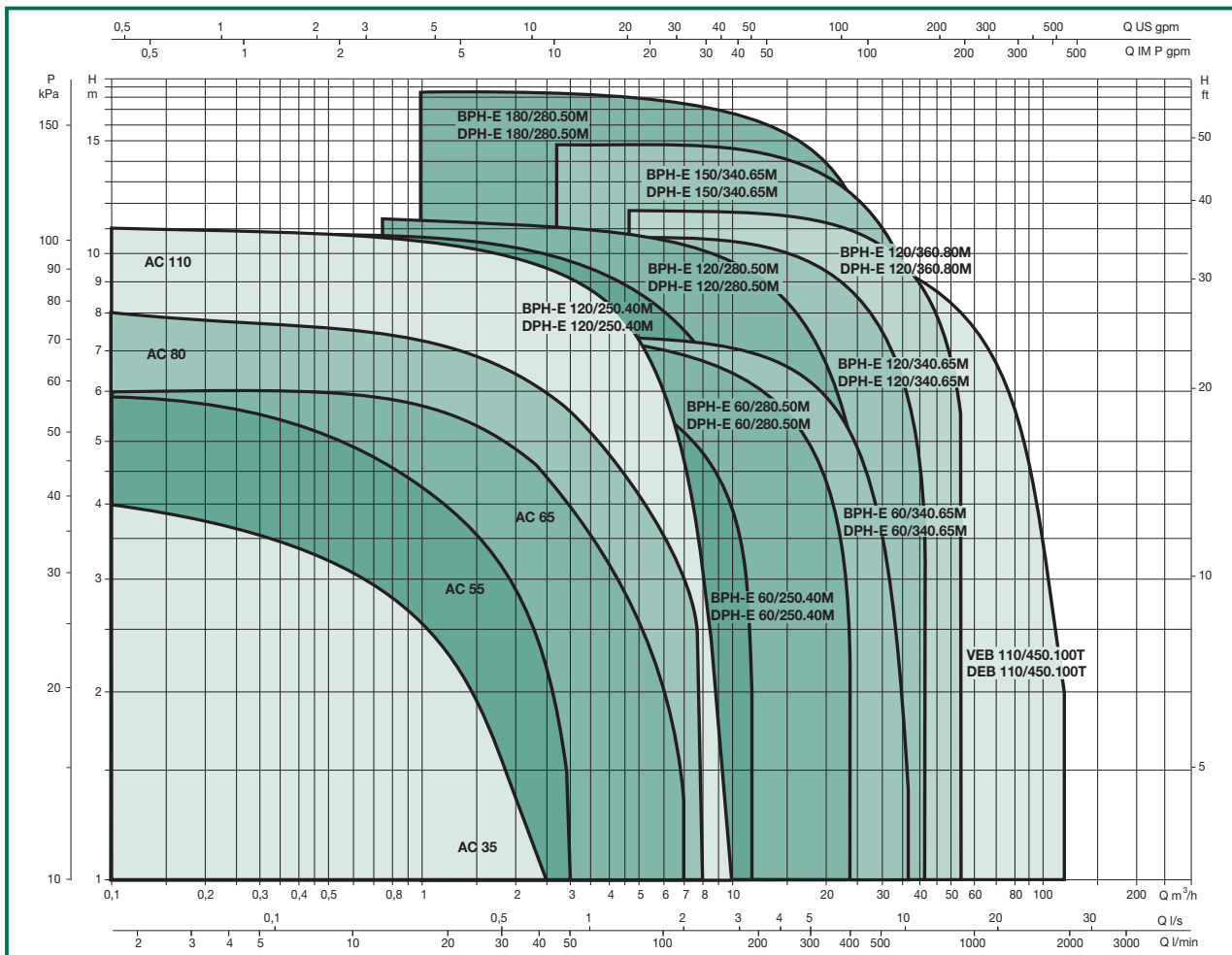


ELECTRONIC CIRCULATORS WET ROTOR TYPE

PERFORMANCE RANGE

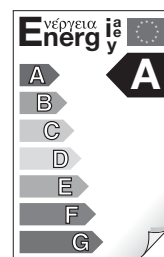
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equivalent to 1000 kg/m³. Tolerance of curves to ISO 9906.

GRAPHIC AND NUMERICAL SELECTION TABLES



SINGLE	TWIN	P1	Q																						
Single-phase - Three-phase	Single-phase - Three-phase	Max W	m³/h l/min	0 0	0,6 10	1,2 20	1,8 30	2,4 40	3 50	4,2 70	5,4 90	7,2 120	9,6 160	12 200	14,4 240	18 300	24 400	30 500	36 600	42 700	54 900	72 1200	80 1333	120 2000	
AC 35/180	-	22	H (m)	4,2	3,4	2,5	1,5	1,0																	
AC 35/180 X	-	22		4,2	3,4	2,5	1,5	1,0																	
AC 35/130	-	22		4,2	3,4	2,5	1,5	1,0																	
AC 55/180	-	45		5,9	5,6	4,4	3,3	2,4	1,4																
AC 55/180 X	-	45		5,9	5,6	4,4	3,3	2,4	1,4																
AC 55/130	-	45		5,9	5,6	4,4	3,3	2,4	1,4																
AC 65/180	-	70		6	6	5,9	5,4	4,7	4	3,1	2,4	1													
AC 65/180 X	-	70		6	6	5,9	5,4	4,7	4	3,1	2,4	1													
AC 80/180	-	107		8	8	7,9	7,4	6,8	6,2	5,1	4,3	2,7													
AC 80/180 X	-	107		8	8	7,9	7,4	6,8	6,2	5,1	4,3	2,7													
AC 110/180 X	-	174	11	11	10,8	10,6	10,2	9,9	8,7	6,9	5,1	2,9													
VEA 40/190 XM	-	230	H (m)	4					3,3	3	2,7	2,2	1,6	0,8											
VEB 110/450.100 T	DEB 110/450.100 T	2800	H (m)	11,5												10,5	10,3	9,9	9,5	9	8	6,2	5,3	2	
BPH-E 60/250.40 M	DPH-E 60/250.40 M	344	H (m)	7,2			6,8	6,7	6,5	6,2	5,8	5	3,7	2			10,5	10,3	9,9	9,5	9	8	6,2	5,3	2
BPH-E 120/250.40 M	DPH-E 120/250.40 M	528		11			10,3	10,1	9,8	9,2	8,6	7,65	6,2	4,35	2,4										
BPH-E 60/280.50 M	DPH-E 60/280.50 M	606		7,65			7,5	7,45	7,4	7,3	7,2	6,98	6,7	6,2	5,75	4,6	2,3								
BPH-E 120/280.50 M	DPH-E 120/280.50 M	893		11,3						10,8	10,5	10,3	9,9	9,4	8,5	7,2	4,8	2,1							
BPH-E 180/280.50 M	DPH-E 180/280.50 M	1693		18,4								17,4	17	16,4	15,6	14,4	12	8,8	5,2						
BPH-E 60/340.65 M	DPH-E 60/340.65 M	744		7,4						7,35	7,3	7,24	7,1	6,9	6,65	6,15	4,9	3,3	1,4						
BPH-E 120/340.65 M	DPH-E 120/340.65 M	1262		10,9						10,75	10,68	10,6	10,5	10,38	10,2	9,8	8,7	7,15	5,2	3					
BPH-E 150/340.65 M	DPH-E 150/340.65 M	1767		14,9						14,88	14,83	14,75	14,65	14,55	14,3	13,88	12,65	11	9,35	7,15					
BPH-E 120/360.80 M	DPH-E 120/360.80 M	1789		11,8									11,65	11,58	11,5	11,4	11,25	10,75	10,2	9,39	8,37	5,65			

ELECTRONIC CIRCULATORS FOR HEATING SYSTEMS



GENERAL DATA




Applications

Low power consumption pump for circulation of hot water, suitable for all types of domestic heating systems.

Benefits

Thanks to the advanced technology employed, the **permanent magnet synchronous motor**, and the **frequency converter**, the new range of AC circulators ensures high efficiency in all applications, bringing appreciable benefits in terms of energy saving. That's why the entire series of **AC** circulators is included in energy efficiency class A. The circulator features an electronic device that detects the changes demanded by the heating system and automatically adapts circulator performance accordingly, always ensuring optimal efficiency and minimum energy consumption. Straightforward operation and an easy-to-ready control panel with display that shows the real power consumption in Watts at each moment of operation.

The AC series circulator can function in three different control modes:

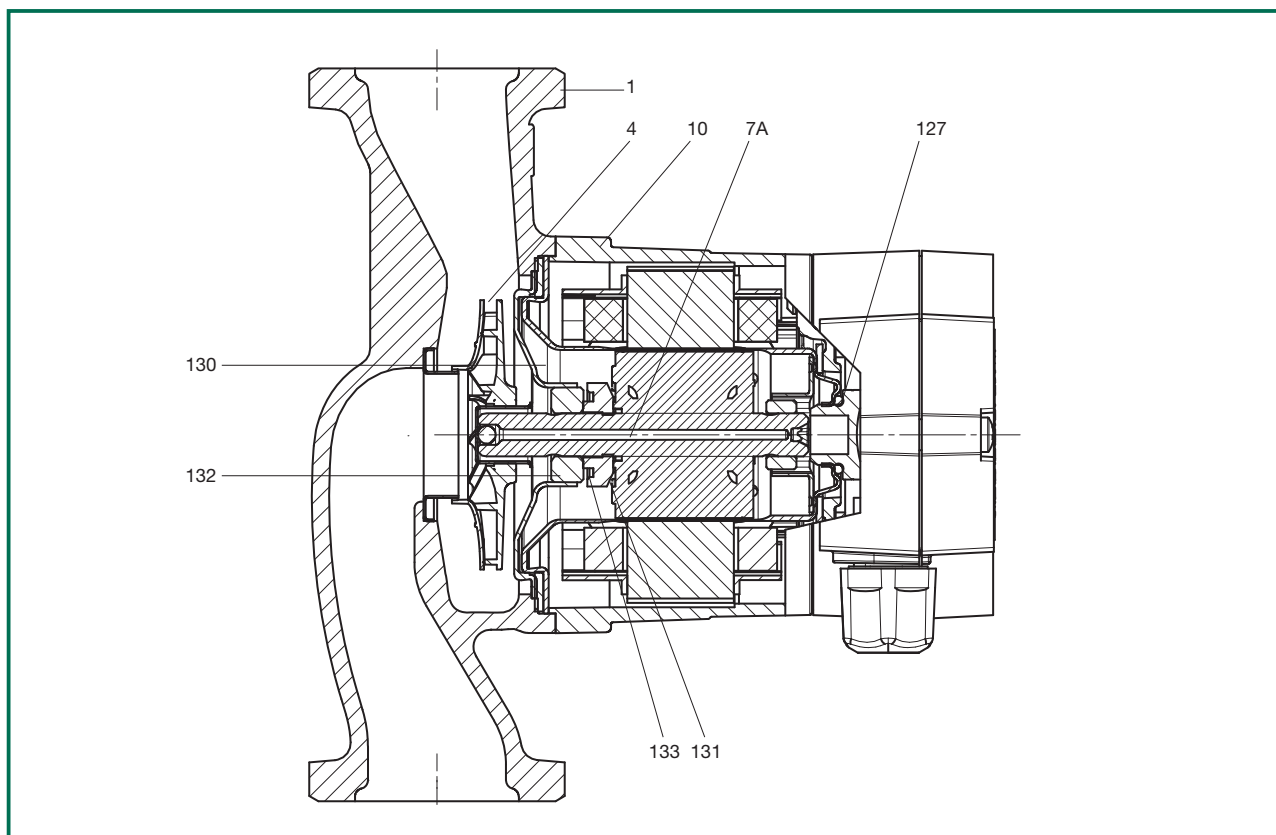
- proportional pressure 
- constant pressure 
- constant speed 

Facility for operation in economy mode (automatic night-time reduction Aut C.).

Thanks to the internal protection of the motor, the pump does not require any form of external protection cutout.

ELECTRONIC CIRCULATORS FOR HEATING SYSTEMS

TECHNICAL DATA



N.	PARTS	MATERIALS
1	PUMP BODY	CAST IRON
4	IMPELLER	TECHNOPOLYMER
7A	MOTOR SHAFT	CERAMIC
10	MOTOR CASING	ALUMINIUM
127	SEAL RING EPDM	EPDM
130	CLOSING FLANGE	STAINLESS STEEL
131	THRUST RING SUPPORT	EPDM
132	BUSHINGS	CERAMIC
133	THRUST RING	GRAPHITE

Operating range AC 35 - AC 55 - AC 65 - AC 80 - AC 110:

Liquid temperature range:

Working pressure:

Protection rating:

Insulation class:

Installation:

Standard power supply:

Liquid quality requirements:

from 0.4 to 10.2 m³/h with head of up to 11 m.

from +2°C to +110°C

10 bar (1000 kPa).

IP 44

F

with horizontal motor shaft

single-phase 1 x 230 V / 50 Hz

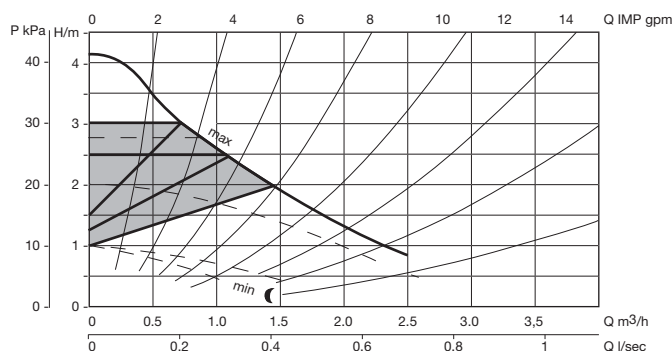
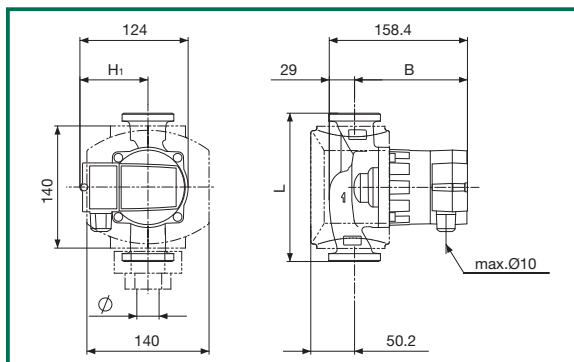
Clean, free of solids and mineral oils,
non-viscous, chemically neutral,
and approximating the properties of water
(max. glycol contents 50%)

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.

ELECTRONIC CIRCULATORS FOR HEATING SYSTEMS

Liquid temperature range: from +2°C to +110°C
Maximum working pressure: 10 bar (1000 kPa)

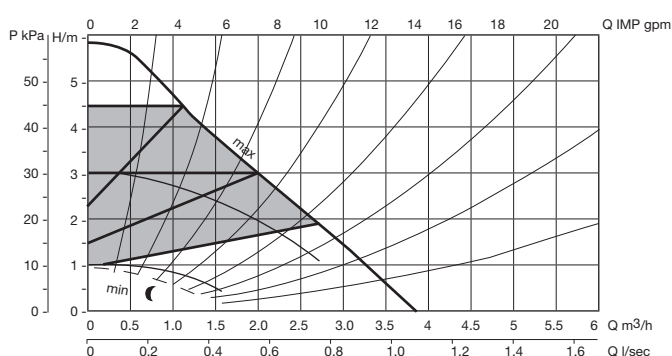
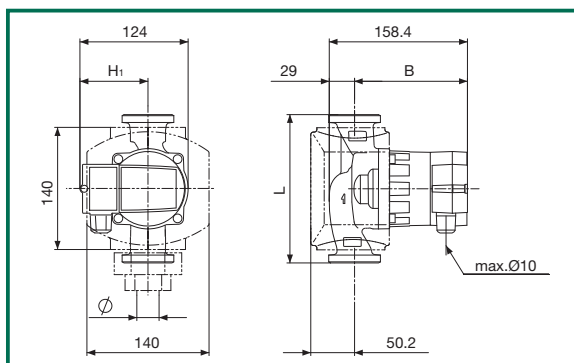
AC 35 SINGLE WITH UNIONS



MODEL	L	B	H1	PACK DIMENSIONS			VOLUME m ³	WEIGHT Kg
				L	B	H		
AC 35/130	130	129,4	78	188	145	180	0,0038	2,3
AC 35/180	180	129,4	78	188	145	180	0,0038	2,3
AC 35/180X	180	129,4	78	188	145	180	0,0038	2,3

MODEL	POWER SUPPLY 50 Hz	CENTRE DISTANCE mm	UNIONS ON REQUEST		ELECTRICAL DATA					MINIMUM SUCTION PRESSURE
			STANDARDIZED	SPECIAL	SPEED	P1 MAX W	In A	CAPACITOR μF Vc		
AC 35/130	1x230 V ~	130	1" F	¾" F - 1 ¼" M	MIN MAX	5 22	0,05 0,19	—	—	t° +90°C m.c.a. 4,5
AC 35/180	1x230 V ~	180	1" F	¾" F - 1 ¼" M	MIN MAX	5 22	0,05 0,19	—	—	t° +90°C m.c.a. 4,5
AC 35/180X	1x230 V ~	180	2" G	1 ¼" F	MIN MAX	5 22	0,05 0,19	—	—	t° +90°C m.c.a. 4,5

AC 55 SINGLE WITH UNIONS



MODEL	L	B	H1	PACK DIMENSIONS			VOLUME m ³	WEIGHT Kg
				L	B	H		
AC 55/130	130	129,4	78	188	145	180	0,0038	2,3
AC 55/180	180	129,4	78	188	145	180	0,0038	2,3
AC 55/180X	180	129,4	78	188	145	180	0,0038	2,3

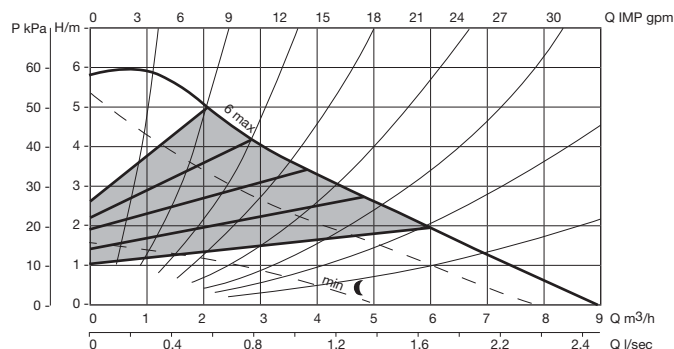
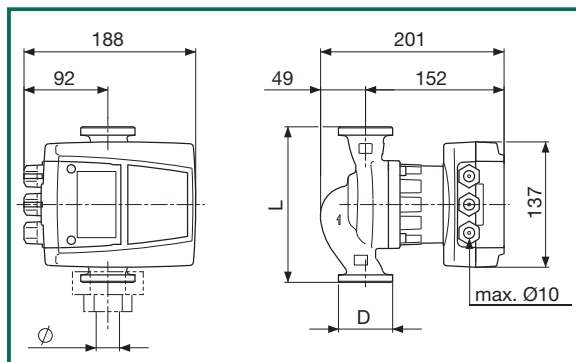
MODEL	POWER SUPPLY 50 Hz	CENTRE DISTANCE mm	UNIONS ON REQUEST		ELECTRICAL DATA					MINIMUM SUCTION PRESSURE
			STANDARDIZED	SPECIAL	SPEED	P1 MAX W	In A	CAPACITOR μF Vc		
AC 55/130	1x230 V ~	130	1" F	¾" F - 1 ¼" M	MIN MAX	5 45	0,05 0,38	—	—	t° +90°C m.c.a. 4,5
AC 55/180	1x230 V ~	180	1" F	¾" F - 1 ¼" M	MIN MAX	5 45	0,05 0,38	—	—	t° +90°C m.c.a. 4,5
AC 55/180X	1x230 V ~	180	2" G	1 ¼" F	MIN MAX	5 45	0,05 0,38	—	—	t° +90°C m.c.a. 4,5

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.

