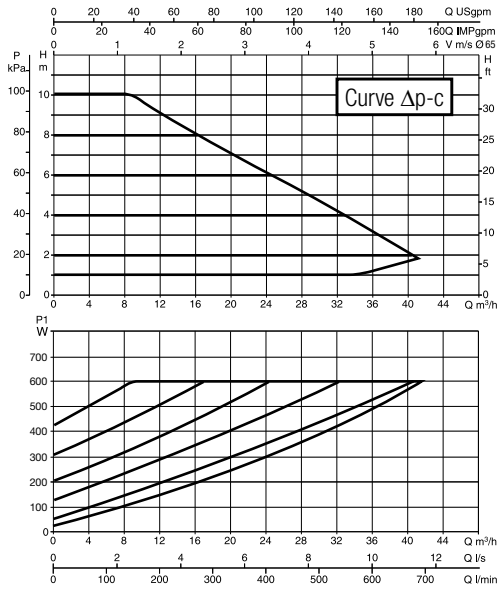


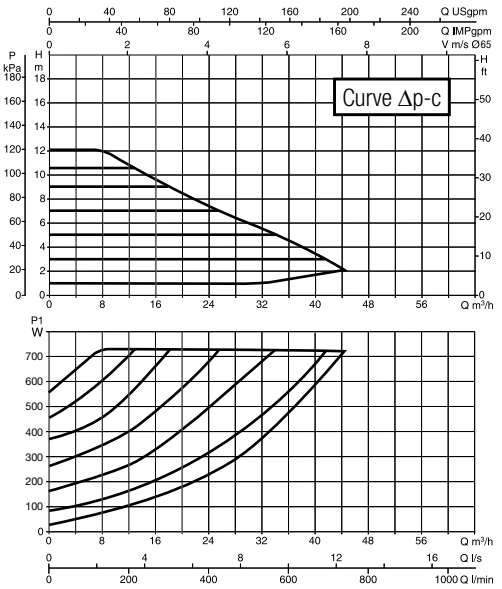
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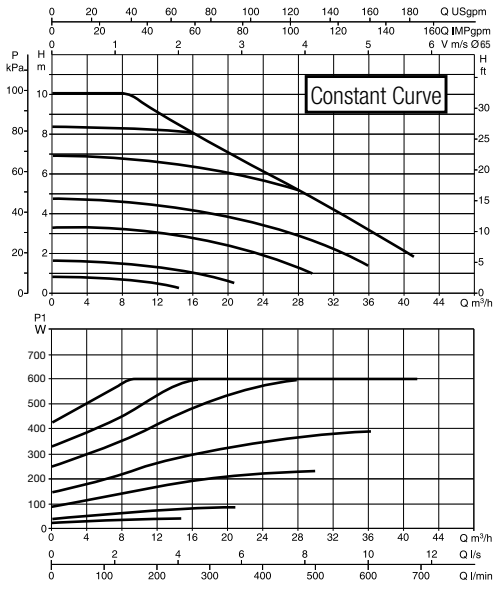


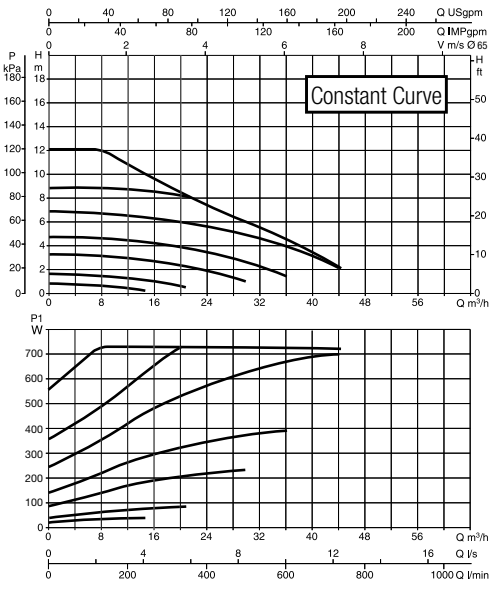
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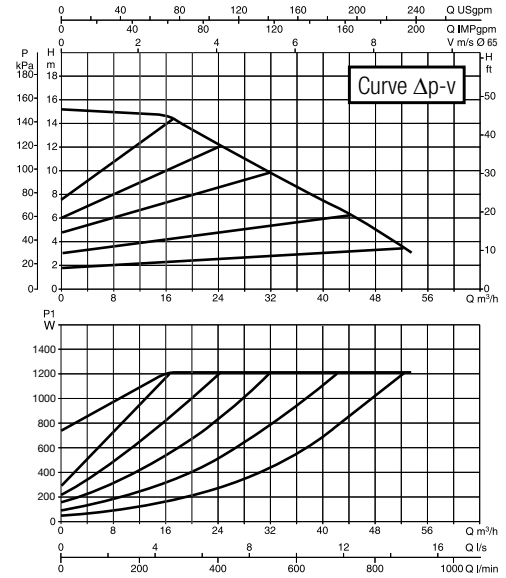


