



HALM

Circulation pumps

Wet rotor circulators and accessories

Heating
Drinking water
Solar
Geothermy
Condensate





Halm produces highly-efficient heating circulation pumps

Halm has been successfully developing and producing heating circulation pumps for over 30 years. It started out manufacturing for renowned OEM customers before electing to develop and produce its own product range in the late 1990s.

Its proficiency in the development of innovative, market-oriented products is first and foremost reflected in the more than half a century of company history. Today, in the third generation, the circulation pumps segment plays a major part in the success of the company. This is particularly evident in the high level of creative innovation in recent years, with many new products in the field of high-efficiency pumps.

Halm places great demand on the quality of its products

Modern production facilities and processes are just as much part of the corporate concept as well thought-out quality management. Internal testing facilities and ISO-certified quality management are indispensable factors of success.

Long-standing customers value the high demands placed on the quality of the products and the flexibility with which Halm meets custom requirements.

Halm is helping to shape the future as a reliable partner

A company is only as good as each of its constituent parts. This is why motivated and experienced employees are a key element of success at Halm. Flexibility and expertise head the list of priorities for being a reliable partner to our customers.

Together with over 230 employees, Halm's objective is to make a lasting contribution to the future with its products. Halm high efficiency pumps already fulfil the tightened requirements of the eco-design directive from 2011 until 2020.

The new HEP Optimo features an LED display showing the modes of operation, the pressure head, the total electrical input power as well as error codes. As standard, it is delivered with a plug and with installation length 180 mm also the insulation shell is included in delivery. No insulation shell is offered for 130mm installation length.

For the HEP Optimo Basic version, we omit features such as display, insulation shell and plug – but we fit a premounted cable in order to be able to offer a very well-priced model for different applications for which these features are neither required nor necessary.

New in the delivery range are condensate pumps for gas and oil condensing boilers called "Lift" and a complete line of "large" HEP Optimo L+ circulators. With this new high quality line of threaded and flanged circulators the whole replacement and new buildings demand for heating, air conditioning and refrigeration applications can be covered from 1 1/4 m to DN65/12 m. The new HEP Optimo L+ complements the existing low cost series HEP Optimo L which have been designed for the main types of applications with head 8 or 10 m.



Catalogue valid for EU countries + others¹⁾

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¹⁾ EFTA (Iceland, Liechtenstein, Norway), Croatia, Switzerland, autonomic areas of EU member states (Faroe Islands, Jersey, Isle of Man, Guernsey, Greenland), Andorra, Monaco, San Marino.

Subject to technical changes without notice. Errors and omissions excepted.

The latest versions of our sales, delivery, and payment conditions as well as guarantee terms can be found on the internet at www.halm-pumps.de

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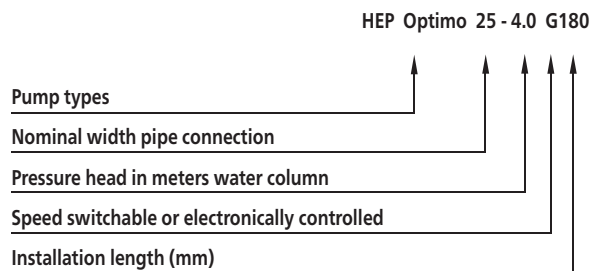
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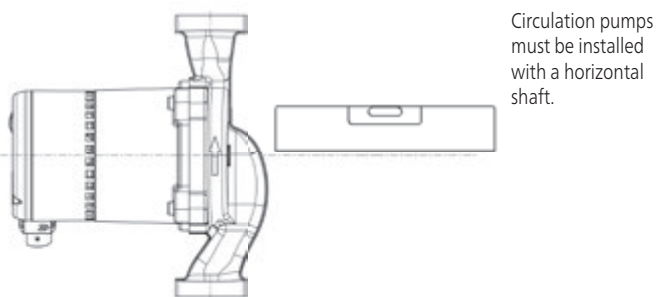
Service hotline

Phone: +49 7153 9202-621

Halm type key



Installation options



Construction

Halm circulation pumps are inline wet rotor circulators. They are maintenance-free and fitted with opposite-facing connecting nozzles of the same nominal width. The pump, motor and terminal box comprise one unit and are optimally matched with one another.

A stainless steel can separates the rotor chamber and stator winding. It features static seals at both ends.

Bearing

Both bearings are made of oxide ceramic. This is particularly suitable because of its hardness, surface quality and corrosion resistance. They ensure smooth running and a long service life. Air cavities in the can well are evacuated via the hollow shaft.

EEI

The benchmark of the most efficient circulators is $EEI \leq 0.20$.

BEST in class

All Halm 4 m high efficiency pumps fulfill the requirements for BEST in class.

High efficiency pumps with LED display, electronically controlled

HEP Optimo series, H1 product group



Insulation shell
With installation length
180 mm included
in delivery.

**BEST
in class**

valid for all Halm 4 m
High efficiency pumps



Technical data

Rate of flow:	up to 3.2 m ³ /h
Pressure head:	4 m/6 m/7 m
Control range:	4-23 W/4-50 W/4-66 W
Media temperature:	+2 °C to +95 °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
EEL:	≤ 0.20 HEP Optimo XX-4.0 GXXX ≤ 0.23 HEP Optimo XX-6.0 GXXX ≤ 0.23 HEP Optimo XX-7.0 GXXX

Product features

- manual start-up feature
- smooth running
- very low energy consumption
- integrated night economy feature
- air-vent screw
- LED display
- convenient operation
- space-saving axially integrated terminal box
- automatic adjustment to pressure conditions
- cataphoretic coated pump housing
- pre-mounted, screwable angle entry-plug
- compact design

Use

The electronically controlled HEP Optimo high efficiency wet rotor circulators with LED display and permanent magnet technology are designed for use in heating systems with variable or constant rate of flow. The cataphoretic coated pump housing is stainless.

Mode of operation Δp control

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 (L) is the best 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), best mode to go with is constant pressure mode CP (T). 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.

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 mm²/s
- operating data must be checked above 20 % glycol

Temperature range

Ambient temperature:	0 °C to +40 °C
Temperature class:	TF 95
Media temperature:	+2 °C to +95 °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 (L), fixed speed (M) and constant pressure (T) can be adjusted continuously variable. The display indicates power consumption in [W] watts. Once the potentiometer is turned, the display first indicates mode of operation (PP, SC, CP), then value of set head in [m] meters. At the factory setting the potentiometer is in mode PP.



High efficiency pumps with LED display, electronically controlled

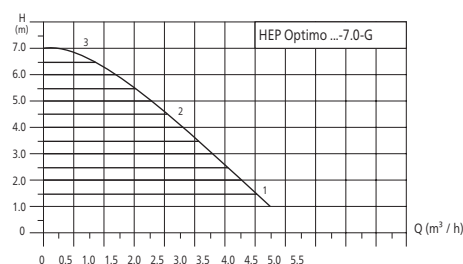
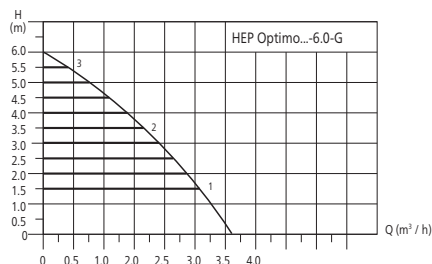
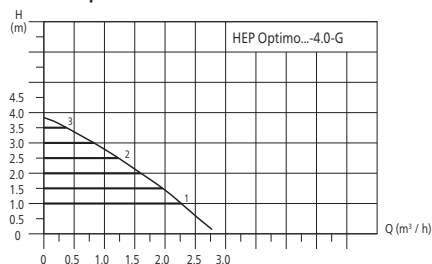
HEP Optimo series, H1 product group



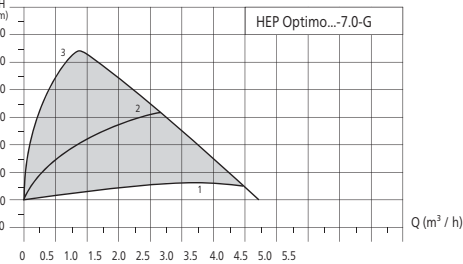
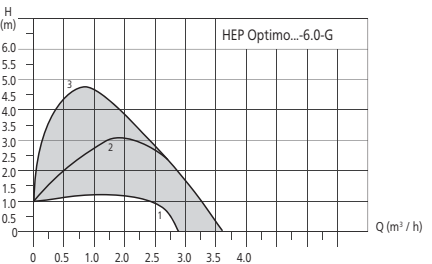
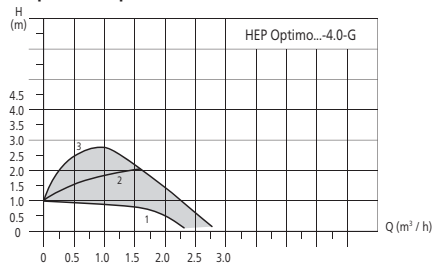
Technical data

Type	Connection pipe	Threaded connection	Installation length (mm)	Voltage (V)	P1 (W)	In (A)	Weight (kg)	Product no.	EEI
HEP Optimo 25-4.0 G180	1"	1½"	180	230	4 ... 23	... 0.30	2.7	0323-34204.1	≤ 0.20
HEP Optimo 25-6.0 G180	1"	1½"	180	230	4 ... 50	... 0.46	2.7	0323-34206.1	≤ 0.23
HEP Optimo 25-7.0 G180	1"	1½"	180	230	4 ... 64	... 0.60	2.8	0323-34207.1	≤ 0.23
HEP Optimo 30-4.0 G180	1¼"	2"	180	230	4 ... 23	... 0.30	2.8	0324-34204.1	≤ 0.20
HEP Optimo 30-6.0 G180	1¼"	2"	180	230	4 ... 50	... 0.46	2.8	0324-34206.1	≤ 0.23
HEP Optimo 30-7.0 G180	1¼"	2"	180	230	4 ... 64	... 0.60	2.8	0324-34207.1	≤ 0.23
HEP Optimo 15-4.0 G130	½"	1"	130	230	4 ... 23	... 0.30	2.7	0321-34004.1	≤ 0.20
HEP Optimo 15-6.0 G130	½"	1"	130	230	4 ... 50	... 0.46	2.7	0321-34006.1	≤ 0.23
HEP Optimo 15-7.0 G130	½"	1"	130	230	4 ... 64	... 0.60	2.7	0321-34007.1	≤ 0.23
HEP Optimo 20-4.0 G130	¾"	1¼"	130	230	4 ... 23	... 0.30	2.7	0322-34004.1	≤ 0.20
HEP Optimo 20-6.0 G130	¾"	1¼"	130	230	4 ... 50	... 0.46	2.7	0322-34006.1	≤ 0.23
HEP Optimo 20-7.0 G130	¾"	1¼"	130	230	4 ... 64	... 0.60	2.7	0322-34007.1	≤ 0.23
HEP Optimo 25-4.0 G130	1"	1½"	130	230	4 ... 23	... 0.30	2.7	0323-34004.1	≤ 0.20
HEP Optimo 25-6.0 G130	1"	1½"	130	230	4 ... 50	... 0.46	2.7	0323-34006.1	≤ 0.23
HEP Optimo 25-7.0 G130	1"	1½"	130	230	4 ... 64	... 0.60	2.7	0323-34007.1	≤ 0.23

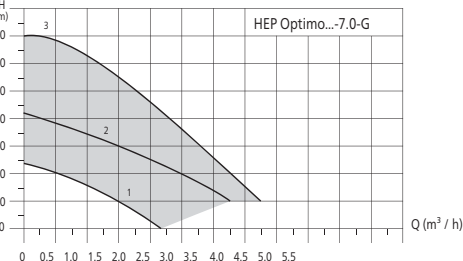
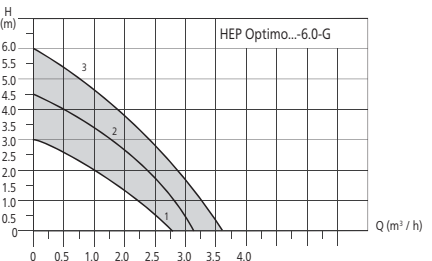
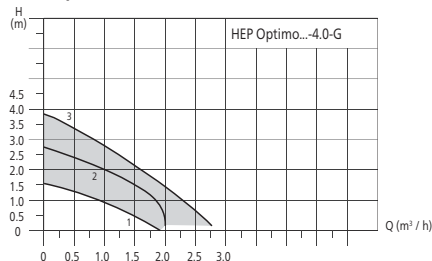
Constant pressure



Proportional pressure



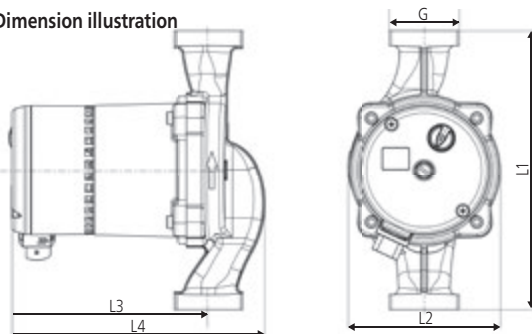
Fixed rpm



Dimensions

Type	L1	L2	L3	L4
HEP Optimo	130/180	98	127	163

Dimension illustration



High efficiency pumps, electronically controlled

HEP Optimo Basic series, H1 product group



**BEST
in class**

valid for all Halm 4 m
High efficiency pumps



Technical data

Rate of flow:	up to 3.2 m ³ /h
Pressure head:	4 m/6 m/7 m
Control range:	4-23 W/4-50 W/4 - 64 W
Media temperature:	+2 °C to +95 °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
EEL:	≤ 0.20 HEP Optimo Basic XX-4.0 GXXX ≤ 0.23 HEP Optimo Basic XX-6.0 GXXX ≤ 0.23 HEP Optimo Basic XX-7.0 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

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 best 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), best mode to go with 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.

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 mm²/s
- operating data must be checked above 20 % glycol

Temperature range

Ambient temperature:	0 °C to +40 °C
Temperature class:	TF 95
Media temperature:	+2 °C to +95 °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.

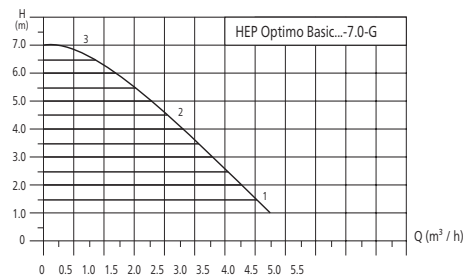
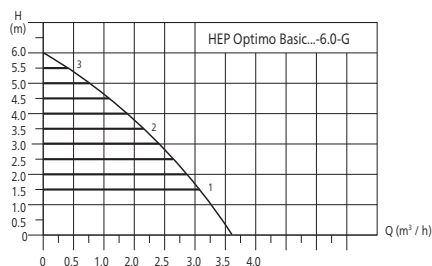
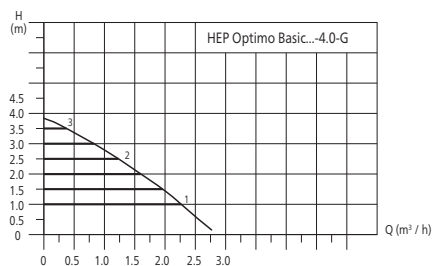




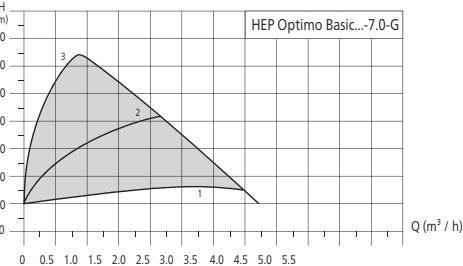
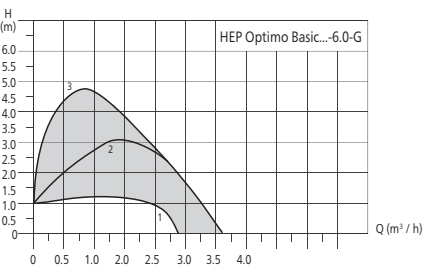
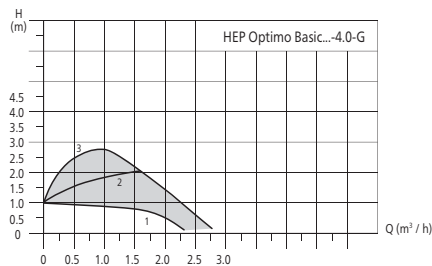
Technical data

