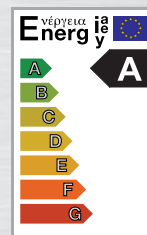


Circulation pumps

Wet rotor circulators and accessories



CATALOGUE

Heating, air-conditioning, solar, domestic water



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 second 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

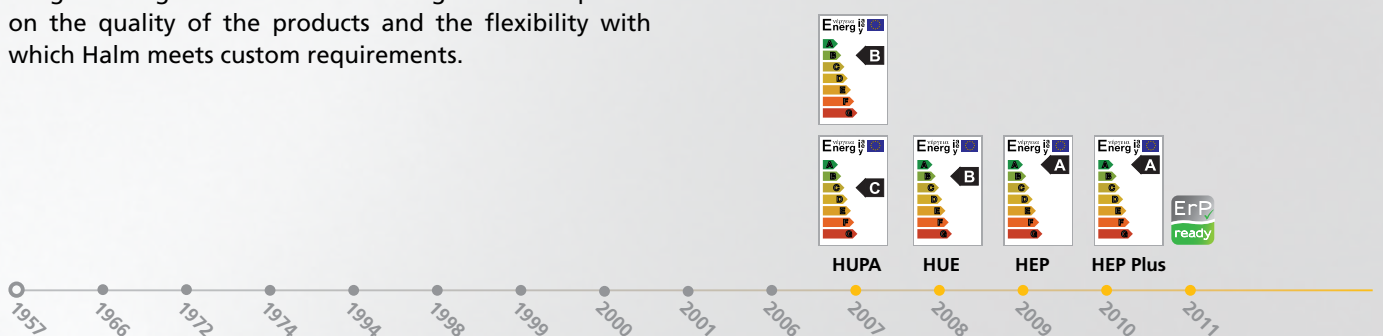
Modern production facilities and processes are just as much part of the corporate concept as well thought-out quality management. Internal testing facilities and ISO-certified quality management are indispensable factors of success.

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 200 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.



I. Product range		Page
Contact		4
General information		5
Circulation pumps with screw connection		
HEP Plus:	High efficiency pumps with LED display, electronically controlled, efficiency class "A"	6
HEP:	High efficiency pumps, electronically controlled, efficiency class "A"	8
HUPA:	Standard heating circulation pumps, speed step switch (3-step)	10
HLPA:	Standard heating circulation pumps, speed step switch (3-step)	12
HGPA:	Heating circulation pumps, speed step switch, pressure head 7-12 m	14
BUPA:	Standard circulation pumps for domestic water	16
BGPA:	Circulation pumps for domestic water, pressure head 7-12 m	18
KGPA:	Cold water circulation pumps (geothermy, air-conditioning, and refrigeration), pressure head 7-12 m	20
Accessories		
Z:	Terminal plug for circulation pumps	22
	Insulation shell	22
II. Replacement lists		
Circulation pumps with screw connection		
HEP Plus:	High efficiency pumps with LED display, electronically controlled, efficiency class "A"	23
HEP:	High efficiency pumps, electronically controlled, efficiency class "A"	23
HUPA:	Standard heating circulation pumps, speed step switch (3-step)	23
HLPA:	Standard heating circulation pumps, speed step switch (3-step)	24
HGPA:	Heating circulation pumps, speed step switch, pressure head 7-12 m	24
BUPA:	Standard circulation pumps for domestic water	24
KGPA:	Cold water circulation pumps (geothermy, air-conditioning, and refrigeration), pressure head 7-12 m	25

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

Contact at Halm:

Sales

Mr Robin Pomreinke

E-mail: robin.pomreinke@halm.info

Tel: +49 (0)7153 9202-32

Fax: +49 (0)7153 9202-45

Customer service

Mr Thomas Müller

E-mail: thomas.mueller@halm.info

Tel: +49 (0)7153 9202-31

Fax: +49 (0)7153 49168

Service hotline

Tel: +49 (0)7153 9202-621

Order management

Ms Hannelore Tomani

E-mail: hannelore.tomani@halm.info

Tel: +49 (0)7153 9202-23

Fax: +49 (0)7153 49168

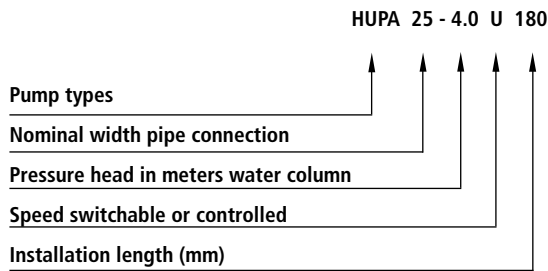
Ms Sabrina Wagner

E-Mail: sabrina.wagner@halm.info

Tel: 07153 9202-66

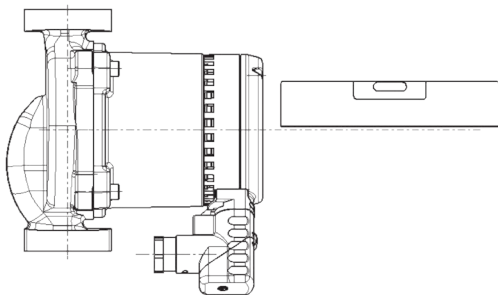
Fax: 07153 49168

Halm type key



Installation options

Circulation pumps must be installed with a horizontal shaft.



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.

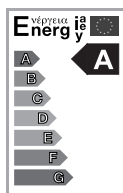
A stainless steel can separates the rotor chamber and stator winding. It features static seals at both ends.

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.

High efficiency pumps with LED display, electronically controlled

HEP Plus series, HP product group



Insulation shell
With installation length
180 mm included
in delivery.
See also page 22.



also available with stainless steel housing
– version (N) –

Technical data

Rate of flow: up to 3.2 m³ / 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 and 180 mm
Threaded connection: 1", 1½" and 2"
Protection class: IP 42
Insulation class: F
Control: Δp or fixed rpm

Product features

- LED display
- compact design
- manual start-up feature
- smooth running
- very low energy consumption
- integrated night economy feature
- air-vent screw

- convenient operation
- pre-mounted, screwable angle entry-plug
- space-saving axially integrated terminal box
- automatic adjustment to pressure conditions
- KTL coated pump housing, at version (N) from stainless steel

Use

The electronically controlled HEP Plus high efficiency wet rotor circulators with permanent magnet technology are designed for use in heating systems with variable or constant rate of flow. Due to the stainless steel housing at version (N) this pump is also suitable for drinking water systems.

Mode of operation Δp control

When thermostatic valves in heating systems close, the volume flow drops. This results in slight pipe resistance. The declining flow rate means that the circulation pump requires a lower pressure head. This is identified by the automatic control of the circulation pump. It automatically adjusts to the system and reduces its performance. This leads to not only trouble-free and quiet operation but also reduces energy consumption to a minimum.

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

At version (N): Drinking water systems in building and industry installations as

- circulation circuit
- storage charging circuit
- cooling and heating circuit
- underfloor heating

Materials

Component	Material	Material No.
Pump body	Grey-cast iron / version (N) stainless steel	0.6020 / 1.4308
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 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

Ambient temperature: 0 °C to 40 °C

Temperature class: TF 95

Media temperature: +2 °C to 95 °C

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

Motor protection / electronic control

The motor winding is resistant to stall current, so that motor protection is not required. The electronic control is integrated in the terminal box.

Integrated night economy feature

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

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.

Enclosure pressure

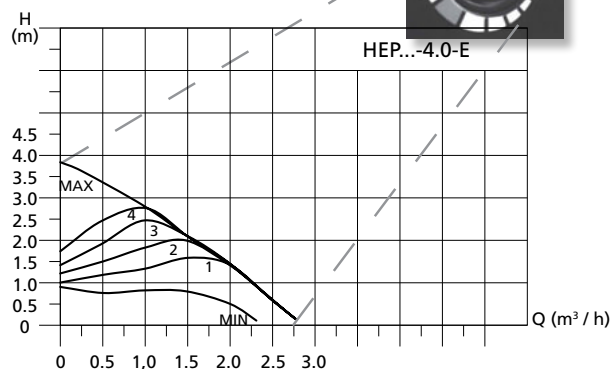
10 bar

Sound pressure level

The sound pressure level is < 45 dB (A)

Choice of control characteristic

The control characteristics and the fixed speed steps can be adjusted continuously variable via the potentiometer on the axial terminal box. At the factory settings the potentiometer is in the centre position. This position corresponds to the reference characteristic curve with optimal efficiency. If noises are heard in this position, the characteristic curve can be adjusted by turning the potentiometer clockwise. If the pressure head is not sufficient (some radiators remain cold despite hydraulic equalisation), the characteristic curve can be corrected upwards.



