

# High efficiency pumps, electronically controlled

HEP Optimo Basic series, H1 product group



**BEST**  
in class

**ERP**  
2015<sup>+</sup>

## TECHNICAL DATA

Rate of flow: up to 4,4 m<sup>3</sup>/h  
 Pressure head: 4 m/6 m/8 m  
 Control range: 4-20 W/5-57 W/6-64 W  
 Media temperature: +2 °C to +110 °C  
 Installation length: 130 and 180 mm  
 Threaded connection: 1", 1½" and 2"  
 Protection class: IP 42  
 Insulation class: F  
 Nominal pressure: PN 10  
 Control: Δpc + Δpv + fixed rpm  
 EEI: ≤ 0.17 HEP Optimo Basic XX-4.0 GXXX  
 ≤ 0.18 HEP Optimo Basic XX-6.0 GXXX  
 ≤ 0.20 HEP Optimo Basic XX-8.0 GXXX

## PRODUCT FEATURES

- manual start-up feature
- smooth running
- very low energy consumption
- integrated night economy feature
- air-vent screw
- convenient operation
- space-saving axially integrated terminal box
- automatic adjustment to pressure conditions
- cataphoretic coated pump housing
- pre-mounted cable (1 m)
- compact design

## USE

The electronically controlled HEP Optimo Basic high efficiency wet rotor circulators with permanent magnet technology are designed for use in heating systems with variable or constant rate of flow.

## MODE OF OPERATION ΔP CONTROL FOR HEATING SYSTEMS

When thermostatic valves in systems with a long main supply heating pipe (likely for radiator systems) close, the total flow drops. This results in lower pipe resistance in this main pipe, which means the pump has to create lower head. Using proportional pressure mode PP (⚡) is the preferred setting for such heating systems, as here the pump decreases head at lower flow.

If the main supply heating pipe has not to be taken into consideration, because it is short or has its own pump (likely for underfloor heating systems with in mixing units integrated pumps), the best mode to use is constant pressure mode CP (⊞). In such heating systems, it is important always to have constant pressure for the radiators or ufh-circuits, as the pressure loss in the main pipe is not considered and all other consumers are installed in parallel, which does not influence the maximum pressure loss.

## CONTROL MODES FOR USE IN SOLAR SYSTEMS

As a rule, solar systems are designed for constant flow. High differential pressure at low flow is required. The fixed speed mode (⚡) is recommended for this. With this setting, the pump generates the highest possible differential pressure.

In the case of solar systems with a variable flow rate, the setting „Constant pressure“ (⊞) can alternatively be selected. Here, the differential pressure is kept constant regardless of the respective hydraulic situation of the solar system.

The „Proportional pressure“ (⚡) control mode may only be selected if the solar pump is used in a heating system with thermostatic valves.

**Important:** High efficiency pumps with electronically commutated motor (ECM) and integrated automatic control - such as the HEP Optimo - cannot be operated via external controls, which control pumps via wave packet or leading edge control. The Armstrong series HEP BB2 is recommended for such cases.

## MAIN AREAS OF USE

Heating, air-conditioning and industry systems as

- dual pipe system
- underfloor heating
- boiler/primary circuit
- storage charging circuit
- solar systems and heating pumps

## MATERIALS

Component	Material	Material no.
Pump housing	Grey-cast iron	0.6020
Impeller	Polyamide (PA - GF 35)	
Shaft	Ceramic	
Bearing	Ceramic	
Bearing plate	Stainless steel	1.4301
Can	Stainless steel	1.4301

## FLOW MEDIA

- heating water as per VDI 2035
- pure, thin, non-aggressive and non-explosive, mineral oil-free media without solid or long-fibre components
- media with a max. viscosity of 10 mm<sup>2</sup>/s
- operating data must be checked above 20% glycol

## TEMPERATURE RANGE

Ambient temperature: 0 °C to +40 °C  
 Temperature class: TF 110  
 Media temperature: +2 °C to +110 °C

## AMBIENT TEMPERATURE

To avoid condensation forming in the terminal box and stator, the media temperature must always be the same or higher than the ambient temperature.

Ambient temp.	Media temp. min.	Media temp. max.
0	2	95
10	10	95
20	20	95
30	30	95
35	35	90
40	40	70

## MOTOR PROTECTION

External motor protection is not required.

## INTEGRATED NIGHT ECONOMY FEATURE

When the automatic night economy feature is activated, the circulation pump switches between normal mode and economy mode (characteristic curve MIN). The flow temperature is detected by a temperature sensor, the pump reacts accordingly. For this, it is necessary for the circulation pump to be installed in flow.

## MINIMUM INFLOW PRESSURE

Please determine the minimum inflow pressure for corresponding temperature from the following table.