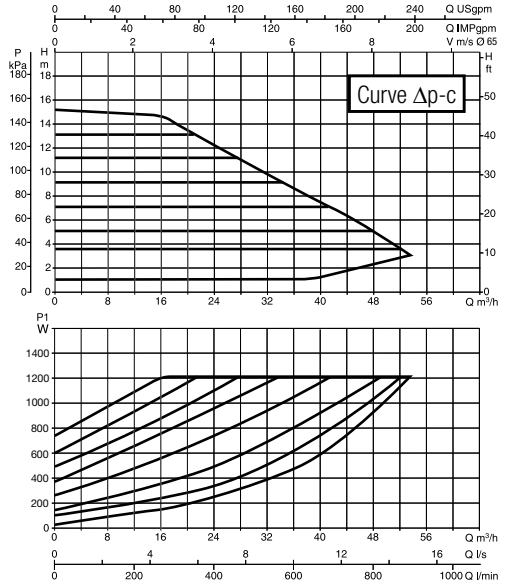


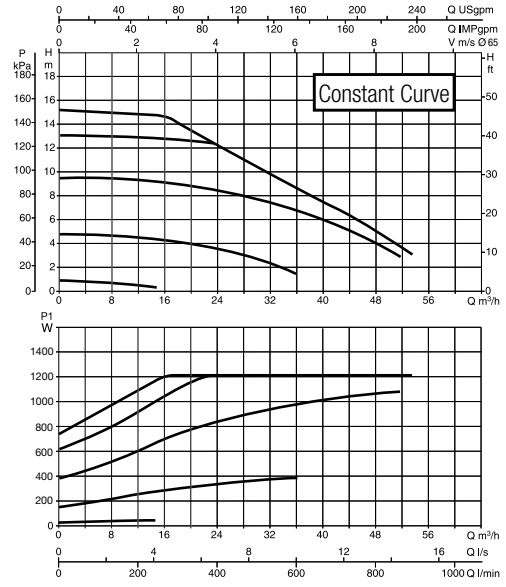




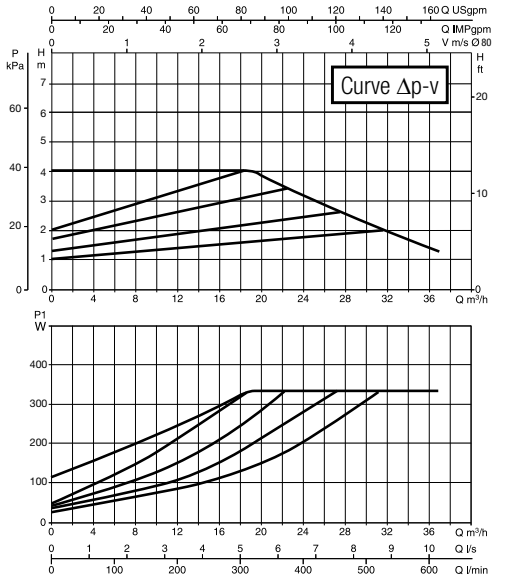
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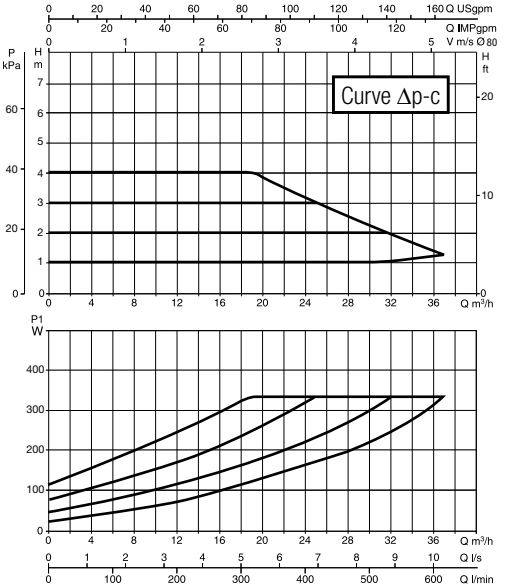