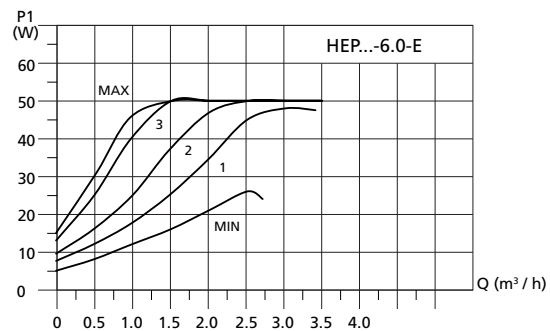
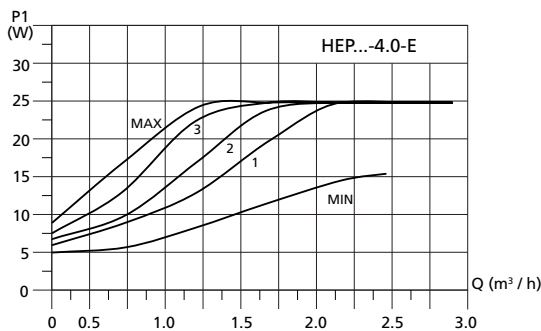
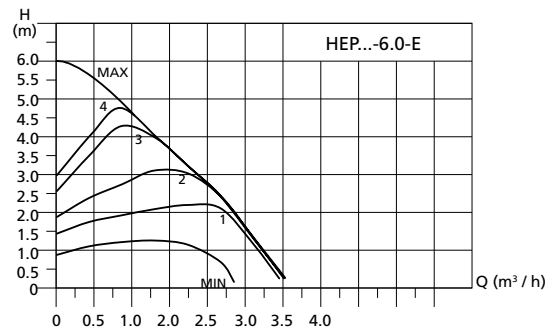
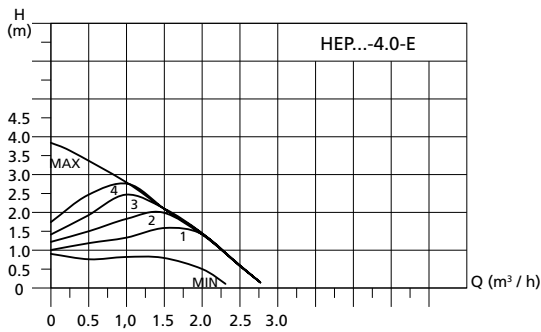
High efficiency pumps with LED display, electronically controlled

HEP Plus series, HP product group



Technical data

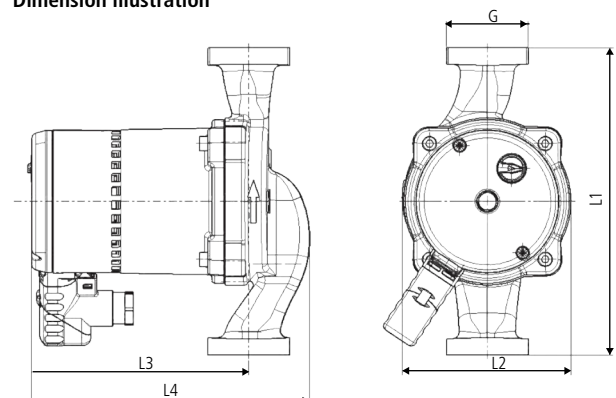
Type	Connection pipe	Threaded connection	Installation length (mm)	P1 (W)	In (A)	Weight (kg)	Product No.	Eff. Class
HEP Plus 15-4.0 E 130	½"	1"	130	4 ... 23	... 0.3	2.7	0321-34004.4	A
HEP Plus 15-6.0 E 130	½"	1"	130	4 ... 50	... 0.46	2.7	0321-34006.4	A
HEP Plus 25-4.0 E 130	1"	1½"	130	4 ... 23	... 0.3	2.7	0323-34004.4	A
HEP Plus 25-6.0 E 130	1"	1½"	130	4 ... 50	... 0.46	2.7	0323-34006.4	A
HEP Plus 25-4.0 E 180	1"	1½"	180	4 ... 23	... 0.3	2.7	0323-34204.4	A
HEP Plus 25-6.0 E 180	1"	1½"	180	4 ... 50	... 0.46	2.7	0323-34206.4	A
HEP Plus 30-4.0 E 180	1¼"	2"	180	4 ... 23	... 0.3	2.8	0324-34204.4	A
HEP Plus 30-6.0 E 180	1¼"	2"	180	4 ... 50	... 0.46	2.8	0324-34206.4	A
HEP Plus (N) 15-4.0 E 130	½"	1"	130	4 ... 23	... 0,3	2,7	0351-34004.4	A
HEP Plus (N) 15-6.0 E 130	½"	1"	130	4 ... 50	... 0,46	2,7	0351-34006.4	A
HEP Plus (N) 25-4.0 E 180	1"	1½"	180	4 ... 23	... 0,3	2,7	0353-34204.4	A
HEP Plus (N) 25-6.0 E 180	1"	1½"	180	4 ... 50	... 0,46	2,7	0353-34206.4	A



Dimensions

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

Dimension illustration

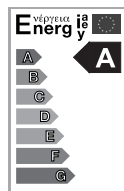


High efficiency pumps, electronically controlled

HEP series, HP product group



Insulation shell
With installation length
180 mm included
in delivery.
See also page 22.



Technical data

Rate of flow: up to 3.2 m³ / 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 and 180 mm
Threaded connection: 1", 1½" and 2"
Protection class: IP 42
Insulation class: F
Control: Δp or fixed rpm

Product features

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

Use

The electronically controlled HEP 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 heating systems close, the volume flow drops. This results in slight pipe resistance. The declining flow rate means that the circulation pump requires a lower pressure head. This is identified by the automatic control of the circulation pump. It automatically adjusts to the system and reduces its performance. This leads to not only trouble-free and quiet operation but also reduces energy consumption to a minimum.

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

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

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

Temperature range

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

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 / electronic control

The motor winding is resistant to stall current, so that motor protection is not required. The electronic control is integrated in the terminal box.

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

Enclosure pressure

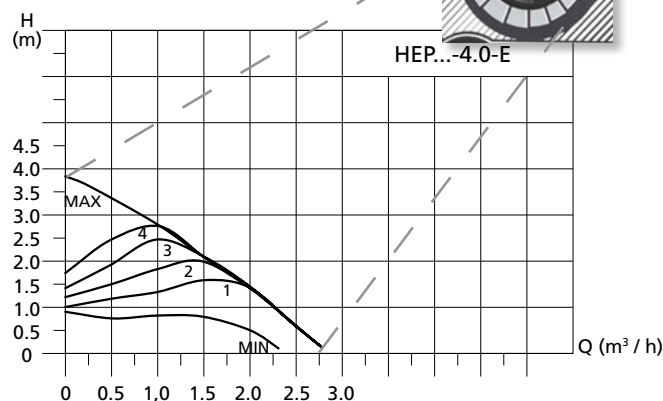
10 bar

Sound pressure level

The sound pressure level is < 45 dB (A)