Type	Connection pipe	Threaded connection	Installation length (mm)	Voltage (V)	P1 (W)	In (A)	Weight (kg)	Product no.	EEL
HEP Optimo Basic 25-4.0 G180	1"	1½"	180	230	4 ... 23	... 0.30	2.7	0323-34204.2	≤ 0.20
HEP Optimo Basic 25-6.0 G180	1"	1½"	180	230	4 ... 50	... 0.46	2.7	0323-34206.2	≤ 0.23
HEP Optimo Basic 25-7.0 G180	1"	1½"	180	230	4 ... 64	... 0.60	2.7	0323-34207.2	≤ 0.23
HEP Optimo Basic 30-4.0 G180	1¼"	2"	180	230	4 ... 23	... 0.30	2.8	0324-34204.2	≤ 0.20
HEP Optimo Basic 30-6.0 G180	1¼"	2"	180	230	4 ... 50	... 0.46	2.8	0324-34206.2	≤ 0.23
HEP Optimo Basic 30-7.0 G180	1¼"	2"	180	230	4 ... 64	... 0.60	2.8	0324-34207.2	≤ 0.23
HEP Optimo Basic 15-4.0 G130	½"	1"	130	230	4 ... 23	... 0.30	2.7	0321-34004.2	≤ 0.20
HEP Optimo Basic 15-6.0 G130	½"	1"	130	230	4 ... 50	... 0.46	2.7	0321-34006.2	≤ 0.23
HEP Optimo Basic 15-7.0 G130	½"	1"	130	230	4 ... 64	... 0.60	2.7	0321-34007.2	≤ 0.23
HEP Optimo Basic 20-4.0 G130	¾"	1 ¼"	130	230	4 ... 23	... 0.30	2.7	0322-34004.2	≤ 0.20
HEP Optimo Basic 20-6.0 G130	¾"	1 ¼"	130	230	4 ... 50	... 0.46	2.7	0322-34006.2	≤ 0.23
HEP Optimo Basic 20-7.0 G130	¾"	1 ¼"	130	230	4 ... 64	... 0.60	2.7	0322-34007.2	≤ 0.23
HEP Optimo Basic 25-4.0 G130	1"	1½"	130	230	4 ... 23	... 0.30	2.7	0323-34004.2	≤ 0.20
HEP Optimo Basic 25-6.0 G130	1"	1½"	130	230	4 ... 50	... 0.46	2.7	0323-34006.2	≤ 0.23
HEP Optimo Basic 25-7.0 G130	1"	1½"	130	230	4 ... 64	... 0.60	2.7	0323-34007.2	≤ 0.23

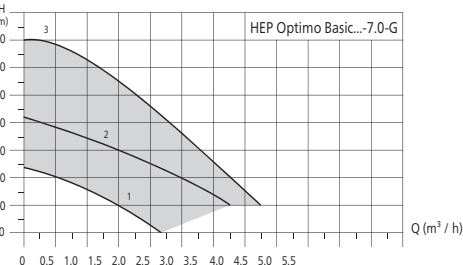
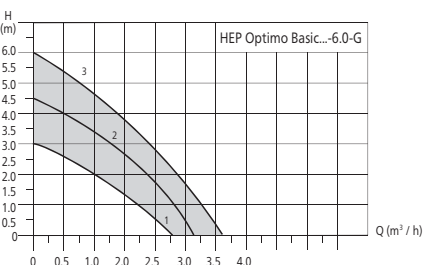
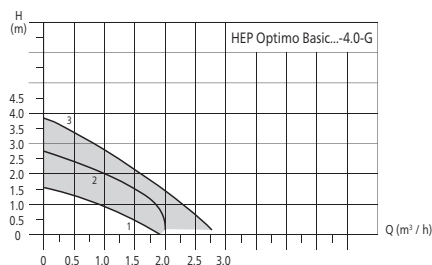
Constant pressure



Proportional pressure



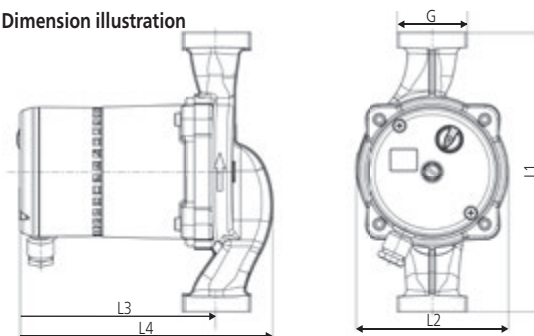
Fixed rpm



Dimensions

Type	L1	L2	L3	L4
HEP Optimo Basic	130/180	98	127	163

Dimension illustration



High efficiency pumps with LCD display, electronically controlled

HEP Optimo L series, H2 product group



Technical data

Rate of flow: up to 10 m³/h
 Pressure head: 8 m/10 m
 Control range: 15-180 W/15-195 W
 Media temperature: +2 °C to +95 °C
 Installation length: 180 mm (thread)/220 mm (flange)
 Threaded connection: 1½" and 2" (thread)/DN 32 and DN 40 (flange)
 Protection class: IP 42
 Insulation class: F
 Nominal pressure: PN 10
 EEI: ≤ 0.23 HEP Optimo L XX-8.0 GXXX
 ≤ 0.23 HEP Optimo L XX-10.0 GXXX

Control:

Internal: $\Delta p_c + \Delta p_v$ + fixed rpm
 External:

- digital: PWM (characteristic lines for heating and solar per VDMA device paper 24224)
 frequency f nominal: 100-1000 Hz
 voltage U nominal: 5-15 V
 power I: 10 mA
- analogue: 0-10 V with cable break detection
 power I: 1 mA
 impedance: 10 kOhm

Omnibus fault message: Selector switch, potential-free, power max. 2 A/240 VAC
 Power supply for external unit: Voltage DC 12 V, power max. 100 mA

Product features

- LCD display
- manual start-up feature
- smooth running
- very low energy consumption
- air-vent screw
- collective fault signal
- convenient operation
- axially integrated terminal box
- automatic adjustment to pressure conditions
- cathophoretic coated pump housing

Use

The electronically controlled HEP Optimo L high efficiency wet rotor circulators with LCD display and permanent magnet technology are designed for use in heating systems with variable or constant rate of flow. The cathophoretic coated pump housing is stainless.

Main areas of use

Heating, air-conditioning and industry systems as

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

Controls function

You can make adjustments with the integrated control keys at the front. The LCD display shows the total electrical input power as a numeric value in [W] watts. Different icons at the top of the display show the function, setting and the modes of operation.

Materials

Component	Material	Material No.
Pump body	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 mm²/s
- operating data must be checked above 20 % glycol

Temperature range

Ambient temperature: 0 °C to +40 °C
 Temperature class: TF 95
 Media temperature: +2 °C to +95 °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.

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	0.45 bar

Sound pressure level

The sound pressure level is < 45 dB (A)

High efficiency pumps with LCD display, electronically controlled

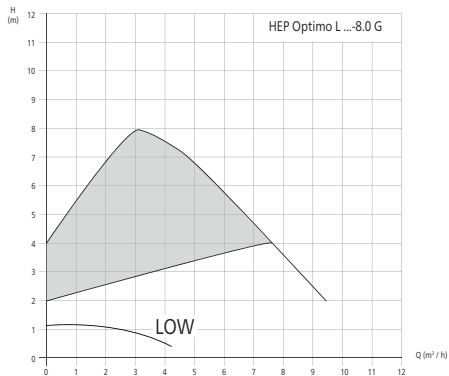
HEP Optimo L series, H2 product group



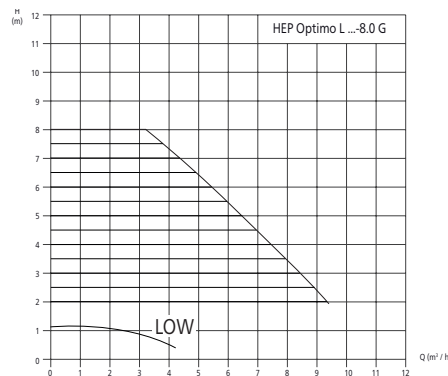
Technical data

Type	Connection pipe	Threaded connection	Flange	Installation length (mm)	Voltage (V)	P1 (W)	In (A)	Weight (kg)	Product no.	EEL
HEP Optimo L 25-8.0 G180	1"	1½"	-	180	230	15 ... 180	0.090 ... 0.90	5.96	0323-64208.1	≤ 0.23
HEP Optimo L 25-10.0 G180	1"	1½"	-	180	230	15 ... 195	0.090 ... 0.90	5.96	0323-64210.1	≤ 0.23
HEP Optimo L 30-8.0 G180	1¼"	2"	-	180	230	15 ... 180	0.090 ... 0.90	5.96	0324-64208.1	≤ 0.23
HEP Optimo L 30-10.0 G180	1¼"	2"	-	180	230	15 ... 195	0.090 ... 0.90	5.96	0324-64210.1	≤ 0.23
HEP Optimo L 32-8.0 G220	-	-	DN 32	220	230	15 ... 180	0.090 ... 0.90	6.135	0324-94208.1	≤ 0.23
HEP Optimo L 32-10.0 G220	-	-	DN 32	220	230	15 ... 195	0.090 ... 0.90	6.135	0324-94210.1	≤ 0.23
HEP Optimo L 40-8.0 G220	-	-	DN 40	220	230	15 ... 180	0.090 ... 0.90	6.135	0325-94208.1	≤ 0.23
HEP Optimo L 40-10.0 G220	-	-	DN 40	220	230	15 ... 195	0.090 ... 0.90	6.135	0325-94210.1	≤ 0.23

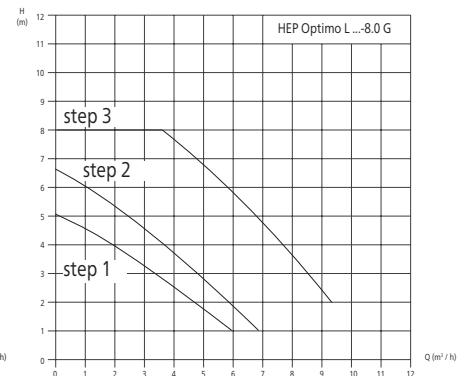
Proportional pressure



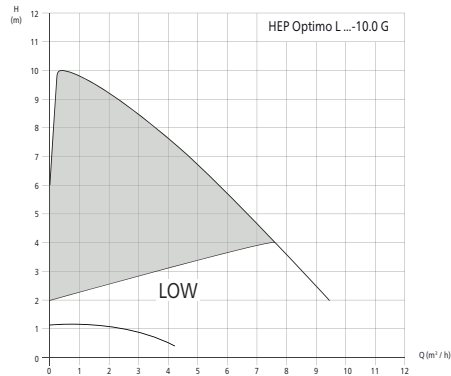
Constant pressure



Fixed rpm



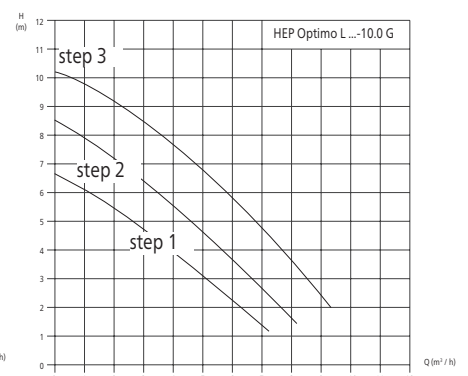
Proportional pressure



Constant pressure



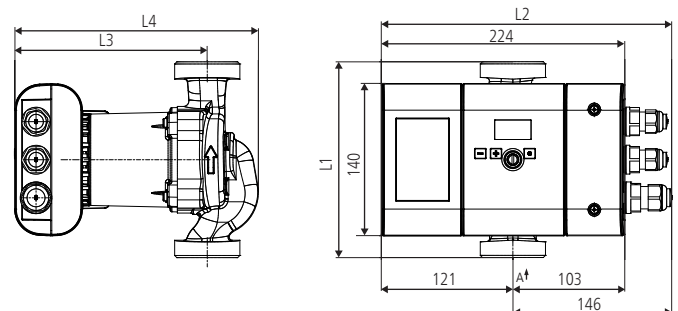
Fixed rpm



Dimensions

Type	L1	L2	L3	L4
HEP Optimo L (thread)	180	267	178	225
HEP Optimo L (flange)	220	267	177.5	245

Dimension illustration



High efficiency pumps with LCD display, electronically controlled

HEP Optimo L+ series, H2 product group



Insulation shell included in delivery



Technical data

Rate of flow:	7 to 45 m ³ /h depending on model
Pressure head:	4 m/6 m/8 m/10 m/12 m
Control range:	6 to 760 W depending on model
Media temperature:	-10 °C (non freezing) to +110 °C
Installation length:	180 to 340 mm depending on model
Circulator connection:	1½" and 2" (thread)/DN 32 + 40 + 50 + 65 (flange)
Protection class:	IP 44
Insulation class:	F
Nominal pressure:	PN 10

Control

Internal:	Δpc + Δpv + Eco Mode + fixed rpm
External:	analogue 0-10 V Start/Stop (bridged terminal ex works)

Omnibus fault message: Selector switch, potential free.

Product features

- High-efficiency wet running circulator with integrated automatic modes and additional eco mode for additional savings of approx. 40% compared to the best proportional pressure control.
- Convenient operation with multi-knob and dip switch.
- Optional night mode and locking against unauthorized adjustment.
- Clear display of function, setting and operating status via backlit icons and LCD display.
- Connection possibility of external control (0-10 V, start / stop signal) and omnibus fault indication.
- Numerous integrated additional functions (autom. air ventilation, soft-start/inrush current limitation, anti blockage function, electronic motor protection against thermal overload).
- High-quality manufacturing and standard insulation shells.

Use

The wet-running high-efficiency circulators HEP Optimo L+ have an electronically commutated synchronous motor with permanent magnet rotor and a continuously variable differential pressure control. They are designed for use in circulating systems with variable or constant flow.

The inline pump housings are resistant to corrosion by a cathodic electrodeposition coating. The HEP Optimo L+ are designed for a static operating pressure of 10 bar.

Main areas of use

Heating, air conditioning/refrigeration, solar, heat pumps and industrial facilities as

- dual pipe system
- boiler and primary circuit
- single pipe system
- storage loading circuit
- panel systems like underfloor heating

Controls function

With the multi-function button, all settings can be made easily and quickly. The multi-function button consists of an outer dial for the selection of the desired mode and the power set values, and an internal activation pushbutton for the programming start and for the confirmation of the selected mode or the power set point. Lit symbols in the motor cap indicate which mode has been active or selected. By pressing the activation pushbutton for more than 30 seconds, the pump is reset to factory default settings. 10 LED segments located around the outer dial show blue enlightened for the se-

lected power values (10-100% of maximum curve). The display shows alternately head, flow rate and power consumption. In cases of disturbances the icon SERVICE lights and additional error codes shown on the display enable a rapid troubleshooting. DIP switches located in the Circulator terminal box can be used optionally for locking against unauthorized adjustment and/or for an activation of the night setback mode.

Materials

Component	Material	Material no.
Pump housing	Grey cast iron, KTL	EN-GJL-200
Impeller	Plastic with fiberglass	PSU-GF30
Shaft	Stainless steel	1.4034
Bearing	Ceramic/Graphite	
Can	Stainless steel	1.4301
Insulation shell	Polypropylen	

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 mm²/s.
- operating data must be checked above 20 % glycol.

Temperature range

Ambient temperature:	0 °C to +40 °C
Temperature class:	TF 110
Media temperature:	-10 °C (non-freezing) to +110 °C

Ambient temperature

To avoid condensation on the pump housing, the media temperature should always be equal to or higher than the ambient temperature (see table).

Otherwise, as well as for temperatures from -10 °C to +5 °C, we recommend using a diffusion-tight insulation shell (see accessories).

Ambient temperature	Media temperature min.	Media temperature max.
0 °C	2 °C	110 °C
10 °C	10 °C	110 °C
20 °C	20 °C	110 °C
30 °C	30 °C	110 °C
35 °C	35 °C	100 °C
40 °C	40 °C	90 °C

Motor protection

An external motor protection is not required. The integrated electronic motor protection automatically reduces the power at overload. Simultaneously, a warning appears on the display.

Minimum inflow pressure

To avoid cavitation noise and circulator damage the following minimum inlet pressure must be maintained at the pump suction nozzle.

The values apply up to 300 m above sea level. Otherwise, a surcharge of 0.01 bar per 100 m time should be added.

