



AMCAL
INDUSTRIAL PUMP SOLUTIONS

GRUNDFOS 
DATA BOOKLET

MAGNA3

Model E

Circulator pumps

50/60 Hz



GRUNDFOS 

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1. Product description



TM086782

The Grundfos MAGNA3 circulator pumps are designed for circulating liquids in systems with variable flow requirements where you want to optimise the setting of the pump duty point, thus reducing energy costs.

Applications

- Heating systems
 - main pump
 - mixing loops
 - heating surfaces
- air-conditioning and cooling systems
- domestic hot-water systems
- ground source heat pump systems
- solar-heating systems.

The MAGNA3 circulator pump is perfect for both new systems as well as for replacement. The pump is ideal when operating in systems requiring an automated adjustment of pressure. This pump range is the best choice as it eliminates the need for expensive bypass valves and similar components.

Furthermore, the pump is appropriate for systems with hot-water priority as an external signal can immediately force the pump to operate according to the maximum curve, for example in solar-heating systems. When using the pumps in domestic hot-water systems, please observe local legislation regarding pump house material. Grundfos strongly recommend that you use stainless-steel pumps in domestic hot-water applications to avoid corrosion.

Application wizard

MAGNA3 features a built-in application wizard, which is accessed via the pump's operating panel. By specifying your system step by step, the application wizard identifies the best suited control mode for your application.

See section Application wizard.

Related information

[Application wizard](#)

Duty range

Data	MAGNA3 (N) Single-head pump	MAGNA3 D Twin-head pump
Maximum flow rate	78.5 m ³ /h	150 m ³ /h
Maximum head	18 metres	
Maximum system pressure	1.6 MPa (16 bar)	
Liquid temperature	-10 to +110 °C	

To ensure correct operation, it is important that the duty points in the system match the duty range of the pump.

Characteristic features

- AUTOADAPT.
- FLOWLIMIT.
- FLOWADAPT - a combination of the AUTOADAPT control mode and FLOWLIMIT function.
- Built-in Grundfos differential-pressure and temperature sensor.
- Proportional-pressure control.
- Constant-pressure control.
- Constant-temperature control.
- Constant-curve duty.
- Maximum or minimum curve duty.
- Automatic night setback.
- Self-explanatory user interface with TFT display and high quality silicone push-buttons.
- Heat energy monitor.
- Wireless multipump function.
- The complete range is available for a maximum system pressure of 16 bar, PN 16.

Benefits

- Low energy consumption due to the AUTOADAPT function, allowing the pump to adjust automatically to external factors, such as outside temperatures and consumption patterns.
- Simple installation.
- No maintenance and long life.
- Operating log history.
- Easy and simple system optimisation.
- External control and monitoring enabled via add-on modules.
- No external motor protection required.
- Insulating shells for heating systems supplied with single-head pumps.
- Wide temperature range due to thermal separation of the control box and pump media.
- MAGNA pumps are preferred and used in MIXIT solution system.

Intended use in the United Kingdom

Safety precautions for UK:



The product is not intended for use in any home appliance, home automation, home control system or consumer product in the UK.

Type key

Example	MAGNA3	(D)	80	-120	(F)	(N)	360
Pos.	1	2	3	4	5	6	7

Pos.	Code	Explanation	Designation
1	MAGNA3	MAGNA3	Type range
2	(D)	Single-head pump Twin-head pump	
3	80		Nominal diameter (DN) of inlet and outlet ports [mm]
4	-120		Maximum head [dm]
5	(F)	Threaded Flange	Pipe connection
6	(N)	Cast iron Stainless steel	Pump housing material
7	360		Port-to-port length [mm]

Model type

This data booklet covers MAGNA3. The model version is stated on the nameplate.



Model type on pump nameplate

You can find a comparison of the MAGNA3 model types in section Functions.

Related information

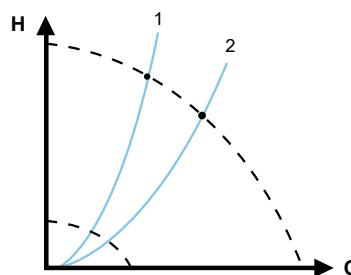
4. Functions

Pump heads in twin-head pumps

The twin-head pump housing has a flap valve on the outlet side. The flap valve seals off the port of the idle pump housing to prevent the pumped liquid from running back to the inlet side. Due to the flap valve, there is a difference in the hydraulics between the two heads.



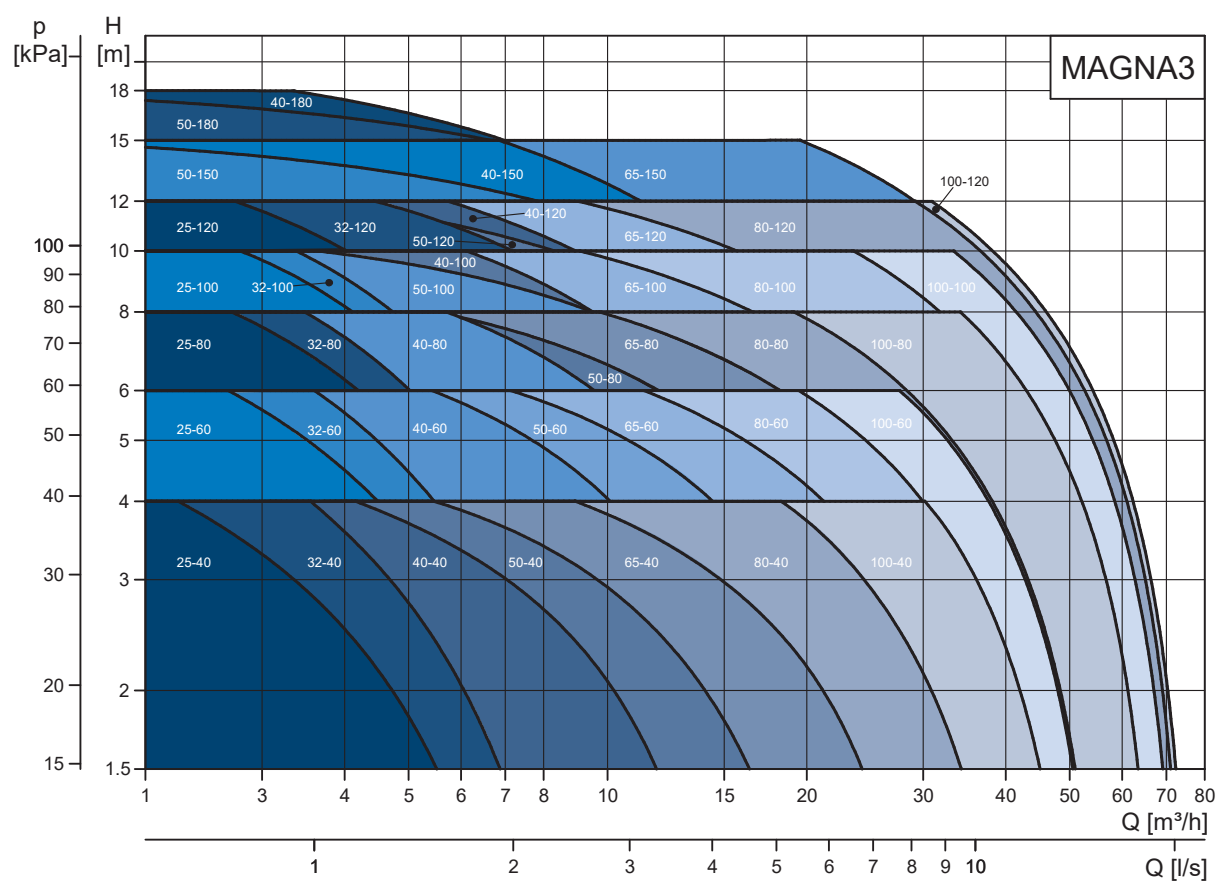
Twin-head pump housing with flap valve



Hydraulic difference between the two heads

Pos.	Description
1	Right pump head
2	Left pump head

Performance range, MAGNA3

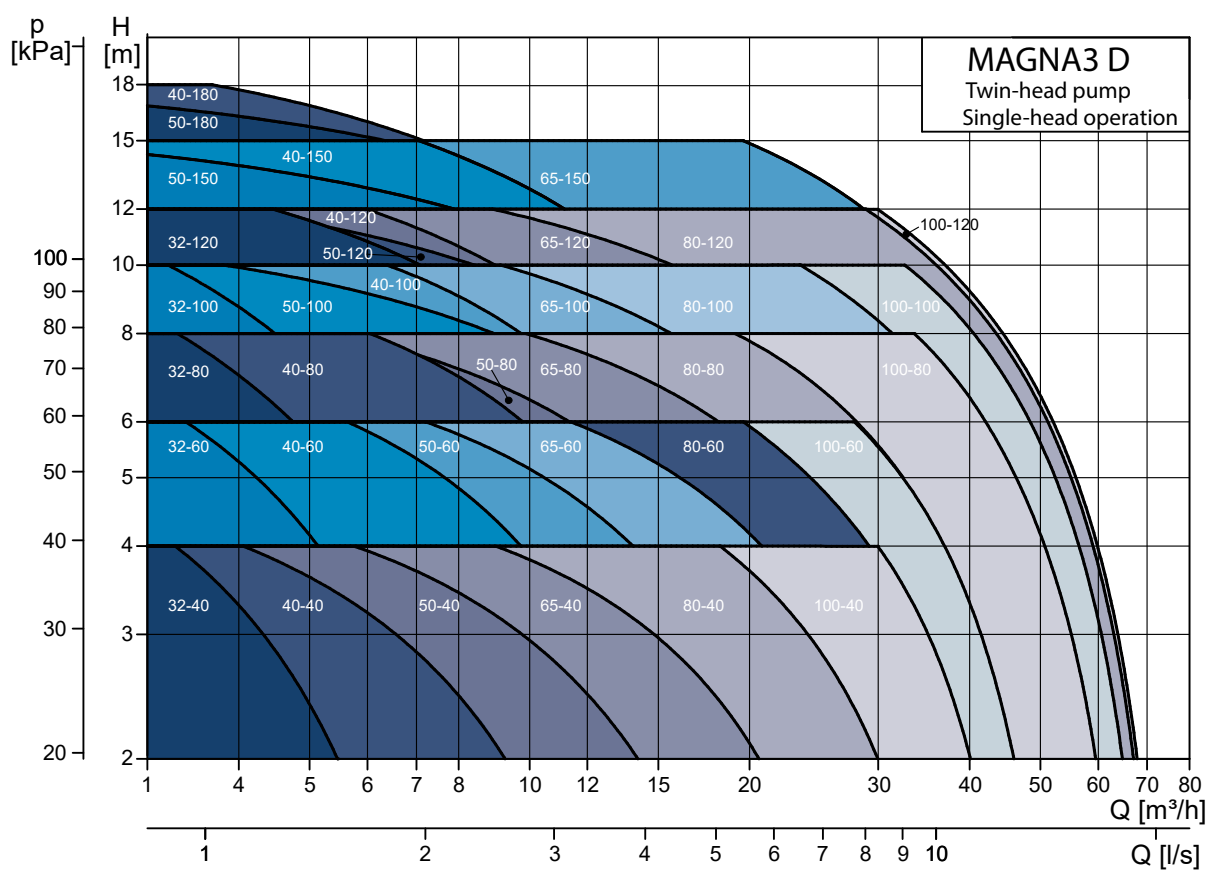


TM057963

Performance range, MAGNA3

Note: MAGNA3 32-120 is available both as a flange model and a threaded model, but with different performance.

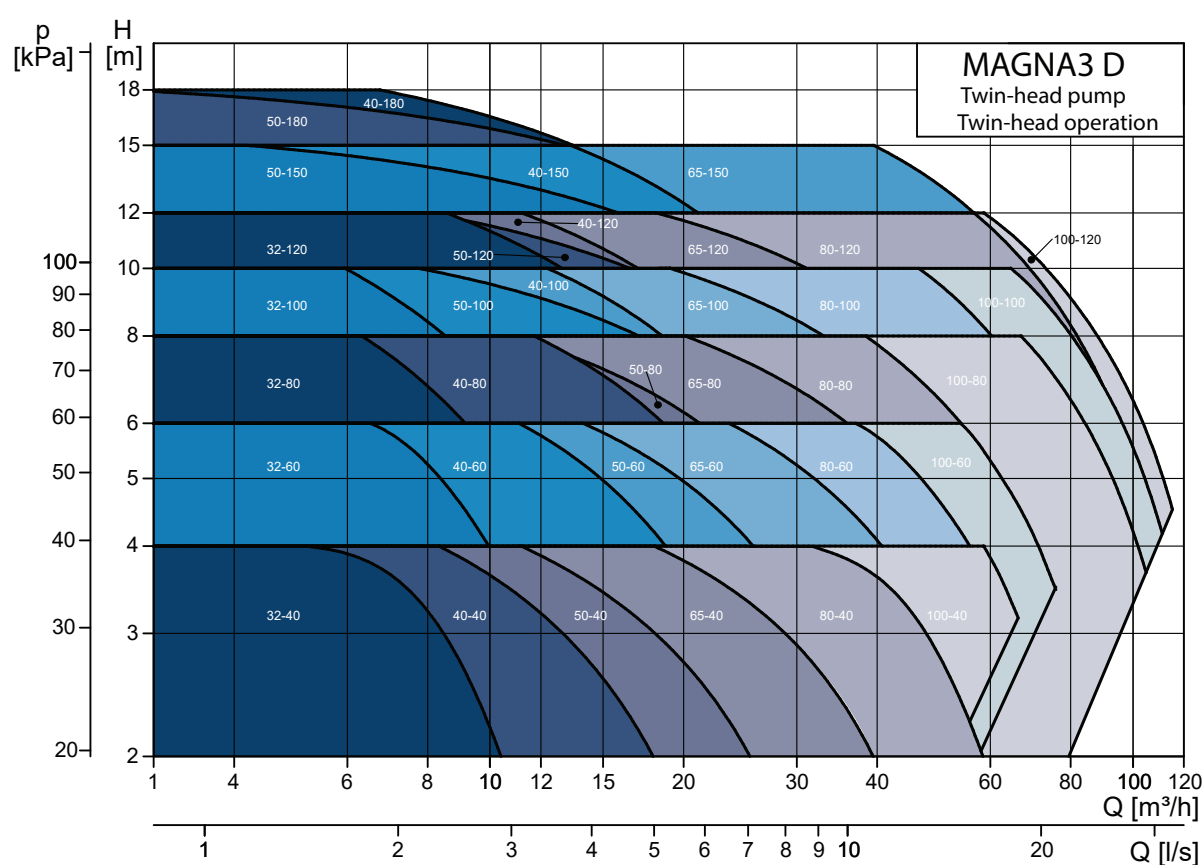
Performance range, MAGNA3 single-head operation



TM053937

Performance range, MAGNA3 twin pump in single-head operation

Performance range, MAGNA3 twin-head operation



TM053938

Performance range, MAGNA3 twin-head operation

2. Product range

Single-head pumps

Pump type	Port-to-port length [mm]	Threaded pipe connection					Electrical connection	Data sheet
		Cast iron				Stainless steel		
		PN 6	PN 10	PN 6/10	PN 16	PN 10		
MAGNA3 25-40 (N)	180		•		•	•	Plug	MAGNA3 25-40 (N)
MAGNA3 25-60 (N)	180		•		•	•	Plug	MAGNA3 25-60 (N)
MAGNA3 25-80 (N)	180		•		•	•	Plug	MAGNA3 25-80 (N)
MAGNA3 25-100 (N)	180		•		•	•	Plug	MAGNA3 25-100 (N)
MAGNA3 25-120 (N)	180		•		•	•	Plug	MAGNA3 25-120 (N)
MAGNA3 32-40 (N)	180		•		•	•	Plug	MAGNA3 32-40 (N)
MAGNA3 32-60 (N)	180		•		•	•	Plug	MAGNA3 32-60 (N)
MAGNA3 32-80 (N)	180		•		•	•	Plug	MAGNA3 32-80 (N)
MAGNA3 32-100 (N)	180		•		•	•	Plug	MAGNA3 32-100 (N)
MAGNA3 32-120 (N)	180		•		•	•	Plug	MAGNA3 32-120 (N)

Pump type	Port-to-port length [mm]	Flange connection					Electrical connection	Data sheet
		Cast iron				Stainless steel		
		PN 6	PN 10	PN 6/10	PN 16	PN 6/10		
MAGNA3 32-40 F (N)	220			•	•	•	Plug	MAGNA3 32-40 F (N)
MAGNA3 32-60 F (N)	220			•	•	•	Plug	MAGNA3 32-60 F (N)
MAGNA3 32-80 F (N)	220			•	•	•	Plug	MAGNA3 32-80 F (N)
MAGNA3 32-100 F (N)	220			•	•	•	Plug	MAGNA3 32-100 F (N)
MAGNA3 32-120 F (N)	220			•	•	•	Terminals	MAGNA3 32-120 F (N)
MAGNA3 40-40 F (N)	220			•	•	•	Plug	MAGNA3 40-40 F (N)
MAGNA3 40-60 F (N)	220			•	•	•	Plug	MAGNA3 40-60 F (N)
MAGNA3 40-80 F (N)	220			•	•	•	Terminals	MAGNA3 40-80 F (N)
MAGNA3 40-100 F (N)	220			•	•	•	Terminals	MAGNA3 40-100 F (N)
MAGNA3 40-120 F (N)	250			•	•	•	Terminals	MAGNA3 40-120 F (N)
MAGNA3 40-150 F (N)	250			•	•	•	Terminals	MAGNA3 40-150 F (N)
MAGNA3 40-180 F (N)	250			•	•	•	Terminals	MAGNA3 40-180 F (N)
MAGNA3 50-40 F (N)	240			•	•	•	Terminals	MAGNA3 50-40 F (N)
MAGNA3 50-60 F (N)	240			•	•	•	Terminals	MAGNA3 50-60 F (N)
MAGNA3 50-80 F (N)	240			•	•	•	Terminals	MAGNA3 50-80 F (N)
MAGNA3 50-100 F (N)	280			•	•	•	Terminals	MAGNA3 50-100 F (N)
MAGNA3 50-120 F (N)	280			•	•	•	Terminals	MAGNA3 50-120 F (N)
MAGNA3 50-150 F (N)	280			•	•	•	Terminals	MAGNA3 50-150 F (N)
MAGNA3 50-180 F (N)	280			•	•	•	Terminals	MAGNA3 50-180 F (N)
MAGNA3 65-40 F (N)	340			•	•	•	Terminals	MAGNA3 65-40 F (N)
MAGNA3 65-60 F (N)	340			•	•	•	Terminals	MAGNA3 65-60 F (N)
MAGNA3 65-80 F (N)	340			•	•	•	Terminals	MAGNA3 65-80 F (N)
MAGNA3 65-100 F (N)	340			•	•	•	Terminals	MAGNA3 65-100 F (N)
MAGNA3 65-120 F (N)	340			•	•	•	Terminals	MAGNA3 65-120 F (N)
MAGNA3 65-150 F (N)	340			•	•	•	Terminals	MAGNA3 65-150 F (N)
MAGNA3 80-40 F	360	•	•		•		Terminals	MAGNA3 80-40 F
MAGNA3 80-60 F	360	•	•		•		Terminals	MAGNA3 80-60 F
MAGNA3 80-80 F	360	•	•		•		Terminals	MAGNA3 80-80 F
MAGNA3 80-100 F	360	•	•		•		Terminals	MAGNA3 80-100 F
MAGNA3 80-120 F	360	•	•		•		Terminals	MAGNA3 80-120 F
MAGNA3 100-40 F	450	•	•		•		Terminals	MAGNA3 100-40 F
MAGNA3 100-60 F	450	•	•		•		Terminals	MAGNA3 100-60 F

Pump type	Port-to-port length [mm]	Flange connection					Electrical connection	Data sheet
		Cast iron				Stainless steel		
		PN 6	PN 10	PN 6/10	PN 16	PN 6/10		
MAGNA3 100-80 F	450	•	•		•		Terminals	MAGNA3 100-80 F
MAGNA3 100-100 F	450	•	•		•		Terminals	MAGNA3 100-100 F
MAGNA3 100-120 F	450	•	•		•		Terminals	MAGNA3 100-120 F

Twin-head pumps

Pump type	Port-to-port length [mm]	Threaded pipe connection		Electrical connection	Data sheet
		Cast iron			
		PN 10	PN 16		
MAGNA3 D 32-40	180	•	•	Plug	MAGNA3 D 32-40
MAGNA3 D 32-60	180	•	•	Plug	MAGNA3 D 32-60
MAGNA3 D 32-80	180	•	•	Plug	MAGNA3 D 32-80
MAGNA3 D 32-100	180	•	•	Plug	MAGNA3 D 32-100

Pump type	Port-to-port length [mm]	Flange connection				Electrical connection	Data sheet
		Cast iron					
		PN 6	PN 10	PN 6/10	PN 16		
MAGNA3 D 32-40 F	220			•	•	Plug	MAGNA3 D 32-40 F
MAGNA3 D 32-60 F	220			•	•	Plug	MAGNA3 D 32-60 F
MAGNA3 D 32-80 F	220			•	•	Plug	MAGNA3 D 32-80 F
MAGNA3 D 32-100 F	220			•	•	Plug	MAGNA3 D 32-100 F
MAGNA3 D 32-120 F	220			•	•	Terminals	MAGNA3 D 32-120 F
MAGNA3 D 40-40 F	220			•	•	Plug	MAGNA3 D 40-40 F
MAGNA3 D 40-60 F	220			•	•	Plug	MAGNA3 D 40-60 F
MAGNA3 D 40-80 F	220			•	•	Terminals	MAGNA3 D 40-80 F
MAGNA3 D 40-100 F	220			•	•	Terminals	MAGNA3 D 40-100 F
MAGNA3 D 40-120 F	250			•	•	Terminals	MAGNA3 D 40-120 F
MAGNA3 D 40-150 F	250			•	•	Terminals	MAGNA3 D 40-150 F
MAGNA3 D 40-180 F	250			•	•	Terminals	MAGNA3 D 40-180 F
MAGNA3 D 50-40 F	240			•	•	Terminals	MAGNA3 D 50-40 F
MAGNA3 D 50-60 F	240			•	•	Terminals	MAGNA3 D 50-60 F
MAGNA3 D 50-80 F	240			•	•	Terminals	MAGNA3 D 50-80 F
MAGNA3 D 50-100 F	280			•	•	Terminals	MAGNA3 D 50-100 F
MAGNA3 D 50-120 F	280			•	•	Terminals	MAGNA3 D 50-120 F
MAGNA3 D 50-150 F	280			•	•	Terminals	MAGNA3 D 50-150 F
MAGNA3 D 50-180 F	280			•	•	Terminals	MAGNA3 D 50-180 F
MAGNA3 D 65-40 F	340			•	•	Terminals	MAGNA3 D 65-40 F
MAGNA3 D 65-60 F	340			•	•	Terminals	MAGNA3 D 65-60 F
MAGNA3 D 65-80 F	340			•	•	Terminals	MAGNA3 D 65-80 F
MAGNA3 D 65-100 F	340			•	•	Terminals	MAGNA3 D 65-100 F
MAGNA3 D 65-120 F	340			•	•	Terminals	MAGNA3 D 65-120 F
MAGNA3 D 65-150 F	340			•	•	Terminals	MAGNA3 D 65-150 F
MAGNA3 D 80-40 F	360	•	•		•	Terminals	MAGNA3 D 80-40 F
MAGNA3 D 80-60 F	360	•	•		•	Terminals	MAGNA3 D 80-60 F
MAGNA3 D 80-80 F	360	•	•		•	Terminals	MAGNA3 D 80-80 F
MAGNA3 D 80-100 F	360	•	•		•	Terminals	MAGNA3 D 80-100 F
MAGNA3 D 80-120 F	360	•	•		•	Terminals	MAGNA3 D 80-120 F
MAGNA3 D 100-40 F	450	•	•		•	Terminals	MAGNA3 D 100-40 F
MAGNA3 D 100-60 F	450	•	•		•	Terminals	MAGNA3 D 100-60 F
MAGNA3 D 100-80 F	450	•	•		•	Terminals	MAGNA3 D 100-80 F
MAGNA3 D 100-100 F	450	•	•		•	Terminals	MAGNA3 D 100-100 F
MAGNA3 D 100-120 F	450	•	•		•	Terminals	MAGNA3 D 100-120 F

Note: You find the product numbers of the various pump variants in section Performance curves and technical data.

Related information

- [Conversion table](#)

Pump selection

All pumps have a "best point" ($\eta_{\max}$), indicating where the pump is working most efficiently.

Consider the parameters in the following section.

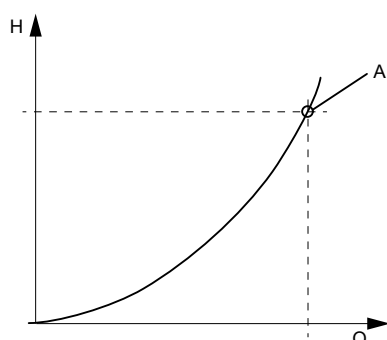
Pump size

The system characteristic is used together with the performance curve of the pump for sizing and correct pump selection.

The selection of pump size must be based on the following:

- required maximum flow
- maximum pressure loss in the system.

Refer to the system characteristics to determine the duty point.



TM022040

System characteristic

Pos.	Description
A	Duty point

Operating conditions

You must check whether the operating conditions are fulfilled, i.e.:

- liquid quality and temperature
- ambient conditions
- minimum inlet pressure
- maximum operating pressure.

See section Operating conditions.

Related information

[General recommendations](#)

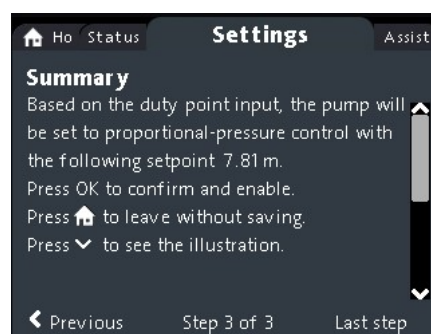
Control modes

- AUTOADAPT (factory setting) which is suitable for most installations.
- FLOWADAPT in systems where flow limitation is required.
- Proportional-pressure control in systems with considerable pressure losses in relation to large flow variations.
- Constant-pressure control in systems with insignificant pressure losses in relation to large flow variations.
- Constant-temperature control in systems with a fixed system characteristic, for example domestic hot-water systems.
- Differential-temperature control in heating and cooling systems.
- Constant flow in systems where a constant flow is required independently of the head.
- Constant-curve duty.

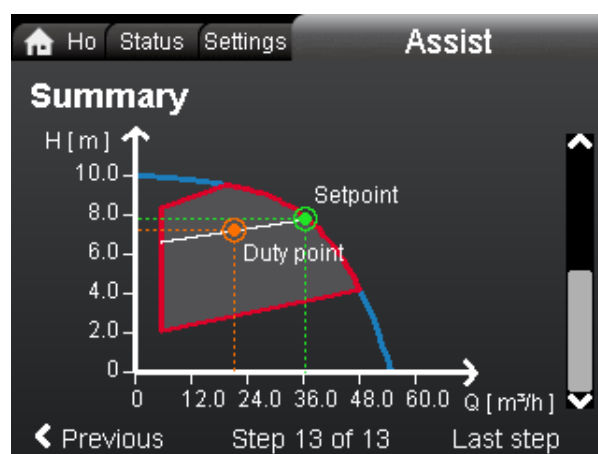
For further information on control and operating modes, see section Functions.

Automatic determination of setpoint

If you know the duty point, you can enter the value on the display when setting the pump. The pump then automatically calculates the corresponding setpoint.



4SETPOINTSTEP12A



4

Example of setpoint calculation based on chosen control mode and entered Q and H values

Related information

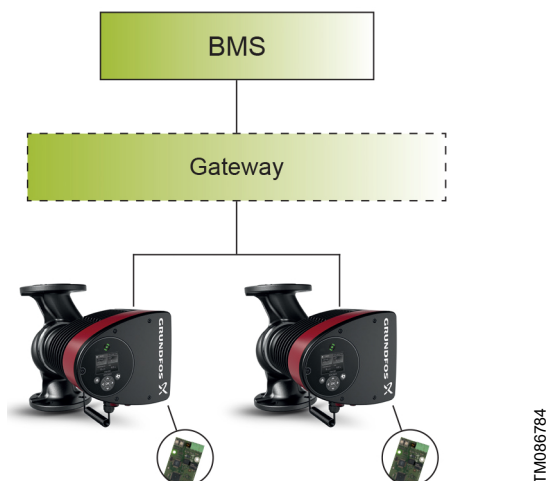
[4. Functions](#)

Communication

The Grundfos CIM modules (Communication Interface Module) enable the MAGNA3 to connect to standard fieldbus networks, offering substantial benefits:

- complete process control and monitoring
- modular design, prepared for future requirements
- based on standard functional profiles
- simple configuration and easy installation
- open communication standards
- reading warning and alarm indications.

For further details, see section CIM modules.



Example of typical building management system (BMS)

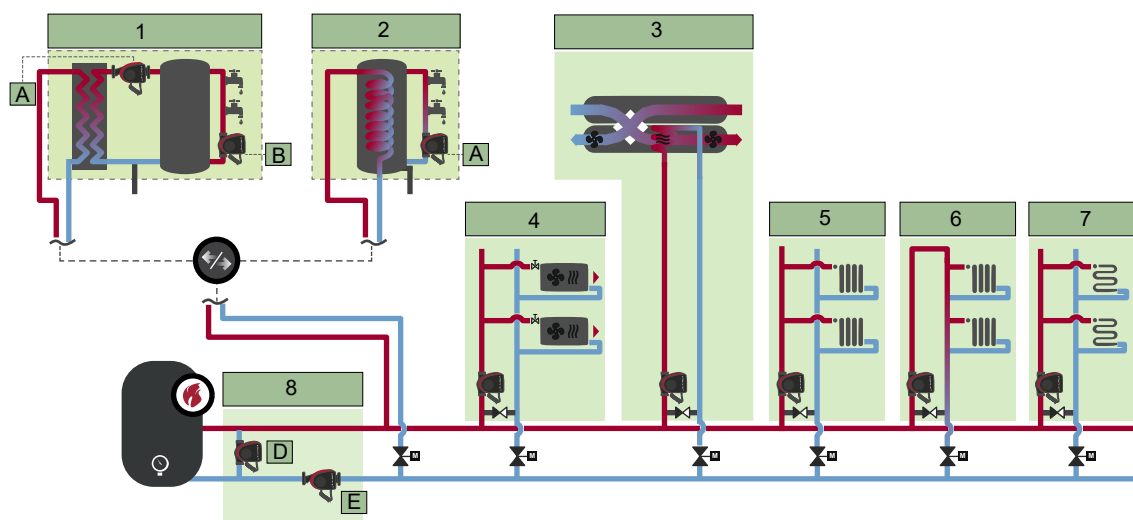
Note: A gateway is a device that facilitates the transfer of data between two different networks based on different communication protocols.

Related information

[CIM modules](#)

3. System applications

Heating systems



TM070360

Functional drawing of a heating system in a commercial building

Pos.	Description
1	Hot water
1A	Charging pump
1B	Recirculation
2	Hot water
2A	Recirculation
3	Air handling unit
4	Fan coil unit
5	Radiator two-pipe system
6	Radiator one-pipe system
7	Underfloor/ceiling
8	Boiler pump
8D	Shunt/buffer
8E	"Primary only" system

The following sections provide recommendations on which control mode to choose according to your application and where the pump is placed in the system. In addition, you can use MAGNA3's built-in application wizard to help you identify which control mode is best suited your application. See section Application wizard.

Related information

[Application wizard](#)

1A. Hot water, charging pump

Hot-water applications often have an external controller, which starts the pump when the temperature falls below a desired setpoint. The pump will run until the temperature in the tank is back up.

If the design flow is known, it can be set directly on the pump. The suitable control mode is constant flow.

If only the desired differential temperature across the plate heat exchanger is known, constant speed curves can be chosen and adjusted to reach the desired delta T.

See sections Constant flow and Constant curve.

Related information

[Constant flow](#)

[Constant curve](#)

1B. Hot water, recirculation

The constant-temperature control mode together with the pump's internal temperature sensor makes it possible to maintain any given temperature of the return water. The desired temperature setpoint is set directly on the pump. If you want to maintain a certain temperature at a critical point furthest out in the system, the constant-temperature control mode can be used in combination with an external temperature sensor.

See section Constant temperature.

Related information

[Constant temperature](#)

2A. Hot water, recirculation

See section 1B. Hot water, recirculation.

Related information

[1B. Hot water, recirculation](#)

3. Air handling unit

Constant flow

If the air flow temperature and thereby the heat output is controlled by for example a motorised valve, the system is typically operating with constant flow. Therefore, we recommend that the pump operates in the constant-flow control mode.

See section Constant curve.

Related information

[Constant flow](#)

Variable flow

Normally, the distance between the pump and the air handling unit is short, eliminating pressure losses almost completely even if the flow varies. Therefore, the constant-pressure control mode is suitable in this type of application.

See section Constant pressure.

Related information

[Constant pressure](#)

4. Fan coil unit

Typically, fan coil units are situated at a considerable distance from the pump.

Therefore, depending on how many fan coils are operating and at which demand, large variations in pressure loss will occur.

In such applications proportional pressure is the recommended control mode.

If the pressure losses are unknown, you can choose the AUTOADAPT control mode, which will automatically adjust the pump performance to the actual system characteristic.

See sections Proportional pressure and AUTOADAPT.

Related information

[Proportional pressure](#)

[AUTOADAPT](#)

5. Radiator, two pipe

Since these applications have varying pressure losses due to the distance between the pump and radiators, we recommend that the pump operates in the proportional-pressure control mode.

If the pressure losses are unknown, it is possible to use the AUTOADAPT control mode, which will automatically adjust the pump performance to the actual system characteristic.

See sections Proportional pressure and AUTOADAPT.

Related information

[Proportional pressure](#)

[AUTOADAPT](#)

6. Radiator, one pipe

In one-pipe radiator systems the flow is typically constant, making the pressure losses constant as well. Therefore, pumps in these applications are best suited to operate in constant-pressure control mode.

Because these applications are often designed with a specific differential temperature, it is possible to adjust the constant-pressure setpoint until this differential temperature is achieved.

See section Constant pressure.

Related information

[Constant pressure](#)

7. Underfloor/ceiling

In these systems the flow will vary depending on how many rooms are in operation. However, since the distance is short between the pump and manifold, to which the pipes are connected, there is no variation in pressure losses. Because of this the constant-pressure control mode is the optimum choice.

See section Constant pressure.

Related information

[Constant pressure](#)

8D. Shunt/buffer

Constant temperature with internal sensor

If both the return temperature and the desired minimum temperature back to the boiler are known, you can calculate the required flow temperature supplied by the shunt pump.

The calculated flow temperature is set directly on the pump, when setting the control mode to constant temperature.

See section Constant temperature,

Related information

[Constant temperature](#)

Constant temperature with external sensor

The minimum required return temperature back to the boiler can be measured and controlled by the use of an external temperature sensor placed close to the boiler. This temperature can then be set directly on the pump together with the constant-temperature control mode.

See section Constant temperature,

Related information

[Constant temperature](#)

Constant differential temperature

If the purpose of the boiler shunt pump is to secure that a maximum differential temperature across a boiler is not exceeded, choose the differential temperature control mode. Despite load variations, the differential temperature is then kept on a desired level. This requires an additional temperature sensor.

8E. "Primary only" system

These pumps are characterised by operating with large variations in flow. Depending on the distance between the pump and the last branch served by the pump, either constant-pressure or proportional-pressure control modes can be chosen.

Typically, proportional pressure will be the better option if the pressure is above 5 m or the distance between the pump and the last branch exceeds 10 m.

On the other hand, if pressure loss variations are limited because all branches are connected closer to the pump, constant pressure will be the recommended control mode.

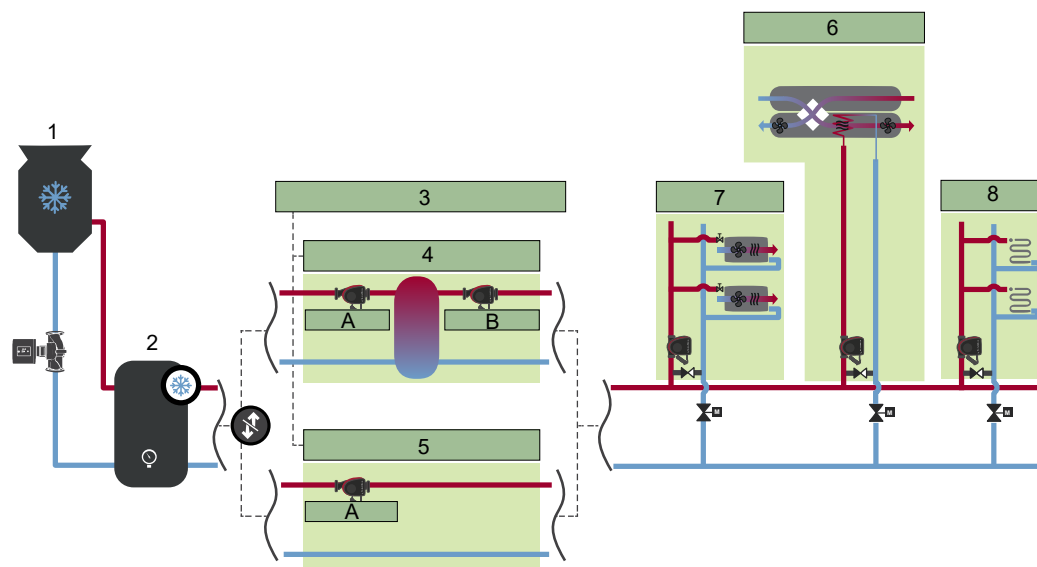
See sections Constant pressure and Proportional pressure.

Related information

[*Constant pressure*](#)

[*Proportional pressure*](#)

Cooling systems



TM070358

Functional drawing of a cooling system in a commercial building

Pos.	Description
1	Cooling tower
2	Cooling source
3	Chiller pump
4	Primary/secondary system
4A	Primary pump
4B	Secondary pump
5	"Primary only" system
5A	Primary pump
6	Air handling unit
7	Fan coil unit
8	Underfloor/ceiling

The following sections provide recommendations on which control mode to choose according to your application and where the pump is placed in the system. In addition, you can use MAGNA3's built-in application wizard to help you identify which control mode is best suited your application. See section Application wizard.

Related information

[Application wizard](#)

4A. Primary/secondary system, primary pump

Constant temperature

If the setpoint temperature from the chiller is known and the aim is to maintain this temperature all the way to the buffer tank, the constant-temperature control mode can be chosen.

Depending on the position of the pump, the internal or an external temperature sensor can be used to measure the temperature.

See section Constant temperature.

Related information

[Constant temperature](#)

Differential temperature

If the design differential temperature across the chiller is known, the differential temperature control mode can be selected. This requires an additional temperature sensor. See section Differential temperature.

Related information

[Differential temperature](#)

Constant flow

In cases where the chiller is not varying, the pump is typically started and stopped by the chiller. This indicates a requirement for constant flow, hence this being the optimum control mode.

See section Constant curve.

Related information

[Constant flow](#)

Constant curve

In cases where the chiller is not varying and the required delta-T is known, the constant-curve control mode can be used. Here, the constant curve is adjusted until the desired delta-T is obtained.

See section Constant curve.

Related information

[Constant curve](#)

4B. Primary/secondary system, secondary pump

Secondary pumps are exposed to large variations in flow and pressure losses due to load variations in the system. For this reason, proportional pressure is the recommended control mode.

If the pressure losses are below 5 mWc, the constant pressure control mode is a good alternative.

If the pressure losses are unknown, you can choose the AUTOADAPT control mode, which will automatically adjust the pump performance to the actual system characteristic.

See sections Proportional pressure, Constant pressure, and AUTOADAPT.

Related information

[Constant pressure](#)

[Proportional pressure](#)

[AUTOADAPT](#)

5A. "Primary only" system, primary pump

These pumps are exposed to large variations in flow and pressure losses due to load variations in the system. For this reason, proportional pressure is the recommended control mode.

If the pressure losses are below 5 mWc, the constant-pressure control mode is a good alternative.

If the pressure losses are unknown, you can choose the AUTOADAPT control mode, which will automatically adjust the pump performance to the actual system characteristic.

See sections Proportional pressure, Constant pressure, and AUTOADAPT.

Related information

[Constant pressure](#)

[Proportional pressure](#)

[AUTOADAPT](#)

6. Air handling unit

If the required flow in the coil is known, constant flow is the preferred control mode. Here, the pump will adjust to the needed pressure.

The actual heat supply is controlled by the motorised valves as shown in section Cooling systems.

If the pressure loss in the coil is known, constant pressure is a suitable control mode. This control mode ensures that the pump is able to overcome the pressure loss.

See sections Constant curve and Constant pressure.

Related information

[Cooling systems](#)

[Constant flow](#)

[Constant pressure](#)

7. Fan coil unit

Fan coil applications are characterised by variable flow due to a varying number of coils in operation. The more coils in operation the higher the pressure loss.

Therefore, proportional pressure is the optimum control mode.

See section Proportional pressure.

Related information

[Proportional pressure](#)

8. Underfloor/ceiling

In an underfloor/ceiling application the circuits are individually balanced according to pressure loss. This means that all circuits have the same pressure loss even though they may differ in length.

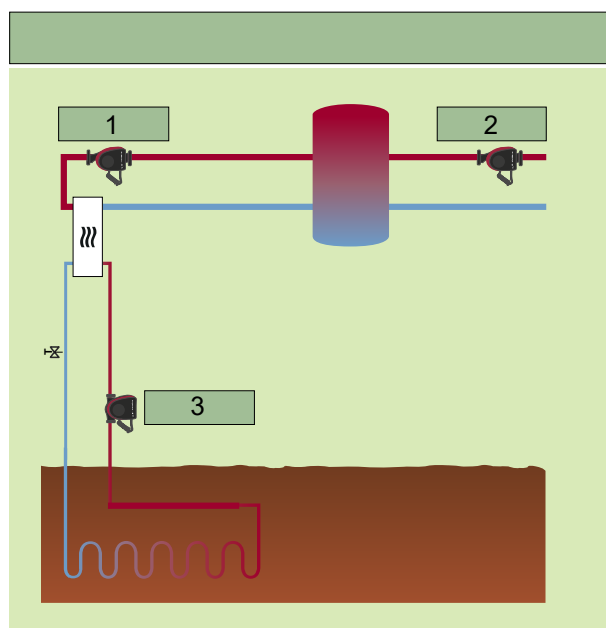
Even if the flow varies, the pressure loss will remain the same, and for this reason constant pressure is the recommended control mode.

See section Constant pressure.

Related information

[Constant pressure](#)

Ground source heat pump systems (GSHP)



Ground source heat pump system in a commercial building

Pos.	Description
1	Charging pump
2	Distribution side
3	Ground loop

The following sections provide recommendations on which control mode to choose according to your application and where the pump is placed in the system. In addition, you can use MAGNA3's built-in application wizard to help you identify which control mode is best suited your application. See section Application wizard.

Related information

[Application wizard](#)

1. Charging pump

If the temperature in the tank falls below a certain threshold, the charging pump starts. The pump operates until the tank temperature is back up at the desired level. As this is a closed circuit with no flow variations, constant-flow or constant-curve operation are suitable control modes.

See sections Constant flow and Constant curve.

Related information

[Constant flow](#)

[Constant curve](#)

2. Distribution side

If the distribution pump is connected to a radiator system, proportional pressure is the optimum control mode. If underfloor heating is connected right after the pump, constant pressure is preferred.

See sections Proportional pressure and Constant pressure.