Choice of control characteristic

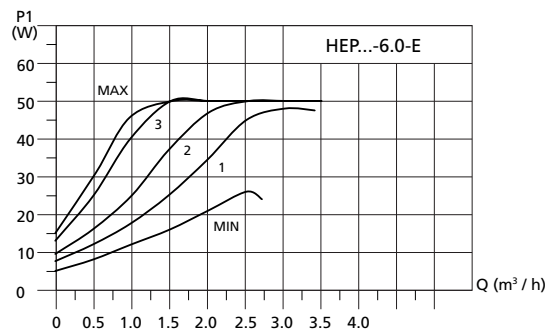
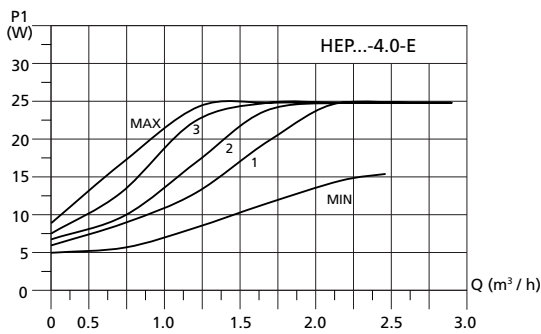
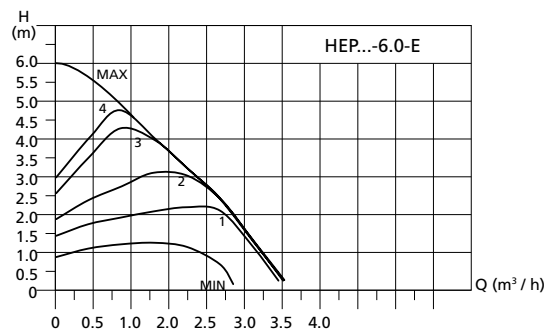
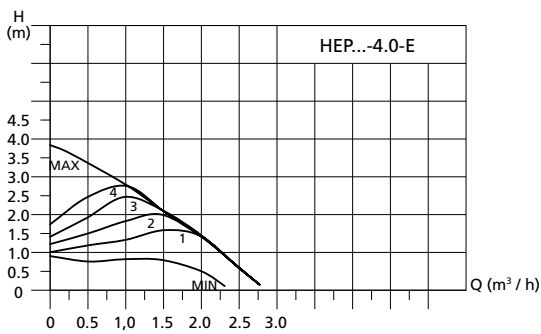
The control characteristics and the fixed speed steps can be adjusted continuously variable via the potentiometer on the axial terminal box. At the factory settings the potentiometer is in the centre position. This position corresponds to the reference characteristic curve with optimal efficiency. If noises are heard in this position, the characteristic curve can be adjusted by turning the potentiometer clockwise. If the pressure head is not sufficient (some radiators remain cold despite hydraulic equalisation), the characteristic curve can be corrected upwards.





Technical data

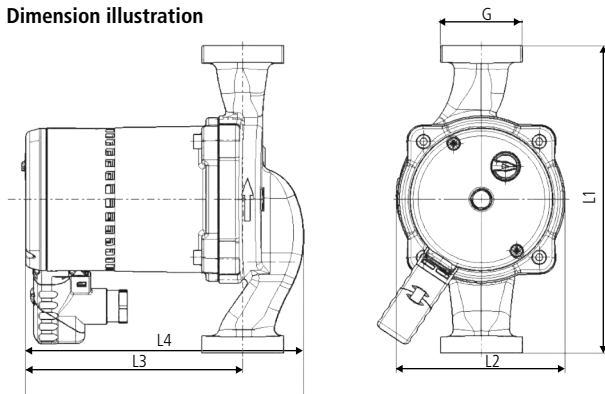
Typ	Anschluss R	Anschluss G	Einbaulänge (mm)	P1 (W)	In (A)	Gewicht (kg)	Art.- Nr.	Eff.- Klasse
HEP 15-4.0 E 130	½"	1"	130	4 ... 23	... 0,3	2,7	0321-34004.5	A
HEP 15-6.0 E 130	½"	1"	130	4 ... 50	... 0,46	2,7	0321-34006.5	A
HEP 25-4.0 E 130	1"	1½"	130	4 ... 23	... 0,3	2,7	0323-34004.5	A
HEP 25-6.0 E 130	1"	1½"	130	4 ... 50	... 0,46	2,7	0323-34006.5	A
HEP 25-4.0 E 180	1"	1½"	180	4 ... 23	... 0,3	2,7	0323-34204.5	A
HEP 25-6.0 E 180	1"	1½"	180	4 ... 50	... 0,46	2,7	0323-34206.5	A
HEP 30-4.0 E 180	1¼"	2"	180	4 ... 23	... 0,3	2,8	0324-34204.5	A
HEP 30-6.0 E 180	1¼"	2"	180	4 ... 50	... 0,46	2,8	0324-34206.5	A



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

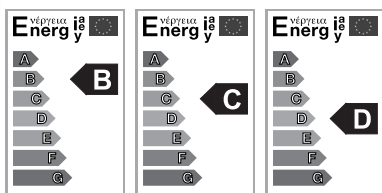
Dimensions

Dimension illustration



Standard heating circulation pumps, speed step switch (3-step)

HUPA series, H product group



Technical data

Rate of flow:	up to 3.8 m ³ / h
Pressure head:	up to 7 m
Media temperature:	-10 °C to 110 °C
Installation length:	130 and 180 mm
Threaded connection:	1", 1½" and 2"
Protection class:	IP 44
Insulation class:	F
Control:	3-step switch with manual speed selection
Voltage tolerance:	+/-10 %

Product features

- energy-optimised
- manual start-up feature
- space-saving axially integrated terminal box
- KTL coated pump housing

Use

The HUPA series circulation pumps are wet rotor circulators designed for use in heating systems with constant or weakly variable flow rates. With the 3-step rotary switch and the finely graded default programme, almost every working point on a system can be set economically.

Main areas of use

Heating, air-conditioning and industry systems as

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

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

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

Temperature range

Ambient temperature:	0 °C to 40 °C
Temperature class:	TF 110
Media temperature:	-10 °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

The motor winding is resistant to stall current, so that motor protection is not required.

Speed switching

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

Sound pressure level

The sound pressure level is < 45 dB (A)

Minimum inflow pressure

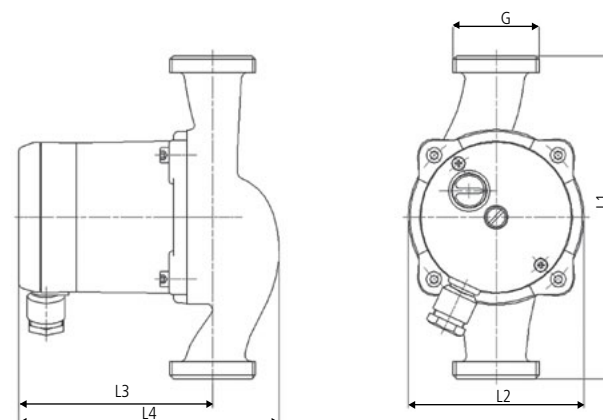
Please determine the minimum inflow pressure for corresponding temperature from the following table.

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

Dimensions

Type	L1	L2	L3	L4
HUPA	130 / 180	98	108	145

Dimension illustration



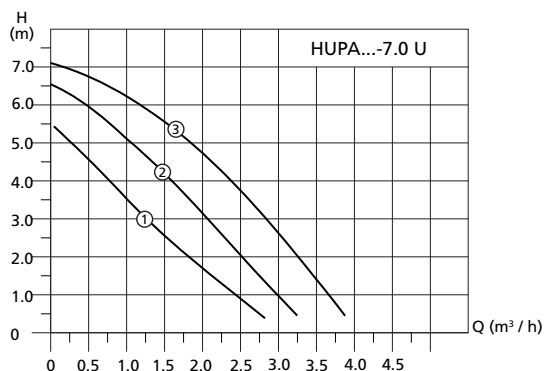
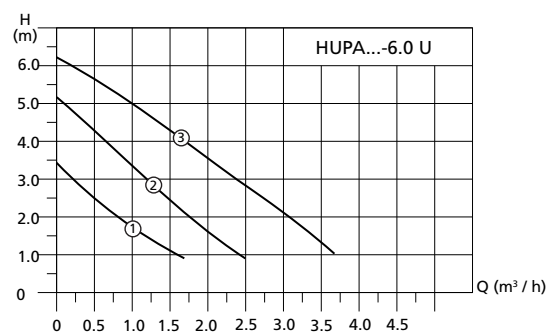
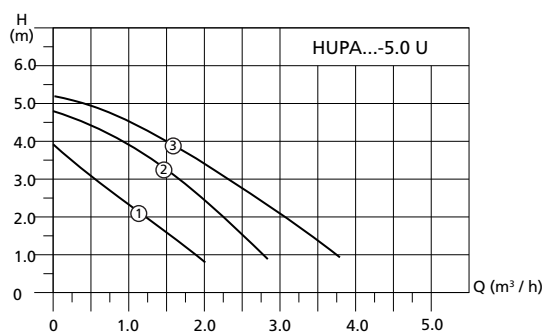
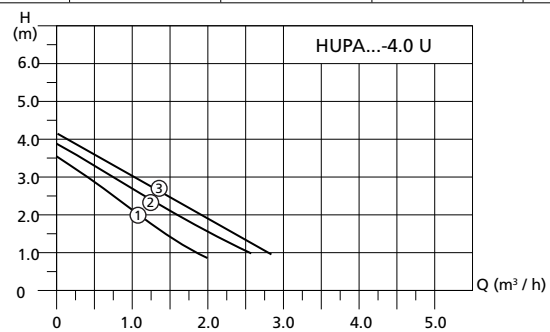
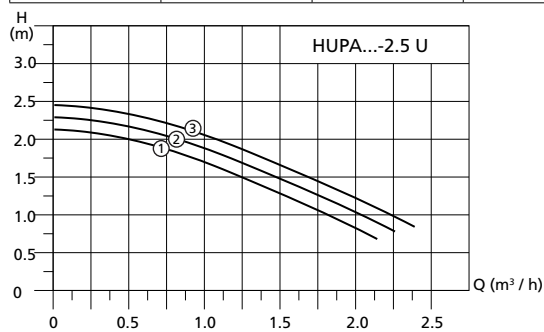
Standard heating circulation pumps, speed step switch (3-step)