ELECTRONIC CIRCULATORS FOR HEATING SYSTEMS

Liquid temperature range: from +2°C to +110°C
Maximum working pressure: 10 bar (1000 kPa)

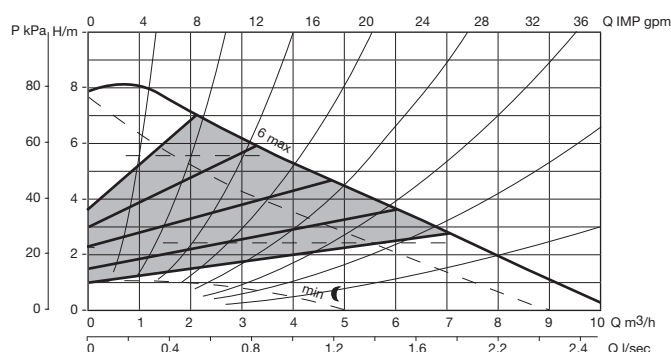
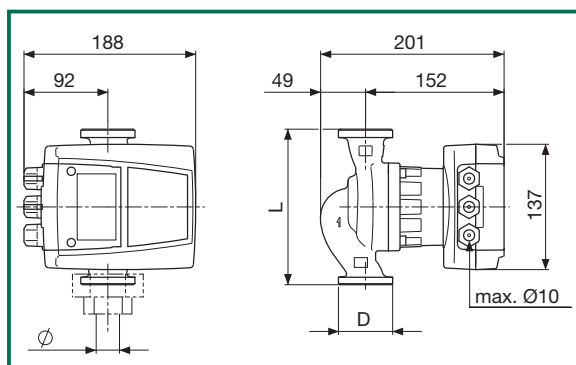
AC 65 SINGLE WITH UNIONS



MODEL	L	B	H1	PACK DIMENSIONS			VOLUME m ³	WEIGHT Kg
AC 65/180	180	152	92	230	187	200	0,012	3,8
AC 65/180X	180	152	92	230	187	200	0,012	3,8

MODEL	POWER SUPPLY 50 Hz	CENTRE DISTANCE mm	UNIONS ON REQUEST		ELECTRICAL DATA					MINIMUM SUCTION PRESSURE
			STANDARDIZED	SPECIAL	SPEED	P1 MAX W	In A	CAPACITOR μF Vc		
AC 65/180	1x230 V ~	180	1" F	¾" F - 1 ¼" M	MIN MAX	8 70	0,1 0,5	—	—	t° +90°C m.c.a. 4,5
AC 65/180X	1x230 V ~	180	2" G	1 ¼" F	MIN MAX	8 70	0,1 0,5	—	—	t° +90°C m.c.a. 4,5

AC 80 SINGLE WITH UNIONS



MODEL	L	B	H1	PACK DIMENSIONS			VOLUME m ³	WEIGHT Kg
AC 80/180	180	152	92	230	187	200	0,012	3,8
AC 80/180X	180	152	92	230	187	200	0,012	3,8

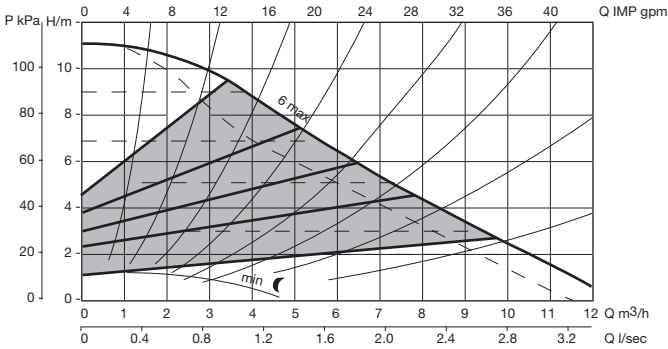
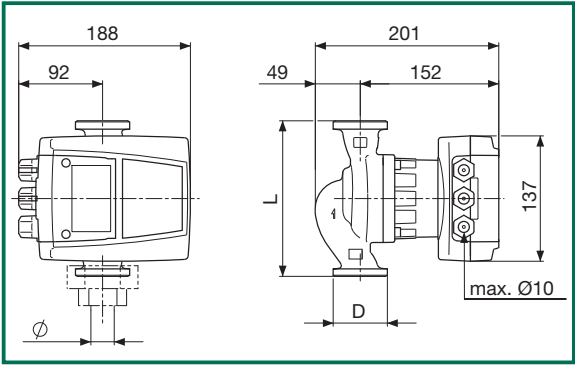
MODEL	POWER SUPPLY 50 Hz	CENTRE DISTANCE mm	UNIONS ON REQUEST		ELECTRICAL DATA					MINIMUM SUCTION PRESSURE
			STANDARDIZED	SPECIAL	SPEED	P1 MAX W	In A	CAPACITOR μF Vc		
AC 80/180	1x230 V ~	180	1" F	¾" F - 1 ¼" M	MIN MAX	8 107	0,1 0,8	—	—	t° +90°C m.c.a. 4,5
AC 80/180X	1x230 V ~	180	2" G	1 ¼" F	MIN MAX	8 107	0,1 0,8	—	—	t° +90°C m.c.a. 4,5

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.

ELECTRONIC CIRCULATORS FOR HEATING SYSTEMS

Liquid temperature range: from +2°C to +110°C
Maximum working pressure: 10 bar (1000 kPa)

AC 110 SINGLE WITH UNIONS



MODEL	L	B	H1	PACK DIMENSIONS			VOLUME m ³	WEIGHT Kg
				L	B	H		
AC 110/180X	180	152	92	230	187	200	0,012	3,8

MODEL	POWER SUPPLY 50 Hz	CENTRE DISTANCE mm	UNIONS ON REQUEST		ELECTRICAL DATA					MINIMUM SUCTION PRESSURE
			STANDARDIZED	SPECIAL	SPEED	P1 MAX W	In A	CAPACITOR µF Vc		
AC 110/180X	1x230 V ~	180	2" G	1 1/4" F	MIN MAX	8 174	0,1 1,25	-	-	t° +90°C m.c.a. 4,5

ELECTRONIC CIRCULATORS FOR HEATING SYSTEMS



GENERAL DATA

Applications

The VE circulator features an electronic control device that detects the changes in performance demanded by the heating system (equipped with automatic thermostatic valves) and automatically adapts circulator performance accordingly, always ensuring optimal efficiency, low noise operation, and minimum energy consumption. When the system requires the maximum available flow rate, the circulator self-adjusts to maximum speed and operates at full power. When the capacity of the system is reduced, either by manual actions performed by the user or due to automatic operation of the thermostatic valves, the electronic controller detects the required flow rate reduction and reduces the speed (and hence flow rate) of the circulator accordingly, while keeping the head virtually constant (with a conventional circulator this parameter would tend to increase under similar conditions).

Construction features

Wet rotor circulator.

Cast iron pump body.

Motor shaft and rotor protective jacket in stainless steel.

Thanks to the internal protection of the motor, the pump does not require any form of external protection cutout.

The pump always starts with medium power (high torque) irrespective of whether the current setting is normal duty or night-time reduction (min.).

Voltage-free contact for service and fault signalling.

Facility for operation at economy speed (min. 1).

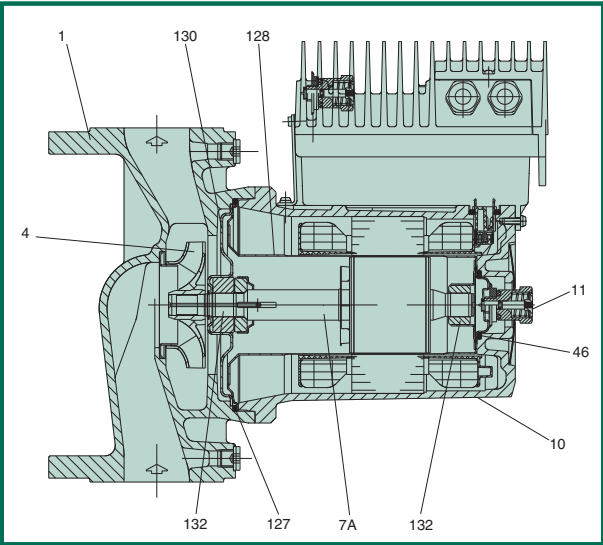
On request: analogue module for external setup of rotation speed via 0-10 V or 0-20 mA input.

This product complies with European standard EN 60335-2-51.

ELECTRONIC CIRCULATORS FOR HEATING SYSTEMS

TECHNICAL DATA

N.	PARTS	MATERIALS
1	PUMP BODY	CAST IRON 200 UNI ISO 185
4	IMPELLER	TECHNOPOLYMER
7A	MOTOR SHAFT	STAINLESS STEEL
10	MOTOR CASING	ALUMINIUM
11	BREATHER PLUG	BRASS PCu Zn 40 Pb2 UNI 570S
127	SEAL RING	EPDM
46	SEAL RING	EPDM
128	STATOR JACKET	STAINLESS STEEL
130	CLOSING FLANGE	STAINLESS STEEL
132	BUSHINGS	CERAMIC



– Designation index:
(example)

VEA = circulator with threaded ports
VEB = flanged circulator

maximum head (dm)

centre distance (mm)

(DN) flanged ports nominal diameter
X = 2" threaded ports

M = single-phase motor
T = three-phase motor

VEA 40 / 190 . X M

Operating range:

from 0.5 to 115 m³/h with head of up to 10.5 m.

Liquid temperature range:

from +15°C to +95°C

Liquid quality requirements:

clean, free of solid contaminants and mineral oils, non-viscous, chemically neutral, close to the properties of water..

Maximum working pressure:

6 bar (600 kPa).
(Special executions on request 16 bar (1600 kPa).

Insulation class:

H

Cable gland:

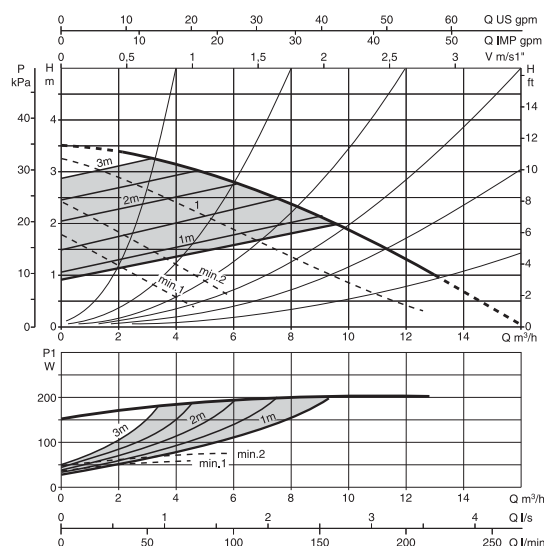
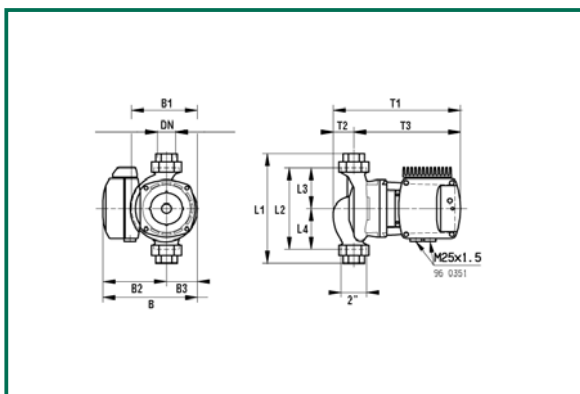
PG 16

Protection rating:

☐ corresponding to IP42

VEA 40/190 XM

SINGLE WITH UNIONS - SINGLE-PHASE



MODEL	DN	B	B1	B2	B3	L1	L2	L3	L4	T1	T2	T3	WEIGHT (kg)
VEA 40/190 XM	2" G	220	153	148	72	255	190	95	95	296	48	248	15

MODEL	POWER SUPPLY 50 Hz	CENTRE DISTANCE mm	ELECTRICAL DATA					
			SPEED	rpm	P1 MAX W	In A	CAPACITOR	
VEA 40/190 XM	1x230 V ~	190	MIN adjustment	600	32	0,2	8	450
			MAX adjustment	1460	200	0,9		
			min1	600	30	0,2		

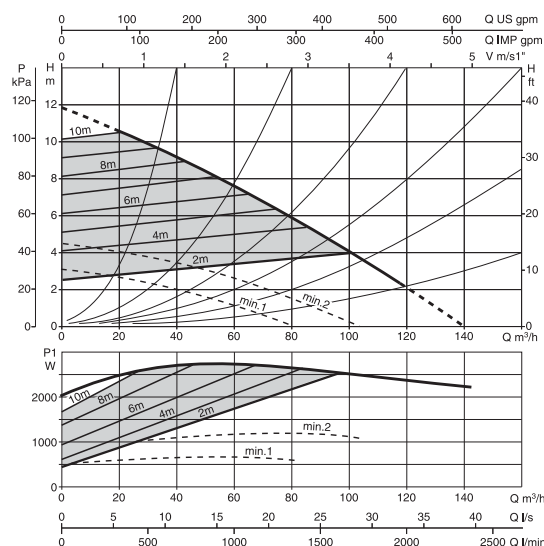
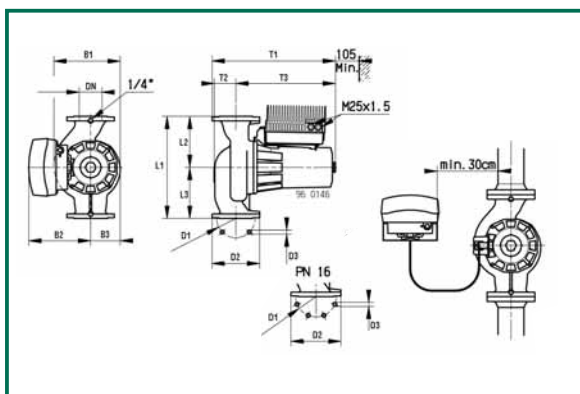
The performance curves are based on kinematic viscosity values = 1 mm²/s and density equivalent to 1000 kg/m³. Tolerance of curves to ISO 9906.

ELECTRONIC CIRCULATORS FOR HEATING SYSTEMS

Liquid temperature range: from +15°C to +95°C
Maximum working pressure: 6 bar (600 kPa) - 16 bar (1600 kPa) on request

VEB 110/450.100 T

SINGLE FLANGED - THREE-PHASE



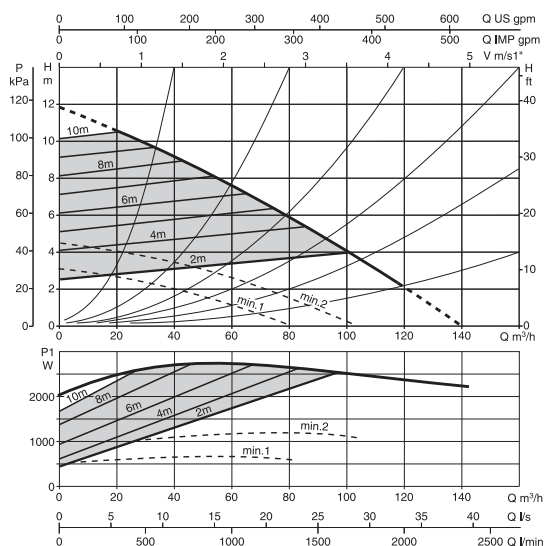
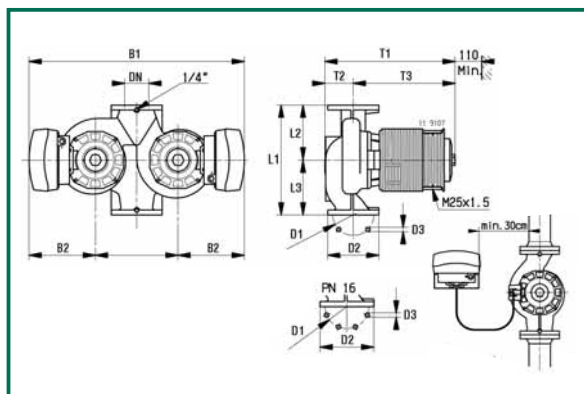
MODEL	DN	B1	B2	B3	PN 6			PN 16			L1	L2	L3	T1	T2	T3	WEIGHT (kg)
					D1	D2	D3	D1	D2	D3							
VEB 110/450.100 T	100	294	273	131	170	210	18	180	220	18	450	225	225	545	96	440	75

MODEL	POWER SUPPLY 50 Hz	CENTRE DISTANCE mm	ELECTRICAL DATA			
			SPEED	rpm	P1 MAX W	In A
VEB 110/450.100 T	3x400 V ~	450	MIN adjustment	800	400	1,0
			MAX adjustment	1700	2800	6,0
			min1	800	400	1,0

* Only on request

DEB 110/450.100 T

TWIN FLANGED - THREE-PHASE



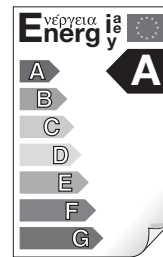
MODEL	DN	B1	B2	B3	PN 6			D1	D2	D3	L1	L2	PN 16	T1	T2	T3	WEIGHT (kg)
					D1	D2	D3						L3				
DEB 110/450.100 T	100	886	273		170	210	18	180	220	18	450	225	225	535	117	419	152

MODEL	POWER SUPPLY 50 Hz	CENTRE DISTANCE mm	ELECTRICAL DATA			
			SPEED	rpm	P1 MAX W	In A
DEB 110/450.100 T	3x400 V ~	450	MIN adjustment	800	400	1,0
			MAX adjustment	1700	2800	6,0
			min1	800	400	1,0

* Only on request

Hydraulic data refer to a single pump in operation.

ELECTRONIC CIRCULATORS FOR HEATING AND AIR CONDITIONING SYSTEMS



BPH-E

DPH-E

GENERAL DATA

Applications

DIALOGUE 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
- Office buildings
- Homes

All models are available in both single and twin versions

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. In order to further reduce losses in the circulator pump body, for the single version we recommend the use of insulating covers, which are ordered as accessories and supplied separately.

APPLICATIONS IN AIR CONDITIONING

Unlike conventional electronic pumps, electronic circulators can be used also in air conditioning systems in which the temperature of the pumped liquid is lower than the room temperature. In these conditions condensate tends to form on the exterior 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. In the case of thermal insulation of the circulator body using the optional insulating covers (only for the single version – the insulation must be made to measure for the twin version) use special caution to avoid obstructing the drainage labyrinths in order to avoid impairing operation.

CONSTRUCTION FEATURES

Enbloc circulator composed of cast iron hydraulic section and wet rotor asynchronous 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, flanged and equipped with threaded fittings for pressure and temperature readings.

Rotor in technopolymer, motor shaft in hardened stainless steel held in graphite bearings lubricated by the pumping medium. Rotor protective jacket and stator jacket in stainless steel. Ceramic thrust ring, ethylene propylene seals and brass air breather plug. Asynchronous two-pole 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 PN10, which is compatible with PN6 counter-flanges for interchangeability of pumps in existing systems. A DN 80 PN 16 (eight holes) version can be supplied on request

Circulator protection rating: IP 44

Insulation class: H

Standard voltage input: single-phase 230V 50/60Hz

This product complies with European standards EN 61800-3 – EN 60335-1 – EN 60335-2-51

DIALOGUE CONSTRUCTION CHARACTERISTICS (Electronic device)

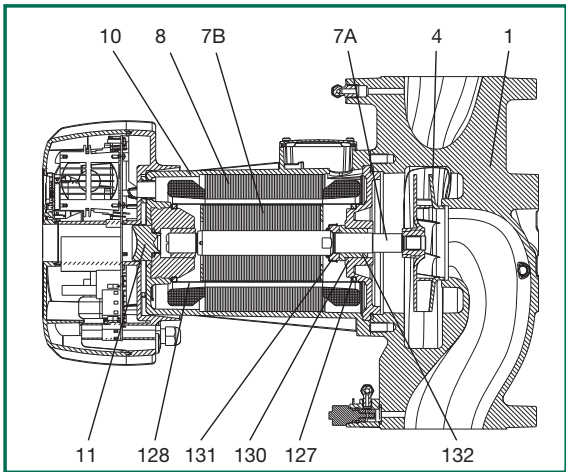
The circulators are controlled by a device based on NPT type IGBTs of the latest generation for greater efficiency and robustness. Specific features include:

- sine wave modulated PWM
- High carrier frequency to eliminate all audio band noise
- Dedicated 32-bit DSP processor
- Optimised space vector algorithm

An intuitive and functional user interface ensures ease of calibration for all users. The backlit easy-to-read display on the control panel, three easy navigation keys, a hierarchical menu in line with the latest trends in the field of mobile telephony, and a very wide choice of functions, mean that BPH-E circulators are truly revolutionary products. Reliable and rugged construction plus modern and innovative styling complete the product also from an aesthetic standpoint.

