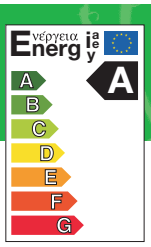
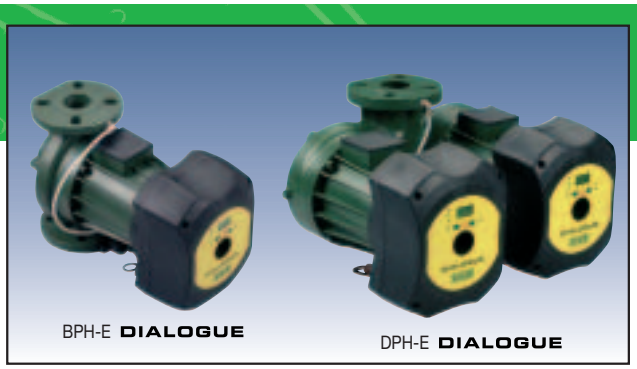
DAB
PUMP PERFORMANCE




# ELECTRONIC CIRCULATORS

## FOR HEATING AND AIR CONDITIONING SYSTEMS




**DIALOGUE** electronic circulation pumps can be used in the heating, ventilation and air conditioning systems of apartment and office blocks such as:

- High-rise apartments
- Houses
- Schools
- Properties
- Apartment blocks
- Clinics and hospitals
- Buildings adapted for offices

All models are available both in the single version as well as in the back-up twin version

The **BPH-E and DPH-E DIALOGUE** circulators incorporate an electronic controller offering adjustment at constant pressure, adjustment at proportional pressure (constant flow, therefore) and constant curve and differential pressure operation according to the temperature of the pumped liquid.The user interface is intuitive and easy to use.

**STRUCTURAL CHARACTERISTICS (Electronic devices)**

For greater efficiency and strength, the **DIALOGUE** circulators are controlled by a IGBT based device with the latest NPT technology. The specific characteristics are as follows:

- sinusoidal PWM modulation
- High carrier frequency to eliminate any audio band noise
- 32 bit dedicated DPS processor
- "space vector" optimized algorithm

Setting has been made user friendly thanks to an intuitive and functional user interface. The simplified backlit display on the control panel, with three simple navigation keys, a pull-down menu in line with the latest mobile phone trends, and a wide range of functions make the BPH-E **DIALOGUE** circulator a revolutionary product.

A reliable a sturdy construction combined to the modern and innovative design completes the product even from an aesthetical point of view.

**STRUCTURAL CHARACTERISTICS**

Enbloc circulation pump made up of cast iron hydraulic parts and an electric asynchronous motor with wet rotor. Aluminium motor casing. High performance volute pump casing thanks to the detailed design and smooth internal surfaces. In-line suction and delivery ports, flanged with threaded connectors for the introduction of the temperature and pressure sockets. Technopolymer rotor, hardened stainless steel motor shaft mounted on graphite bushings that are lubricated by the pumped liquid. Stainless steel rotor and stator liner. Ceramic thrust washer, ethylene propylene grommet and brass air vent cap. Two pole asynchronous motor.

An automatic type clapet valve is foreseen on the back-up twin version that is incorporated into the delivery port to prevent the circulation of water when the unit is idle. Furthermore, a blank flange is also supplied if one of the two motors requires maintenance. The standard PN10 production of the pump casing is compatible with PN6 counterflanges for the interchangeability of the pump on existing systems. The DN 80 PN 16 version (eight holes) can be supplied on request.

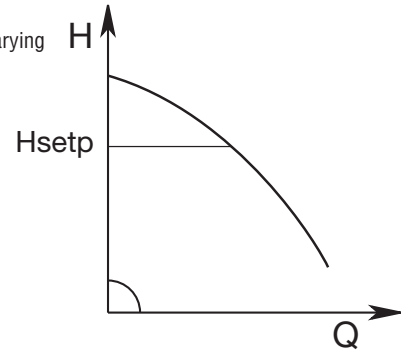
Circulator protection class: IP 44 Insulation class: H
Standard voltage: 230V, 50/60 Hz single-phase
The product complies with the EN61800-3 -EN 60335-1 - EN60335-2-51 European standards
**Operating range:** from 11,8 to 72 m3/h with head up to 18 metres;
**Liquid temperature range:** from –10 °C to +120 °C
**Liquid quality requirements:** clean, free from solids, not viscous, not aggressive and close to the characteristics of water. (glicole max 30%).
**Maximum operating pressure:** 10 bar (1000 kPa)
**Flanging:** DN 40, DN 50, DN 65, PN 10 (4 holes), DN 80 in PN 6 / 10 (4 holes)
**Minimum head pressure:** see tables.
**Special versions on request:** Flanging - DN 80 in PN 10 / PN 16 (8 holes)

## ELECTRICAL DATA

| MODEL | | VOLTAGE 50/60 Hz | CENTRE DISTANCE mm | UNIONS ON REQUEST | ELECTRICAL DATA | | MINIMUM HEAD PRESSURE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Single | Twin | | | | P1 MAX W | In A | | | | | |
| **BPH-E 60/250-40** | **DPH-E 60/250-40** | 230 V | 250 | DN 40 - PN 10 | 344 | 2 | t° | 75° | 90° | 110° | 120° |
| | | | | | | | m.t. | 1,6 | 4 | - | 19 |
| **BPH-E 120/250-40** | **DPH-E 120/250-40** | 230 V | 250 | DN 40 - PN 10 | 528 | 3 | t° | 75° | 90° | 110° | 120° |
| | | | | | | | m.t. | 6 | 9 | - | 23 |
| **BPH-E 60/280-50** | **DPH-E 60/280-50** | 230 V | 280 | DN 50 - PN 10 | 606 | 3,37 | t° | 75° | 90° | 110° | 120° |
| | | | | | | | m.t. | 4 | 7,5 | - | 21 |
| **BPH-E 120/280-50** | **DPH-E 120/280-50** | 230 V | 280 | DN 50 - PN 10 | 893 | 4,84 | t° | 75° | 90° | 110° | 120° |
| | | | | | | | m.t. | 2 | 5 | - | 20 |
| **BPH-E 180/280-50** | **DPH-E 180/280-50** | 230 V | 280 | DN 50 - PN 10 | 1693 | 9,2 | t° | 75° | 90° | 110° | 120° |
| | | | | | | | m.t. | 2 | 5 | - | 20 |
| **BPH-E 60/340-65** | **DPH-E 60/340-65** | 230 V | 340 | DN 65 - PN 10 | 744 | 4,1 | t° | 75° | 90° | 110° | 120° |
| | | | | | | | m.t. | 1 | 4 | - | 18 |
| **BPH-E 120/340-65** | **DPH-E 120/340-65** | 230 V | 340 | DN 65 - PN 10 | 1262 | 6,72 | t° | 75° | 90° | 110° | 120° |
| | | | | | | | m.t. | 7 | 11 | 18 | - |
| **BPH-E 150/340-65** | **DPH-E 150/340-65** | 230 V | 340 | DN 65 - PN 10 | 1767 | 9,2 | t° | 75° | 90° | 110° | 120° |
| | | | | | | | m.t. | 7 | 11 | 18 | - |
| **BPH-E 120/360-80** | **DPH-E 120/360-80** | 230 V | 360 | DN 80 - PN 10 | 1789 | 9,23 | t° | 75° | 90° | 110° | 120° |
| | | | | | | | m.t. | 6 | 10 | - | 22 |

## OPERATING MODES

**1 - Constant differential pressure regulation mode ΔP-c**
The ΔP-c regulation mode maintains the system's differential pressure constant at the set value Hsetp based on the varying flow rate.




This regulation is particularly suitable for the following systems:

**a. Dual pipe heating systems with thermostatic valves and:**
- head less than 2 meters;
- natural circulation;
- low head loss in the parts of the system where the total quantity of water flows;
- high differential temperature (central heating).

**b. Floor heating systems with thermostatic valves**
**c. Single pipe heating systems with thermostatic valves and adjustment valves**
**d. Systems with primary circuit pumps with low head loss**

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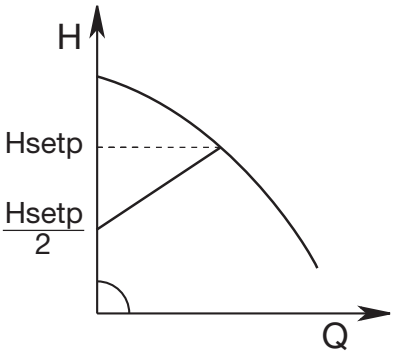
**2 - Proportional differential pressure regulation mode ΔP-v**
The ΔP-v regulation mode, based on the changing flow rate, linearly varies the delivery value of the head from Hsetp to Hsetp/2.