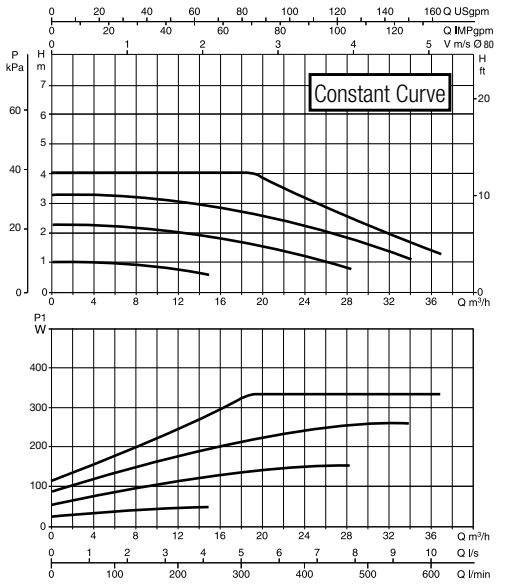




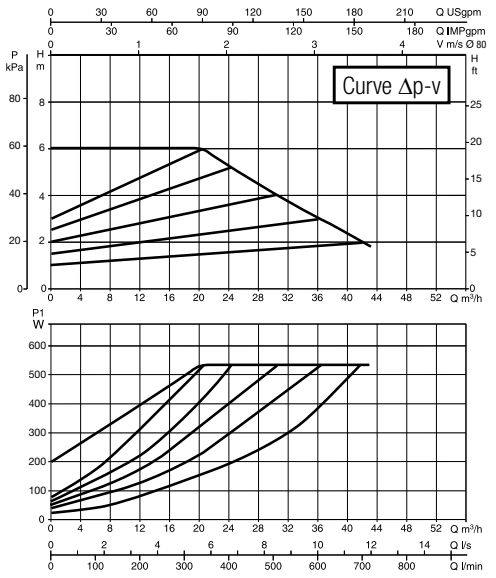
EVOPLUS B 40/360.80 M - EVOPLUS D 40/360.80 M



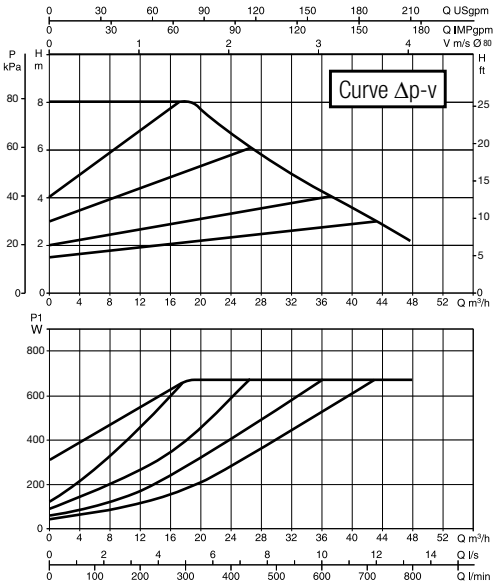


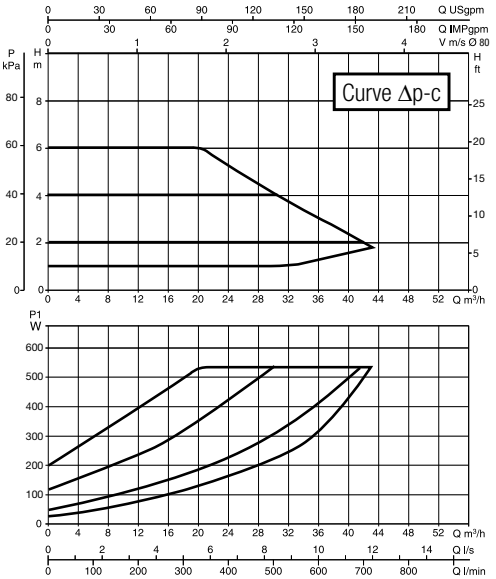


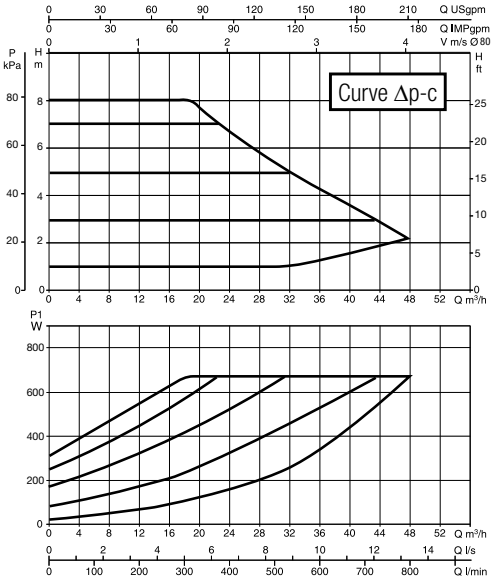
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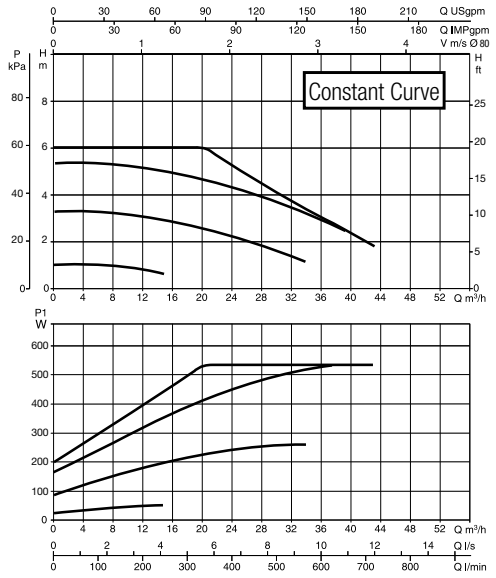