Related information

[Constant pressure](#)

[Proportional pressure](#)

3. Ground loop

Since the ground loop is a closed system with no variations in flow, the most suitable control modes are constant flow and constant curve.

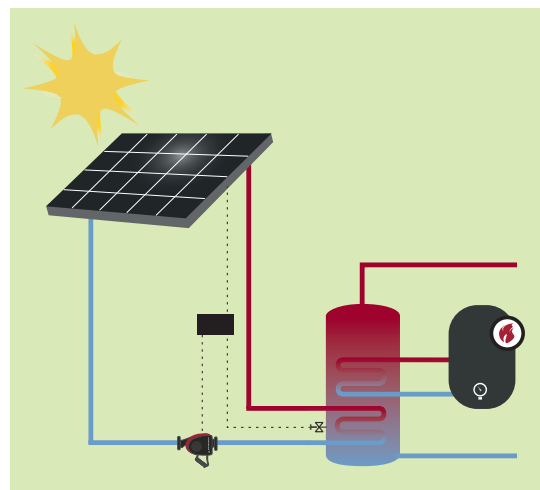
See sections Constant flow and Constant curve.

Related information

[Constant flow](#)

[Constant curve](#)

Solar-heating systems



Functional drawing of a solar-heating system

We recommend that the main pump in a solar-heating system operates with the constant-curve control mode or as recommended by the solar system provider.

Alternative control modes, like constant temperature or differential temperature, can be viable options, but the must only be chosen based on dialogue with the solar system provider.

See sections Constant curve, Constant temperature, and Differential temperature.

Related information

[Constant curve](#)

[Constant temperature](#)

[Differential temperature](#)

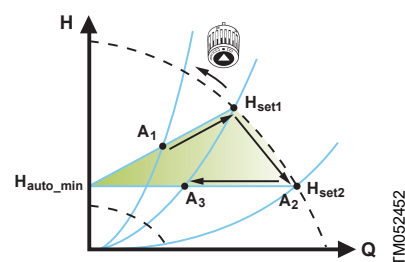
4. Functions

	Section
Operating modes	
Normal (control modes enabled)	<i>Normal</i>
Stop	<i>Stop</i>
Minimum curve	<i>Min.</i>
Maximum curve	<i>Max.</i>
Control modes	
AUTOADAPT (factory setting)	<i>AUTOADAPT</i>
FLOWADAPT	<i>FLOWADAPT</i>
Proportional pressure	<i>Proportional pressure</i>
Constant pressure	<i>Constant pressure</i>
Constant temperature	<i>Constant temperature</i>
Differential temperature	<i>Differential temperature</i>
Constant flow	<i>Constant flow</i>
Constant curve	<i>Constant curve</i>
Additional control mode features	
FLOWLIMIT	<i>FLOWLIMIT</i>
Automatic Night Setback	<i>Automatic night setback</i>
Multipump modes	
Alternating operation	<i>Multipump function</i>
Backup operation	<i>Backup operation</i>
Cascade operation	<i>Cascade operation</i>
Readings and settings on the pump	
Operating panel and display	<i>Performance overview</i>
Operating status	<i>Operating status and pump performance</i>
Pump performance	<i>Operating status and pump performance</i>
Warning and alarm	<i>Warning and alarm</i>
Heat energy monitor	<i>Heat energy monitor</i>
Operating log	<i>Operating log</i>
Grundfos Eye (status indicator)	<i>Grundfos Eye</i>
Communication	Communication
Wireless Grundfos GO	<i>Grundfos GO Remote</i>
Wireless GENIair connection	<i>Wireless GENIair</i>
Pump information to BMS via CIM modules	<i>CIM modules</i>
Bus via GENIbus	<i>Functions</i>
Bus via LonWorks	<i>Available CIM modules</i>
Bus via PROFIBUS DP	<i>Available CIM modules</i>
Bus via Modbus RTU	<i>Available CIM modules</i>
Bus via BACnet MS/TP	<i>Available CIM modules</i>
Digital inputs	<i>Digital inputs</i>
Relay outputs	<i>Relay outputs</i>
Analog input for external sensor	<i>Analog input for an external sensor</i>
External setpoint function	<i>External setpoint function</i>

Control modes: Quick overview

AUTOADAPT

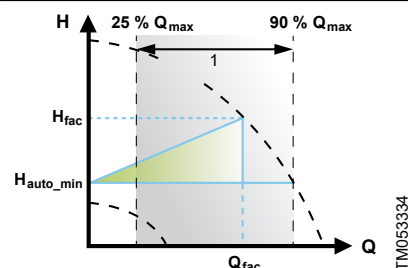
- We recommend this control mode for most heating systems.
- During operation, the pump automatically makes the necessary adjustment to the actual system characteristic.



FLOWADAPT

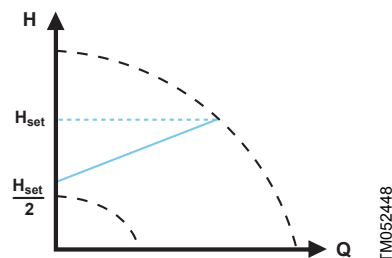
The FLOWADAPT control mode combines a control mode and a function:

- The pump is running in AUTOADAPT.
- The delivered flow from the pump will never exceed a selected $FLOW_{LIMIT}$.



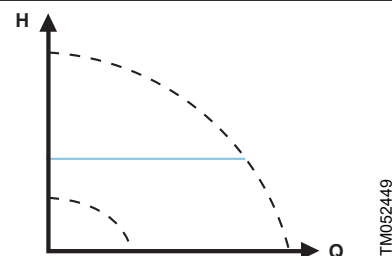
Proportional pressure

- Used in systems with relatively large pressure losses in the distribution pipes.
- The head of the pump will increase proportionally to the flow in the system to compensate for the large pressure losses in the distribution pipes.



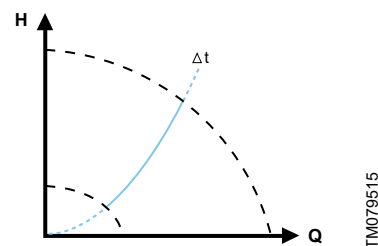
Constant pressure

- We recommend this control mode in systems with relatively small pressure losses.
- The pump head is kept constant, independent of the flow in the system.



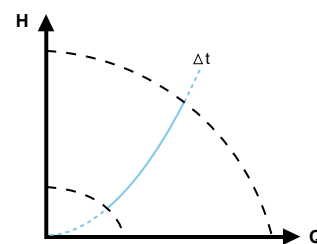
Constant temperature

In systems with a fixed system characteristic, for example domestic hot-water systems, the control of the pump according to a constant return-pipe temperature is relevant.



Differential temperature

- Ensures a constant differential temperature drop across heating and cooling systems.
- The pump will maintain a constant differential temperature between the pump and the external sensor.

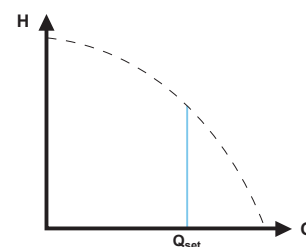


TM079515

Constant flow

Note: Available for pumps with production code from 1838.

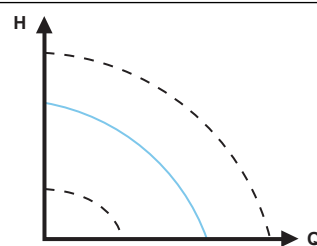
- The pump maintains a constant flow in the system independently of the head.
- It is not possible to use an external sensor, instead, the pump uses its internal sensor.



TM071240

Constant curve

- The pump can be set to operate according to a constant curve, like an uncontrolled pump.
- Set the desired speed in % of the maximum speed in the range from minimum to 100 %.



TM052446

For multipump modes, see section Multipump modes.

Related information

[Multipump function](#)

FLOWADAPT

The FLOWADAPT control mode combines AUTOADAPT and FLOWLIMIT, meaning that the pump runs AUTOADAPT while at the same time ensuring that the flow rate never exceeds the entered FLOWLIMIT value. This control mode is suitable for systems where a maximum flow limit is desired and where a steady flow through the boiler in a boiler system is required. Here, no extra energy is used for pumping too much liquid into the system.

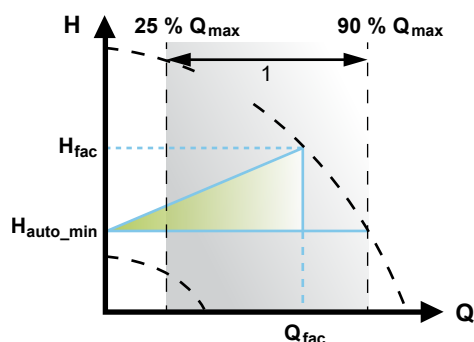
In systems with mixing loops, you can use FLOWADAPT to control the flow in each loop.

Characteristics and key benefits

- The dimensioned flow for each zone (required heat energy) is determined by the flow from the pump. This flow rate can be set precisely in the FLOWADAPT control mode without using throttling valves.
- When the flow rate is set lower than the balancing valve setting, the pump will ramp down instead of losing energy by pumping against a balancing valve.
- Cooling surfaces in air-conditioning systems can operate at high pressure and low flow.

Note: The pump cannot reduce the flow on the inlet side, but is able to control that the flow on the outlet side is at least the same as on the inlet side, as the pump has no built-in valve.

Technical specifications



TM053334

FLOWADAPT control

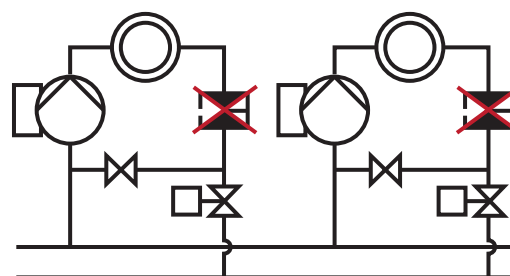
Pos.	Description
1	Setting range

The factory setting of the FLOWADAPT is the flow where the AUTOADAPT factory setting meets the maximum curve. See figure above.

The typical pump selection is based on the required flow and calculated pressure losses. The pump is typically oversized by 30 to 40 % to ensure that it can overcome the pressure losses in the system. Under these conditions, the full benefit of AUTOADAPT cannot be obtained.

To adjust the maximum flow of this "oversized" pump, balancing valves are built into the circuit to increase the resistance and thus reduce the flow.

The FLOWADAPT function reduces the need for a pump throttling valve, see figure below. but does not eliminate the need for balancing valves in heating systems.



TM052685

Reduced need for a pump throttling valve

Proportional pressure

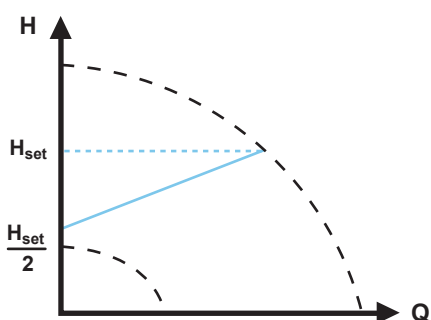
Proportional pressure is suitable in systems with relatively large pressure losses in the distribution pipes and in air-conditioning and cooling systems:

- Two-pipe heating systems with thermostatic valves and the following:
 - very long distribution pipes
 - strongly throttled pipe balancing valves
 - differential-pressure regulators
 - large pressure losses in the parts of the system through which the entire amount of water flows (for example boiler, heat exchanger and distribution pipe up to the first branching).
- Primary circuit pumps in systems with large pressure losses in the primary circuit.
- Air-conditioning systems with the following:
 - heat exchangers (fan coils)
 - cooling ceilings
 - cooling surfaces.

Characteristics and key benefits

- The head of the pump increases proportionally to the flow in the system.
- Compensates for large pressure losses in the distribution pipes.

Technical specifications



TM052448

Proportional-pressure control

The head against a closed valve is half the setpoint H_{set} .

Constant pressure

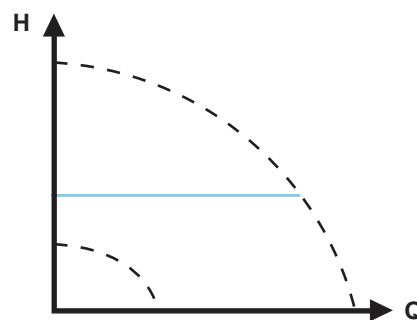
A constant pressure is advantageous in systems with relatively small pressure losses in the distribution pipes:

- Two-pipe heating systems with thermostatic valves:
 - dimensioned for natural circulation
 - small pressure losses in the parts of the system through which the entire amount of water flows (for example boiler, heat exchanger and distribution pipe up to the first branching).
 - modified to a high differential temperature between the flow pipe and the return pipe (for example district heating).
- Underfloor heating systems with thermostatic valves.
- One-pipe heating systems with thermostatic valves or pipe balancing valves.
- Primary circuit pumps in systems with small pressure losses in the primary circuit.

Characteristics and key benefits

- The pump pressure is kept constant, independent of the flow in the system.

Technical specifications



TM052449

Constant-pressure control

Constant temperature

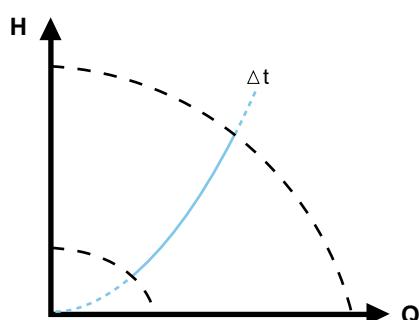
This control mode is suitable in systems with a fixed system characteristic, for example domestic hot-water systems, where the control of the pump according to a constant return-pipe temperature is relevant.

The pump is from factory set to operate in a heating system with a controller gain, K_p , equal to 1. If the pump operates in a cooling system, the gain must be changed to a negative value, for example -1. This is done via the operating panel of the pump.

Characteristics and key benefits

- The temperature is kept constant.
- $FLOW_{LIMIT}$ is used to control the maximum circulation flow.

Technical specifications



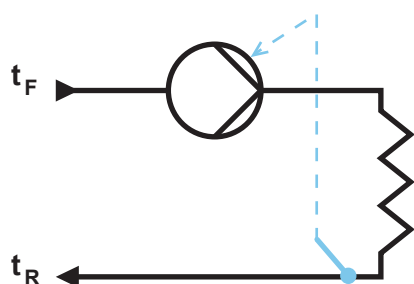
TM079515

Constant-temperature control

The inverse control for cooling application is available from model B.

Temperature sensor

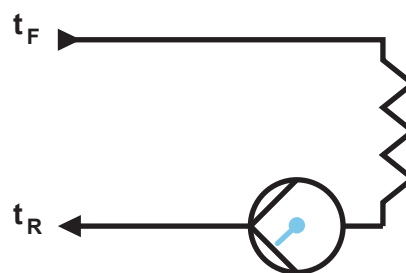
If the pump is installed in the flow pipe, install an external temperature sensor in the return pipe of the system. See figure below. Install the sensor as close as possible to the consumer (radiator, heat exchanger, etc.).



TM052615

Pump with external sensor

If the pump is installed in the return pipe of the system, you can use the internal temperature sensor. In this case, install the pump as close as possible to the consumer (radiator, heat exchanger, etc.).



TM052616

Pump with internal sensor

Differential temperature

Select this control mode if the pump performance is to be controlled according to a differential temperature in the system where the pump is installed.

Characteristics and key benefits

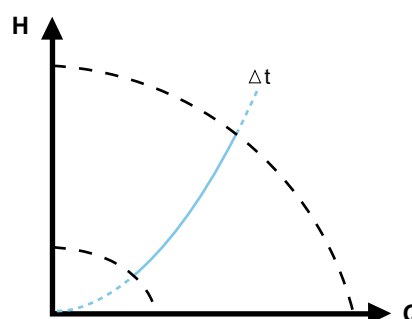
- Ensures a constant differential temperature drop across heating and cooling systems.
- Ensures a constant differential temperature between the pump and the external sensor, see sections Technical specifications and Temperature sensor.
- Requires two temperature sensors, the internal temperature sensor together with an external sensor.

Related information

[Technical specifications](#)

[Temperature sensor](#)

Technical specifications



TM079515

Differential temperature

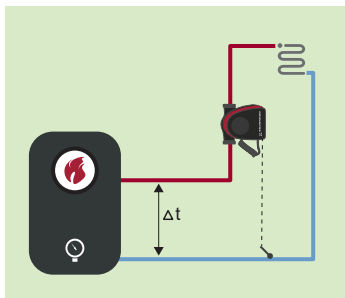
The differential-temperature control mode is available from model B. The model version is stated on the nameplate. See section Model type.

Related information

[Model type](#)

Temperature sensor

To measure the temperature difference of the flow pipe and the return pipe, you must use both the internal sensor and an external sensor. If the pump is installed in the flow pipe, the external sensor must be installed in the return pipe and vice versa. Always install the sensor as close as possible to the consumer (radiator, heat exchanger, etc.).



TM070362

Differential temperature

Constant flow

Note: Available for pumps with production code from 1838.

The pump maintains a constant flow in the system independently of the head. See section Characteristics and key benefits.

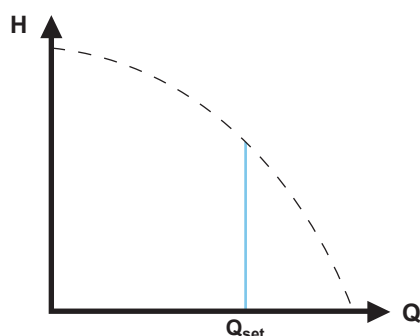
Constant flow is suitable in applications such as air handling units, hot-water systems and ground-source heating systems.

Related information

[Characteristics and key benefits](#)

Characteristics and key benefits

- It is not possible to use an external sensor, instead, the pump uses its internal sensor.
- In multipump systems constant flow is only available in alternating and backup operation, not cascade operation.



TM071240

Constant flow rate

Constant curve

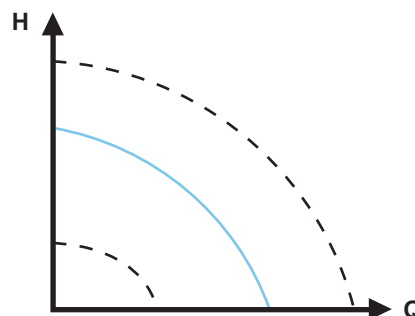
A constant curve is suitable for systems, where both a constant flow rate and a constant head are required, i.e.:

- Heat surfaces
- cooling surfaces
- heating systems with 3-way valves
- air-conditioning system with 3-way valve
- chiller pumps

Characteristics and key benefits

- If an external controller is installed, the pump is able to change from one constant curve to another, depending on the value of the external signal.
- Depending on your preferences, the pump can be controlled according to either a maximum or minimum curve.

Technical specifications



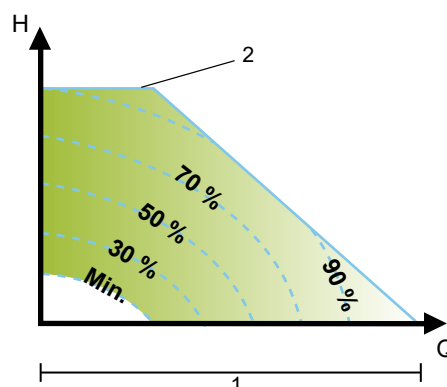
TM052446

Constant-curve duty

The pump can be set to operate according to a constant curve, like an uncontrolled pump. See figure above.

Depending on the pump model, you can set the desired speed in % of the maximum speed. The span of control depends on the minimum speed, power and pressure limitation of the pump.

Note: If the pump speed is set in the range between minimum and maximum, the power and pressure are limited when the pump is running on the maximum curve. This means that the maximum performance can be achieved at a speed lower than 100 %. See figure below.



TM058242

Power and pressure limitations influencing the maximum curve

Pos.	Description
1	Speed setting from 0 to 100 %
2	Limited max. curve

You can also set the pump to operate according to the maximum or minimum curve, like an uncontrolled pump:

- You can use the maximum curve mode in periods where a maximum flow is required. This operating mode is for instance suitable for hot-water priority.
- You can use the minimum curve mode in periods where a minimum flow is required. This operating mode is for instance suitable for manual night setback if automatic night setback is not desired.

You can select these two operating modes via the digital inputs.

In the control mode constant curve, you can obtain a constant flow by choosing a setpoint at 100 % and choosing the desired value for the flow rate with the $FLOW_{LIMIT}$ function. Take the accuracy of the flow estimation into consideration.

Additional control mode features

MAGNA3 offers additional features for the control modes to meet specific demands.

FLOWLIMIT

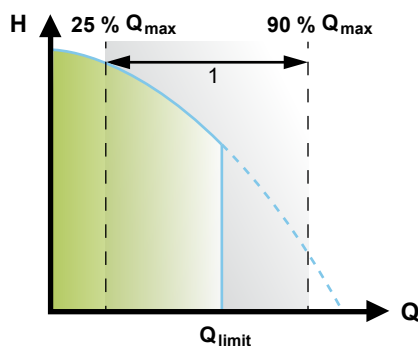
The feature is an integrated part of the FLOWADAPT control mode, but is also advantageous in:

- proportional-pressure mode
- constant-pressure mode
- constant-temperature mode
- constant-curve mode
- differential-temperature mode.

Characteristics and key benefits

- A control mode feature that, when activated, ensures that the rated maximum flow is never exceeded.
- By enabling FLOWLIMIT in systems where MAGNA3 has full authority, the rated flow is never exceeded, thus eliminating the need for throttling valves.

Technical specifications



TM052445

FLOWLIMIT

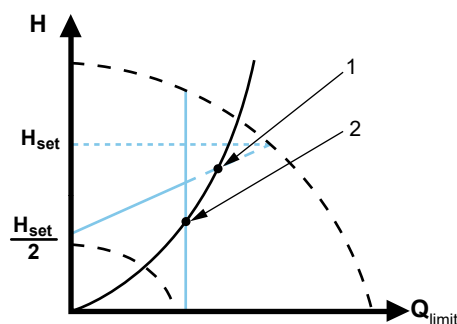
Pos.	Description
1	Setting range

The setting range for the FLOWLIMIT is 25 to 90 % of the Q_{max} of the pump.

Note: Do not set the FLOWLIMIT lower than the dimensioned duty point.

In the flow range between 0 and Q_{limit} , the pump will run according to the selected control mode.

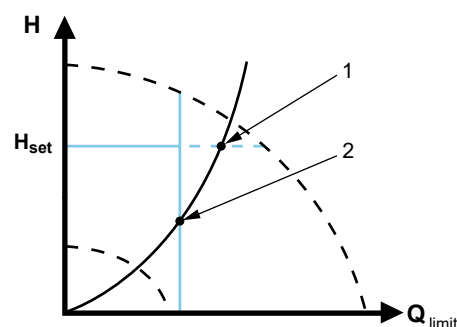
When Q_{limit} is reached, the FLOWLIMIT function will reduce the pump speed to ensure that the flow never exceeds the FLOWLIMIT set, no matter if the system requires a higher flow due to an increased resistance in the system. See the figures below.



TM052543

Proportional-pressure control with FLOWLIMIT

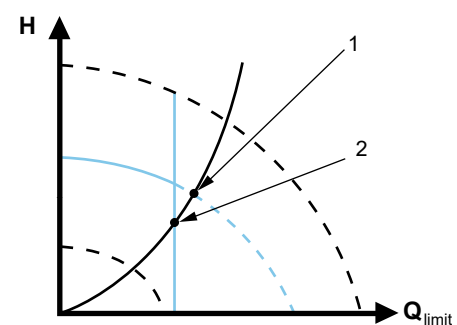
Pos.	Description
1	Normal proportional-pressure duty point
2	FLOWLIMIT duty point



TM052544

Constant-pressure control with FLOWLIMIT

Pos.	Description
1	Normal constant-pressure duty point
2	FLOWLIMIT duty point



TM052542

Constant curve with FLOWLIMIT

Pos.	Description
1	Normal constant-curve duty point
2	FLOWLIMIT duty point

Automatic night setback

A night setback system is often integrated into a building management system (BMS), or as part of an equivalent electronic control system, which has a built-in timer.

The feature is not beneficial in rooms with underfloor heating because of the regulating inertia of the underfloor heating.

Characteristics and key benefits

- Automatic night setback lowers the room temperature at night, which reduces heating costs.
- The pump automatically changes between normal duty and night setback (duty at low demand), depending on the flow pipe temperature.
- Once activated, the pump runs on the minimum curve.

Technical specifications

The pump automatically changes to night setback when the built-in sensor registers a flow-pipe temperature drop of more than 10 to 15 °C within approx. two hours. The temperature drop must be at least 0.1 °C/min.

Changeover to normal duty takes place without time lag when the temperature has increased by approx. 10 °C.

Note: You cannot enable automatic night setback when the pump is in constant-curve mode.

Multipump modes

Multipump function

The multipump function enables control of single-head pumps connected in parallel and twin-head pumps without the use of external controllers. The pumps in a multipump system communicate with each other via the wireless GENlair connection.

Pump system:

- Twin-head pump.
- Two single-head pumps connected in parallel. The pumps must be of equal size and type. Each pump requires a non-return valve in series with the pump.

A multipump system is set via a selected pump, i.e. the master pump (first selected pump). The multipump functions are described in the following sections.

Alternating operation

Only one pump is operating at a time. The change from one pump to the other depends on time or energy. If a pump fails, the other pump will take over automatically.

Backup operation

One pump is operating continuously. The backup pump is operated at intervals to prevent seizing up. If the duty pump stops due to a fault, the backup pump will start automatically.

Cascade operation

Cascade operation ensures that the pump performance is automatically adapted to the consumption by switching pumps on or off. The system thus runs as energy-efficiently as possible with a constant pressure and a limited number of pumps.

The slave pump starts when the master pump either runs at 90 % of the maximum speed or runs on the maximum curve.

The slave pump stops if one of the following conditions are fulfilled:

- One of the two pumps runs on minimum curve.
- One of the two pumps runs below 50 % of the maximum speed and at the same time runs below 50 % of the maximum power consumption.

Cascade operation is available in constant speed and constant pressure. You can with advantage choose a twin-head pump as the backup pump will start for a short period in peak-load situations.

All pumps in operation will run at equal speed.

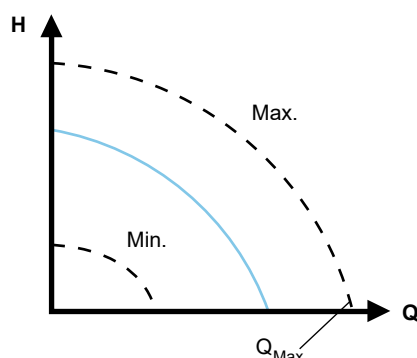
Pump changeover is automatic and depends on speed, operating hours and faults.

Flow estimation accuracy

The calculated flow rate has a typical accuracy of $\pm 5\%$ of $Q_{\max}$. The less flow through the pump, the less accurate the reading will be. In worst case scenarios, such as closed valve operation, the accuracy can be up to 10% of $Q_{\max}$.

See section Heat energy monitor.

Example:



$Q_{\max}$

1. MAGNA3 65-60 has a $Q_{\max}$ of $40 \text{ m}^3/\text{h}$. A typical 5% accuracy means $2 \text{ m}^3/\text{h}$ inaccuracy of $Q_{\max} \pm 2 \text{ m}^3/\text{h}$.
2. This accuracy is valid for the entire QH area. If the pump indicates $10 \text{ m}^3/\text{h}$, the measurement is $10 \pm 2 \text{ m}^3/\text{h}$.
3. The flow rate can be $8\text{-}12 \text{ m}^3/\text{h}$.

Note: Use of a water/ethylene glycol mixture will decrease the accuracy.

Related information

[Heat energy monitor](#)

Low flow indication

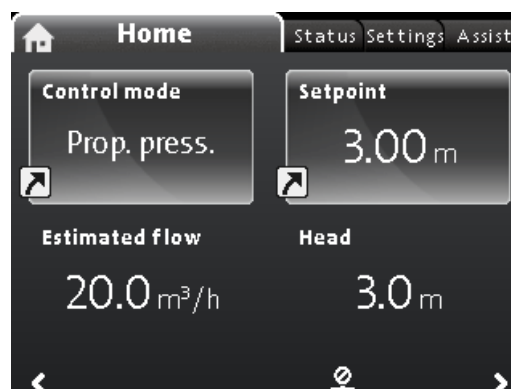
The pump can experience low flow due to for example valves being shut. In cases where the flow is below 10% of the maximum flow, thus too low for the pump's internal sensor to measure, it will be stated on the MAGNA3 display. A speed measurement will tell you that the pump is still running.

When the flow is high enough for the pump to measure, the MAGNA3 display returns to normal.

Readings on the pump

Performance overview

The "Home" menu allows you to quickly gain an overview of the main settings of up to four user-defined parameters or graphical illustration of a QH performance curve.



Example of the "Home" menu with overview of settings and performance

Operating status and pump performance

The status menu shows the current operating mode and the selected control mode, if any. Here, you can also review the performance of the pump:

- QH graph showing current duty point, flow rate, head, power and liquid temperature.
- "Resulting setpoint" shows the setpoint set on the pump, the external influence and the resulting setpoint.
- Liquid temperature.
- Speed.
- Operating hours.

Warning and alarm

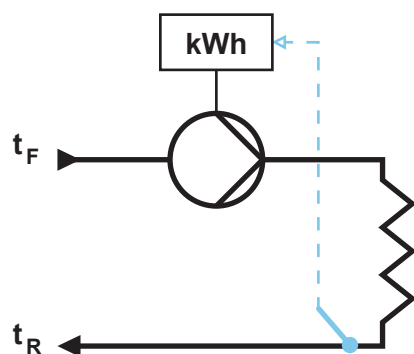
The **Warning and alarm** menu provides information on:

- actual warning or alarm, if any
- information about when the warning/alarm occurred, disappeared and about corrective actions
- Warning and alarm logs.

Heat energy monitor

Heat energy monitor is a monitoring function which makes it possible to track the heat energy distribution and consumption within a system. This prevents excessive energy costs caused by system imbalances.

The pump requires a temperature sensor in the flow pipe or the return pipe. This temperature sensor is not supplied with the pump.



TMO55367

MAGNA3 with built-in heat energy monitor

Note: MAGNA3 incorporates a calculator for flow and media temperature, see section External Grundfos sensors.

Related information

[External Grundfos sensors](#)

Heat consumption accuracy

The built-in flow estimation needed for the calculation has a typical accuracy of $\pm 5\%$ of Q_{max} . The less flow through the pump, the less accurate the reading will be. In worst case scenarios, such as closed valve operation, the accuracy can be up to 10% of Q_{max} . The actual accuracy in a duty point will be shown in the MAGNA3 display (this feature is available for pumps with production code from 1838).

The temperature measurement accuracy also depends on the sensor type. Therefore, you cannot use the heat energy value for billing purposes. However, the value is perfect for optimisation purposes in order to prevent excessive energy costs. See section Flow estimation accuracy.

To counterbalance any inaccuracy on either the internal and external sensor, it is possible to manually enter a temperature offset. The offset is entered in integers, for example 2 degrees.

Note: Temperature sensor offset is available for pumps with production code from 1838.

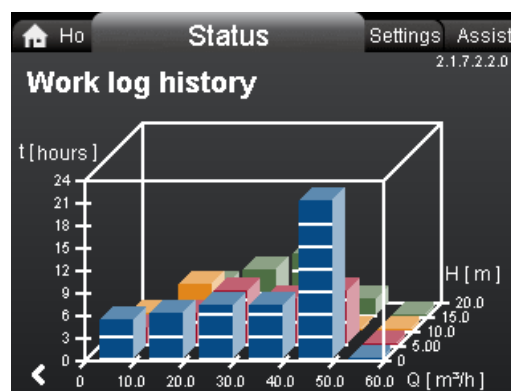
Related information

[Flow estimation accuracy](#)

Operating log

The **Operating log** is the perfect tool for pump optimisation, replacement and fault finding as it offers the following:

- All duty points and operating conditions are tracked and stored in the pump.
- The 3D work log and duty curve (over time) provide instant overviews of historical pump performance and operating conditions.



Example of Operating log

Help and guidance

The Assist menu guides you through the setup of the pump and offers the following:

- step-by-step instructions in how to set the pump
- a short description of the six control modes and recommended applications
- assistance with fault correction
- fault advice
- multipump setup
- setup, analog input
- description of control mode.

Grundfos Eye

Grundfos Eye at the top of the operating panel is a pump status indicator light providing information about the pump operating status.

The indicator light will flash in different sequences and provide information about the following:

- power on/off
- pump warnings
- pump alarms
- remote control
- pump running/stopped.

The function of Grundfos Eye is described in detail in the installation and operating instructions.



TM086783

Grundfos Eye

Communication

MAGNA3 enables communication via the following:

- wireless Grundfos GO Remote
- multipump connection via wireless GENIair
- fieldbus communication via CIM modules
- digital inputs
- relay outputs
- analog input.

Connection of Grundfos Go via Bluetooth

The pump communicates wirelessly with Grundfos GO via Bluetooth. Before connecting the product to Grundfos GO Remote, the Grundfos GO Remote app must be downloaded to your smartphone or tablet. The app is free of charge and available for iOS and Android devices.

1. Open Grundfos GO Remote on your device. Make sure that Bluetooth is enabled.
Your device must be within reach of the product to establish Bluetooth connection.
2. Press the Bluetooth CONNECT button on Grundfos GO on your device.
3. Press the connect button on the operating panel in the pump. The center LED of Grundfos eye above the display is flashing until your device is connected. Once the connection is established, the LED will be permanently on.

Grundfos GO Remote is now ready to setting up and monitoring the product.



TM082070

Grundfos GO Remote

With Grundfos GO Remote, you can monitor your pump, change settings, collect data and make reports. A user-friendly interface provides you with all the information and help you need, as well as live pump data monitoring and easy-to-follow tips and guides.

For further details, see section Grundfos GO Remote.

Related information

[Grundfos GO Remote](#)

[Grundfos GO Remote](#)

Wireless GENlair

The pump is designed for multipump connection via the wireless GENlair connection.

The built-in wireless GENlair module enables communication between pumps and with Grundfos GO Remote without the use of add-on modules:

- Multipump function. See section Multipump function.
- Grundfos GO Remote. See section Grundfos GO Remote.

Related information

[Multipump function](#)

[Grundfos GO Remote](#)

CIM modules



TM053811

Grundfos CIM modules

A CIM module is an add-on Communication Interface Module. The CIM module enables data transmission between the pump and an external system, for example a BMS (Building Management System) or SCADA system.

Pumps older than model C must have a CIM module mounted in both the slave and master pump. Pumps from model C have an integrated booster profile, which enables data in the slave to be monitored by the master. This booster profile supports newer versions of CIM modules, making it possible only to mount the CIM module on the master pump. See section CIM modules, for a list of CIM modules supporting the booster profile.

The CIM module communicates via fieldbus protocols.

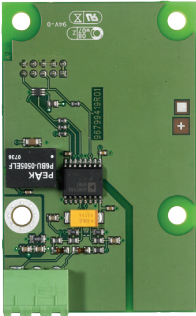
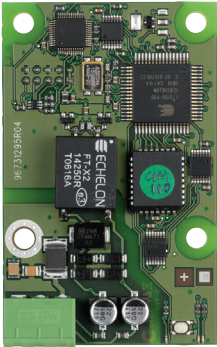
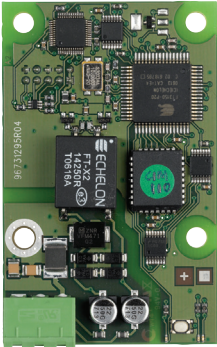
See section Available CIM modules.

Related information

[Available CIM modules](#)

[CIM modules](#)

Available CIM modules

Module	Fieldbus protocol	Description	Functions
CIM 050			
	GENIbus	CIM 050 is a Grundfos communication interface module used for communication with a GENIbus network.	CIM 050 has terminals for the GENIbus connection.
CIM 100			
	LonWorks	CIM 100 is a Grundfos communication interface module used for communication with a LonWorks network.	CIM 100 has terminals for the LonWorks connection. Two LEDs are used to indicate the actual status of the CIM 100 communication. One LED is used for indication of correct connection to the pump, and the other is used to indicate LonWorks communication status.
CIM 110			
	LONworks for Twinpump	CIM 110 is a Grundfos communication interface module for communication with a LON network to be used in master head of a Twinpump.	CIM 110 has FTT-10 terminals for the LonWorks connection. Two LEDs are used to indicate the actual status of the CIM 100 communication. One LED is used for indication of correct connection to the pump, and the other is used to indicate LonWorks communication status.
CIM 150			
	PROFIBUS DP	CIM 150 is a Grundfos communication interface module used for communication with a PROFIBUS network.	CIM 150 has terminals for the PROFIBUS DP connection. DIP switches are used to set line termination. Two hexadecimal rotary switches are used to set the PROFIBUS DP address. Two LEDs are used to indicate the actual status of the CIM 150 communication. One LED is used for indication of correct connection to the pump, and the other is used to indicate PROFIBUS communication status.

Module	Fieldbus protocol	Description	Functions
CIM 200	Modbus RTU	CIM 200 is a Grundfos communication interface module used for communication with a Modbus RTU network.	CIM 200 has terminals for the Modbus connection. DIP switches are used to select parity and stop bits, to select transmission speed and to set line termination. Two hexadecimal rotary switches are used to set the Modbus address. Two LEDs are used to indicate the actual status of the CIM 200 communication. One LED is used for indication of correct connection to the pump, and the other is used to indicate Modbus communication status.
CIM 260-EU	EU 3G/4G cellular	CIM 260-EU is a Grundfos communication interface module, which communicates using Modbus TCP via cellular data transmission to a SCADA system or SMS communication to mobile phones. CIM 260-EU is for Europe only	CIM 260-EU has a SIM-card slot and an SMA connection to the cellular antenna. CIM 260 can be fitted with a lithium-ion battery. Two LEDs are used to indicate the actual status of the CIM 260 communication. One LED is used for indication of correct connection to the pump, and the other is used to indicate cellular communication status. Note: The SIM card is not supplied with the CIM 260-EU.
CIM 280-EU GIC GEN2	Cellular GiC	CIM 280-EU GIC GEN2 is a Grundfos communication interface for communication via cellular network to Grundfos iSolution Could applications. CIM 280-EU GIC GEN2 is for Europe only	CIM 280-EU GIC GEN2 has a SIM-card slot and an SMA connection for a cellular antenna. CIM 280-EU GIC GEN2 can be fitted with a lithium-ion battery. Two LEDs are used to indicate the actual status of the CIM 280-EU GIC GEN2 communication. One LED is used for indication of correct connection to the pump, and the other is used to indicate cellular communication status. Note: A eUICC SIM card is supplied with the CIM 280-EU. Reach out to Grundfos to verify if your Grundfos iSolution Could application is supported. Require a related 3G/4G antenna
CIM 280-US GIC GEN2	Cellular GiC	CIM 280-US GIC GEN2 is a Grundfos communication interface for communication via cellular network to Grundfos iSolution Could applications. CIM 280-US GIC GEN2 is for North America/Canada only.	CIM 280-US GIC GEN2 has a SIM-card slot and an SMA connection for a cellular antenna. CIM 280-US GIC GEN2 can be fitted with a lithium-ion battery. Two LEDs are used to indicate the actual status of the CIM 280-US GIC GEN2 communication. One LED is used for indication of correct connection to the pump, and the other is used to indicate cellular communication status. Note: A eUICC SIM card is supplied with the CIM 280-US. Reach out to Grundfos to verify if your Grundfos iSolution Could application is supported and your country fit due to frequency bands and approvals. Require a related 3G/4G antenna.

Module	Fieldbus protocol	Description	Functions
CIM 300	BACnet MS/TP	CIM 300 is a Grundfos communication interface module used for communication with a BACnet MS/TP network.	CIM 300 has terminals for the BACnet MS/TP connection. DIP switches are used to set transmission speed and line termination and to select the custom Device Object Instance Number. Two hexadecimal rotary switches are used to set the BACnet address. Two LEDs are used to indicate the actual status of the CIM 300 communication. One LED is used for indication of correct connection to the pump, and the other is used to indicate BACnet communication status.
CIM 500	Ethernet	CIM 500 is a Grundfos communication interface module used for data transmission between an industrial Ethernet network and a Grundfos product. CIM 500 supports various industrial Ethernet protocols: PROFINET Modbus TCP BACnet IP EtherNet/IP	CIM 500 supports various industrial Ethernet protocols. CIM 500 is configured via the built-in web server, using a standard web browser on a PC.
CIM 550	Ethernet GiC	CIM 550 Ethernet GiC interface is a Grundfos communication interface for communication via LAN and internet to Grundfos iSolution Could applications.	CIM 550 Ethernet GiC has a RJ 45 interface for LAN connection, a RS 485 port for future Modbus RTU slave connection and a BLE radio for commissioning via Grundfos GO. LEDs are used to indicate the actual status of the CIM 550 communication. One LED is used for indication of correct connection to the pump, and the other is used to indicate LAN connection to Grundfos iSolution Could applications. Reach out to Grundfos to verify if your Grundfos iSolution Could application is supported and your country fit due to approvals.

For product numbers, see the section on CIM modules.

Related information

[CIM modules](#)

Grundfos Remote Management

Grundfos Remote Management is an easy-to-install, low-cost solution for wireless monitoring and management of Grundfos products. GRM is based on a centrally hosted database and a web server with wireless data collection via GSM/GPRS modem. The system only requires an internet connection, a web browser, a GRM modem and an antenna as well as a contract with Grundfos allowing you to monitor and manage Grundfos pump systems.

You have wireless access to your account anywhere and anytime you have an internet connection, for example via a smartphone, tablet PC, laptop or computer. Warnings and alarms can be sent by email or SMS to your mobile phone or computer.

For information about the CIM communication interface module and GSM antennas, see section Grundfos Remote Management.

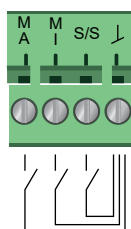
Related information

[Grundfos Remote Management](#)

Digital inputs

You can use the digital input for external control of start/stop or forced maximum or minimum curve.

Note: If no external on/off switch is connected, maintain the jumper between the Start/Stop (S/S) and frame ($\perp$) terminals. This connection is the factory setting.



TM079522

Digital input in control box

Contact symbol	Function
M A	Maximum curve
M I	Minimum curve
S/S	Start/Stop
$\perp$	Frame connection

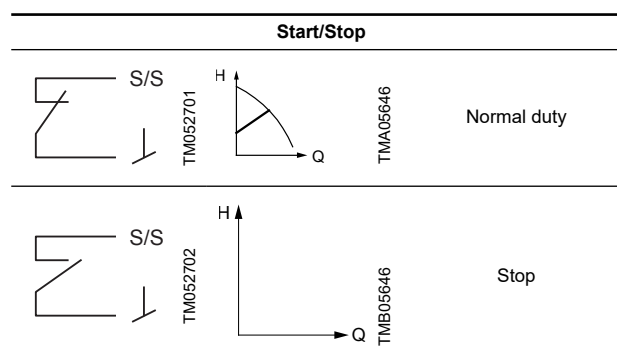
Relay recommendations for Start/Stop

To ensure a trouble-free operation, Grundfos recommends using a Solid State Relay with a minimum load current below 1 mA. These relays typically have a MOSFET transistor as output drive. Relays with gold contacts for small signal operation can also be used.

Note: Relays with a Thyristor output drive cannot be used.