This regulation is particularly suitable for the following systems:

**a. Dual pipe heating systems with thermostatic valves and:**
- head over 4 meters;
- exceptionally long piping;
- valves with a wide operating range;
- differential pressure regulator;
- high head loss in the parts of the system where the total quantity of water flows;
- low differential temperature

**b. Floor heating systems and systems with thermostatic valves and high head loss in the boiler circuit.**
**c. Systems with primary circuit pumps with high head loss.**

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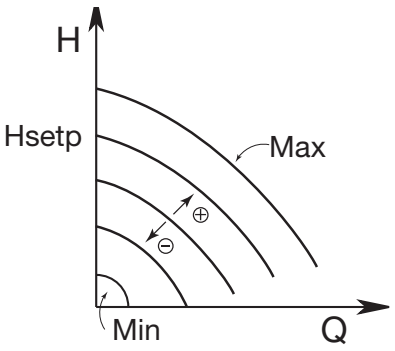
**3 - Constant curve regulation mode**

The regulation at constant speed deactivates the regulation of the electronic module.
The speed of the pump can be manually regulated at a constant value through the control panel, remote control or by a 0-10V signal where:

V<= 3 Volt the rotation speed is 846 rpm (min speed)
V = 10 Volt the rotation speed is 2820 rpm (max speed)
For V between 3 and 10 Volt linear interpolation of the speed.

This type of regulation is particularly suitable for circulators in already existing systems.

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**4 - Proportional and constant differential pressure regulation mode based on the water temperature**

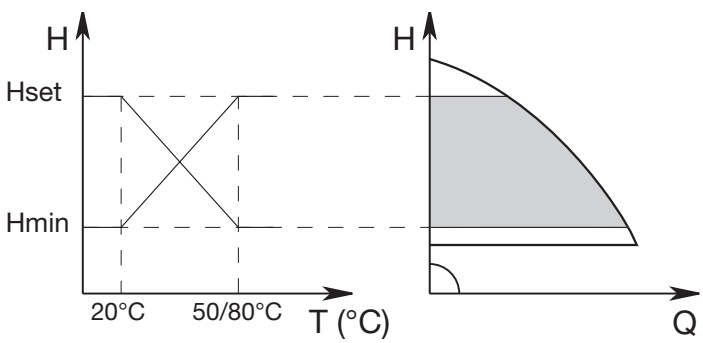
The Setpoint related to the head of the circulator is reduced and increased base on the water temperature.

The temperature of the liquid can be set at 80°C or 50°C.

This type of regulation is particularly suitable for the following systems:

**a. in systems with a variable flow rate (dual pipe heating systems), where a further reduction of the circulator's performance is ensured due to the drop in temperature of the circulating liquid when less heating is required.**
**b. in systems with a constant flow rate (single pipe and floor heating systems), where the performance of the circulator can be regulated only when the temperature change function is activated.**

**This is set by means of the control unit on the lid of the DIALOGUE device.**

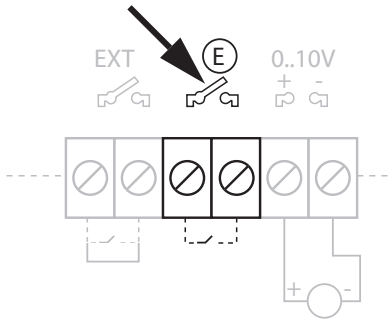


## ECONOMY MODE

The economy mode can be set directly from the control panel by setting the reduction value (f.rid) that can have a maximum value of 50%.

The following values are replaced in all the previously listed settings:

Hset
to a value of
Hset x f.rid




## ALARMS MANAGEMENT

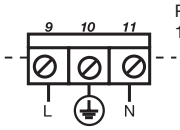
The **DIALOGUE** device can remotely reactivate the alarms that have occurred in the pump itself through a clean contact (250Vac – 5 Amp). These alarms are also memorised in the resident memory for subsequent consultation. The alarms archive can also be cancelled to perform dedicated tests.

## ALARMS DISPLAY

| Symbol | Alarm Type | Symbol | Alarm Type |
|---|---|---|---|
| | E01 “Pump blocked” | | W01 “No sensor signal” |
| | E02 “Internal error V18” | | W02 “No back-up twin communication” |
| min | E03 “Low mains voltage” (LP) | max | W03 “Overheating of electronic parts” |
| max | E04 “High mains voltage” (HP) | | W04 “Cooling system failure” |
| max | E06 “Critical overheating of electronic parts” | | |

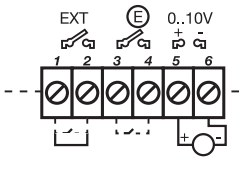
## TERMINAL BLOCK LAYOUT

**Power supply terminal block layout**



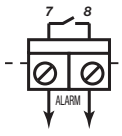

Power supply connection terminals
1x230V 50-60Hz
***9*** = Live
***10*** = Earth
***11*** = Neutral

**Service terminal block layout**




Remote control connection terminals
***1 - 2*** (exit)
Economy mode input connection terminals
***3 - 4*** (Ⓔ)
Analogue input connection terminals 0-10V dc
***5*** = + 10V ***6*** = 0 V

**Alarms terminal block layout**

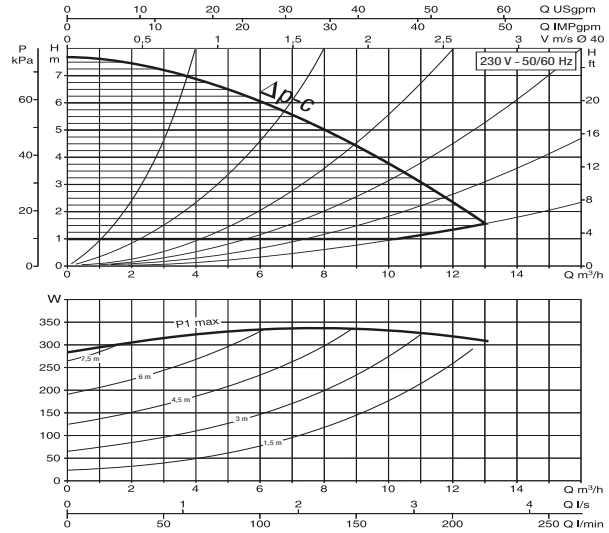



Remote alarm contact connection terminals
250V ac 5A
***7 - 8*** (alarm)