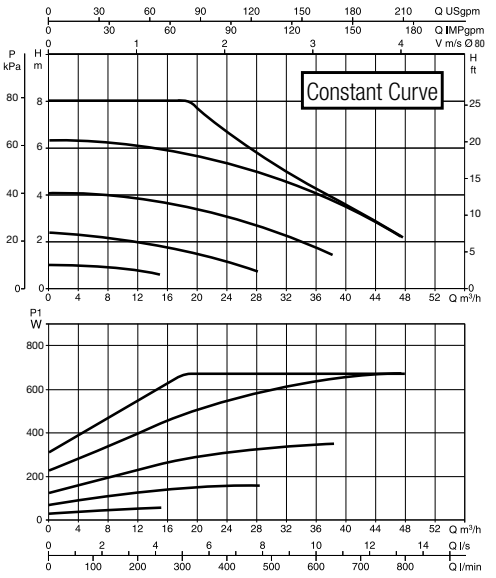
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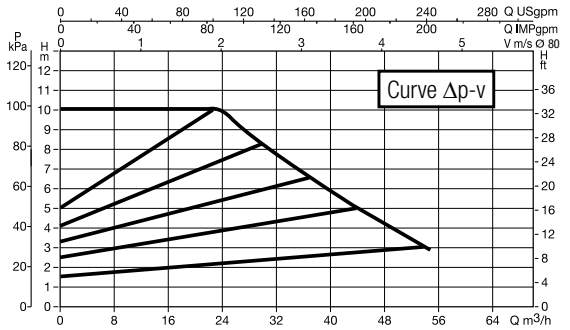


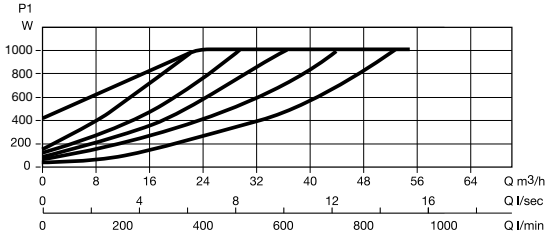


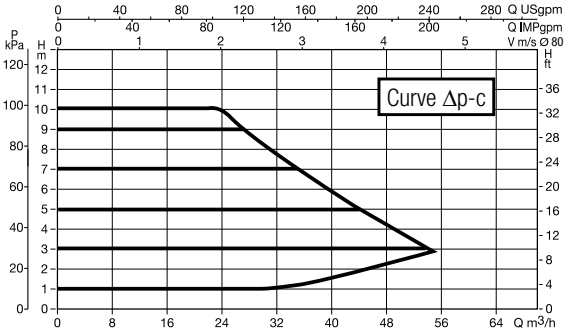


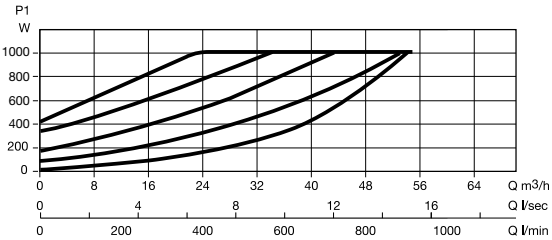


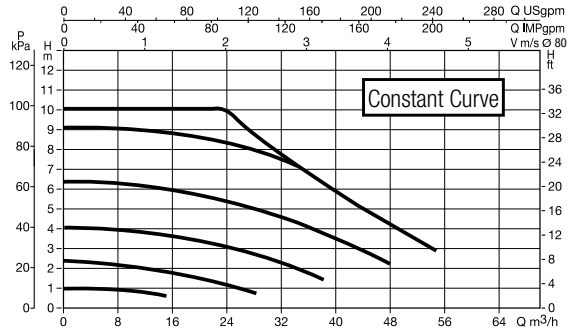
EVOPLUS B 100/360.80 M - EVOPLUS D 100/360.80 M