DATI TECNICI

N.	PARTS	MATERIALS
1	PUMP BODY	CAST IRON 200 UNI ISO 185
4	IMPELLER	TECHNOPOLYMER B
7A	MOTOR SHAFT	AISI 420 C Quenched and Tempered STAINLESS STEEL
7B	ROTOR	–
8	STATOR	–
10	MOTOR CASING	DIE CAST ALUMINIUM
11	BREATHING PLUG	BRASS P Cu Zn 40 Pb2 UNI 5705
127	SEAL RING	ETHYLENE PROPYLENE (EPDM)
128	STATOR JACKET	STAINLESS STEEL AISI 321 quenched and tempered – AISI 304
130	CLOSING FLANGE	CAST IRON 200 UNI ISO 185
131	THRUST RING SUPPORT	AISI 304 L STAINLESS STEEL
132	BUSHINGS	CARBON EC 941



DESIGNATION INDEX:

(example)

B P H - E 120 / 250 . 40 M

B = single circulator

D = twin circulator

M = 4-pole motor

P = 2-pole motor

H = suitable for both air conditioning and heating

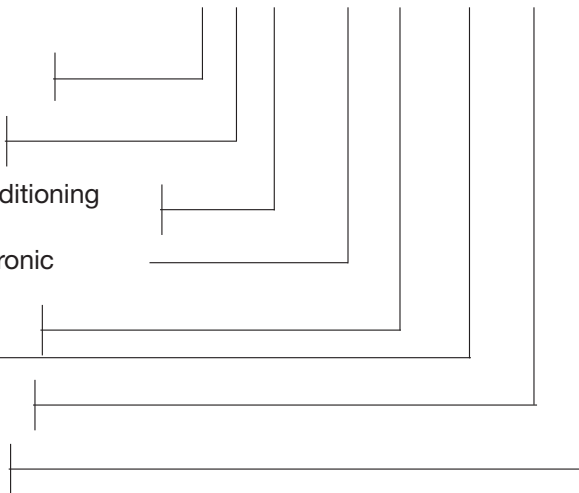
E = **DIALOGUE** electronic

maximum head (dm)

centre distance (mm)

(DN) nominal diameter of flanged ports

M = single-phase motor



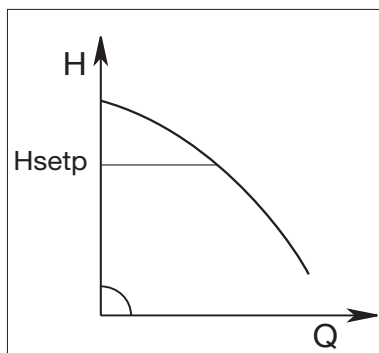
Operating range:	from 13.8 to 59.76 m ³ /h with head of up to 18.2 m.
Liquid temperature range:	from -10°C to +120°C
Liquid quality requirements:	clean, free of solids and mineral oils, non-viscous, chemically neutral and approximating the properties of water (max. glycol contents 30%)
Maximum working pressure:	10 bar (1000 kPa)
Standard flanging:	DN 40, DN 50, DN 65, PN 10 (4 slots), DN 80 in PN 6 / 10 (4 slots)
Minimum suction pressure:	the values are given in the relative tables.
Special executions on request:	Flanging DN 80 in PN 10 / PN 16 (8 holes)
Accessories:	DN 40 - DN 50 - DN 65 - DN 80 threaded counter-flanges in PN 10.
Electromagnetic compatibility:	BPH-E and DPH-E 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). Models with power rating below 1 kW require a 2.4 mH external input filter as prescribed by EN 61000-3-2.

OPERATING MODES

All functions listed below can be consulted by all users (irrespective of the level of expertise) simply by scrolling through the Dialogue menu. Calibration and parameter editing are protected and reserved for expert users.

1 - 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 two 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;

b. Under-floor central heating systems with thermostatic valves

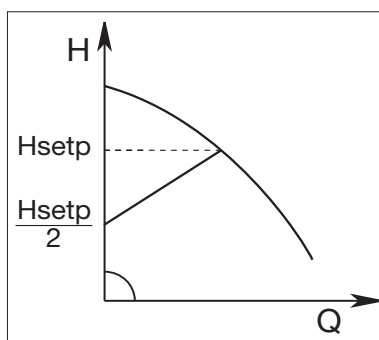
c. Single-pipe central heating systems with thermostatic valves and calibration valves

d. Installations having primary circuit pumps with low pressure drops

2 - 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 two 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 $\Delta P-v$

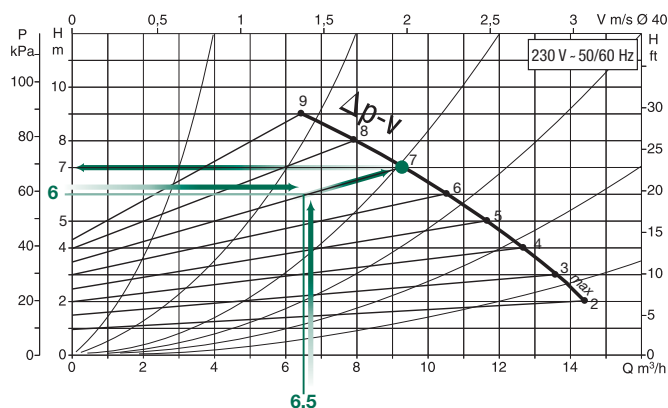
The following operating point is required:

$$Q = 6,5 \text{ m}^3/\text{h}$$

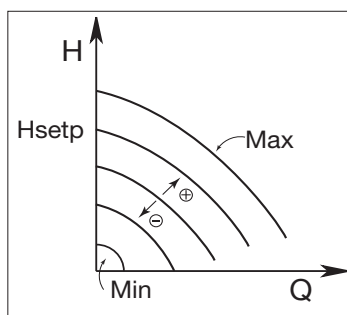
$$H = 6 \text{ m}$$

PROCEDURE:

1. In the graph, find the required operating point and then find the nearest DIALOGUE 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.



3 - Constant curve (speed??) control mode



Setting constant speed control automatically inhibits electronic module control strategies. Pump speed can be adjusted manually to a constant value directly from the front panel or by means of a remote control utilising an 0-10V signal, where:

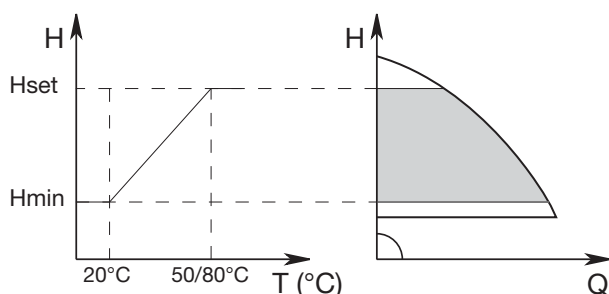
$V \leq 3$ Volt, pump speed is 846 rpm (min. speed)

$V = 10$ Volt, pump speed is 2820 rpm (max. speed)

Linear interpolation of pump speeds for V between 3 and 10 Volt

This type of control mode is particularly suitable when replacing circulators in existing installations.

4 - Constant differential pressure control mode with proportional control in relation to water temperature



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

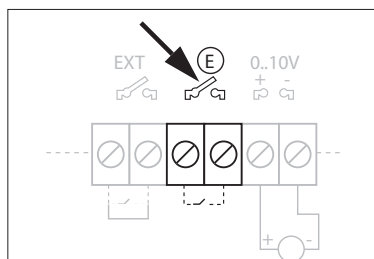
Liquid temperature can be set to 80°C or 50°C.

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

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

This function is set on the control panel **DIALOGUE**.

ECONOMY FUNCTION



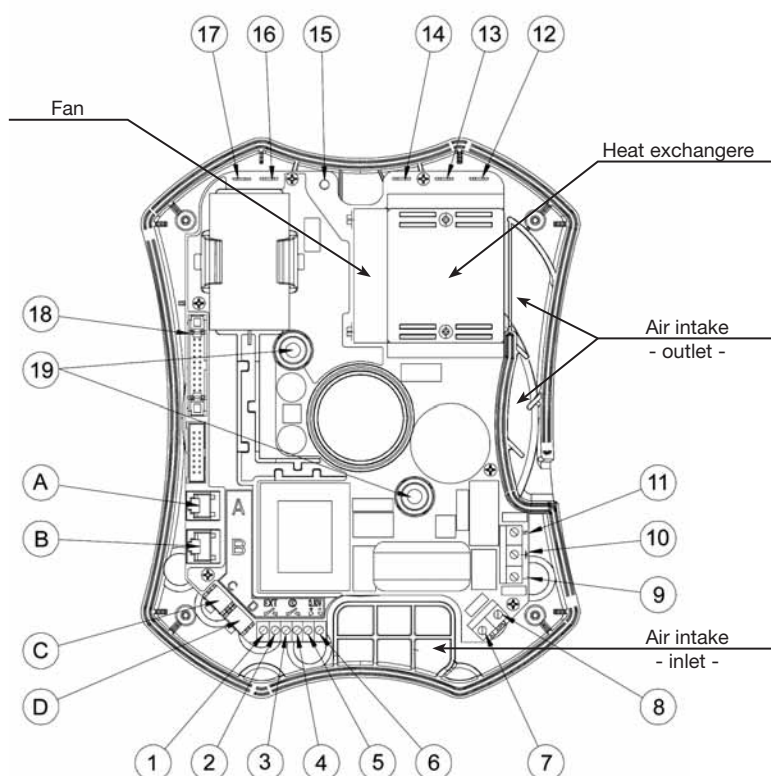
The economy function can be set directly on the control panel, by setting a reduction value (f.rid) the maximum value of which is 50%

In all previously listed settings, the value

Hset

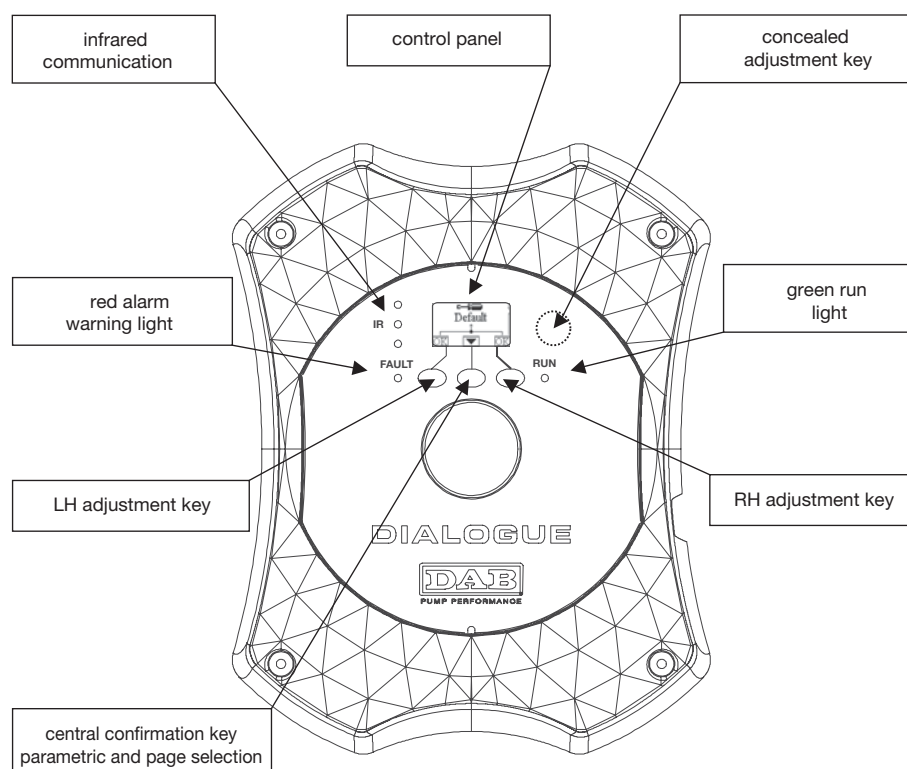
must be replaced with an
 $Hset \times f.rid$

CONNECTION DIAGRAM



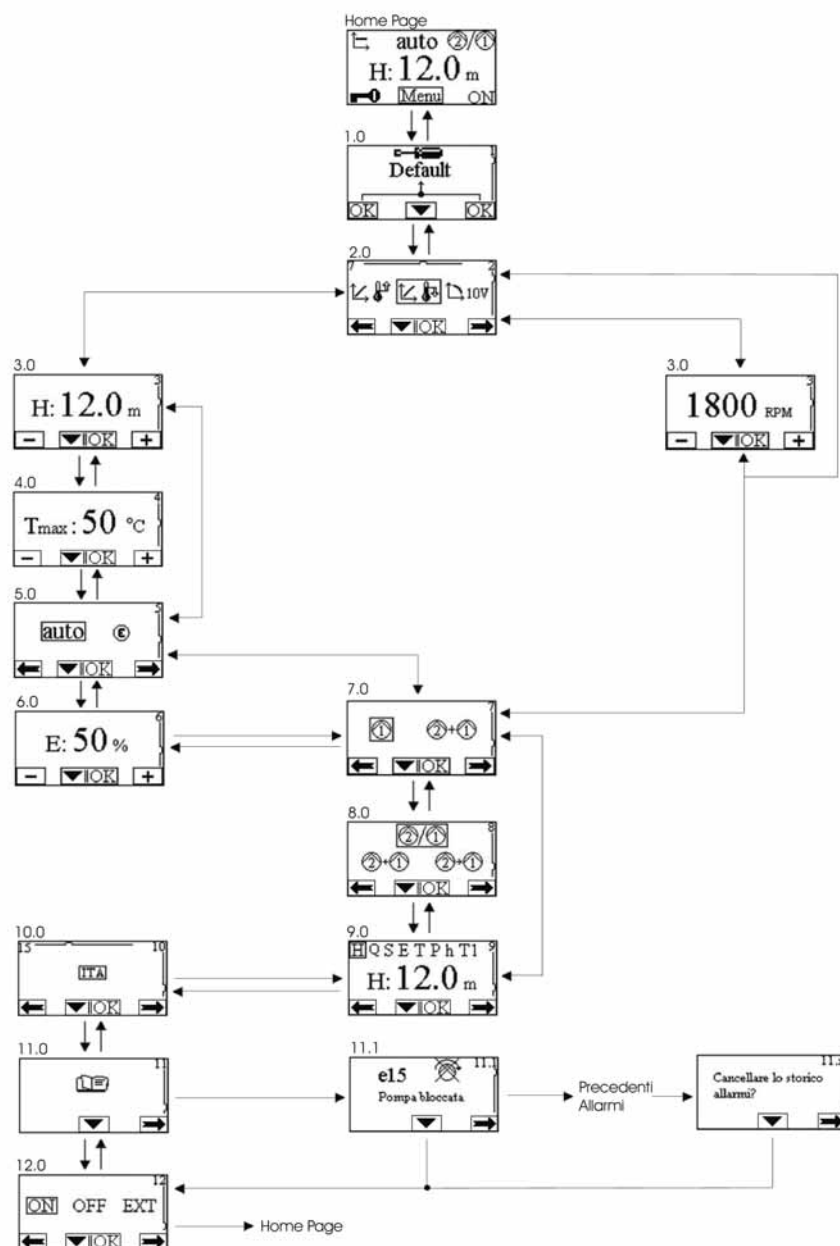
Ref.	Function
A	RS 485 remote serial connector
B	Connector for twin circulators
C	Connector for remote sensor (optional)
D	Connector for circulator integral sensor (standard equipment)
1-2 (exit)	Terminals for connection of a remote control
3-4 (E)	Terminals for economy function input
5-6 (0-10V)	Terminals for 0-10V dc analogue input ref. 5 = +10V ref. 6 = 0V
7-8 (ALARM)	Terminals for 250V ac 5A remote alarm contact
9-10-11	Terminals for 1x230V 50-60Hz power feeding line ref. 9 = Line ref. 10 = Earth ref. 11 = Neutral
12-13-14	Fastons for motor cables connection ref. 12 = red wire ref. 13 = green wire ref. 14 = white wire
15	Motor earthing screw
16-17	Fastons for motor protector connection - white wire
18	Dialogue display connector
19	Dialogue fixing screws

CONTROL PANEL DESCRIPTION



DIALOGUE DISPLAY - THE SETTING PACOPPERTERS

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



DISPLAYABLE QUANTITIES DESCRIPTION

Symbol	Description
H Q S E T P h T1	Shows paCOPPERTers
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 Dialogue is switched off.
S	Speed in revs/minute (rpm)
E	Analog input 0-10V
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

Status

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

Operating mode

Symbol	Description
auto	Auto
Ⓔ	Economy mode

Regulation mode

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

Miscellaneous

Symbol	Description
	Control panel blocked
	Multifunction key for confirming paCOPPERters and scrolling pages

ALARMS MANAGEMENT

The **DIALOGUE** device can remotely reactivate the alarms that have occurred in the pump itself through a clean contact (250Vac – 5 Amp). These alarms are also memorised in the resident memory for subsequent consultation. The alarms archive can also be cancelled to perform dedicated tests.

ALARMS DISPLAY

Symbol	Alarm type
	E01 Pump blocked
	E02 Internal error V18"
	E03 Low mains voltage" (LP)
	E04 High mains voltage" (HP)
	E06 Critical overheating of electronic parts"
	W01 Sensor signal absent"
	W02 Twin communication absent"
	W03 Overheating of electronic parts"
	W04 Fault in cooling systems"
	W05 Current overload protection"

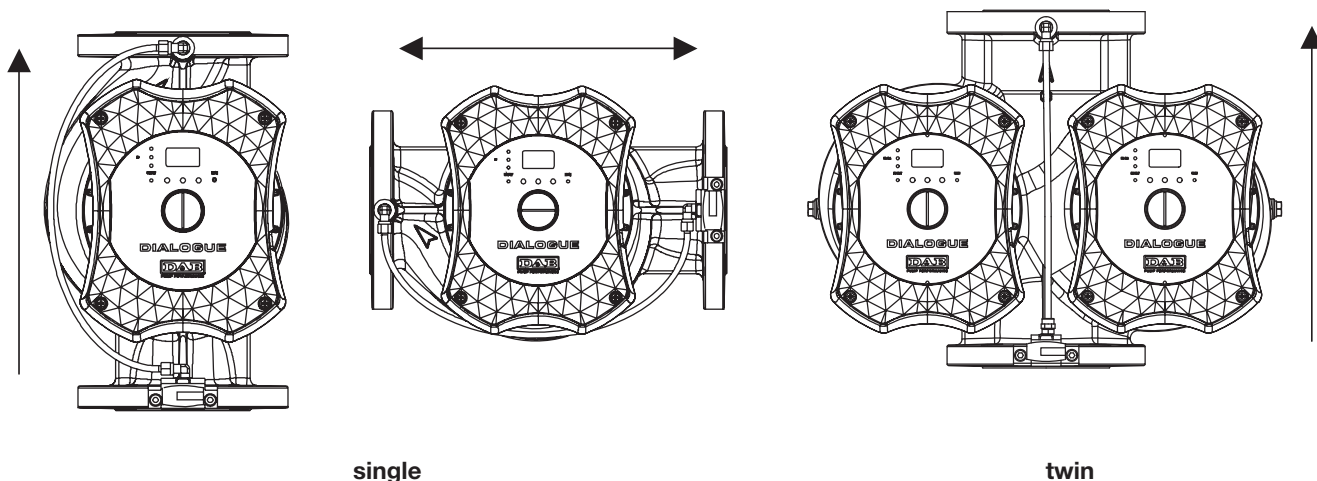
W05 **Motor current overload protection**

The circulators in the BPH-E and DPH-E series contain a current limitation system to protect the electro-pumps against any current overloads. The maximum current that can be supplied is set for each size. If this current exceeds the set value, the protection intervenes, reducing the operating frequency (a **Warning W05** is generated in the alarm log). If this current does not fall within the predetermined values, the pump goes into a **blocking error E01** (the fixed red "FAULT" light is lit and the alarm relay closes) and attempts to restart every 10 minutes.

TROUBLESHOOTING

Error condition		
Display indication	Description	Reset sequence
E01	Pumpblocked	- Free the pump by hand.
E02	InternalerrorV18	- Disconnect power supply to Dialogue. After having waited 5 minutes, restore power supply to Dialogue. If the error persists, change the Dialogue.
E03	Low mains voltage (LP)	- Disconnect power supply to Dialogue. After having waited 5 minutes, restore power supply to Dialogue. Check that the mains voltage is correct, if necessary restore the data plate value.
E04	High mains voltage (HP)	- Disconnect power supply to Dialogue. After having waited 5 minutes, restore power supply to Dialogue. Check that the mains voltage is correct, if necessary restore the data plate value.
E06	Critical overheating of electronic parts	- Disconnect power supply to Dialogue. After having waited 5 minutes, open the cover of the Dialogue. Clean the air sockets and the cooling body with dry air (fig.3 page 5) Close the cover of the Dialogue.
W01	Sensor signal absent	- Check the sensor connection (ref. D). If the sensor is faulty, change it.
W02	Twin communication absent	- Check that the twin communication cable is intact. Check that the circulator is fed.
W03	Overheating of electronic parts	- Disconnect power supply to Dialogue. After having waited 5 minutes, open the cover of the Dialogue. Clean the air sockets and the cooling body with dry air (fig.3 page 5) Close the cover of the Dialogue.
W04	Faulty cooling systems	- Check that the fan is clean and that it moves freely. Change the Dialogue.
W05	Overload protection	- Check that the circulator turns freely. Check that the addition of antifreeze does not exceed the maximum amount of 30%.

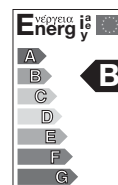
INSTALLATION



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.