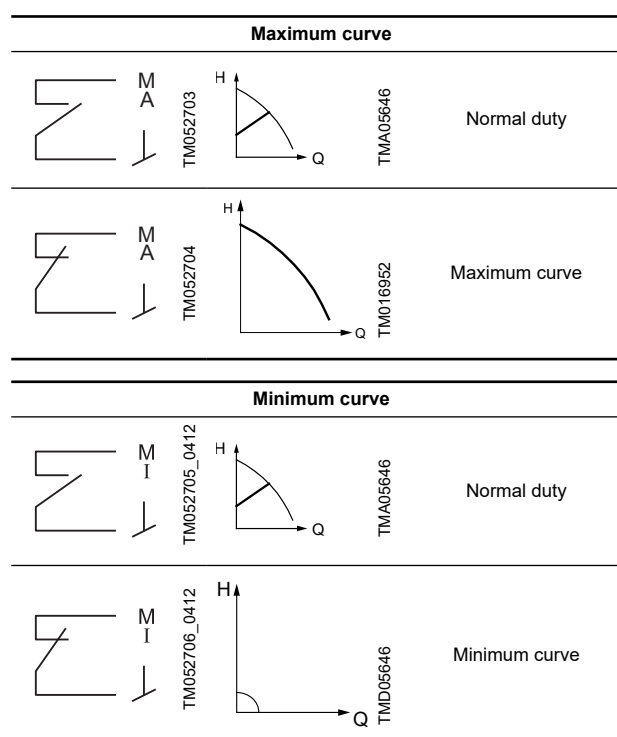
External start/stop

You can start and stop the pump via the digital input.



External forced maximum or minimum curve

You can force the pump to operate on the maximum or minimum curve via the digital input.



Relay outputs

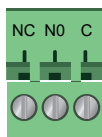
The pump has two signal relays with a potential-free changeover contact for external fault indication.

You can set the function of the signal relay to **Alarm**, **Ready** or **Operation** on the pump operating panel or with Grundfos GO Remote.

Factory settings of relays:

Relay	Function
1	Operation signal
2	Alarm signal

Note: You can configure both relays to "ready, alarm or operating".



TM079523

Relay output in control box

Contact symbol	Function
NC	Normally closed
NO	Normally open
C	Common

The functions of the signal relays are as shown in the table below:

Signal relay	Alarm signal
	Not activated: - The power supply has been switched off. - The pump has not registered a fault.
	Activated: The pump has registered a fault.
Signal relay	Ready signal
	Not activated: The pump has registered a fault and is unable to run.
	Activated: - The pump has been set to stop, but is ready to run. - The pump is running.
Signal relay	Operating signal
	Not activated: The pump is not running.
	Activated: The pump is running.

Analog input for an external sensor

To optimize pump performance, you can use the analog input for the connection of an external sensor in the following cases:

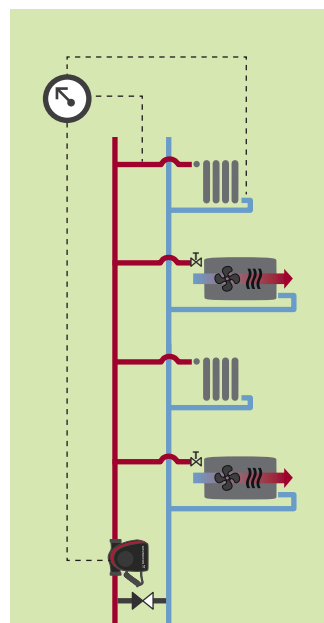
Function/control mode	Sensor type
Heat energy monitor	Temperature sensor
Constant temperature	
Differential temperature	
Constant pressure	Differential-pressure transmitter

Controlling the flow in the system

When using an external differential-pressure sensor to control the flow in the system, you obtain the externally set pressure, which results in the following benefits:

- minimizes operating costs
- prevents valve noise
- ensures comfort (adequate pressure).

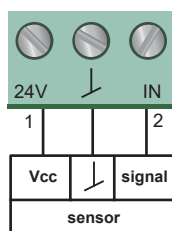
When setting this function, make sure that the pump is set to run in constant-pressure mode and that "Differential-pressure control" has been activated in the "Analog input" menu on the pump's operating panel.



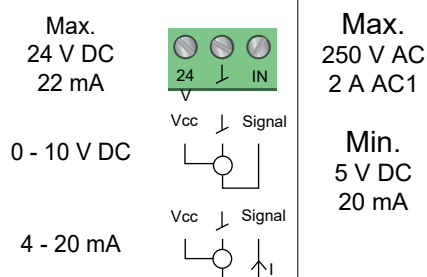
TM070361

External differential-pressure sensor

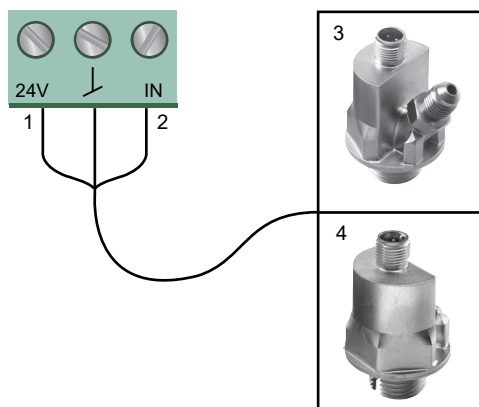
The electrical signal for the input can be 0-10 V or 4-20 mA. You can change the selection of the electrical signal (0-10 V or 4-20 mA) on the operating panel or with Grundfos GO.



Analog input for an external sensor or control



Wiring, analog input



Examples of external sensors

Pos.	Sensor type
1	Vcc
2	Signal
3	Differential-pressure transmitter, Grundfos type DPI V.2 1/2" connection and 4-20 mA signal.
4	Relative-pressure transmitter. Combined temperature and pressure sensor, Grundfos type RPI T2. 1/2" connection and 0-10 V signal.

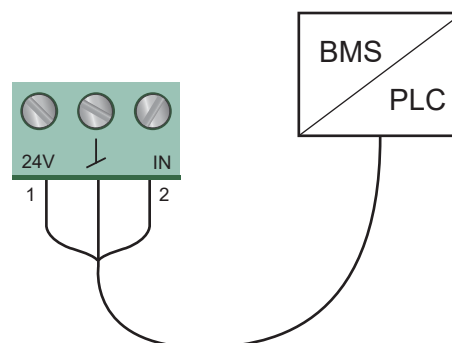
For further details, see section External Grundfos Sensors.

Related information

[External Grundfos sensors](#)

External control system

The analog input can be used for an external signal for the control from a BMS system or similar control system.



Example of external signal for the control via BMS or PLC

External setpoint function

You can use the analog input to influence the setpoint externally.

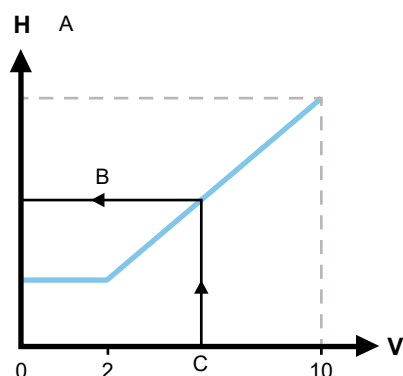
The external setpoint function can be used in two different ways:

- Linear with Min.
- Linear with Stop (available for pumps with production code from 1838)

In both modes the input signal range is influenced linearly.

Linear with Min.

Here, a 0-10 V or 4-20 mA signal controls the pump speed range in a linear function. The range of control depends on the minimum speed, power and pressure limits of the pump. See the figures below.



TM069149

Linear with Min., 0-10 V

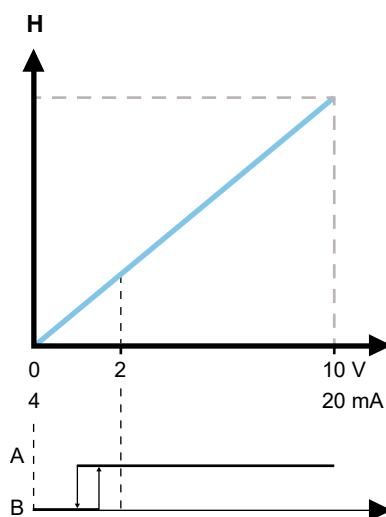
Pos.	Description
A	(user setpoint)
B	Resulting setpoint
C	Analog input

Control	
0-2 V (0-20 %)	Resulting setpoint is equal to minimum.
2-10 V (20-100 %)	Resulting setpoint is between minimum and user setpoint.

Linear with Stop

Note: Available for pumps with production code from 1838.

Here, if the input signal is below 10 %, the pump changes to operating mode **"Stop"**. If the input signal is increased above 15 %, the operating mode is changed back to **"Normal"**.



TM071250

"Linear with Stop", 0-10 V

Pos.	Description
A	Normal
B	Stop

External setpoint function according to model

The external setpoint function operates differently, depending on the model. For model A,B and C, the maximum speed is often obtained at voltages lower than 10 V as the span of control is limited.

In models newer than A,B, and C, the internal scaling has been optimised making the dynamic area bigger, thus giving a better control of the pump speed when using the external setpoint function.

The same applies if the pump is receiving a set point from Building Management Systems.

5. Operating conditions

General recommendations

Water in heating systems	Water quality according to local standards such as the German standard VDI 2035
Domestic hot water	Degree of hardness up to 20 °dH
Water containing glycol	Maximum viscosity = 10-50 cSt ~ 50 % water / 50 % ethylene glycol at -10 °C

Liquid temperature

Continuously: -10 to +110 °C.

Stainless-steel pumps in domestic hot-water systems:

In domestic hot-water systems, we recommend that you keep the liquid temperature below 65 °C to eliminate the risk of lime precipitation.

Location

The pump is designed for indoor installation.

Always install the pump in a dry environment where it will not be exposed to drops or splashes, for example water, from surrounding equipment or structures.

As the pump contains stainless-steel parts, it is important that it is not installed directly in environments, such as:

- Indoor swimming pools where the pump would be exposed to the ambient environment of the pool.
- Locations with direct and continuous exposure to a marine atmosphere.
- In rooms where hydrochloric acid (HCl) can form acidic aerosols escaping from, for example, open tanks or frequently opened or vented containers.

The above applications do not disqualify for installation of MAGNA3. However, it is important that the pump is not installed directly in these environments.

Cooling applications

In cooling applications condensation may occur on the surface of the pump.

To protect the electronics, power on the pump must be switched on, if the cold water is forced through the pump.

Ambient conditions

Ambient conditions	
Ambient temperature during operation	-20 to +40 °C
Ambient temperature during storage and transport	-40 to +70 °C
Relative humidity	Max. 95 %

Ambient temperatures below 0 °C

When operating the pump at ambient temperatures below 0 °C, observe below requirements to reduce condensation and avoid ice buildup.

Requirements for operation below 0 °C	Media type	
	Glycol mix	Water
Media temperature at min. 5 °C	-	•
Power switched on permanently	•	•
Continuous operation	-	•
Twin-head pumps: cascade operation every 24 hours	•	•

Max. operating pressure

PN 6: 6 bar / 0.6 MPa

PN 10: 10 bar / 1.0 MPa

PN 12: 175 psi (12 bar, 1.2 MPa)

PN 16: 16 bar / 1.6 MPa.

Note: Not all variants are available in all markets.

Test pressure

The pumps can withstand test pressures as indicated in EN 60335-2-51. See below.

- PN 6: 7.2 bar / 0.72 MPa
- PN 10: 12 bar / 1.2 MPa
- PN 6/10: 12 bar / 1.2 MPa
- PN 12: 12 bar / 1.2 MPa
- PN 16: 19.2 bar / 1.92 MPa.

Not all variants are available in all markets.

During normal operation, do not use the pump at higher pressures than those stated on the nameplate.

The pressure test has been made with water containing anticorrosive additives at a temperature of 20 °C.

Min. inlet pressure

The following relative minimum pressure must be available at the pump inlet during operation to avoid cavitation noise and damage to the pump bearings.

The values in the table below apply to single-head pumps and twin-head pumps in single-head operation.

MAGNA3	Liquid temperature			
	25 °C	75 °C	95 °C	110 °C
	Inlet pressure [bar] / [MPa]			
25-40/60/80/100/120	0.0	0.10 / 0.01	0.35 / 0.035	1.0 / 0.10
32-40/60/80/100/120	0.0	0.10 / 0.01	0.35 / 0.035	1.0 / 0.10
32-40/60/80/100/120 F	0.0	0.10 / 0.01	0.35 / 0.035	1.0 / 0.10
32-120 F	0.0	0.10 / 0.01	0.20 / 0.020	0.7 / 0.07
40-40/60 F	0.0	0.10 / 0.01	0.35 / 0.035	1.0 / 0.10
40-80/100/120/150/180 F	0.0	0.10 / 0.01	0.50 / 0.05	1.0 / 0.10
50-40/60/80 F	0.0	0.10 / 0.01	0.40 / 0.04	1.0 / 0.10
50-100/120 F	0.0	0.10 / 0.01	0.50 / 0.05	1.0 / 0.10
50-150/180 F	0.4	0.70 / 0.07	1.20 / 0.12	1.7 / 0.17
65-40/60/80/100/120/150 F	0.4	0.70 / 0.07	1.20 / 0.12	1.7 / 0.17
80-40/60/80/100/120 F	0.2	0.50 / 0.05	1.00 / 0.10	1.5 / 0.15
100-40/60/80/100/120 F	0.4	0.70 / 0.07	1.20 / 0.12	1.7 / 0.17

In the case of cascade twin-head operation, increase the required relative inlet pressure by 0.1 bar / 0.01 MPa compared to the stated values for single-head pumps or twin-head pumps in single-head operation.

Note: The actual inlet pressure plus pump pressure against a closed valve must be lower than the maximum permissible system pressure.

The relative minimum inlet pressures apply to pumps installed up to 300 metres above sea level. For altitudes above 300 metres, increase the required relative inlet pressure by 0.1 bar / 0.01 MPa per 100 metres altitude. The MAGNA3 pump is only approved for an altitude of 2000 metres.

Closed valve operation

MAGNA3 pumps can operate at any speed against a closed valve for several days without damage to the pump. However, Grundfos recommends you to operate at the lowest possible speed curve to minimise energy losses. There are no minimum flow requirements.

Note: Do not close inlet and outlet valves simultaneously, always keep one valve open when the pump is running to avoid pressure buildup. Media and ambient temperatures must never exceed the specified temperature range.

Pumped liquids

The pump is suitable for thin, clean, non-aggressive and non-explosive liquids, not containing solid particles or fibres that may attack the pump mechanically or chemically.

In heating systems, the water must meet the requirements of accepted standards on water quality in heating systems, for example the German standard VDI 2035.

In domestic hot-water systems, we recommend that you use MAGNA3 pumps only for water with a degree of hardness lower than approx. 14 °dH.

In domestic hot-water systems, we recommend that you keep the liquid temperature below 65 °C to eliminate the risk of lime precipitation.

You can use MAGNA3 pumps for pumping water/glycol mixtures up to 50 %.

Example of a water/ethylene glycol mixture:

Maximum viscosity: 10-50 cSt ~ 50 % water / 50 % ethylene glycol mixture at -10 °C.

The pump is controlled by a power-limiting function that protects against overload.

The pumping of glycol mixtures will affect the maximum curve and reduce the performance, depending on the water/ethylene glycol mixture and the liquid temperature.

To prevent the ethylene glycol mixture from degrading, avoid temperatures exceeding the rated liquid temperature and minimise the operating time at high temperatures.

You must clean and flush the system before the ethylene glycol mixture is added.

To prevent corrosion or lime precipitation, check and maintain the ethylene glycol mixture regularly. If further dilution of the supplied ethylene glycol is required, follow the glycol supplier's instructions.

Electrical data

Pump type	MAGNA3 (D)
Enclosure class	IPX4D (EN 60529)
Insulation class	F
Supply voltage	1 × 230 V, 50/60 Hz, PE ¹⁾ M20 cable gland (supplied with the pump)
Three digital inputs	External potential-free contact Contact load: 5 V, 10 mA Screened cable M16 cable gland (not supplied with the pump) Loop resistance: Maximum 130 Ω
Analog input	4-20 mA (load: 150 Ω) 0-10 VDC (load: > 10 kΩ) M16 cable gland (not supplied with the pump)
Two relay outputs	Internal potential-free changeover contact Maximum load: 250 V, 2 A, AC1 Minimum load: 5 VDC, 20 mA Screened cable, depending on signal level M16 cable gland (not supplied with the pump)
Bus input	Grundfos Communication Interface Modules (add-on CIM modules) for: • GENIbus • LonWorks • PROFIBUS DP • Modbus RTU • GSM/GPRS • Grundfos Remote Management • BACnet MS/TP • Ethernet.
Leakage current	$I_{\text{leakage}} < 3.5 \text{ mA}$ The leakage currents are measured in accordance with EN 60335-1.
EMC	Standards used: EN 55014-1:2006 + A1:2009 + A2:2011, EN 55014-1:2017, EN 61000-6-2:2005, EN 61000-3-3:2013, EN 61000-3-2:2014.
Cos φ	Terminal-connected versions have a built-in active PFC (Power Factor Control) which gives a cos φ from 0.98 to 0.99, i.e. very close to 1. Plug-connected versions have no PFC and therefore the power factor is from 0.50 to 0.99.
Consumption when the pump is stopped	4 to 10 W, depending on activity, i.e. reading the display, use of Grundfos GO Remote, interaction with modules, etc. 4 W, when the pump is stopped and there is no activity.

¹⁾ For Japanese models, the voltage is 200-230 V.

Sound pressure level

The sound pressure level of the pump is dependent on the power consumption. Levels are determined in accordance with ISO 3745 and ISO 11203, method Q2.

Pump size	Maximum [dB(A)]
25-40/60/80/100/120	39
32-40/60/80/100/120	
40-40/60	
50-40	
32-120 F	45
40-80/100	
50-60/80	
65-40/60	
80-40	
40-120/150/180	50
50-100/120/150/180	
65-80/100/120	
80-60/80	
100-40/60	55
65-150	
80-100/120	
100-80/100/120	

6. Construction

MAGNA3 is of the canned-rotor type, i.e. pump and motor form an integral unit without shaft seal and with only two gaskets for sealing. The bearings are lubricated by the pumped liquid.

The pump is characterised by the following:

- controller integrated in the control box
- operating panel on the control box
- control box prepared for optional CIM modules
- built-in differential-pressure and temperature sensor
- cast-iron or stainless-steel pump housing
- twin-head versions
- no external motor protection required
- insulating shells supplied with single-head pumps for heating systems.

Motor and electronic controller

MAGNA3 incorporates a 4-pole synchronous, permanent-magnet motor (PM motor). This motor type is characterised by higher efficiency than a conventional asynchronous squirrel-cage motor.

The pump speed is controlled by an integrated frequency converter.

Differential-pressure and temperature sensor

The differential-pressure and temperature sensor is located in the pump housing in a channel between the inlet and outlet ports.

Via a cable, the sensor sends an electrical signal for the differential pressure across the pump and for the liquid temperature to the controller in the control box.

The sensor offers substantial benefits:

- direct feedback on the pump display
- complete pump control
- measurement of the pump workload for precise and optimum control resulting in higher energy efficiency.

Sensor specifications, temperature

Temperature range during operation	Accuracy
-10 to +35 °C	± 2 °C
+35 to +90 °C	± 1 °C
+90 to +110 °C	± 2 °C

Pump connections

Threaded pipe connections according to ISO 228-1.

Flange dimensions to EN 1092-2.

Surface treatment

The pump housing and pump head are electrocoated to improve corrosion resistance.

Electrocoating includes:

- alkaline cleaning
- pretreatment with zinc phosphate coating
- cathodic electrocoating (epoxy)
- curing of paint film at 200 to 250 °C.

The pump housing of stainless-steel versions is not treated or painted and appears in blank steel.



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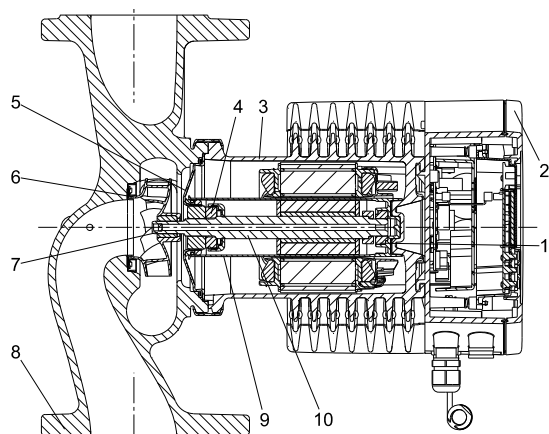
MAGNA3 stainless steel version

Colour

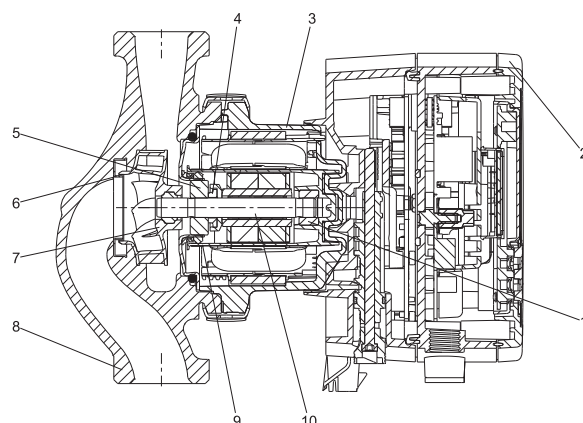
Colour codes for the pump:

Colour	Code
Red	NCS40-50R
Black	NCS9000

Sectional drawings



Terminal-connected version



Plug-connected version

Material specification

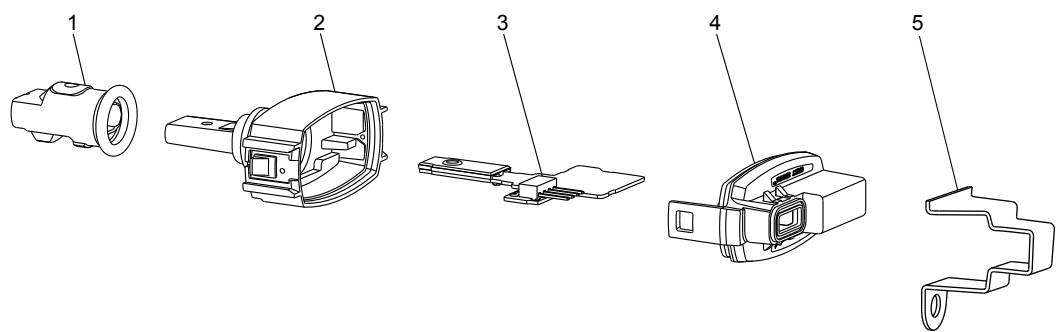
See section Sectional drawings.

Pos.	Component	Material	EN
1	Outer bearing ring	Aluminium oxide	
2	Control box	Polycarbonate	
3	Stator housing	Aluminium	
	O-rings	EPDM	
4	Thrust bearing	Aluminium oxide/carbon	
5	Bearing plate	Stainless steel	EN 1.4301
6	Neck ring	Stainless steel	EN 1.4301
7	Impeller	PES	
8	Pump housing	Cast iron/stainless steel	EN 1561 EN-GJL-250/EN 1.4308
9	Rotor can	PPS	
10	Shaft	Ceramic (plug-connected versions)	
10	Shaft	Stainless steel (terminal-connected versions)	EN 1.4404

Related information

[Sectional drawings](#)

Sensor drawing



TM069250

Sensor

Pos.	Component	Material	EN
1	Sealing cap	EPDM	
2	Housing	PPS	
3	Printed-circuit board	-	
4	Cover snap-on	PA/TPV	
5	Bracket for sensor	Stainless steel	EN 1.4301

7. Installation

Outdoor installation

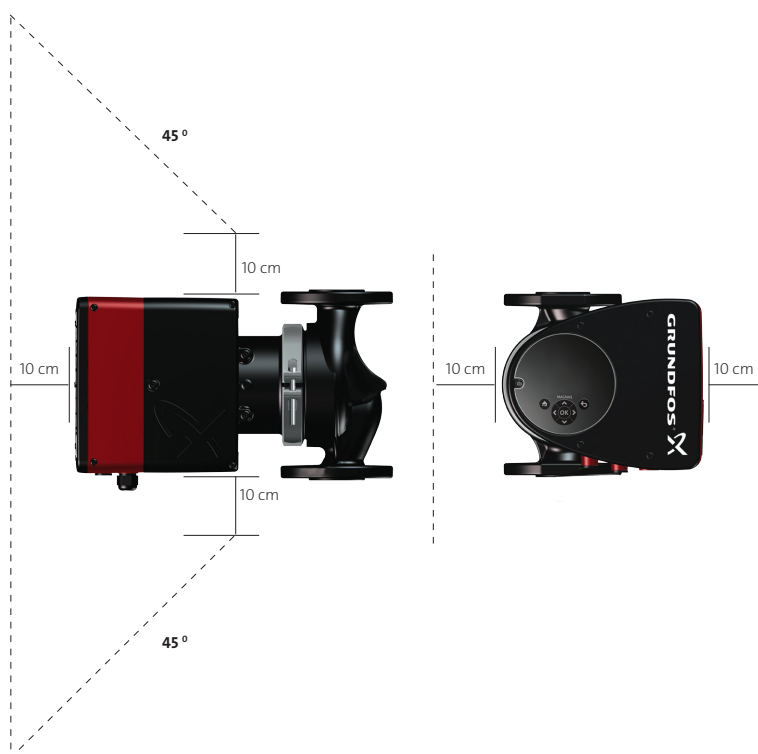
The product is intended for indoor installation. However, the product can be installed outdoors if you fulfil these requirements to avoid condensation on the electronic components:

- Observe the operating conditions and enclosure class of the product.

- Provide the product with a suitable cover. The cover must be large enough to ensure that the product is not exposed to direct sunlight, rain or snow.
- Do not expose the product to UV radiation.
- Keep the drain holes clear of any blockage.
- Collect and remove condensation buildup.

Minimum clearance

MAGNA requires the following space on the installation sit as shown below.



Minimum clearance around Single head pump

TVM060059



TM060058

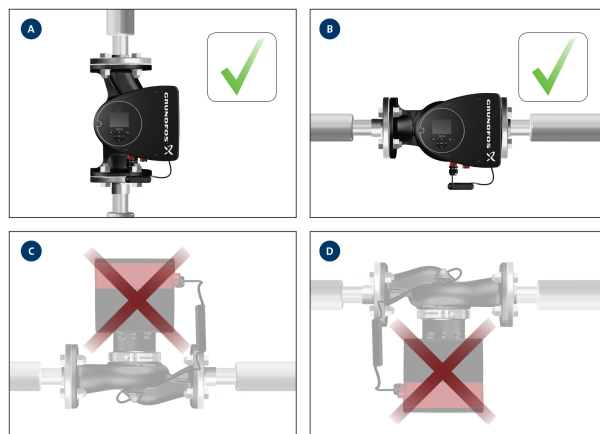
Minimum clearance around Twin-head pump

Mechanical installation

MAGNA3 is designed for indoor installation.

You must install the pump with horizontal motor shaft.

You can install the pump in horizontal as well as vertical pipes.



TM086787

Installation positions

Arrows on the pump housing indicate the liquid flow direction through the pump.

The control box must be in horizontal position with the Grundfos logo in vertical position.

You must install the pump in such a way that it is not stressed by the pipes.

The pump may be suspended directly in the pipes, provided that the pipes can support the pump.

Twin-head pumps are prepared for installation on a mounting bracket or base plate.

To ensure adequate cooling of motor and electronics, observe the following:

- Position the pump in such a way that sufficient cooling is ensured.
- The temperature of the ambient air must not exceed 40 °C.

Insulating shells

The insulating shells supplied with single-head MAGNA3 pumps are for heating systems and must be fitted as part of the installation.

Insulating shells for applications with ice buildup are available as an accessory.

See section Insulating shells for applications with ice buildup.

Note: Insulating shells are not available for twin-head pumps.

Related information

[Insulating shells for applications with ice buildup](#)

Electrical installation

The electrical connection and protection must be carried out in accordance with local regulations. Persons with pacemakers disassembling this product must exercise care when handling the magnetic materials embedded in the rotor.

- The pump must be connected to an external main switch.
- The pump must always be correctly earthed.
- The pump requires no external motor protection.
- The pump incorporates thermal protection against slow overloading and blocking.
- When switched on via the power supply, the pump will start pumping after approx. 5 seconds.

Note: The number of starts and stops via the power supply must not exceed four times per hour.

The pump has a digital input that you can use for external control of start/stop without switching the power supply on/off.

Make the pump mains connection as shown in the diagrams on the following pages.

Cables

Use screened cables for external on/off switch, digital input, sensor and setpoint signals.

- All cables used must be heat-resistant up to at least 70 °C.
- All cables used must be installed in accordance with EN 60204-1 and EN 50174-2.

Additional protection

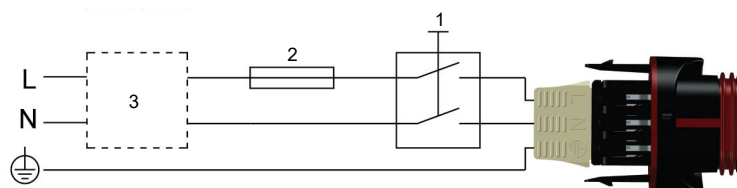
Plug-connected versions

In case of an insulation fault, the fault current may be a pulsating DC. Observe national legislation about requirements for and selection of Residual Current Device (RCD) when installing the pump.

Terminal-connected versions

For terminal-connected versions, in case of an insulation fault, the fault current may be a DC or pulsating DC. Observe national legislation about requirements for and selection of Residual Current Device (RCD) when installing the pump.

Connection to power supply, plug-connected versions

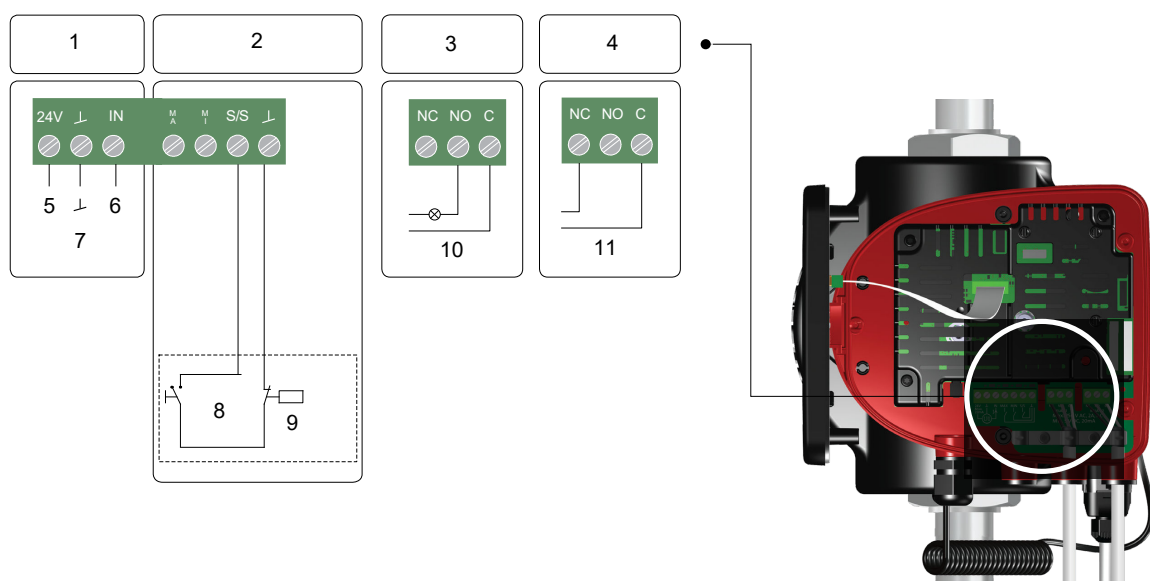


TM055277

Example of plug-connected motor with main switch, backup fuse and additional protection

Pos.	Description
1	External switch
2	Fuse
3	RCD

Connection to external controllers, plug-connected versions



TM070380

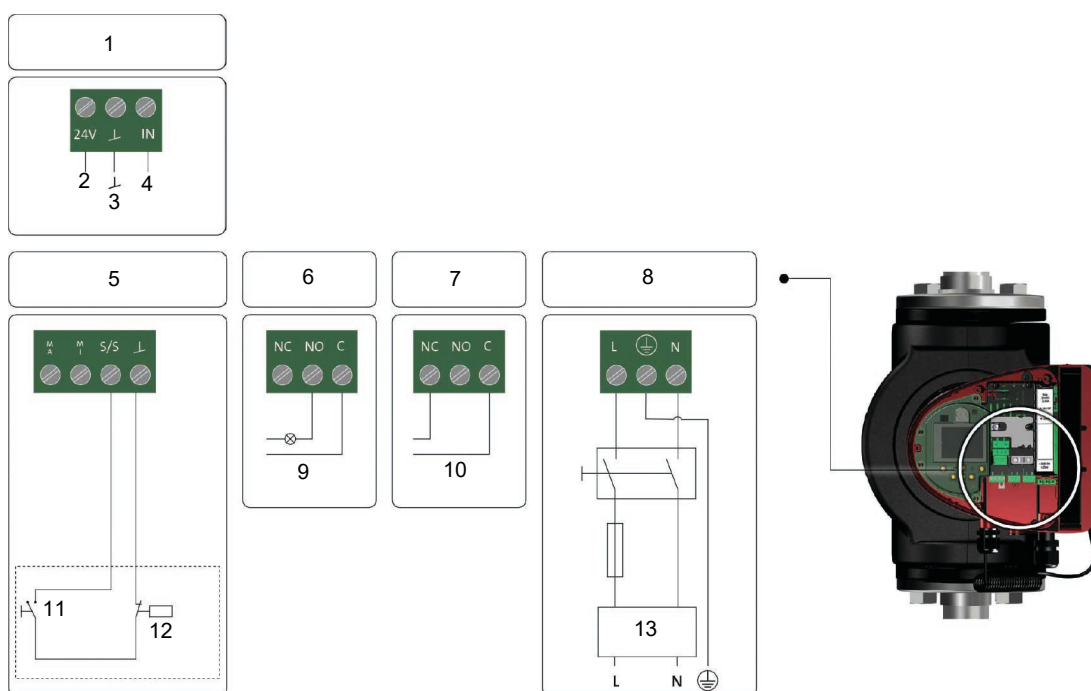
Example of connections in the control box of plug-connected versions

Pos.	Description
1	Analog input
2	Digital input
3	Relay 1
4	Relay 2
5	Vcc
6	Signal
7	Sensor
8	Start/stop
9	On/off timer
10	Operation
11	Alarm

Note: Use C and NC for fault signals as this enables serial connections of more relays and detection of signal cable defects.

The connection terminals of plug-connected versions differ from those of terminal-connected versions, but they have the same function and connection options.

Connections in the control box, terminal-connected versions



TM070364

Example of connections in the control box of terminal-connected versions

Pos.	Description
1	Analog input
2	Vcc
3	Sensor
4	Signal
5	Digital input
6	Relay 1
7	Relay 2
8	Power
9	Operation
10	Alarm
11	Start/stop
12	On/off timer
13	RCD

Note: Use C and NC for fault signals as this enables serial connections of more relays and detection of signal cable defects.

For further information on digital and analog inputs, see sections Digital inputs and Analog input for external sensor.

For information on relay outputs, see section Relay outputs.

Related information

[Digital inputs](#)

[Relay outputs](#)

[Analog input for an external sensor](#)

8. Operating the product

MAGNA3 can be operated and monitored via the operating panel on the pump and via the Grundfos GO Remote app.

Operating panel

The MAGNA3 pump range allows you to set the pump directly on the user-friendly, 4" TFT operating panel with self-explanatory push-buttons made of high-quality silicone for precise navigation.

The operating panel gives quick and easy access to pump and performance data on site. The menu includes all available MAGNA3 pump settings, such as control mode, setpoint, relay output and bus communication.

Startup guide and assistance

When you start the pump for the first time, you are presented with a startup guide enabling easy setting of the pump. Additionally, the **"Assist"** menu, including the application wizard, guides you through the various settings of the pump.



Operating panel, startup guide

Application wizard

The application wizard helps you to set the correct control mode according to your application. The wizard can be accessed via the startup guide and the **"Assist"** menu.

Starting with the overall application type, e.g. radiator, and then specifying the system setup step by step, the wizard identifies the best suited control mode and, if necessary, helps you set the duty point.

The Display menu overview booklet provided with the pump includes application overviews such as the ones shown in section System applications. Using these, you can quickly identify the pump in your system and apply this knowledge directly to the wizard on the pump.



Related information

[Heating systems](#)

Grundfos GO Remote

The pump communicates wirelessly with Grundfos GO Remote via Bluetooth, which allows you to:

- read operating data such as flow rate, liquid temperature and energy consumption
- read out warnings and alarms
- set the control mode and setpoint
- select external setpoint signal
- select function for digital input
- set up multipump systems
- allocate the pump number making it possible to distinguish between pumps that are connected via Grundfos GENIbus
- generate pdf reports with operating data, pump setup and warnings and alarms history.

Furthermore, Grundfos GO Remote includes assisted pump setup and assisted fault advice.



Connecting the pump to Grundfos GO Remote

9. Curve conditions

Performance curves

The guidelines below apply to the performance curves on section MAGNA3 25-40 (N) to section MAGNA3 D 100-120 F:

- Test liquid: airless water.
- The curves apply to a density of $\rho = 983.2 \text{ kg/m}^3$ and a liquid temperature of 60°C .
- All curves show average values. If a specific minimum performance is required, individual measurements must be made.
- The curves apply to a kinematic viscosity of $\mu = 0.474 \text{ mm}^2/\text{s}$ (0.474 cSt).
- Reference supply voltage: $1 \times 230 \text{ V}$, 50 Hz.
- EEI obtained according to EN 16297.

Note: Within the MAGNA3 performance range, you can set the constant- and proportional-pressure curves in steps of 0.1 m head on the operating panel or with Grundfos GO Remote.

Related information

- [MAGNA3 25-40 \(N\)](#)
- [MAGNA3 D 100-120 F](#)

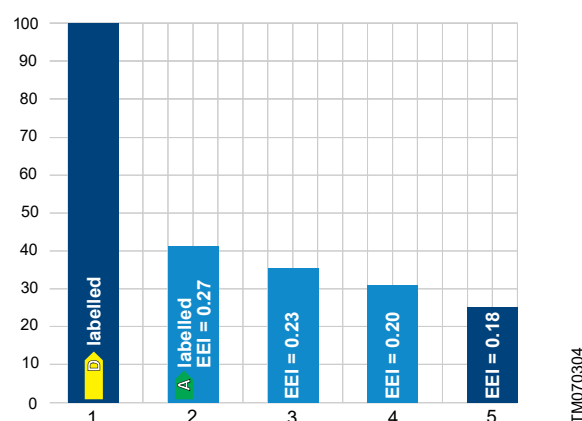
Energy efficiency index (EEI)

MAGNA3 is energy-optimised and complies with the EuP Directive (Commission Regulation (EC) No 641/2009) which has been effective as from 1 January 2013.

For MAGNA3 single-head pumps, the average energy efficiency index (EEI) is 0.18 with values down to 0.17, categorised as best in class.

MAGNA3 with its AUTOADAPT function is the preferred choice for large heating systems and a true efficiency frontrunner.

Below figure shows the energy consumption index for a typical circulator pump compared to the various EEI limits.



Energy consumption index, single-head pumps

Pos.	Description
1	Typical circulator pump
2	EuP 2013
3	EuP 2015
4	EuP benchmark level
5	MAGNA3 (average EEI value)

With an energy efficiency index (EEI) well below the EuP benchmark level, you can achieve energy savings of up to 75 % compared to a typical circulator pump and thus a remarkably fast return on investment.

QR code on pump nameplate



TM082051

QR code on pump nameplate

With Grundfos GO Remote or a smartphone, you get the following information about MAGNA3:

- product photo
- pump performance curves
- dimensional sketches
- wiring diagram
- quotation text
- technical data
- service parts list
- PDF files, such as data booklet and installation and operating instructions.

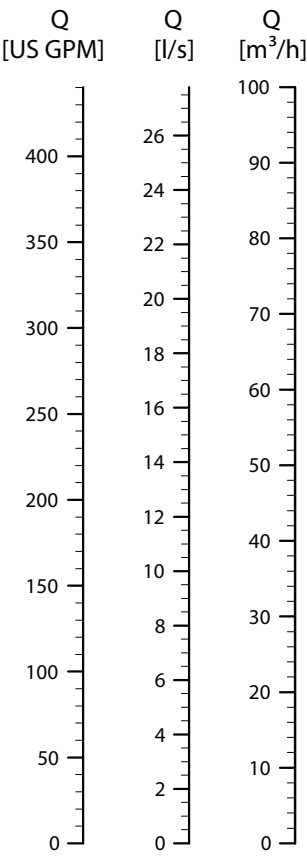
Markings and approvals

The following marks are available after positive testing of MAGNA3:

Mark	Description
 CE_SYMBOL	The CE marking is based on the declaration of conformity issued by the manufacturer who certifies that the product meets all the appropriate provisions of the relevant legislation implementing certain European Directives.
 TM017897	Electro-technical products including products according to the Product Safety Act (ProdSG) and medical products according to the Medical Product Act (MPG) according to German VDE/EN/IEC standards, other technical specifications as well as possible provisions of law with respect to safety and health requirements.
 EAC	Mark of Conformity in the Russia, Kazakhstan, Armenia, Kyrgyzstan and Belarus Customs Union for imports of Machinery and Industrial Equipment.
 WRAS_APPR_CMYK	The product complies with the requirements of the United Kingdom Water Supply (Water Fittings) Regulations/Scottish Water Byelaws. Applies to the stainless-steel version only.
 TSE	The Turkish Standards Institute (TSE) certified that this product complies with the relevant directives and standards.
ACS	ACS - Attestation de Conformité Sanitaire. The suitability of this product to come into contact with water destined for human consumption has been evaluated and approved by a laboratory accredited by the French Ministry of Health.
 WEEE_MARK	Crossed-out wheeled bin according to EN 50419:2006. The crossed-out wheeled bin symbol on a product means that it must be disposed of separately from household waste. When a product marked with this symbol reaches its end of life, take it to a collection point designated by the local waste disposal authorities. The separate collection and recycling of such products will help protect the environment and human health.