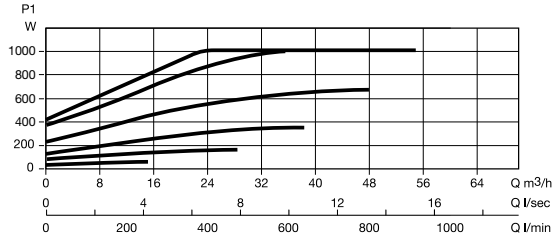




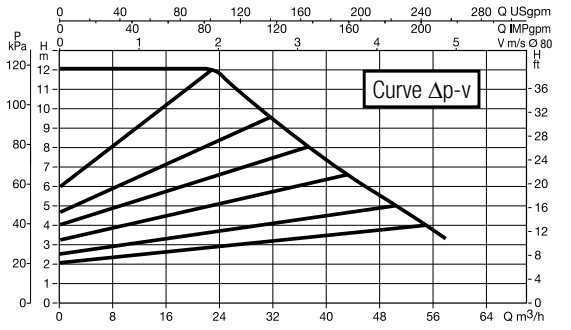


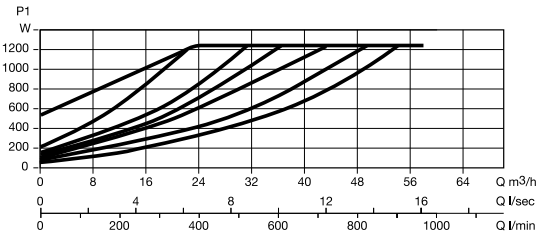


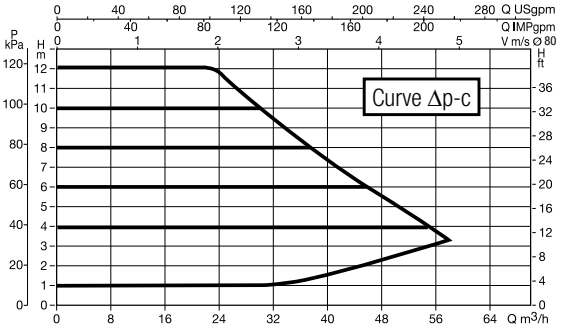


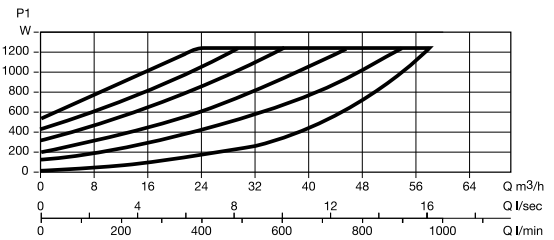


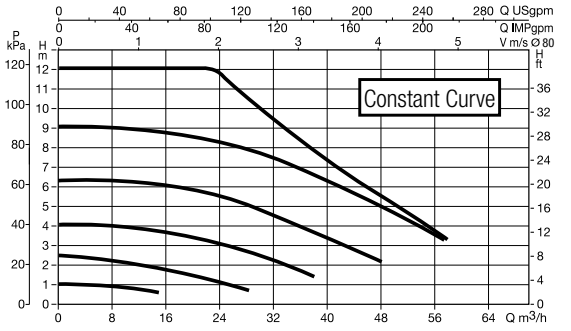
EVOPLUS B 120/360.80 M - EVOPLUS D 120/360.80 M