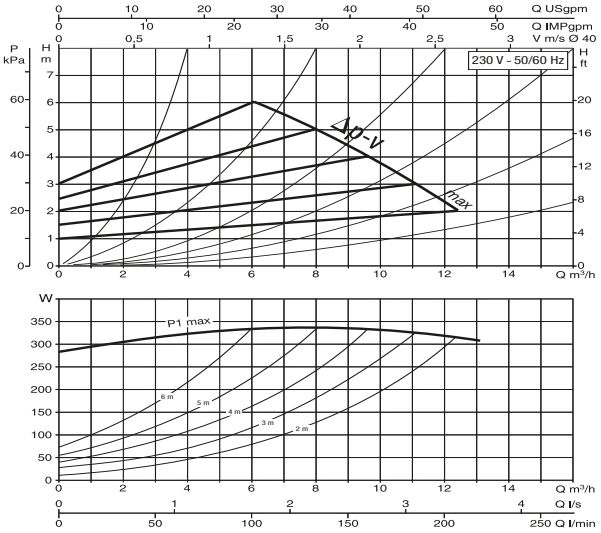
# HYDRAULIC DATA

## BPH-E 60/250.40 M

### Δp-c (constant)

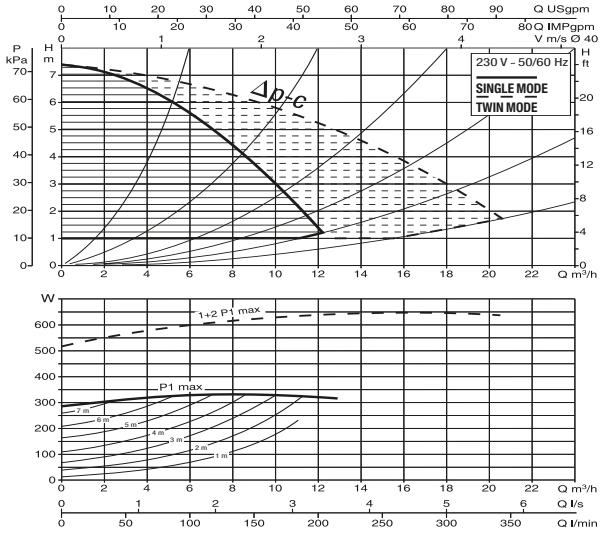



### Δp-v (variable)

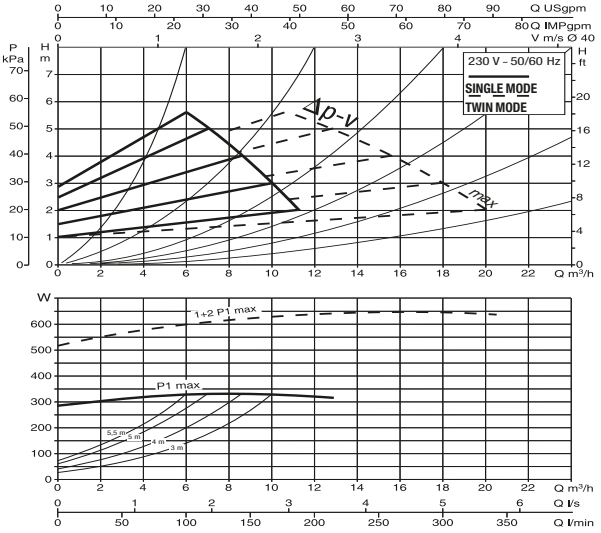



## DPH-E 60/250.40 M

### Δp-c (constant)

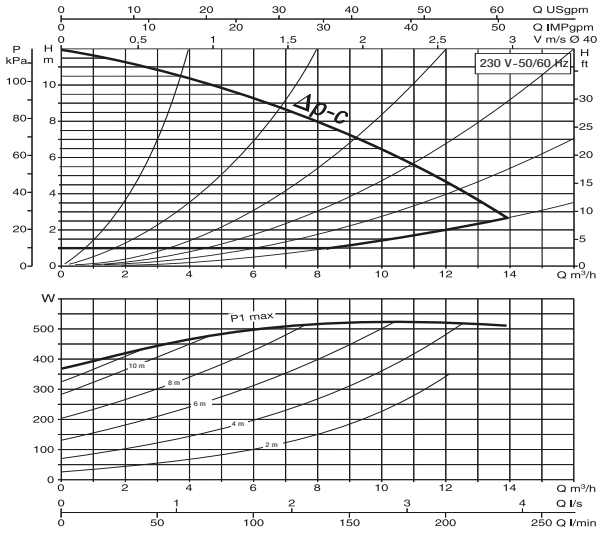



### Δp-v (variable)

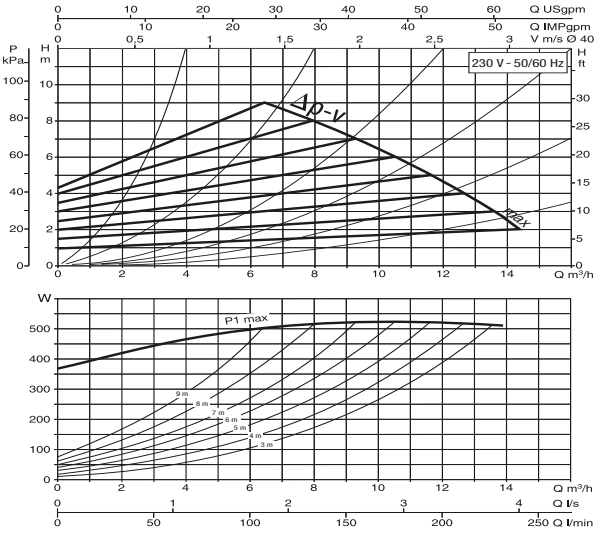



## BPH-E 120/250.40 M

### Δp-c (constant)




### Δp-v (variable)

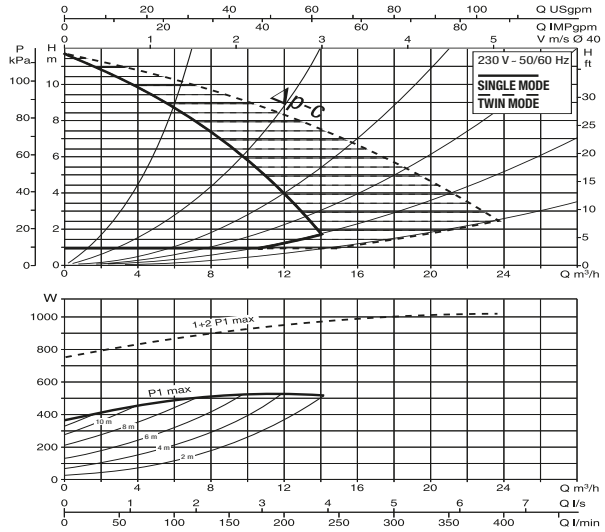



* From july 2007

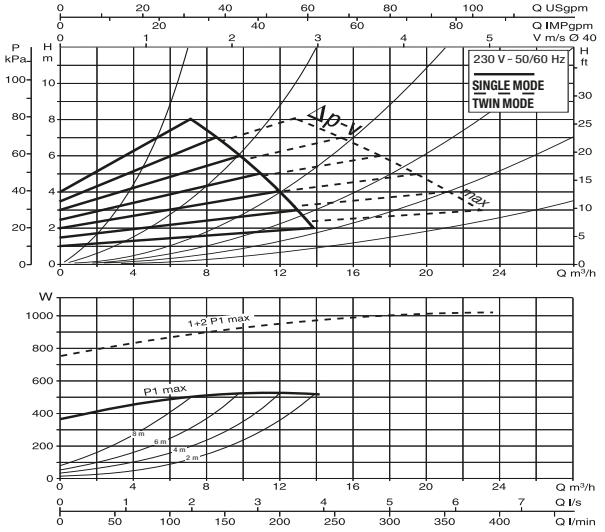
# HYDRAULIC DATA

## DPH-E 120/250.40 M

Δp-c (constant)

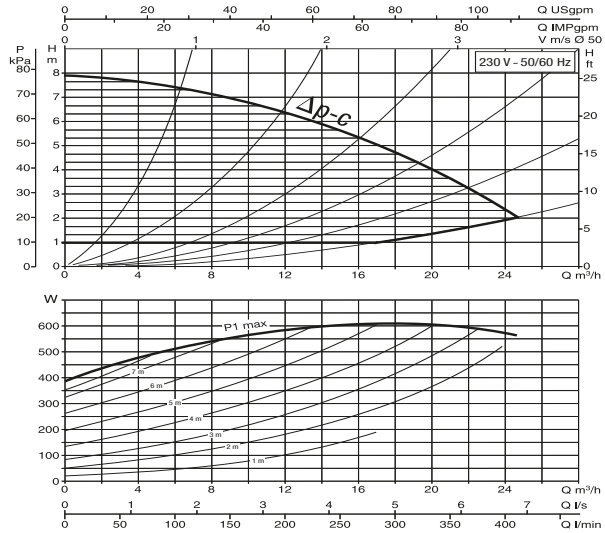



Δp-v (variable)

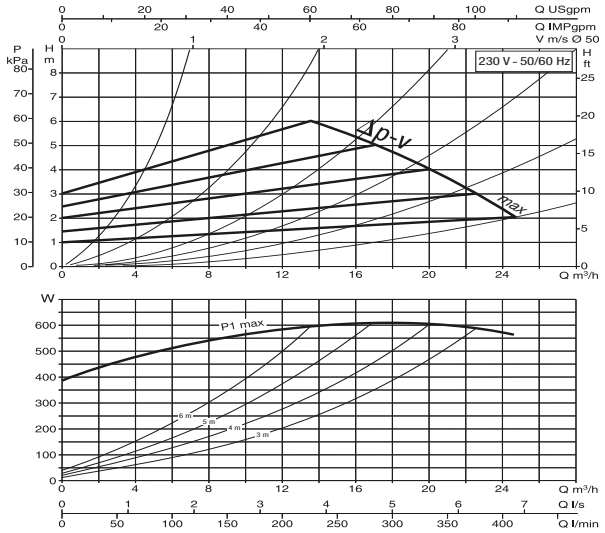



## BPH-E 60/280.50 M

Δp-c (constant)

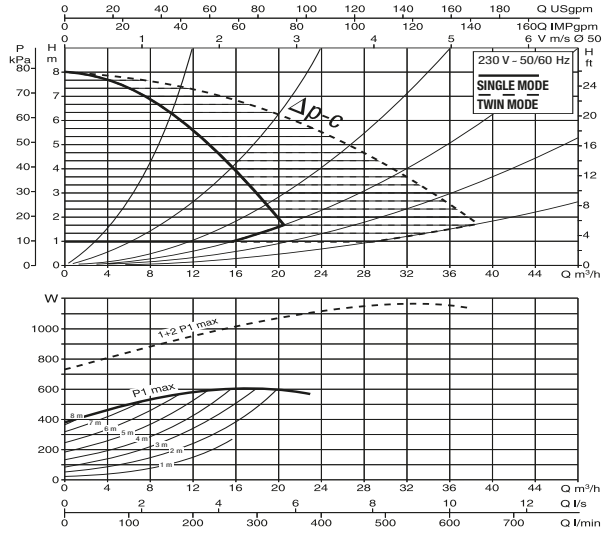



Δp-v (variable)