10. Performance curves and technical data

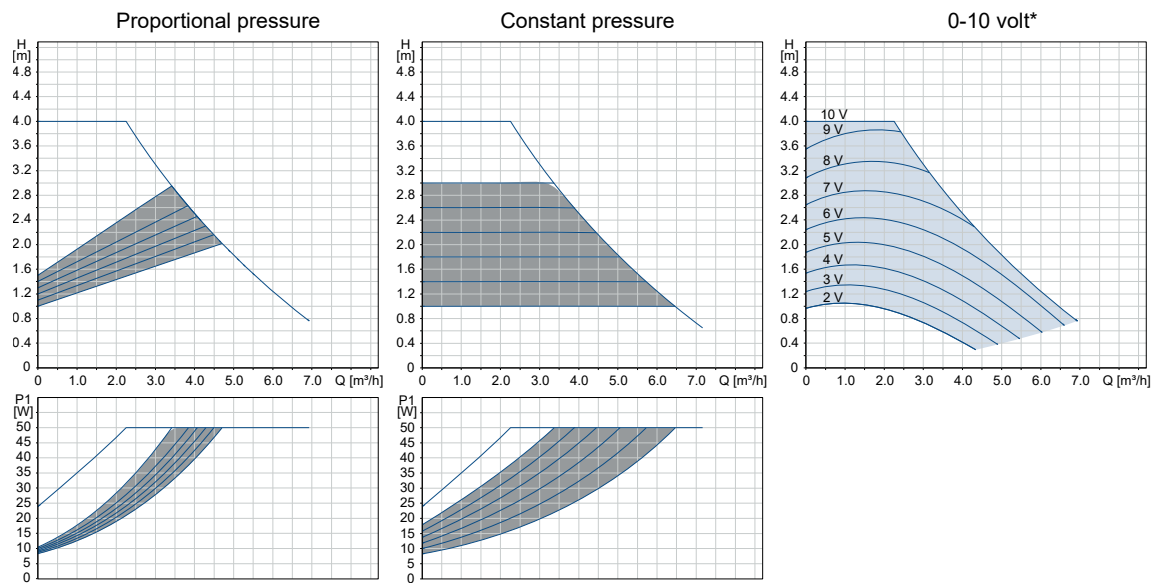
■ Conversion table



TM068913

■ MAGNA3 25-40 (N)

1 × 230 V, 50/60 Hz



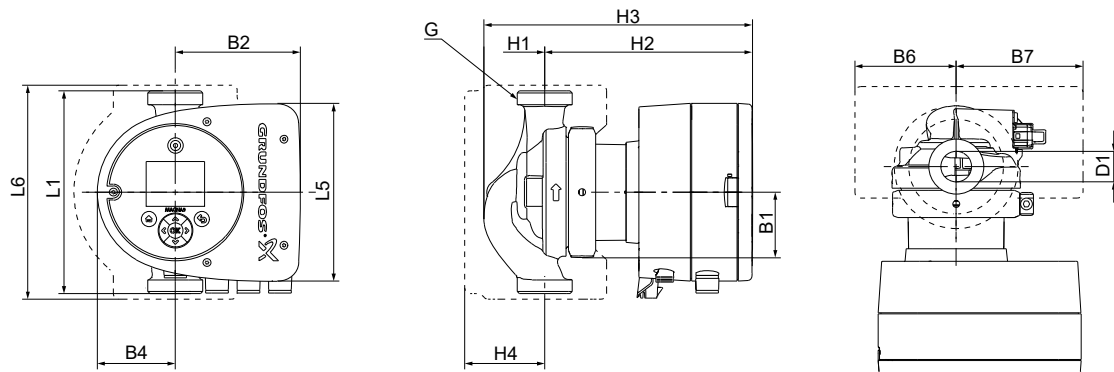
TM079348

Speed	P1 [W]	I _l [A]
Min.	9	0.09
Max.	50	0.46

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [dm ³]
4.8	5.3	14.64

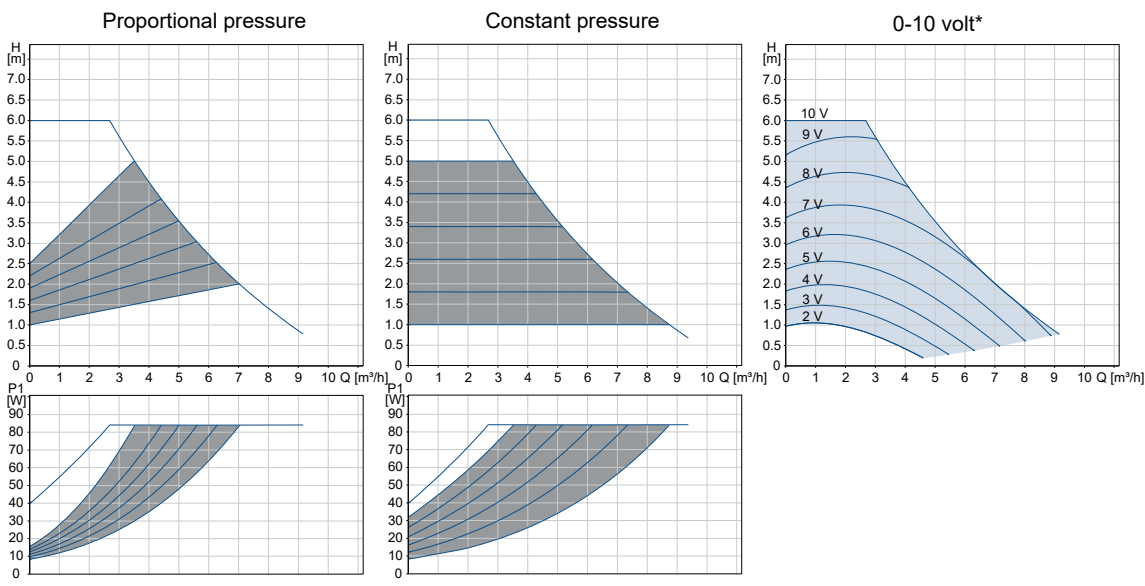
* External setpoint influence shown with a set point of H _{max}	
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.



TM086794

Pump type	Dimensions [mm]												[inch]	
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	G
MAGNA3 25-40 (N)	180	158	190	58	111	69	90	113	54	185	239	71	25	1 1/2

■ MAGNA3 25-60 (N)
1 x 230 V, 50/60 Hz



TM079349

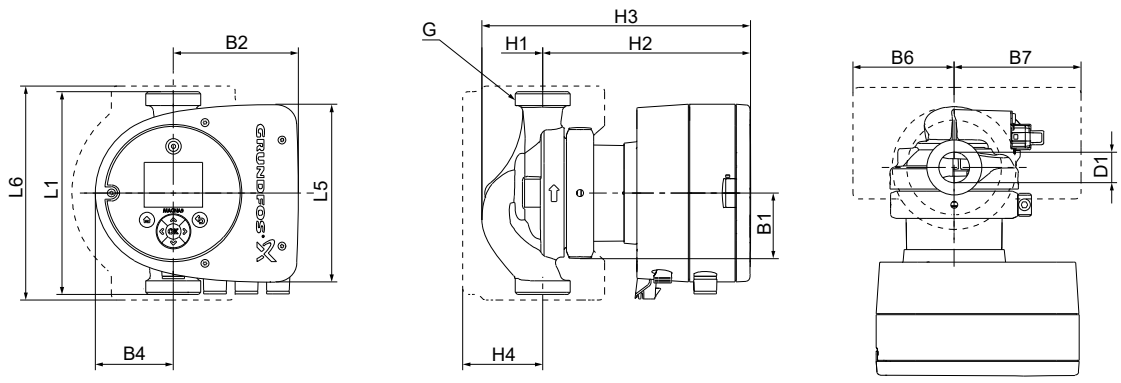
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I _l [A]
Min.	9	0.09
Max.	84	0.75

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
4.8	5.3	0.01

* External setpoint influence shown with a set point of H _{max}	
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.

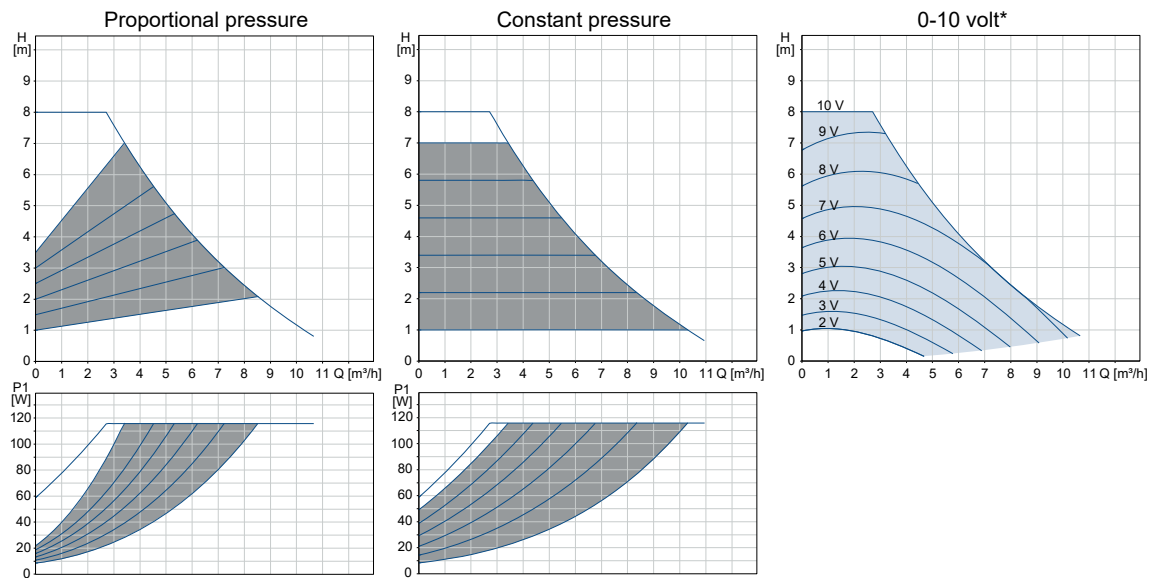


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Pump type	Dimensions [mm]												[inch]	
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	G
MAGNA3 25-60 (N)	180	158	190	58	111	69	90	113	54	185	239	71	25	1 1/2

MAGNA3 25-80 (N)

1 x 230 V, 50/60 Hz



TM079350

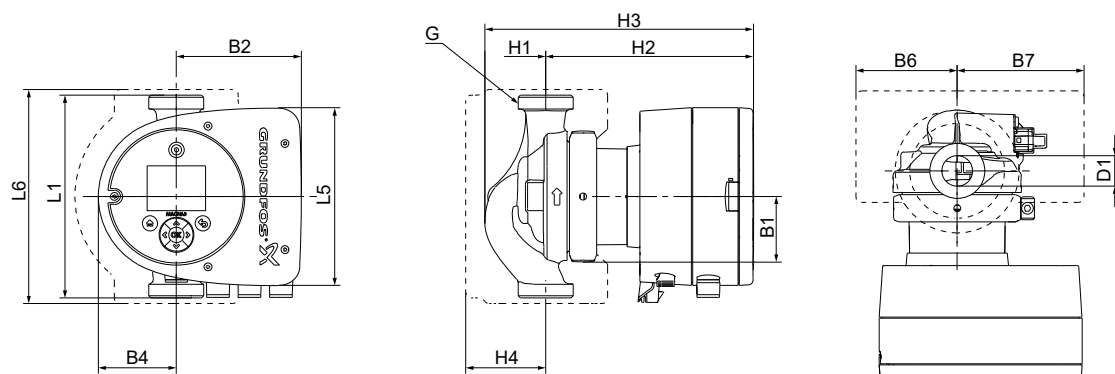
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	116	1.02

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
4.8	5.3	0.01

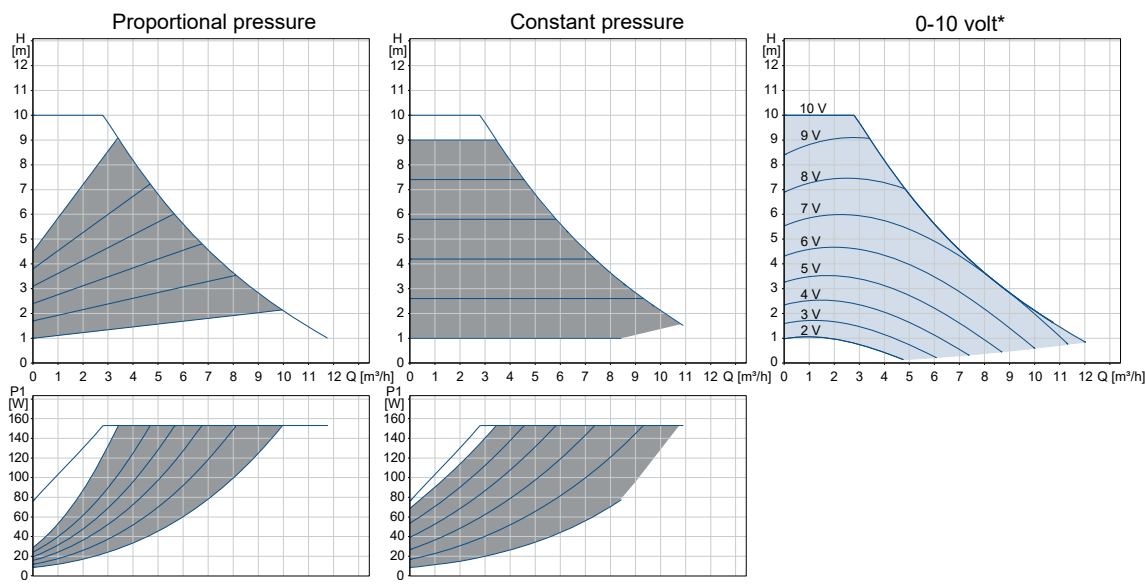
	* External setpoint influence shown with a set point of H _{max}
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.



TM086794

Pump type	Dimensions [mm]												[inch]	
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	G
MAGNA3 25-80 (N)	180	158	190	58	111	69	90	113	54	185	239	71	25	1 1/2

■ MAGNA3 25-100 (N)
1 x 230 V, 50/60 Hz



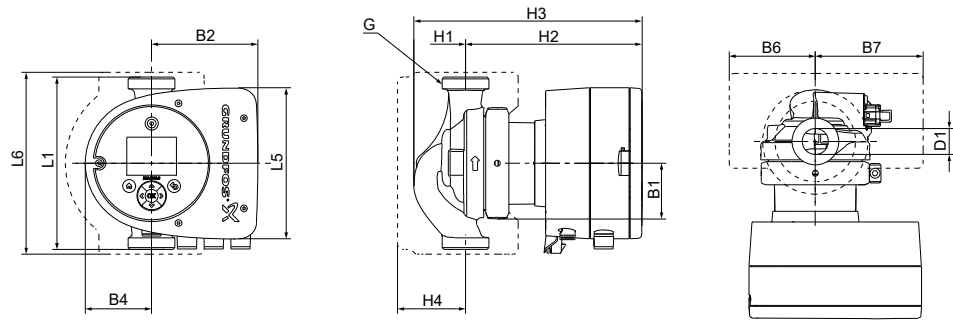
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I _l [A]
Min.	9	0.09
Max.	153	1.33

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
4.8	5.3	0.01

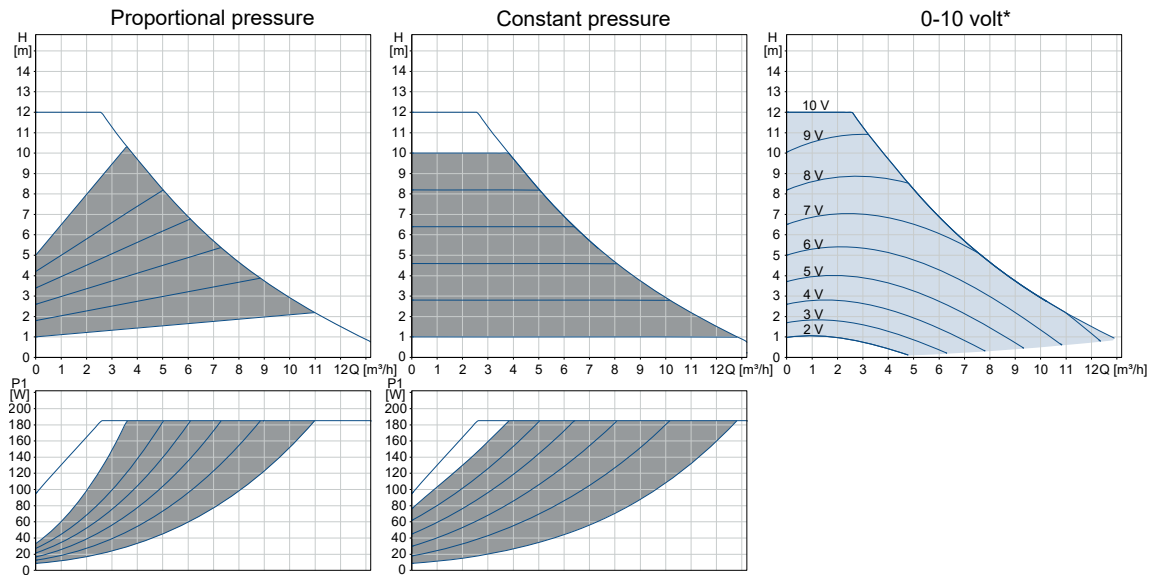
* External setpoint influence shown with a set point of H _{max}	
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.



Pump type	Dimensions [mm]												[inch]	
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	G
MAGNA3 25-100 (N)	180	158	190	58	111	69	90	113	54	185	239	71	25	1 1/2

■ MAGNA3 25-120 (N)

1 x 230 V, 50/60 Hz



TM079352

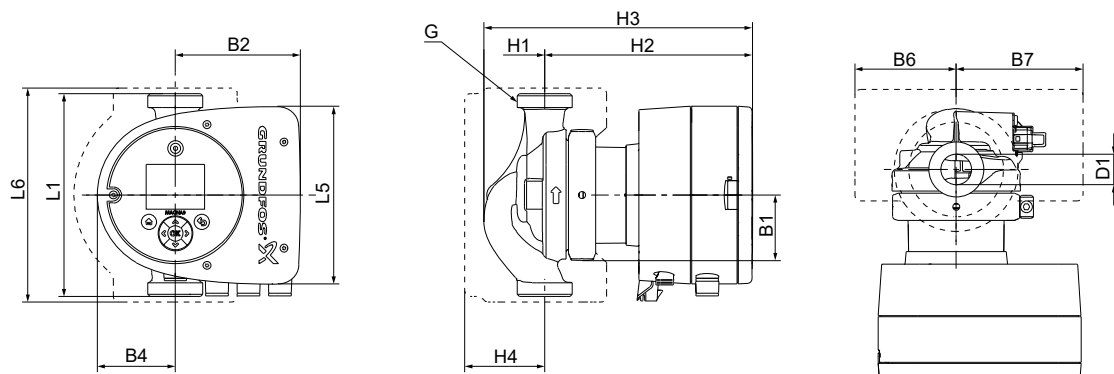
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	185	1.56

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
4.8	5.3	0.01

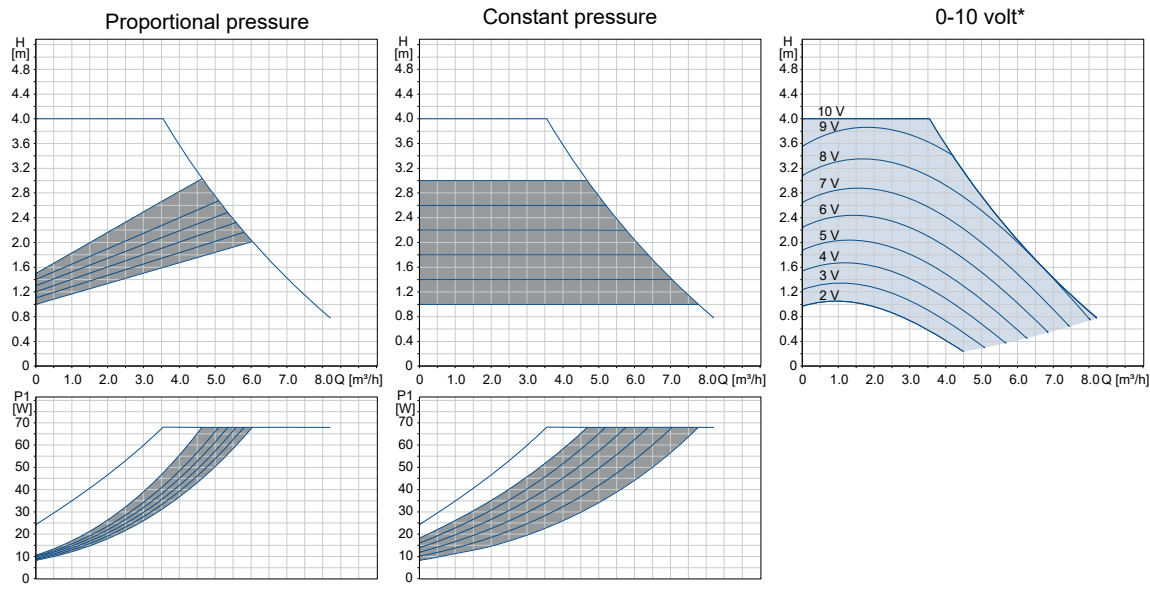
	* External setpoint influence shown with a set point of H _{max}
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.



TM086794

Pump type	Dimensions [mm]													[inch]
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	G
MAGNA3 25-120 (N)	180	158	190	58	111	69	90	113	54	185	239	71	25	1 1/2

■ MAGNA3 32-40 (N)
1 x 230 V, 50/60 Hz



TM079353

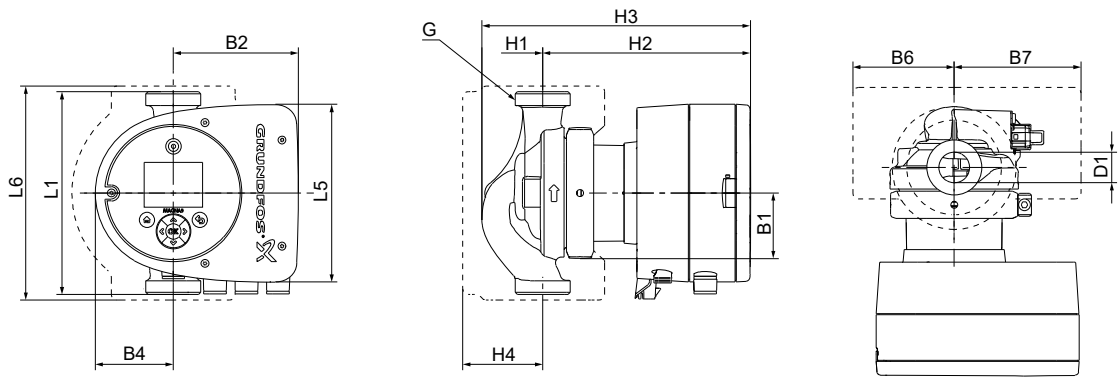
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I _l [A]
Min.	9	0.09
Max.	68	0.61

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
4.8	5.3	0.01

* External setpoint influence shown with a set point of H _{max}	
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.

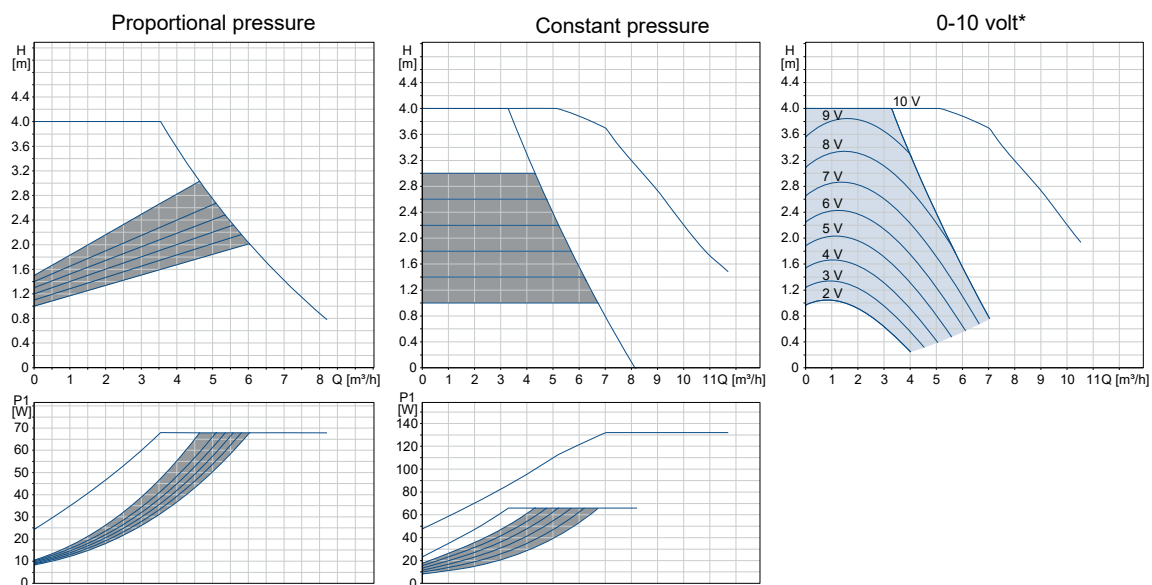


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Pump type	Dimensions [mm]												[inch]	
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	G
MAGNA3 32-40 (N)	180	158	190	58	111	69	90	113	54	185	239	71	32	2

■ MAGNA3 D 32-40

1 x 230 V, 50/60 Hz



TM079354

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

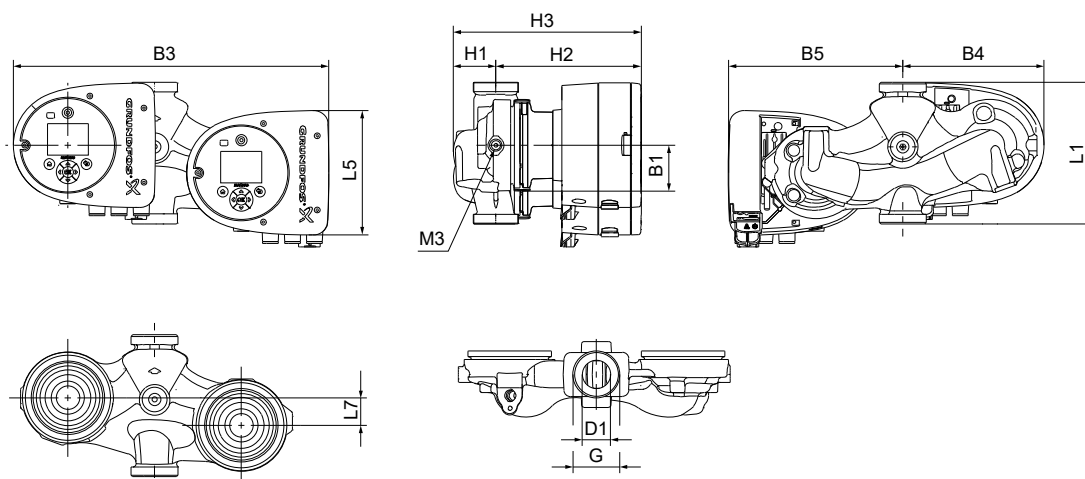
Speed	P1 [W]	I _t [A]
Min.	9	0.09
Max.	66	0.61

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
13.2	14.0	0.04

* External setpoint influence shown with a set point of H _{max}		
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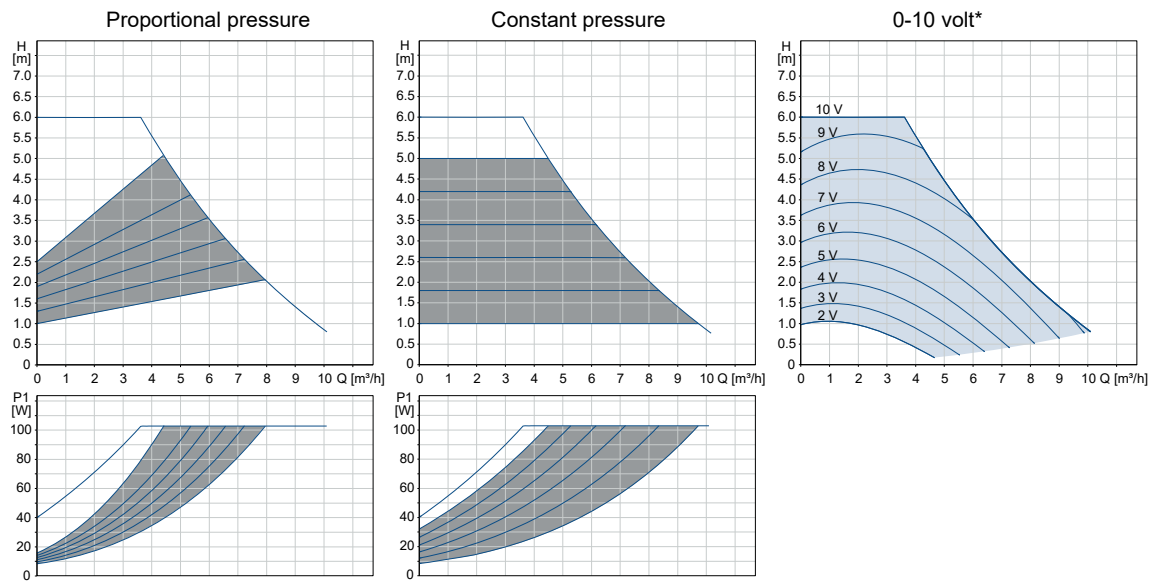
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.19.



TM086796

Pump type	Dimensions [mm]											[inch]	
	L1	L5	L7	B1	B3	B4	B5	H1	H2	H3	D1	G	M3
MAGNA3 D 32-40	180	158	35	58	400	179	221	54	185	239	32	2	1/4

■ MAGNA3 32-60 (N)
1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

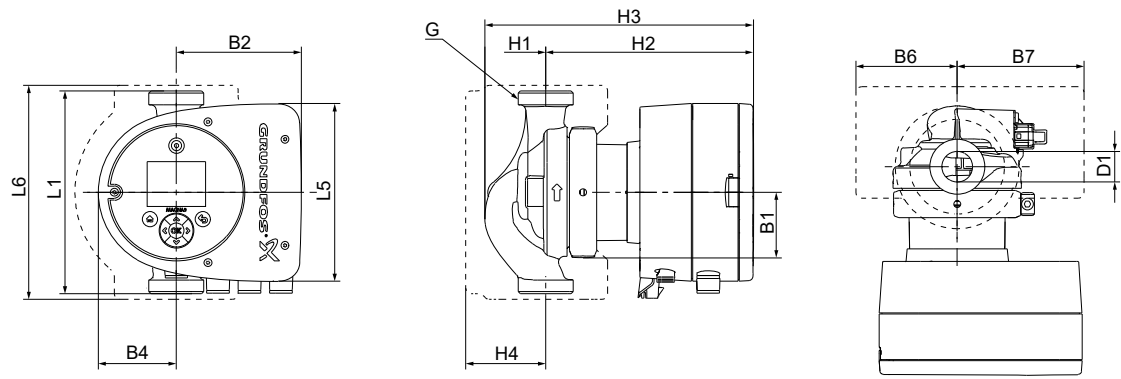
Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	103	0.91

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m ³]
4.8	5.3	0.01

	* External setpoint influence shown with a set point of H _{max}
--	--

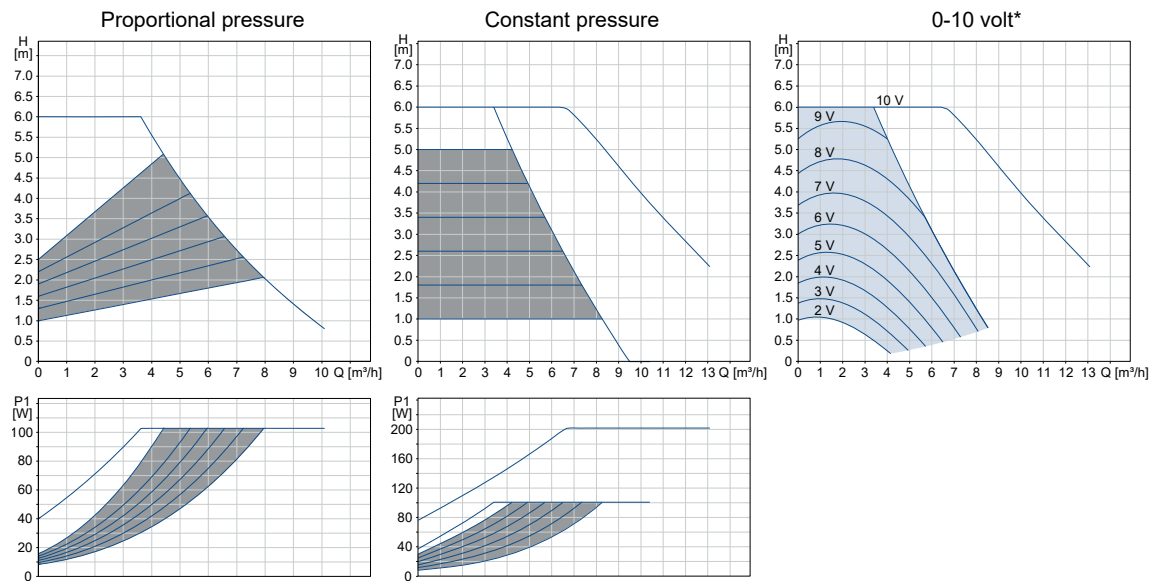
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.



Pump type	Dimensions [mm]											[inch]		
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	G
MAGNA3 32-60 (N)	180	158	190	58	111	69	90	113	54	185	239	71	32	2

■ MAGNA3 D 32-60

1 x 230 V, 50/60 Hz



TM079356

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

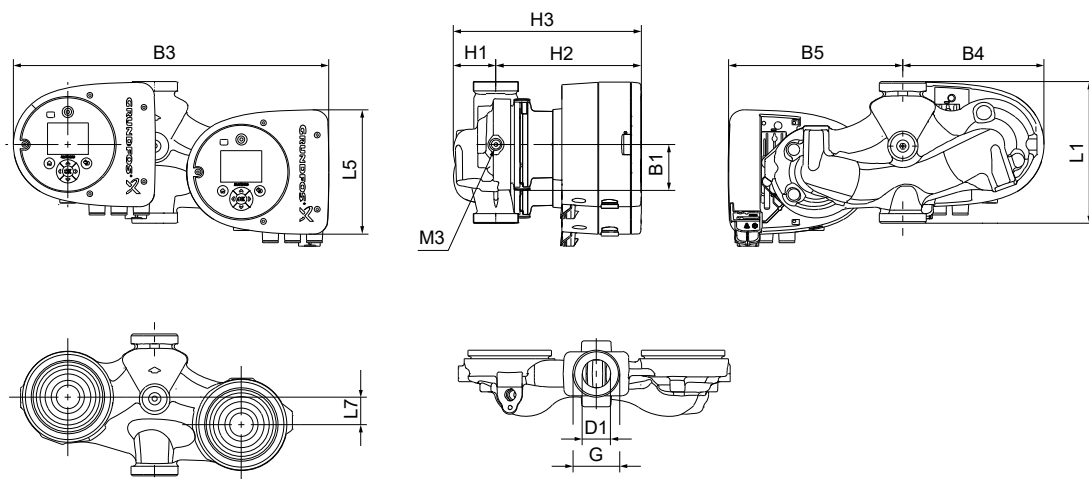
Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	101	0.91

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
13.2	14.0	0.04

* External setpoint influence shown with a set point of H_{max}

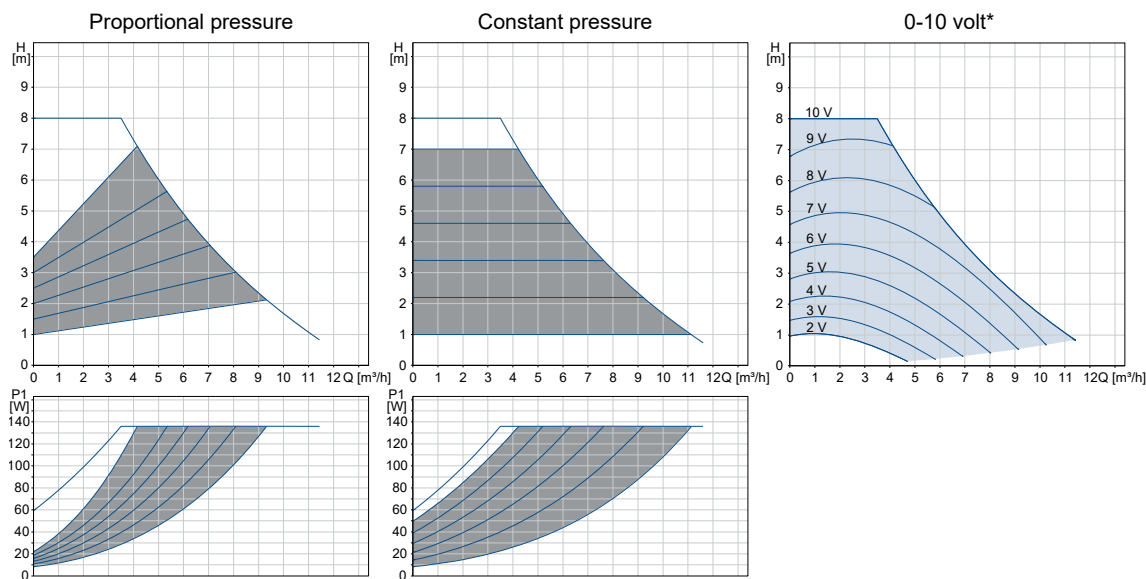
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.



TM086796

Pump type	Dimensions [mm]											[inch]	
	L1	L5	L7	B1	B3	B4	B5	H1	H2	H3	D1	G	M3
MAGNA3 D 32-60	180	158	35	58	400	179	221	54	185	239	32	2	1/4

■ MAGNA3 32-80 (N)
1 x 230 V, 50/60 Hz



TM079357

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

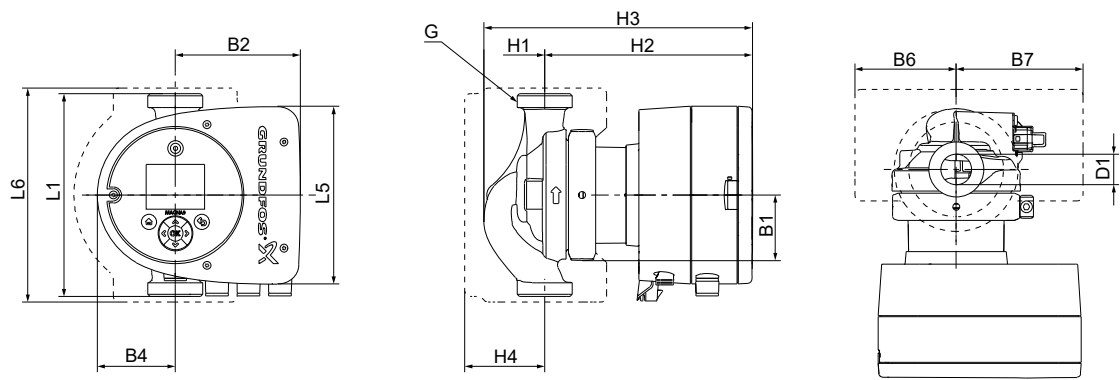
Speed	P1 [W]	I _l [A]
Min.	9	0.09
Max.	136	1.19

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
4.8	5.3	0.01

	* External setpoint influence shown with a set point of H _{max}
--	--

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.

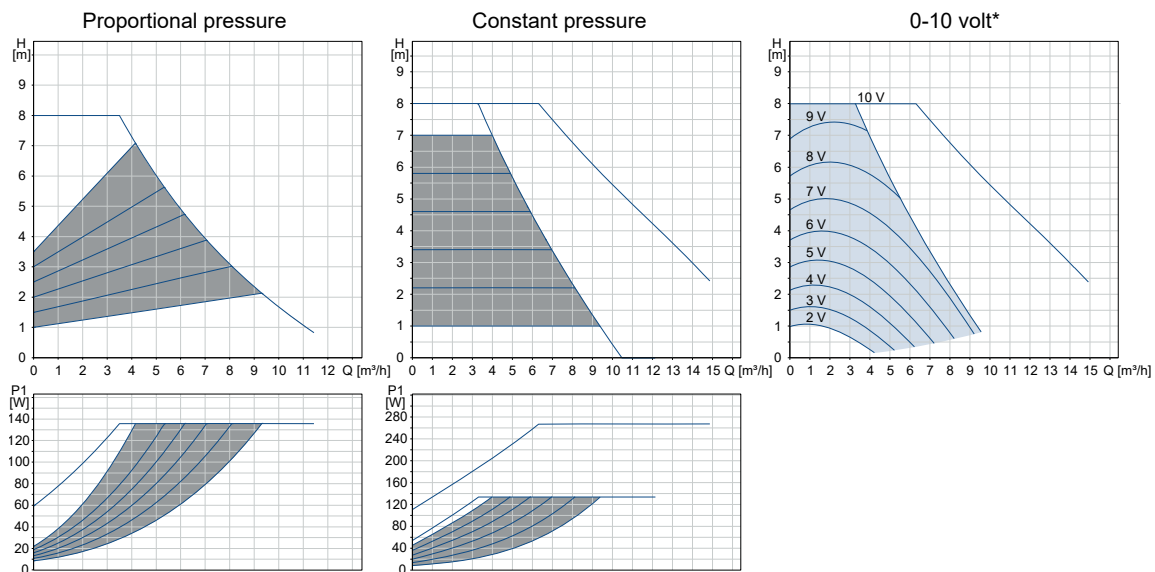


TM086794

Pump type	Dimensions [mm]												[inch]	
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	G
MAGNA3 32-80 (N)	180	158	190	58	111	69	90	113	54	185	239	71	32	2

■ MAGNA3 D 32-80

1 x 230 V, 50/60 Hz



TM079358

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

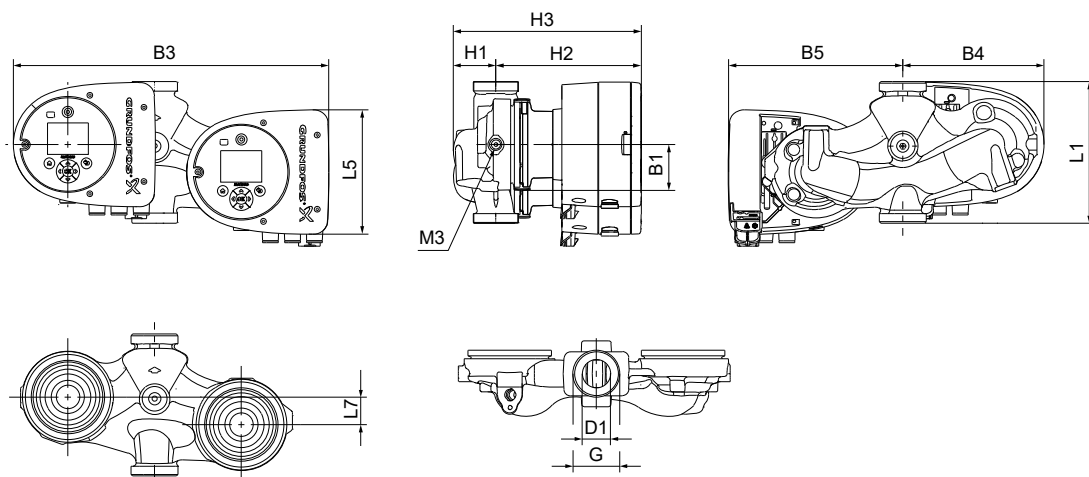
Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	134	1.19

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
13.2	14.0	0.04

* External setpoint influence shown with a set point of H_{max}

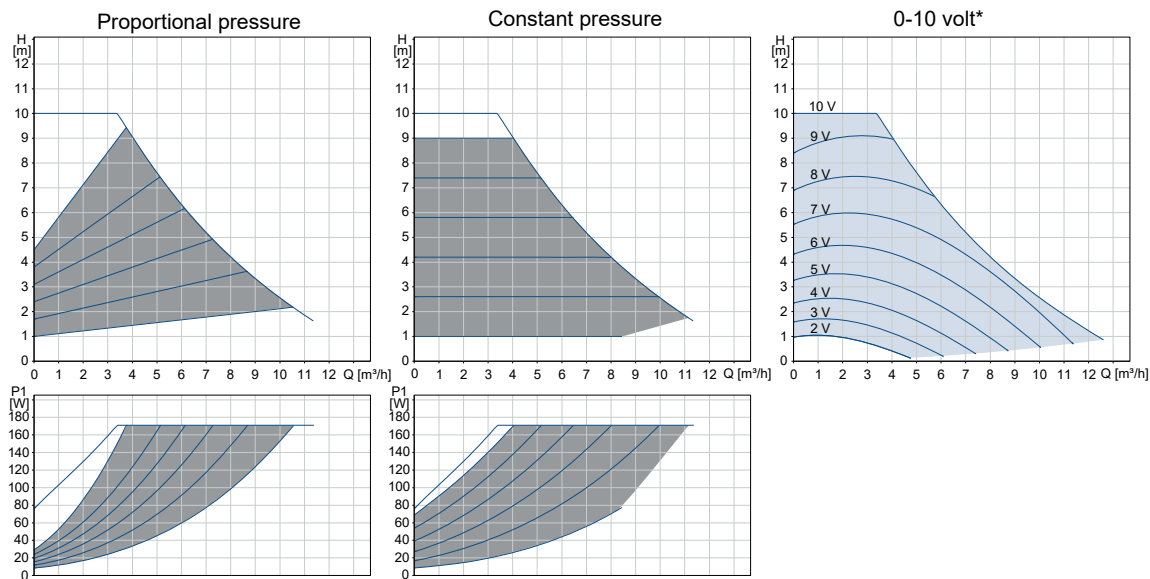
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.