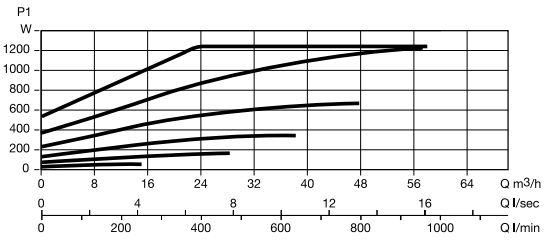




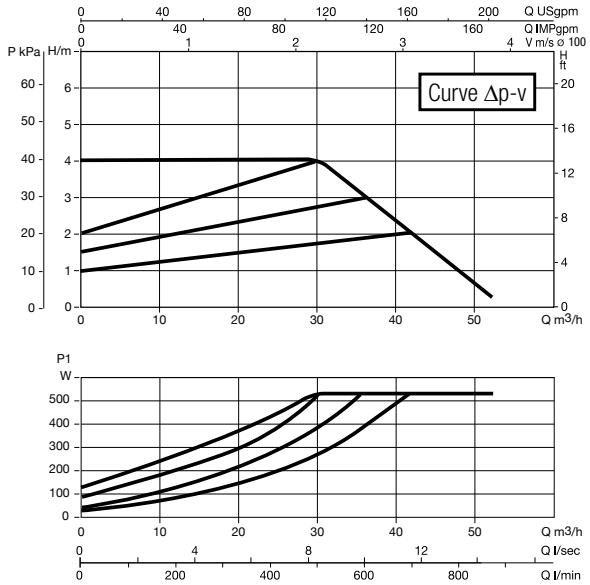


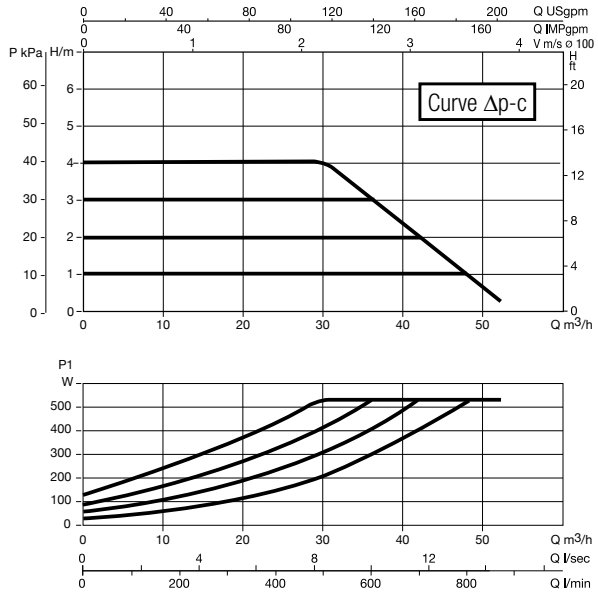


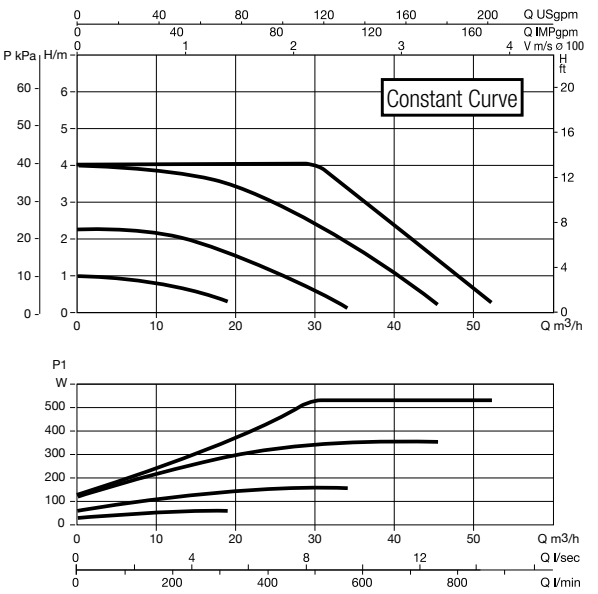




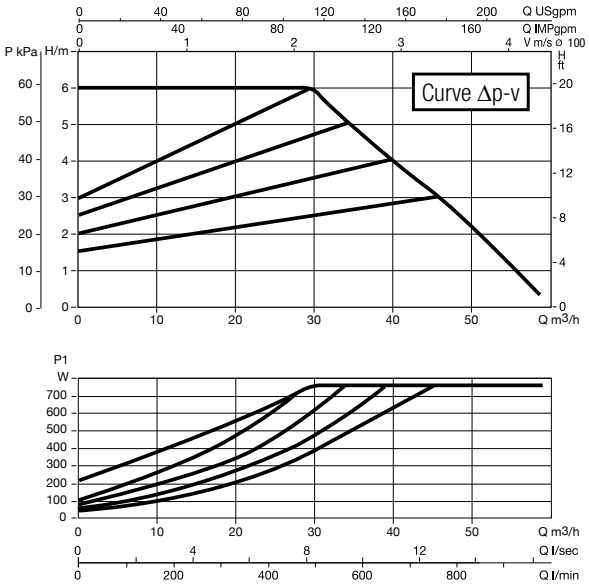
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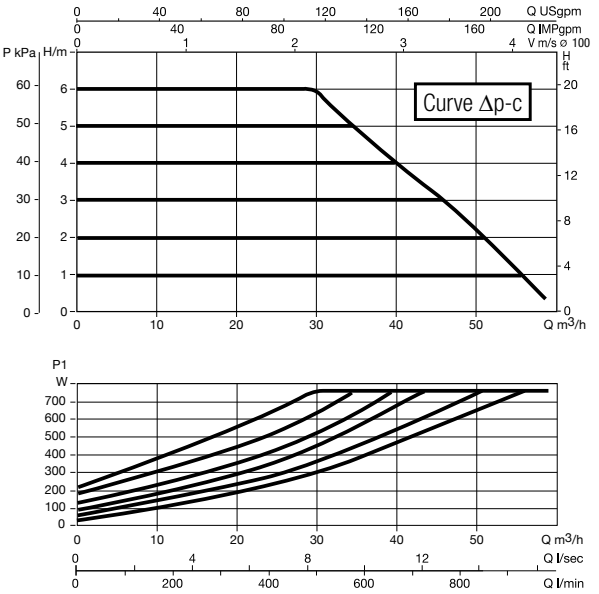