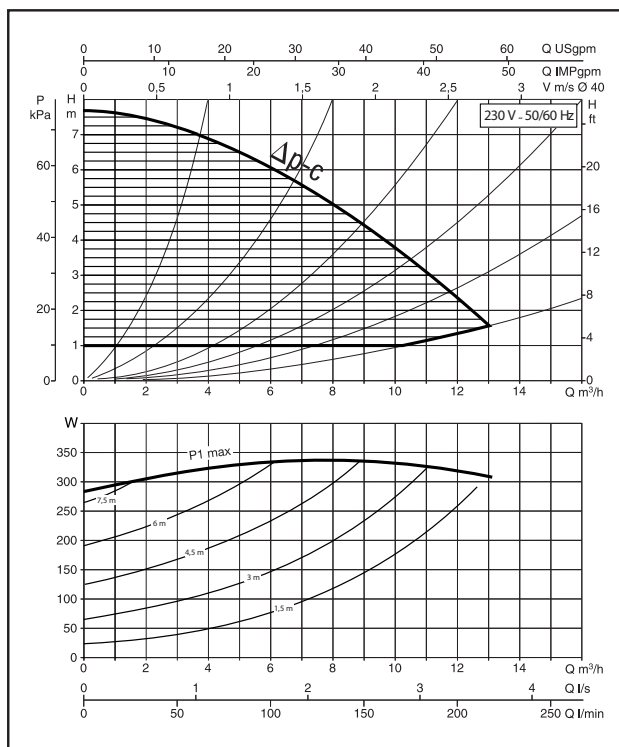
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

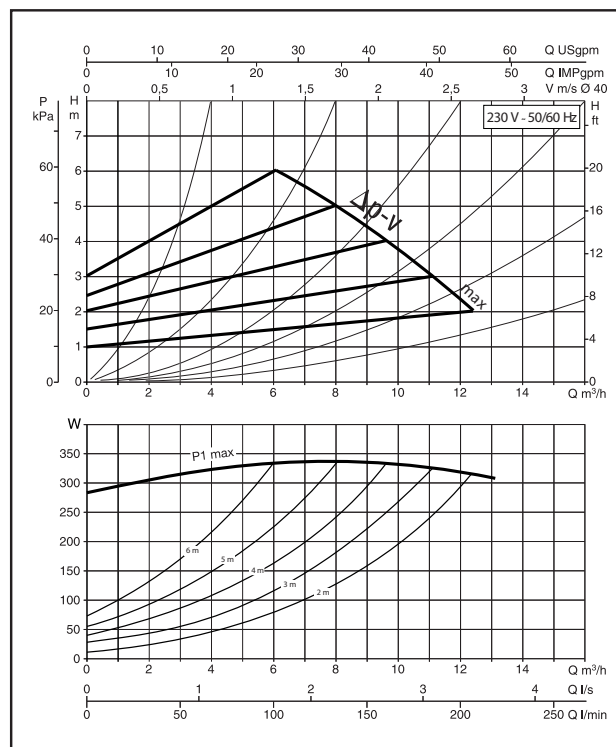


BPH-E 60/250.40 M

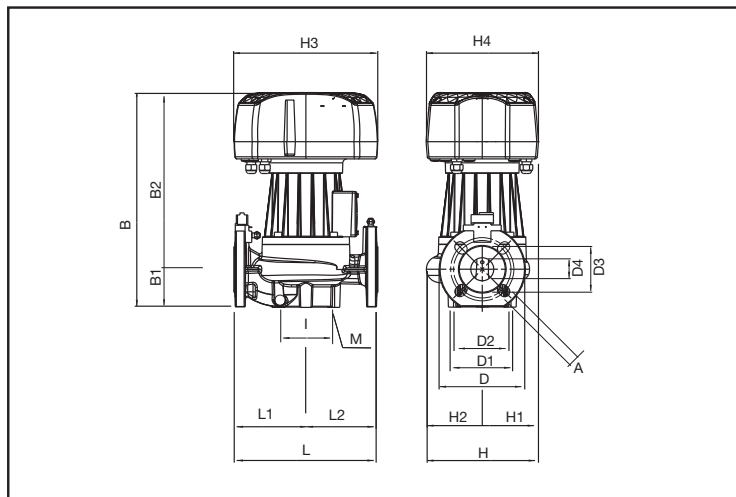
Characteristic curves Δp -c (constant)



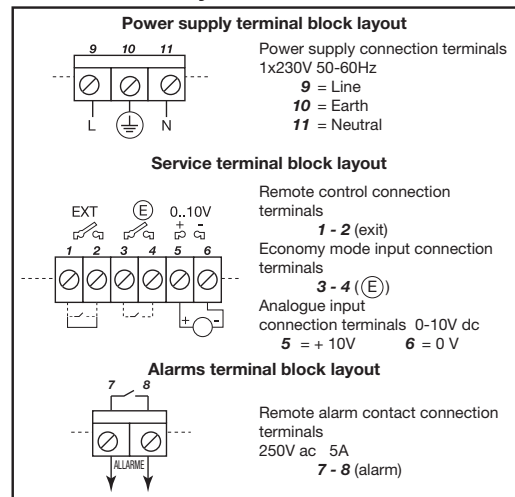
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
250	125	125	18	374	66	308	150	110	100	80	40	100	-	-	-	M10	195	83	112	250	196

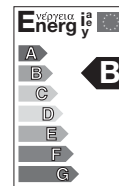
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE				
				P1 MAX W	I _n A	t°	75°	90°	110°	120°
BPH-E 60/250-40	230 V	250	DN 40 - PN 10	344	2	mt.	1,6	4	-	19

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.

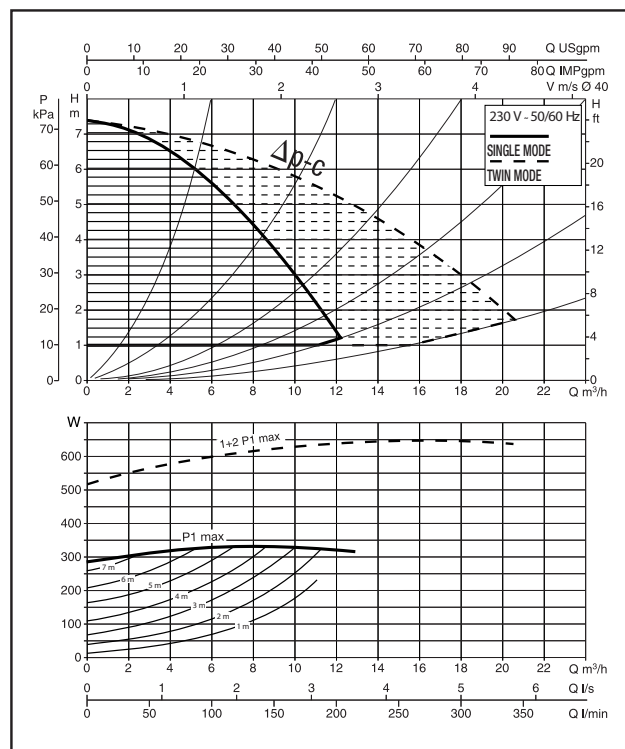
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

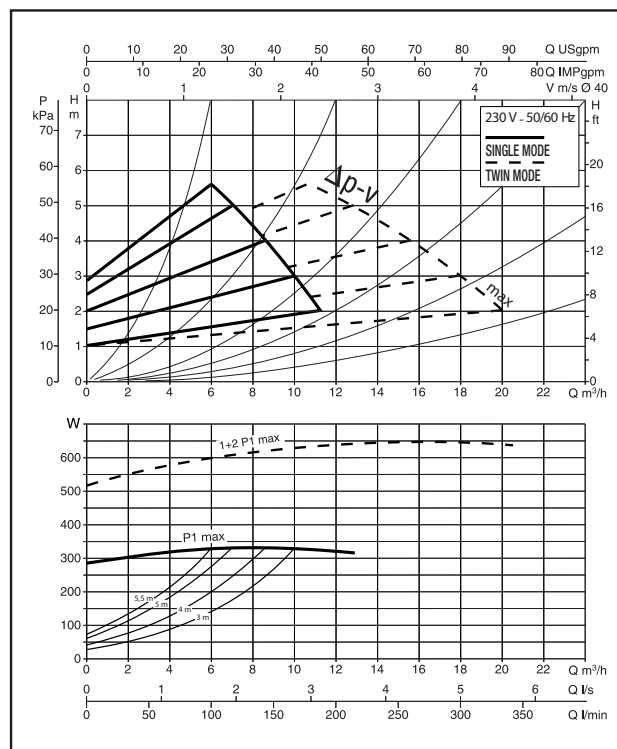


DPH-E 60/250.40 M

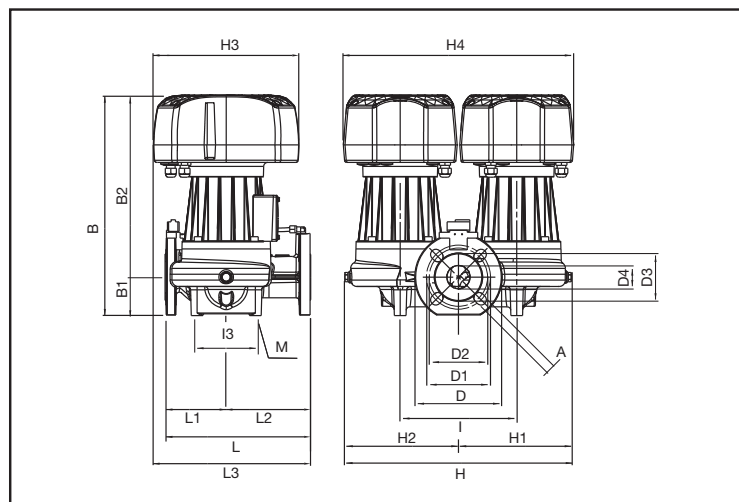
Characteristic curves Δp -c (constant)



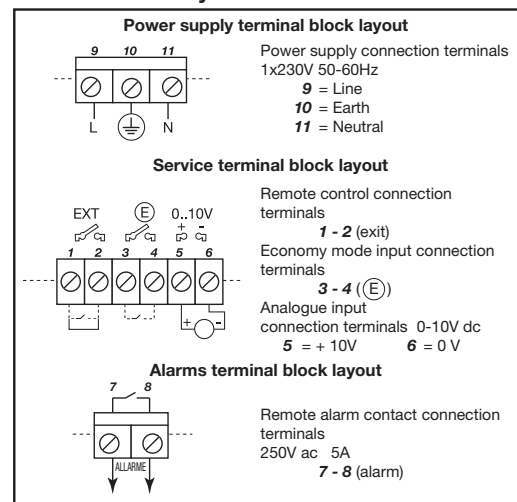
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	L3	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
250	105	145	270	18	378	66	312	150	110	100	80	40	200	100	100	100	M12	389	194,5	195	250	396

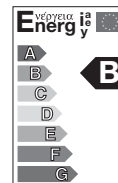
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE
				P1 MAX W	I _n A	
DPH-E 60/250-40	230 V	250	DN 40 - PN 10	344	2	t° 75° 90° 110° 120° mt. 1,6 4 - 19

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.

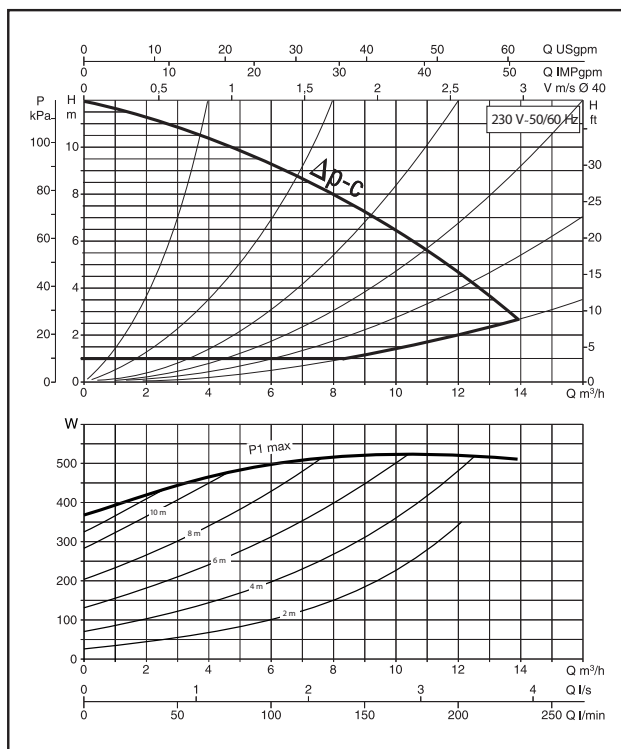
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

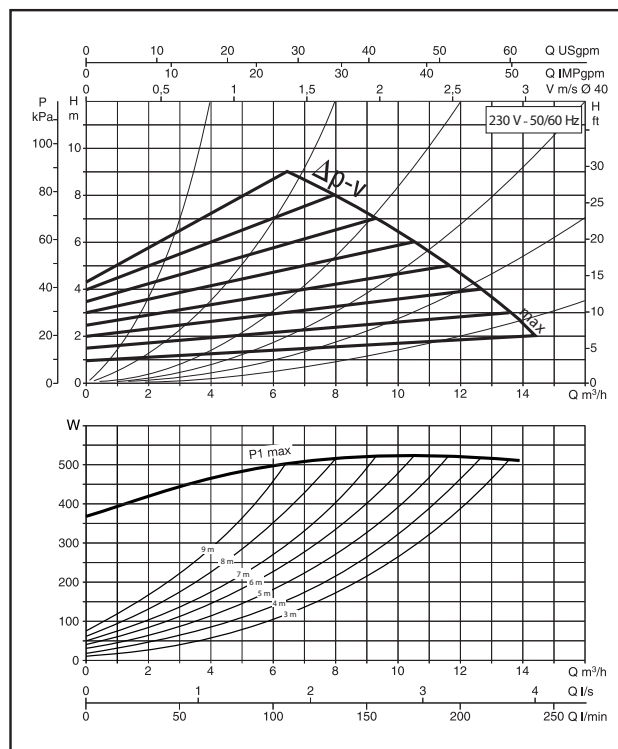


BPH-E 120/250.40 M

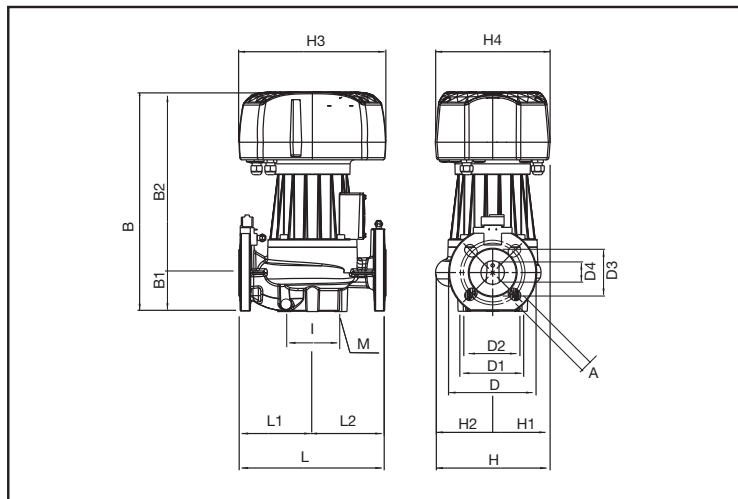
Characteristic curves Δp -c (constant)



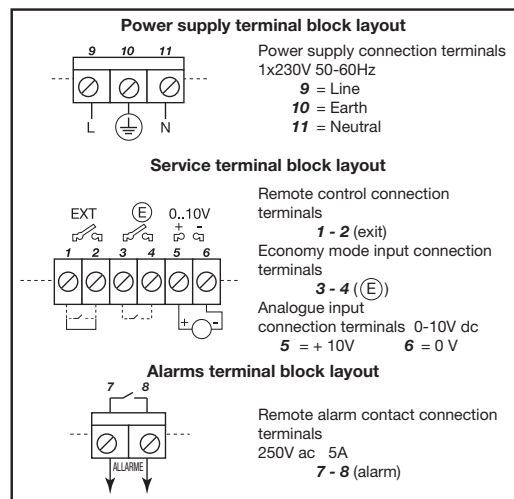
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
250	125	125	18	374	66	308	150	100	100	80	40	100	-	-	-	M10	195	83	112	250	196

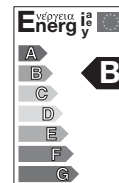
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE				
				P1 MAX W	I _n A					
BPH-E 120/250-40	230 V	250	DN 40 - PN 10	528	3	t° mt.	75° 6	90° 9	110° -	120° 23

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.

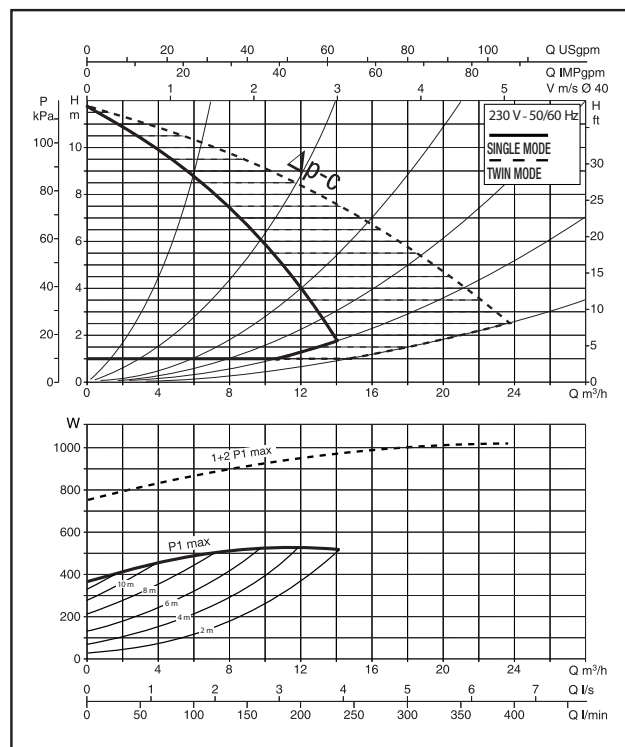
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

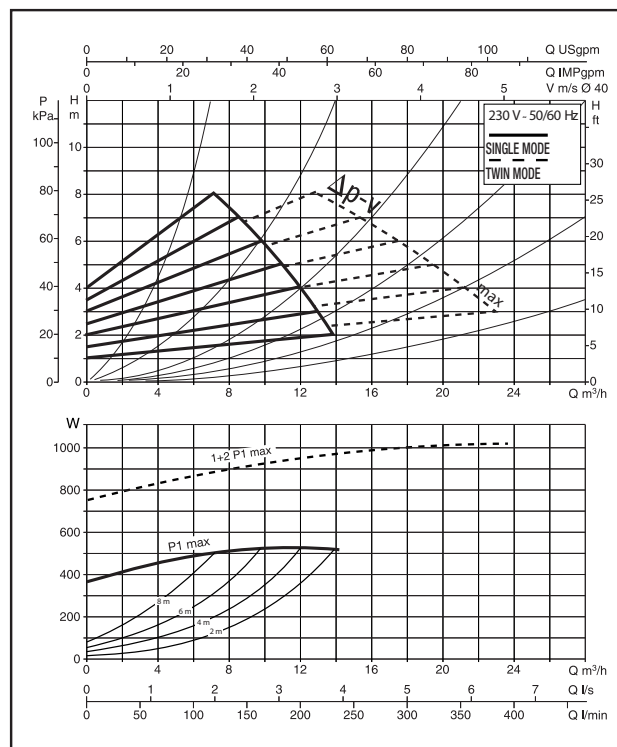


DPH-E 120/250.40 M

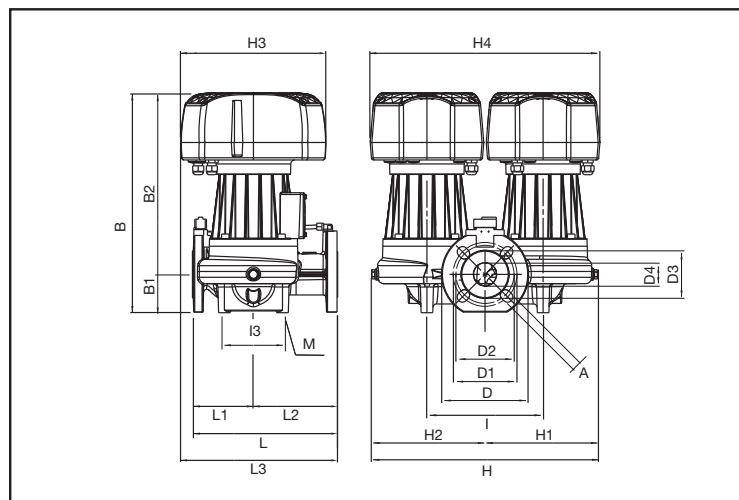
Characteristic curves Δp -c (constant)



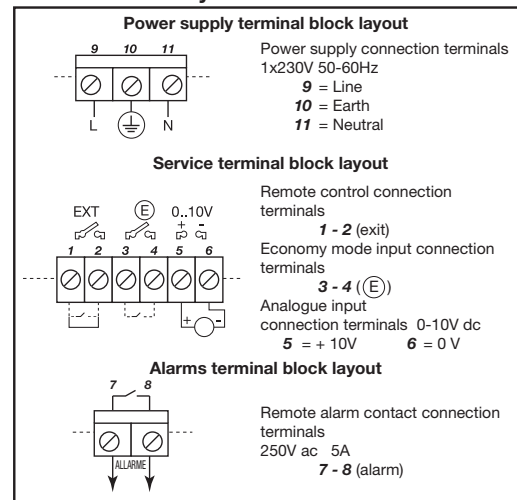
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	L3	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
250	105	145	270	18	378	66	312	150	110	100	80	40	200	100	100	100	M12	389	194,5	195	250	396

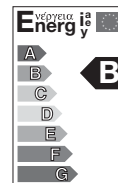
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE				
				P1 MAX W	I _n A					
DPH-E 120/250-40	230 V	250	DN 40 - PN 10	528	3	t° mt.	75° 6	90° 9	110° -	120° 23

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.