TM086796

Pump type	Dimensions [mm]											[inch]	
	L1	L5	L7	B1	B3	B4	B5	H1	H2	H3	D1	G	M3
MAGNA3 D 32-80	180	158	35	58	400	179	221	54	185	239	32	2	1/4

■ MAGNA3 32-100 (N)
1 x 230 V, 50/60 Hz



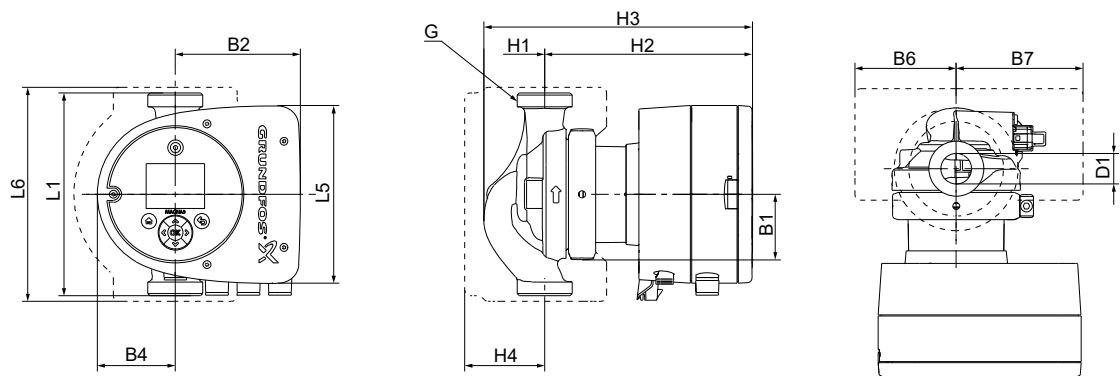
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	171	1.47

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
4.8	5.3	0.01

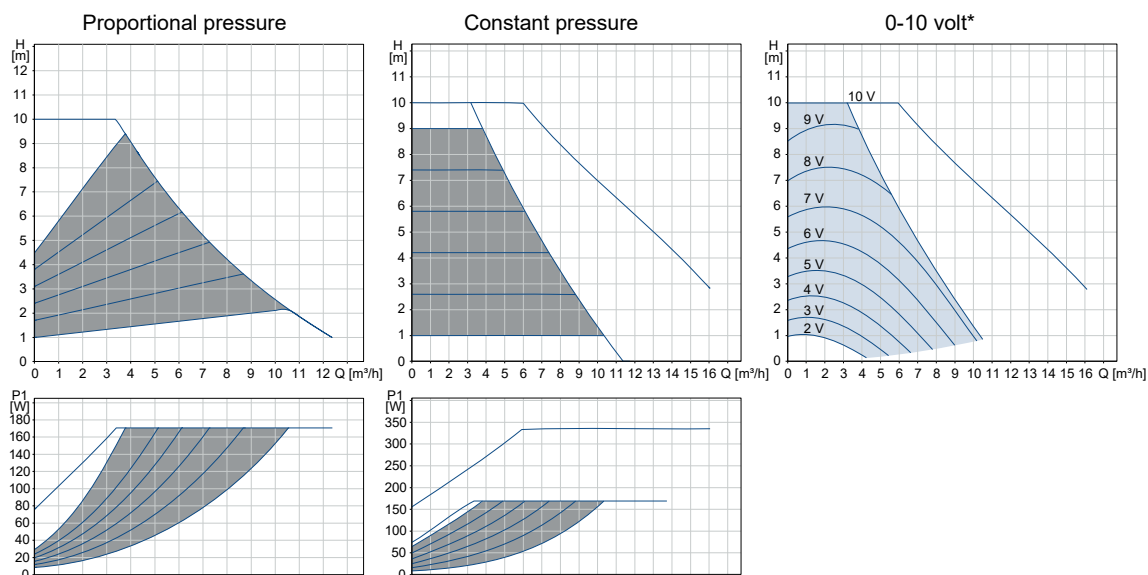
* External setpoint influence shown with a set point of H _{max}	
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.



Pump type	Dimensions [mm]											[inch]		
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	G
MAGNA 32-100 (N)	180	158	190	58	111	69	90	113	54	185	239	71	32	2

MAGNA3 D 32-100

1 x 230 V, 50/60 Hz



TM079360

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

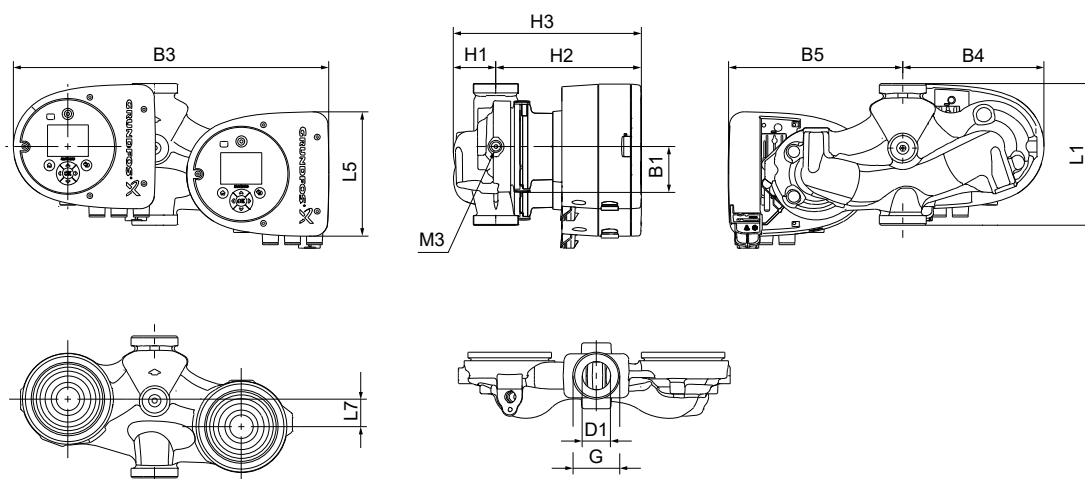
Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	169	1.47

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
13.2	14.0	0.04

* External setpoint influence shown with a set point of H_{max}

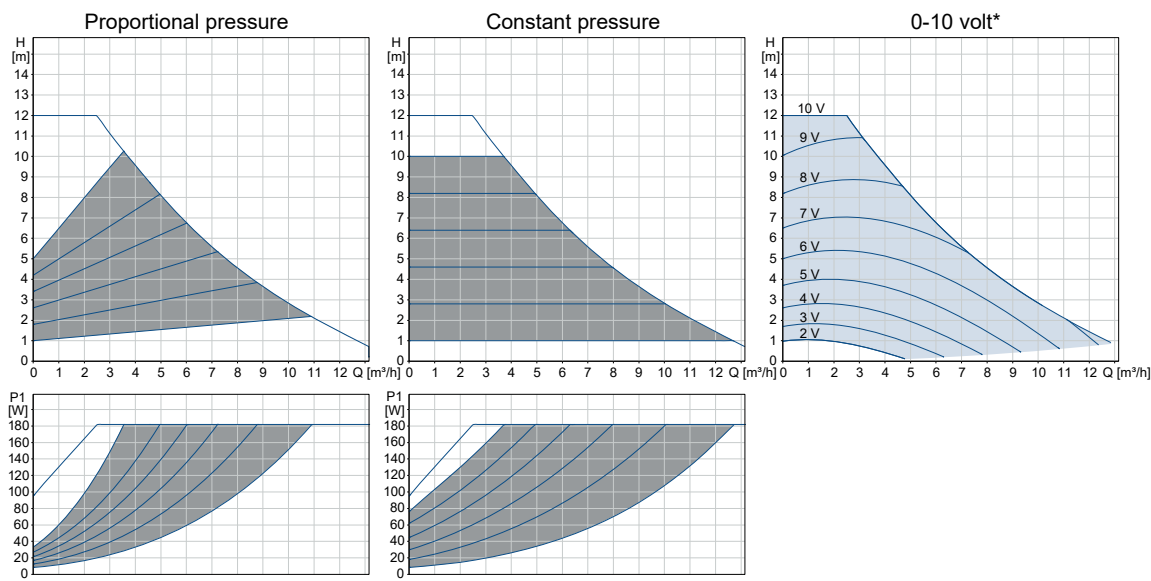
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.



TM086796

Pump type	Dimensions [mm]											[inch]	
	L1	L5	L7	B1	B3	B4	B5	H1	H2	H3	D1	G	M3
MAGNA3 D 32-100	180	158	35	58	400	179	221	54	185	239	32	2	1/4

■ MAGNA3 32-120 (N)
1 x 230 V, 50/60 Hz



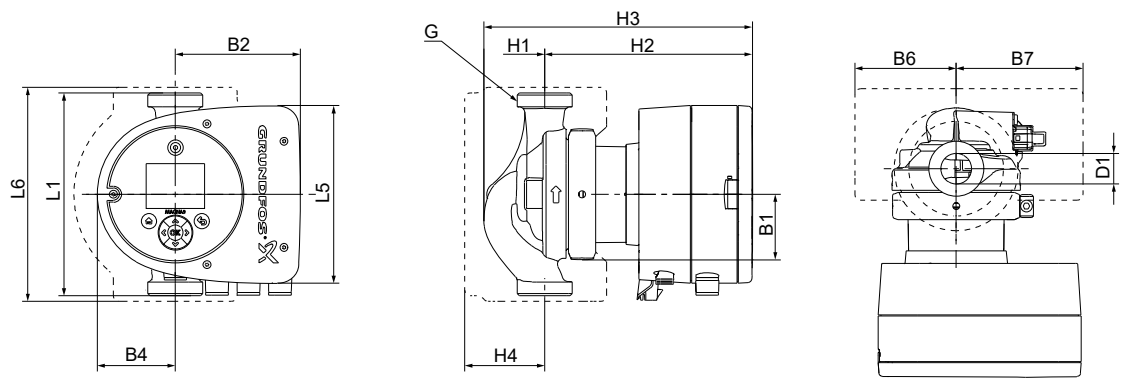
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	182	1.56

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
5.02	5.99	0.01

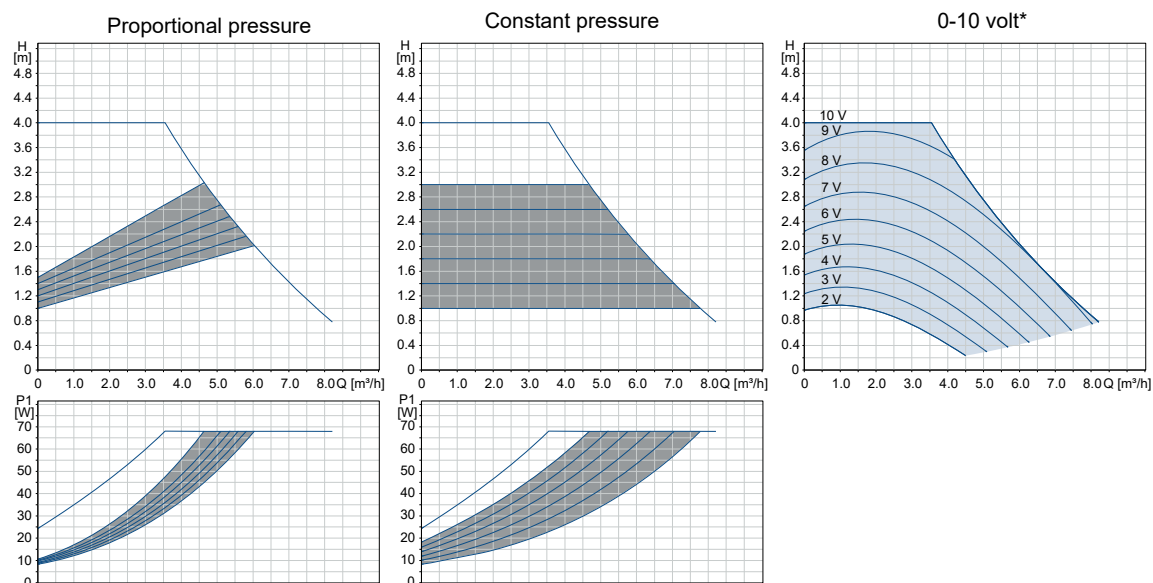
* External setpoint influence shown with a set point of H _{max}	
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.



Pump type	Dimensions [mm]											[inch]		
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	G
MAGNA3 32-120 (N)	180	158	190	58	111	69	90	113	54	185	239	71	32	2

MAGNA3 32-40 F (N)

1 x 230 V, 50/60 Hz



TM079353

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

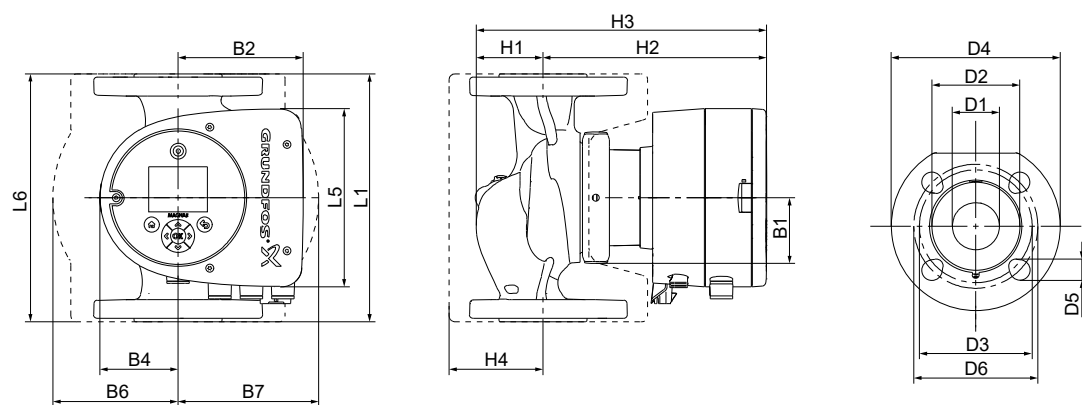
Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	68	0.61

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
7.8	8.3	0.02

* External setpoint influence shown with a set point of H_{max}

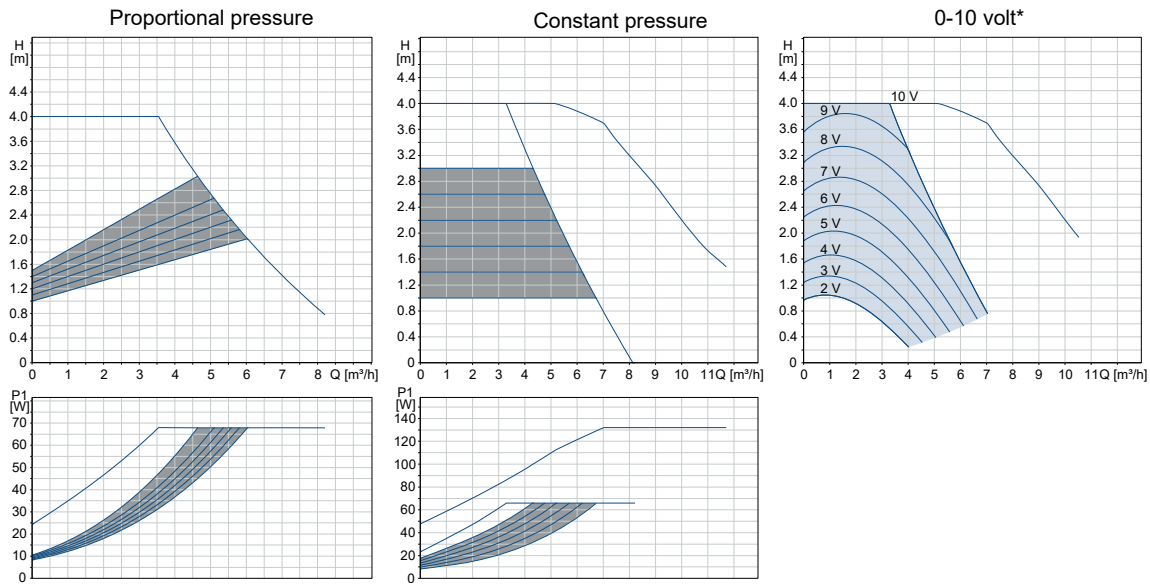
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.



TM086799

Pump type	Dimensions [mm]															
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4
MAGNA3 32-40 F (N)	220	158	220	58	111	69	100	110	65	185	250	82	32	76	90/100	140

■ MAGNA3 D 32-40 F
1 x 230 V, 50/60 Hz



TM079354

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

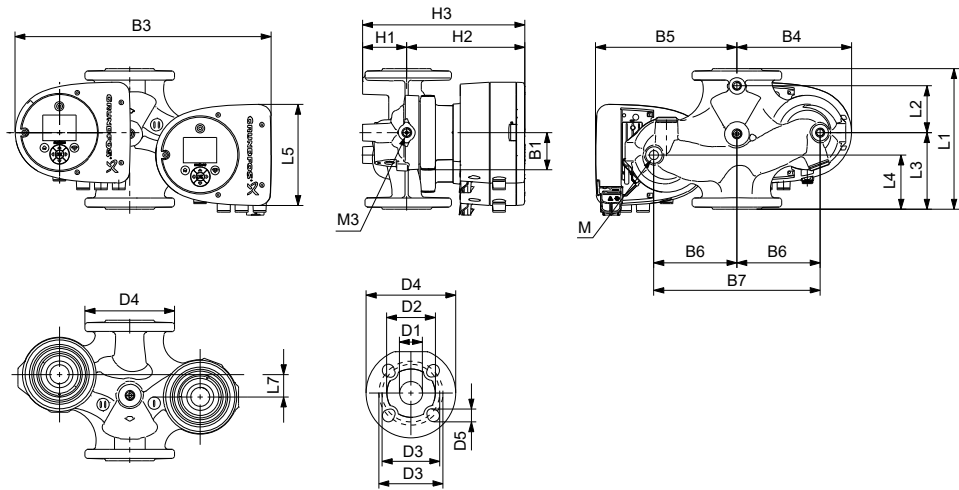
Speed	P1 [W]	I _l [A]
Min.	9	0.09
Max.	66	0.61

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
15.6	16.3	0.04

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.19.



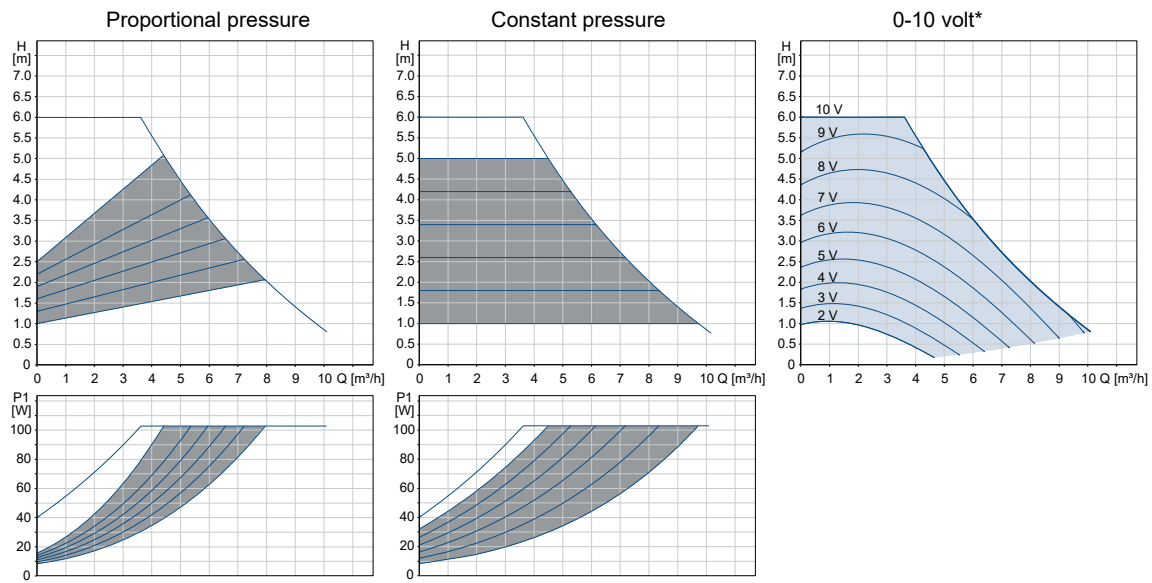
TM1040017

Pump type	Dimensions [mm]																			
	L1	L2	L3	L4	L5	L7	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 32-40 F	220	73	120	85	158	35	58	400	179	221	130	260	69	185	254	32	76	90/100	140	14/19

M12 Rp 1/4

MAGNA3 32-60 F (N)

1 x 230 V, 50/60 Hz



TM079355

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

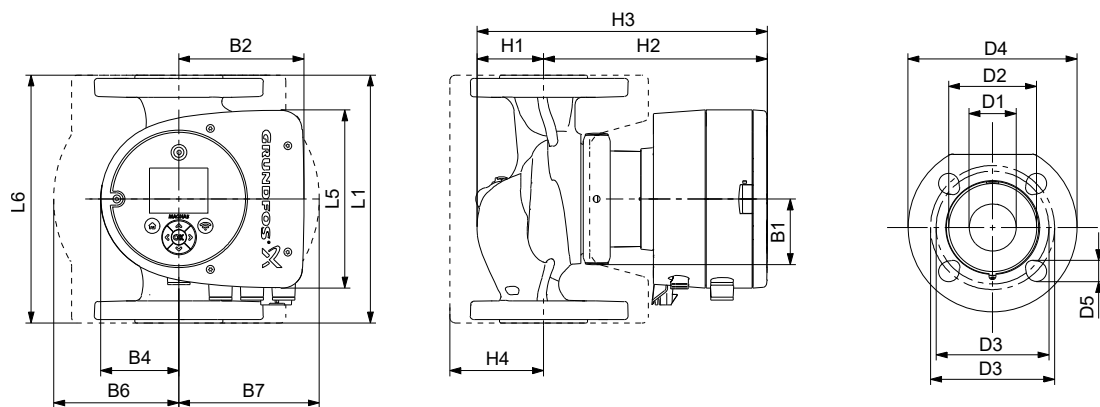
Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	103	0.91

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
7.8	8.3	0.02

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.

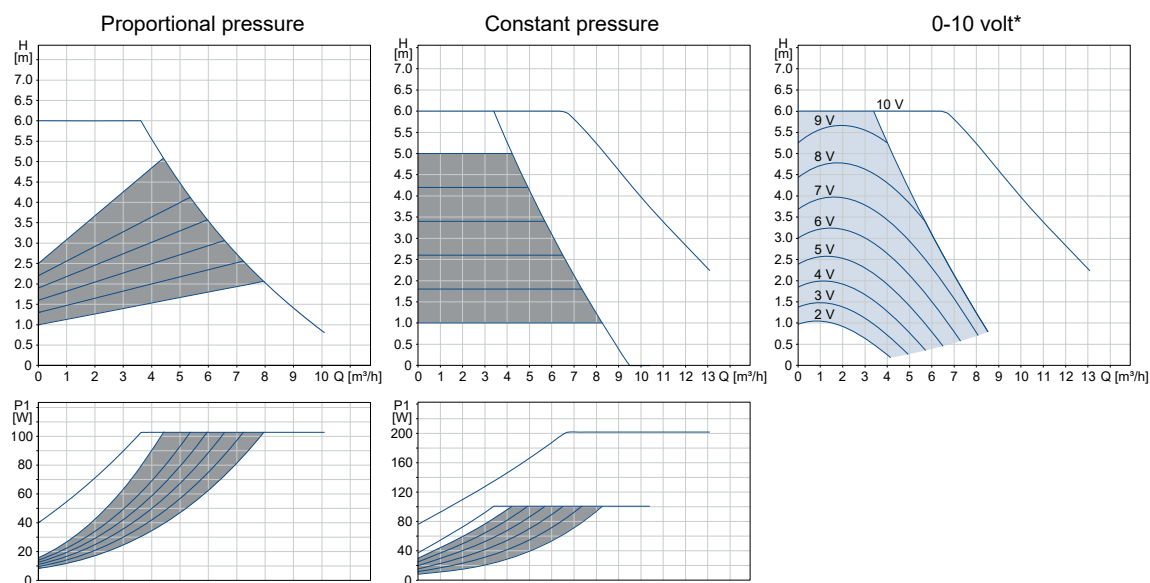


TM1040016

Pump type	Dimensions [mm]																
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 32-60 F (N)	220	158	220	58	111	69	100	110	65	185	250	82	32	76	90/100	140	14/19

- **MAGNA3 D 32-60 F**

1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

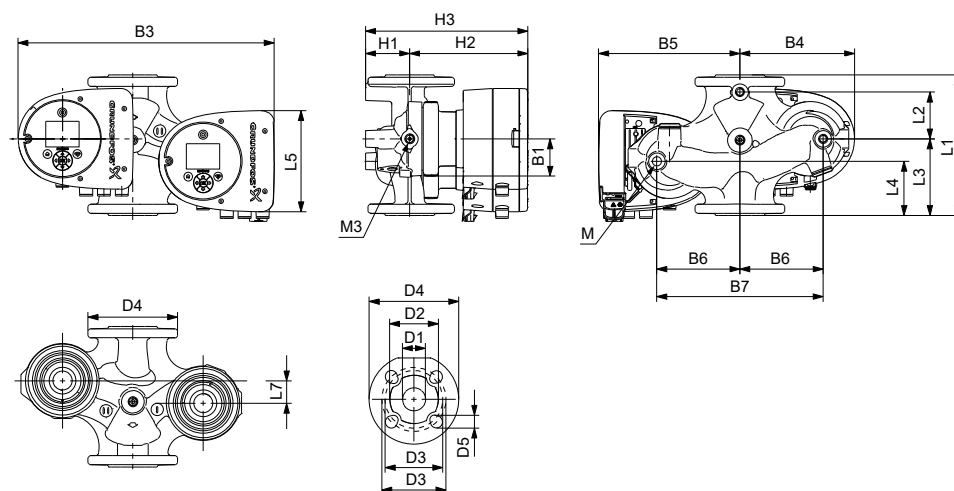
Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	101	0.91

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
15.6	16.3	0.04

* External setpoint influence shown with a set point of $H_{\max}$

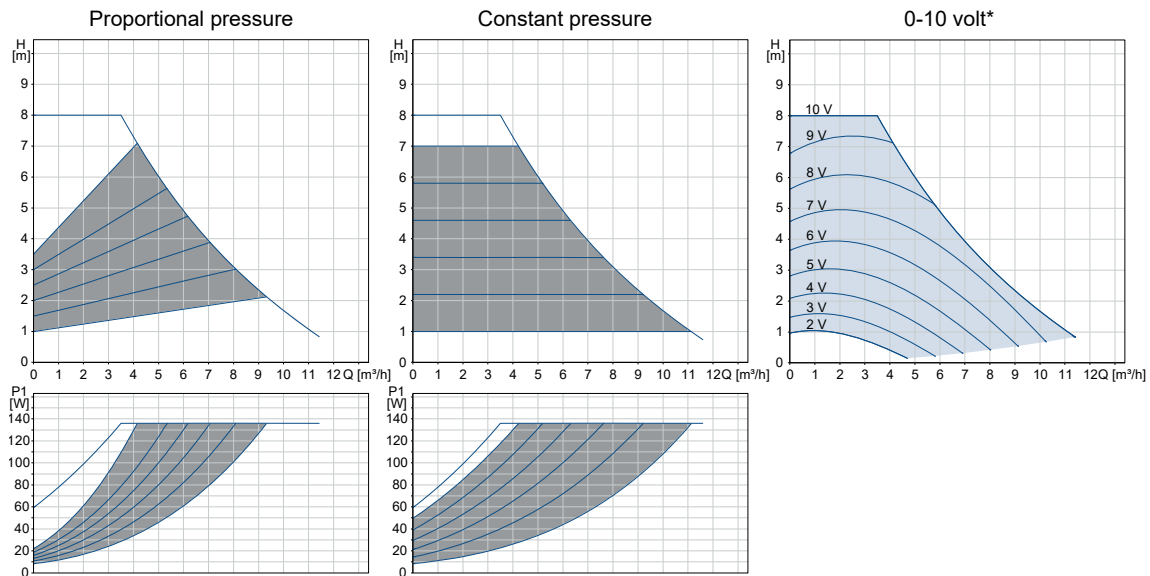
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.



Pump type	Dimensions [mm]																					
	L1	L2	L3	L4	L5	L7	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5	M	M3
MAGNA3 D 32-60 F	220	73	120	85	158	35	58	400	179	221	130	260	69	185	254	32	76	90/100	140	14/19	M12	Rp 1/4

MAGNA3 32-80 F (N)

1 x 230 V, 50/60 Hz



TM079357

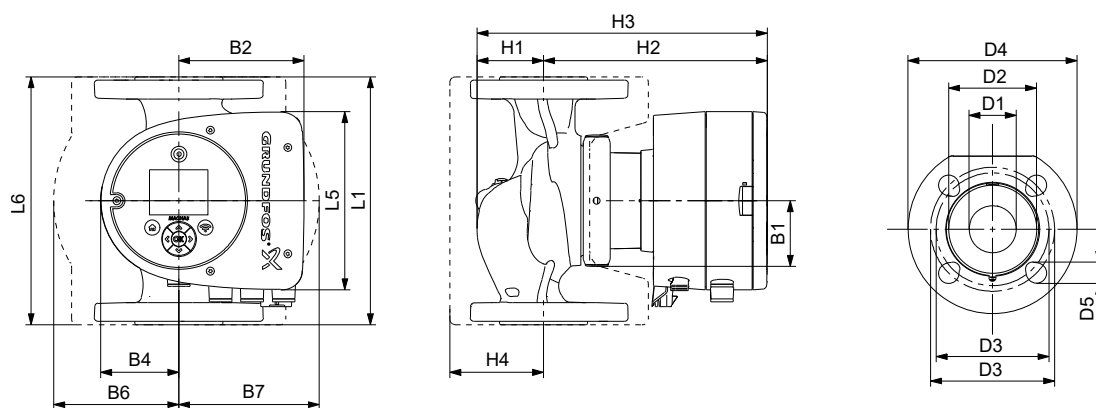
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	136	1.19

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
7.8	8.3	0.02

	* External setpoint influence shown with a set point of H _{max}
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.

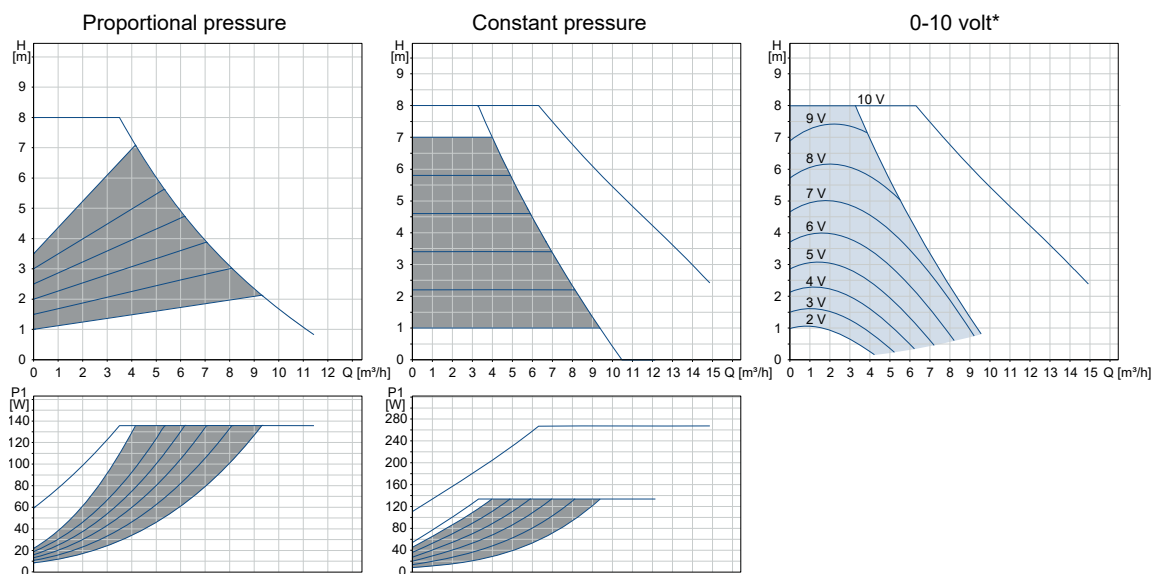


TM1040016

Pump type	Dimensions [mm]																
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 32-80 F (N)	220	158	220	58	111	69	100	110	65	185	250	82	32	76	90/100	140	14/19

- **MAGNA3 D 32-80 F**

1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	134	1.19

The pump incorporates overload protection.

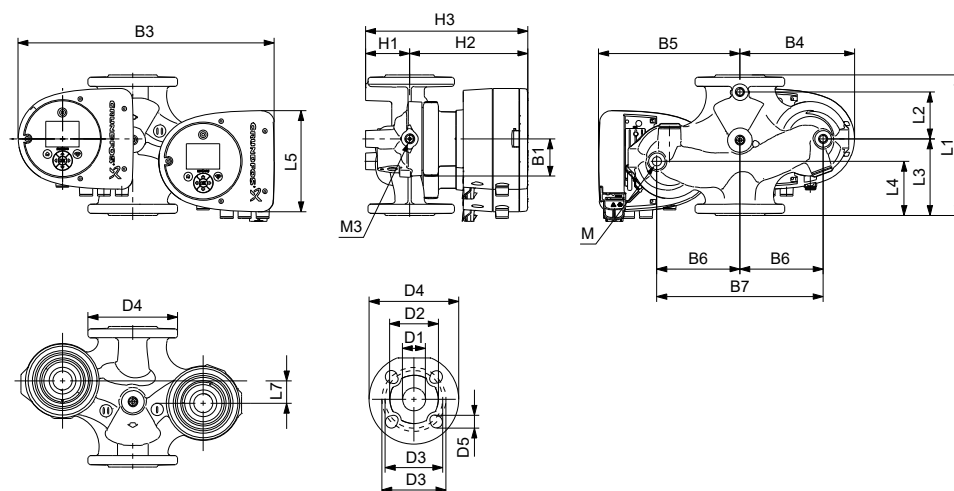
The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
15.6	16.3	0.04

* External setpoint influence shown with a set point of $H_{\max}$

* External setpoint influence shown with a setpoint of $H_{\max}$

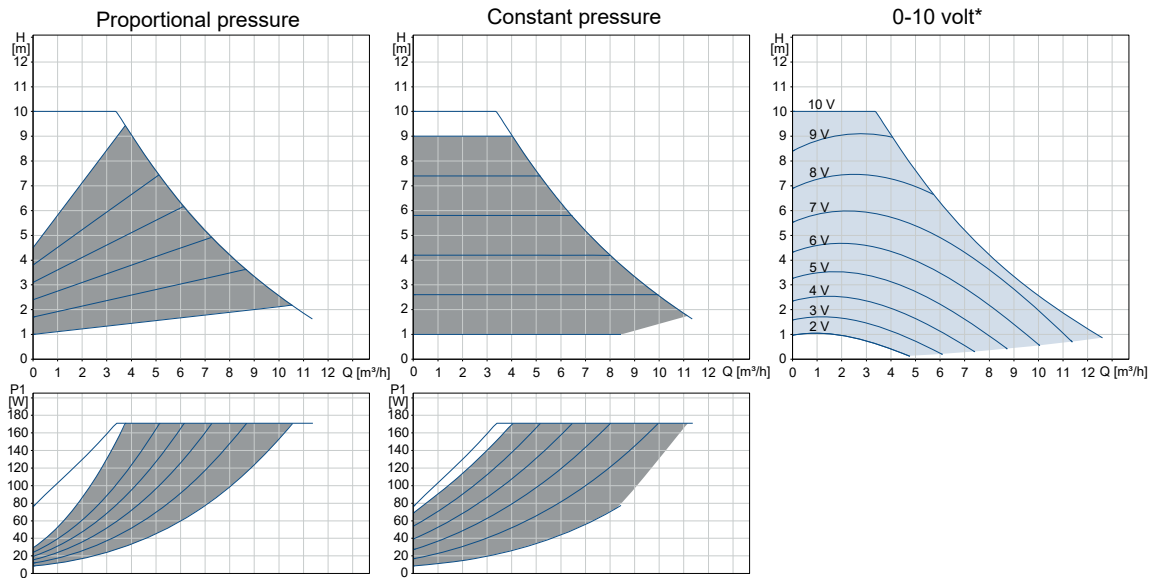
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.



Pump type	Dimensions [mm]																					
	L1	L2	L3	L4	L5	L7	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5	M	M3
MAGNA3 D 32-80 F	220	73	120	85	158	35	58	400	179	221	130	260	69	185	254	32	76	90/100	140	14/19	M12	Rp 1/4

MAGNA3 32-100 F (N)

1 x 230 V, 50/60 Hz



TM079359

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

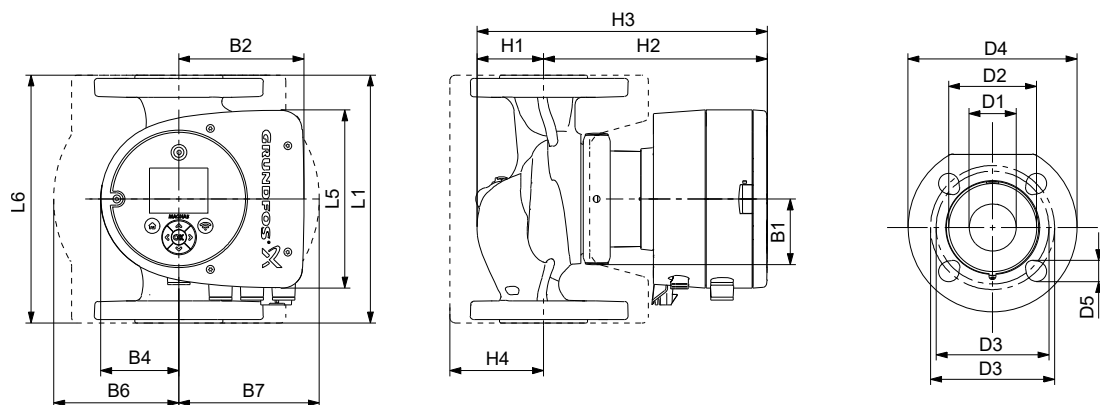
Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	171	1.47

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
7.8	8.3	0.02

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.

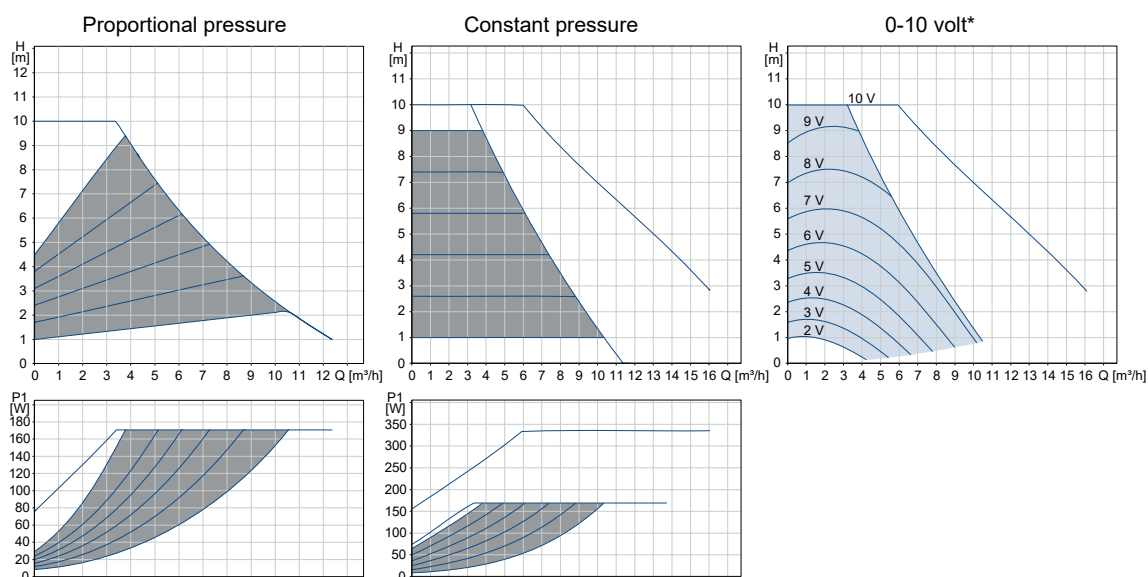


TM1040016

Pump type	Dimensions [mm]																
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 32-100 F (N)	220	158	220	58	111	69	100	110	65	185	250	82	32	76	90/100	140	14/19

- **MAGNA3 D 32-100 F**

1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

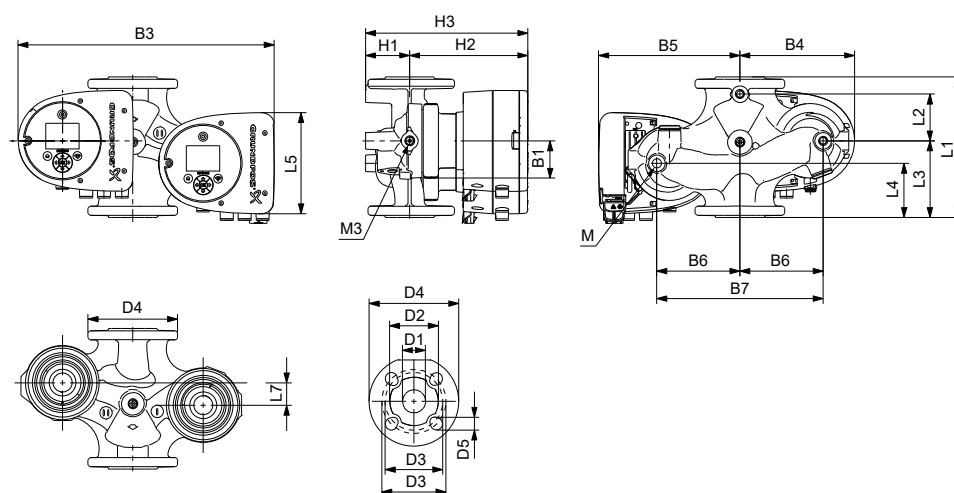
Speed	P1 [W]	I ₁ [A]
Min.	9	0.09
Max.	169	1.47

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
15.6	16.3	0.04

* External setpoint influence shown with a set point of $H_{\max}$

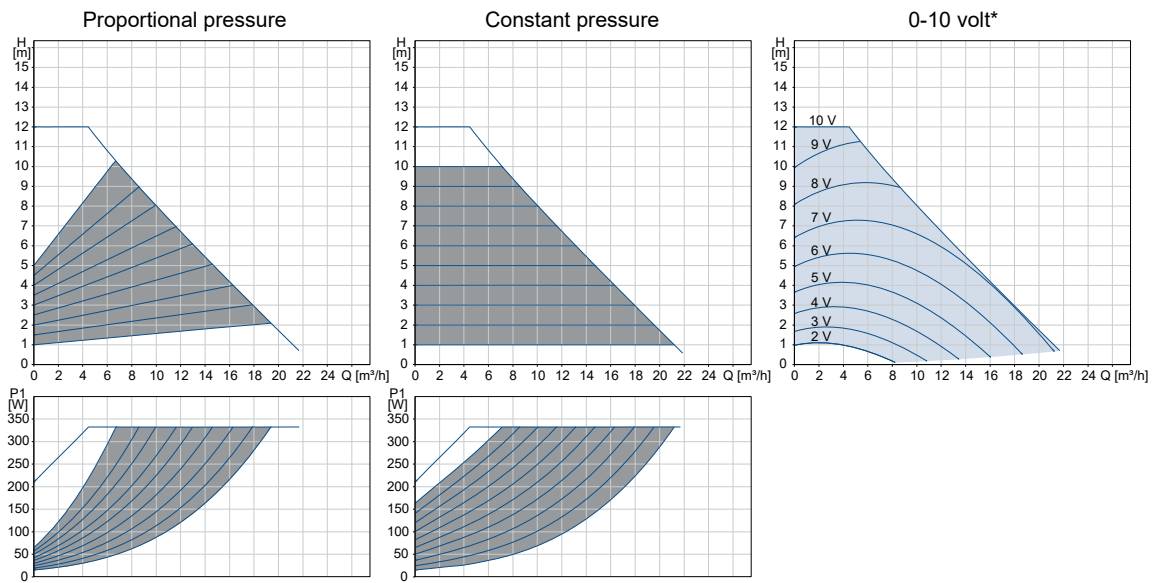
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.