HUPA series, H product group



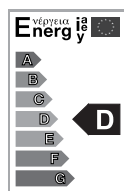
Technical data

Type	Connection pipe	Threaded connection	Installation length (mm)	P1 (W)	In (A)	Weight (kg)	Product No.	Eff. Class
HUPA 15-2.5 U 130	½"	1"	130	27 ... 35	0.12 ... 0.15	2.6	0321-33003	B
HUPA 15-4.0 U 130	½"	1"	130	33 ... 44	0.14 ... 0.19	2.6	0321-33004	B
HUPA 15-5.0 U 130	½"	1"	130	43 ... 77	0.19 ... 0.34	2.6	0321-33005	C
HUPA 15-6.0 U 130	½"	1"	130	43 ... 80	0.19 ... 0.34	2.6	0321-33006	C
HUPA 15-7.0 U 130	½"	1"	130	54 ... 97	0.24 ... 0.39	2.6	0321-33007	D
HUPA 25-2.5 U 130	1"	1½"	130	27 ... 35	0.12 ... 0.15	2.6	0323-33003	B
HUPA 25-4.0 U 130	1"	1½"	130	33 ... 44	0.14 ... 0.19	2.6	0323-33004	B
HUPA 25-5.0 U 130	1"	1½"	130	43 ... 77	0.19 ... 0.34	2.6	0323-33005	C
HUPA 25-6.0 U 130	1"	1½"	130	43 ... 80	0.19 ... 0.34	2.6	0323-33006	C
HUPA 25-7.0 U 130	1"	1½"	130	54 ... 97	0.24 ... 0.39	2.6	0323-33007	D
HUPA 25-2.5 U 180	1"	1½"	180	27 ... 35	0.12 ... 0.15	2.7	0323-33203	B
HUPA 25-4.0 U 180	1"	1½"	180	33 ... 44	0.14 ... 0.19	2.7	0323-33204	B
HUPA 25-5.0 U 180	1"	1½"	180	43 ... 77	0.19 ... 0.34	2.7	0323-33205	C
HUPA 25-6.0 U 180	1"	1½"	180	43 ... 80	0.19 ... 0.34	2.8	0323-33206	C
HUPA 25-7.0 U 180	1"	1½"	180	54 ... 97	0.24 ... 0.39	2.8	0323-33207	D
HUPA 30-2.5 U 180	1¼"	2"	180	27 ... 35	0.12 ... 0.15	2.8	0324-33203	B
HUPA 30-4.0 U 180	1¼"	2"	180	33 ... 44	0.14 ... 0.19	2.8	0324-33204	B
HUPA 30-5.0 U 180	1¼"	2"	180	43 ... 77	0.19 ... 0.34	2.8	0324-33205	C
HUPA 30-6.0 U 180	1¼"	2"	180	43 ... 80	0.19 ... 0.34	2.8	0324-33206	C
HUPA 30-7.0 U 180	1¼"	2"	180	54 ... 97	0.24 ... 0.39	2.8	0324-33207	D



Standard heating circulation pumps, speed step switch (3-step)

HLPA series, H product group



Technical data

Rate of flow:	up to 7 m ³ / h
Pressure head:	up to 7 m
Media temperature:	-10 °C to 110 °C
Installation length:	180 mm
Threaded connection:	1½" und 2"
Protection class:	IP 44
Insulation class:	F
Control:	3-step switch with manual speed selection

Product features

- compact design
- smooth running
- convenient operation
- manual start-up feature
- space-saving axially integrated terminal box

Use

The HPLA circulation pump from Halm was specially designed for heating systems in which large pressure heads and capacities are equally required. These circulation pumps are designed for use in heating systems with variable or constant flow rates. The HPLA circulation pumps meet the energy efficiency standard class D.

Main areas of use

Heating, air-conditioning and industry systems as

- dual pipe system
- boiler / primary circuit
- storage charging circuit

Flow media

- heating water
- pure, thin, non-aggressive and non-explosive, mineral oil-free media without solid particles or fibres
- media with a max. viscosity of $1,08 \times 10^{-4}$ ft²/s
- operating data must be checked above 20 % glycol

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

Temperature range

Ambient temperature:	0 °C to 40 °C
Temperature class:	TF 110
Media temperature:	-10 °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

The motor includes an internal thermal overload protection. External motor protection is not required.

Speed switching

Three speed, with manual selector. The respective speed is set via rotary switch integrated in the terminal board.

Sound pressure level

The sound pressure level is < 45 dB (A)

Minimum inflow pressure

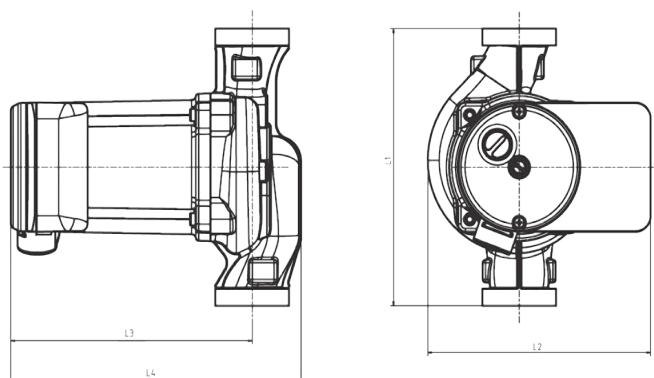
Please determine the minimum inflow pressure for corresponding temperature from the following table.

Media temperature	< 85 °C	90 °C	110 °C
Minimum inflow pressure	0,05 bar	0,3 bar	1,10 bar

Dimensions

Type	L1	L2	L3	L4
HLPA	180	153	165	199

Dimension illustration



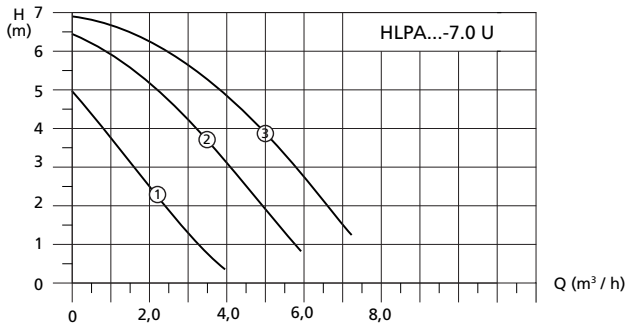
Standard heating circulation pumps, speed step switch (3-step)

HLPA series, H product group



Technical data

Type	Connection pipe	Threaded connection	Installation length (mm)	P1 (W)	In (A)	Weight (kg)	Product No.	Eff. Class
HLPA 25-7.0 U 180	1"	1½"	180	95 ... 190	0,45... 0,85	4,5	0323-63207	D
HLPA 30-7.0 U 180	1¼"	2"	180	95 ... 190	0,45... 0,85	4,5	0324-63207	D



Heating circulation pumps, speed step switch, pressure head 7-12 m

HGPA series, HG product group



Technical data

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

Product features

- compact design
- smooth running
- convenient operation
- manual start-up feature
- space-saving axially integrated terminal box

Use

The HGPA circulation pump range from Halm was specially designed for heating systems in which large pressure heads and capacities are equally required. These circulation pumps are designed for use in heating systems with variable or constant flow rates.

Main areas of use

Heating, air-conditioning and industry systems as

- dual pipe system
- underfloor heating
- boiler / primary circuit
- storage charging circuit

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

Materials

Component	Material	Material No.
Pump body	Grey-cast iron	0.6020
Impeller	Polypropylene (PP - GF 50)	
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

The motor includes an integrated motor-protective circuit-breaker. External motor protection is not required.