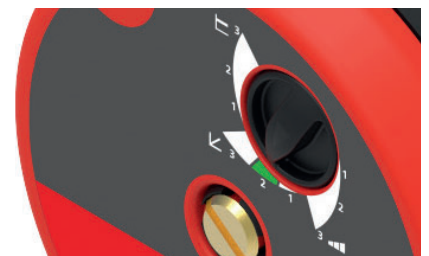
Media temperature	< 75 °C	> 90 °C
Minimum inflow pressure	0.05 bar	0.28 bar

## SOUND PRESSURE LEVEL

The sound pressure level is < 45 dB (A).

## CHOICE OF CONTROL CHARACTERISTIC

You can set 3 different control modes via the potentiometer on the axial terminal box. Proportional pressure (⚡), fixed speed (⚡) and constant pressure (⊞) can be adjusted continuously variable.



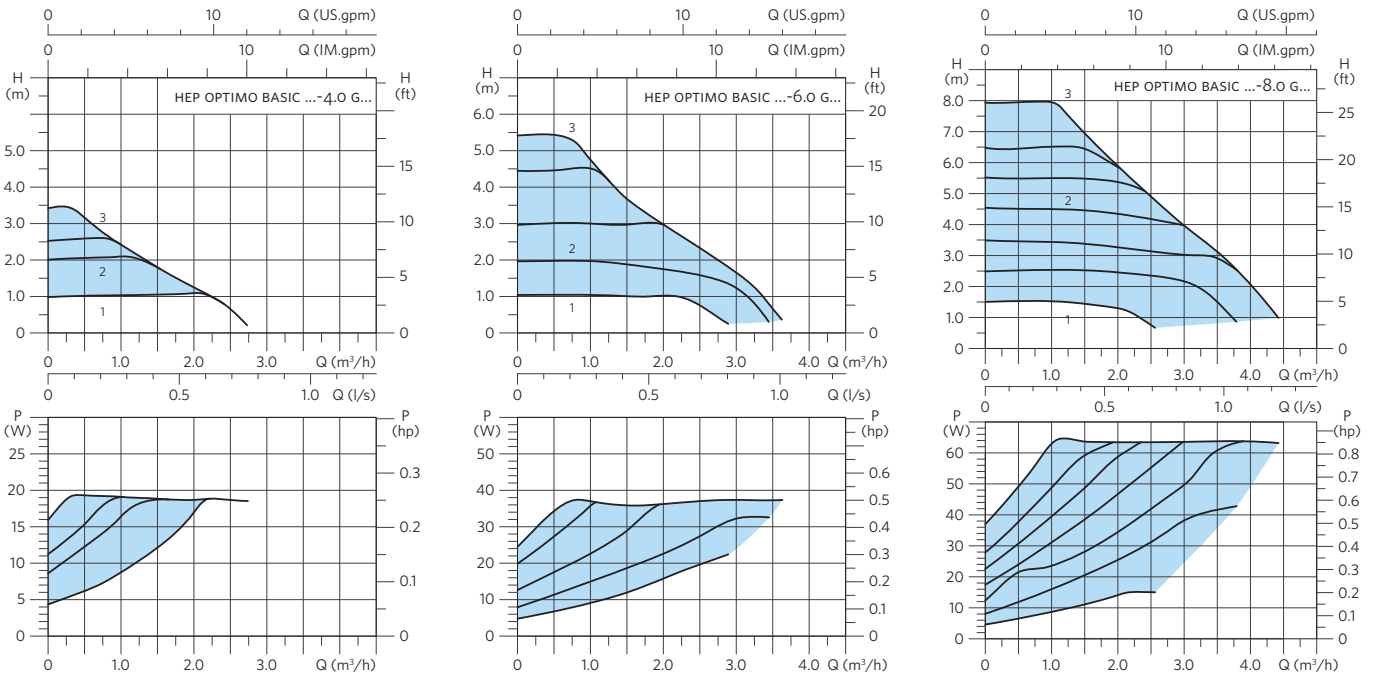
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Serie HEP Optimo Basic, H1 product group