Pump type	Dimensions [mm]																					
	L1	L2	L3	L4	L5	L7	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5	M	M3
MAGNA3 D 32-100 F	220	73	120	85	158	35	58	400	179	221	130	260	69	185	254	32	76	90/100	140	14/19	M12	Rp 1/4

MAGNA3 32-120 F (N)

1 x 230 V, 50/60 Hz



TM079362

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	15	0.18
Max.	345	1.55

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
15	17.4	0.04

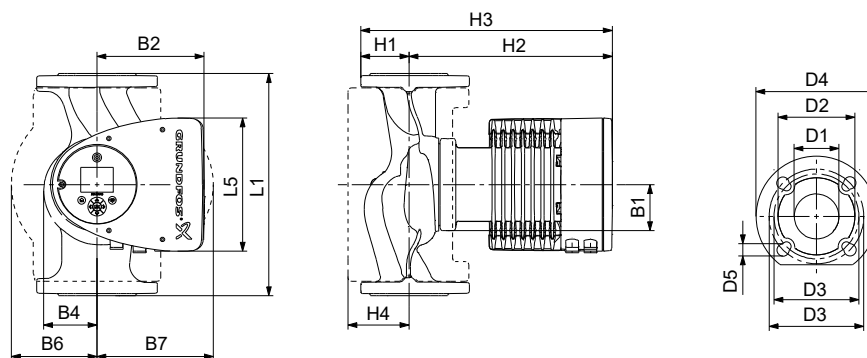
* External setpoint influence shown with a set point of H_{max}

System pressure: Max. 1.0 MPa (10 bar).
Also available as max. 1.6 MPa (16 bar).

Liquid temperature: -10 to +110 °C (TF 110).

Also available with: Stainless-steel pump housing, type N.

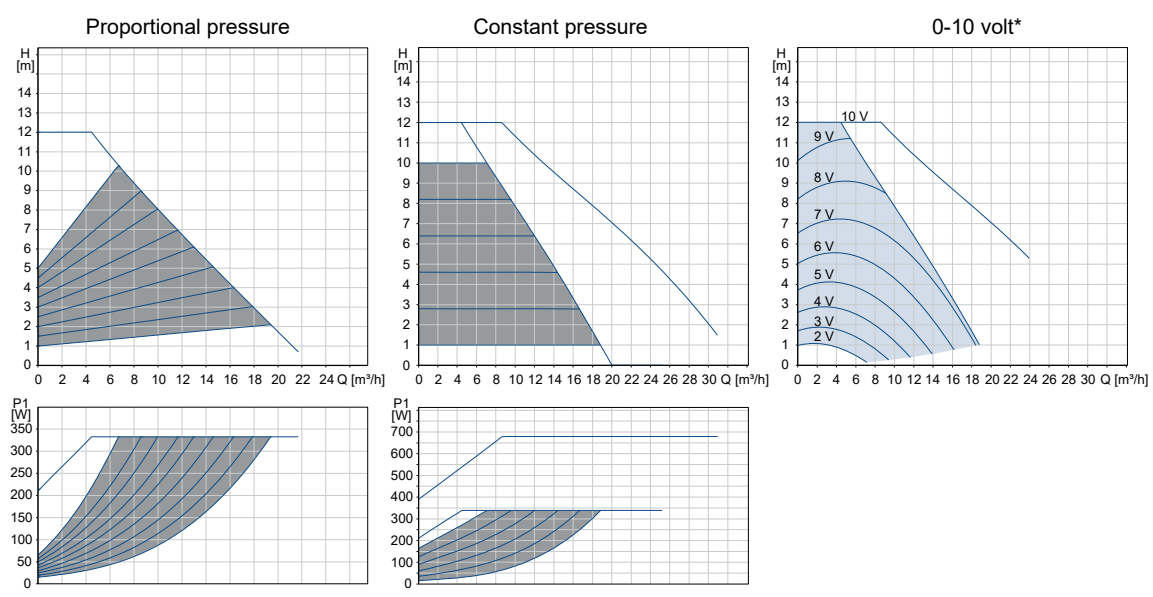
Specific EEI: 0.18.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 32-120 F (N)	220	204	84	164	73	106	116	65	301	366	86	32	76	90/100	140	14/19

■ MAGNA3 D 32-120 F
1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

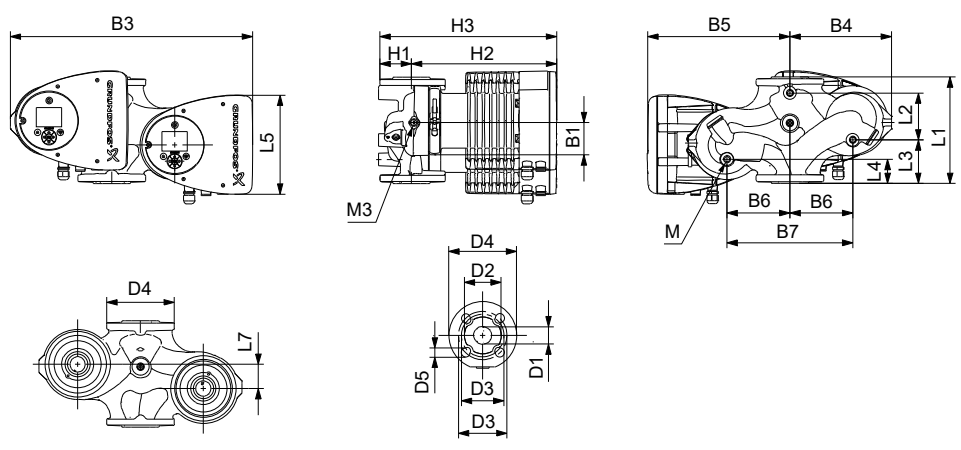
Speed	P1 [W]	I ₁ [A]
Min.	16	0.18
Max.	350	1.53

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
30	30.3	0.04

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.19.

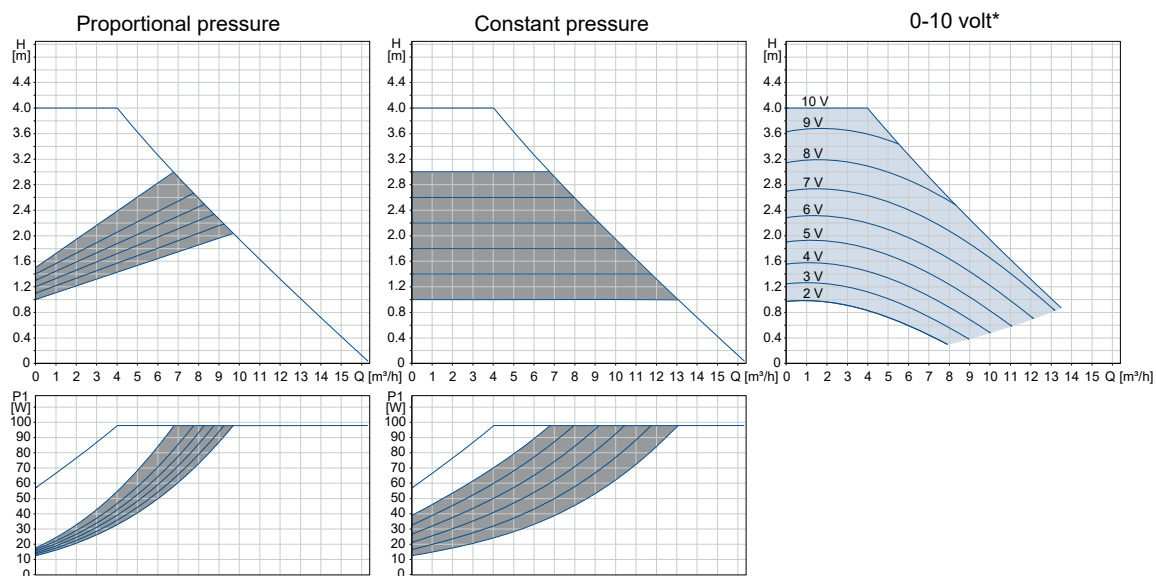


Pump type	Dimensions [mm]																			
	L1	L2	L3	L4	L5	L7	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 32-120 F	220	97	90	50	204	50	84	502	210	294	130	260	68	300	368	32	76	90/100	140	14/19

M M3 Rp 1/4

MAGNA3 40-40 F (N)

1 x 230 V, 50/60 Hz



TM079364

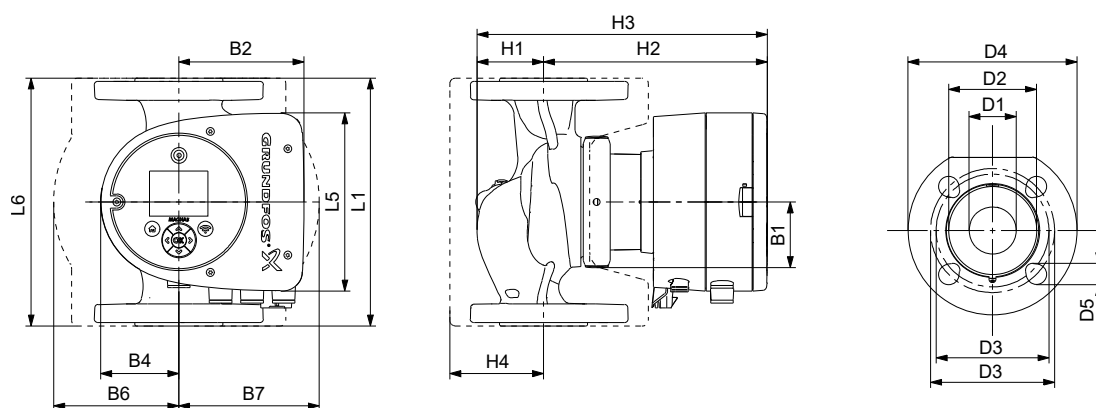
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	12	0.11
Max.	105	0.87

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
9.8	10.4	0.02

	* External setpoint influence shown with a set point of H _{max}
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.

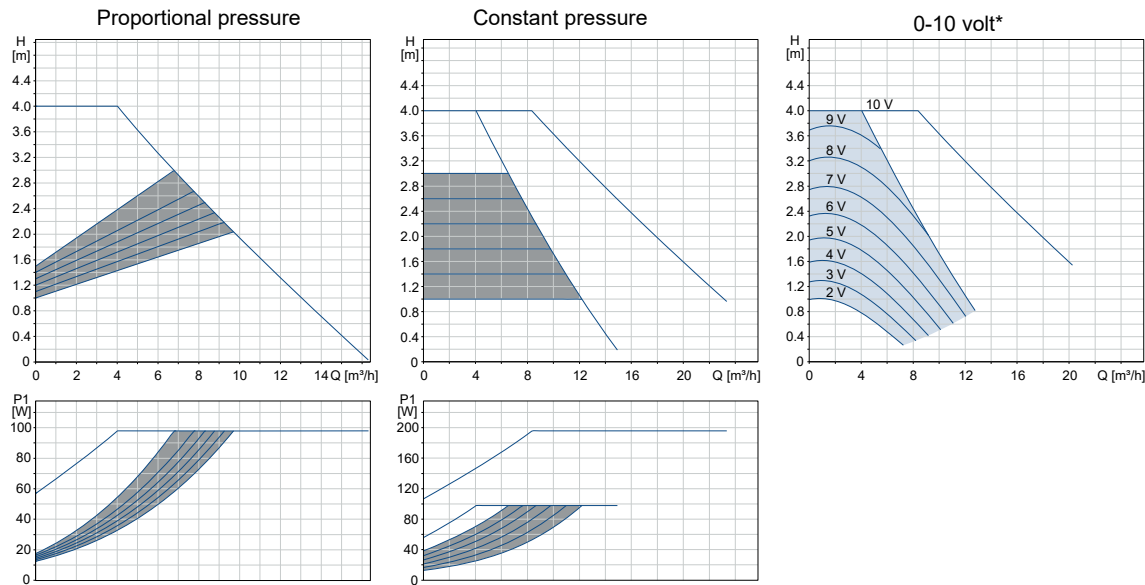


TM1040016

Pump type	Dimensions [mm]																
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 40-40 F (N)	220	158	220	58	111	69	105	105	65	199	264	83	40	84	100/110	150	14/19

■ MAGNA3 D 40-40 F

1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

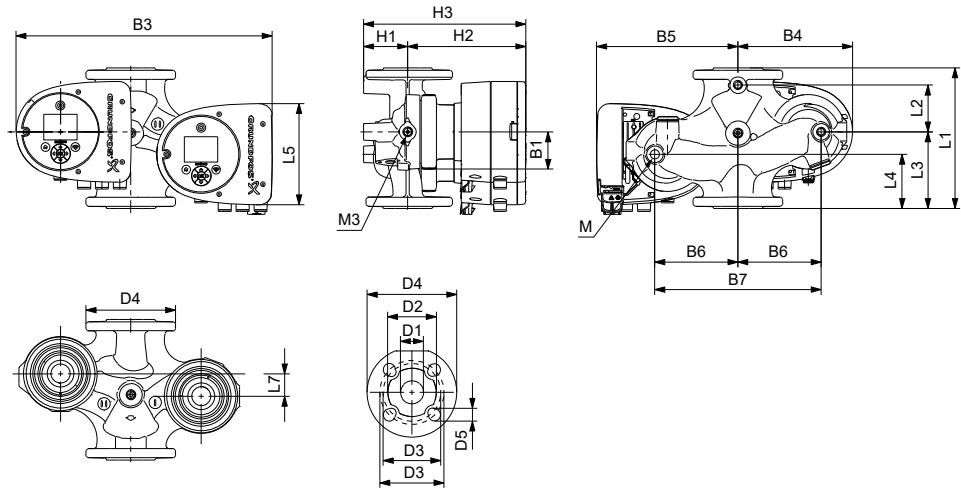
Speed	P1 [W]	I ₁ [A]
Min.	12	0.11
Max.	105	0.87

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
19.9	20.6	0.04

* External setpoint influence shown with a set point of H_{max}

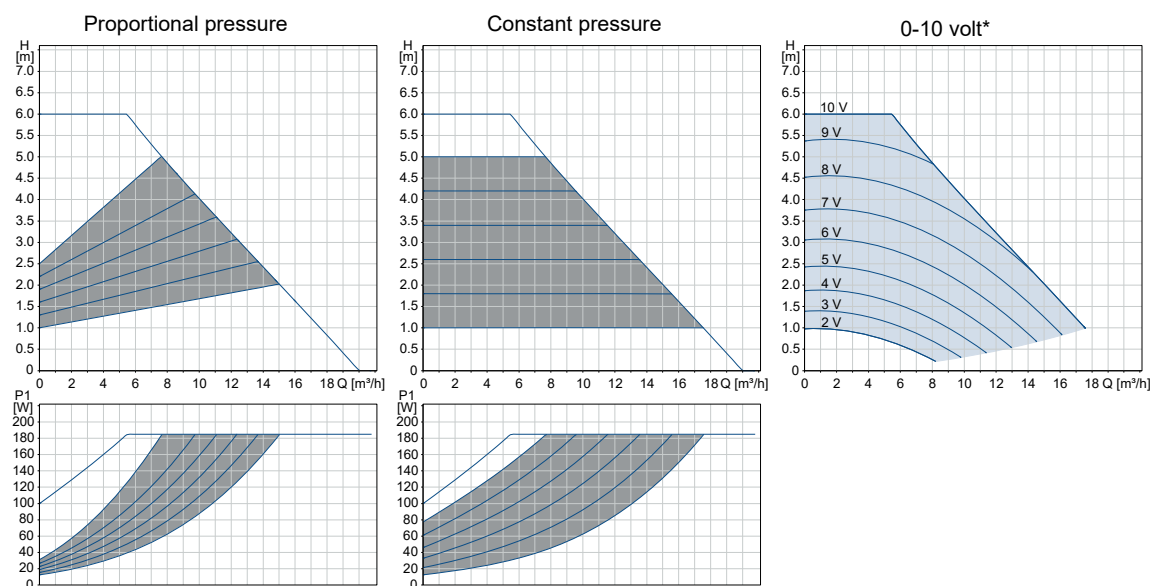
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.19.



Pump type	Dimensions [mm]																				Rp	
	L1	L2	L3	L4	L5	L7	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5	M	M3
MAGNA3 D 40-40 F	220	53	140	60	158	15	58	452	211	241	130	260	76	199	275	40	84	100/110	150	14/19	12	1/4

MAGNA3 40-60 F (N)

1 x 230 V, 50/60 Hz



TM079366

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	12	0.11
Max.	194	1.58

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
9.9	10.4	0.02

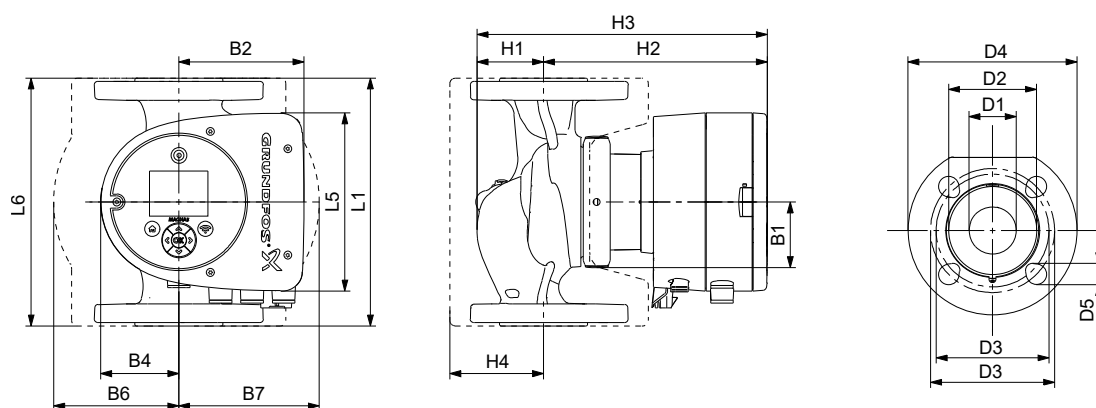
* External setpoint influence shown with a set point of H_{max}

System pressure: Max. 1.0 MPa (10 bar).
Also available as max. 1.6 MPa (16 bar).

Liquid temperature: -10 to +110 °C (TF 110).

Also available with: Stainless-steel pump housing, type N.

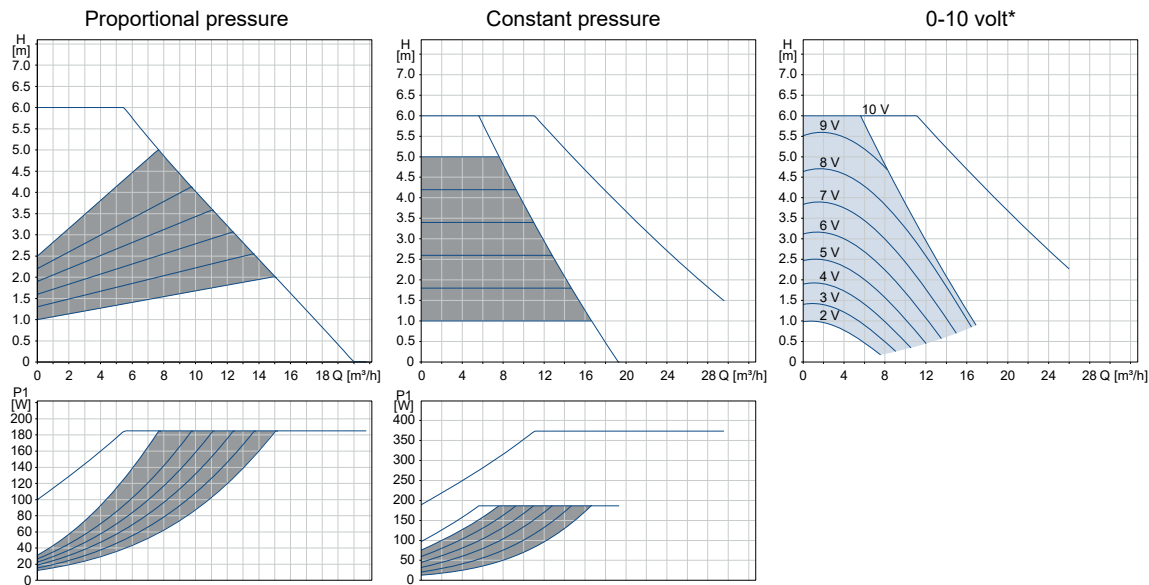
Specific EEI: 0.19.



TM1040016

Pump type	Dimensions [mm]																
	L1	L5	L6	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 40-60 F (N)	220	158	220	58	111	69	105	105	65	199	264	83	40	84	100/110	150	14/19

■ MAGNA3 D 40-60 F
1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

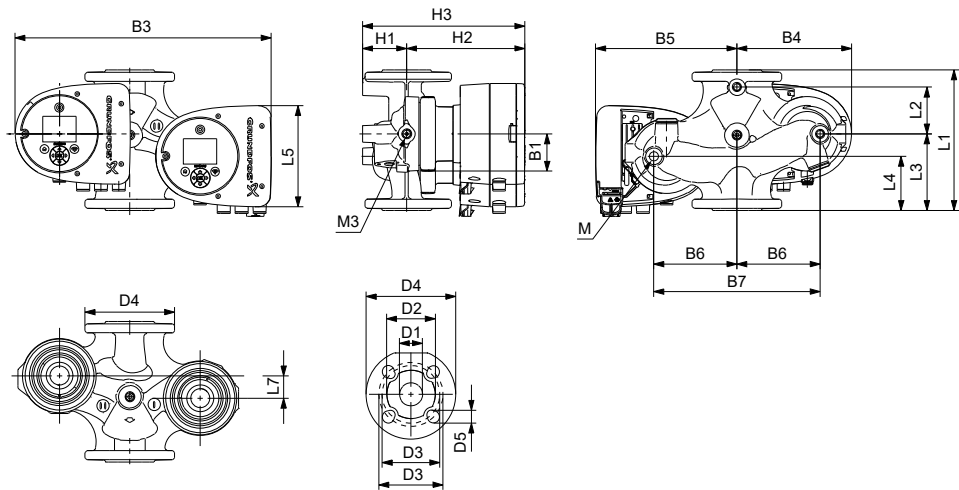
Speed	P1 [W]	I _l [A]
Min.	12	0.11
Max.	196	1.55

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
19.9	20.6	0.04

* External setpoint influence shown with a set point of H_{max}

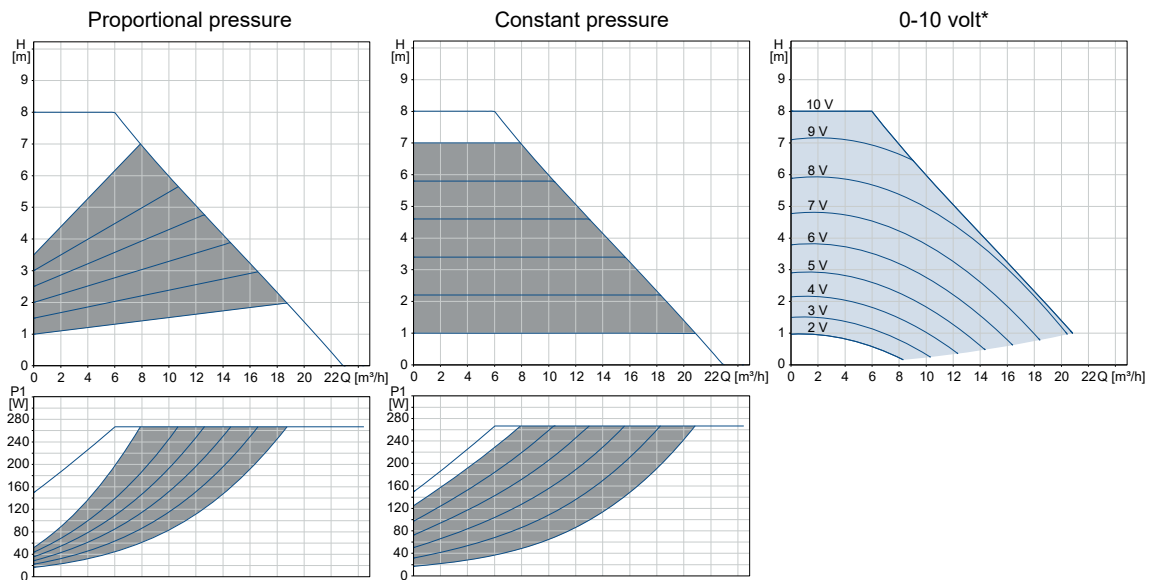
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.19.



Pump type	Dimensions [mm]																				Rp	
	L1	L2	L3	L4	L5	L7	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5	M	M3
MAGNA3 D 40-60 F	220	53	140	60	158	15	58	452	211	241	130	260	76	199	275	40	84	100/110	150	14/19	12	1/4

MAGNA3 40-80 F (N)

1 x 230 V, 50/60 Hz



TM079383

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	17	0.19
Max.	278	1.26

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
15.9	18.7	0.04

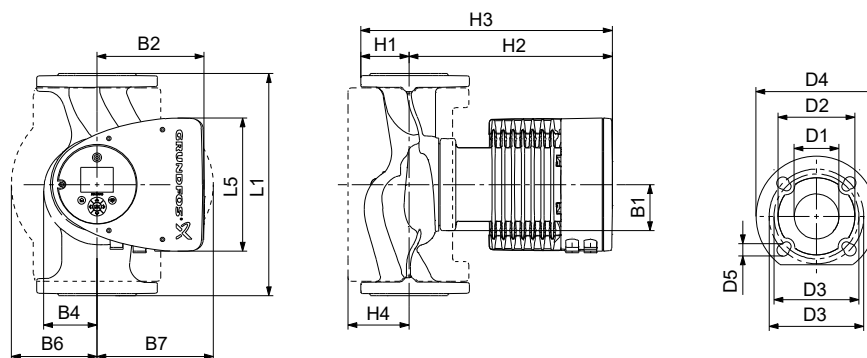
* External setpoint influence shown with a set point of H_{max}

System pressure: Max. 1.0 MPa (10 bar).
Also available as max. 1.6 MPa (16 bar).

Liquid temperature: -10 to +110 °C (TF 110).

Also available with: Stainless-steel pump housing, type N.

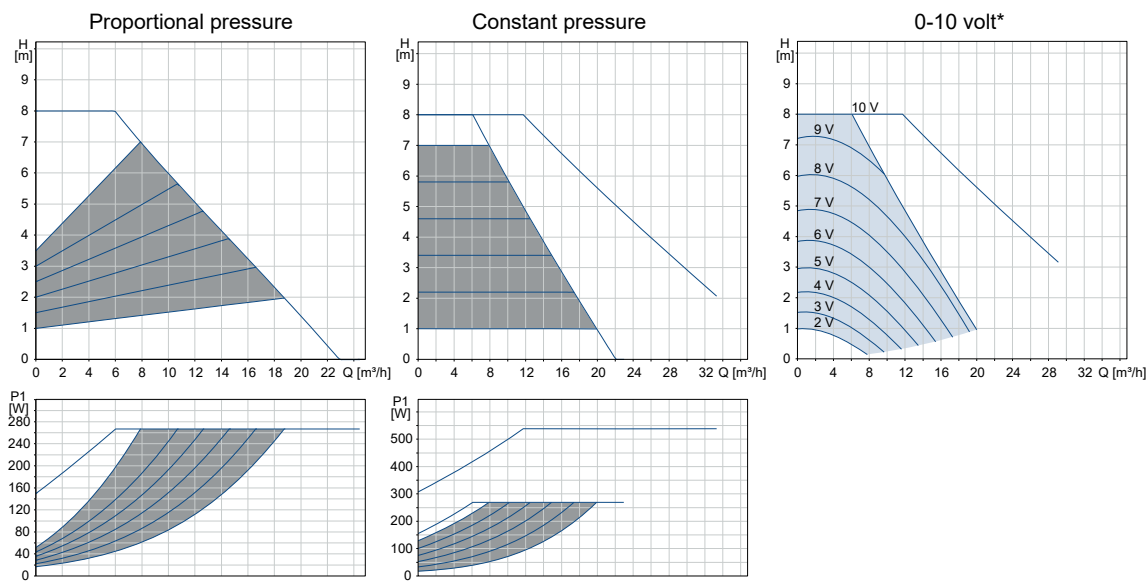
Specific EEI: 0.19.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 40-80 F (N)	220	204	84	164	73	106	128	65	304	369	83	40	84	100/110	150	14/19

■ MAGNA3 D 40-80 F
1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

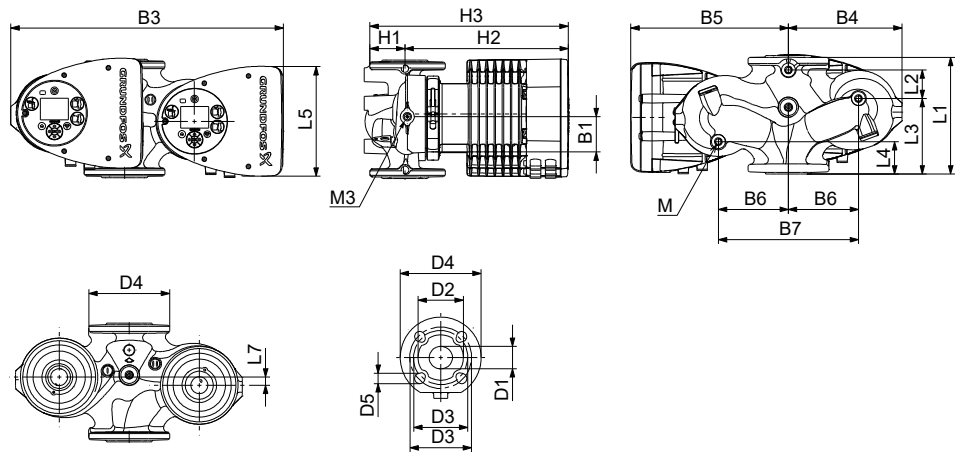
Speed	P1 [W]	I ₁ [A]
Min.	17	0.19
Max.	279	1.24

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
32.6	32.8	0.04

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.20.

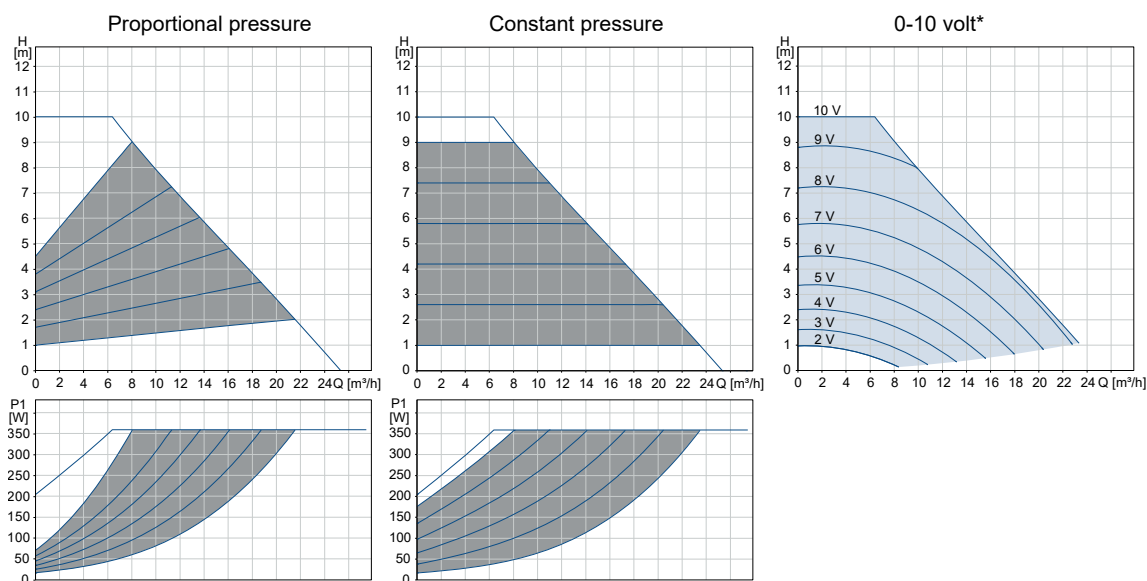


Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	L7	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4
MAGNA3 D 40-80 F	220	53	140	60	204	15	84	502	210	294	130	260	76	303	379	40	84	100/110	150

M	M3
14/19	Rp 1/4

MAGNA3 40-100 F (N)

1 x 230 V, 50/60 Hz



TM079385

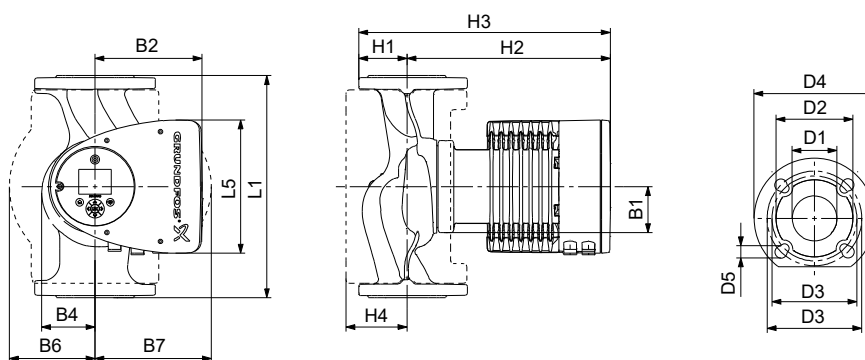
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	18	0.20
Max.	371	1.66

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
15.9	18.7	0.04

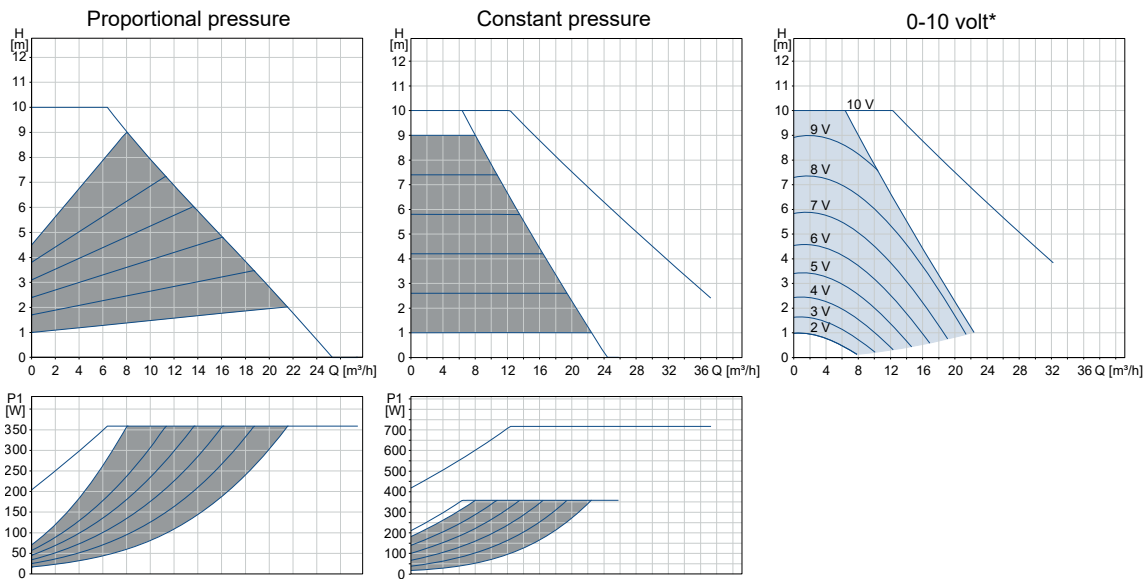
* External setpoint influence shown with a set point of H _{max}	
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 40-100 F (N)	220	204	84	164	73	106	128	65	304	369	83	40	84	100/110	150	14/19

■ MAGNA3 D 40-100 F
1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

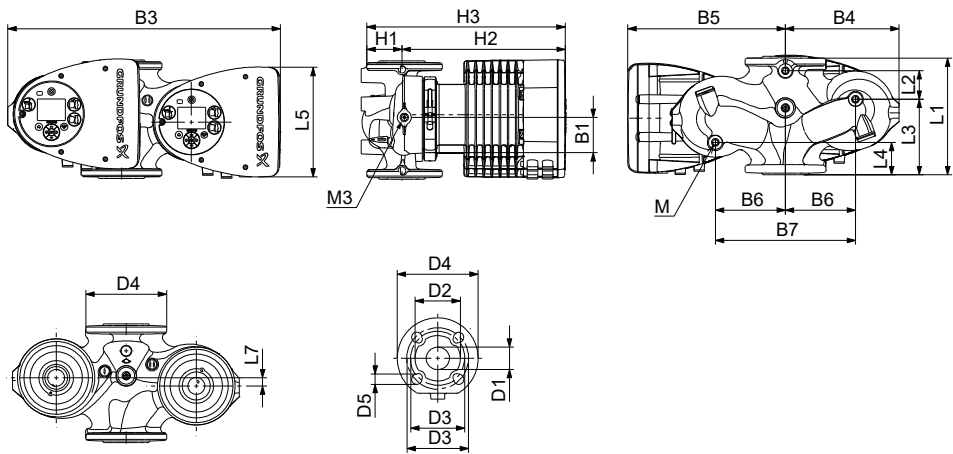
Speed	P1 [W]	I ₁ [A]
Min.	18	0.19
Max.	371	1.64

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
32.6	32.8	0.04

* External setpoint influence shown with a set point of H_{max}

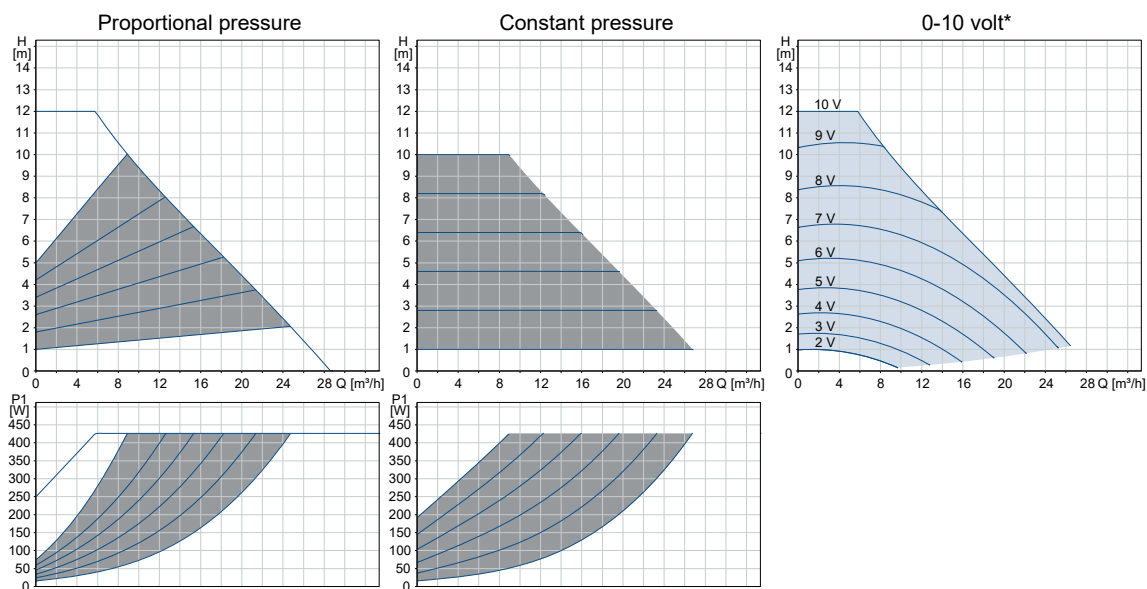
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.19.



Pump type	Dimensions [mm]																			M	M3
	L1	L2	L3	L4	L5	L7	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4		
MAGNA3 D 40-100 F	220	53	140	60	204	15	84	502	210	294	130	260	76	303	379	40	84	100/110	150	14/19	M12 Rp 1/4

MAGNA3 40-120 F (N)

1 x 230 V**, 50/60 Hz



TM079387

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

** For Japanese models, the voltage is 200-230 V

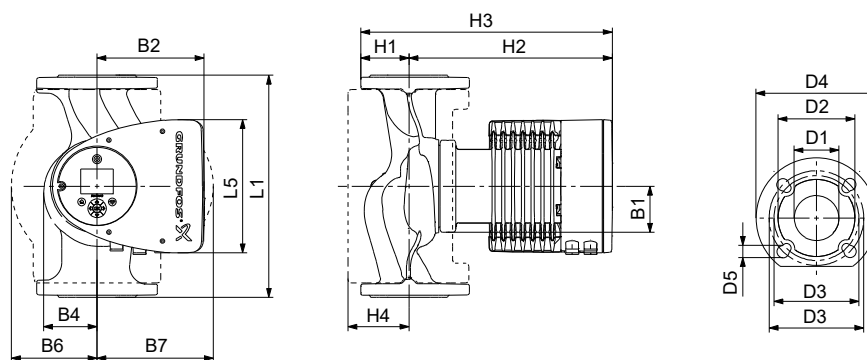
Speed	P1 [W]	I _l [A]
Min.	17	0.19
Max.	440	1.96

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
15.5	18.2	0.04

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.