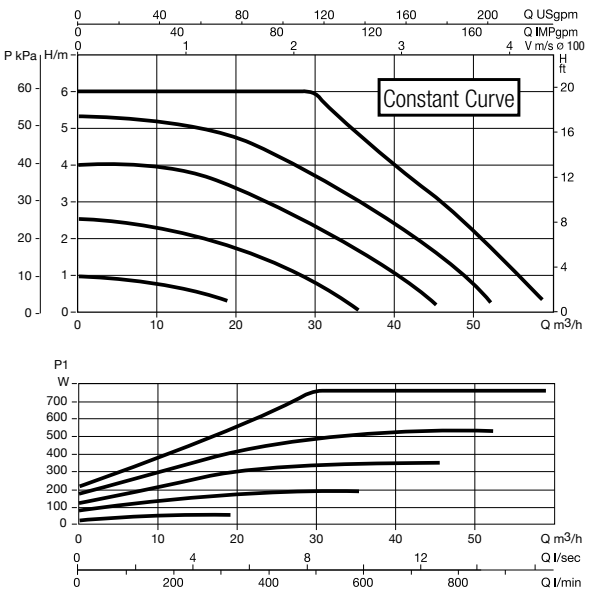




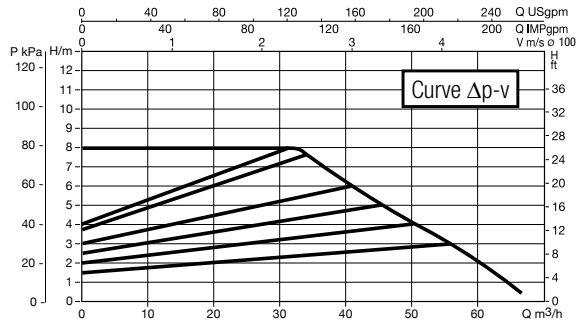
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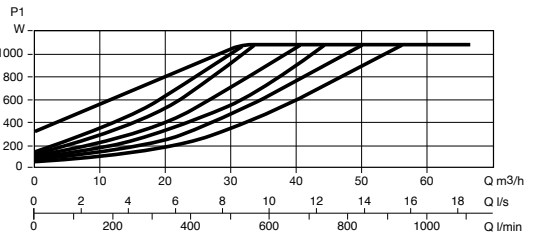


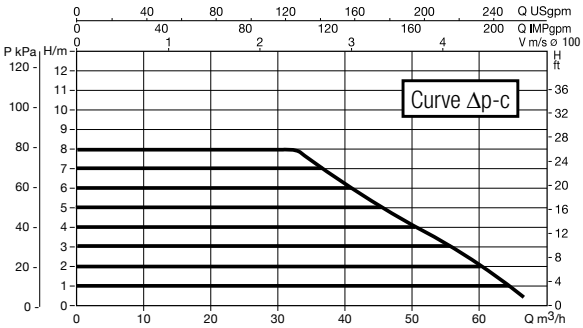


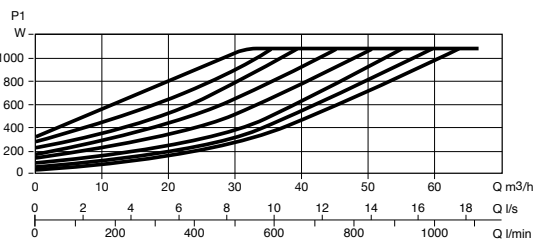


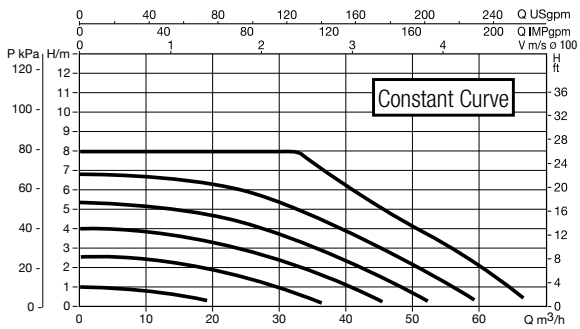
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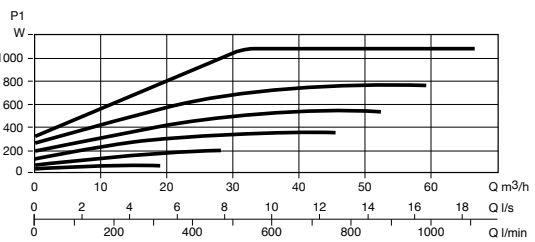