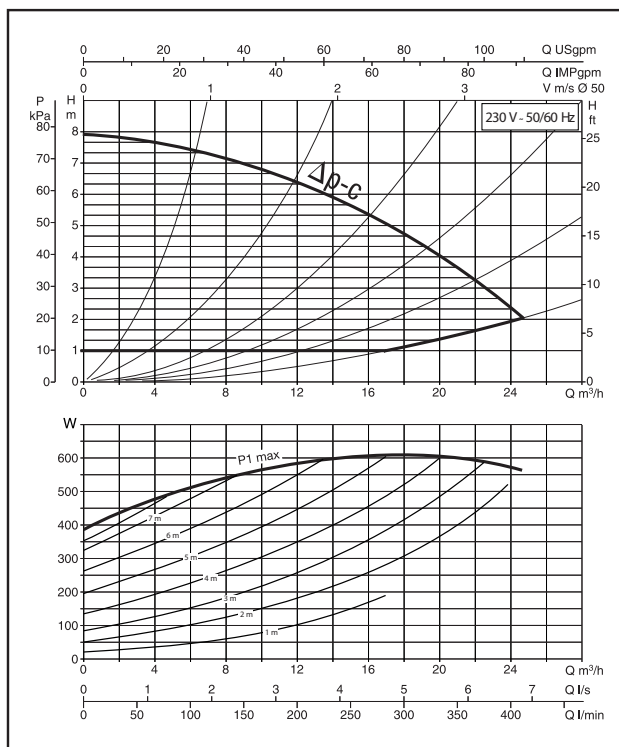
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

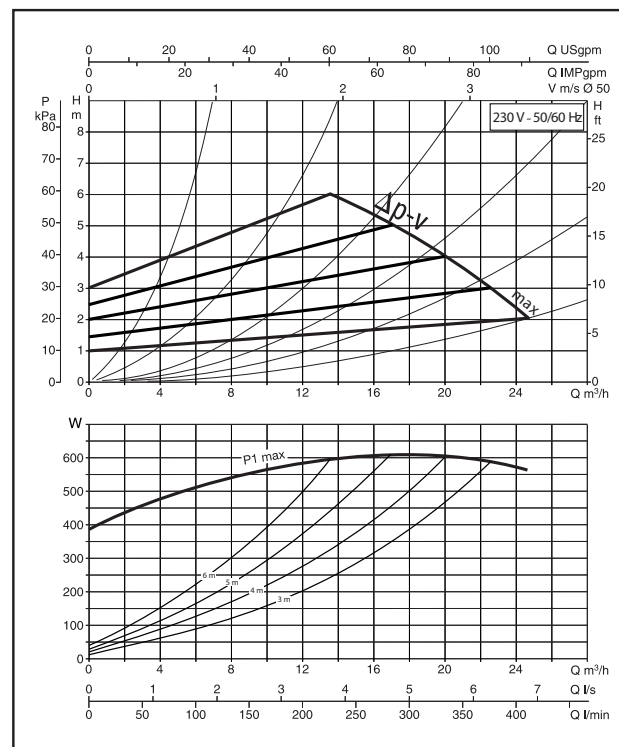


BPH-E 60/280.50 M

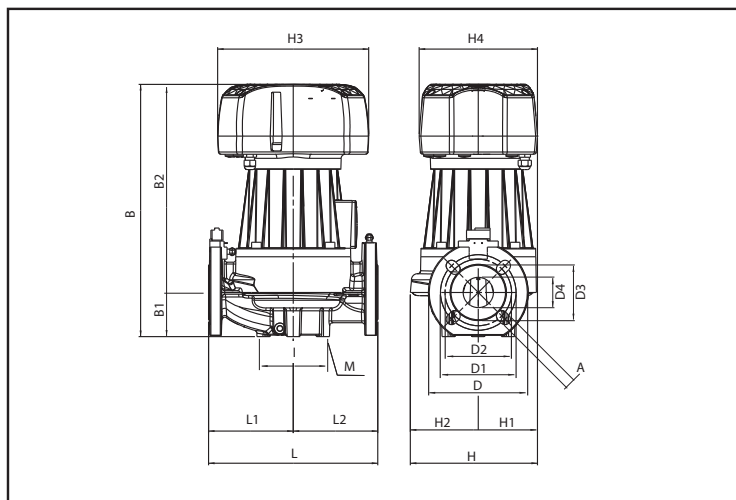
Characteristic curves Δp -c (constant)



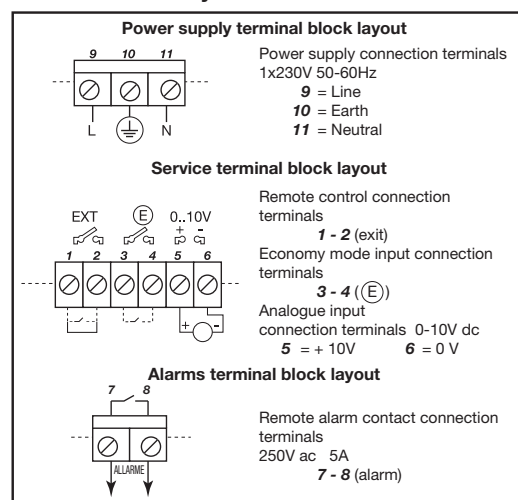
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
280	140	140	18	417	73	344	165	125	110	90	50	100	-	-	-	M10	210	96	114	250	196

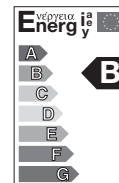
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE				
				P1 MAX W	In A					
BPH-E 60/280-50	230 V	280	DN 50 - PN 10	606	3,37	t° mt.	75° 4	90° 7,5	110° -	120° 21

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.

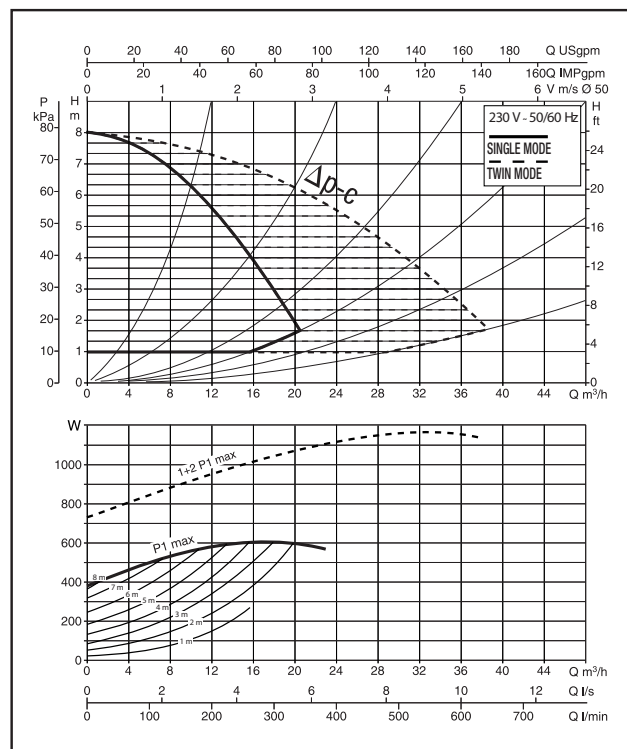
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

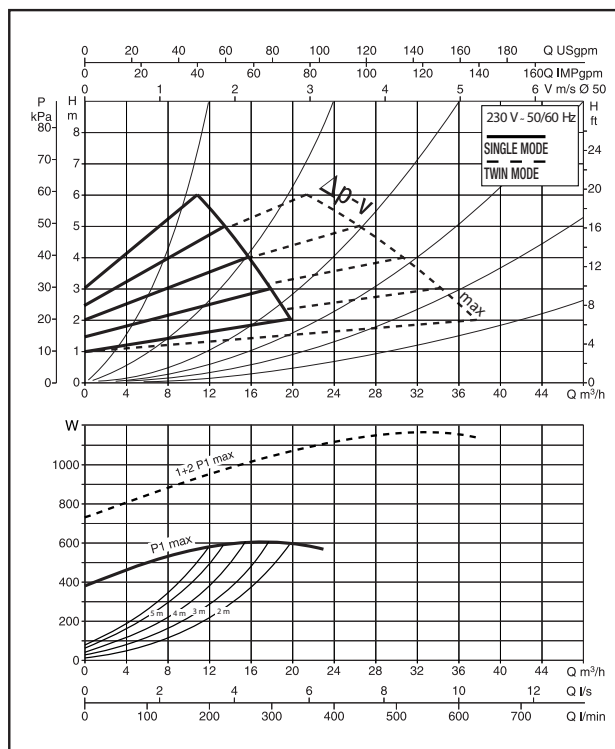


DPH-E 60/280.50 M

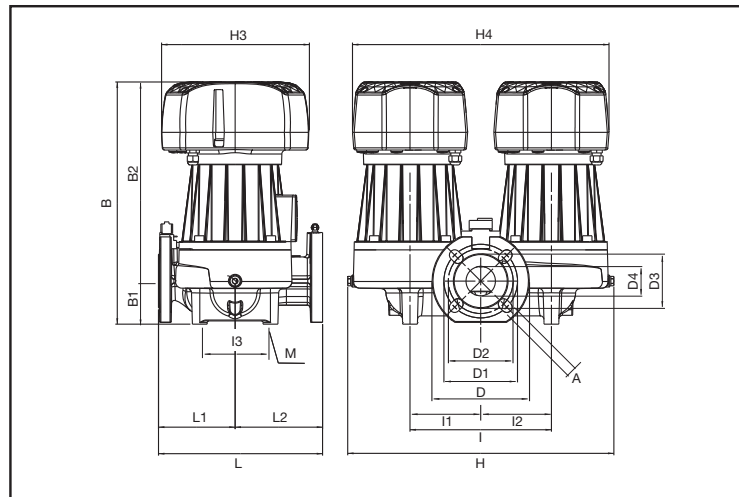
Characteristic curves Δp -c (constant)



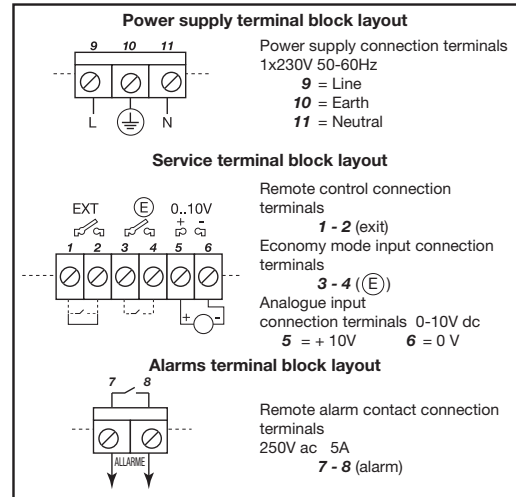
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
280	130	150	18	411	73	338	165	125	110	90	50	240	120	120	120	M14	452	226	226	250	436

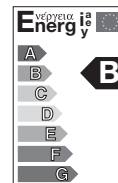
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE
				P1 MAX W	I _n A	
DPH-E 60/280-50	230 V	280	DN 50 - PN 10	606	3,37	t° 75° 90° 110° 120° mt. 4 7,5 - 21

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.

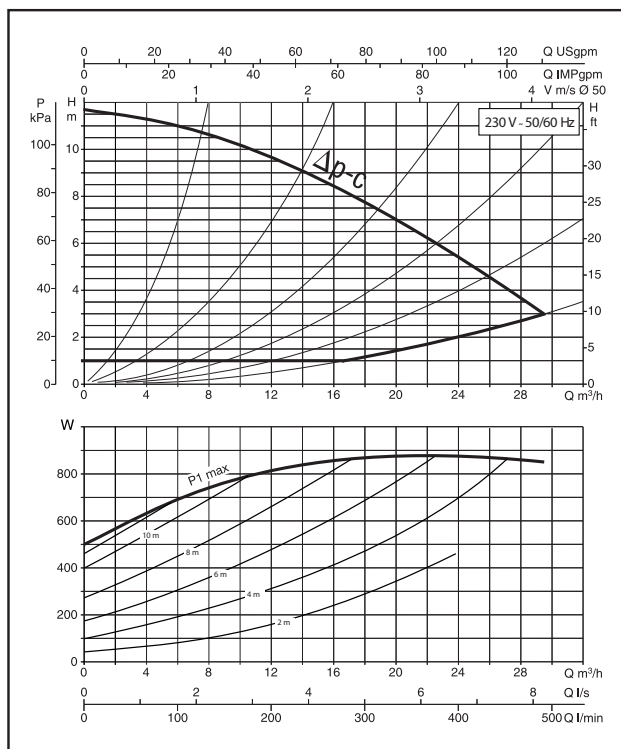
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

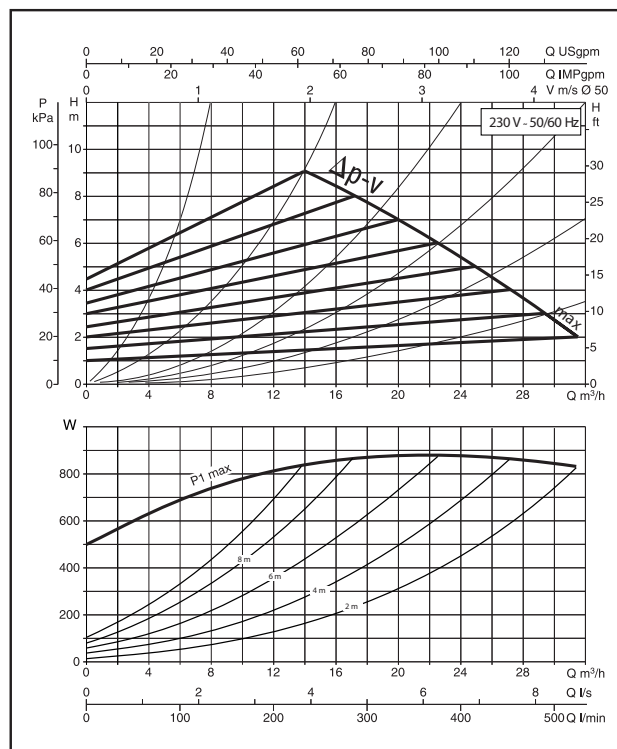


BPH-E 120/280.50 M

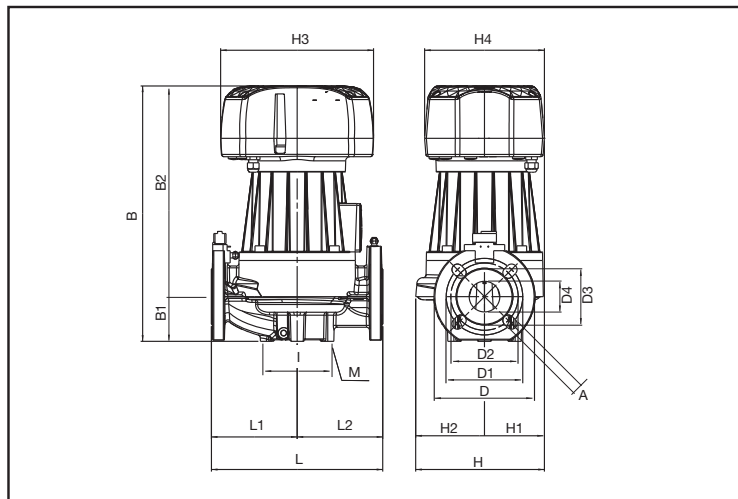
Characteristic curves Δp -c (constant)



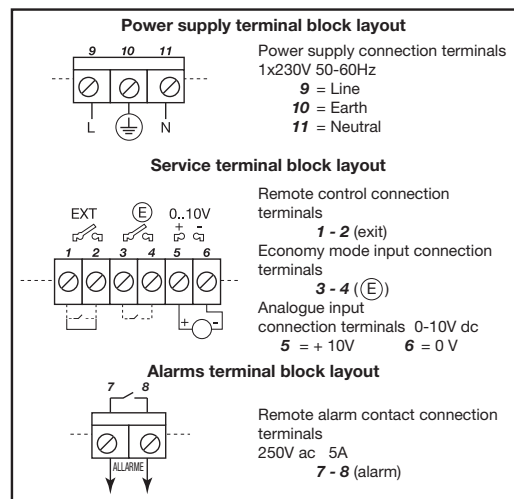
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
280	140	140	18	417	73	344	165	125	110	90	50	100	-	-	-	M10	210	96	114	250	196

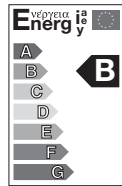
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE				
				P1 MAX W	I _n A	t° mt.	75° 2	90° 5	110° -	120° 20
BPH-E 120/280-50	230 V	280	DN 50 - PN 10	893	4,84					

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.

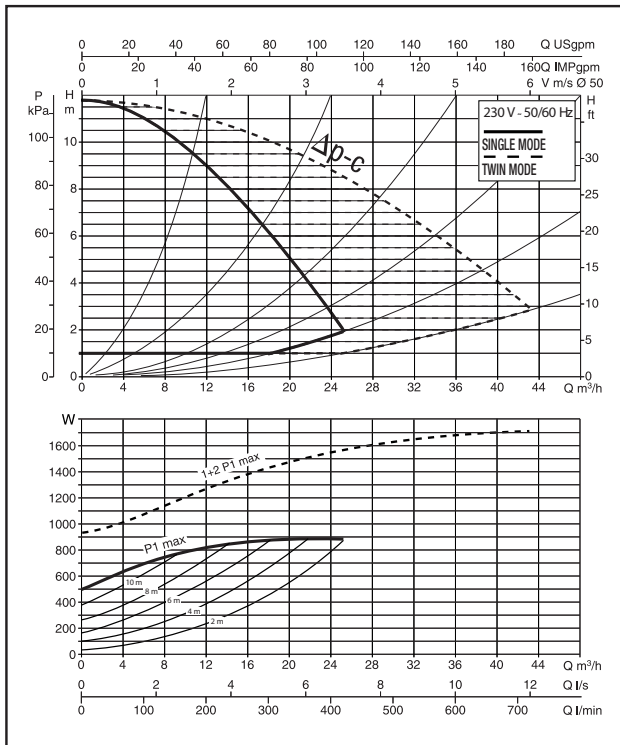
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

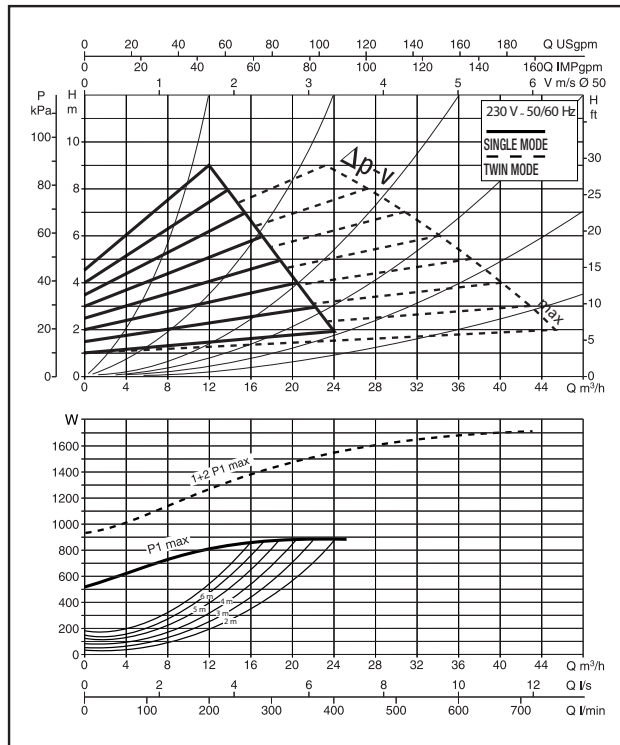


DPH-E 120/280.50 M

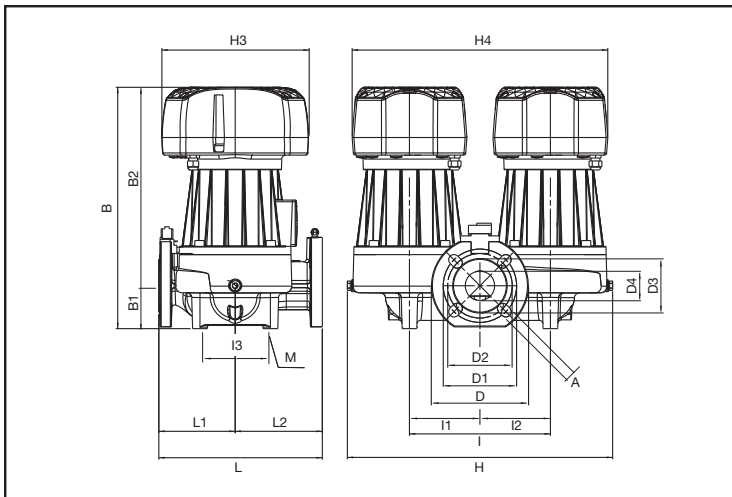
Characteristic curves Δp -c (constant)



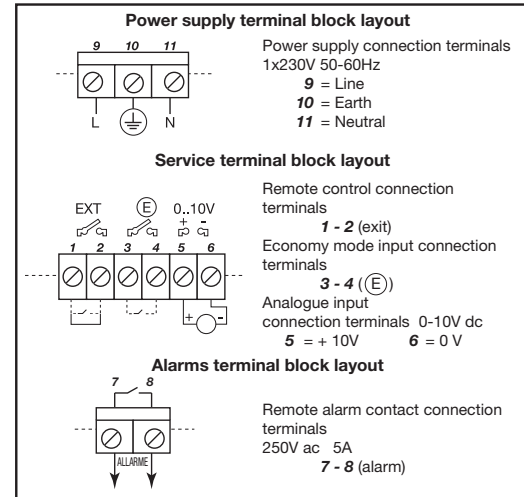
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
280	130	150	18	411	73	338	165	125	110	90	50	240	120	120	120	M14	452	226	226	250	436

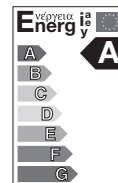
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE				
				P1 MAX W	In A					
DPH-E 120/280-50	230 V	280	DN 50 - PN 10	893	4,84	t° mt.	75° 2	90° 5	110° -	120° 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.