Speed switching

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

Sound pressure level

The sound pressure level is < 45 dB (A)

Minimum inflow pressure

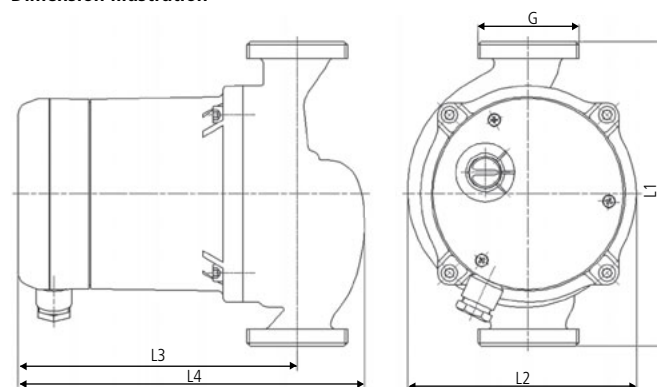
Please determine the minimum inflow pressure for corresponding temperature from the following table.

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

Dimensions

Type	L1	L2	L3	L4
HGPA	180	135.5	166	206

Dimension illustration



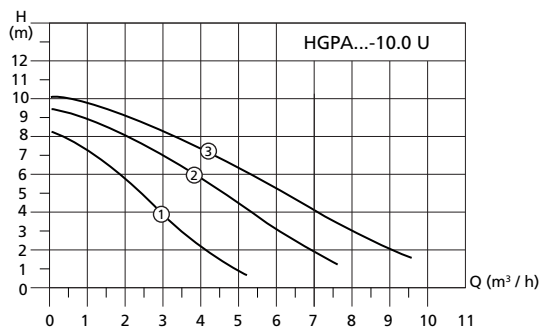
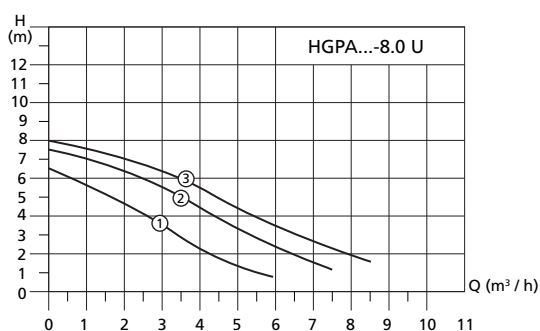
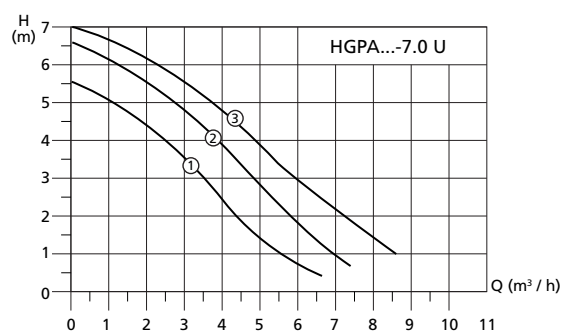
Heating circulation pumps, speed step switch, pressure head 7-12 m

HGPA series, HG product group



Technical data

Type	Connection pipe	Threaded connection	Installation length (mm)	P1 (W)	In (A)	Weight (kg)	Product No.
HGPA 25-7.0 U 180	1"	1½"	180	220 ... 260	1.03 ... 1.13	6.5	0323-41207
HGPA 25-8.0 U 180	1"	1½"	180	260 ... 286	1.23 ... 1.25	6.5	0323-41208
HGPA 25-10.0 U 180	1"	1½"	180	283 ... 357	1.35 ... 1.56	6.5	0323-41210
HGPA 25-12.0 U 180	1"	1½"	180	285 ... 400	1.36 ... 1.73	6.5	0323-41212
HGPA 30-7.0 U 180	1¼"	2"	180	220 ... 260	1.03 ... 1.13	6.6	0324-41207
HGPA 30-8.0 U 180	1¼"	2"	180	260 ... 286	1.23 ... 1.25	6.6	0324-41208
HGPA 30-10.0 U 180	1¼"	2"	180	283 ... 357	1.35 ... 1.56	6.6	0324-41210
HGPA 30-12.0 U 180	1¼"	2"	180	285 ... 400	1.36 ... 1.73	6.6	0324-41212



Standard circulation pumps for domestic water

BUPA series, B product group



Technical data

Rate of flow:	up to 5.0 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:	F
Control:	3-step switch with manual speed selection

Product features

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

Use

The BUPA series circulation pumps are wet rotor circulators designed for use in heating systems with constant or weakly variable flow rates. They feature a corrosion-resistant enclosure in bronze and are thus suitable for use in drinking water circulation systems.

Main areas of use

Drinking water systems in building and industry installations as

- circulation circuit
- storage charging circuit
- cooling and heating circuit
- underfloor heating

Flow media

- drinking water and heated drinking water to a temperature of 65 °C and a degree of hardness of 14 °dH (temporary hardness)
- 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

Materials

Component	Material	Material No.
Pump body	Bronze (RG 5)	2.1096 (low-lead)
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

The motor winding is resistant to stall current, so that motor protection is not required.

Speed switching

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

Sound pressure level

The sound pressure level is < 45 dB (A)

Minimum inflow pressure

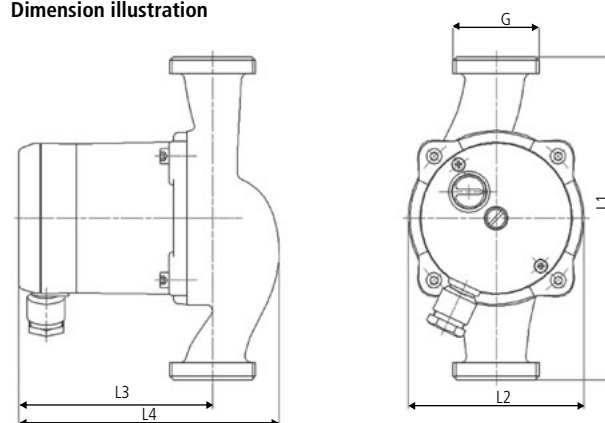
Please determine the minimum inflow pressure at corresponding temperature from the following table.

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

Dimensions

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

Dimension illustration



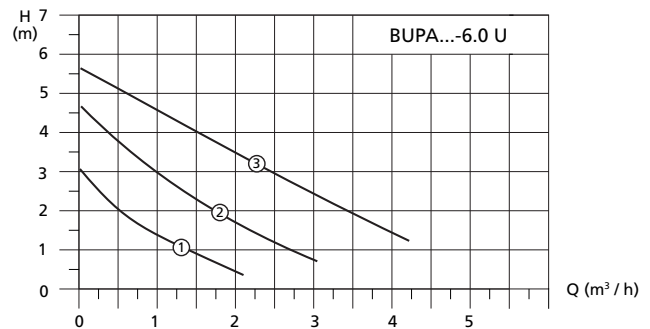
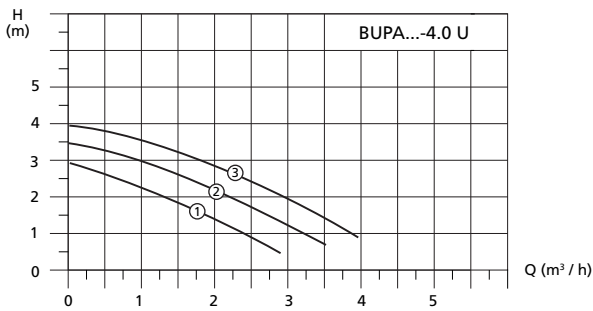
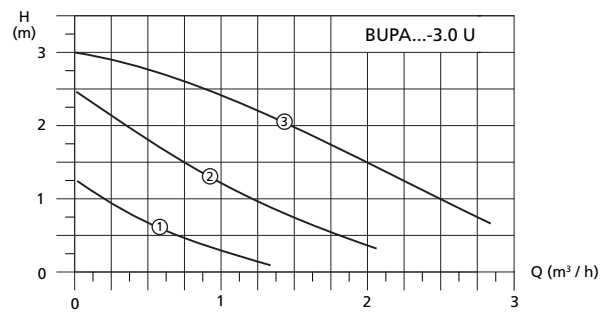
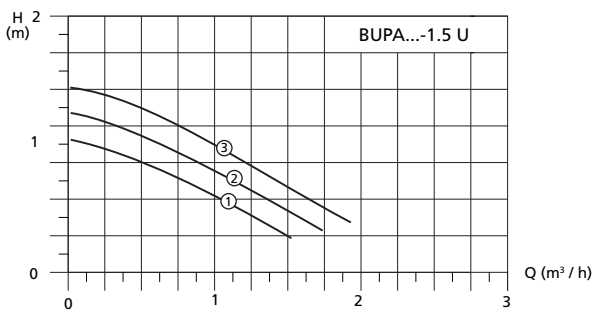
Standard circulation pumps for domestic water