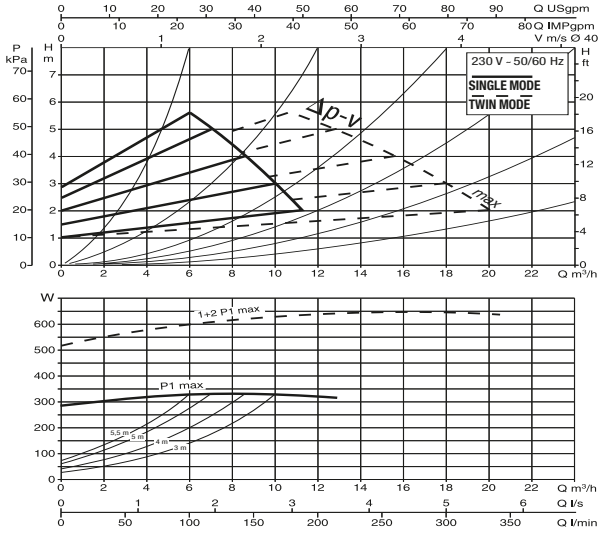



## DPH-E 60/280.50 M

Δp-c (constant)

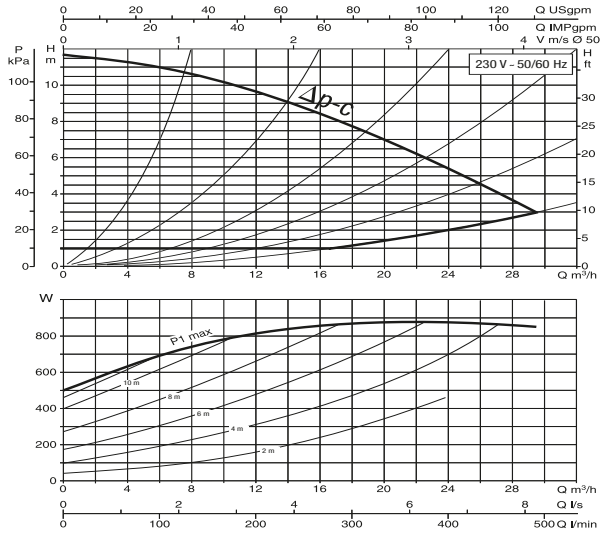



Δp-v (variable)

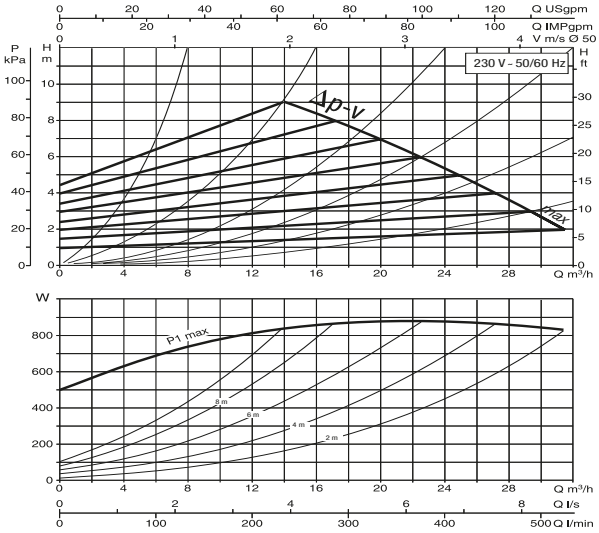


# HYDRAULIC DATA

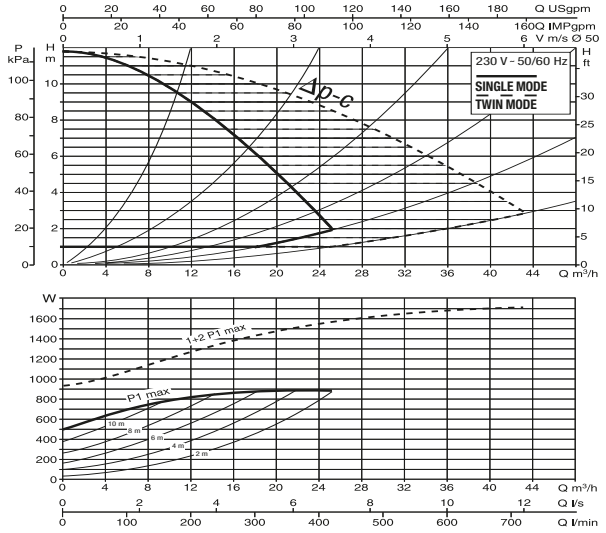
## BPH-E 120/280.50 M Δp-c (constant)