## TECHNICAL DATA

TYPE	CONNECTION PIPE	THREADED CONNECTION	INSTALLATION LENGTH (MM)	VOLTAGE / FREQUENCY	P1 (W)	I <sub>MAX</sub> (A)	NET-WEIGHT (KG)	PRODUCT NO.	EEL
HEP OPTIMO BASIC 25-4.0 G180	1"	1½"	180	230 V 50/60 HZ	4 ... 20	0,26	2,7	0623-34204.2-71	≤ 0,17
HEP OPTIMO BASIC 25-6.0 G180	1"	1½"	180	230 V 50/60 HZ	5 ... 37	0,41	2,7	0623-34206.2-71	≤ 0,18
HEP OPTIMO BASIC 25-8.0 G180	1"	1½"	180	230 V 50/60 HZ	6 ... 64	0,61	2,7	0623-34208.2-71	≤ 0,20
HEP OPTIMO BASIC 30-4.0 G180	1¼"	2"	180	230 V 50/60 HZ	4 ... 20	0,26	2,8	0624-34204.2-71	≤ 0,17
HEP OPTIMO BASIC 30-6.0 G180	1¼"	2"	180	230 V 50/60 HZ	5 ... 37	0,41	2,8	0624-34206.2-71	≤ 0,18
HEP OPTIMO BASIC 30-8.0 G180	1¼"	2"	180	230 V 50/60 HZ	6 ... 64	0,61	2,8	0624-34208.2-71	≤ 0,20
HEP OPTIMO BASIC 15-4.0 G130	½"	1"	130	230 V 50/60 HZ	4 ... 20	0,26	2,3	0621-34004.2-71	≤ 0,17
HEP OPTIMO BASIC 15-6.0 G130	½"	1"	130	230 V 50/60 HZ	5 ... 37	0,41	2,3	0621-34006.2-71	≤ 0,18
HEP OPTIMO BASIC 15-8.0 G130	½"	1"	130	230 V 50/60 HZ	6 ... 64	0,61	2,3	0621-34008.2-71	≤ 0,20
HEP OPTIMO BASIC 20-4.0 G130	¾"	1 ¼"	130	230 V 50/60 HZ	4 ... 20	0,26	2,4	0622-34004.2-71	≤ 0,17
HEP OPTIMO BASIC 20-6.0 G130	¾"	1 ¼"	130	230 V 50/60 HZ	5 ... 37	0,41	2,4	0622-34006.2-71	≤ 0,18
HEP OPTIMO BASIC 20-8.0 G130	¾"	1 ¼"	130	230 V 50/60 HZ	6 ... 64	0,61	2,4	0622-34008.2-71	≤ 0,20
HEP OPTIMO BASIC 25-4.0 G130	1"	1½"	130	230 V 50/60 HZ	4 ... 20	0,26	2,5	0623-34004.2-71	≤ 0,17
HEP OPTIMO BASIC 25-6.0 G130	1"	1½"	130	230 V 50/60 HZ	5 ... 37	0,41	2,5	0623-34006.2-71	≤ 0,18
HEP OPTIMO BASIC 25-8.0 G130	1"	1½"	130	230 V 50/60 HZ	6 ... 64	0,61	2,5	0623-34008.2-71	≤ 0,20