BUPA series, B product group



Technical data

Type	Connection pipe	Threaded connection	Installation length (mm)	P1 (W)	In (A)	Weight (kg)	Product No.
BUPA 15-1.5 U 130	½"	1"	130	28 ... 58	0.16 ... 0.2	2.7	0331-31002
BUPA 15-3.0 U 130	½"	1"	130	33 ... 63	0.17 ... 0.3	2.7	0331-31003
BUPA 15-4.0 U 130	½"	1"	130	40 ... 70	0.27 ... 0.44	2.7	0331-31004
BUPA 15-6.0 U 130	½"	1"	130	56 ... 100	0.27 ... 0.44	2.7	0331-31006
BUPA 20-1.5 U 150	¾"	1¼"	150	28 ... 58	0.16 ... 0.28	2.7	0332-31102
BUPA 20-3.0 U 150	¾"	1¼"	150	33 ... 63	0.17 ... 0.3	2.7	0332-31103
BUPA 20-4.0 U 150	¾"	1¼"	150	40 ... 70	0.27 ... 0.44	2.7	0332-31104
BUPA 20-6.0 U 150	¾"	1¼"	150	56 ... 100	0.27 ... 0.44	2.7	0332-31106
BUPA 25-1.5 U 130	1"	1½"	130	28 ... 58	0.16 ... 0.28	2.7	0333-31002
BUPA 25-3.0 U 130	1"	1½"	130	33 ... 63	0.17 ... 0.3	2.7	0333-31003
BUPA 25-4.0 U 130	1"	1½"	130	40 ... 70	0.27 ... 0.44	2.7	0333-31004
BUPA 25-6.0 U 130	1"	1½"	130	55 ... 90	0.27 ... 0.44	2.7	0333-31006
BUPA 25-1.5 U 180	1"	1½"	180	40 ... 70	0.27 ... 0.44	2.8	0333-31202
BUPA 25-3.0 U 180	1"	1½"	180	56 ... 100	0.27 ... 0.44	2.8	0333-31203
BUPA 25-4.0 U 180	1"	1½"	180	40 ... 70	0.27 ... 0.44	2.8	0333-31204
BUPA 25-6.0 U 180	1"	1½"	180	56 ... 100	0.27 ... 0.44	2.8	0333-31206



Circulation pumps for domestic water, pressure head 7-12 m

BGPA series, BG product group



Technical data

Rate of flow:	up to 12.0 m ³ / 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:	F
Control:	3-step switch with manual speed selection

Product features

- manual start-up feature
- space-saving axially integrated terminal box
- pump enclosure in bronze

Use

The BGPA series circulation pumps are wet rotor circulators designed for use in heating systems with a flow rate of > 5 m³ / h. They feature a corrosion-resistant enclosure in bronze and are thus designed for use in drinking water circulation systems.

Main areas of use

Drinking water systems in building and industry installations as

- circulation circuit
- storage charging circuit
- cooling and heating circuit
- underfloor heating

Flow media

- drinking water and heated drinking water to a temperature of 65 °C and a degree of hardness of 14 °dH (temporary hardness)
- 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

Materials

Component	Material	Material No.
Pump body	Bronze (RG 5)	2.1096 (low-lead)
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

The motor includes an integrated motor-protective circuit-breaker. External motor protection is not required.

Speed switching

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

Sound pressure level

The sound pressure level is < 45 dB (A)

Minimum inflow pressure

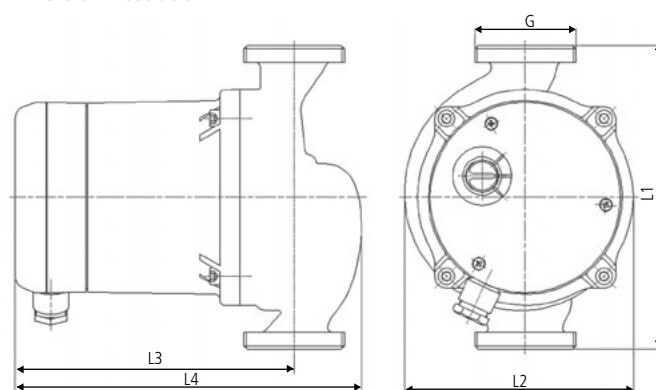
Please determine the minimum inflow pressure for corresponding temperature from the following table.

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

Dimensions

Type	L1	L2	L3	L4
BGPA	180	135,5	166	206

Dimension illustration



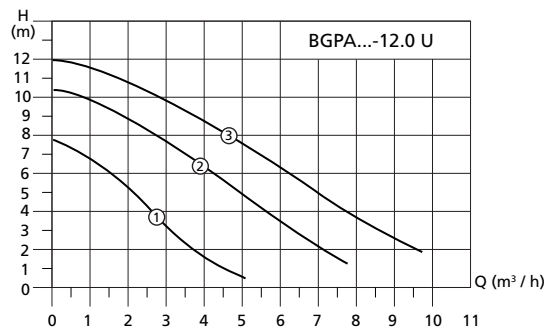
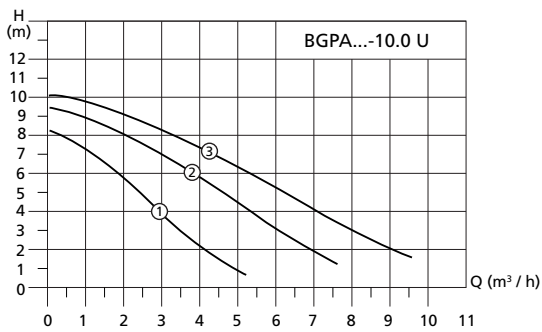
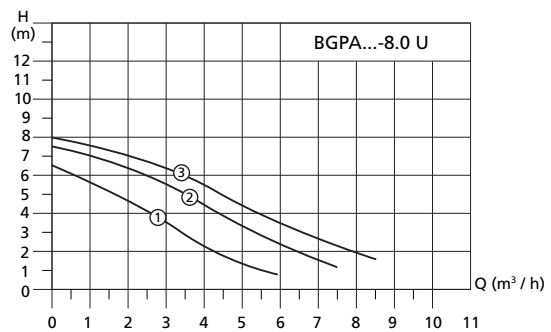
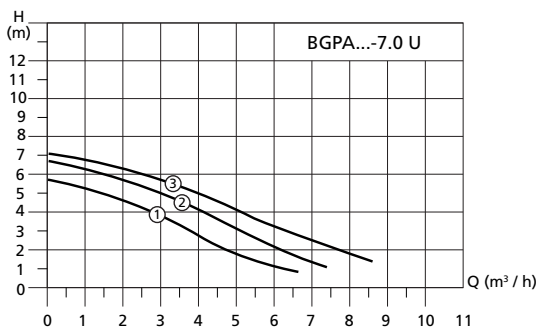
Circulation pumps for domestic water, pressure head 7-12 m

BGPA series, BG product group



Technical data

Type	Connection pipe	Threaded connection	Installation length (mm)	P1 (W)	In (A)	Weight (kg)	Product No.
BGPA 20-7.0 U 180	¾"	1¼"	180	220 ... 260	1.03 ... 1.13	6.5	0332-41207
BGPA 20-8.0 U 180	¾"	1¼"	180	260 ... 286	1.23 ... 1.25	6.5	0332-41208
BGPA 20-10.0 U 180	¾"	1¼"	180	283 ... 357	1.35 ... 1.56	6.5	0332-41210
BGPA 20-12.0 U 180	¾"	1¼"	180	285 ... 400	1.36 ... 1.73	6.5	0332-41212
BGPA 25-7.0 U 180	1"	1½"	180	220 ... 260	1.03 ... 1.13	6.5	0333-41207
BGPA 25-8.0 U 180	1"	1½"	180	260 ... 286	1.23 ... 1.25	6.5	0333-41208
BGPA 25-10.0 U 180	1"	1½"	180	283 ... 357	1.35 ... 1.56	6.5	0333-41210
BGPA 25-12.0 U 180	1"	1½"	180	285 ... 400	1.36 ... 1.73	6.5	0333-41212





Cold water circulation pumps (geothermy, air-conditioning and refrigeration), pressure head 7-12 m

KGPA series, KG product group



Technical data

Rate of flow: up to 12.0 m³ / h
 Pressure head: up to 12 m
 Media temperature: -25 °C to 110 °C
 Installation length: 180 mm
 Threaded connection: 1½" and 2"
 Protection class: IP 44
 Insulation class: F
 Control: 3-step switch with manual speed selection

Product features

- manual start-up feature
- space-saving axially integrated terminal box
- pump enclosure with KTL coating

Use

The KGPA series circulation pumps are wet rotor circulators designed for use in cold water systems with a flow rate of > 5 m³ / h. They feature an enclosure resistant to corrosion with KTL coating and a sealed motor winding. On request, pumps from the KGPA series are also available with a bronze enclosure (KGPB).