Media temperature	< 80 °C	> 80 °C bis < 95 °C
Minimum inflow pressure	0,5 bar	1,5 bar

Sound pressure level

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

High efficiency pumps with LCD display, electronically controlled

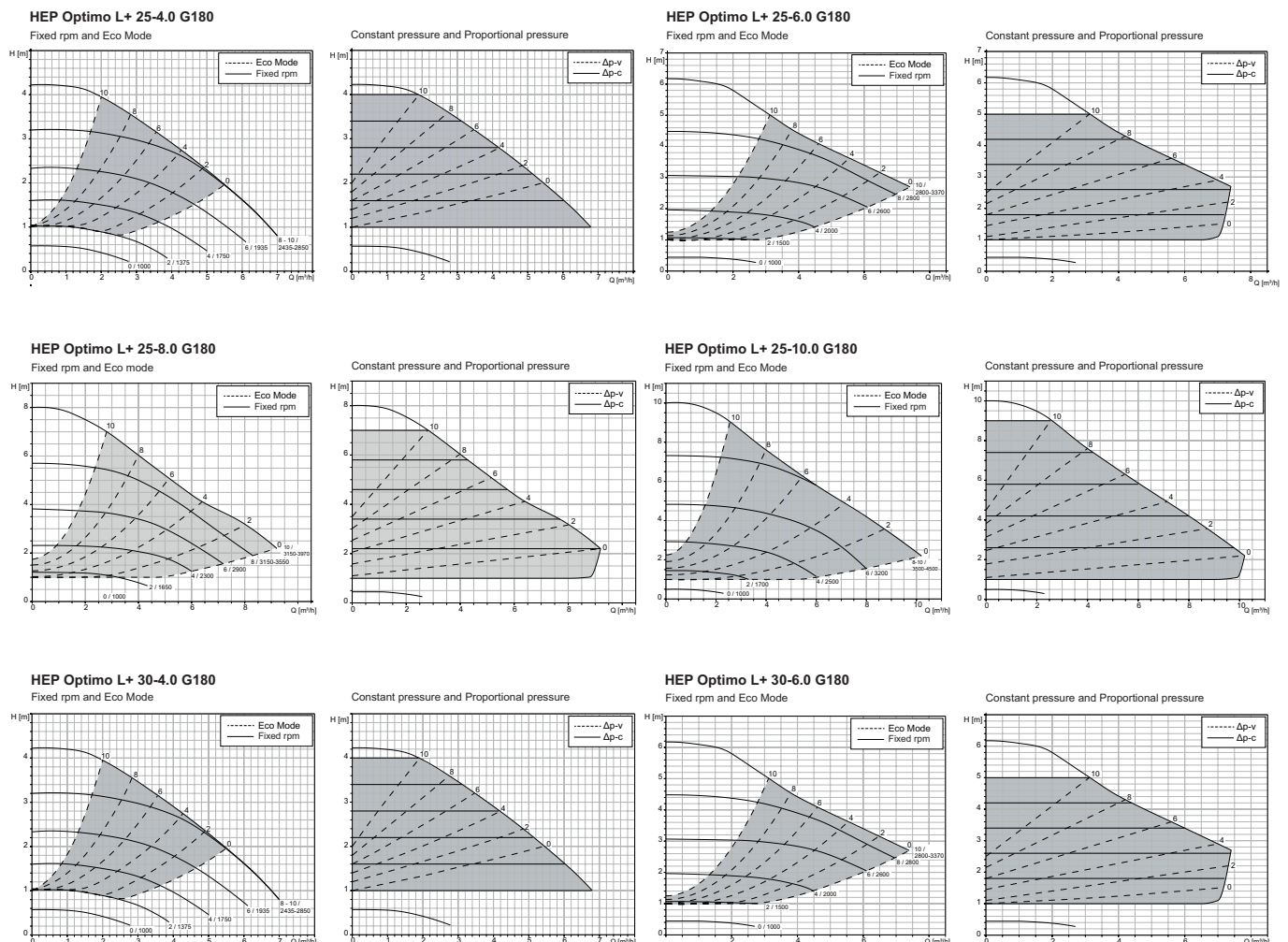
HEP Optimo L+ series, H2 product group



Technical data

Model	Connection pipe	Threaded connection	Flange	Installation length (mm)	Voltage (V)	P1 (W)	In (A)	Weight (kg)	Product no.	EEI
HEP Optimo L+ 25-4.0 G180	1"	1 1/2"		180	230	6 ... 64	0.03 ... 0.28	4.6	0323-92040	≤ 0.20
HEP Optimo L+ 25-6.0 G180	1"	1 1/2"		180	230	6 ... 112	0.03 ... 0.50	4.6	0323-92060	≤ 0.20
HEP Optimo L+ 25-8.0 G180	1"	1 1/2"		180	230	6 ... 145	0.03 ... 0.63	4.6	0323-92080	≤ 0.20
HEP Optimo L+ 25-10.0 G180	1"	1 1/2"		180	230	6 ... 175	0.03 ... 0.80	4.6	0323-92100	≤ 0.20
HEP Optimo L+ 30-4.0 G180	1 1/4"	2"		180	230	6 ... 64	0.03 ... 0.28	5.1	0324-92040	≤ 0.20
HEP Optimo L+ 30-6.0 G180	1 1/4"	2"		180	230	6 ... 112	0.03 ... 0.50	5.1	0324-92060	≤ 0.20
HEP Optimo L+ 30-8.0 G180	1 1/4"	2"		180	230	6 ... 145	0.03 ... 0.63	5.1	0324-92080	≤ 0.20
HEP Optimo L+ 30-10.0 G180	1 1/4"	2"		180	230	6 ... 175	0.03 ... 0.80	5.1	0324-92100	≤ 0.20
HEP Optimo L+ 30-12.0 G180	1 1/4"	2"		180	230	9 ... 350	0.04 ... 1.50	6.4	0324-92120	≤ 0.20
HEP Optimo L+ 40-6.0 G220			32	220	230	9 ... 350	0.04 ... 1.50	9.3	0324-93120	≤ 0.20
HEP Optimo L+ 40-8.0 G220			40	220	230	7 ... 110	0.03 ... 0.48	8.0	0325-93060	≤ 0.20
HEP Optimo L+ 40-10.0 G220			40	220	230	10 ... 265	0.04 ... 1.15	11.1	0325-93080	≤ 0.20
HEP Optimo L+ 40-12.0 G250			40	250	230	10 ... 350	0.04 ... 1.50	11.1	0325-93100	≤ 0.20
HEP Optimo L+ 50-6.0 G240			40	250	230	46 ... 611	0.20 ... 2.70	20.3	0325-93120	≤ 0.22
HEP Optimo L+ 50-8.0 G240			50	240	230	7 ... 133	0.04 ... 1.20	12.6	0326-93060	≤ 0.20
HEP Optimo L+ 50-10.0 G280			50	240	230	10 ... 275	0.04 ... 1.50	12.6	0326-93080	≤ 0.20
HEP Optimo L+ 50-12.0 G280			50	280	230	38 ... 476	0.16 ... 2.10	21.0	0326-93100	≤ 0.22
HEP Optimo L+ 50-12.0 G280			50	280	230	46 ... 620	0.20 ... 2.70	21.0	0326-93120	≤ 0.22
HEP Optimo L+ 65-6.0 G340			65	340	230	15 ... 350	0.07 ... 1.50	16.6	0327-93060	≤ 0.20
HEP Optimo L+ 65-12.0 G340			65	340	230	55 ... 760	0.24 ... 3.30	29.5	0327-93120	≤ 0.22

Performance curves



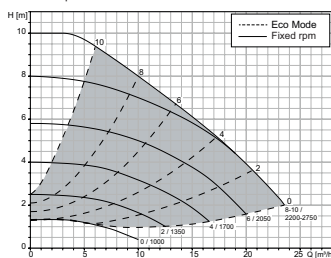
High efficiency pumps with LCD display, electronically controlled

HEP Optimo L+ series, H2 product group

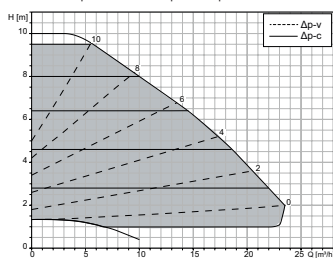


HEP Optimo L+ 50-10.0 G280

Fixed rpm and Eco Mode

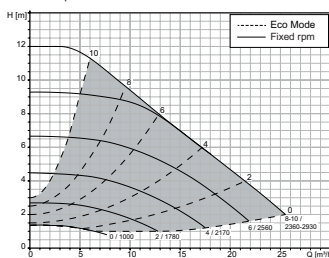


Constant pressure and Proportional pressure

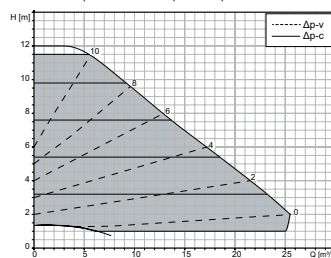


HEP Optimo L+ 50-12.0 G280

Fixed rpm and Eco Mode

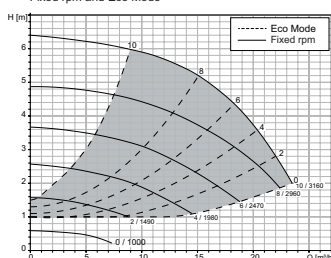


Constant pressure and Proportional pressure

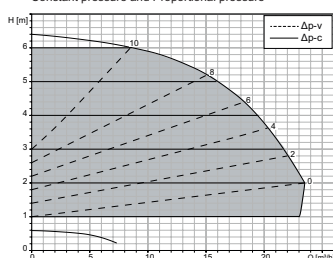


HEP Optimo L+ 65-6.0 G340

Fixed rpm and Eco Mode

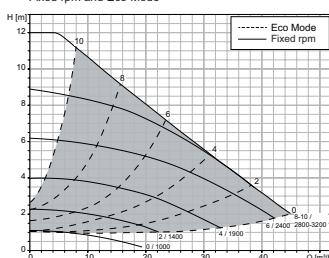


Constant pressure and Proportional pressure

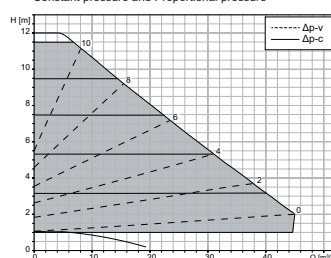


HEP Optimo L+ 65-12.0 G340

Fixed rpm and Eco Mode



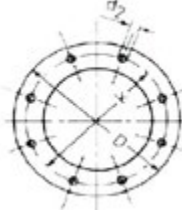
Constant pressure and Proportional pressure



Dimensions (Flange Dimensions in mm)

Combination Flanges	PN 6			PN 10		
	ØD	Øk	n x d2	ØD	Øk	n x d2
DN 32	120	90	4 x Ø14	140	100	4 x Ø19
DN 40	130	100	4 x Ø14	150	110	4 x Ø19
DN 50	140	110	4 x Ø14	165	125	4 x Ø19
DN 65	160	130	4 x Ø14	185	145	4 x Ø19

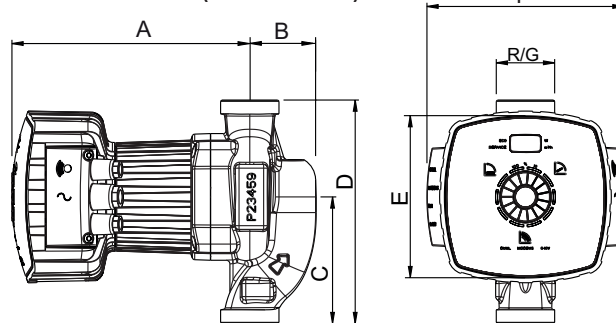
Dimension illustration



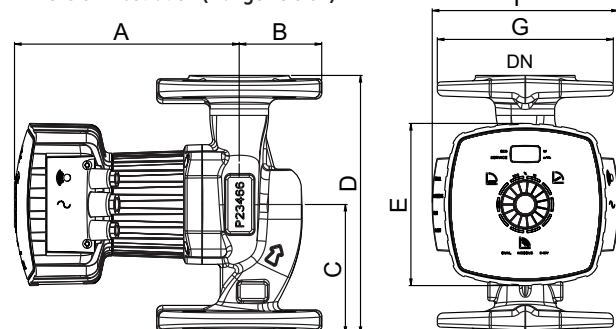
Dimension (Circulator dimensions in mm)

Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
HEP Optimo L+ 25-4.0 G180	192	53	102	180	140	160
HEP Optimo L+ 25-6.0 G180	192	53	102	180	140	160
HEP Optimo L+ 25-8.0 G180	192	53	102	180	140	160
HEP Optimo L+ 25-10.0 G180	192	53	102	180	140	160
HEP Optimo L+ 30-4.0 G180	192	53	102	180	140	160
HEP Optimo L+ 30-6.0 G180	192	53	102	180	140	160
HEP Optimo L+ 30-8.0 G180	192	53	102	180	140	160
HEP Optimo L+ 30-10.0 G180	192	53	102	180	140	160
HEP Optimo L+ 30-12.0 G180	245	56	98	180	140	160
HEP Optimo L+ 32-12.0 G220	245	65	110	220	140	160
HEP Optimo L+ 40-6.0 G220	192	70	110	220	140	160
HEP Optimo L+ 40-8.0 G220	192	70	120	220	140	160
HEP Optimo L+ 40-10.0 G220	255	70	120	220	140	160
HEP Optimo L+ 40-12.0 G250	382	76	135	250	206	240
HEP Optimo L+ 50-6.0 G240	256	78	130	240	140	160
HEP Optimo L+ 50-8.0 G240	256	78	130	240	140	160
HEP Optimo L+ 50-10.0 G280	382	77	140	280	206	240
HEP Optimo L+ 50-12.0 G280	382	77	140	280	206	240
HEP Optimo L+ 65-6.0 G340	257	89	170	340	140	160
HEP Optimo L+ 65-12.0 G340	387	100	170	340	206	240

Dimension illustration (Threaded version)



Dimension illustration (Flange version)



High efficiency pumps with LED display and stainless steel housing, electronically controlled

HEP Optimo (N) series, T1 product group



Insulation shell
With installation length
180 mm included
in delivery.

**BEST
in class**

valid for all Halm 4 m
High efficiency pumps



Technical data

Rate of flow:	up to 3.2 m ³ /h
Pressure head:	4 m/6 m
Control range:	4-23 W/4-50 W
Media temperature:	+2 °C to +95 °C
Installation length:	130, 150 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
EEL:	≤ 0.20 HEP Optimo XX-4.0 NXXX ≤ 0.23 HEP Optimo XX-6.0 NXXX

Product features

- manual start-up feature
- smooth running
- very low energy consumption
- integrated night economy feature
- air-vent screw
- LED display
- convenient operation
- space-saving axially integrated terminal box
- automatic adjustment to pressure conditions
- stainless steel pump housing
- pre-mounted, screwable angle entry-plug
- compact design
- optical fault indication
- optical display control mode

Use

The electronically controlled HEP Optimo (N) high efficiency wet rotor circulators with LED display and permanent magnet technology are designed for use in heating systems as well as drinking water systems with variable or constant rate of flow.

Mode of operation Δp control

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 best 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 or drinking water systems), best mode to go with 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.

Main areas of use

- drinking water systems

Materials

Component	Material	Material no.
Pump housing	Stainless steel	1.4308
Impeller	Polyamide (PA - GF 35)	
Shaft	Ceramic	
Bearing	Ceramic	
Bearing plate	Stainless steel	1.4301
Can	Stainless steel	1.4301

Flow media

- drinking water up to a temperature of 65 °C and a degree of hardness of 14 °dH (temporary hardness)
- 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 mm²/s
- operating data must be checked above 20 % glycol

Temperature range

Ambient temperature:	0 °C to +40 °C
Temperature class:	TF 95
Media temperature:	+2 °C to +95 °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. The display indicates power consumption in [W] watts. Once the potentiometer is turned, the display first indicates mode of operation (PP, SC, CP), then value of set head in [m] meters. At the factory setting the potentiometer is in mode PP.