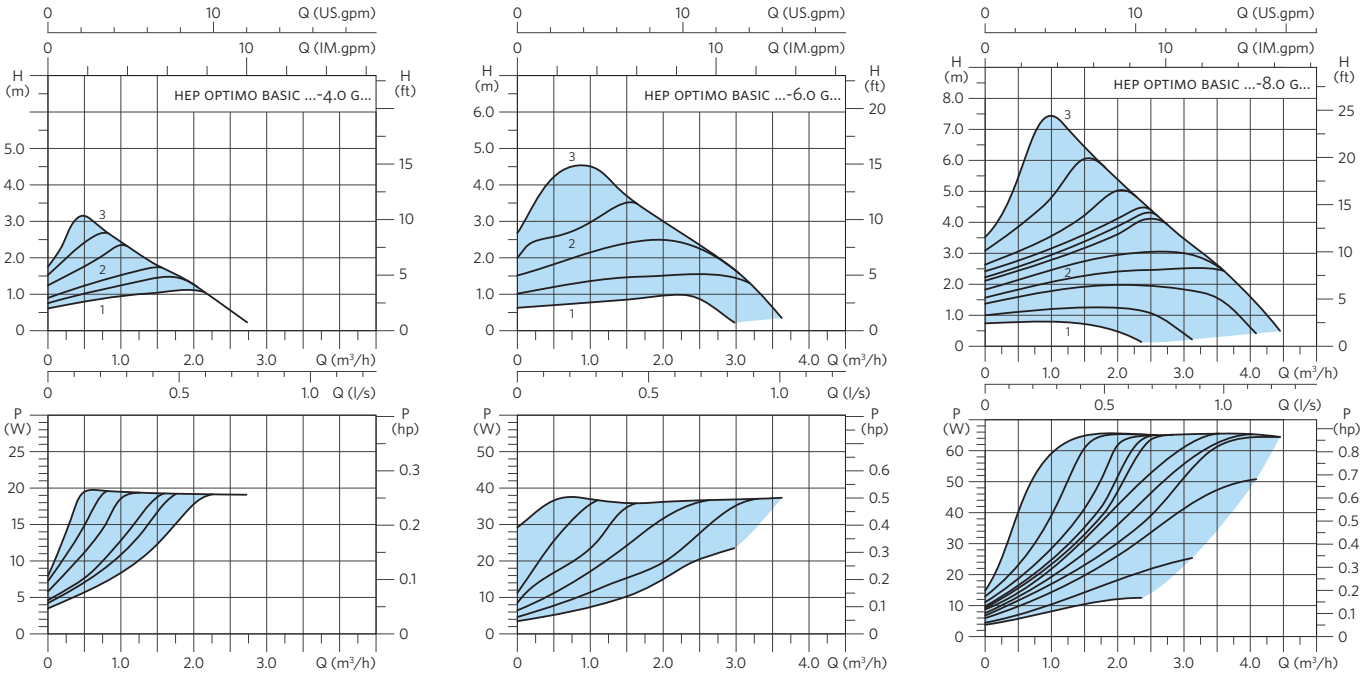
## CONSTANT PRESSURE



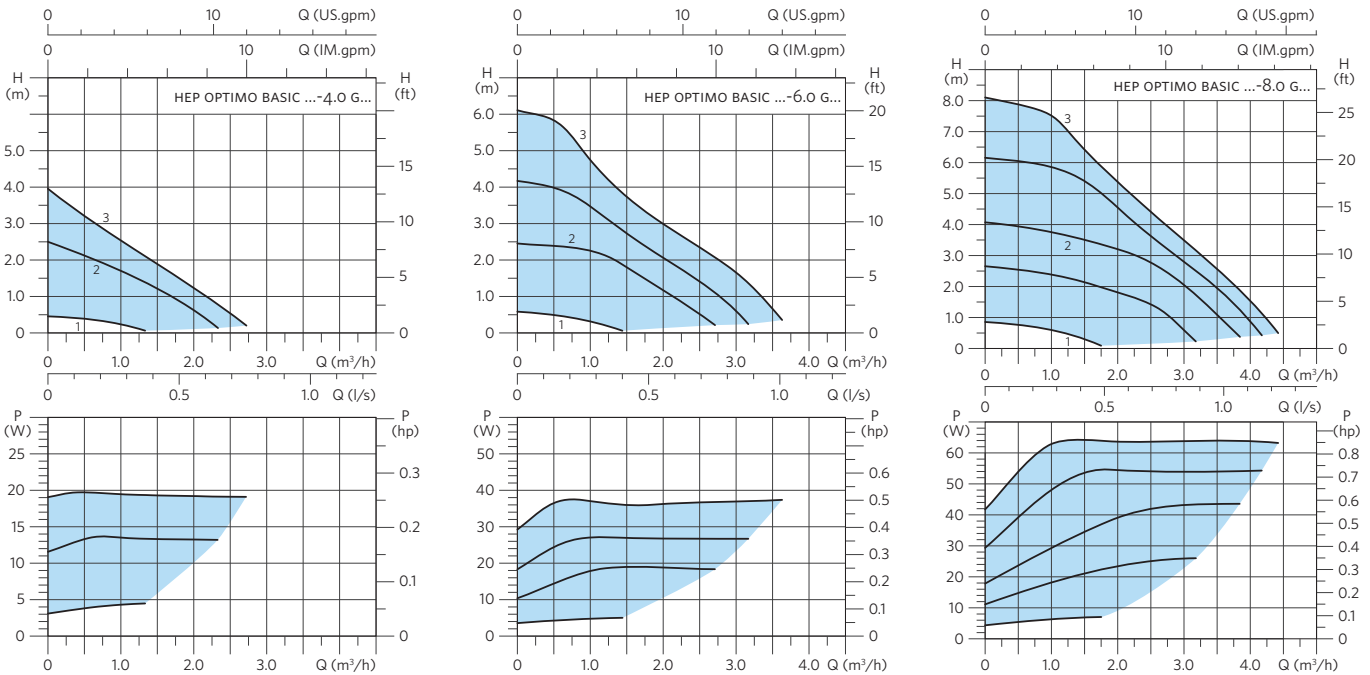
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## PROPORTIONAL PRESSURE



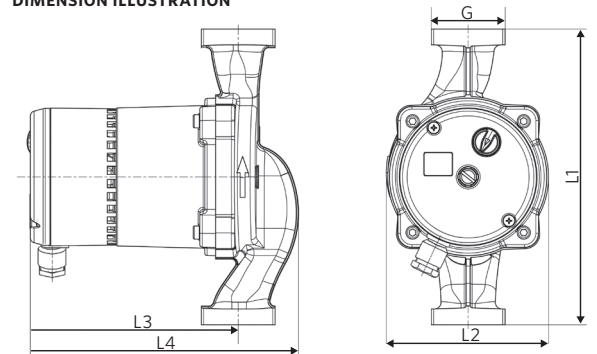
## FIXED RPM



## DIMENSIONS

TYPE	L1 (MM)	L2 (MM)	L3 (MM)	L4 (MM)
HEP OPTIMO BASIC	130/180	98	127	163

## DIMENSION ILLUSTRATION





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