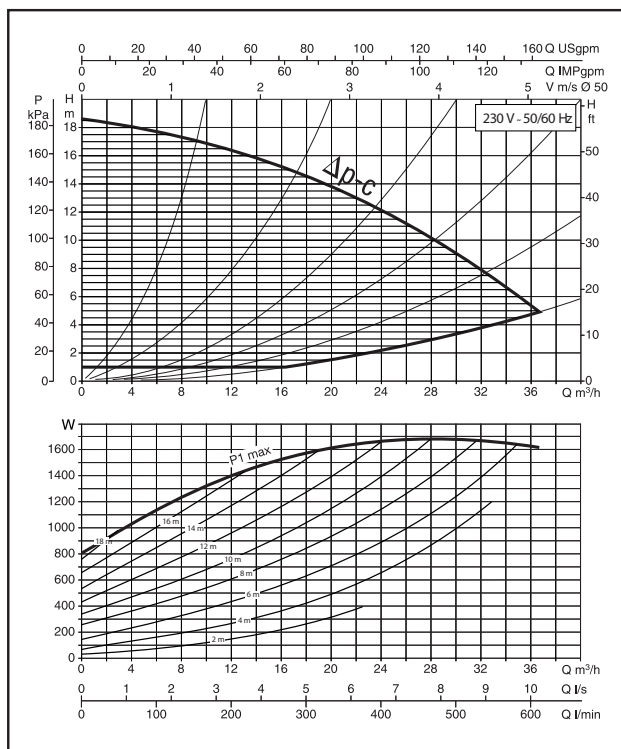
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

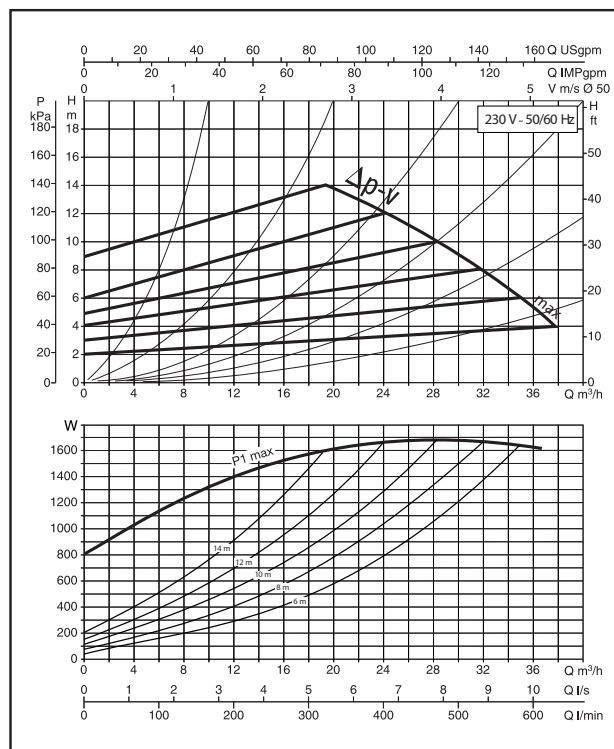


BPH-E 180/280.50 M

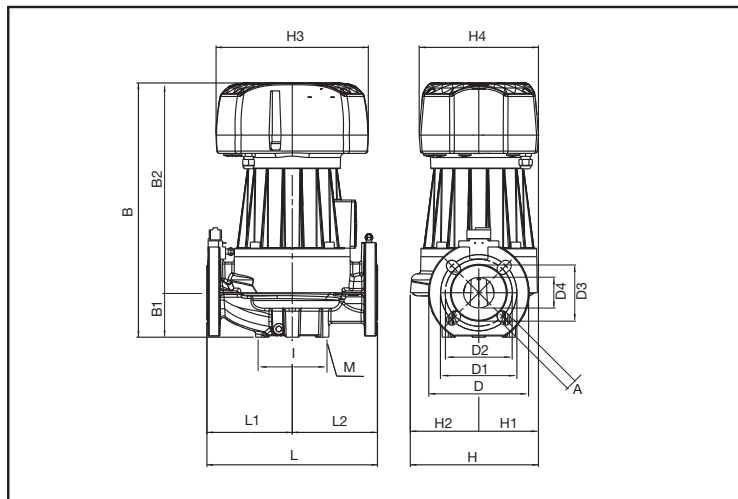
Characteristic curves Δp -c (constant)



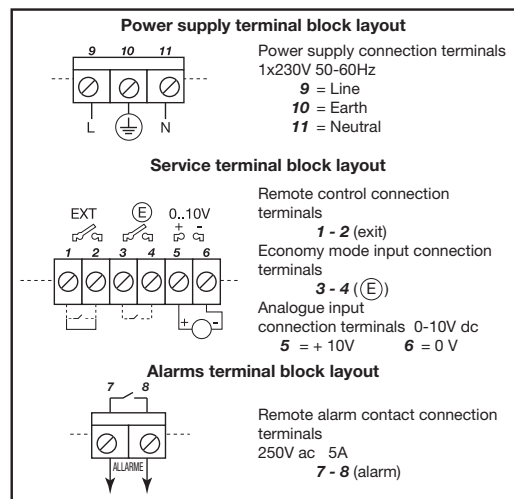
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
280	140	140	18	467	73	394	165	125	110	90	50	100	-	-	-	M10	210	96	114	250	196

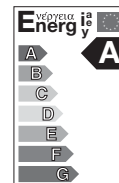
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE				
				P1 MAX W	I _n A					
BPH-E 180/280-50	230 V	280	DN 50 - PN 10	1693	9,2	t° mt.	75° 2	90° 5	110° -	120° 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.

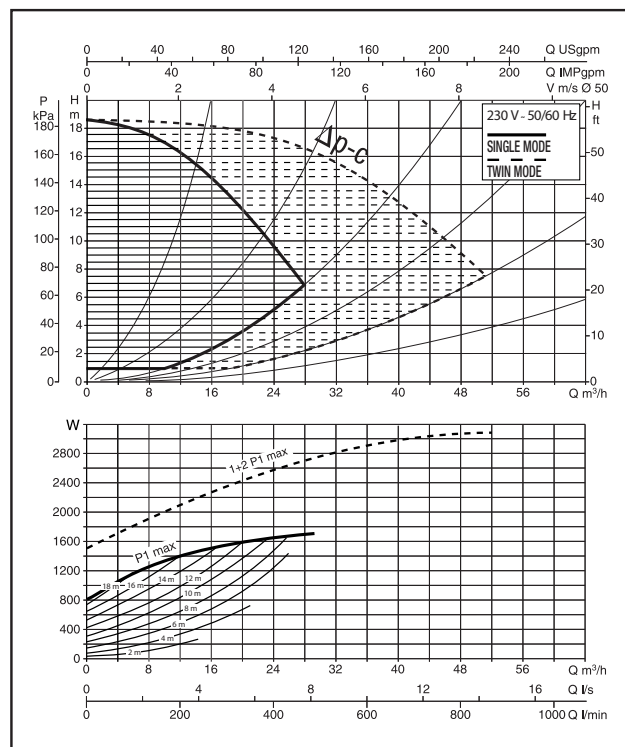
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

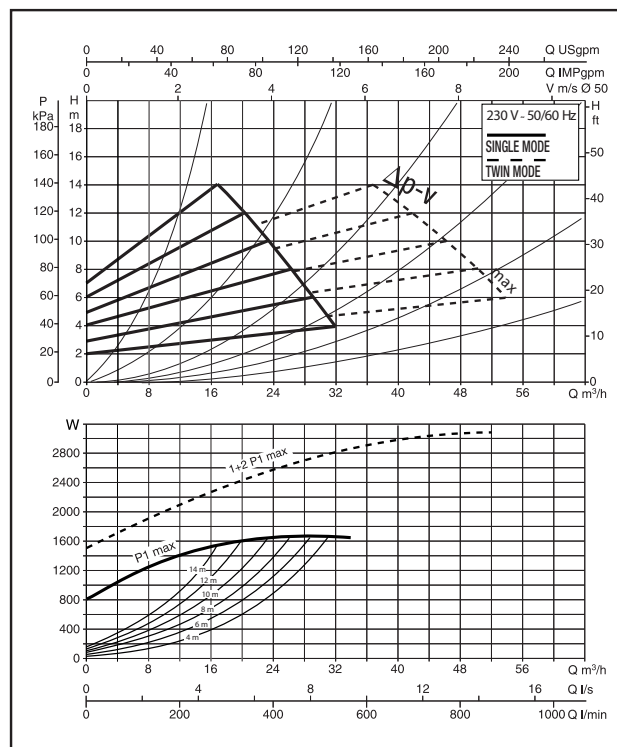


DPH-E 180/280.50 M

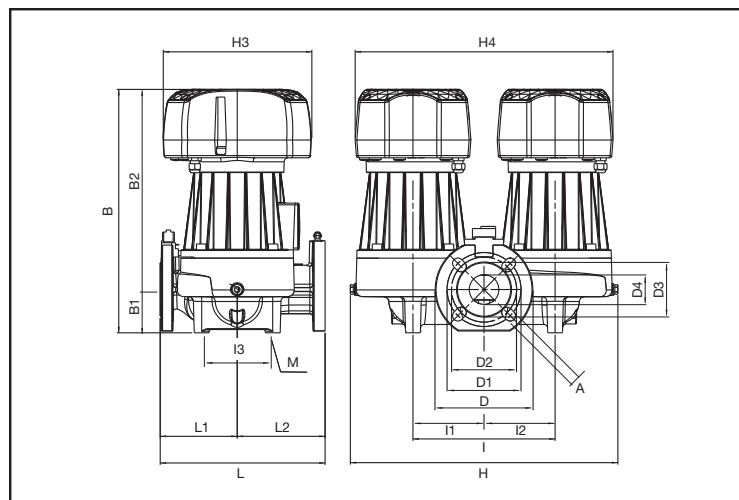
Characteristic curves Δp -c (constant)



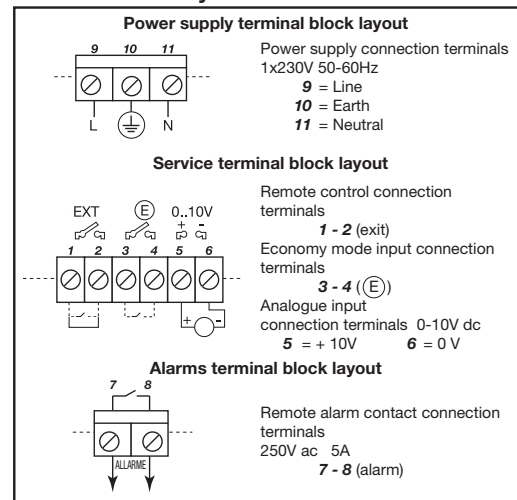
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
280	130	150	18	461	73	388	165	125	110	90	50	240	120	120	120	M14	452	226	226	250	436

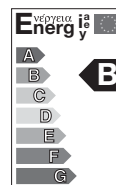
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE				
				P1 MAX W	I _n A					
DPH-E 180/280-50	230 V	280	DN 50 - PN 10	1693	9,2	t°	75°	90°	110°	120°
						mt.	2	5	-	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.

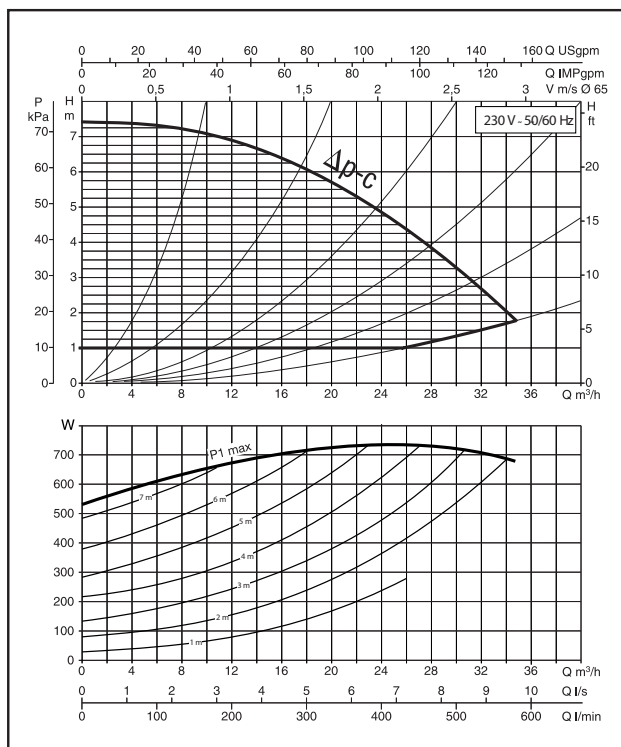
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

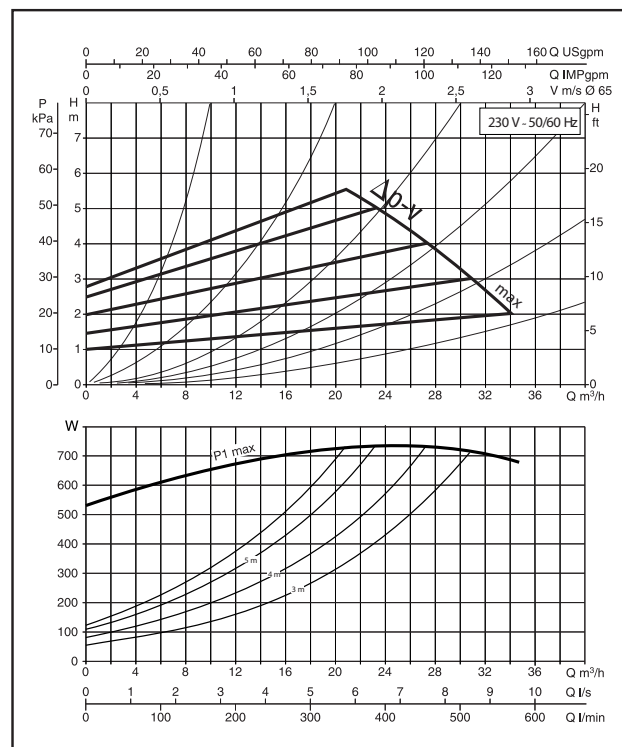


BPH-E 60/340.65 M

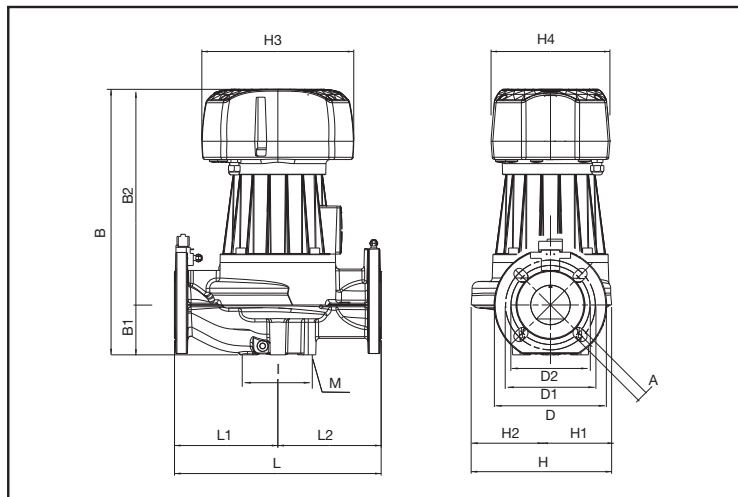
Characteristic curves Δp -c (constant)



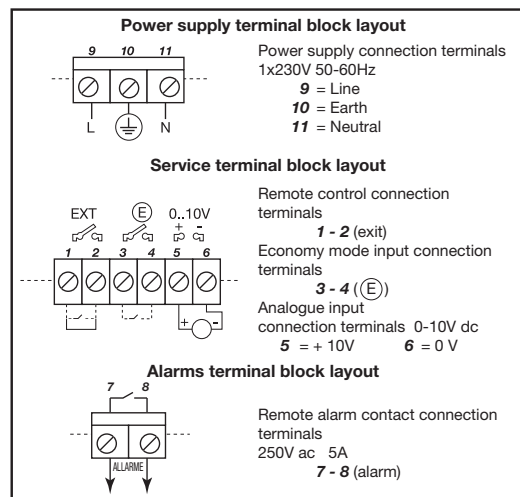
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
340	170	170	18	437	82	355	185	145	130	110	65	100	-	-	-	M12	231	100	131	250	196

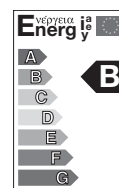
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE				
				P1 MAX W	In A					
BPH-E 60/340-65	230 V	340	DN 65 - PN 10	744	4,1	t° mt.	75° 1	90° 4	110° -	120° 18

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.