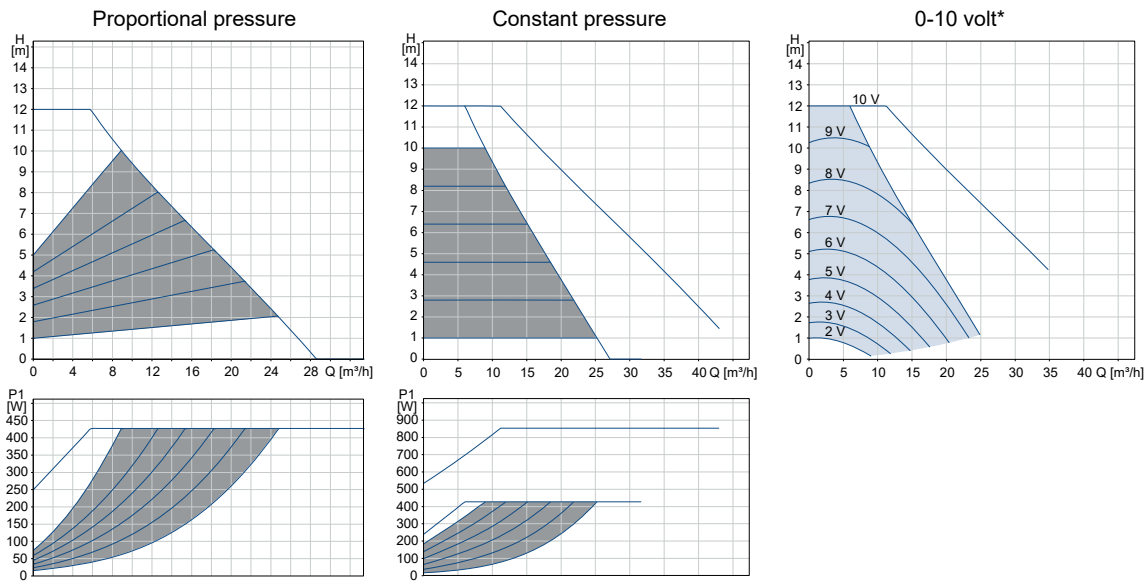


TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 40-120 F (N)	250	204	84	164	73	106	128	65	304	369	83	40	84	100/110	150	14/19

■ MAGNA3 D 40-120 F

1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

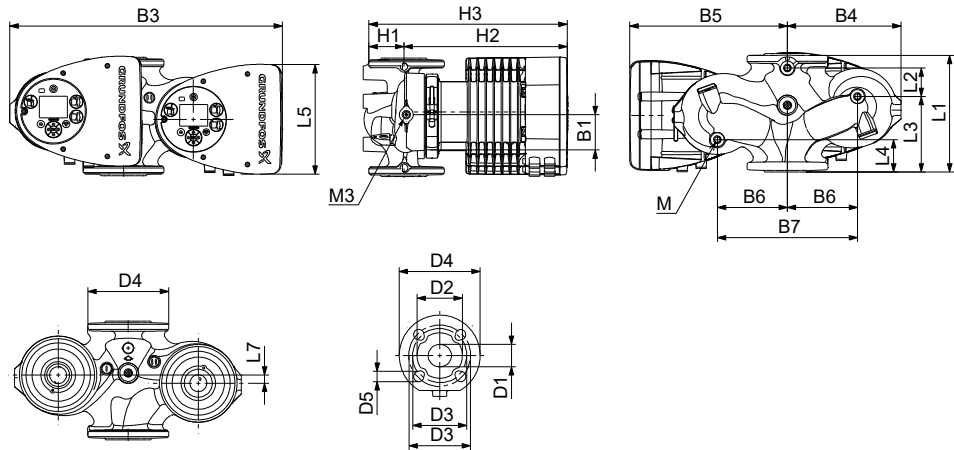
Speed	P1 [W]	I ₁ [A]
Min.	16	0.18
Max.	441	1.91

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
31.7	31.9	0.04

* External setpoint influence shown with a set point of H_{max}

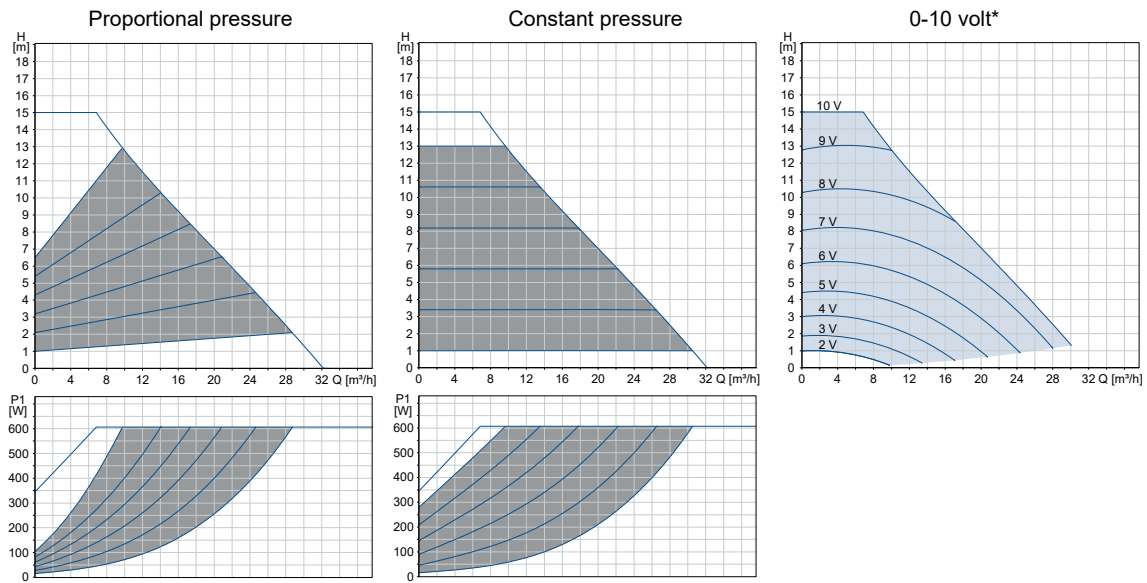
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.19.



Pump type	Dimensions [mm]																				
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5	M	M3
MAGNA3 D 40-120 F	250	58	155	75	204	84	512	220	294	130	260	69	303	372	40	84	100/110	150	14/19	M12	Rp 1/4

MAGNA3 40-150 F (N)

1 x 230 V, 50/60 Hz



TM079389

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I _l [A]
Min.	17	0.19
Max.	626	2.78

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
15.5	18.2	0.04

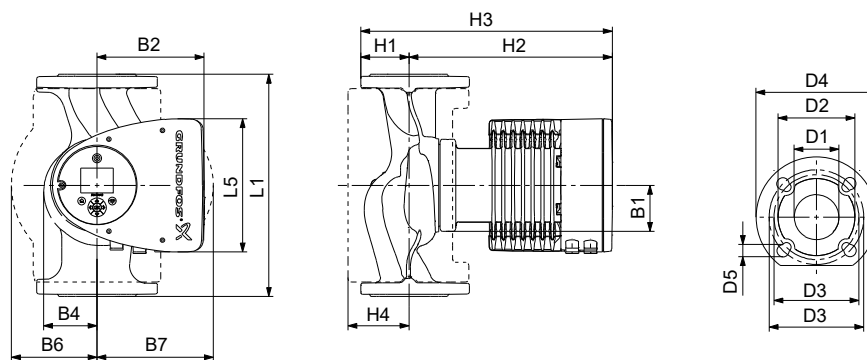
* External setpoint influence shown with a set point of H_{max}

System pressure: Max. 1.0 MPa (10 bar).
Also available as max. 1.6 MPa (16 bar).

Liquid temperature: -10 to +110 °C (TF 110).

Also available with: Stainless-steel pump housing, type N.

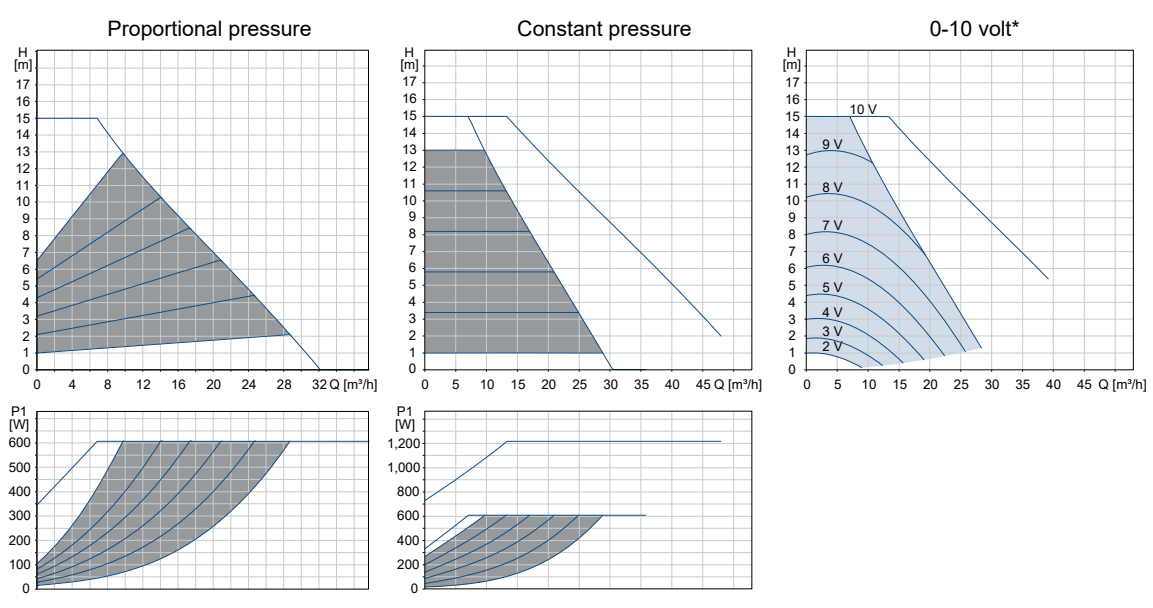
Specific EEI: 0.18.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 40-150 F (N)	250	204	84	164	73	106	128	65	304	369	83	40	84	100/110	150	14/19

■ MAGNA3 D 40-150 F
1 x 230 V, 50/60 Hz



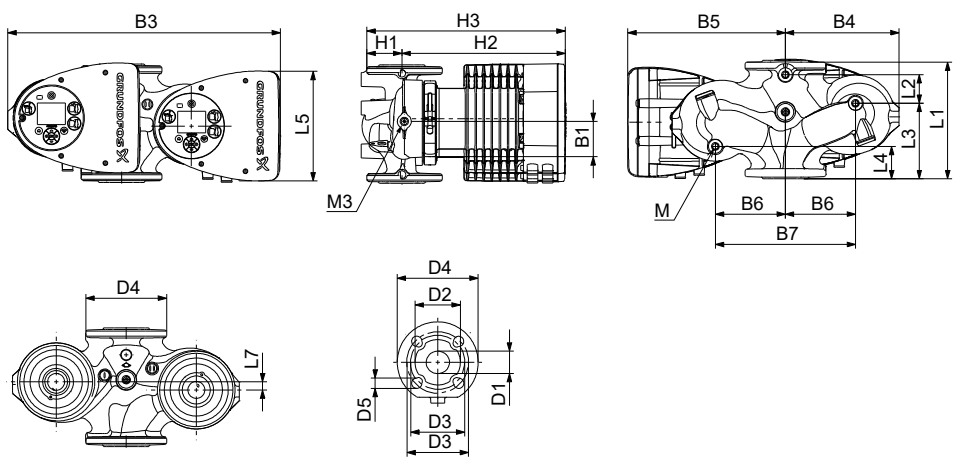
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I _l [A]
Min.	16	0.18
Max.	627	2.75

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
31.7	31.9	0.04

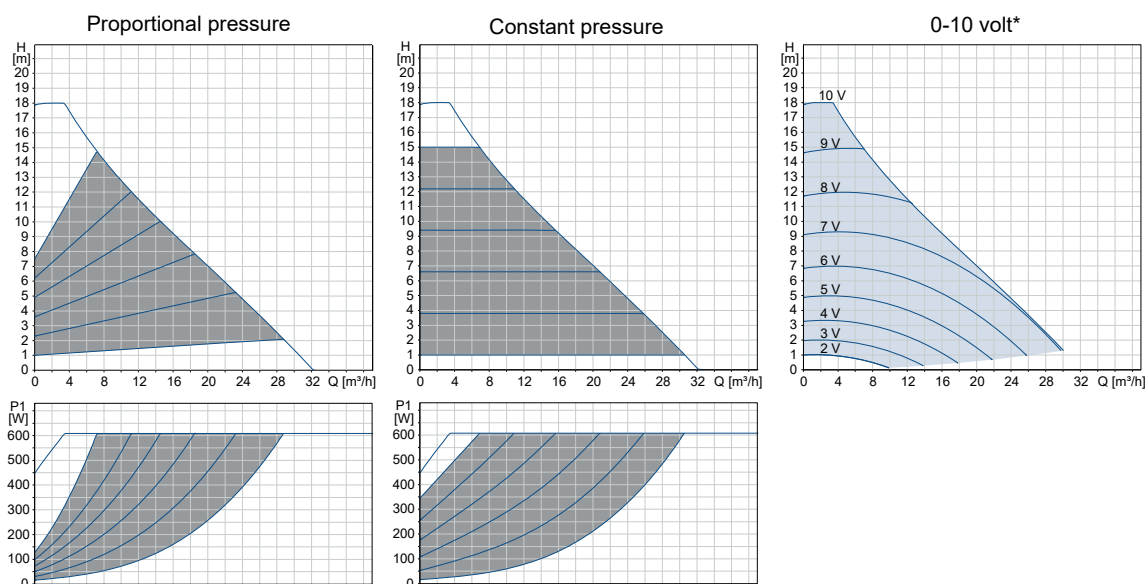
* External setpoint influence shown with a set point of H _{max}	
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.



Pump type	Dimensions [mm]																			M	M3
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5		
MAGNA3 D 40-150 F	250	58	155	75	204	84	512	220	294	130	260	69	303	372	40	84	100/110	150	14/19	M12	Rp 1/4

MAGNA3 40-180 F (N)

1 x 230 V, 50/60 Hz



TM079391

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I _l [A]
Min.	16	0.18
Max.	627	2.78

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
15.5	18.7	0.04

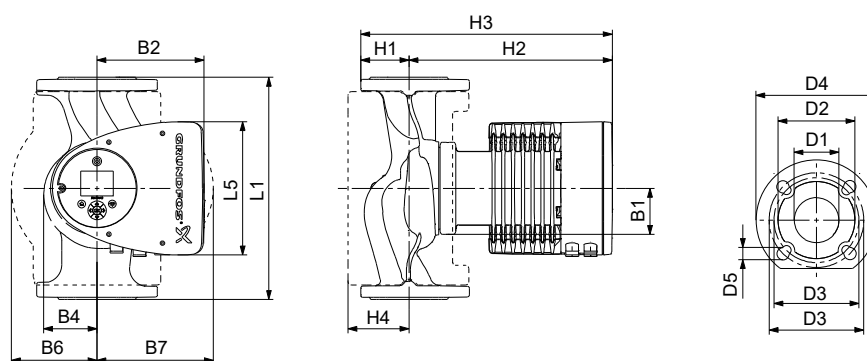
* External setpoint influence shown with a set point of H_{max}

System pressure: Max. 1.0 MPa (10 bar).
Also available as max. 1.6 MPa (16 bar).

Liquid temperature: -10 to +110 °C (TF 110).

Also available with: Stainless-steel pump housing, type N.

Specific EEI: 0.17

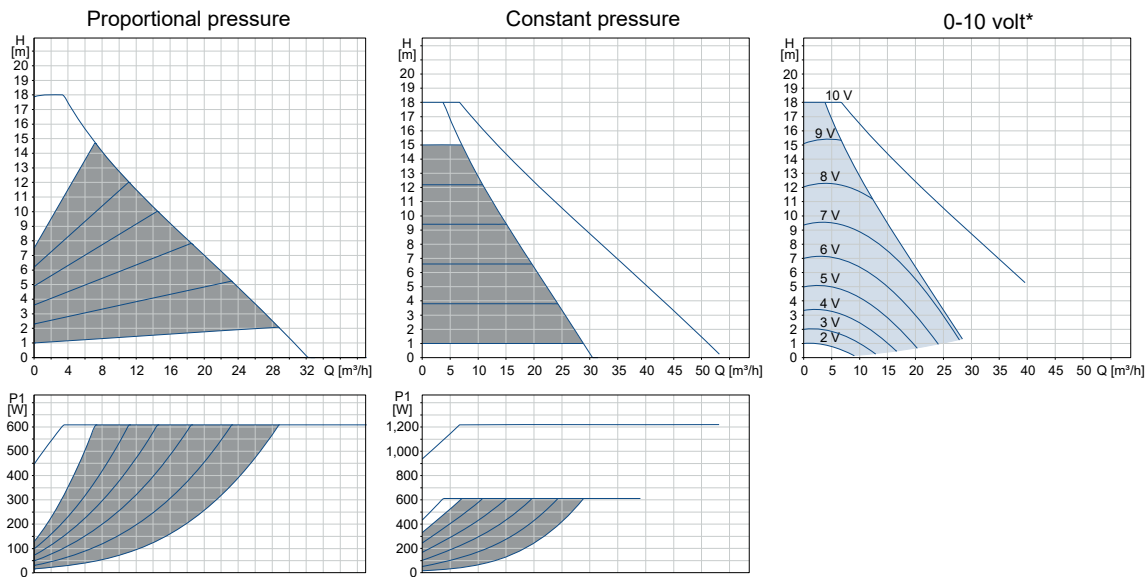


TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 40-180 F (N)	250	204	84	164	73	106	128	65	304	369	83	40	84	100/110	150	14/19

■ MAGNA3 D 40-180 F

1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

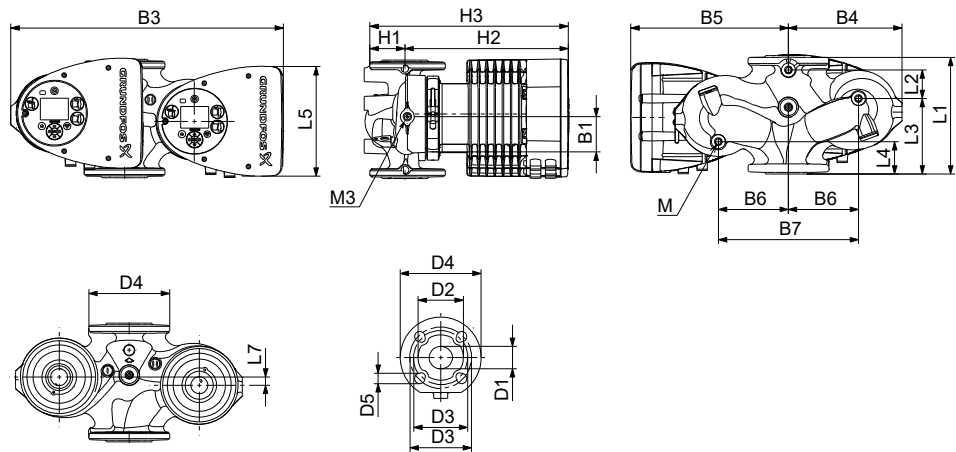
Speed	P1 [W]	I ₁ [A]
Min.	16	0.18
Max.	627	2.75

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
31.7	31.9	0.04

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.

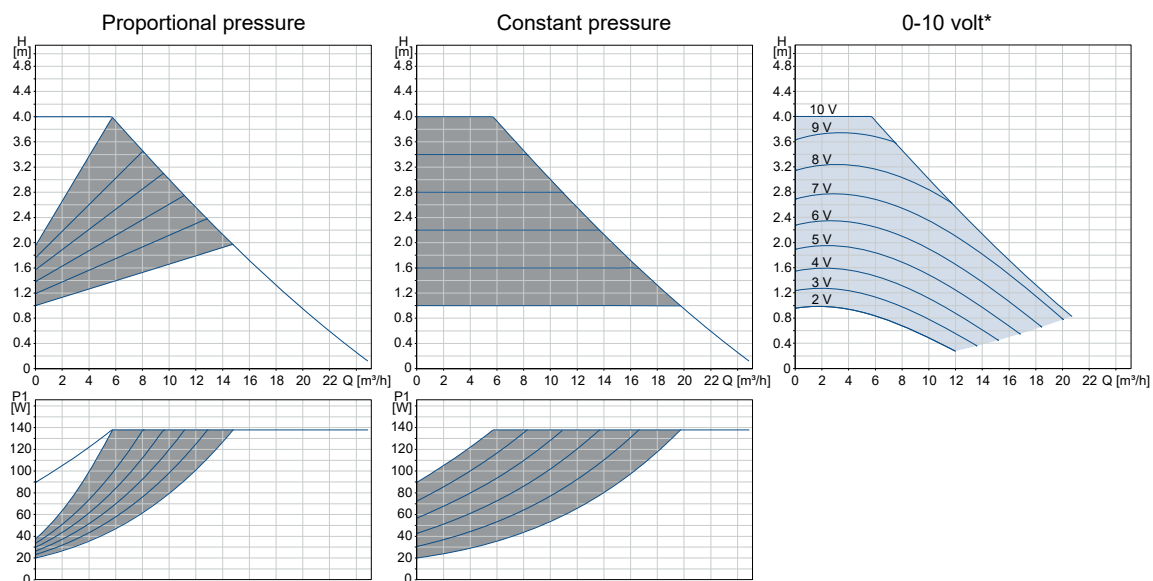


Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 40-180 F	250	58	155	75	204	84	512	220	294	130	260	69	303	372	40	84	100/110	150	14/19

M	M3
M12	Rp 1/4

MAGNA3 50-40 F (N)

1 x 230 V, 50/60 Hz



TM079393

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

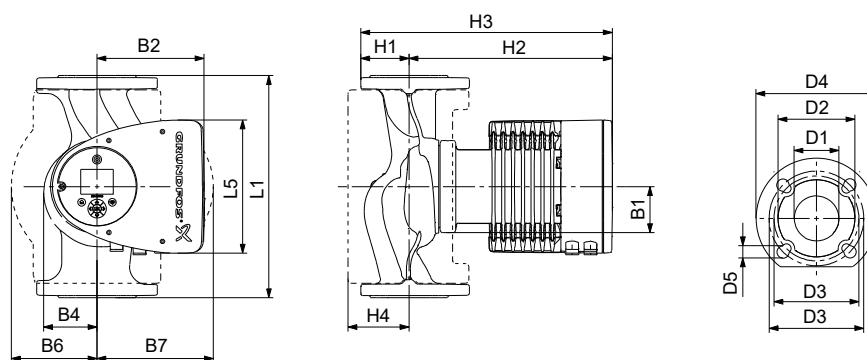
Speed	P1 [W]	I ₁ [A]
Min.	20	0.22
Max.	146	0.72

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
17.0	20.4	0.05

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.20.

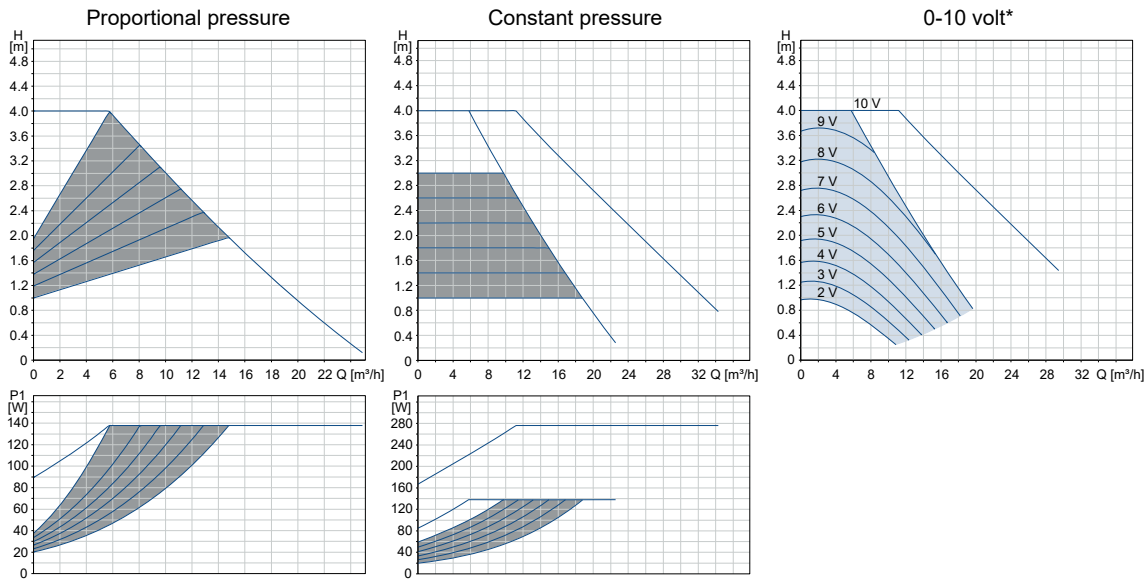


TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 50-40 F (N)	240	204	84	164	73	127	127	71	304	374	97	50	102	110/125	165	14/19

■ MAGNA3 D 50-40 F

1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

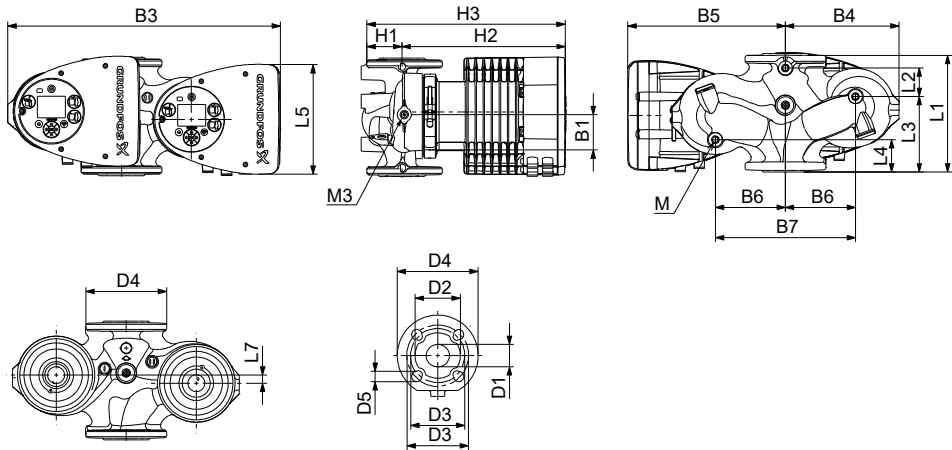
Speed	P1 [W]	I ₁ [A]
Min.	20	0.22
Max.	146	0.68

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
33.0	41.8	0.05

* External setpoint influence shown with a set point of H_{max}

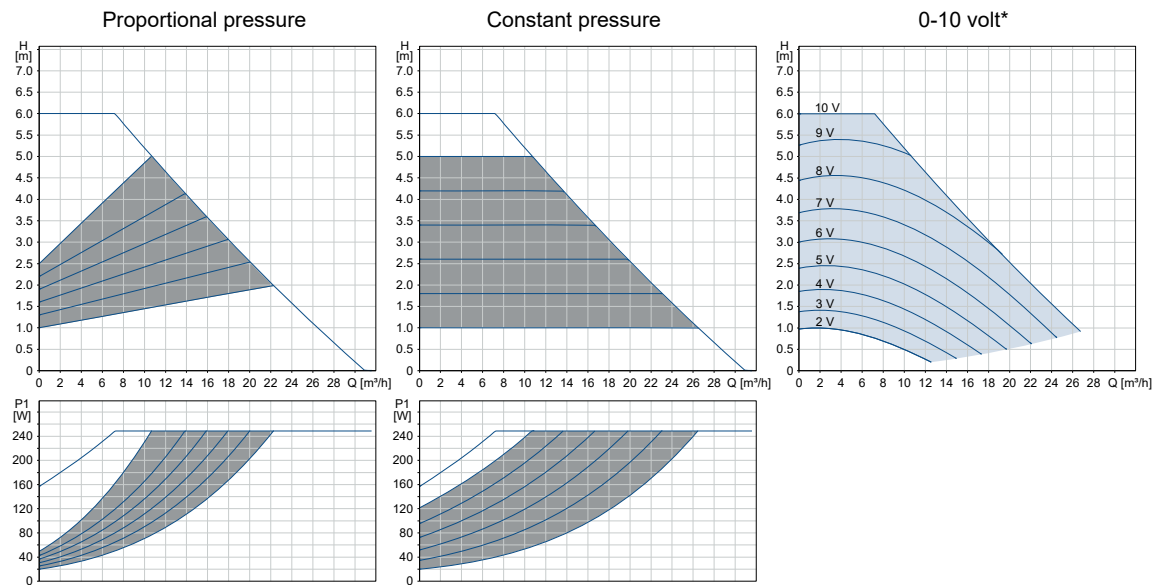
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.20.



Pump type	Dimensions [mm]																					
	L1	L2	L3	L4	L5	L7	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5	M	M1
MAGNA3 D 50-40 F	240	48	160	45	204	45	84	515	221	294	130	260	75	304	379	50	102	110/125	165	14/19	M12	Rp 1/4

MAGNA3 50-60 F (N)

1 x 230 V, 50/60 Hz



TM079395

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	21	0.23
Max.	259	1.18

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
17.0	20.4	0.05

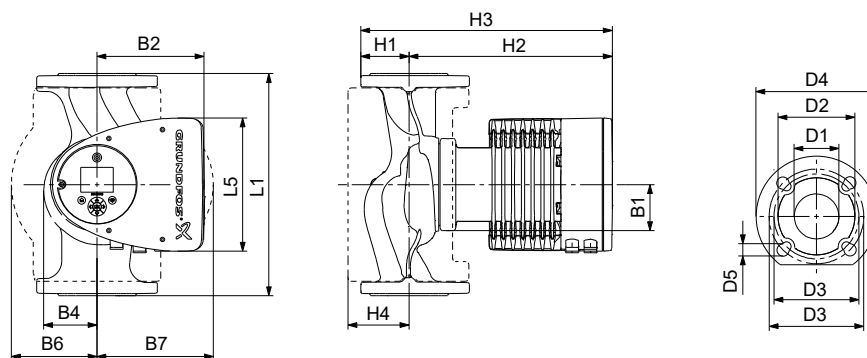
* External setpoint influence shown with a set point of H_{max}

System pressure: Max. 1.0 MPa (10 bar).
Also available as max. 1.6 MPa (16 bar).

Liquid temperature: -10 to +110 °C (TF 110).

Also available with: Stainless-steel pump housing, type N.

Specific EEI: 0.19.

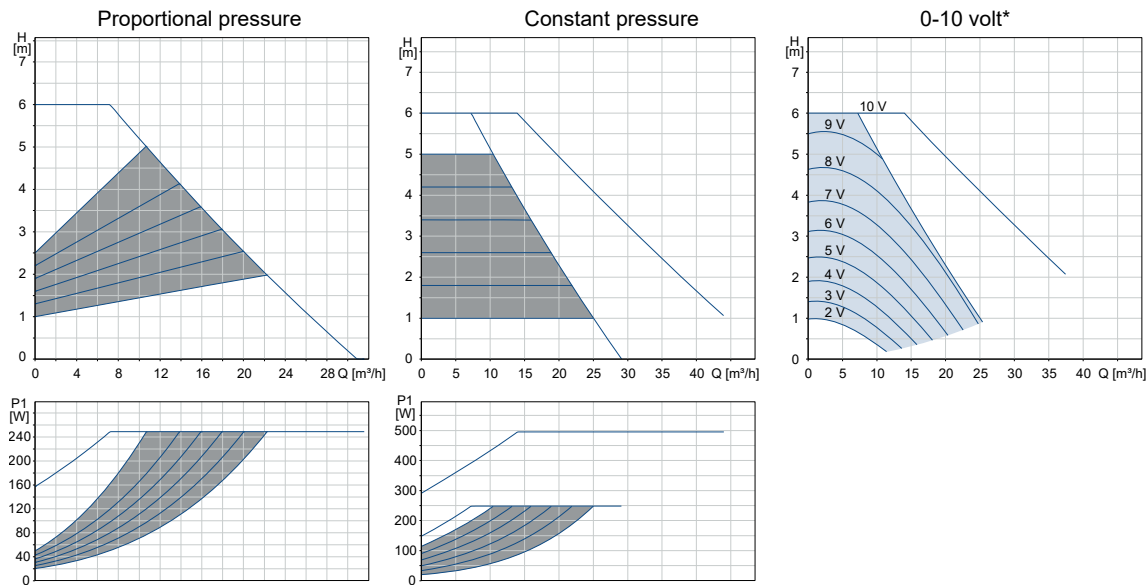


TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 50-60 F (N)	240	204	84	164	73	127	127	71	304	374	97	50	102	110/125	165	14/19

■ MAGNA3 D 50-60 F

1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

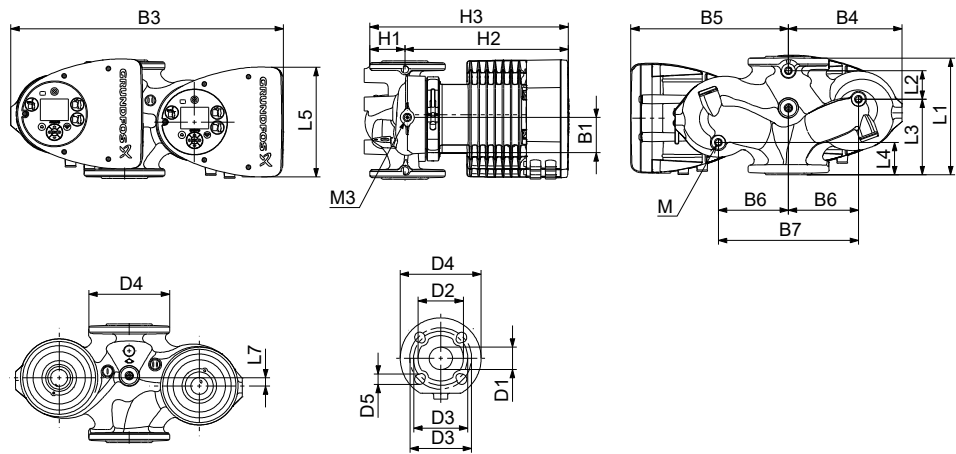
Speed	P1 [W]	I ₁ [A]
Min.	20	0.21
Max.	258	1.15

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
33.0	41.8	0.05

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.19.

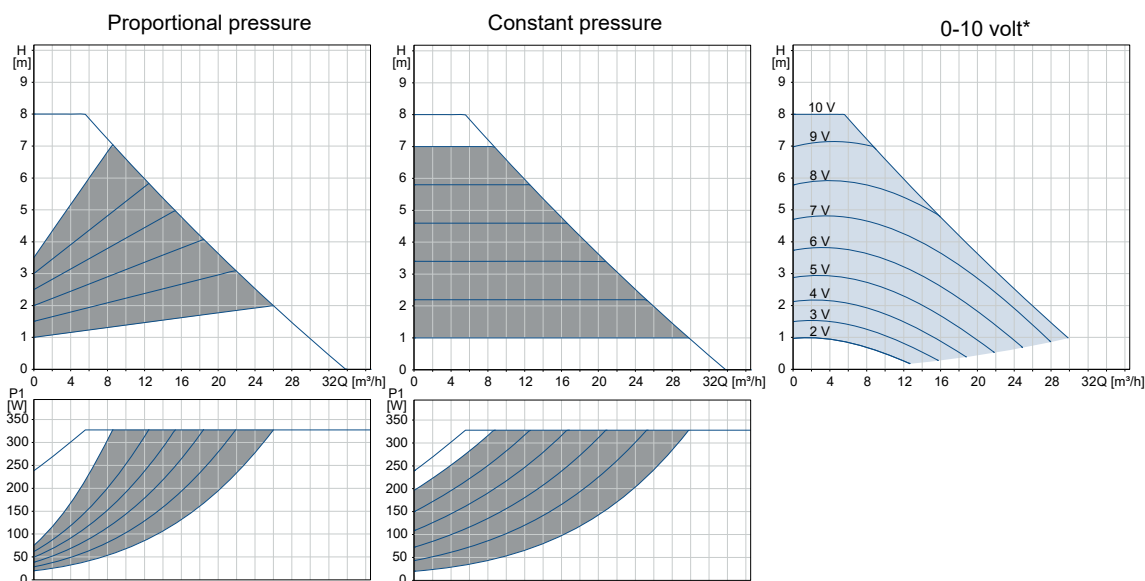


Pump type	Dimensions [mm]																			
	L1	L2	L3	L4	L5	L7	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 50-60 F	240	48	160	45	204	45	84	515	221	294	130	260	75	304	379	50	102	110/125	165	14/19

M	M12
M3	Rp 1/4

MAGNA3 50-80 F (N)

1 x 230 V, 50/60 Hz



TM079397

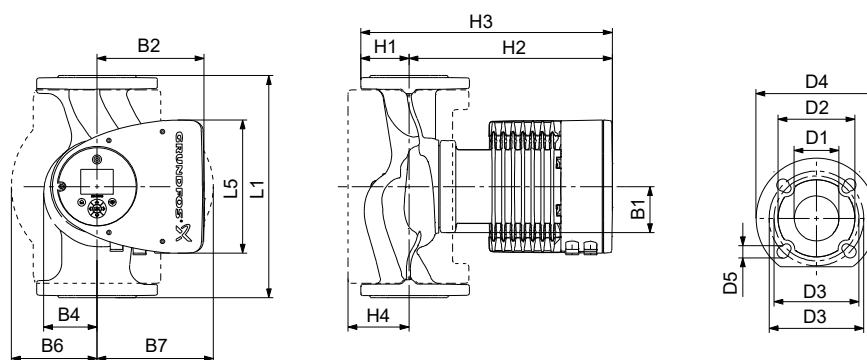
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	21	0.22
Max.	339	1.53

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
17.0	20.4	0.05

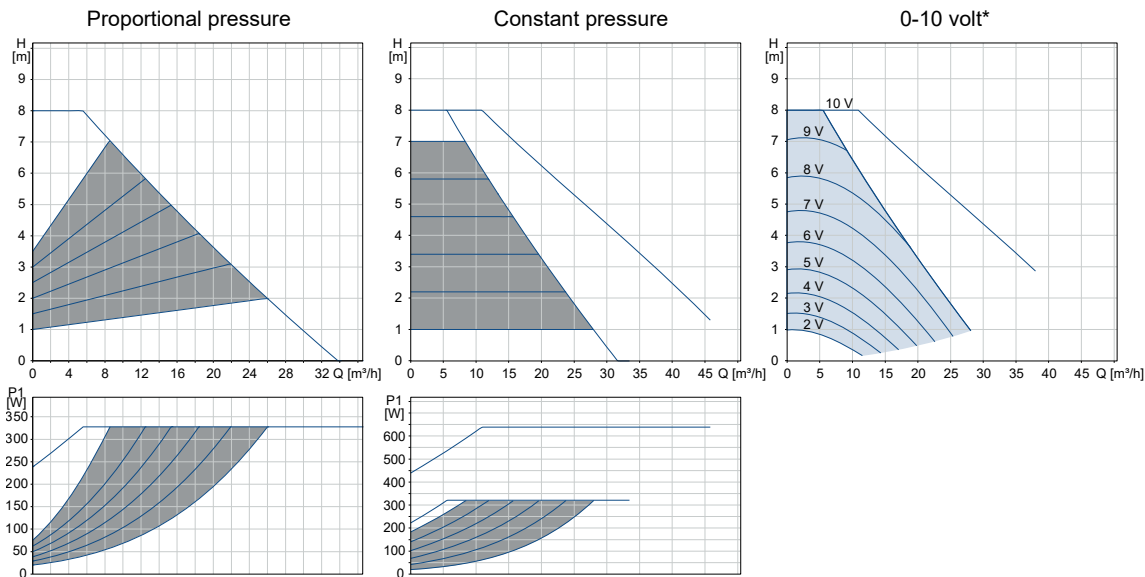
	* External setpoint influence shown with a set point of H _{max}
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 50-80 F (N)	240	204	84	164	73	127	127	71	304	374	97	50	102	110/125	165	14/19

■ MAGNA3 D 50-80 F
1 x 230 V, 50/60 Hz



TM079398

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

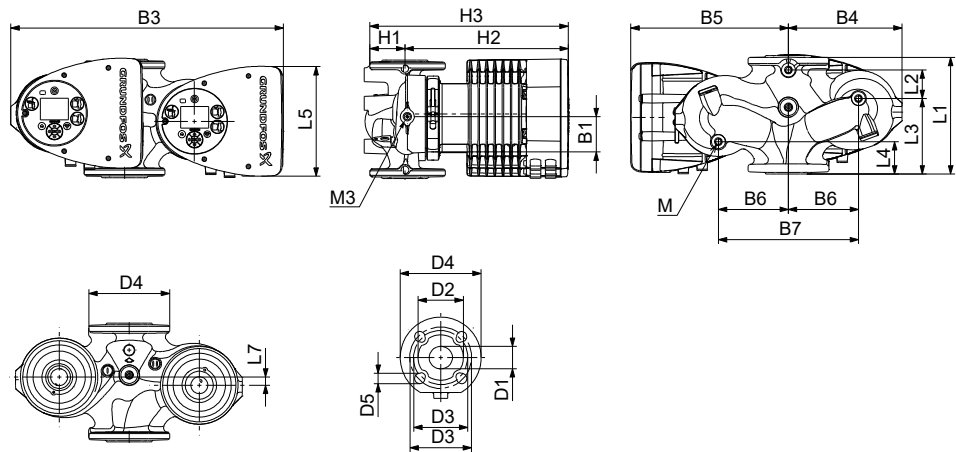
Speed	P1 [W]	I ₁ [A]
Min.	21	0.22
Max.	332	1.48

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
33.0	41.8	0.05

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.19.