High efficiency pumps with LED display and stainless steel housing, electronically controlled

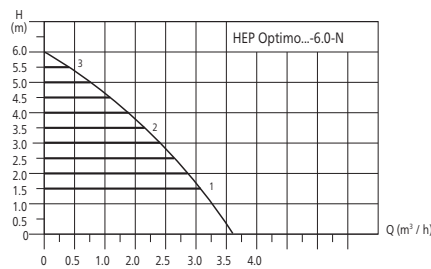
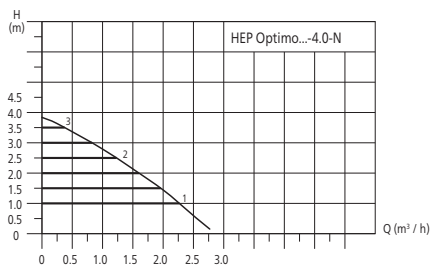
HEP Optimo (N) series, T1 product group



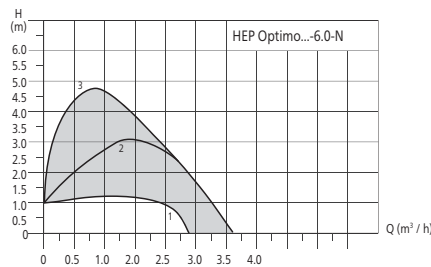
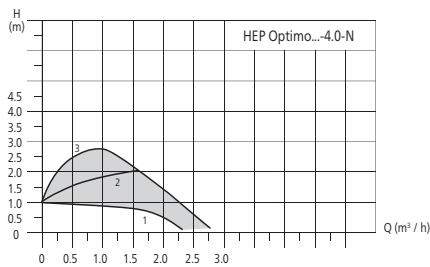
Technical data

Type	Connection pipe	Threaded connection	Installation length (mm)	Voltage (V)	P1 (W)	In (A)	Weight (kg)	Product no.	EEl
HEP Optimo 25-4.0 N180	1"	1½"	180	230	4 ... 23	... 0.30	2.7	0353-34204.1	≤ 0.20
HEP Optimo 25-6.0 N180	1"	1½"	180	230	4 ... 50	... 0.46	2.7	0353-34206.1	≤ 0.23
HEP Optimo 15-4.0 N130	½"	1"	130	230	4 ... 23	... 0.30	2.7	0351-34004.1	≤ 0.20
HEP Optimo 15-6.0 N130	½"	1"	130	230	4 ... 50	... 0.46	2.7	0351-34006.1	≤ 0.23
HEP Optimo 20-4.0 N150	¾"	1¼"	150	230	4 ... 23	... 0.30	2.7	0352-34104.1	≤ 0.20
HEP Optimo 20-6.0 N150	¾"	1¼"	150	230	4 ... 50	... 0.46	2.7	0352-34106.1	≤ 0.23
HEP Optimo 25-4.0 N130	1"	1½"	130	230	4 ... 23	... 0.30	2.7	0353-34004.1	≤ 0.20
HEP Optimo 25-6.0 N130	1"	1½"	130	230	4 ... 50	... 0.46	2.7	0353-34006.1	≤ 0.23

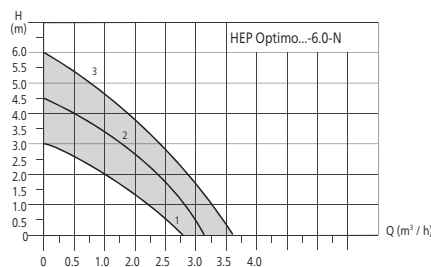
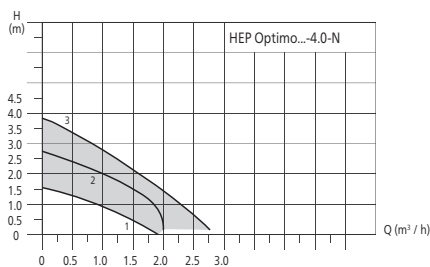
Constant pressure



Proportional pressure



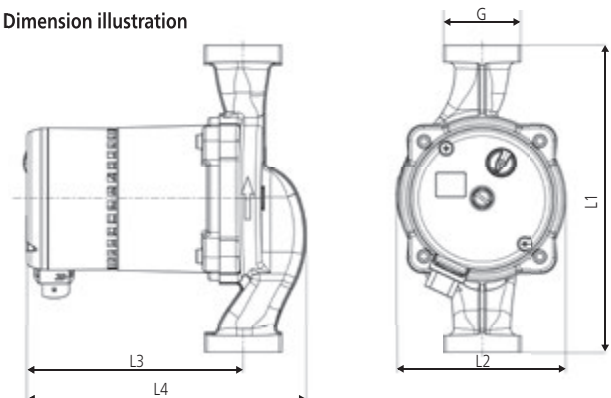
Fixed rpm



Dimensions

Type	L1	L2	L3	L4
HEP Optimo (N)	130/150/180	98	127	163

Dimension illustration



High efficiency pumps with stainless steel housing, electronically controlled

HEP Optimo Basic (N) series, T1 product group



BEST
in class

valid for all Halm 4 m
High efficiency pumps



Technical data

Rate of flow:	up to 3.2 m ³ /h
Pressure head:	4 m/6 m
Control range:	4-23 W/4-50 W
Media temperature:	+2 °C to +95 °C
Installation length:	130, 150 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
EEL:	≤ 0.20 HEP Optimo Basic XX-4.0 NXXX ≤ 0.23 HEP Optimo Basic XX-6.0 NXXX

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
- stainless steel pump housing
- pre-mounted cable (1 m)
- compact design

Use

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

Mode of operation Δp control

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 best 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 or drinking water systems), best mode to go with 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.

Main areas of use

- drinking water systems

Materials

Component	Material	Material no.
Pump housing	Stainless steel	1.4308
Impeller	Polyamide (PA - GF 35)	
Shaft	Ceramic	
Bearing	Ceramic	
Bearing plate	Stainless steel	1.4301
Can	Stainless steel	1.4301

Flow media

- drinking water up to a temperature of 65 °C and a degree of hardness of 14 °dH (temporary hardness)
- 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 mm²/s
- operating data must be checked above 20 % glycol

Temperature range

Ambient temperature:	0 °C to +40 °C
Temperature class:	TF 95
Media temperature:	+2 °C to +95 °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.



High efficiency pumps with stainless steel housing, electronically controlled

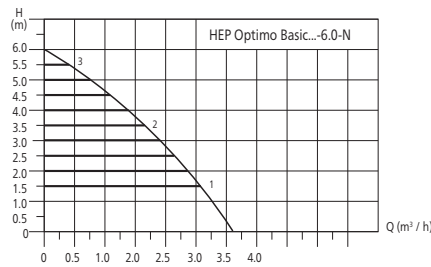
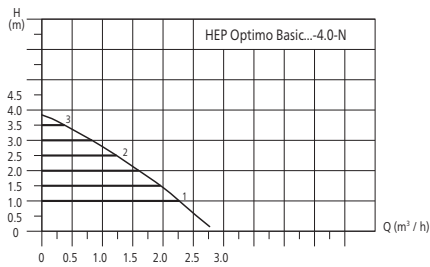
HEP Optimo Basic (N) series, T1 product group



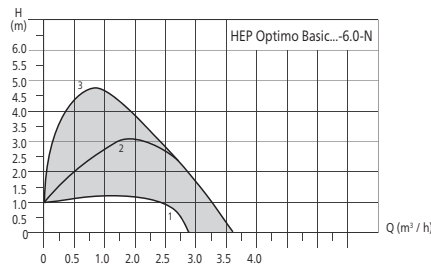
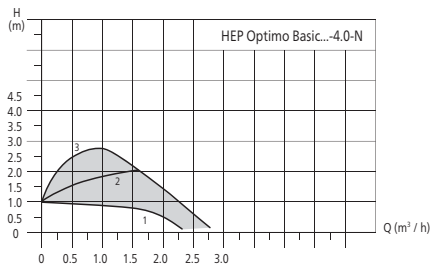
Technical data

Type	Connection pipe	Threaded connection	Installation length (mm)	Voltage (V)	P1 (W)	In (A)	Weight (kg)	Product no.	EEl
HEP Optimo Basic 25-4.0 N180	1"	1½"	180	230	4 ... 23	... 0.30	2.7	0353-34204.2	≤ 0.20
HEP Optimo Basic 25-6.0 N180	1"	1½"	180	230	4 ... 50	... 0.46	2.7	0353-34206.2	≤ 0.23
HEP Optimo Basic 15-4.0 N130	½"	1"	130	230	4 ... 23	... 0.30	2.7	0351-34004.2	≤ 0.20
HEP Optimo Basic 15-6.0 N130	½"	1"	130	230	4 ... 50	... 0.46	2.7	0351-34006.2	≤ 0.23
HEP Optimo Basic 20-4.0 N150	¾"	1 ¼"	150	230	4 ... 23	... 0.30	2.7	0352-34104.2	≤ 0.20
HEP Optimo Basic 20-6.0 N150	¾"	1 ¼"	150	230	4 ... 50	... 0.46	2.7	0352-34106.2	≤ 0.23
HEP Optimo Basic 25-4.0 N130	1"	1½"	130	230	4 ... 23	... 0.30	2.7	0353-34004.2	≤ 0.20
HEP Optimo Basic 25-6.0 N130	1"	1½"	130	230	4 ... 50	... 0.46	2.7	0353-34006.2	≤ 0.23

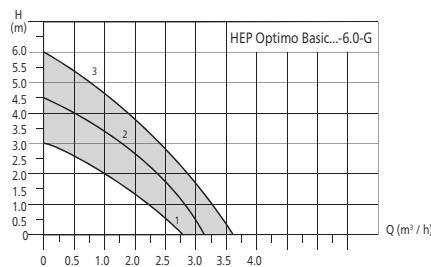
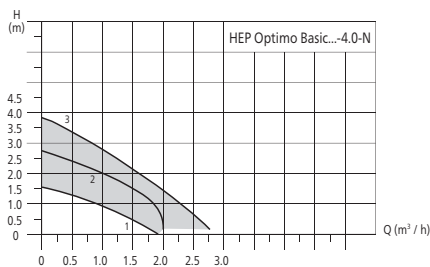
Constant pressure



Proportional pressure



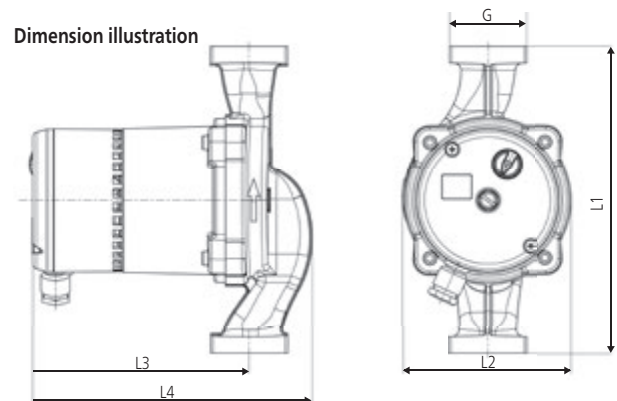
Fixed rpm



Dimensions

Type	L1	L2	L3	L4
HEP Optimo Basic (N)	130/180	98	127	163

Dimension illustration



Standard circulation pumps for drinking water with stainless steel housing

BUPA (N) series, T3 product group



Technical data

Rate of flow:	up to 4.0 m ³ /h
Pressure head:	up to 6 m
Media temperature:	+2 °C to +110 °C
Installation length:	130, 150 and 180 mm
Threaded connection:	1", 1¼" and 1½"
Protection class:	IP 44
Insulation class:	H
Nominal pressure:	PN 10
Control:	3-step switch with manual speed selection

Product features

- manual start-up feature
- space-saving axially integrated terminal box

Use

The BUPA (N) series circulation pumps are wet rotor circulators designed for use in drinking water systems with constant or weakly variable flow rates. They feature a corrosion-resistant pump housing in stainless steel and are thus suitable for use in drinking water circulation systems.

Materials

Component	Material	Material no.
Pump housing	Stainless steel	1.4308
Impeller	PSU - GF 20	
Shaft	Ceramic	
Bearing	Ceramic	
Bearing plate	Stainless steel	1.4301
Can	Stainless steel	1.4301

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	110
10	10	110
20	20	110
30	30	110
35	35	110
40	40	110

Motor protection

External motor protection is not required.

Speed switching

The respective speed is set via a rotary switch integrated in the axial terminal box.

Minimum inflow pressure

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

Media temperature	< 85 °C	90 °C	110 °C
Minimum inflow pressure	0.05 bar	0.3 bar	1.10 bar

Sound pressure level

The sound pressure level is < 45 dB (A)

Flow media

Only for drinking water up to a temperature of 65 °C and a max. degree of hardness of 14 °dH (temporary hardness).

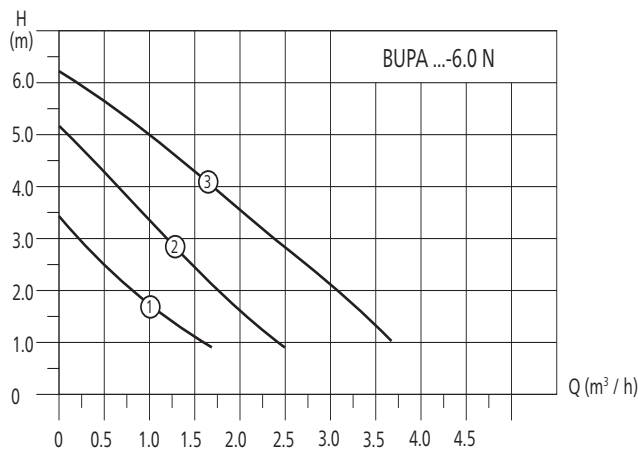
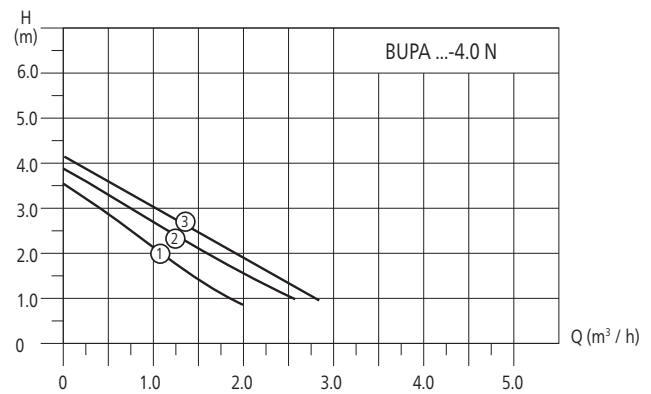
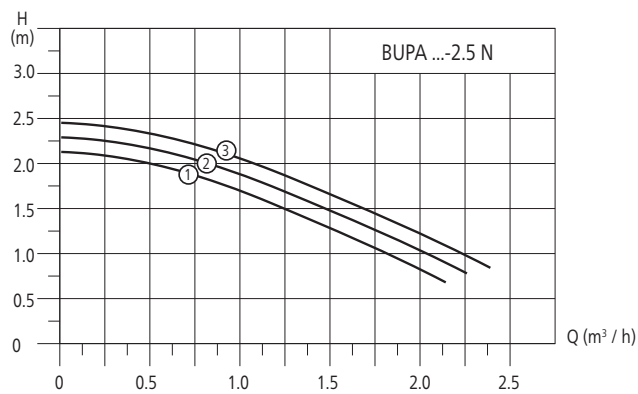
Standard circulation pumps for drinking water with stainless steel housing

BUPA (N) series, T3 product group



Technical data

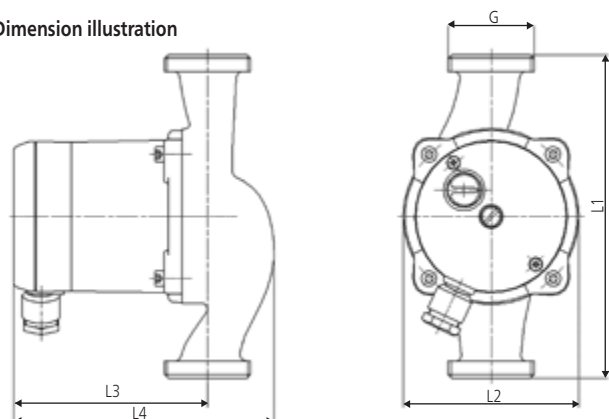
Type	Connection pipe	Threaded connection	Installation length (mm)	Voltage (V)	P1 (W)	In (A)	Weight (kg)	Product no.
BUPA 25-2.5 N180	1"	1½"	180	230	27 ... 35	0.12 ... 0.15	2.8	0353-30203
BUPA 25-4.0 N180	1"	1½"	180	230	33 ... 44	0.14 ... 0.19	2.8	0353-30204
BUPA 25-6.0 N180	1"	1½"	180	230	43 ... 80	0.19 ... 0.34	2.8	0353-30206
BUPA 15-2.5 N130	½"	1"	130	230	27 ... 35	0.12 ... 0.15	2.7	0351-30003
BUPA 15-4.0 N130	½"	1"	130	230	33 ... 44	0.14 ... 0.19	2.7	0351-30004
BUPA 15-6.0 N130	½"	1"	130	230	43 ... 80	0.19 ... 0.34	2.7	0351-30006
BUPA 20-2.5 N150	¾"	1¼"	150	230	27 ... 35	0.12 ... 0.15	2.7	0352-30103
BUPA 20-4.0 N150	¾"	1¼"	150	230	33 ... 44	0.14 ... 0.19	2.7	0352-30104
BUPA 20-6.0 N150	¾"	1¼"	150	230	43 ... 80	0.19 ... 0.34	2.7	0352-30106
BUPA 25-2.5 N130	1"	1½"	130	230	27 ... 35	0.12 ... 0.15	2.7	0353-30003
BUPA 25-4.0 N130	1"	1½"	130	230	33 ... 44	0.14 ... 0.19	2.7	0353-30004
BUPA 25-6.0 N130	1"	1½"	130	230	43 ... 80	0.19 ... 0.34	2.7	0353-30006



Dimensions

Type	L1	L2	L3	L4
BUPA (N)	130/150/180	98	108	145

Dimension illustration



Circulation pumps for drinking water with stainless steel housing, pressure head 7-12 m

BGPA (N) series, T3 product group



Technical data

Rate of flow: up to 12.0 m³/h
 Pressure head: up to 12 m
 Media temperature: +2 °C to +110 °C
 Installation length: 180 mm
 Threaded connection: 1¼" and 1½"
 Protection class: IP 44
 Insulation class: H
 Nominal pressure: PN 10
 Control: 3-step switch with manual speed selection

Product features

- manual start-up feature
- space-saving axially integrated terminal box
- pump housing in stainless steel

Use

The BGPA (N) series circulation pumps are wet rotor circulators designed for use in drinking water systems with a flow rate of > 5 m³/h. They feature a corrosion-resistant housing in stainless steel and are thus designed for use in drinking water circulation systems.