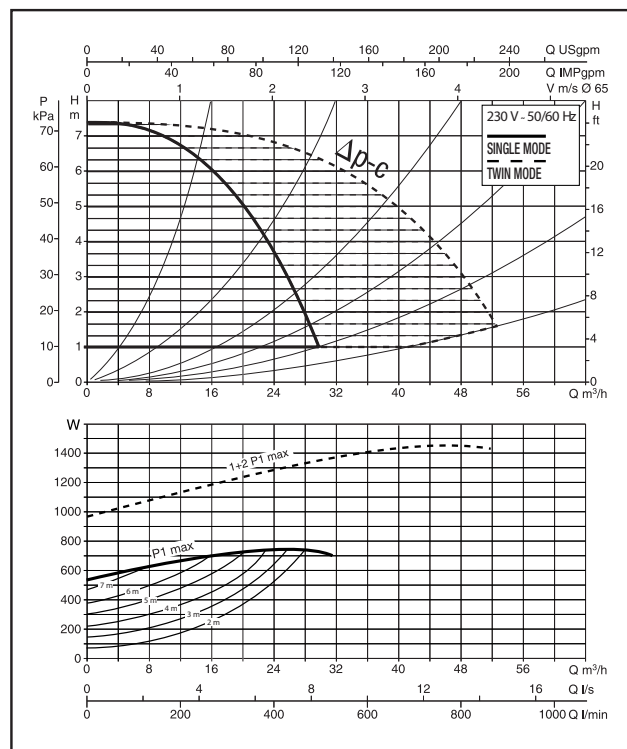
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

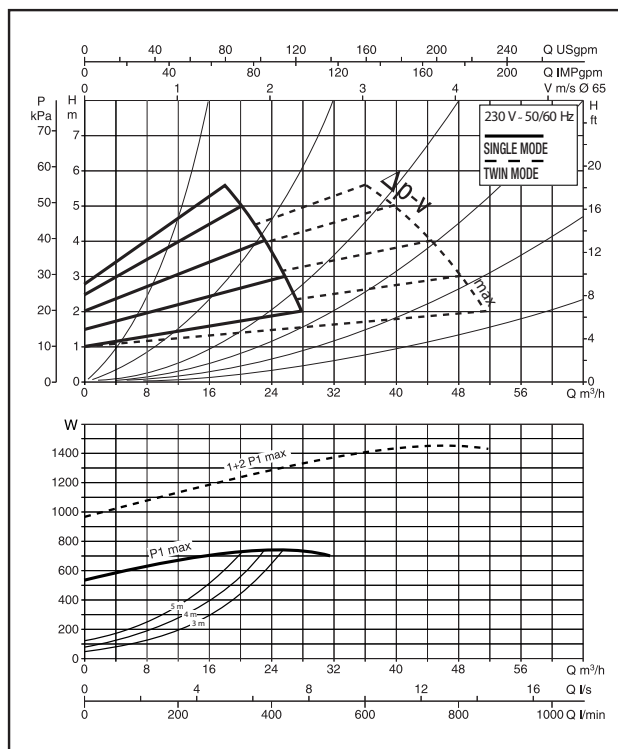


DPH-E 60/340.65 M

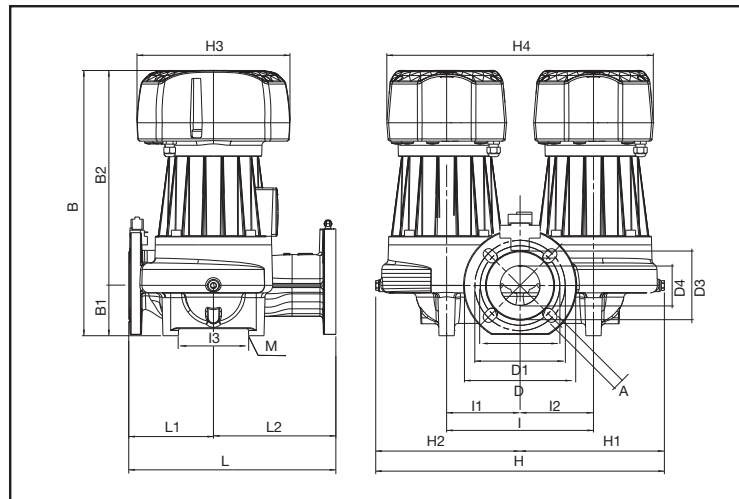
Characteristic curves Δp -c (constant)



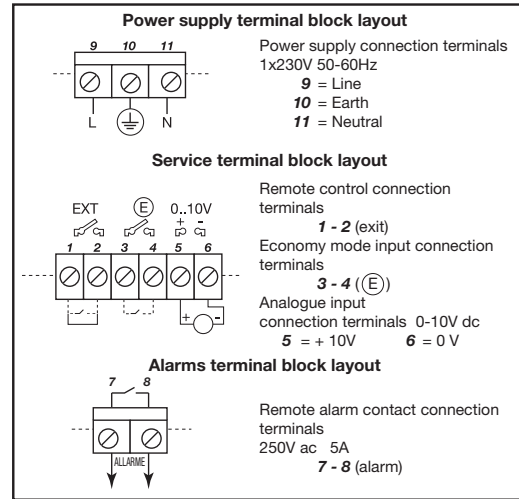
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
340	138,5	201,5	18	433	82	351	185	145	130	110	65	240	120	120	140	M14	472	236	236	250	436

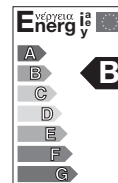
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTROFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE
				P1 MAX W	I _n A	
DPH-E 60/340-65	230 V	340	DN 65 - PN 10	744	4,1	t° 75° 90° 110° 120° mt. 1 4 - 18

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.

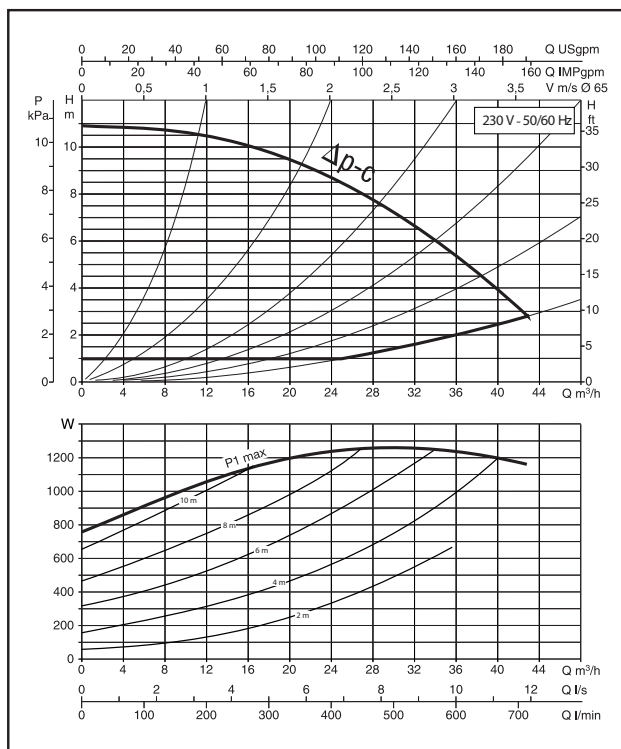
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

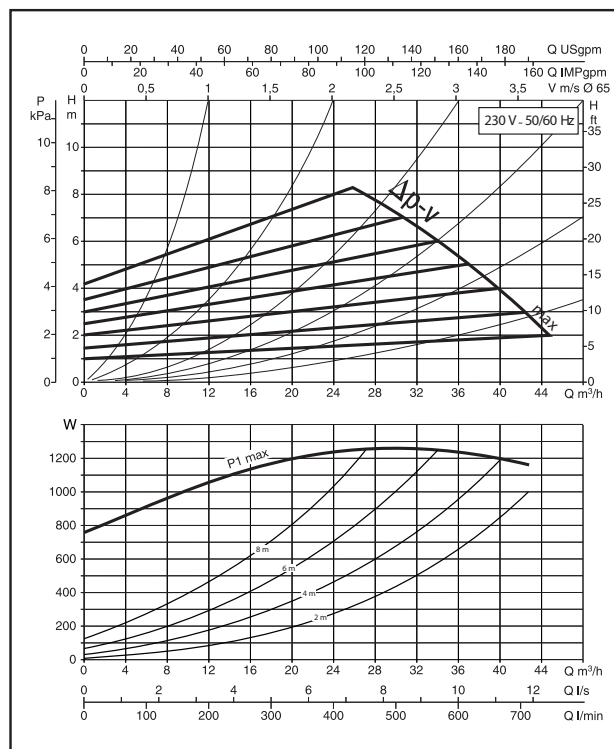


BPH-E 120/340.65 M

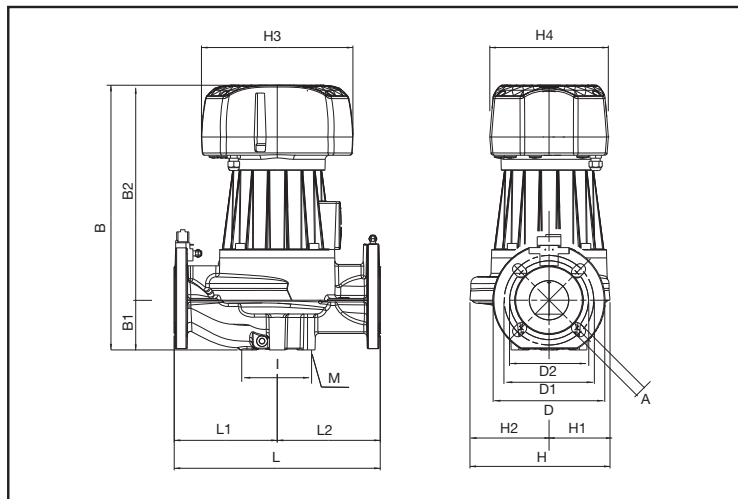
Characteristic curves Δp -c (constant)



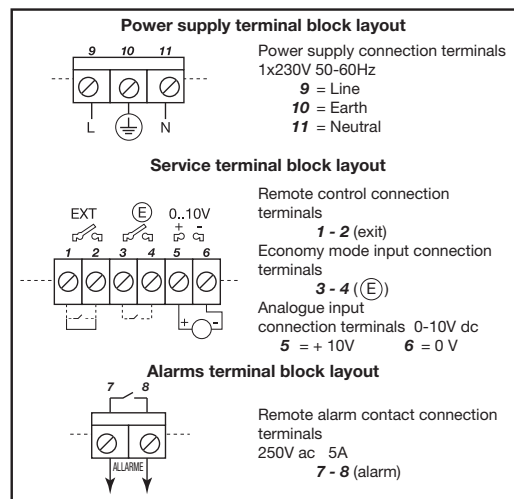
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
340	170	170	18	487	82	405	185	145	130	110	65	100	-	-	-	M12	231	100	131	250	196

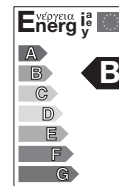
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE
				P1 MAX W	I _n A	
BPH-E 120/340-65	230 V	340	DN 65 - PN 10	1262	6,72	t° 75° 90° 110° 120° mt. 7 11 18 -

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.

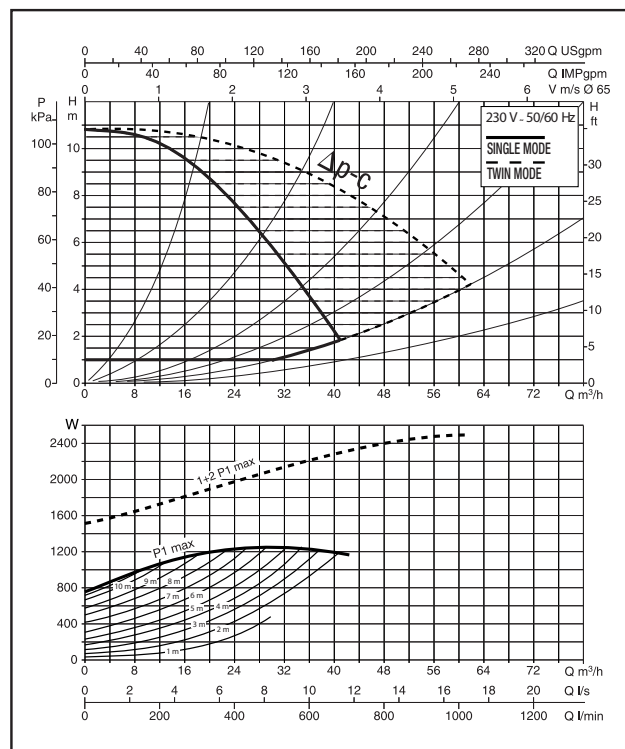
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

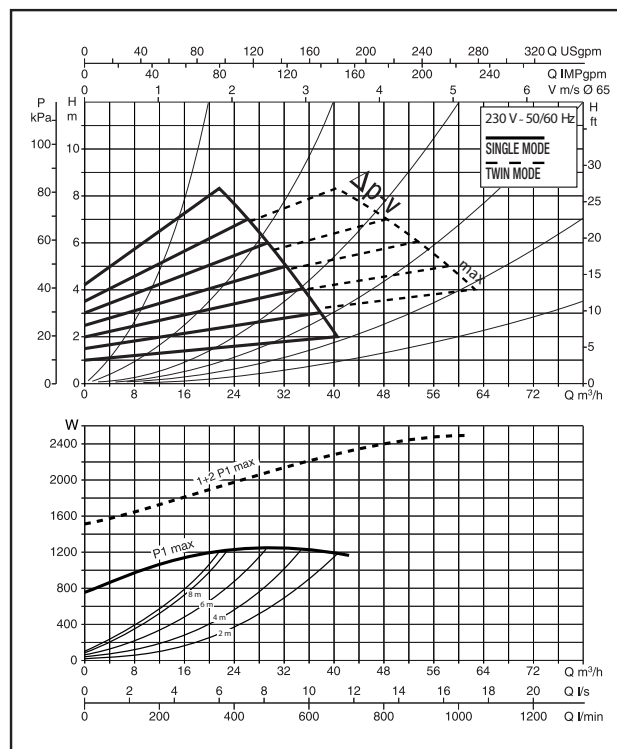


DPH-E 120/340.65 M

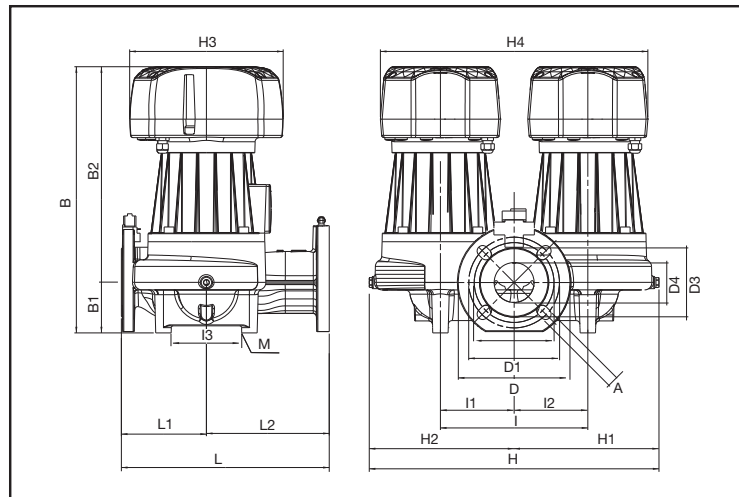
Characteristic curves Δp -c (constant)



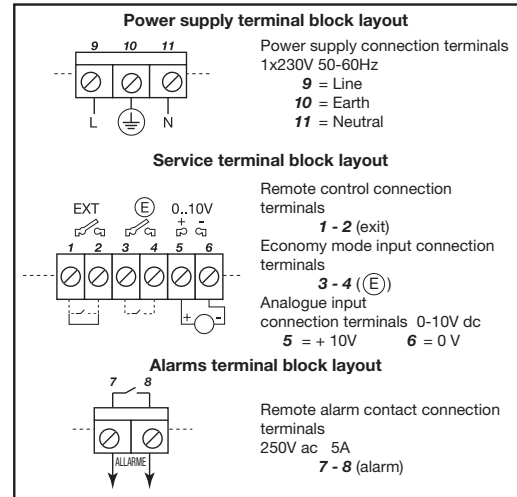
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
340	138,5	201,5	18	483	82	220	185	145	130	110	65	240	120	120	140	M14	472	236	236	250	436

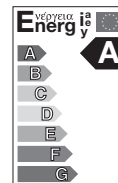
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE
				P1 MAX W	I _n A	
DPH-E 120/340-65	230 V	340	DN 65 - PN 10	1262	6,72	t° 75° 90° 110° 120° mt. 7 11 18 -

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.

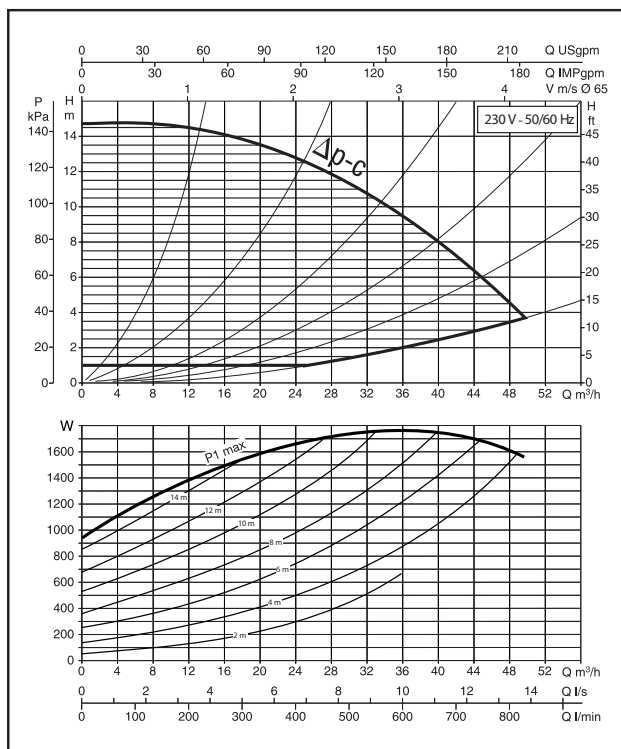
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

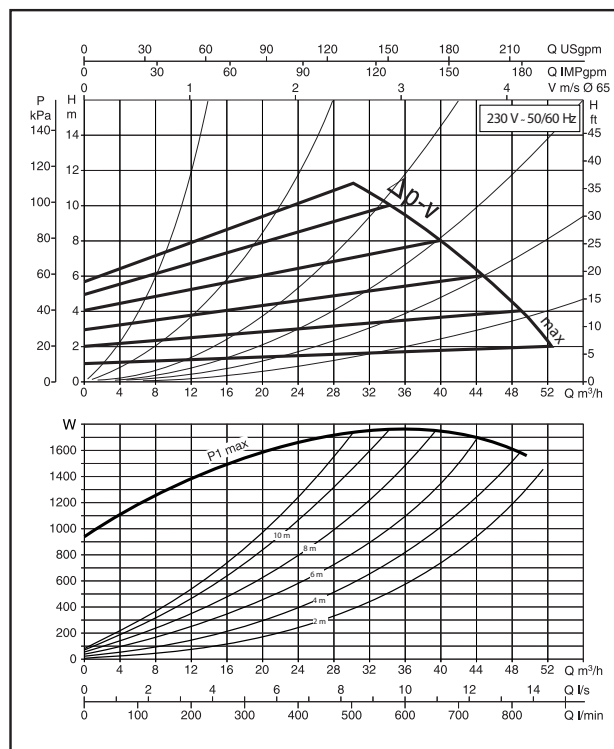


BPH-E 150/340.65 M

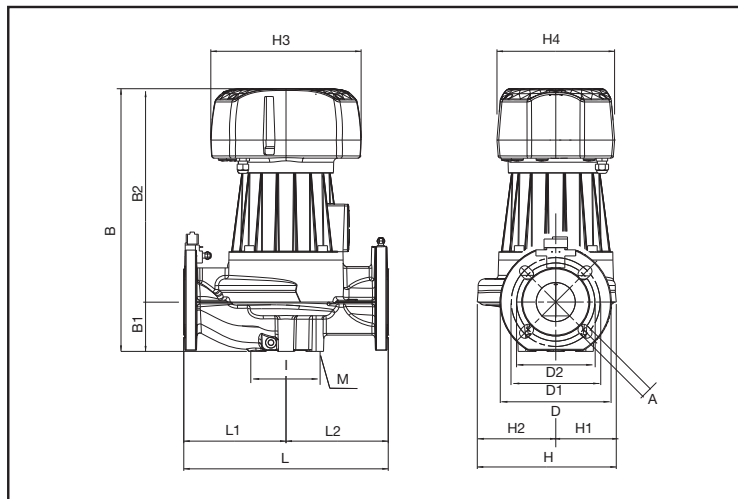
Characteristic curves Δp -c (constant)



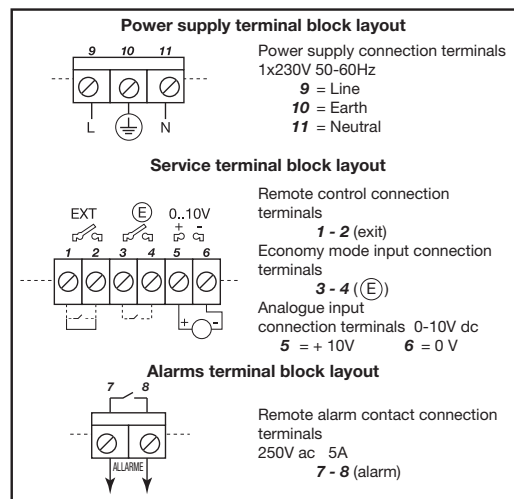
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
340	170	170	18	487	82	405	185	145	130	110	65	100	-	-	-	M12	231	100	131	250	196

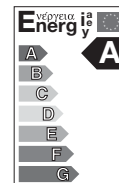
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE				
				P1 MAX W	I _n A	t° mt.	75° 7	90° 11	110° 18	120° -
BPH-E 150/340-65	230 V	340	DN 65 - PN 10	1767	9,2					

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.