Main areas of use

- cold water systems
- geothermy
- air-conditioning
- refrigeration

Flow media

- 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

Materials

Component	Material	Material No.
Pump body	Grey-cast iron	0.6020
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: -25 °C to 110 °C

Motor protection

The motor includes an integrated motor-protective circuit-breaker. External motor protection is not required.

Speed switching

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

Sound pressure level

The sound pressure level is < 45 dB (A)

Minimum inflow pressure

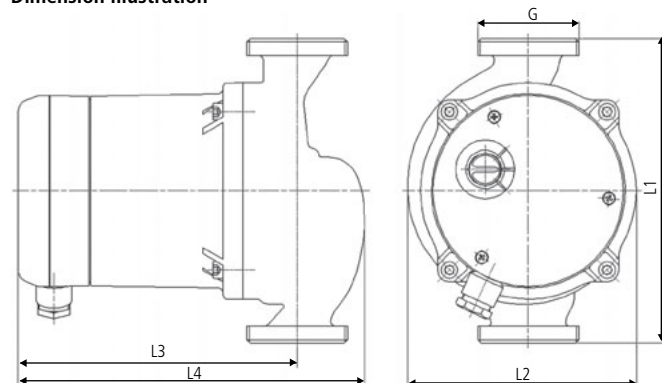
Please determine the minimum inflow pressure for corresponding temperature from the following table.

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

Dimensions

Type	L1	L2	L3	L4
KGPA	180	135.5	166	206

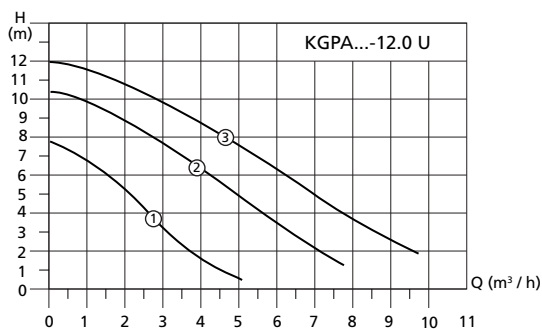
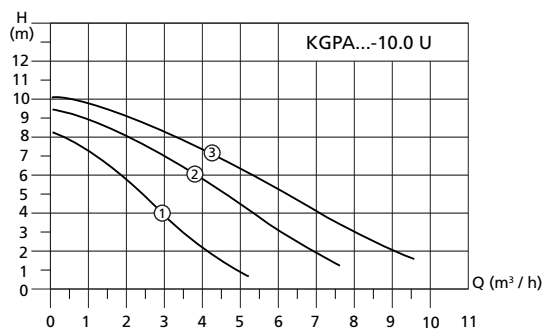
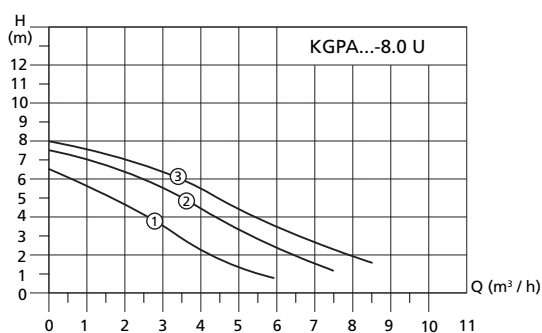
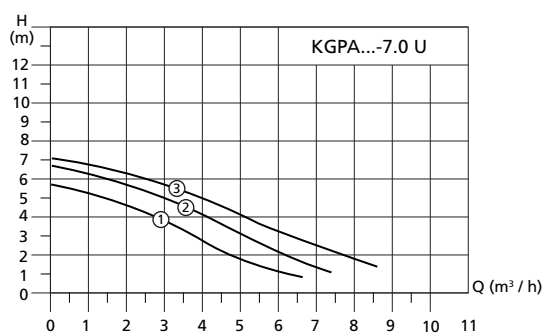
Dimension illustration





Technical data

Type	Connection pipe	Threaded connection	Installation length (mm)	P1 (W)	In (A)	Weight (kg)	Product No.
KGPA 25-7.0 U 180	1"	1½"	180	220 ... 260	1.03 ... 1.13	6.5	0313-51207
KGPA 25-8.0 U 180	1"	1½"	180	260 ... 286	1.23 ... 1.25	6.5	0313-51208
KGPA 25-10.0 U 180	1"	1½"	180	283 ... 357	1.35 ... 1.56	6.5	0313-51210
KGPA 25-12.0 U 180	1"	1½"	180	285 ... 400	1.36 ... 1.73	6.5	0313-51212
KGPA 30-7.0 U 180	1¼"	2"	180	220 ... 260	1.03 ... 1.13	6.6	0314-51207
KGPA 30-8.0 U 180	1¼"	2"	180	260 ... 286	1.23 ... 1.25	6.6	0314-51208
KGPA 30-10.0 U 180	1¼"	2"	180	283 ... 357	1.35 ... 1.56	6.6	0314-51210
KGPA 30-12.0 U 180	1¼"	2"	180	285 ... 400	1.36 ... 1.73	6.6	0314-51212



Accessories

Z product group

Plugs for screw pumps ("plug & pump")

- screwable universal plug complete with motor connection / socket only
- for universal use with all Halm screw pumps
- for simple and quick connection



Description	Product No.
Plug complete	3219-2205-01
Socket only	3219-2204

Insulation shell

For product groups HP / HE / H in installation length 180 mm



Further accessories on request.

Description	Product No.
Insulation shell	4152-0100



Sample



HP product group

HEP series, HEP Plus series

Grundfos	Wilo "Stratos"	KSB	Biral	DAB	ITT Lowara	Halm	Halm product no.
Alpha 2 15-40 Alpha 2L 15-40 Alpha Pro 15-40	Pico 15/1-4 Eco 15/1-3	-	AX 12-4	-	EA 15-4/130 EV 15-4/130	HEP 15-4.0 E 130 HEP Plus 15-4.0 E 130	0321-34004.5 0321-34004.4
Alpha 2 15-60 Alpha 2L 15-60 Alpha Pro 15-60	Pico 15/1-6 Eco 15/1-5	-	AX 13-4	-	EA 15-6/130 EV 15-6/130	HEP 15-6.0 E 130 HEP Plus 15-6.0 E 130	0321-34006.5 0321-34006.4
Alpha 2 25-40 130 Alpha 2L 25-40 130 Alpha Pro 25-40 130	Pico 25/1-4 130 Eco 25/1-3 130	-	AX 12-3	-	EA 25-4/130 EV 25-4/130	HEP 25-4.0 E 130 HEP Plus 25-4.0 E 130	0323-34004.5 0323-34004.4
Alpha 2 25-50 130* Alpha 2L 25-50 130* Alpha 2 25-60 130 Alpha 2L 25-60 130 Alpha Pro 25-60 130	Pico 25/1-6 130 Eco 25/1-5 130	-	AX 13-3	-	EA 25-6/130 EV 25-6/130	HEP 25-6.0 E 130 HEP Plus 25-6.0 E 130	0323-34006.5 0323-34006.4
Alpha 2 25-40 Alpha 2L 25-40 Alpha Pro 25-40	Pico 25/1-4 Stratos Eco 25/1-3	Riotronic P 25-40 Riotronic Eco 25-40	AX 12-1	AC 35/180M	EA 25-4/180 EV 25-4/180	HEP 25-4.0 E 180 HEP Plus 25-4.0 E 180	0323-34204.5 0323-34204.4
Alpha 2 25-60 Alpha 2L 25-60 Alpha Pro 25-60L	Pico 25/1-6 Eco 25/1-5	Riotronic P 25-60 Riotronic Eco 25-60	AX 13-1	AC 55/180M	EA 25-6/180 EV 25-6/180	HEP 25-6.0 E 180 HEP Plus 25-6.0 E 180	0323-34206.5 0323-34206.4
Alpha 2 32-40 Alpha 2L 32-40 Alpha Pro 32-40	Pico 30/1-4 Eco 30/1-3	Riotronic P 30-40 Riotronic Eco 30-40	AX 12-2	AC 35/180X	EA 32-4/180 EV 32-4/180	HEP 30-4.0 E 180 HEP Plus 30-4.0 E 180	0324-34204.5 0324-34204.4
Alpha 2 32-60 Alpha 2L 32-60 Alpha Pro 32-60	Pico 30/1-6 Eco 30/1-5	Riotronic P 30-60 Riotronic Eco 30-60	AX 13-2	AC 55/180X	EA 32-6/180 EV 32-6/180	HEP 30-6.0 E 180 HEP Plus 30-6.0 E 180	0324-34206.5 0324-34206.4