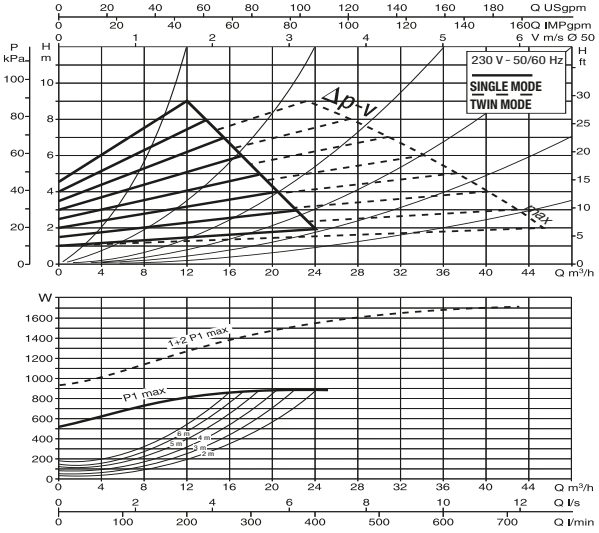

## BPH-E 120/280.50 M Δp-v (variable)



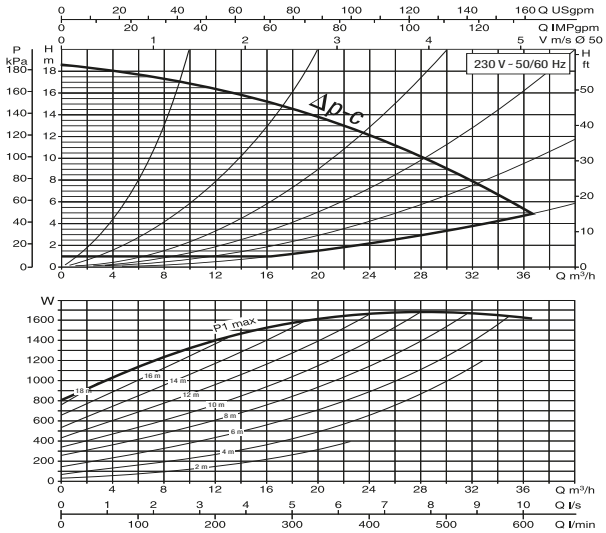

## DPH-E 120/280.50 M Δp-c (constant)



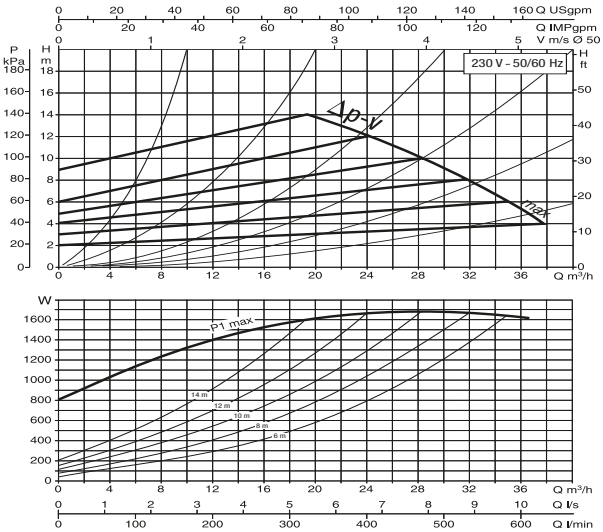

## DPH-E 120/280.50 M Δp-v (variable)




## BPH-E 180/280.50 M Δp-c (constant)




## BPH-E 180/280.50 M Δp-v (variable)

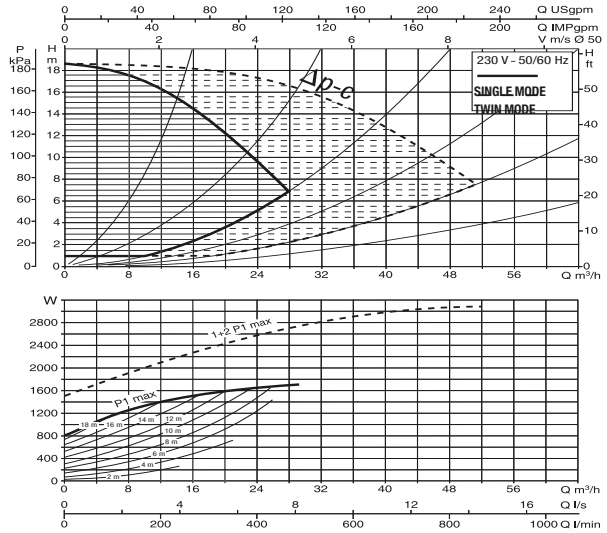


DAB
PUMP PERFORMANCE

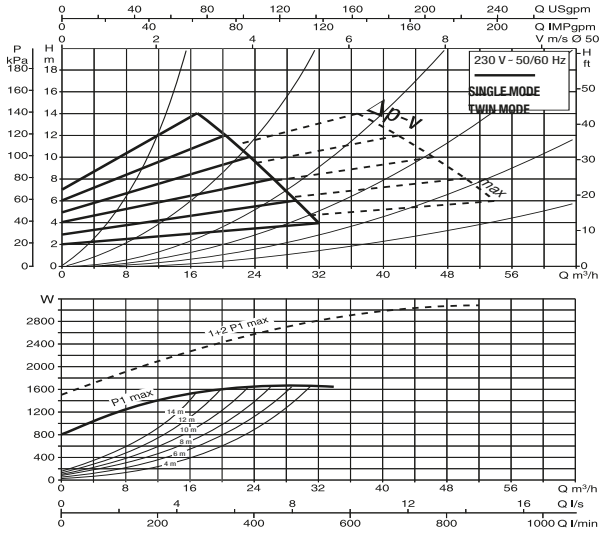
# HYDRAULIC DATA

## DPH-E 180/280.50 M

### Δp-c (constant)

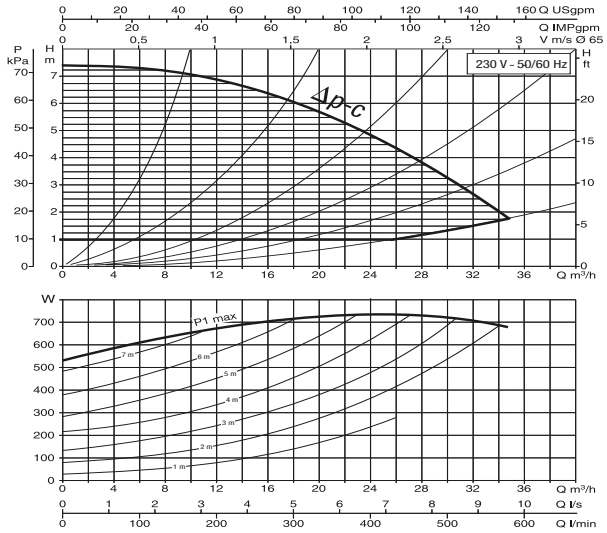



### Δp-v (variable)




## BPH-E 60/340.65 M

### Δp-c (constant)

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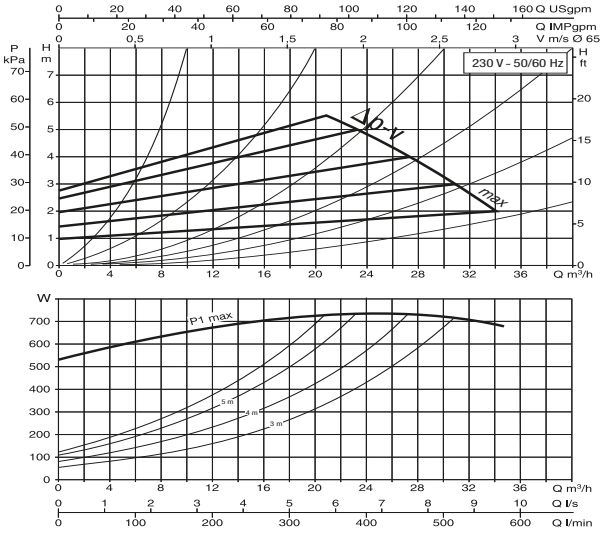
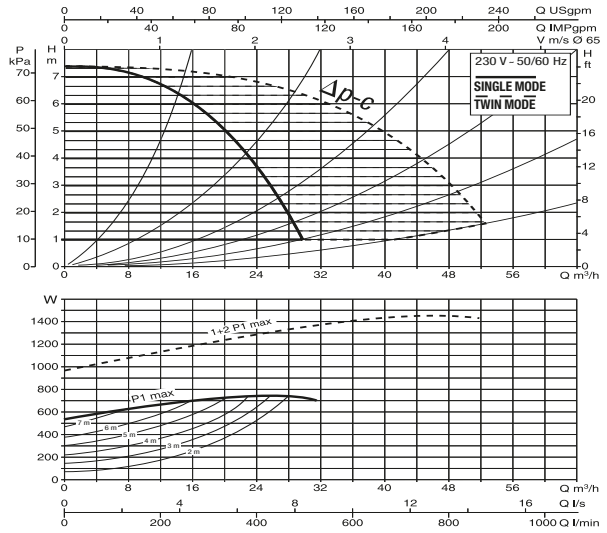



## DPH-E 60/340.65 M

### Δp-c (constant)

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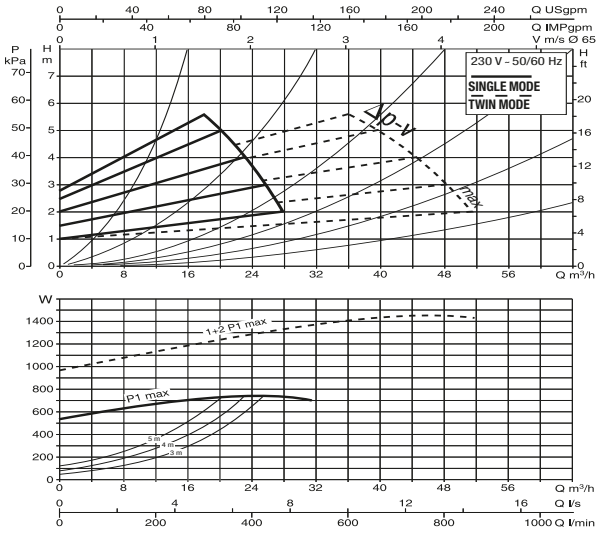
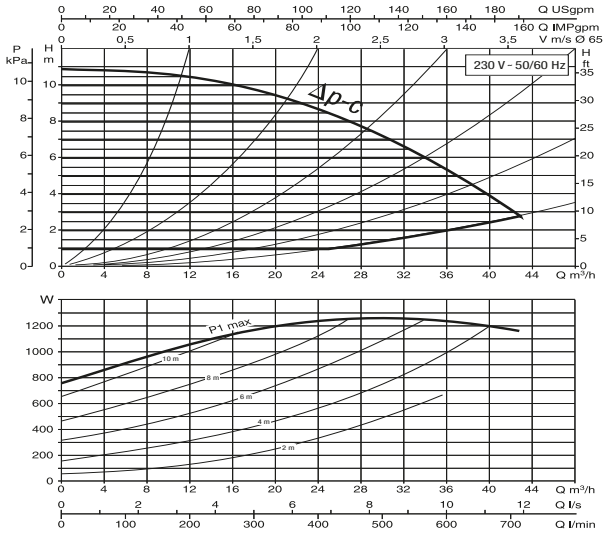
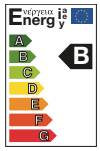