Materials

Component	Material	Material no.
Pump housing	Stainless steel	1.4308
Impeller	Polypropylene (PP - GF 30)	
Shaft	Ceramic	
Bearing	Ceramic	
Bearing plate	Brass	2.0401
Can	Stainless steel	1.4301

Temperature range

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

Ambient temperature

To avoid the build-up of condensation, the ambient temperature must always be lower than the media temperature.

Ambient temp.	Media temp. min.	Media temp. max.
0	2	110
10	10	110
20	20	110
30	30	110
35	35	110
40	40	110

Motor protection

External motor protection is not required.

Speed switching

The respective speed is set via a rotary switch integrated in the axial terminal box.

Minimum inflow pressure

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

Media temperature	< 85 °C	90 °C	110 °C
Minimum inflow pressure	0.05 bar	0.3 bar	1.10 bar

Sound pressure level

The sound pressure level is < 45 dB (A)

Flow media

Only for drinking water up to a temperature of 65 °C and a max. degree of hardness of 14 °dH (temporary hardness).

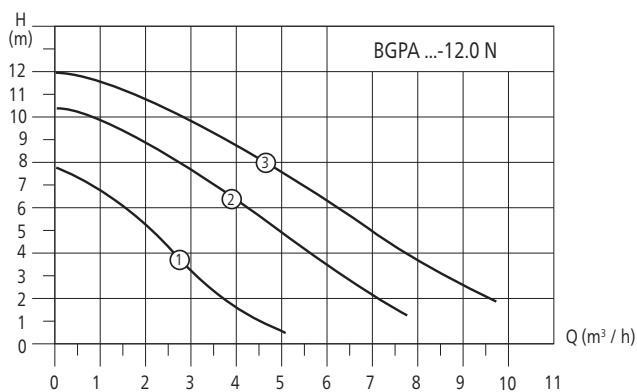
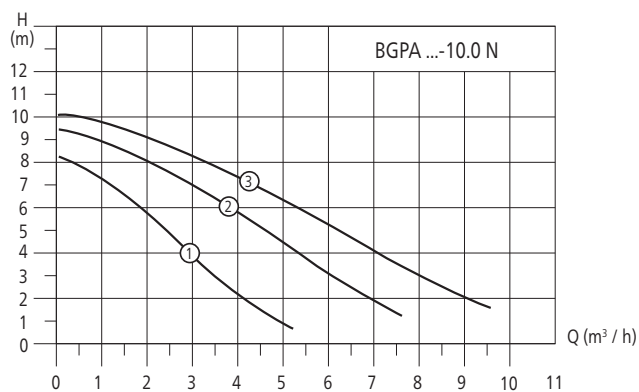
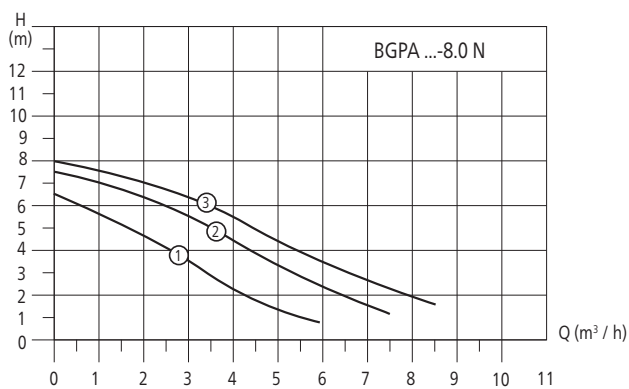
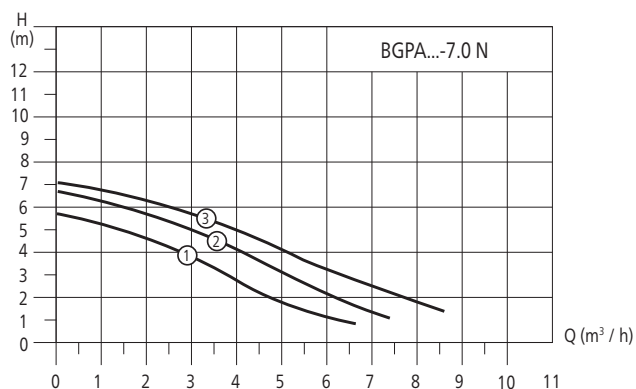
Circulation pumps for drinking water with stainless steel housing, pressure head 7-12 m

BGPA (N) series, T3 product group



Technical data

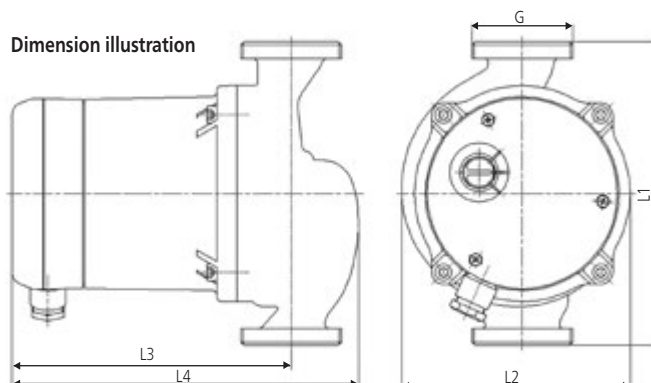
Type	Connection pipe	Threaded connection	Installation length (mm)	Voltage (V)	P1 (W)	In (A)	Weight (kg)	Product no.
BGPA 20-7.0 N180	3/4"	1 1/4"	180	230	220 ... 260	1.03 ... 1.13	6.5	0352-40207
BGPA 20-8.0 N180	3/4"	1 1/4"	180	230	260 ... 286	1.23 ... 1.25	6.5	0352-40208
BGPA 20-10.0 N180	3/4"	1 1/4"	180	230	283 ... 357	1.35 ... 1.56	6.5	0352-40210
BGPA 20-12.0 N180	3/4"	1 1/4"	180	230	285 ... 400	1.36 ... 1.73	6.5	0352-40212
BGPA 25-7.0 N180	1"	1 1/2"	180	230	220 ... 260	1.03 ... 1.13	6.5	0353-40207
BGPA 25-8.0 N180	1"	1 1/2"	180	230	260 ... 286	1.23 ... 1.25	6.5	0353-40208
BGPA 25-10.0 N180	1"	1 1/2"	180	230	283 ... 357	1.35 ... 1.56	6.5	0353-40210
BGPA 25-12.0 N180	1"	1 1/2"	180	230	285 ... 400	1.36 ... 1.73	6.5	0353-40212



Dimensions

Type	L1	L2	L3	L4
BGPA (N)	180	135.5	166	206

Dimension illustration



High efficiency pumps with LED display, electronically controlled

HEP Optimo Solar series, S1 product group



Insulation shell
With installation length
180 mm included
in delivery.

**BEST
in class**

valid for all Halm 4 m
High efficiency pumps



Technical data

Rate of flow:	up to 3.2 m ³ /h
Pressure head:	4 m/6 m
Control range:	4-23 W/4-50 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
EEL:	≤ 0.20 HEP Optimo Solar XX-4.0 GXXX ≤ 0.23 HEP Optimo Solar XX-6.0 GXXX

Product features

- manual start-up feature
- smooth running
- very low energy consumption
- integrated night economy feature
- air-vent screw
- LED display
- convenient operation
- space-saving axially integrated terminal box
- automatic adjustment to pressure conditions
- cataphoretic coated pump housing
- pre-mounted, screwable angle entry-plug
- compact design

Use

The electronically controlled HEP Optimo Solar high efficiency wet rotor circulators with LED display and permanent magnet technology are designed for use in solar systems with variable or constant rate of flow. The cataphoretic coated pump housing is stainless.

Mode of operation Δp control

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 best 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 or solar systems), best mode to go with 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.

Main areas of use

- solar systems

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 mm²/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	110
10	10	110
20	20	110
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. The display indicates power consumption in [W] watts. Once the potentiometer is turned, the display first indicates mode of operation (PP, SC, CP), then value of set head in [m] meters. At the factory setting the potentiometer is in mode PP.



High efficiency pumps with LED display, electronically controlled

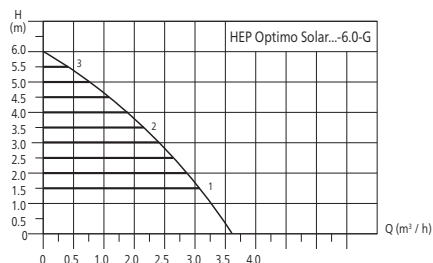
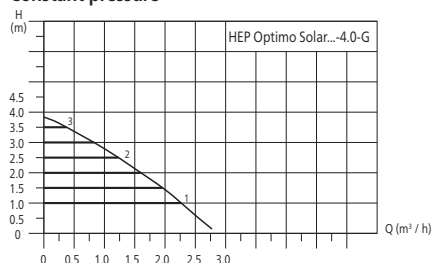
HEP Optimo Solar series, S1 product group



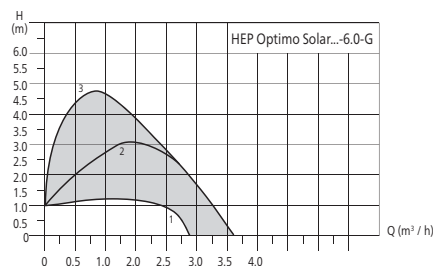
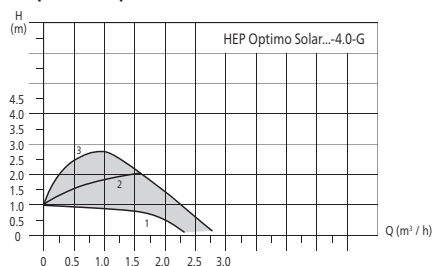
Technical data

Type	Connection pipe	Threaded connection	Installation length (mm)	Voltage (V)	P1 (W)	In (A)	Weight (kg)	Product no.	EEL
HEP Optimo Solar 25-4.0 G180	1"	1½"	180	230	4 ... 23	... 0.30	2.7	0313-34204.1	≤ 0.20
HEP Optimo Solar 25-6.0 G180	1"	1½"	180	230	4 ... 50	... 0.46	2.7	0313-34206.1	≤ 0.23
HEP Optimo Solar 30-4.0 G180	1¼"	2"	180	230	4 ... 23	... 0.30	2.8	0314-34204.1	≤ 0.20
HEP Optimo Solar 30-6.0 G180	1¼"	2"	180	230	4 ... 50	... 0.46	2.8	0314-34206.1	≤ 0.23
HEP Optimo Solar 15-4.0 G130	½"	1"	130	230	4 ... 23	... 0.30	2.7	0311-34004.1	≤ 0.20
HEP Optimo Solar 15-6.0 G130	½"	1"	130	230	4 ... 50	... 0.46	2.7	0311-34006.1	≤ 0.23
HEP Optimo Solar 20-4.0 G130	¾"	1 ¼"	130	230	4 ... 23	... 0.30	2.7	0312-34004.1	≤ 0.20
HEP Optimo Solar 20-6.0 G130	¾"	1 ¼"	130	230	4 ... 50	... 0.46	2.7	0312-34006.1	≤ 0.23
HEP Optimo Solar 25-4.0 G130	1"	1½"	130	230	4 ... 23	... 0.30	2.7	0313-34004.1	≤ 0.20
HEP Optimo Solar 25-6.0 G130	1"	1½"	130	230	4 ... 50	... 0.46	2.7	0313-34006.1	≤ 0.23

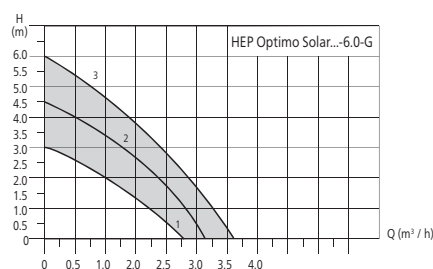
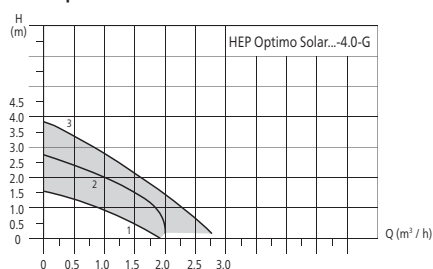
Constant pressure



Proportional pressure



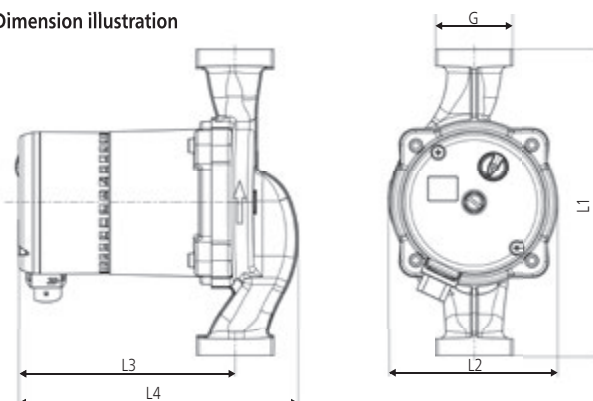
Fixed rpm



Dimensions

Type	L1	L2	L3	L4
HEP Optimo Solar	130/180	98	127	163

Dimension illustration



High efficiency pumps with LCD display, electronically controlled

HEP Optimo L Solar series, S2 product group



Technical data

Rate of flow:	up to 10 m ³ /h
Pressure head:	8 m/10 m
Control range:	15-180 W/15-195 W
Media temperature:	+2 °C to +110 °C
Installation length:	180 mm (thread)/220 mm (flange)
Threaded connection:	1½" and 2" (thread)/DN 32 and DN 40 (flange)
Protection class:	IP 42
Insulation class:	F
Nominal pressure:	PN 10
EEL:	≤ 0.23 HEP Optimo L XX-8.0 GXXX ≤ 0.23 HEP Optimo L XX-10.0 GXXX

Control:

Internal:	$\Delta p_c + \Delta p_v$ + fixed rpm
External:	<ul style="list-style-type: none"> digital: PWM (characteristic lines for heating and solar per VDMA device paper 24224) frequency f nominal: 100-1000 Hz voltage U nominal: 5-15 V power I: 10 mA analogue: 0-10 V with cable break detection power I: 1 mA impedance: 10 kOhm

Omnibus fault message: Selector switch, potential-free, power max. 2 A/240 VAC
Power supply for external unit: Voltage DC 12 V, power max. 100 mA

Product features

- LCD display
- manual start-up feature
- smooth running
- very low energy consumption
- air-vent screw
- collective fault signal
- convenient operation
- axially integrated terminal box
- automatic adjustment to pressure conditions
- cataphoretic coated pump housing

Use

The electronically controlled HEP Optimo L Solar high efficiency wet rotor circulators with LCD display and permanent magnet technology are designed for use in heating systems with variable or constant rate of flow. The cataphoretic coated pump housing is stainless.