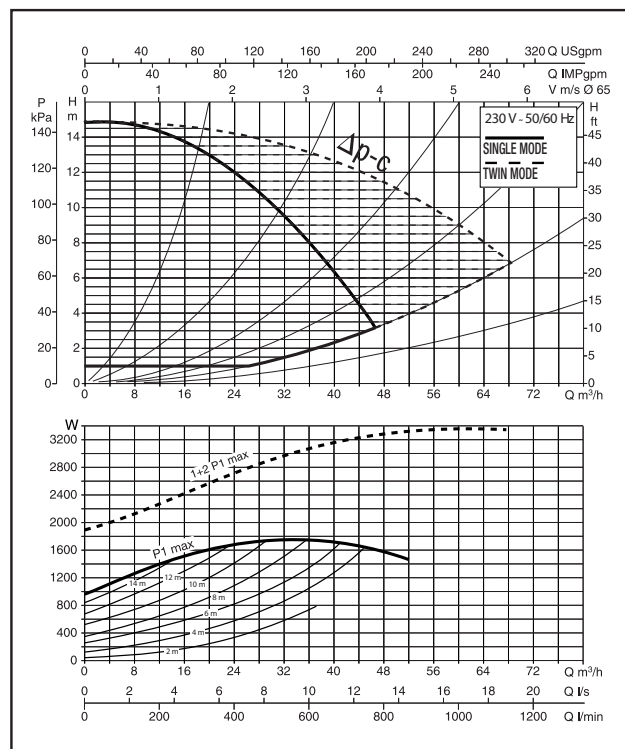
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

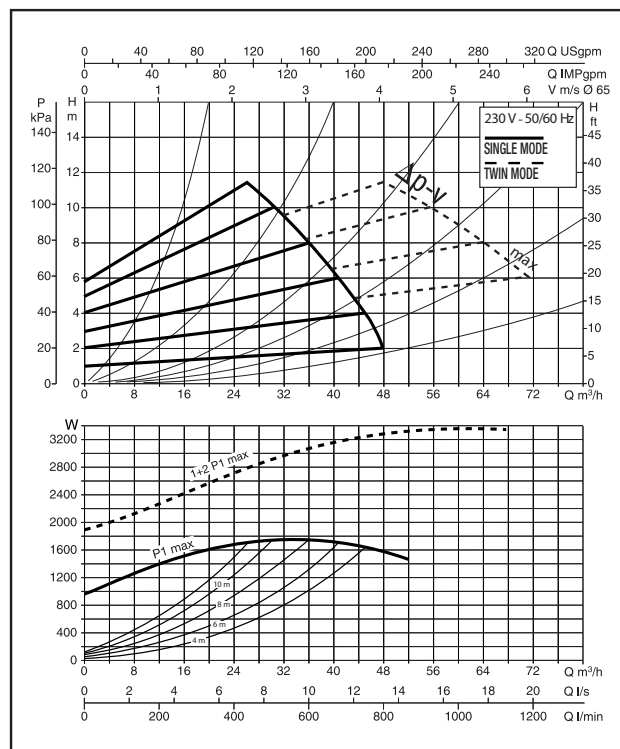


DPH-E 150/340.65 M

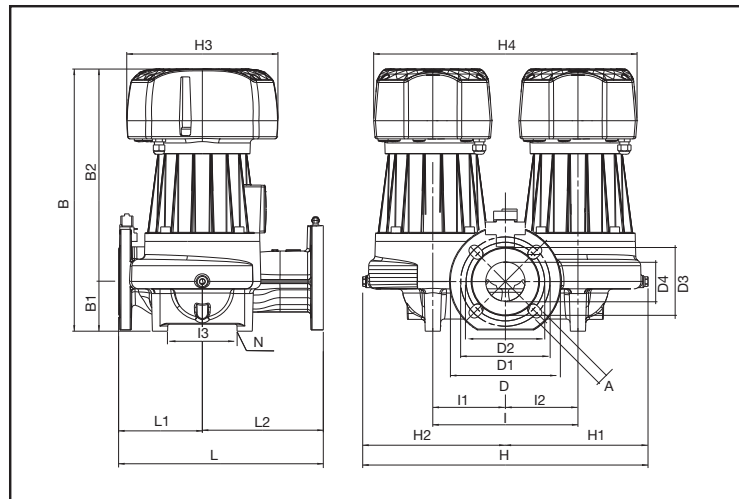
Characteristic curves Δp -c (constant)



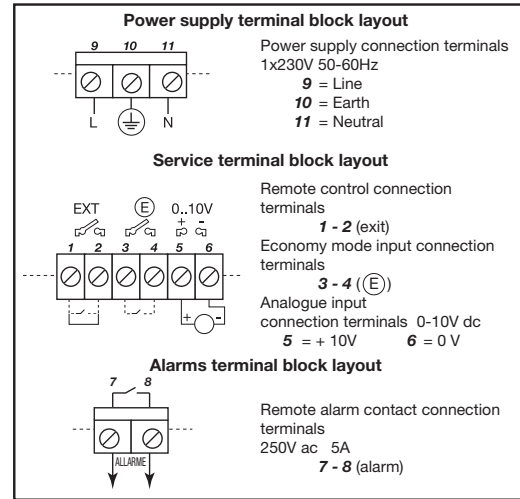
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
340	138,5	201,5	18	483	82	220	185	145	130	110	65	240	120	120	140	M14	472	236	236	250	436

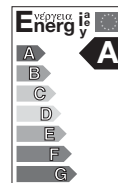
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE
				P1 MAX W	I _n A	
DPH-E 150/340-65	230 V	340	DN 65 - PN 10	1767	9,2	t° 75° 90° 110° 120° mt. 7 11 18 -

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.

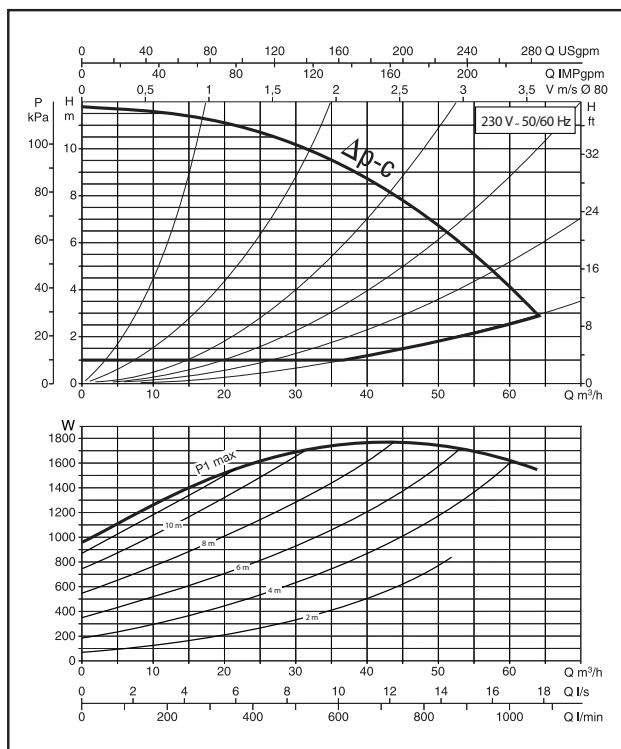
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)

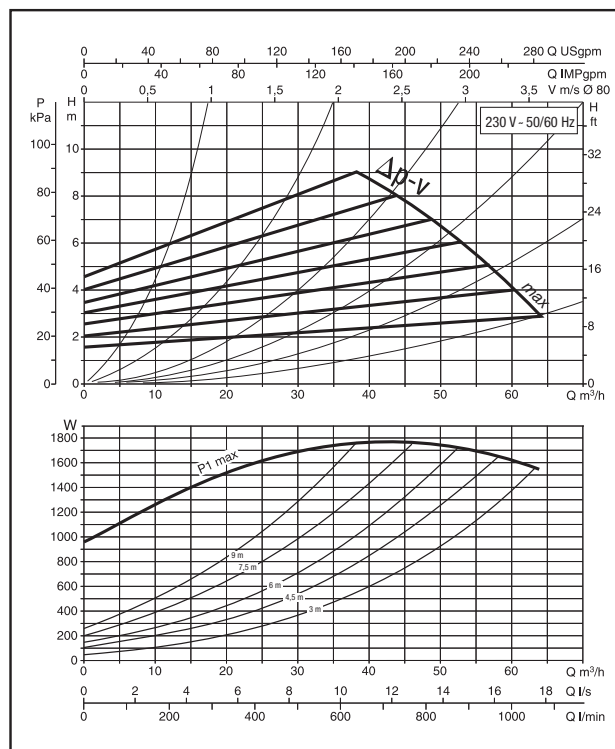


BPH-E 120/360.80 M

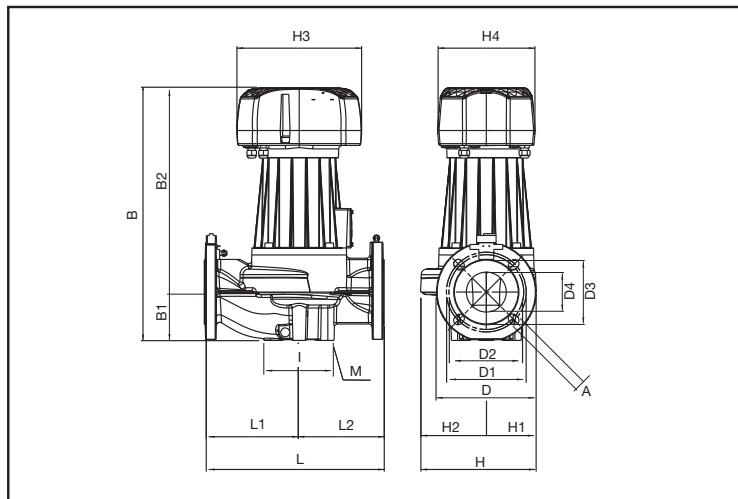
Characteristic curves Δp -c (constant)



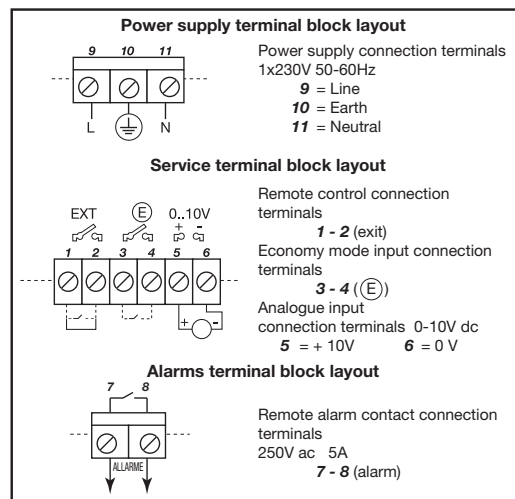
Characteristic curves Δp -v (variable)



Dimensions



Terminals block layout



DIMENSIONS

L	L1	L2	A	B	B1	B2	D	D1	D2	D3	D4	I	I1	I2	I3	M	H	H1	H2	H3	H4
360	190	170	18	506	97	409	200	160	150	130	80	115	-	-	-	M12	232	100	132	250	196

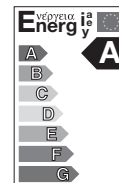
ELECTRICAL DATA

MODEL	VOLTAGE 50/60 Hz	CENTRE DISTANCE mm	CONTOFLANGES ON REQUEST	ELECTRICAL DATA		MINIMUM HEAD PRESSURE				
				P1 MAX W	I _n A	t° mt.	75° 6	90° 10	110° -	120° 22
BPH-E 120/360-80	230 V	360	DN 80 - PN 10	1789	9,23					

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.

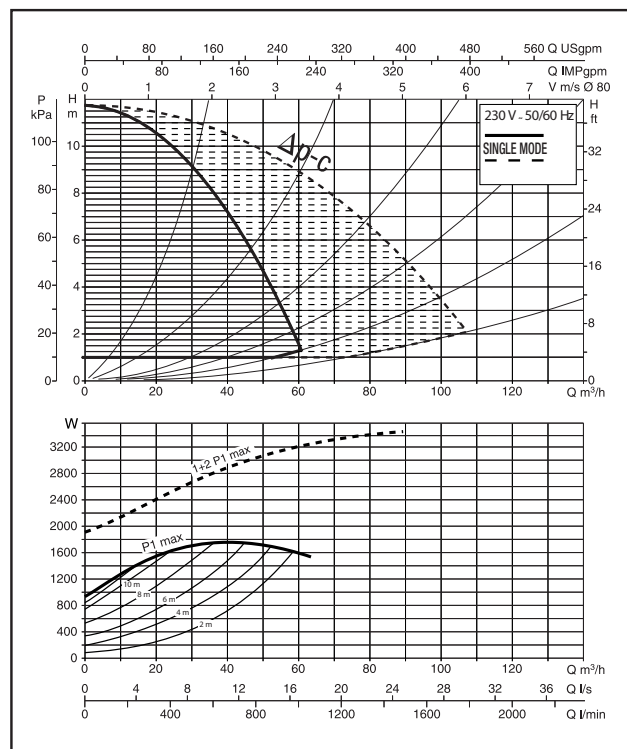
CIRCULATORS FOR HEATING AND AIR-CONDITIONING SYSTEMS

Liquid temperature range: from -10°C to +120°C
Maximum operating pressure: 10 bar (1000 kPa)



DPH-E 120/360.80 M

Characteristic curves Δp -c (constant)



ACCESSORIES UNIONS KIT AND COUNTERFLANGES KIT

MODEL	UNIONS KIT									MODEL	COUNTERFLANGES KIT							
	3/4" F	1" F	1" 1/4 F	1" 1/4 M	1/2" F BRASS	3/4" F BRASS	1" F BRASS	COPPER TO BE WELDED F 22	COPPER TO BE WELDED F 28		DIAM 1" 1/2 PN 10	DIAM 2" PN 10	DIAM 2" 1/2 PN 10	DN 32 PN 6	DN 40 PN 10	DN 80 PN 10	DN 100 PN 6	
VA 25/130	●	●		●						VD 55/220.32				●				
VA 25/180	●	●		●						VD 65/220.32				●				
VA 25/180X			●							B 50/250.40					●			
VA 35/130	●	●		●						B 56/250.40					●			
VA 35/180	●	●		●						B 80/250.40					●			
VA 35/180X			●							B 110/250.40								
VA 55/130	●	●		●						D 50/250.40					●			
VA 55/180	●	●		●						D 56/250.40					●			
VA 55/180X			●							D 80/250.40					●			
VA 65/130	●	●		●						D 110/250.40								
VA 65/180	●	●		●						BMH 30/250.40	●							
VA 65/180X			●							BPH 60/250.40	●							
VB 35/120										BPH 120/250.40	●							
VB 55/120										BMH 30/280.50		●						
VB 65/120										BMH 60/280.50		●						
VD 55/220.32										BPH 60/280.50		●						
VD 65/220.32										BPH 120/280.50		●						
VEA 35/130	●	●		●						BPH 150/280.50		●						
VEA 35/180	●	●		●						BPH 180/280.50		●						
VEA 35/180X			●							BMH 30/340.65			●					
VEA 55/130	●	●		●						BMH 60/340.65			●					
VEA 55/180	●	●		●						BPH 60/340.65			●					
VEA 55/180X			●							BPH 120/340.65			●					
VEA 65/130	●	●		●						BPH 150/340.65			●					
VEA 65/180	●	●		●						BPH 180/340.65			●					
VEA 65/180X			●							BMH 30/360.80						●		
VEA 40/190 XM			●							BMH 60/360.80						●		
VEA 80/180 XM			●							BPH 120/360.80						●		
VS 8/150					●	●	●	●	●	BPH 150/360.80						●		
VS 16/150					●	●	●	●	●	BPH 180/360.80						●		
VS 35/150					●	●	●	●	●	DMH 30/250.40	●							
VS 65/150					●	●	●	●	●	DPH 60/250.40	●							
A 50/180		●								DPH 120/250.40	●							
A 50/180X			●							DMH 30/280.50		●						
A 56/180		●								DMH 60/280.50		●						
A 56/180X			●							DPH 60/280.50		●						
A 80/180		●								DPH 120/280.50		●						
A 80/180X			●							DPH 150/280.50		●						
A 110/180		●								DPH 180/280.50		●						
A 110/180X			●							DMH 30/340.65			●					
										DMH 60/340.65			●					
										DPH 60/340.65			●					
										DPH 120/340.65			●					
										DPH 150/340.65			●					
										DPH 180/340.65			●					
										DMH 30/360.80						●		
										DMH 60/360.80						●		
										DPH 120/360.80						●		
										DPH 150/360.80						●		
										DPH 180/360.80						●		
										VEB 110/450.100							●	
										DEB 110/450.100							●	
										BPH-E 60/250.40					●			
										BPH-E 120/250.40					●			
										BPH-E 120/360.80						●		
										DPH-E 60/250.40					●			
										DPH-E 120/250.40					●			
										DPH-E 120/360.80						●		

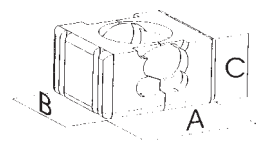
ACCESSORIES

MODEL	OVAL COUNTERFLANGES KIT				
	OVAL DN 20 3/4" F	OVAL DN 25 1" F	OVAL DN 32 1" 1/4 F	OVAL DN 40 1" 1/2 F	OVAL DN 50 2" F
VB 35/120	•	•	•	•	•
VB 55/120	•	•	•	•	•
VB 65/120	•	•	•	•	•

MODEL	COUNTERFLANGES KIT TO BE WELDED			
	DN 40 PN 6	DN 50 PN 6	DN 65 PN 6	DN 80 PN 6
BPH-E 60/250.40	•			
BPH-E120/250.40	•			
BPH-E 60/280.50		•		
BPH-E 120/280.50		•		
BPH-E 180/280.50		•		
BPH-E 60/340.65			•	
BPH-E 120/340.65			•	
BPH-E 150/340.65			•	
BPH-E 120/360.80				•
DPH-E 60/250.40	•			
DPH-E120/250.40	•			
DPH-E 60/280.50		•		
DPH-E 120/280.50		•		
DPH-E 180/280.50		•		
DPH-E 60/340.65			•	
DPH-E 120/340.65			•	
DPH-E 150/340.65			•	
DPH-E 120/360.80				•

MODEL	BLANK COUNTERFLANGES KIT		
	FOR TWIN CIRCULATORS	DN 40 TWIN	DN 50 - DN 65 - DN 80 TWIN
D 50/250.40	•		
D 56/250.40	•		
D 80/250.40	•		
DMH 30/250.40		•	
DPH 60/250.40		•	
DPH 120/250.40		•	
DMH 30/280.50			•
DMH 60/280.50			•
DPH 60/280.50			•
DPH 120/280.50			•
DPH 150/280.50			•
DPH 180/280.50			•
DMH 30/340.65			•
DMH 60/340.65			•
DPH 60/340.65			•
DPH 120/340.65			•
DPH 150/340.65			•
DPH 180/340.65			•
DMH 30/360.80			•
DMH 60/360.80			•
DPH 120/360.80			•
DPH 150/360.80			•
DPH 180/360.80			•

MODEL	PUMP BODY KIT INSULATION FOR BMH - BPH CIRCULATORS (single)				
	TO BE USED FOR CIRCULATORS TYPE	DIMENSIONS			GROSS WEIGHT KG
		A	B	C	
KIT DN 40	BMH - BPH with pump coupling DN 40	260	212	140	0,6
KIT DN 50	BMH - BPH with pump coupling DN 50	256	238	160	0,6
KIT DN 65	BMH - BPH with pump coupling DN 65	300	298	180	1,1
KIT DN 80	BMH - BPH with pump coupling DN 80	300	312	201	1,2

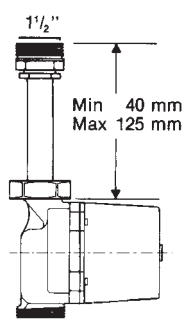


ACCESSORIES

"QUICK SERVICE" ADAPTER KIT

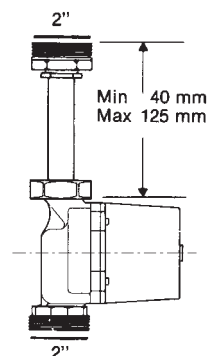
The quick service adapter kit eliminates modifications to the system piping if old circulators are replaced, with bodies or flanged DN 25 and DN 32 unions, with a different centre distance from that of modern circulators. Suitable for use on all modern circulators with threaded mouths.

KIT A



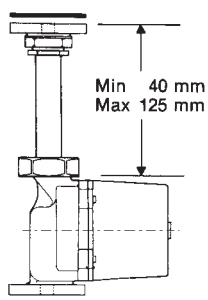
1 1/2" extension

KIT B



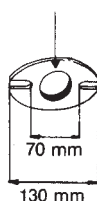
1 1/2" a 2" conversion

KIT C

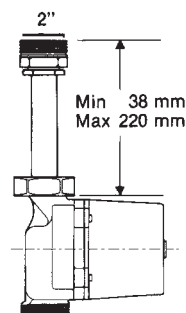


conversion from 1 1/2" body to flanged union
DN 25 - DN 32 with 2" extension

1 1/2" Internal thread



KIT D



2" extension

KIT E



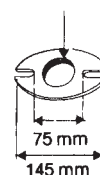
1 1/2" brass adapter



2" brass adapter

KIT AND 2" OVAL COUNTER FLANGE KIT

2" internal thread



2" oval counter flanges DN 40, PN 6 / PN 10
with seals and bolts for conversion from 2" brass
adapter body to 2" union to 2" flanged body DN 40