* From july 2007

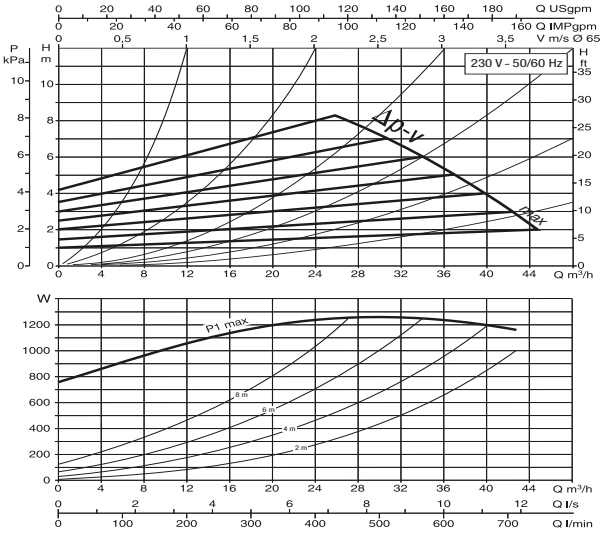
# HYDRAULIC DATA

## BPH-E 120/340.65 M Δp-c (constant)

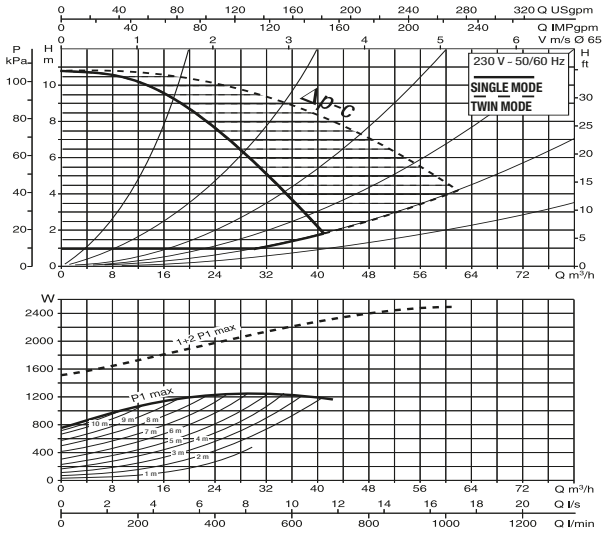


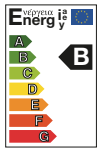




## Δp-v (variable)

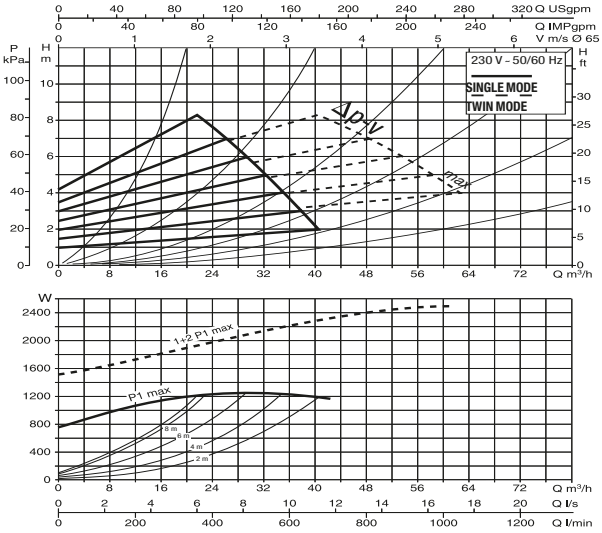



## DPH-E 120/340.65 M Δp-c (constant)

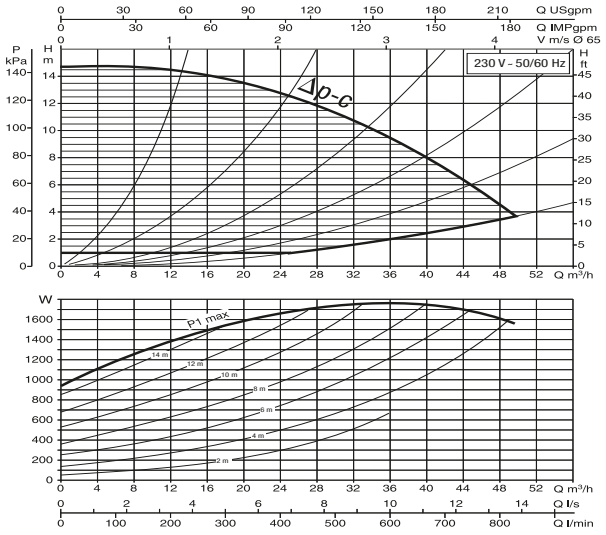


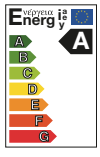




## Δp-v (variable)

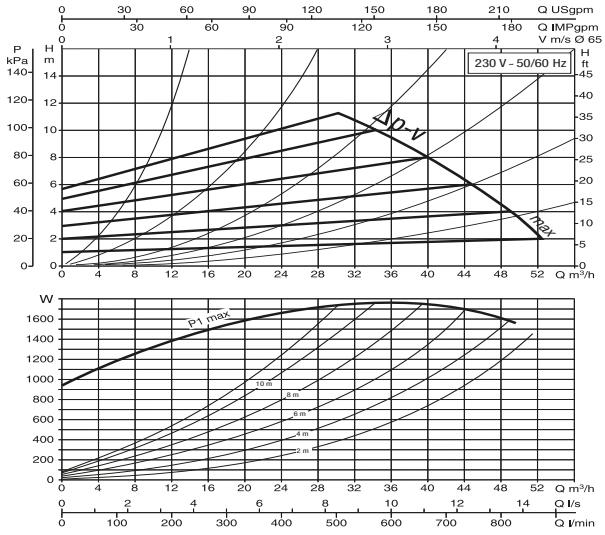



## BPH-E 150/340.65 M Δp-c (constant)



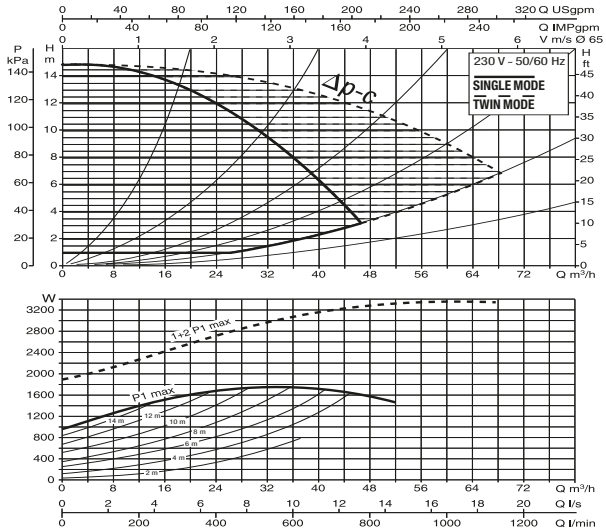

## Δp-v (variable)

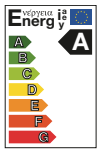


DAB
PUMP PERFORMANCE

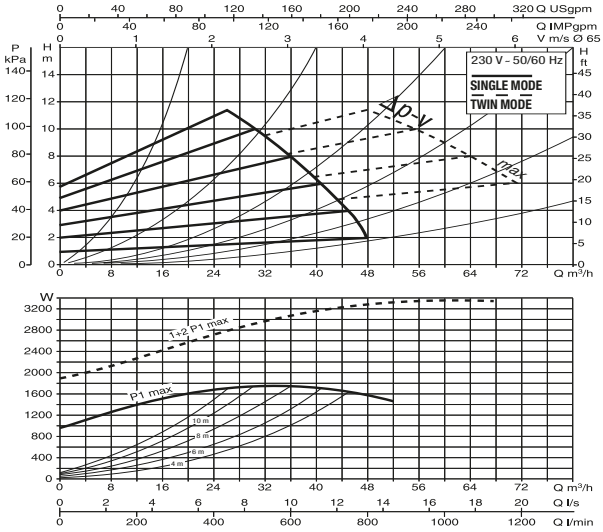