Main areas of use

- solar systems

Controls Function

You can make adjustments with the integrated control keys at the front. The LCD display shows the total electrical input power as a numeric value in [W] watts. Different icons at the top of the display show the function, setting and the modes of operation.

Materials

Component	Material	Material No.
Pump body	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 mm²/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	110
10	10	110
20	20	110
30	30	95
35	35	90
40	40	70

Motor protection

External motor protection is not required.

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	0.45 bar

Sound pressure level

The sound pressure level is < 45 dB (A)

High efficiency pumps with LCD display, electronically controlled

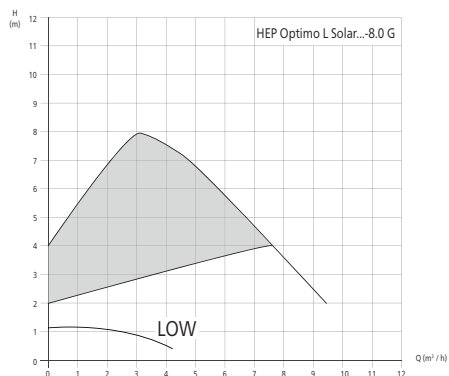
HEP Optimo L Solar series, S2 product group



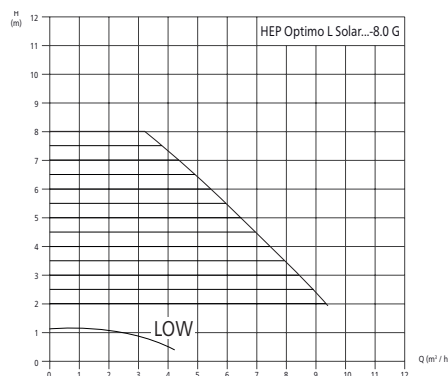
Technical data

Type	Connection pipe	Threaded connection	Flange	Installation length (mm)	Voltage (V)	P1 (W)	In (A)	Weight (kg)	Product no.	EEl
HEP Optimo L Solar 25-8.0 G180	1"	1½"	-	180	230	15 ... 180	0.090 ... 0.90	5.96	0313-64208.1	≤ 0.23
HEP Optimo L Solar 25-10.0 G180	1"	1½"	-	180	230	15 ... 195	0.090 ... 0.90	5.0	0313-64210.1	≤ 0.23
HEP Optimo L Solar 30-8.0 G180	1¼"	2"	-	180	230	15 ... 180	0.090 ... 0.90	5.96	0314-64208.1	≤ 0.23
HEP Optimo L Solar 30-10.0 G180	1¼"	2"	-	180	230	15 ... 195	0.090 ... 0.90	5.0	0314-64210.1	≤ 0.23
HEP Optimo L Solar 32-8.0 G220	-	-	DN 32	220	230	15 ... 180	0.090 ... 0.90	6.135	0314-94208.1	≤ 0.23
HEP Optimo L Solar 32-10.0 G220	-	-	DN 32	220	230	15 ... 195	0.090 ... 0.90	6.135	0314-94210.1	≤ 0.23
HEP Optimo L Solar 40-8.0 G220	-	-	DN 40	220	230	15 ... 180	0.090 ... 0.90	6.135	0315-94208.1	≤ 0.23
HEP Optimo L Solar 40-10.0 G220	-	-	DN 40	220	230	15 ... 195	0.090 ... 0.90	6.135	0315-94210.1	≤ 0.23

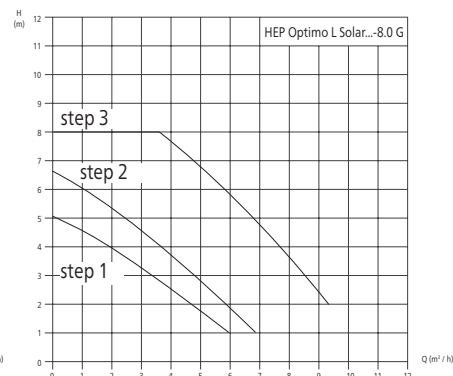
Proportional pressure



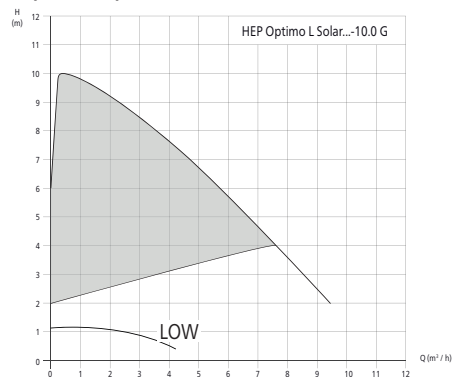
Constant pressure



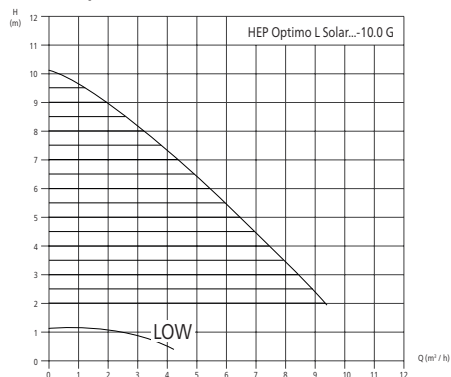
Fixed rpm



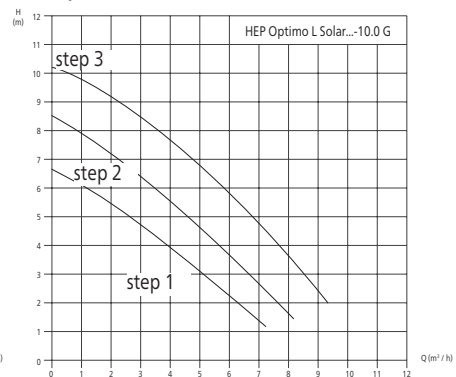
Proportional pressure



Constant pressure



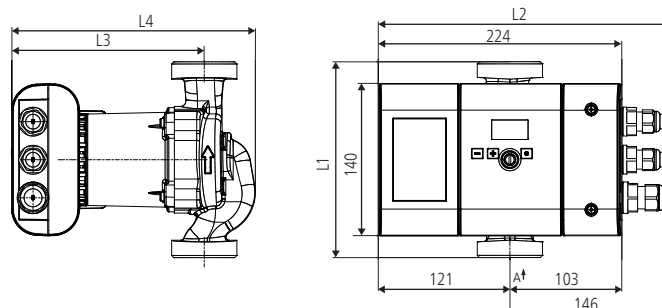
Fixed rpm



Dimensions

Type	L1	L2	L3	L4
HEP Optimo L (thread)	180	267	178	225
HEP Optimo L (flange)	220	267	177.5	245

Dimension illustration



HEP BB2

Babelbox BB2 and HEP PWM , S3 product group



Technical data

Supply voltage:	230 V
Power input:	0.25 W
Signal input leading edge:	0-230 V
Signal input trailing edge:	0-230 V
Signal input wave packet:	0-230 V, 50 Hz
Signal input power consumption:	1.5 mA
PWM output:	12 V DC, 15 mA
Frequency:	1000 Hz
Ambient temperature:	0 °C to +70 °C
Cable connection input:	3 x M16
Dimensions:	115 x 117 x 50 mm
Weight:	0.3 kg

Use

The Babelbox BB2 is designed for use in heating systems in which an on-site controller pulses a standard pump via the power line and this pump is to be replaced by a high-efficiency pump. High-efficiency pumps do not react to a pulsed power line and therefore cannot simply substitute for a standard pump. Interposing the Babelbox BB2 solves this issue while retaining the control functions of the system.

Mode of operation

The BB2 automatically detects if an on-site controller is pulsing the power line via a wave packet or is outputting leading or trailing edge voltage. The BB2 converts this into a PWM signal which is identified by the Halm PWM pump. Just like the standard pump previously, its power is also then controlled. An integrated LED shows the presence of voltage from the on-site controller.

Main areas of use

All applications in which a standard pump controlled externally by the power line is to be replaced by a high-efficiency pump.

- Return flow boost
- Solar installation
- Differential temperature controlled underfloor heating
- Storage charging circuit
- Freshwater station (suitability should be checked with the manufacturer due to the highly sensitive controlled system)

Installation

Stable cable bushings and elevator terminals enable easy installation. The BB2 must be connected to 230 V voltage, with the PWM pump and the pulsed power line. Fully automatic detection of the input signal means no further settings need be adjusted.

Motor (high efficient ECM technology)

Power supply nominal:	200-230 V, 50-60 Hz
Power consumption:	Version 4 m (4- 25 W); Version 7 m (4-70 W)
Power consumption stand-by PWM:	0.8 W

PWM connection

PWM input:	
Frequency f nominal:	100-2000 Hz
Voltage U nominal:	5-24 V
Power PWM to 12 V:	max. 10 mA
Power PWM to 24 V:	max. 20 mA
Insulation voltage optocoupler:	5300 VRMS
	$(T_{in} / T_{pwm}) \times 100$

Standards

8/37/EG, 2006/95/EG, 2004/108/EG
 EN 60335-1, EN 60335-2-51,
 EN 55014-1:2006+A1:2009,
 EN 55014-2:1997+A1.2001+A2:2008
 EN 61000-6:2007, EN 61000-6-3:2007,
 EN 50366, EN 61000-3-2, EN 61000-3-3,
 EN 55014-1, EN 55014-2

The Babelbox BB2 solution



It was previously not possible to replace standard heating pumps driven by wave packet, leading or trailing edge control with high-efficiency pumps. For the first time, this can now be done with the Babelbox BB2.

Fully automatic signal detection

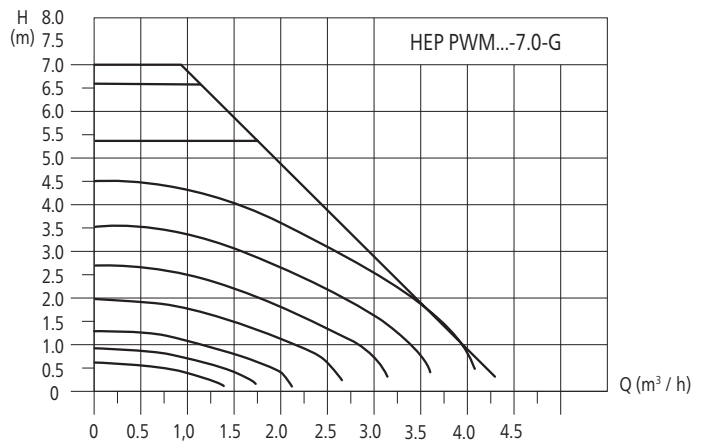
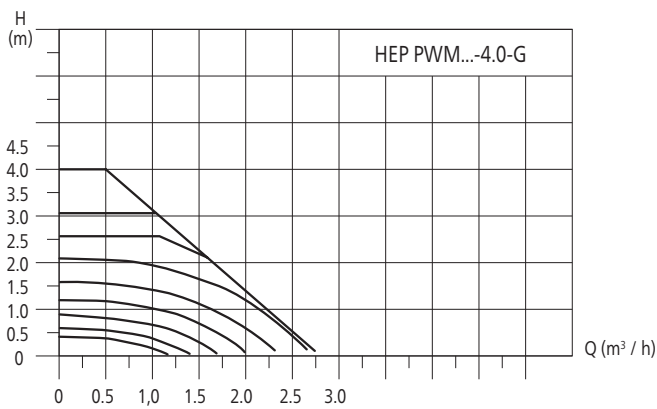


Typical high-efficiency pumps require a 230 V constant voltage supply. If, however, a high-efficiency pump is connected to a variable power voltage supply (solar controller, freshwater station controller, charging controller etc.), it reacts neither to a wave packet nor leading edge control as desired. This is where the Babelbox BB2 from Halm comes in. It independently and fully automatically detects which signal is being output by the controller of the standard pump and converts it into a PWM signal which can be understood by the high-efficiency pump, controlling the latter in just the same way as the previously installed standard pump. The voltage supply for the high-efficiency pump itself comes from a separate 230 V connection.



Technical data

Type	Connection pipe	Threaded connection	Installation length (mm)	P1 (W)	In (A)	Weight (kg)	Product no.
HEP BB2 25-4.0 G180	1"	1 1/2"	180	4 ... 25	... 0.3	3.0	0323-34204.7
HEP BB2 25-7.0 G180	1"	1 1/2"	180	4 ... 66	... 0.6	3.0	0323-34207.7
HEP BB2 30-4.0 G180	1 1/4"	2"	180	4 ... 25	...0.3	3.1	0324-34204.7
HEP BB2 30-7.0 G180	1 1/4"	2"	180	4 ... 66	...0.6	3.1	0324-34207.7
HEP BB2 15-4.0 G130	1/2"	1"	130	4 ... 25	... 0.3	3.0	0321-34004.7
HEP BB2 15-7.0 G130	1/2"	1"	130	4 ... 66	... 0.6	3.0	0321-34007.7
HEP BB2 25-4.0 G130	1"	1 1/2"	130	4 ... 25	... 0.3	3.0	0323-34004.7
HEP BB2 25-7.0 G130	1"	1 1/2"	130	4 ... 66	... 0.6	3.0	0323-34007.7





High efficiency pumps with LED display, electronically controlled and protected against condensation

HEP Optimo Geo series, G1 product group



Insulation shell
With installation length
180 mm included
in delivery.

**BEST
in class**

valid for all Halm 4 m
High efficiency pumps



Technical data

Rate of flow:	up to 3.2 m ³ /h
Pressure head:	4 m/6 m
Control range:	4-23 W/4-50 W
Media temperature:	-15 °C to +95 °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
EEL:	≤ 0.20 HEP Optimo Geo XX-4.0 GXXX ≤ 0.23 HEP Optimo Geo XX-6.0 GXXX

Product features

- manual start-up feature
- smooth running
- very low energy consumption
- integrated night economy feature
- air-vent screw
- LED display
- convenient operation
- space-saving axially integrated terminal box
- automatic adjustment to pressure conditions
- cataphoretic coated pump housing
- pre-mounted, screwable angle entry-plug
- compact design

Use

The electronically controlled HEP Optimo Geo high efficiency wet rotor circulators with LED display and permanent magnet technology are designed for use in heating and cold water circulation systems with variable or constant rate of flow. The motor integrity offers a sealed winding protection from ingress of condensation. The cataphoretic coated pump housing is stainless.

Mode of operation Δp control

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 (L) is the best 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) or heating pumps, best mode to go with is constant pressure mode CP (E). 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.

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 mm²/s
- operating data must be checked above 20 % glycol

Temperature range

Ambient temperature:	0 °C to +40 °C
Temperature class:	TF 95
Media temperature:	-15 °C to +95 °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 (L), fixed speed (M) and constant pressure (E) can be adjusted continuously variable. The display indicates power consumption in [W] watts. Once the potentiometer is turned, the display first indicates mode of operation (PP, SC, CP), then value of set head in [m] meters. At the factory setting the potentiometer is in mode PP.