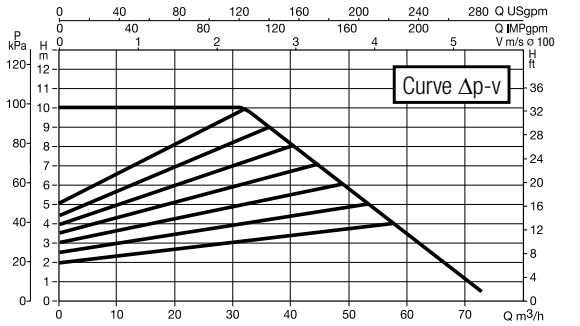


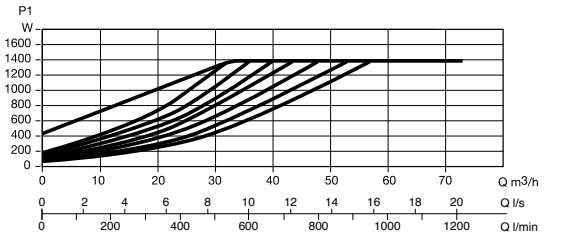


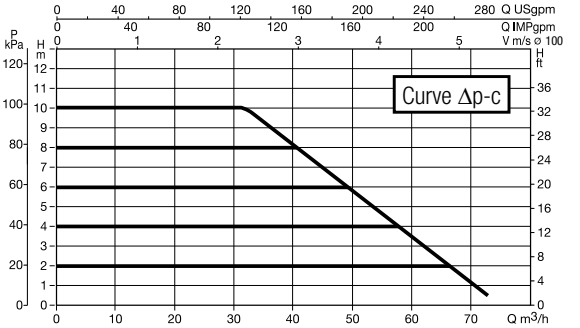


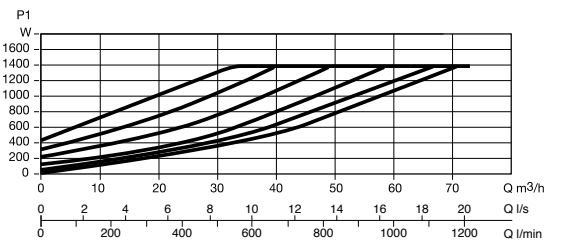


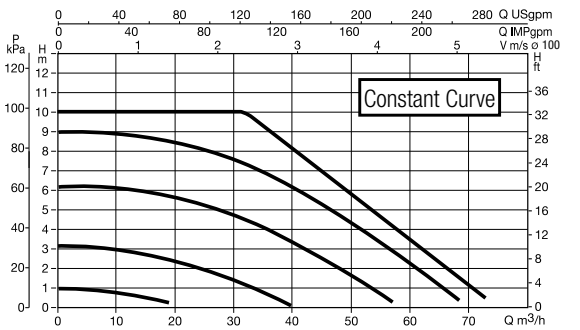
EVOPLUS B 100/450.100 M - EVOPLUS D 100/450.100 M

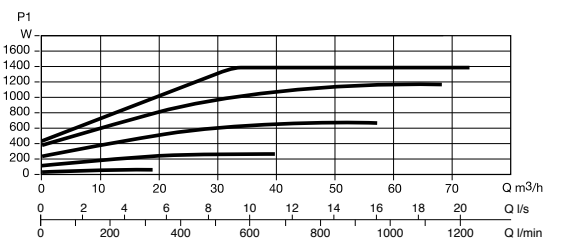




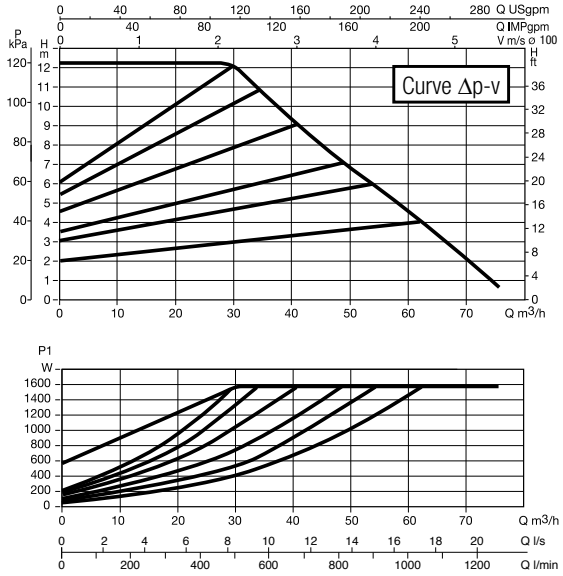


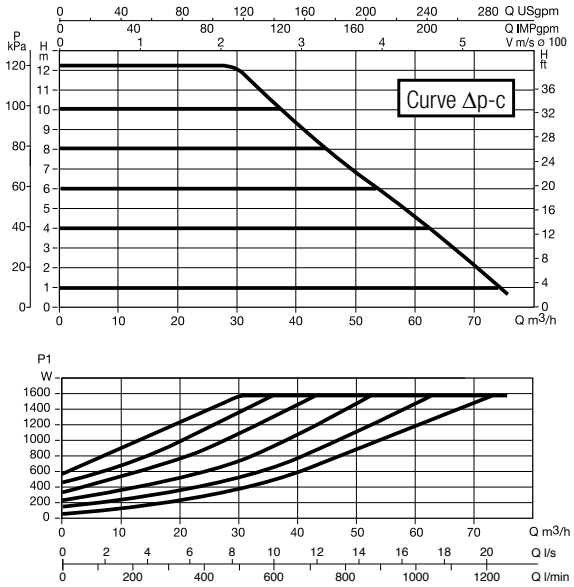


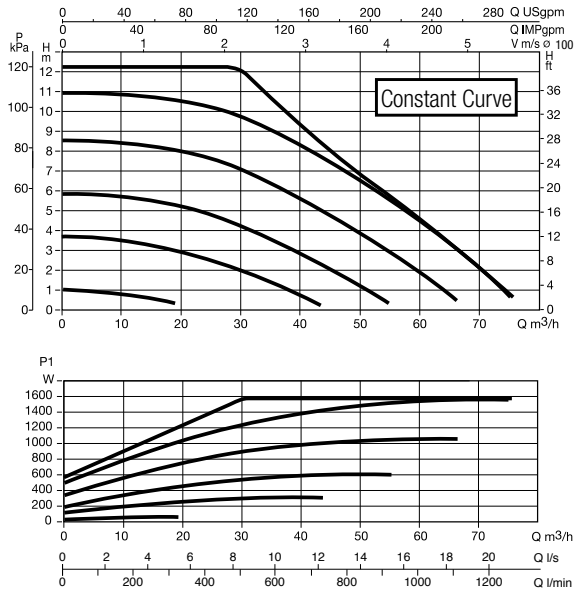




EVOPLUS B 120/450.100 M - EVOPLUS D 120/450.100 M







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