# HYDRAULIC DATA

## DPH-E 150/340.65 M Δp-c (constant)

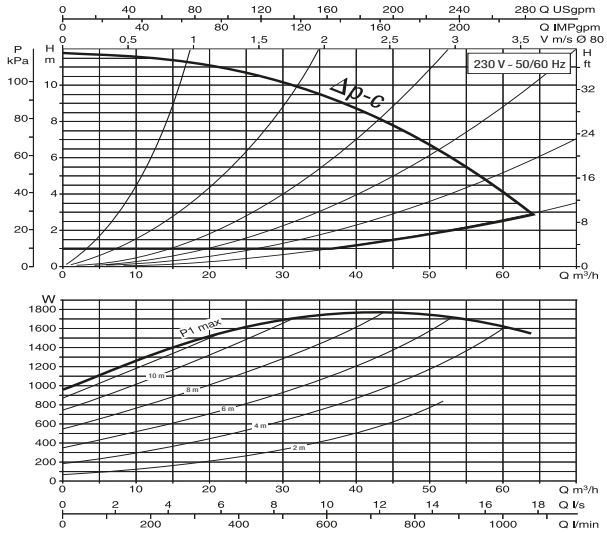


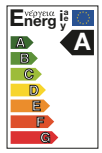




## Δp-v (variable)

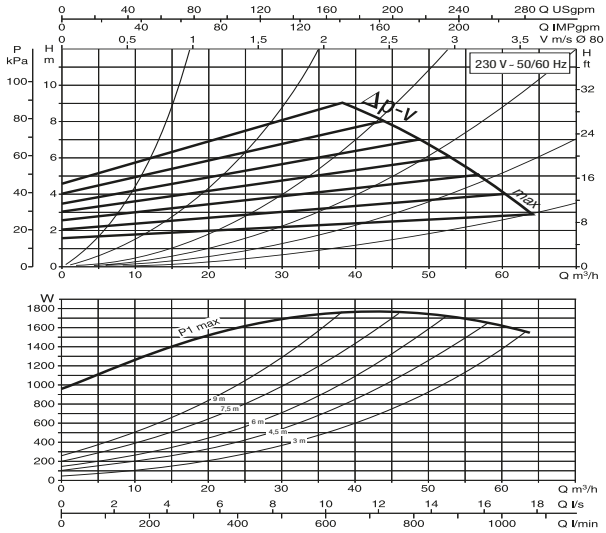



## BPH-E 120/360.80 M Δp-c (constant)

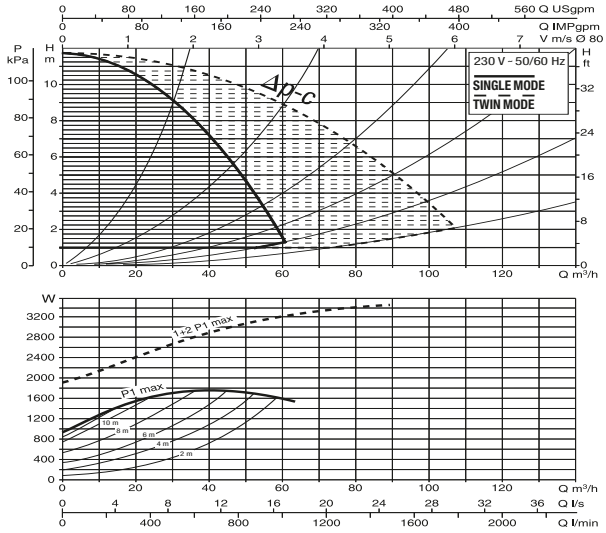


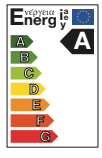




## Δp-v (variable)

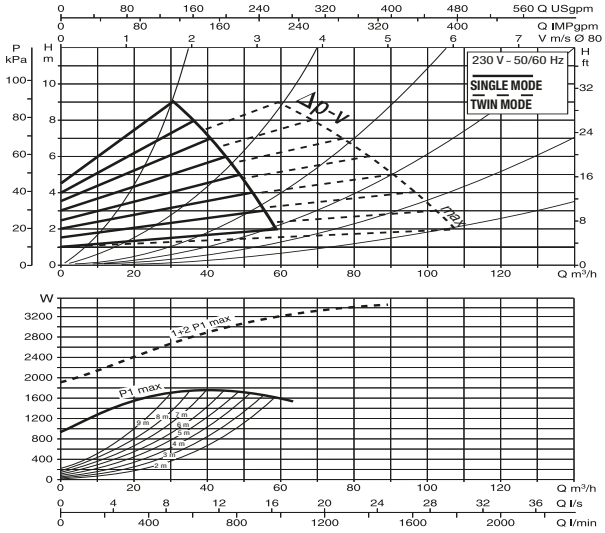



## DPH-E 120/360.80 M Δp-c (constant)



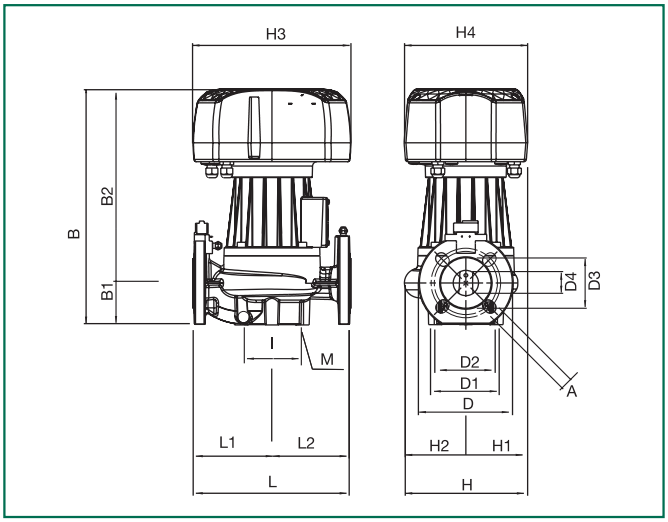




## Δp-v (variable)

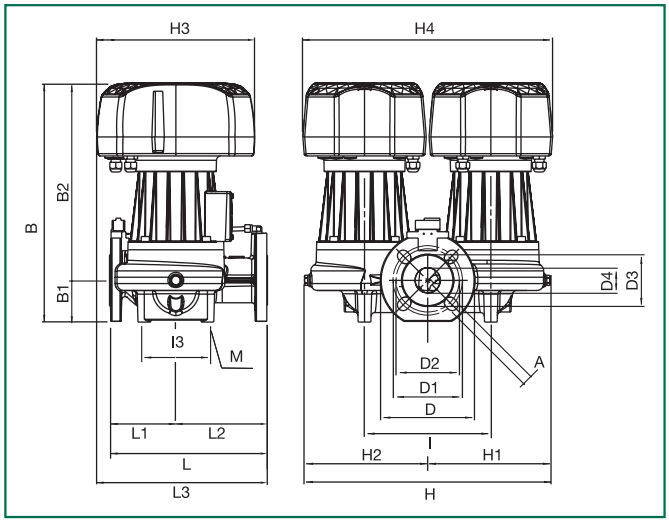


# DIMENSIONS

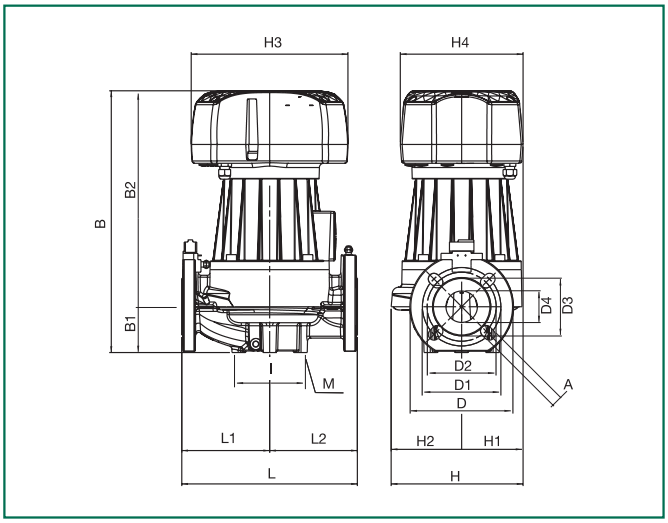
## BPH-E 60/250.40 M - BPH-E 120/250.40 M