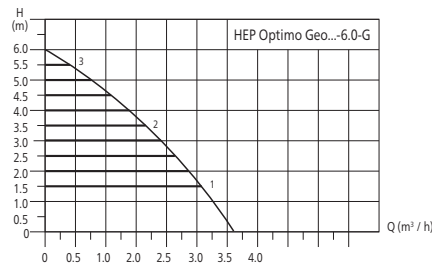
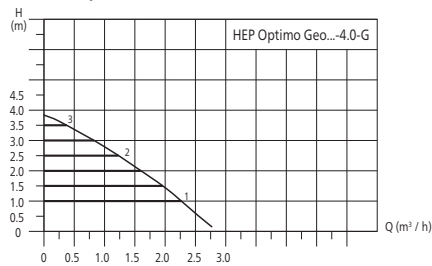




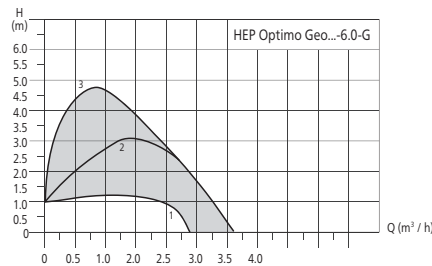
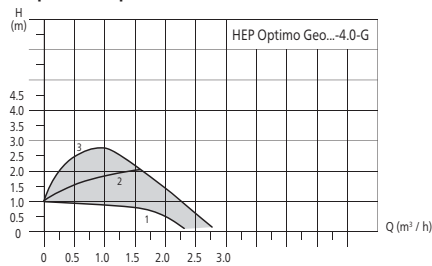
Technical data

Type	Connection pipe	Threaded connection	Installation length (mm)	Voltage (V)	P1 (W)	In (A)	Weight (kg)	Product no.	EEl
HEP Optimo Geo 25-4.0 G180	1"	1½"	180	230	4 ... 23	... 0.30	2.7	0323-34204.8	≤ 0.20
HEP Optimo Geo 25-6.0 G180	1"	1½"	180	230	4 ... 50	... 0.46	2.7	0323-34206.8	≤ 0.23
HEP Optimo Geo 30-4.0 G180	1¼"	2"	180	230	4 ... 23	... 0.30	2.8	0324-34204.8	≤ 0.20
HEP Optimo Geo 30-6.0 G180	1¼"	2"	180	230	4 ... 50	... 0.46	2.8	0324-34206.8	≤ 0.23
HEP Optimo Geo 15-4.0 G130	½"	1"	130	230	4 ... 23	... 0.30	2.7	0321-34004.8	≤ 0.20
HEP Optimo Geo 15-6.0 G130	½"	1"	130	230	4 ... 50	... 0.46	2.7	0321-34006.8	≤ 0.23
HEP Optimo Geo 20-4.0 G130	¾"	1¼"	130	230	4 ... 23	... 0.30	2.7	0322-34004.8	≤ 0.20
HEP Optimo Geo 20-6.0 G130	¾"	1¼"	130	230	4 ... 50	... 0.46	2.7	0322-34006.8	≤ 0.23
HEP Optimo Geo 25-4.0 G130	1"	1½"	130	230	4 ... 23	... 0.30	2.7	0323-34004.8	≤ 0.20
HEP Optimo Geo 25-6.0 G130	1"	1½"	130	230	4 ... 50	... 0.46	2.7	0323-34006.8	≤ 0.23

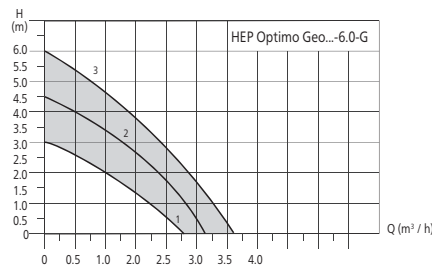
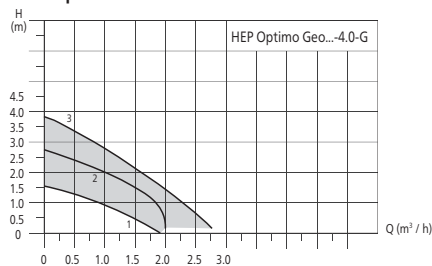
Constant pressure



Proportional pressure



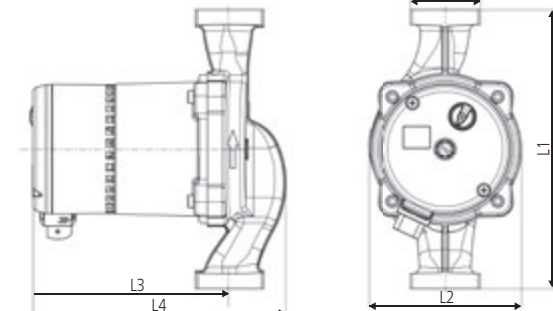
Fixed rpm



Dimensions

Type	L1	L2	L3	L4
HEP Optimo Geo	130/180	98	127	163

Dimension illustration





High efficiency pumps with LCD display, electronically controlled and protected against condensation

HEP Optimo L Geo series, G2 product group



Technical data

Rate of flow: up to 10 m³/h
 Pressure head: 8 m/10 m
 Control range: 15-180 W/15-195 W
 Media temperature: -15 °C to +95 °C
 Installation length: 180 mm (thread)/220 mm (flange)
 Threaded connection: 1½" and 2" (thread)/DN 32 and DN 40 (flange)
 Protection class: IP 42
 Insulation class: F
 Nominal pressure: PN 10
 EEI: ≤ 0.23 HEP Optimo L XX-8.0 GXXX
 ≤ 0.23 HEP Optimo L XX-10.0 GXXX

Control:

Internal: $\Delta p_c + \Delta p_v$ + fixed rpm
 External:

- digital: PWM (characteristic lines for heating and solar per VDMA device paper 24224)
 frequency f nominal: 100-1000 Hz
 voltage U nominal: 5-15 V
 power I: 10 mA
- analogue: 0-10 V with cable break detection
 power I: 1 mA
 impedance: 10 kOhm

Omnibus fault message: Selector switch, potential-free, power max. 2 A/240 VAC
 Power supply for external unit: Voltage DC 12 V, power max. 100 mA

Product features

- LCD display
- manual start-up feature
- smooth running
- very low energy consumption
- air-vent screw
- collective fault signal
- convenient operation
- axially integrated terminal box
- automatic adjustment to pressure conditions
- cathophoretic coated pump housing

Use

The electronically controlled HEP Optimo L Geo high efficiency wet rotor circulators with LCD display and permanent magnet technology are designed for use in heating systems with variable or constant rate of flow. The cathophoretic coated pump housing is stainless.

Main areas of use

Heating, air-conditioning and industry systems as

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

Controls Function

You can make adjustments with the integrated control keys at the front. The LCD display shows the total electrical input power as a numeric value in [W] watts. Different icons at the top of the display show the function, setting and the modes of operation.

Materials

Component	Material	Material No.
Pump body	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 mm²/s
- operating data must be checked above 20 % glycol

Temperature range

Ambient temperature: 0 °C to +40 °C
 Temperature class: TF 95
 Media temperature: -15 °C to +95 °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.

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	0.45 bar

Sound pressure level

The sound pressure level is < 45 dB (A)

High efficiency pumps with LCD display, electronically controlled and protected against condensation

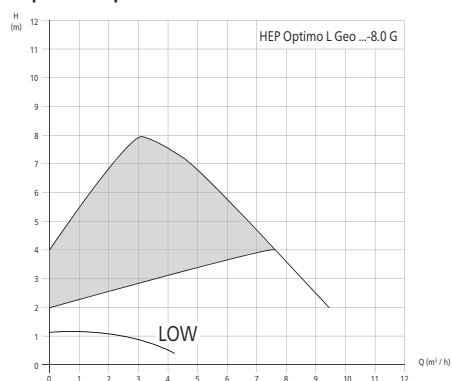
HEP Optimo L Geo series, G2 product group



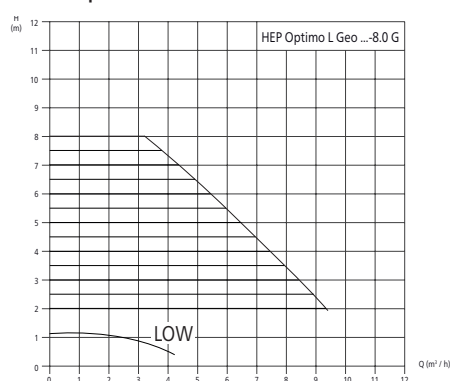
Technical data

Type	Connection pipe	Threaded connection	Flange	Installation length (mm)	Voltage (V)	P1 (W)	In (A)	Weight (kg)	Product no.	EEl
HEP Optimo L Geo 25-8.0 G180	1"	1½"	-	180	230	15 ... 180	0.090 ... 0.90	5.96	0323-64208.8	≤ 0.23
HEP Optimo L Geo 25-10.0 G180	1"	1½"	-	180	230	15 ... 195	0.090 ... 0.90	5.96	0323-64210.8	≤ 0.23
HEP Optimo L Geo 30-8.0 G180	1¼"	2"	-	180	230	15 ... 180	0.090 ... 0.90	5.96	0324-64208.8	≤ 0.23
HEP Optimo L Geo 30-10.0 G180	1¼"	2"	-	180	230	15 ... 195	0.090 ... 0.90	5.96	0324-64210.8	≤ 0.23
HEP Optimo L Geo 32-8.0 G220	-	-	DN 32	220	230	15 ... 180	0.090 ... 0.90	6.135	0324-94208.8	≤ 0.23
HEP Optimo L Geo 32-10.0 G220	-	-	DN 32	220	230	15 ... 195	0.090 ... 0.90	6.135	0324-94210.8	≤ 0.23
HEP Optimo L Geo 40-8.0 G220	-	-	DN 40	220	230	15 ... 180	0.090 ... 0.90	6.135	0325-94208.8	≤ 0.23
HEP Optimo L Geo 40-10.0 G220	-	-	DN 40	220	230	15 ... 195	0.090 ... 0.90	6.135	0325-94210.8	≤ 0.23

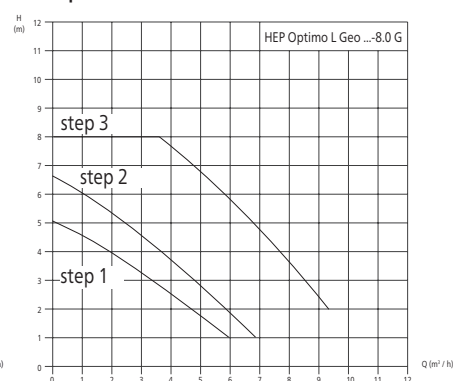
Proportional pressure



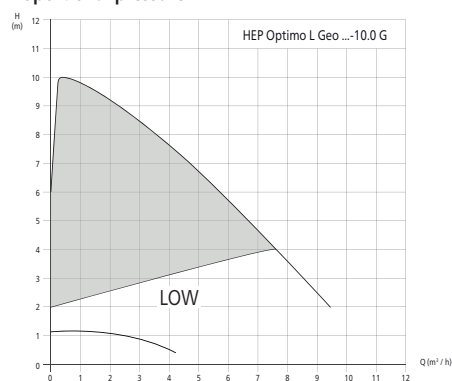
Constant pressure



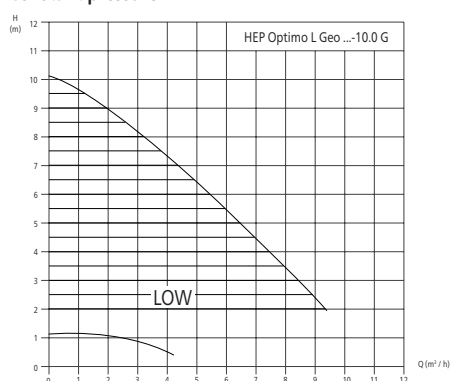
Fixed rpm



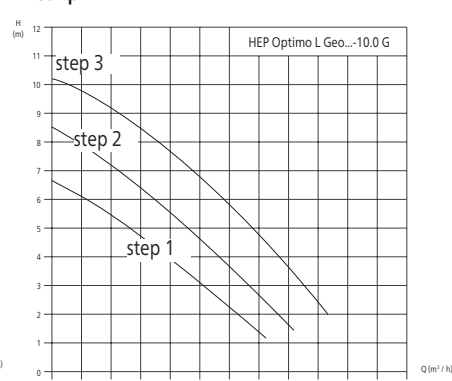
Proportional pressure



Constant pressure



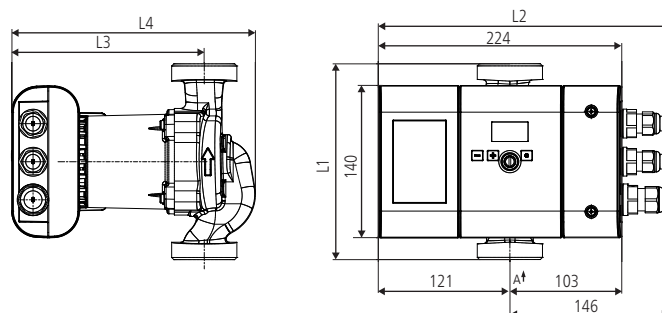
Fixed rpm



Dimensions

Type	L1	L2	L3	L4
HEP Optimo L (thread)	180	267	178	225
HEP Optimo L (flange)	220	267	177.5	245

Dimension illustration



Condensate pump for gas condensing boilers up to 400 kW

Lift series, K1 product group



Technical data

Electrical connection:	230 V, 50/60 Hz
Input power:	65 W
Alarm contact:	max. 230 V, 8 A (resistive load), NO normally open/NC normally closed
Protection class:	IP 55
Medium:	condensate pH ≥ 3 , temperature 70 °C max
Rate of flow:	max. 350 l/h
Pressure head:	max. 4 m
Noise level:	max. 29 dB [A]
Dimensions:	185 x 85 x 100 mm (L x W x H)
Condensate supply:	\varnothing 24 mm
Condensate suction head:	83 mm
Tank:	ABS plastic, max. 0.5 l/0.13 Gal
Condensation drain:	nozzles for hose connection \varnothing 8 x 2 mm
Discharge hose:	included in the scope of delivery
Weight:	1.5 kg

Product features

- fully automatic condensate pump delivered completely ready for connection
- extremely quiet and vibration free
- very compact and space-saving construction
- fully encapsulated pump unit (IP 55) resistant to water jets from any direction
- pump unit also suitable for use in external tank (tank height min. 62 mm, max. 70 mm)
- integrated check valve for discharge hose
- condensation discharge hose (6 m, \varnothing 8 x 2 mm) included in delivery
- pre-mounted power cable (1.6 m) incl. shockproof plug
- overflow protection through separate float
- potential-free alarm connection (NO normally open/NC normally closed)
- pre-mounted alarm cable (0.9 m) incl. wall mounting

Delivery program

Type	Max pressure head	Max rate of flow	For condensing boilers up to	Remarks	Product no.
Lift	4 m	350 l/h	400 kW	incl. pressure hose (6 m, \varnothing 8 x 2 mm)	0341-00400

Use

The Lift condensate pump is a fully automatic unit for the extraction of condensate, produced in gas/oil condensing boilers, air-conditioning systems, refrigerated counters and dehumidifiers incl. collection tank. It can be used anywhere where a condensate disposal through gravity is not possible or where there is no direct drain. The Lift condensate pump is designed for gas condensing boilers up to 400 kW.

The housing is made from ABS plastic and is therefore resistant to acidic condensate (pH ≥ 3). For very acidic condensate (pH < 3), for the use of low-sulfur heating oil and for installations/systems with over 200 kW, it is compulsory according to ATV-DVWK-A 251 in Germany to install a neutralization system (see condensate pump Lift NT25 resp. additional neutralization tank NT50). Complementary municipal or other national regulations must be observed where necessary.

For the use in oil condensing boilers we recommend the additional use of an extension kit with activated carbon (see accessories for condensate pumps).

Main areas of use

- gas condensing boilers
- oil condensing boilers
- air-conditioning systems
- refrigerators, refrigerated cabinets, refrigerated counters*
- dehumidifiers, evaporators
- *) not suitable for splash water

Flow media

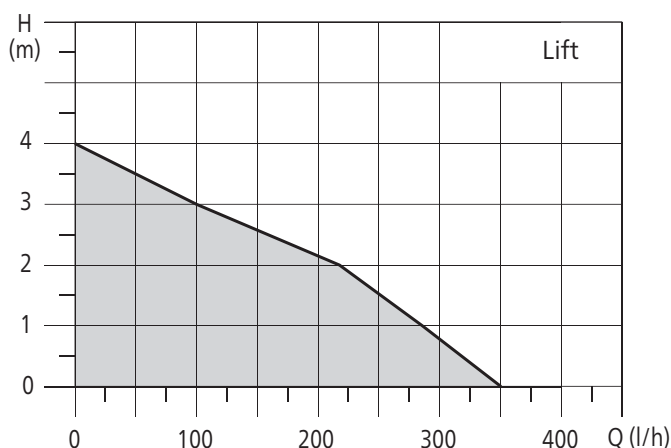
- condensates with a pH ≥ 3 and a 70 °C max temperature.
- condensates with a pH over 3 have to be neutralized.
- condensates with oil residues from oil condensing boilers must be cleaned with activated carbon (extension kit) if necessary.