* UK only



H product group

HUPA series

Grundfos	Wilo	KSB	Biral	DAB	Speck	Halm	Halm product no.
UPS 15-30 130	Star-RS 15/2	-	M 10 -4	-	-	HUPA 15-2.5 U 130	0321-33003
UPS 15-40 130	Star-RS 15/4	Rio C 15-40 130	M 12-4	VA 35/130 1/2"	-	HUPA 15-4.0 U 130	0321-33004
UPS 15-60 130	Star-RS 15/6	Rio C 15-60 130	M 13-4	VA 55/130 1/2"	-	HUPA 15-6.0 U 130	0321-33006
UPS 25-40 130	Star-RS 25/4 130	-	-	VA 35/130	-	HUPA 25-4.0 U 130	0323-33004
UPS 25-50 130	Star-RS 25/5 130 Gold 50*	-	-	-	-	HUPA 25-5.0 U 130	0321-33005
UPS 25-60 130	Star-RS 25/6 130 Gold 60*	-	-	VA 55/130	-	HUPA 25-6.0 U 130	0321-33006
UPS 25-25	Star-RS 25/2	Rio C 25-25	M 10-1	-	N 25/33 VA 25/2	HUPA 25-2.5 U 180	0323-33203
UPS 25-40	Star-RS 25/4	Rio C 25-40	-	VA 35/180	N 25/33 VA 25/4	HUPA 25-4.0 U 180	0323-33204
UPS 25-50	Star-RS 25/5	Rio C 22 / 50	M 12-1	-	N 25/53 VA 25/52	HUPA 25-5.0 U 180	0323-33205
UPS 25-60	Star-RS 25/6	Rio C 25-60	M 13-1	VA 55/180	N 25/33 VA 25/64	HUPA 25-6.0 U 180	0323-33206
-	-	-	M 14-1	-	VA 25/64	HUPA 25-7.0 U 180	0323-33207
UPS 32-30	Star-RS 30/2	Rio C 30-25	M 10-2	-	N 32/33	HUPA 30-2.5 U 180	0324-33203
UPS 32-40	Star-S 30/4	Rio C 30-40	-	VA 35/180 X	N 32/33 VA 32/43	HUPA 30-4.0 U 180	0324-33204
UPS 32-50	Star-RS 30/6	Rio C 32/60	M 12-2	-	N 32/53 VA 32/52	HUPA 30-5.0 U 180	0324-33205
UPS 32-60	Star-RS 30/6	Rio C 30-60	M 13-2	VA 55/180 X	N 32/53 VA 32/64	HUPA 30-6.0 U 180	0324-33206

* UK only

Replacement lists

Grundfos - Wilo - KSB - Biral - Speck - Laing - Halm

H product group

HLPA series

Grundfos	Wilo	KSB	Biral	Speck	Laing	Halm	Halm product no.
UPS 25-8	TOP-S 25/7	Riovar 24 - 8	M 15-1	N 25/75	-	HLPA 25-7.0 U 180	0323-63207
-	TOP-S 30/7	Riovar 34 - 8	M 15-2	N 32/75	-	HLPA 30-7.0 U 180	0324-63207

HG product group

HGPA series

Grundfos	Wilo	KSB	Biral	Speck	Laing	Halm	Halm product no.
-	TOP-S 25/7	Rio 25 - 70	MX / M 14 - 1	VA 25/64	-	HGPA 25-7.0 U 180	0323-41207
UPS 25-80	-	-	MX / M 15 - 1	-	-	HGPA 25-8.0 U 180	0323-41208
UPS 32-80	TOP-S 30/7	Rio 30 - 70	MX / M 14 - 2	VA 32/73	-	HGPA 30-7.0 U 180	0324-41207
-	-	Rio 30 - 70	-	-	-	HGPA 30-8.0 U 180	0324-41208
-	TOP-S 30/10	Rio 30 - 100	MX / M 15 - 2	VA 32/86	-	HGPA 30-10.0 U 180	0324-41210
-	-	Rio 30 - 100	-	-	-	HGPA 30-12.0 U 180	0324-41212

B product group

BUPA series

Grundfos	Wilo	KSB	Biral	Speck	Laing	Halm	Halm product no.
UP 15-14 B/N	Z 15 *	Riotherm C 20-10	W 12 120 *	BN 15	S1-15 / 700 B	BUP 15-1.5 U 130 BUPA 15-1.5 U 130	0331-0103 0331-31002
-	-	R 12 - 1 E *	W 13	-	-	BUP 15-3.0 U 130 BUPA 15-3.0 U 130	0331-0104 0331-31003
-	-	-	W 14	-	-	BUP 15-4.0 U 130 BUPA 15-4.0 U 130	0331-0105 0331-31004
-	-	-	W 14	-	-	BUP 15-6.0 U 130 BUPA 15-6.0 U 130	0331-0107 0331-31006
UP 20-14 / 15 B / N	Star-Z 20/1 *	-	W 12 120 *	-	S1-13 / 100 B	BUP 20-1.5 U 150 BUPA 20-1.5 U 150	0332-0113 0332-31102
UPS 20-15 N	Star-Z 20/2	C 20-15	W 13	-	-	BUP 20-3.0 U 150 BUPA 20-3.0 U 150	0332-0114 0332-31103
UP 20-30 N	TOP-Z 20/4	C 20-30	W 14	BA 25/41	-	BUP 20-4.0 U 150 BUPA 20-4.0 U 150	0332-0115 0332-31104
UP 20-42 N	TOP-Z 20/4	-	W 14	BA 25/4 3	-	BUP 20-6.0 U 150 BUPA 20-6.0 U 150	0332-0117 0332-31106
-	-	-	W 12	BN 20/22 150	S1-13 / 100 B	BUP 25-1.5 U 130 BUPA 25-1.5 U 130	0333-0103 0333-31002
-	-	Riotherm C 25-20	W 13	BN 20/43 150	-	BUP 25-3.0 U 130 BUPA 25-3.0 U 130	0333-0104 0333-31003
-	-	-	W 14	BVA 25/41	-	BUP 25-6.0 U 130 BUPA 25-6.0 U 130	0333-0107 0333-31006
UPS 25-40 B	Star-Z 25/2	-	W 14	BVA 25/43	-	BUP 25-4.0 U 180 BUPA 25-4.0 U 180	0333-0125 0333-31204
UPS 25-60 B	Star-Z 25/6	Riotherm C 25-60	W 14	-	-	BUP 25-6.0 U 180 BUPA 25-6.0 U 180	0333-0127 0333-31206

* note differing installation lengths



KG product group

KGPA series

Grundfos	Wilo	KSB	Biral	Speck	Laing	Halm	Halm product no.
-	TOP-S 25/7	Rio 25 - 70	MX / M 14 - 1	VA 25/64	-	KGPA 25-7.0 U 180	0313-51207
UPS 25-80	-	-	MX / M 15 - 1	-	-	KGPA 25-8.0 U 180	0313-51208
UPS 32-80	TOP-S 30/7	Rio 30 - 70	MX / M 14 - 2	VA 32/73	-	KGPA 30-7.0 U 180	0314-51207
-	-	Rio 30 - 70	-	-	-	KGPA 30-8.0 U 180	0314-51208
-	TOP-S 30/10	Rio 30 - 100	MX / M 15 - 2	VA 32/86	-	KGPA 30-10.0 U 180	0314-51210
-	-	Rio 30 - 100	-	-	-	KGPA 30-12.0 U 180	0314-51212

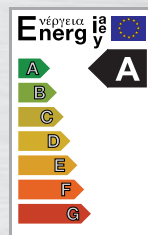




HALM

effiziente Pumpentechnologie

Your representative:



Richard Halm GmbH + Co. KG

Silcherstrasse 54-58
73666 Baltmannsweiler
Germany

Postfach 69
73664 Baltmannsweiler
Germany

Tel: +49 (0)7153 9202-0
Fax: +49 (0)7153 49168

E-mail: info@halm.info
www.halm-pumps.de