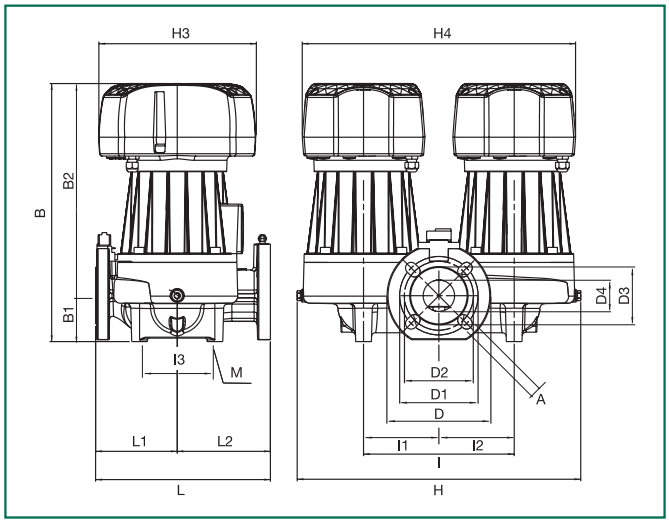

## DPH-E 60/250.40 M - DPH-E 120/250.40 M



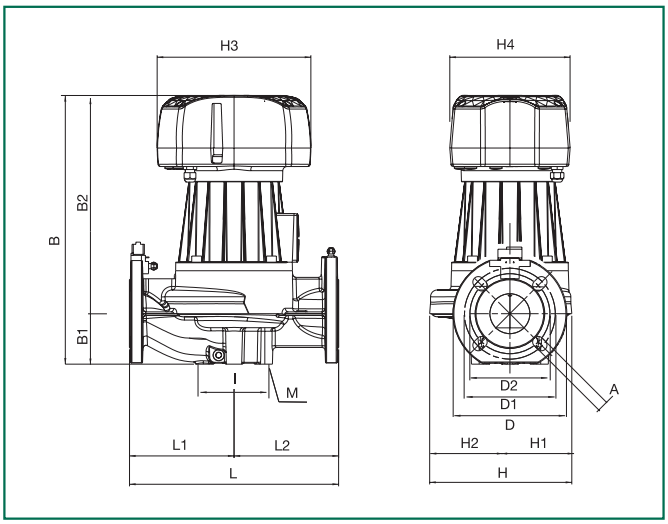

## BPH-E 60/280.50 M - BPH-E 120/280.50 M - BPH-E 180/280.50 M



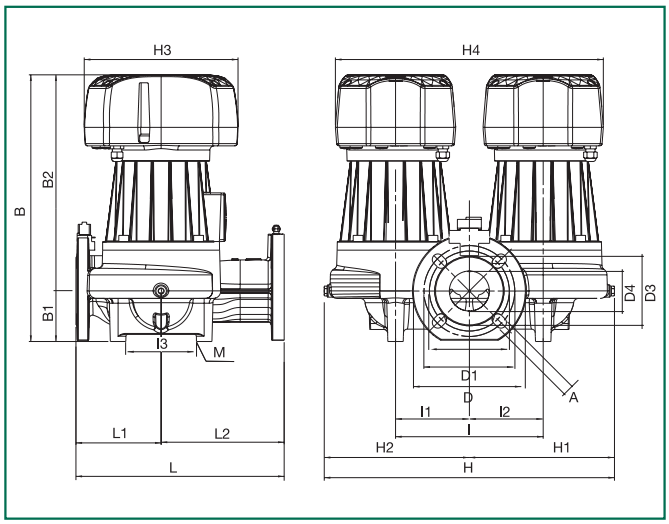

## DPH-E 60/280.50 M - DPH-E 120/280.50 M - DPH-E 180/280.50 M




## BPH-E 60/340.65 M - BPH-E 120/340.65 M - BPH-E 150/340.65 M

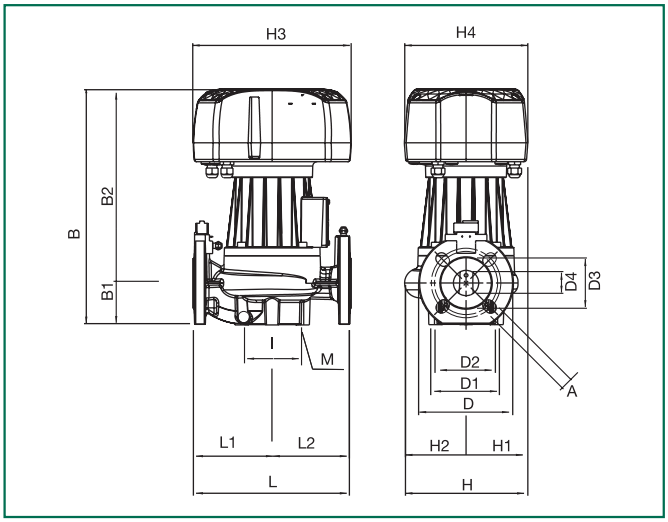



## DPH-E 60/340.65 M - DPH-E 120/340.65 M - DPH-E 150/340.65 M

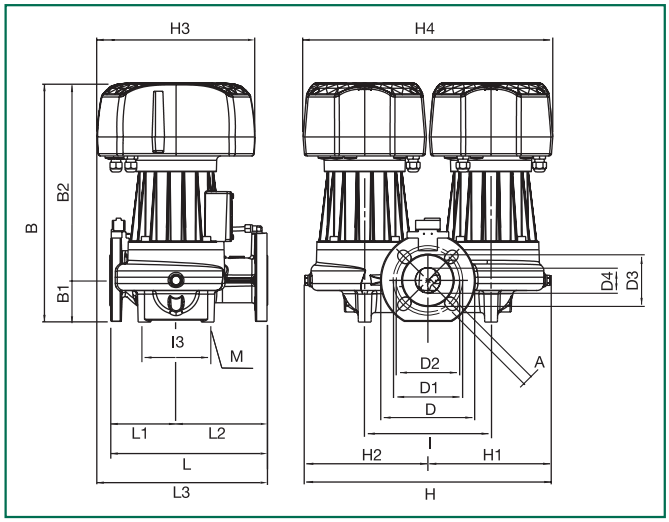


# DIMENSIONS

### BPH-E 120/360.80 M




### DPH-E 120/360.80 M




| MODEL | L | L1 | L2 | L3 | A | B | B1 | B2 | D | D1 | D2 | D3 | D4 | I | I1 | I2 | I3 | M | H | H1 | H2 | H3 | H4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **BPH-E 60/250-40** | 250 | 125 | 125 | - | 18 | 374 | 66 | 308 | 150 | 110 | 100 | 80 | 40 | 100 | - | - | - | M10 | 195 | 83 | 112 | 250 | 196 |
| **DPH-E 60/250-40** | 250 | 105 | 145 | 270 | 18 | 378 | 66 | 312 | 150 | 110 | 100 | 80 | 40 | 200 | 100 | 100 | 100 | M12 | 389 | 194,5 | 195 | 250 | 396 |
| **BPH-E 120/250-40** | 250 | 125 | 125 | - | 18 | 374 | 66 | 308 | 150 | 100 | 100 | 80 | 40 | 100 | - | - | - | M10 | 195 | 83 | 112 | 250 | 196 |
| **DPH-E 120/250-40** | 250 | 105 | 145 | 270 | 18 | 378 | 66 | 312 | 150 | 110 | 100 | 80 | 40 | 200 | 100 | 100 | 100 | M12 | 389 | 194,5 | 195 | 250 | 396 |
| **BPH-E 60/280-50** | 280 | 140 | 140 | - | 18 | 417 | 73 | 344 | 165 | 125 | 110 | 90 | 50 | 100 | - | - | - | M10 | 210 | 96 | 114 | 250 | 196 |
| **DPH-E 60/280-50** | 280 | 130 | 150 | - | 18 | 411 | 73 | 338 | 165 | 125 | 110 | 90 | 50 | 240 | 120 | 120 | 120 | M14 | 452 | 226 | 226 | 250 | 436 |
| **BPH-E 120/280-50** | 280 | 140 | 140 | - | 18 | 417 | 73 | 344 | 165 | 125 | 110 | 90 | 50 | 100 | - | - | - | M10 | 210 | 96 | 114 | 250 | 196 |
| **DPH-E 120/280-50** | 280 | 130 | 150 | - | 18 | 411 | 73 | 338 | 165 | 125 | 110 | 90 | 50 | 240 | 120 | 120 | 120 | M14 | 452 | 226 | 226 | 250 | 436 |
| **BPH-E 180/280-50** | 280 | 140 | 140 | - | 18 | 467 | 73 | 394 | 165 | 125 | 110 | 90 | 50 | 100 | - | - | - | M10 | 210 | 96 | 114 | 250 | 196 |
| **DPH-E 180/280-50** | 280 | 130 | 150 | - | 18 | 461 | 73 | 388 | 165 | 125 | 110 | 90 | 50 | 240 | 120 | 120 | 120 | M14 | 452 | 226 | 226 | 250 | 436 |
| **BPH-E 60/340-65** | 340 | 170 | 170 | - | 18 | 437 | 82 | 355 | 185 | 145 | 130 | 110 | 65 | 100 | - | - | - | M12 | 231 | 100 | 131 | 250 | 196 |
| **DPH-E 60/340-65** | 340 | 138,5 | 201,5 | - | 18 | 433 | 82 | 351 | 185 | 145 | 130 | 110 | 65 | 240 | 120 | 120 | 140 | M14 | 472 | 236 | 236 | 250 | 436 |
| **BPH-E 120/340-65** | 340 | 170 | 170 | - | 18 | 487 | 82 | 405 | 185 | 145 | 130 | 110 | 65 | 100 | - | - | - | M12 | 231 | 100 | 131 | 250 | 196 |
| **DPH-E 120/340-65** | 340 | 138,5 | 201,5 | - | 18 | 483 | 82 | 220 | 185 | 145 | 130 | 110 | 65 | 240 | 120 | 120 | 140 | M14 | 472 | 236 | 236 | 250 | 436 |
| **BPH-E 150/340-65** | 340 | 170 | 170 | - | 18 | 487 | 82 | 405 | 185 | 145 | 130 | 110 | 65 | 100 | - | - | - | M12 | 231 | 100 | 131 | 250 | 196 |
| **DPH-E 150/340-65** | 340 | 138,5 | 201,5 | - | 18 | 483 | 82 | 220 | 185 | 145 | 130 | 110 | 65 | 240 | 120 | 120 | 140 | M14 | 472 | 236 | 236 | 250 | 436 |
| **BPH-E 120/360-80** | 360 | 190 | 170 | - | 18 | 506 | 97 | 409 | 200 | 160 | 150 | 130 | 80 | 115 | - | - | - | M12 | 232 | 100 | 132 | 250 | 196 |
| **DPH-E 120/360-80** | 360 | 190 | 170 | - | 18 | 506 | 97 | 409 | 200 | 160 | 150 | 130 | 80 | 115 | - | - | - | M12 | 232 | 100 | 132 | 250 | 196 |