Temperature range

Media temperature:	+2 °C to +70 °C
Ambient temperature:	+5 °C to +45 °C

Switching points

Alarm max.	55 mm
Start	52 +/- 1 mm
Stop	24 +/- 1 mm



Condensate pump for gas condensing boilers up to 300 kW

Lift Basic series, K1 product group



Technical data

Electrical connection:	230 V, 50/60 Hz
Input power:	65 W
Alarm contact:	max. 230 V, 8 A (resistive load), NO normally open/NC normally closed
Protection class:	IP 20
Medium:	condensate pH ≥ 3 , temperature 70 °C max
Rate of flow:	max. 200 l/h
Pressure head:	max. 4 m
Noise level:	max. 33 dB [A]
Dimensions:	200 x 105 x 160 mm (L x W x H)
Condensate supply:	\varnothing 24 mm
Condensate suction head:	77 mm
Tank:	ABS plastic, max. 1.0 l/0.26 Gal
Condensation drain:	nozzles for hose connection \varnothing 8 x 2 mm
Discharge hose:	included in the scope of delivery
Weight:	1.6 kg

Product features

- fully automatic condensate pump delivered completely ready for connection
- extremely quiet
- space-saving construction
- housing made from ABS plastics is resistant to condensate
- integrated check valve for discharge hose
- condensation discharge hose (6 m, \varnothing 8 x 2 mm) included in delivery
- pre-mounted power cable (1.6 m) incl. shockproof plug
- overflow protection through separate float
- potential-free alarm connection (NO normally open/NC normally closed)
- pre-mounted alarm cable (0.9 m) incl. wall mounting

Use

The Lift Basic condensate pump is a fully automatic unit for the extraction of condensate, produced in gas/oil condensing boilers, air-conditioning systems, refrigerated counters and dehumidifiers incl. collection tank. It can be used anywhere where a condensate disposal through gravity is not possible or where there is no direct drain. The Lift Basic condensate pump is designed for gas condensing boilers up to 300 kW.

The housing is made from ABS plastic and is therefore resistant to acidic condensate (pH ≥ 3). For very acidic condensate (pH < 3), for the use of low-sulfur heating oil and for installations/systems with over 200 kW, it is compulsory according to ATV-DVWK-A 251 in Germany to install a neutralization system (see condensate pump Lift NT25 resp. additional neutralization tank NT50). Complementary municipal or other national regulations must be observed where necessary.

For the use in oil condensing boilers we recommend the additional use of an extension kit with activated carbon (see accessories for condensate pumps).

Main areas of use

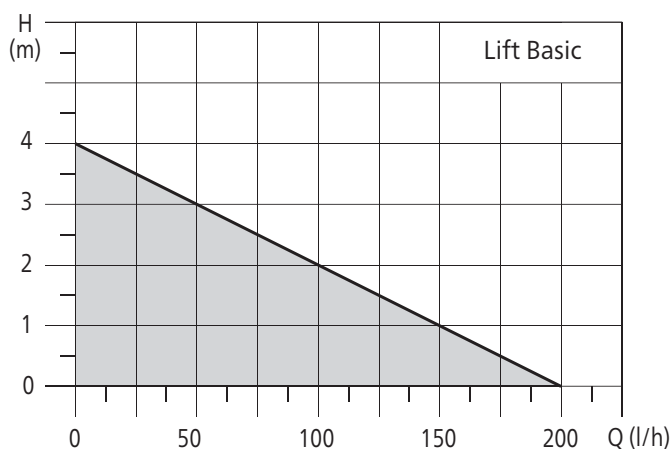
- gas condensing boilers
- oil condensing boilers
- air-conditioning systems
- refrigerators, refrigerated cabinets, refrigerated counters*
- dehumidifiers, evaporators
- *) not suitable for splash water

Flow media

- condensates with a pH ≥ 3 and a 70 °C max temperature.
- condensates with a pH over 3 have to be neutralized.
- condensates with oil residues from oil condensing boilers must be cleaned with activated carbon (extension kit) if necessary.

Temperature range

Media temperature:	+2 °C to +70 °C
Ambient temperature:	+5 °C to +45 °C



Delivery program

Type	Max pressure head	Max rate of flow	For condensing boilers up to	Remarks	Product no.
Lift Basic	4 m	200 l/h	300 kW	incl. pressure hose (6 m, \varnothing 8 x 2 mm)	0341-00300

Condensate pump for oil condensing boilers with neutralization tank

Lift NT25 series, K1 product group



Technical data

Electrical connection:	230 V, 50/60 Hz
Input power:	40 W
Alarm contact:	max. 230 V, 8 A (resistive load), NO normally open/NC normally closed
Protection class:	IP 20
Medium:	condensate pH ≥ 3 , temperature 70 °C max
Rate of flow:	max. 14 l/h
Pressure head:	max. 10 m
Noise level:	max. 36 dB [A]
Dimensions:	244 x 174 x 261 mm (L x W x H)
Condensate supply:	\varnothing 40 mm
Condensate suction head:	200 mm
Neutralization tank:	ABS plastic, 6.0 l/1.59 Gal, incl. neutralization granulate (1 kg)
Condensation drain:	nozzles for hose connection \varnothing 8 x 2 mm
Weight:	2.7 kg

Product features

- fully automatic condensate pump delivered completely ready for connection, incl. neutralization tank
- noise-reducing electronic controls with follow-up time to reduce switching frequency
- space-saving construction
- integrated collection/neutralization tank, incl. first fill with neutralization granulate (1 kg) – sufficient for about 12 months for systems up to 25 kW
- upstream suction filter as well as check valve for discharge hose
- connection for discharge hose (\varnothing 6 x 1.5 mm)
- pre-mounted power cable (1.0 m) incl. shockproof plug
- overflow protection through separate float
- potential-free alarm connection (NO normally open/NC normally closed)

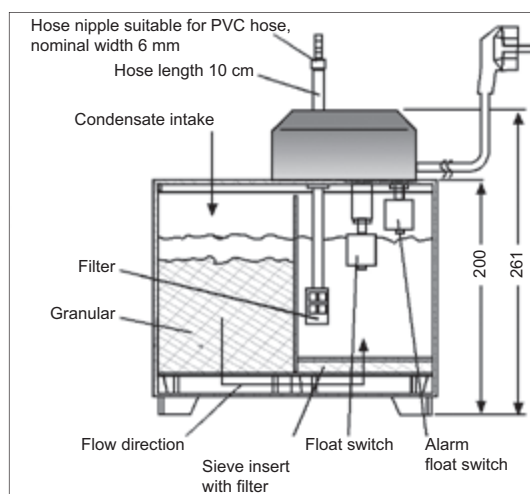
Use

The Lift NT25 condensate pump is a fully automatic unit for the extraction of condensate, produced in gas/oil condensing boilers, air-conditioning systems, refrigerated counters and dehumidifiers incl. collection/neutralization tank. It can be used anywhere where a condensate disposal through gravity is not possible or where there is no direct drain. The Lift NT25 condensate pump is designed for gas and oil condensing boilers up to 25 kW. It is extensible for systems up to 100 kW with additional accessories NB2 and NT50.

The housing is made from ABS plastic and is therefore resistant to acidic condensate (pH ≥ 3).

For the use in oil condensing boilers we recommend the additional use of an extension kit with activated carbon (see accessories for condensate pumps).

Schematic sketch Lift NT25



Main areas of use

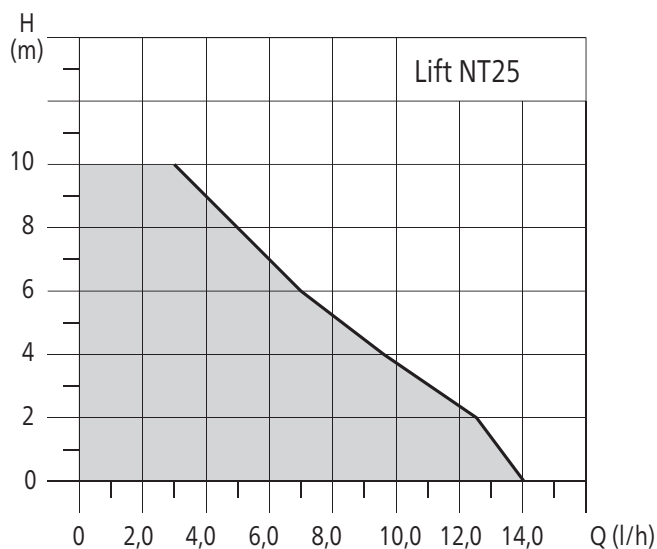
- gas condensing boilers
- oil condensing boilers

Flow media

- condensates produced in gas and oil condensing boilers with a 70 °C max temperature.
- condensates with oil residues from oil condensing boilers must be cleaned with activated carbon (extension kit) if necessary.

Temperature range

Media temperature:	+2 °C to +70 °C
Ambient temperature:	+5 °C to +45 °C



Condensate pump for oil condensing boilers with neutralization tank

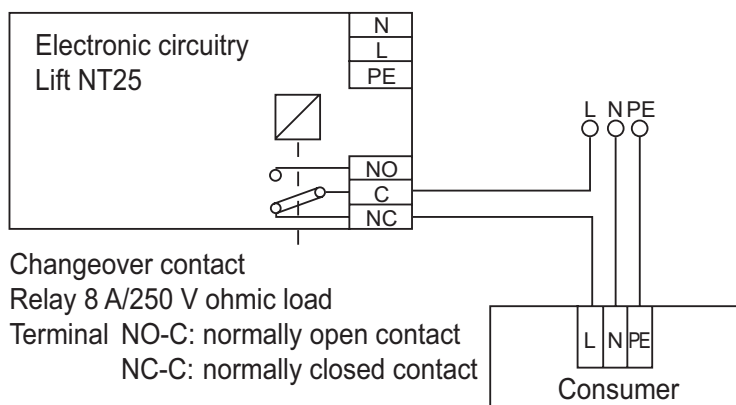
Lift NT25 series, K1 product group



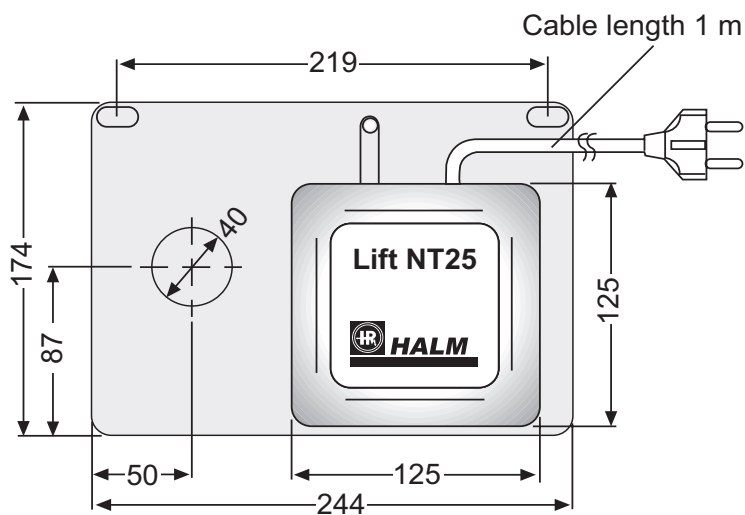
Delivery program

Type	Max pressure head	Max rate of flow	For condensing boilers up to	Remarks	Product no.
Lift NT25	10 m	14 l/h	25 kW	incl. neutralization tank incl. first fill with neutralization granulate	0341-00025

Connection alarm cable



Connection example for potential-free contact



Accessories/Spare parts for circulation pumps

Z1 product group

Screw connections

without picture

Type	Product no.	Description
Grey cast iron connection G 1"	4152-0001.1	1 set c.i. connection Rp 1/2" x G 1"
Grey cast iron connection G 1 1/4"	4152-0001.2	1 set c.i. connection
Grey cast iron connection G 1 1/2"	4152-0001.3	1 set c.i. connection Rp 1" x G 1 1/2"
Grey cast iron connection G 2"	4152-0001.4	1 set c.i. connection Rp 1 1/4" x G 2"
Brass connection G 1"	4152-0005.1	1 set brass connection Rp 1/2" x G 1"
Brass connection G 1 1/4"	4152-0005.2	1 set brass connection Rp 3/4" x G 1 1/4"
Brass connection G 1 1/2"	4152-0005.3	1 set brass connection Rp 1" x G 1 1/2"

Flange adaptors for pipe installation (flange)



Type	Product no.	Description
FA 4030	4152-9006	1 flange adaptor grey-cast iron (PN10) incl. screws + seal, DN40, 30 mm
FA 4070	4152-9007	1 flange adaptor grey-cast iron (PN10) incl. screws + seal, DN40, 70 mm
FA 5010	4152-9008	1 flange adaptor grey-cast iron (PN10) incl. screws + seal, DN50, 10 mm
FA 5020	4152-9009	1 flange adaptor grey-cast iron (PN10) incl. screws + seal, DN50, 20 mm
FA 5050	4152-9010	1 flange adaptor grey-cast iron (PN10) incl. screws + seal, DN50, 50 mm
FA 5060	4152-9011	1 flange adaptor grey-cast iron (PN10) incl. screws + seal, DN50, 60 mm
FA 6510	4152-9012	1 flange adaptor grey-cast iron (PN10) incl. screws + seal, DN65, 10 mm
FA 6525	4152-9013	1 flange adaptor grey-cast iron (PN10) incl. screws + seal, DN65, 25 mm
FA 6530	4152-9014	1 flange adaptor grey-cast iron (PN10) incl. screws + seal, DN65, 30 mm

Insulation shell/Insulation shell for cold water applications



Type	Product no.	Description
WDS A 180	4152-0100	Insulation shell for HEP Optimo (Basic) with installation length 180 mm
WDS B 180	4152-0113	Insulation shell for HEP Optimo L with installation length 180 mm
WDS C 25/30	4152-0114	Insulation shell for HEP Optimo L+ with connection G 1 1/2" and 2"
WDS C 32-12.0	4152-0115	Insulation shell for HEP Optimo L+ 32-12.0
WDS C 40-6.0	4152-0116	Insulation shell for HEP Optimo L+ 40-6.0
WDS C 40-8.0/10.0	4152-0117	Insulation shell for HEP Optimo L+ 40-8.0/10.0
WDS C 40-12.0/50-10.0/12.0	4152-0118	Insulation shell for HEP Optimo L+ 40-12.0 and 50-10.0/12.0
WDS C 50-6.0/8.0	4152-0119	Insulation shell for HEP Optimo L+ 50-6.0/8.0
WDS C 65-6.0	4152-0120	Insulation shell for HEP Optimo L+ 65-6.0
WDS C 65-12.0	4152-0121	Insulation shell for HEP Optimo L+ 65-12.0
KDS C 25-6/8/10 30-6/8/10	4152-0122	Insulation shell for cold water applications for HEP Optimo L+ 25-6.0/8.0/10.0 and 30-6.0/8.0/10.0
KDS C 40-6.0	4152-0123	Insulation shell for cold water applications for HEP Optimo L+ 40-6.0

Plug



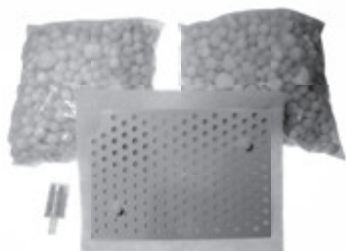
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Type	Product no.	Description
Plug complete	3219-2205-01	Plug for series HEP complete incl. Socket on motor side
Socket only	3219-2204	Socket on motor side for plug for series HEP

Further accessories and spare parts on request.

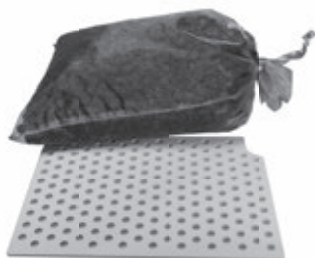


Maintenance kit for Lift NT25



Type	Product no.	Description
Maintenance kit for Lift NT25	4152-0107	Maintenance kit for Lift NT25 for the yearly maintenance consisting of neutralization granulate (2 kg), replacement filter sieve with fleece, replacement filter element for suction filters.

Extension kit oil condensing boilers



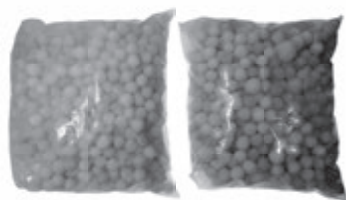
Type	Product no.	Description
Extension kit oil condensing boilers	4152-0108	Extension kit for Lift NT25 for oil condensing boilers consisting of activated carbon filter and sieve.

NT50



Type	Product no.	Description
NT50	4152-0109	Additional collection/neutralization tank with granulate (2 x 2 kg) for neutralization capacity 50 kW, filter sieves (2x) and connection/nozzle for the connection to the Lift NT25. Condensate supply opening Ø40 mm/condensate supply height 200 mm.

NG2



Type	Product no.	Description
NG2	4152-0110	Refill pack neutralization granulate (2 kg)

Alarm plus



Type	Product no.	Description
Alarm plus	4152-0111	Audio and visual fault indicator for the alarm output of the condensate pump (230 V, 50/60 Hz) for the connection to the condensate pump with alarm relay output, 56 x 88 x 51 mm (L x W x H), input power 1.9 W, IP 20, ambient temperature +5 °C to +50 °C.

Further accessories and spare parts on request.

Product no. 4308-0126-EN-EU Version 2.0 (04/2016)

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