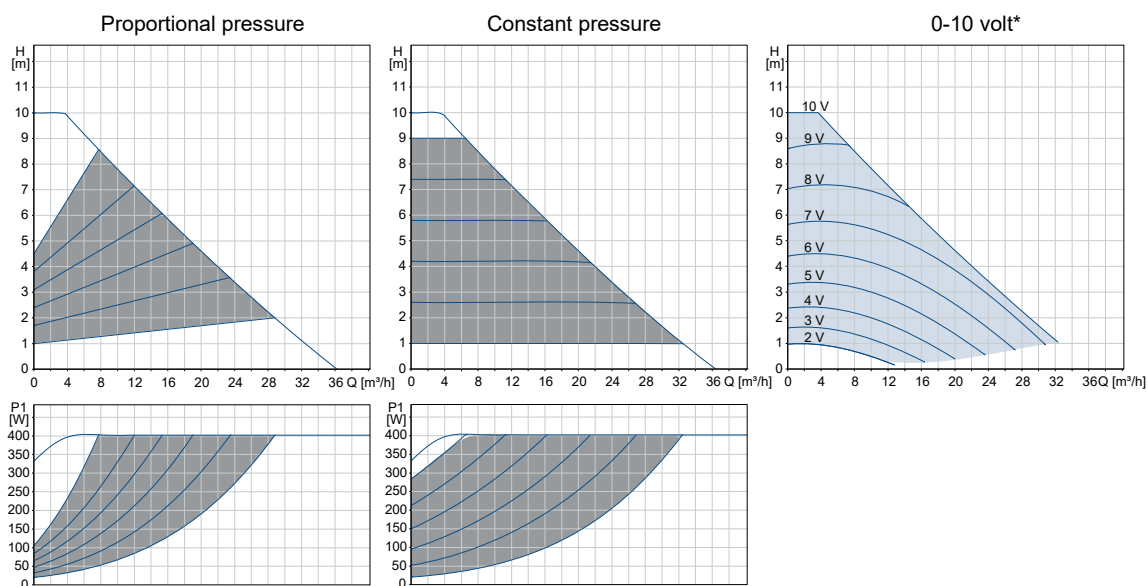


TM1040019

Pump type	Dimensions [mm]																					
	L1	L2	L3	L4	L5	L7	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5	M	M3
MAGNA3 D 50-80 F	240	48	160	45	204	45	84	515	221	294	130	260	75	304	379	50	102	110/125	165	14/19	M12	Rp 1/4

MAGNA3 50-100 F (N)

1 x 230 V, 50/60 Hz



TM079399

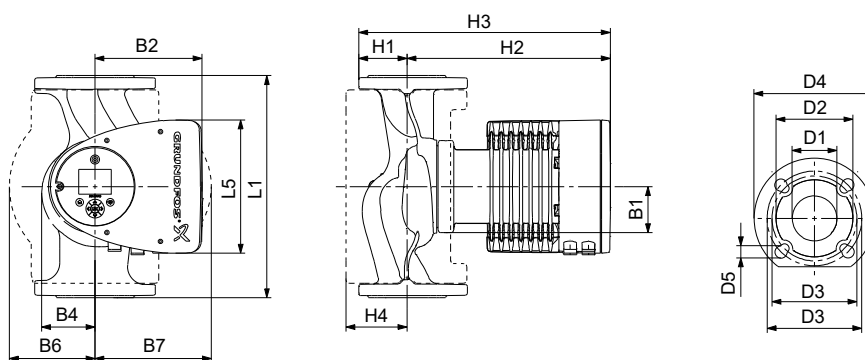
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	21	0.22
Max.	416	1.86

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
17.6	21.1	0.05

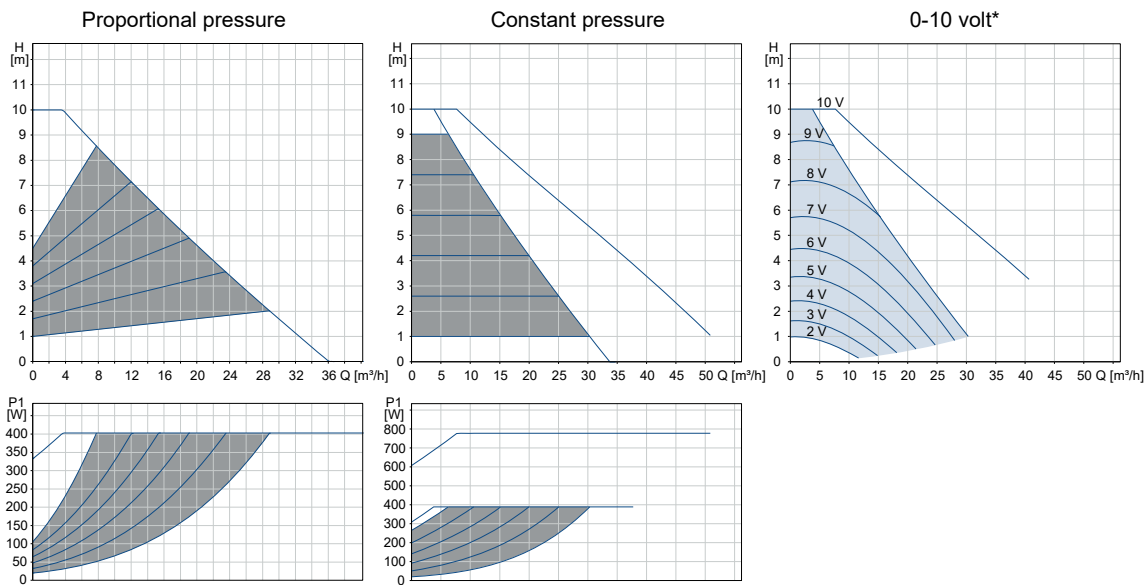
	* External setpoint influence shown with a set point of H _{max}
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 50-100 F (N)	280	204	84	164	73	127	127	72	304	376	97	50	102	110/125	165	14/19

■ MAGNA3 D 50-100 F
1 x 230 V, 50/60 Hz



TM079400

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

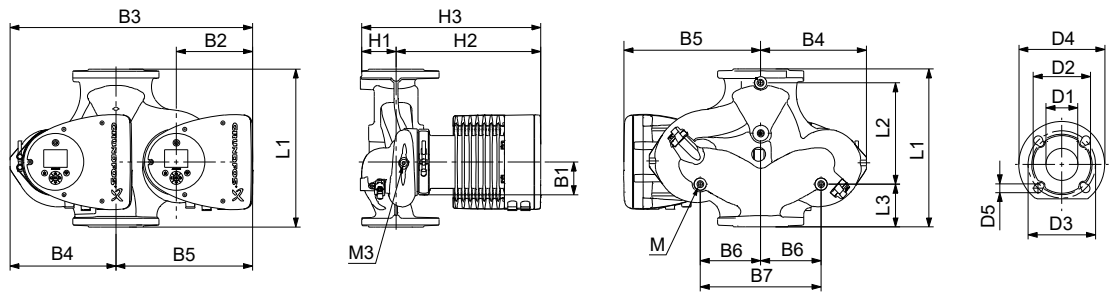
Speed	P1 [W]	I _l [A]
Min.	20	0.21
Max.	402	1.77

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
33.3	42.1	0.05

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.19.

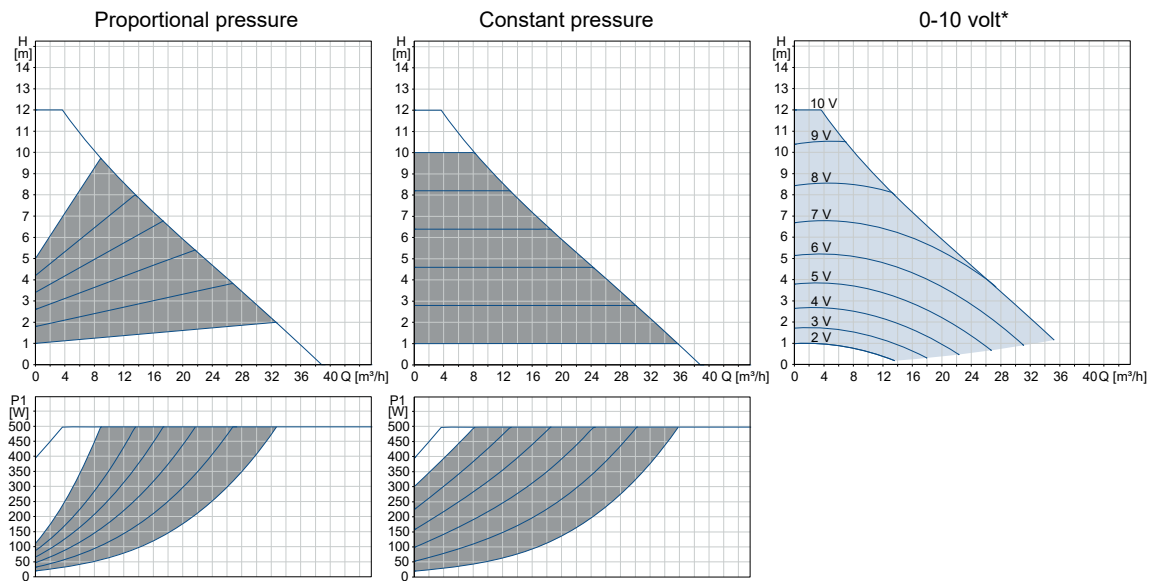


TM1040020

Pump type	Dimensions [mm]																			M	M3
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5		
MAGNA3 D 50-100 F	280	175	75	75	204	84	517	223	294	130	260	75	304	379	50	102	110/125	165	14/19	M12	Rp 1/4

MAGNA3 50-120 F (N)

1 x 230 V**, 50/60 Hz



TM079401

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

** For Japanese models, the voltage is 200-230 V

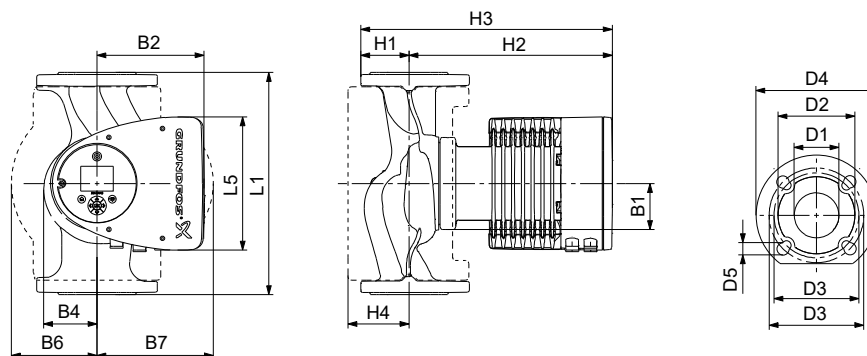
Speed	P1 [W]	I ₁ [A]
Min.	20	0.22
Max.	513	2.30

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
17.6	21.1	0.05

* External setpoint influence shown with a set point of H_{max}

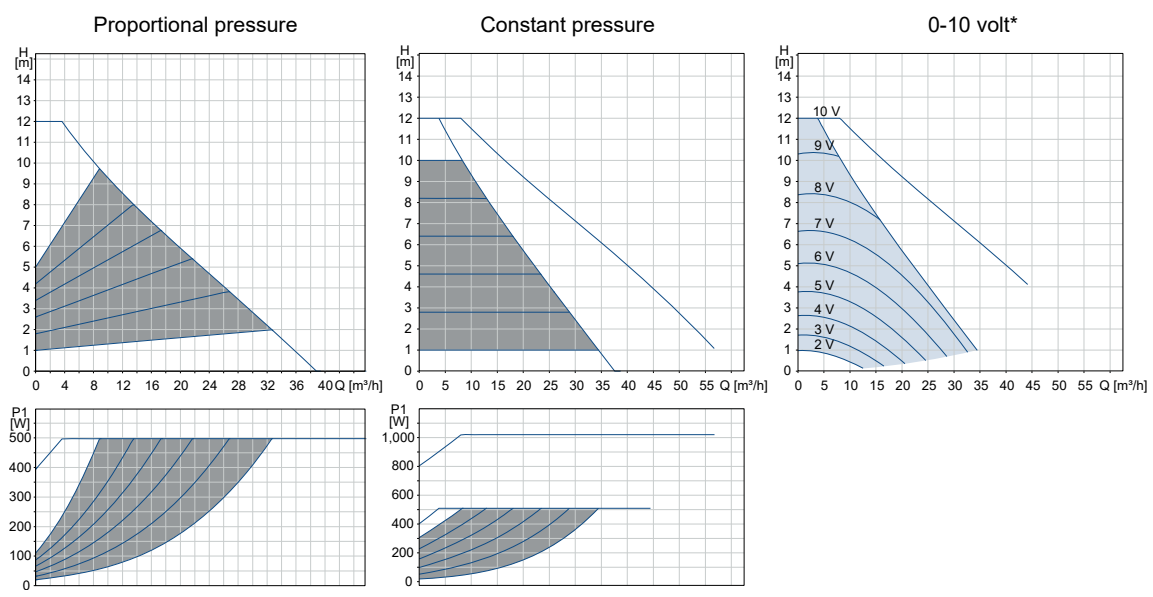
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.17.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 50-120 F (N)	280	204	84	164	73	127	127	72	304	376	97	50	102	110/125	165	14/19

■ MAGNA3 D 50-120 F
1 x 230 V, 50/60 Hz



TM079402

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

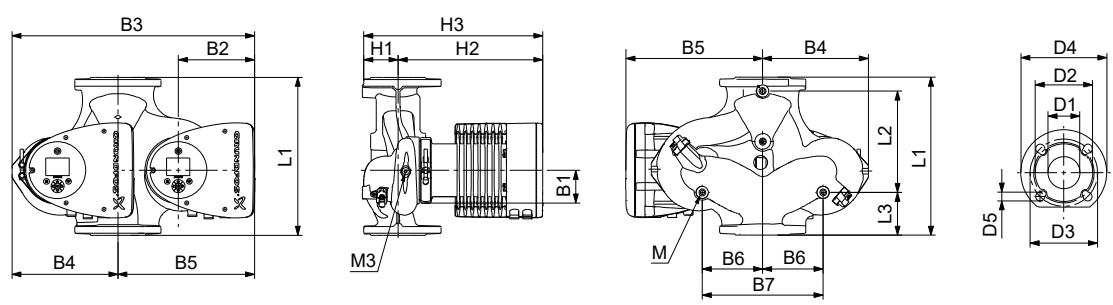
Speed	P1 [W]	I ₁ [A]
Min.	19	0.20
Max.	525	2.32

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
33.3	42.1	0.05

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.



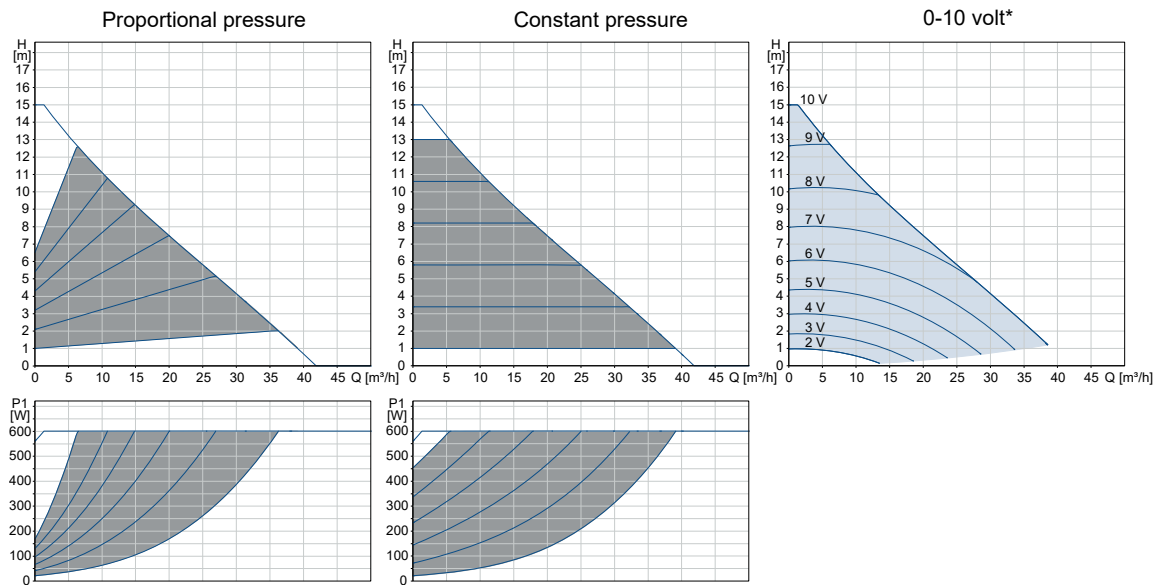
TM1040020

Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 50-120 F	280	175	75	75	204	84	517	223	294	130	260	75	304	379	50	102	110/125	165	14/19

M	M3
M12	Rp 1/4

MAGNA3 50-150 F (N)

1 x 230 V, 50/60 Hz



TM079415

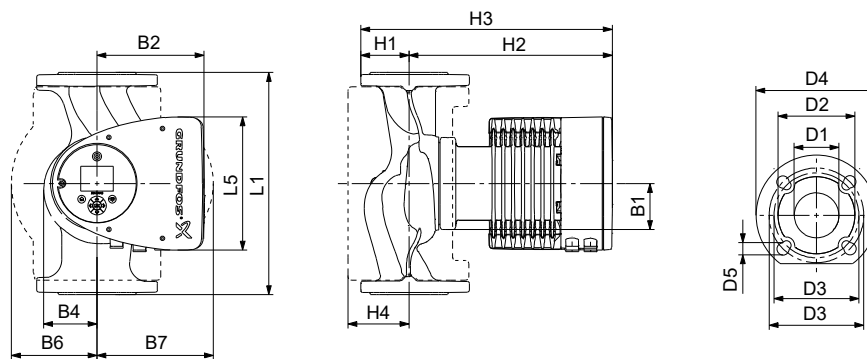
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*
** For Japanese models, the voltage is 200-230 V	

Speed	P1 [W]	I ₁ [A]
Min.	22	0.23
Max.	618	2.75

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
18.3	22.0	0.05

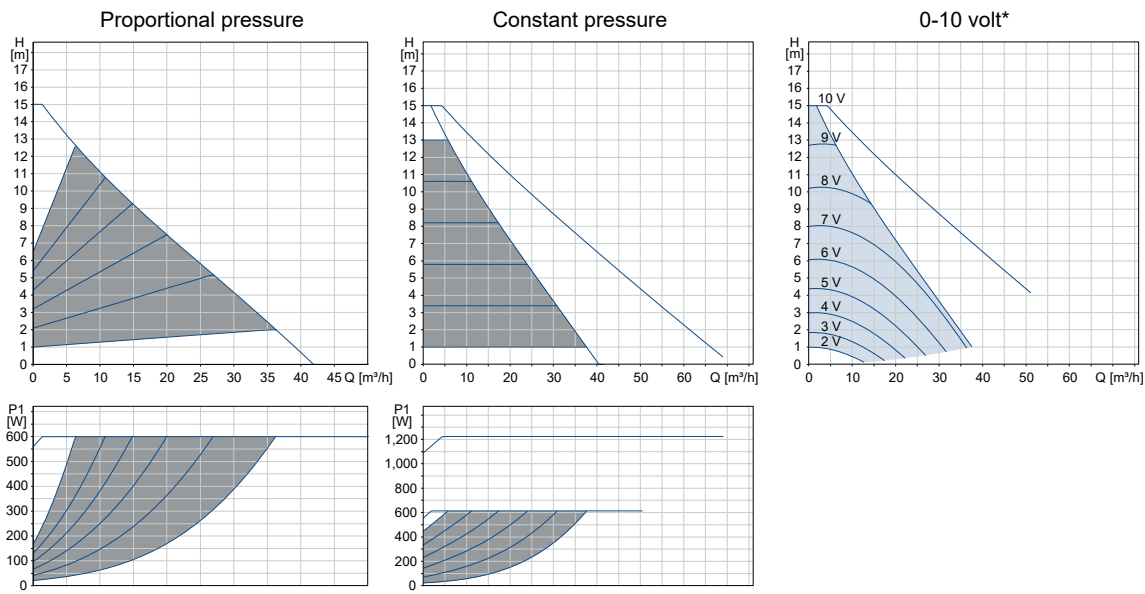
* External setpoint influence shown with a set point of H _{max}	
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 50-150 F (N)	280	204	84	164	73	127	127	72	304	376	97	50	102	110/125	165	14/19

■ MAGNA3 D 50-150 F
1 x 230 V, 50/60 Hz



TM079416

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

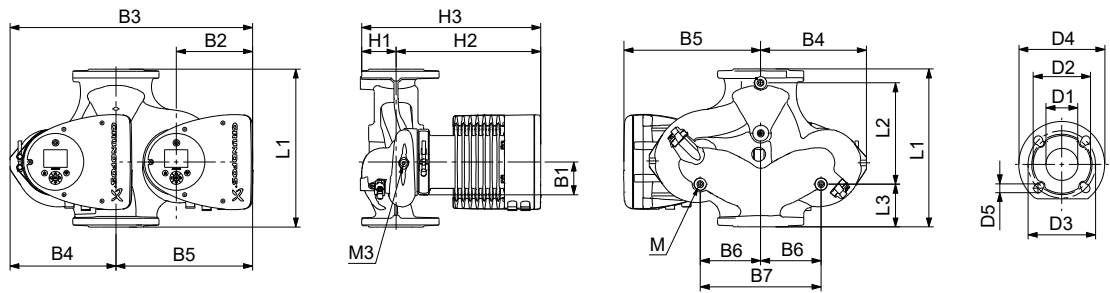
Speed	P1 [W]	I ₁ [A]
Min.	22	0.23
Max.	630	2.76

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
34.7	43.9	0.05

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.



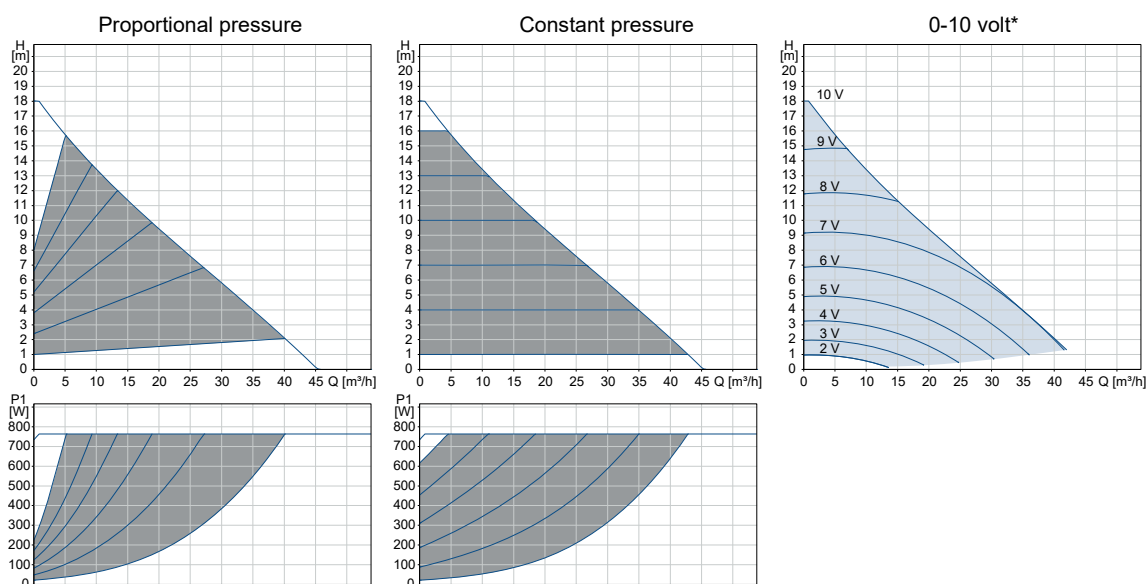
TM1040020

Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 50-150 F	280	175	75	75	204	84	517	223	294	130	260	75	304	379	50	102	110/125	165	14/19

M	M3
M12	Rp 1/4

MAGNA3 50-180 F (N)

1 x 230 V*, 50/60 Hz



TM079417

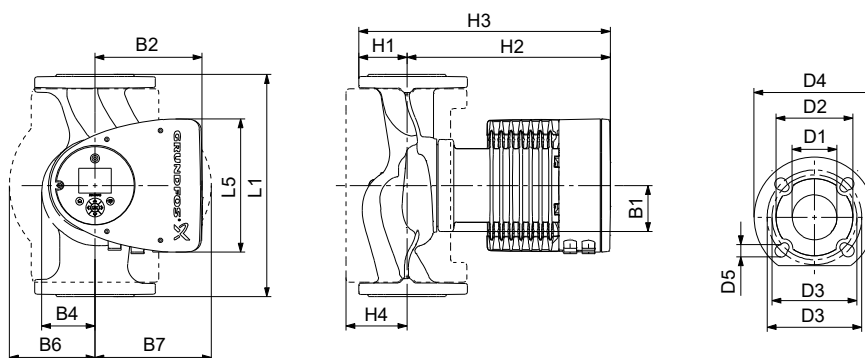
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*
** For Japanese models, the voltage is 200-230 V	

Speed	P1 [W]	I ₁ [A]
Min.	23	0.24
Max.	785	3.45

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
18.3	21.9	0.05

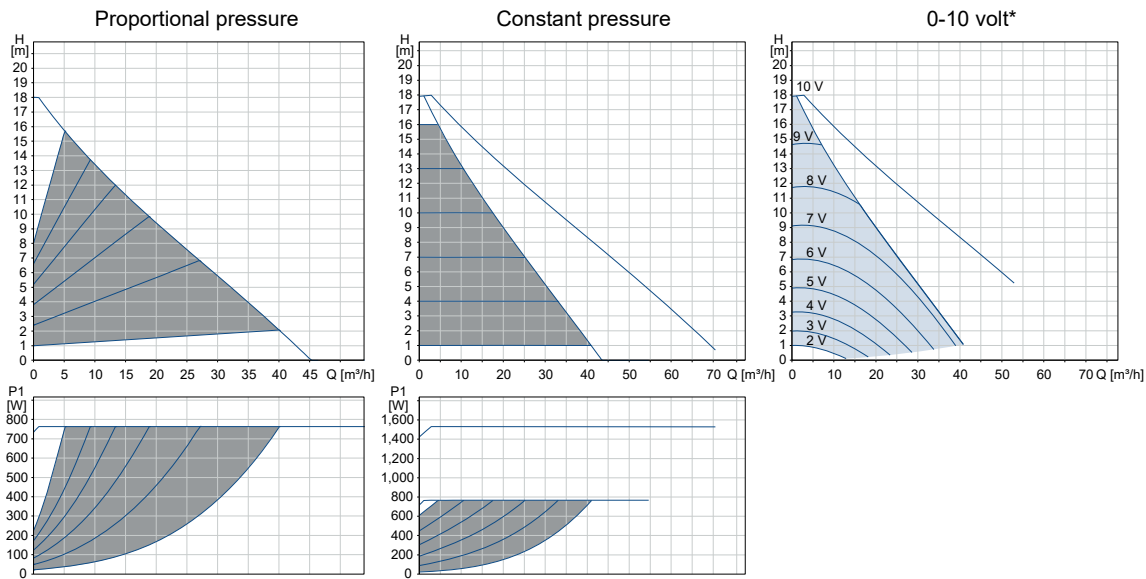
* External setpoint influence shown with a set point of H _{max}	
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.18.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 50-180 F (N)	280	204	84	164	73	127	127	72	304	376	97	50	102	110/125	165	14/19

■ MAGNA3 D 50-180 F
1 x 230 V, 50/60 Hz



TM079418

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

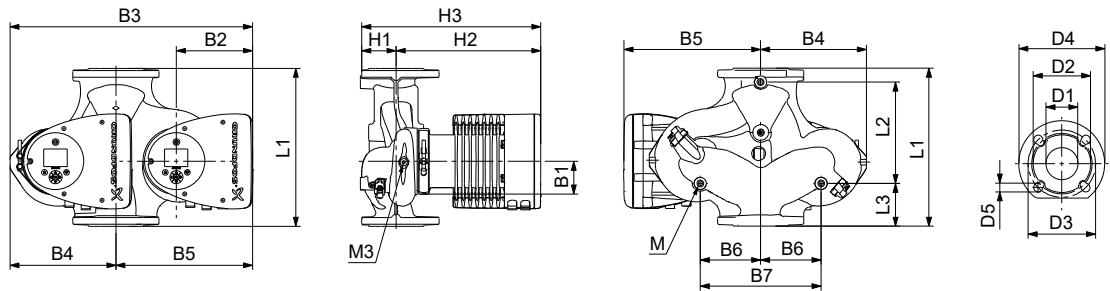
Speed	P1 [W]	I ₁ [A]
Min.	23	0.24
Max.	786	3.42

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
34.7	43.9	0.05

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.



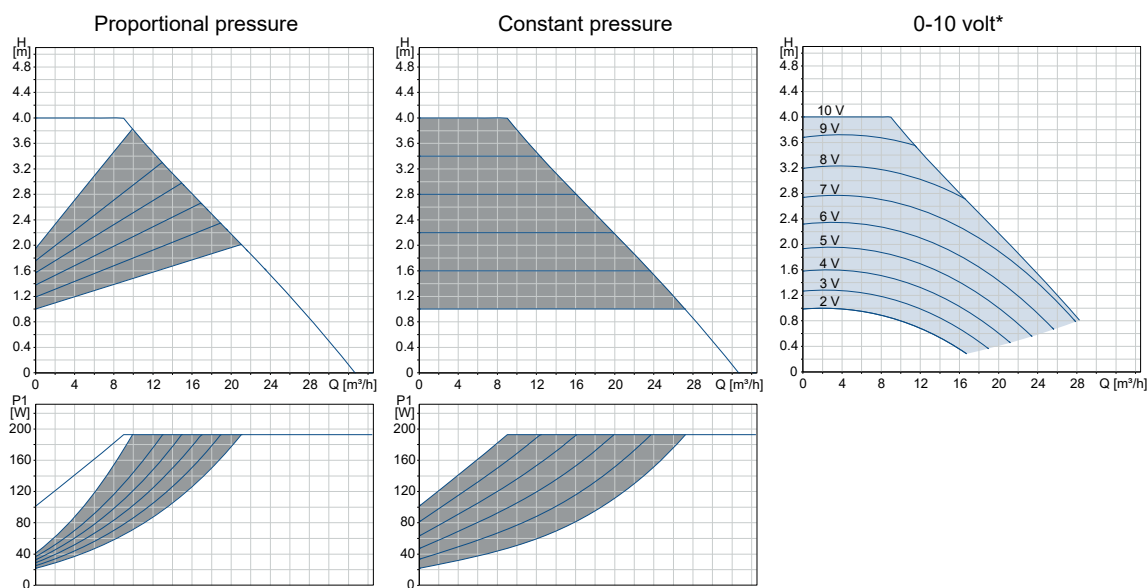
TM1040020

Pump type	Dimensions [mm]																	
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4
MAGNA3 D 50-180 F	280	175	75	75	204	84	517	223	294	130	260	75	304	379	50	102	110/125	165

M	D5	D3	D4	D2	D1	M3
14/19	14/19	M12	Rp 1/4			

MAGNA3 65-40 F (N)

1 x 230 V, 50/60 Hz



TM079419

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	21	0.22
Max.	202	0.94

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
20.2	23.8	0.06

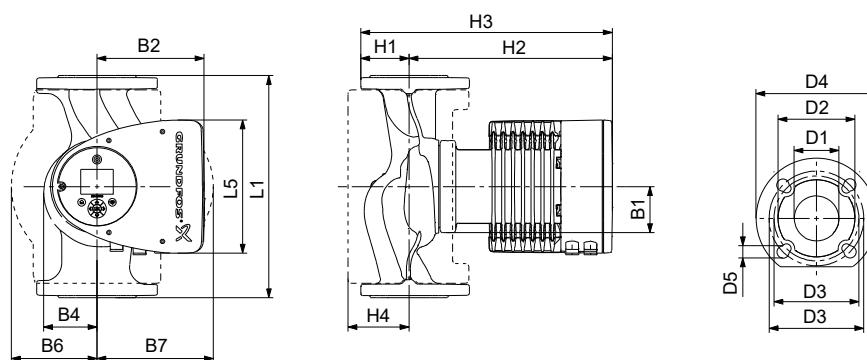
* External setpoint influence shown with a set point of H_{max}

System pressure: Max. 1.0 MPa (10 bar).
Also available as max. 1.6 MPa (16 bar).

Liquid temperature: -10 to +110 °C (TF 110).

Also available with: Stainless-steel pump housing, type N.

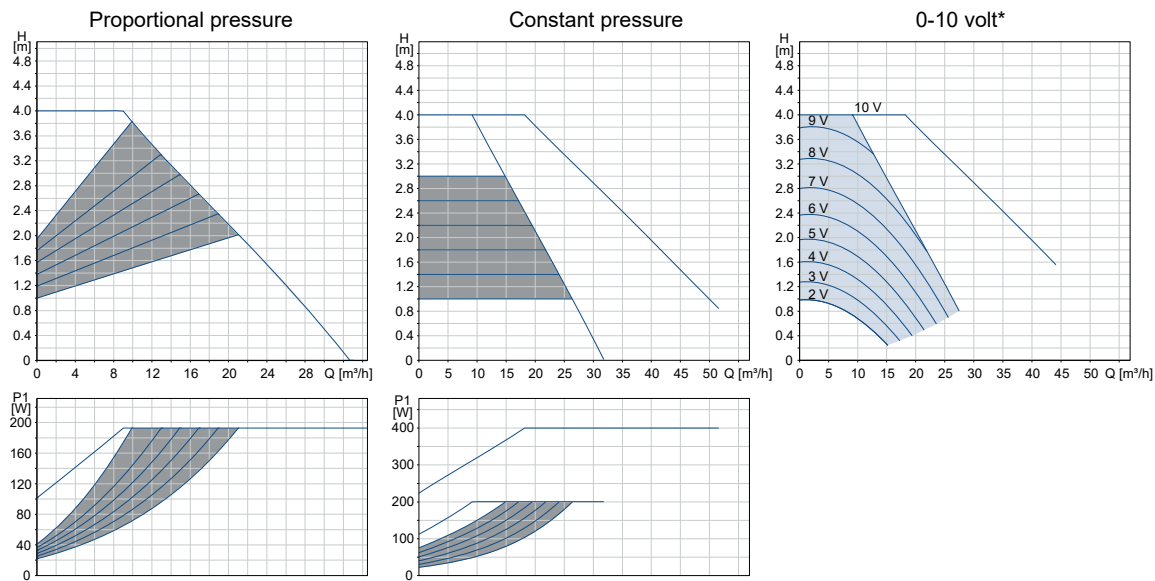
Specific EEI: 0.18.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 65-40 F (N)	340	204	84	164	73	133	133	74	312	386	94	65	119	130/145	185	14/19

■ MAGNA3 D 65-40 F
1 x 230 V, 50/60 Hz



TM079420

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

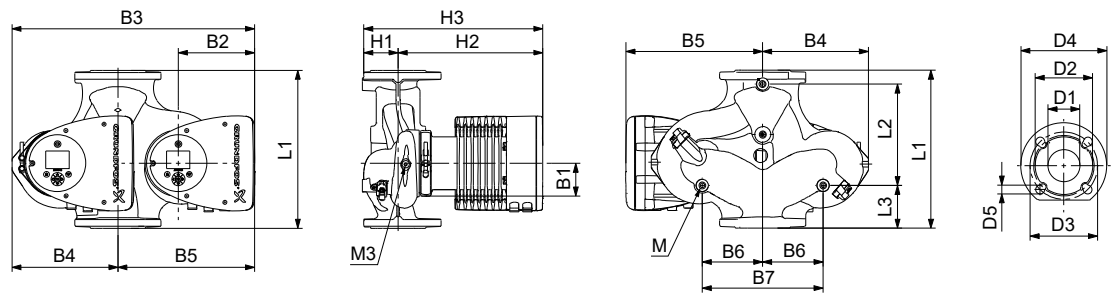
Speed	P1 [W]	I _l [A]
Min.	20	0.22
Max.	209	0.95

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
36.9	45.8	0.06

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.20.



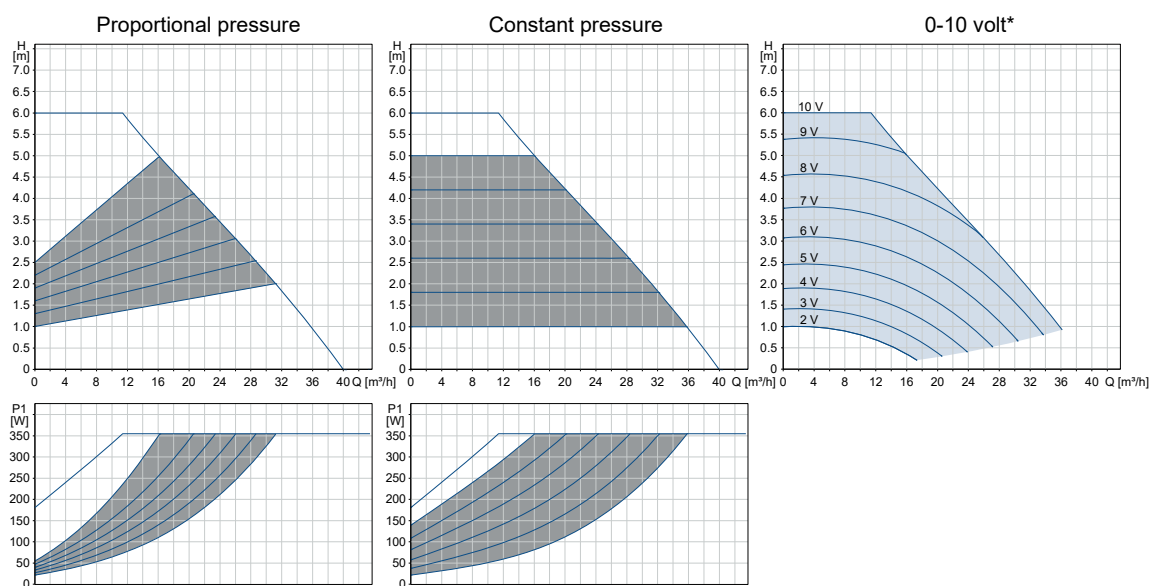
TM1040020

Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 65-40 F	340	218	92	92	204	84	522	228	294	130	260	77	312	389	65	119	130/145	185	14/19

M	M12
M3	Rp 1/4

MAGNA3 65-60 F (N)

1 x 230 V, 50/60 Hz



TM079421

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

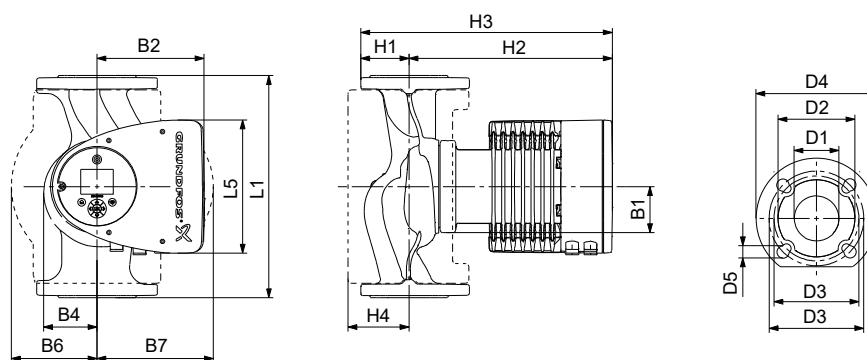
Speed	P1 [W]	I ₁ [A]
Min.	20	0.22
Max.	367	1.64

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
20.2	23.8	0.06

* External setpoint influence shown with a set point of H_{max}

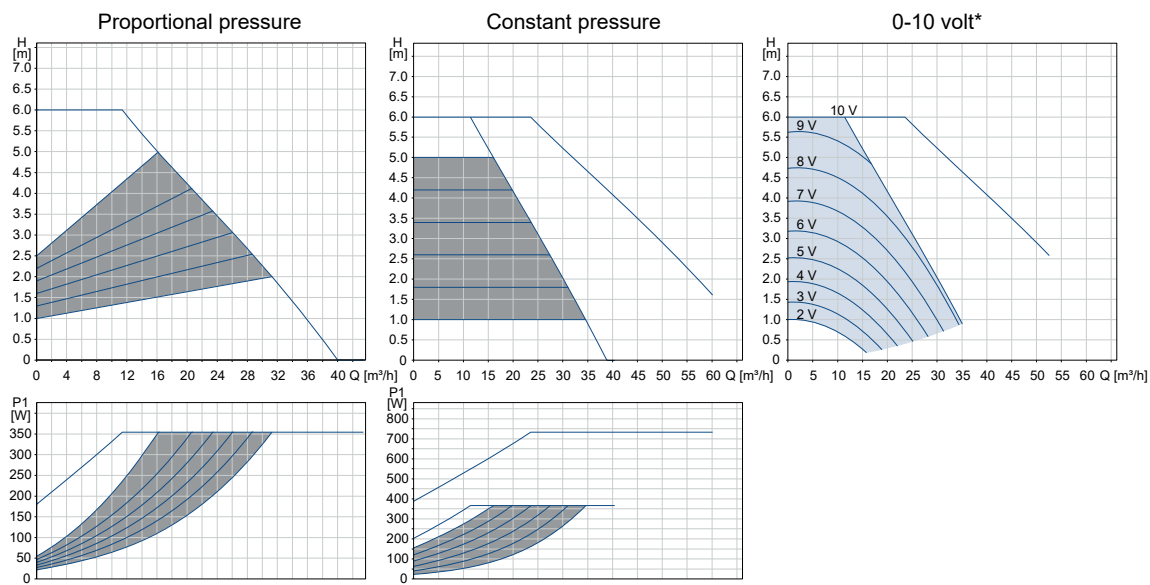
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.17.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 65-60 F (N)	340	204	84	164	73	133	133	74	312	386	94	65	119	130/145	185	14/19

■ MAGNA3 D 65-60 F
1 x 230 V, 50/60 Hz



TM079422

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

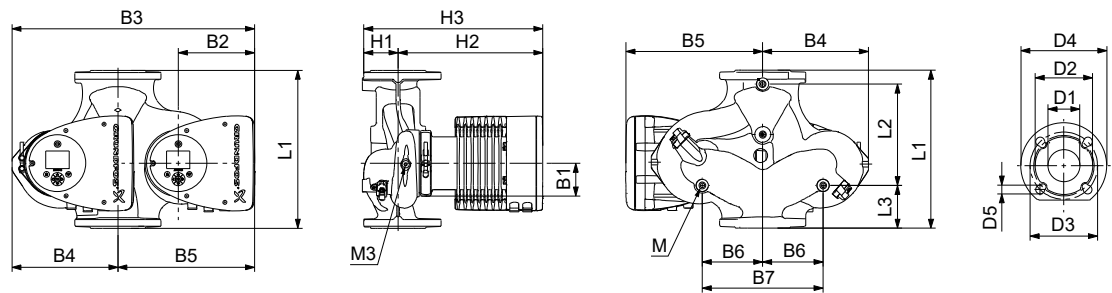
Speed	P1 [W]	I _l [A]
Min.	21	0.23
Max.	379	1.67

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
36.9	45.8	0.06

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.19.



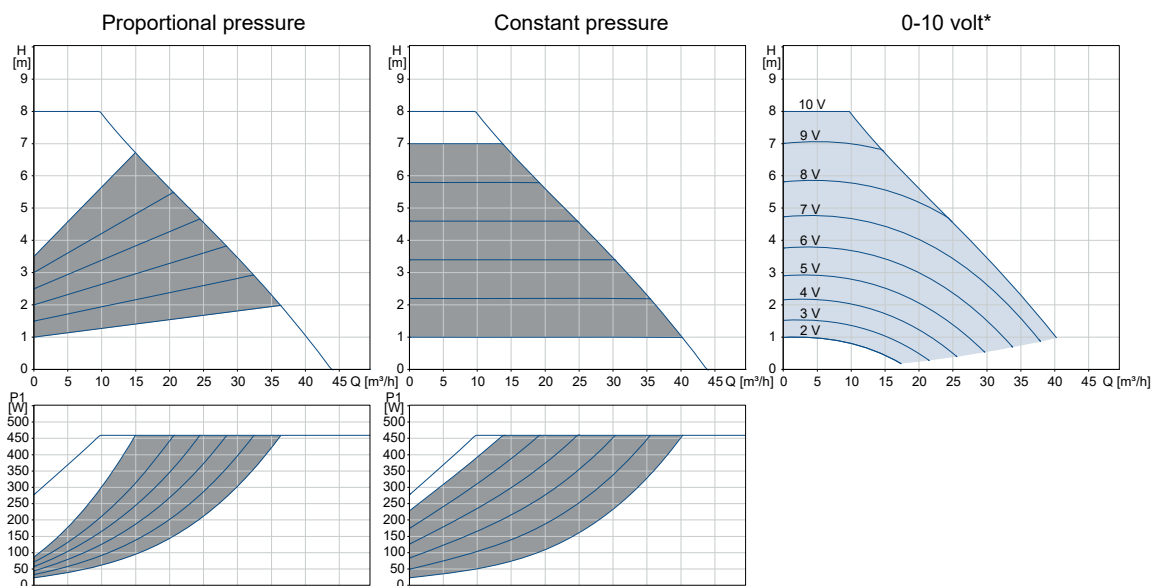
TM1040020

Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 65-60 F	340	218	92	92	204	84	522	228	294	130	260	77	312	389	65	119	130/145	185	14/19

M	M12	M3
		Rp 1/4

MAGNA3 65-80 F (N)

1 x 230 V, 50/60 Hz



TM079423

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	22	0.24
Max.	474	2.11

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
21.0	24.7	0.06

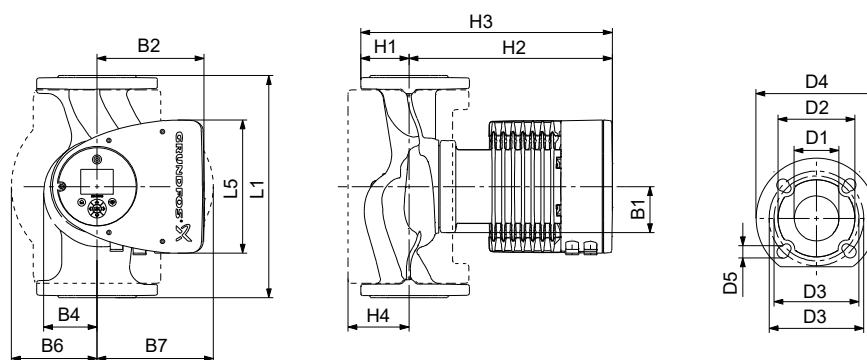
* External setpoint influence shown with a set point of H_{max}

System pressure: Max. 1.0 MPa (10 bar).
Also available as max. 1.6 MPa (16 bar).

Liquid temperature: -10 to +110 °C (TF 110).

Also available with: Stainless-steel pump housing, type N.

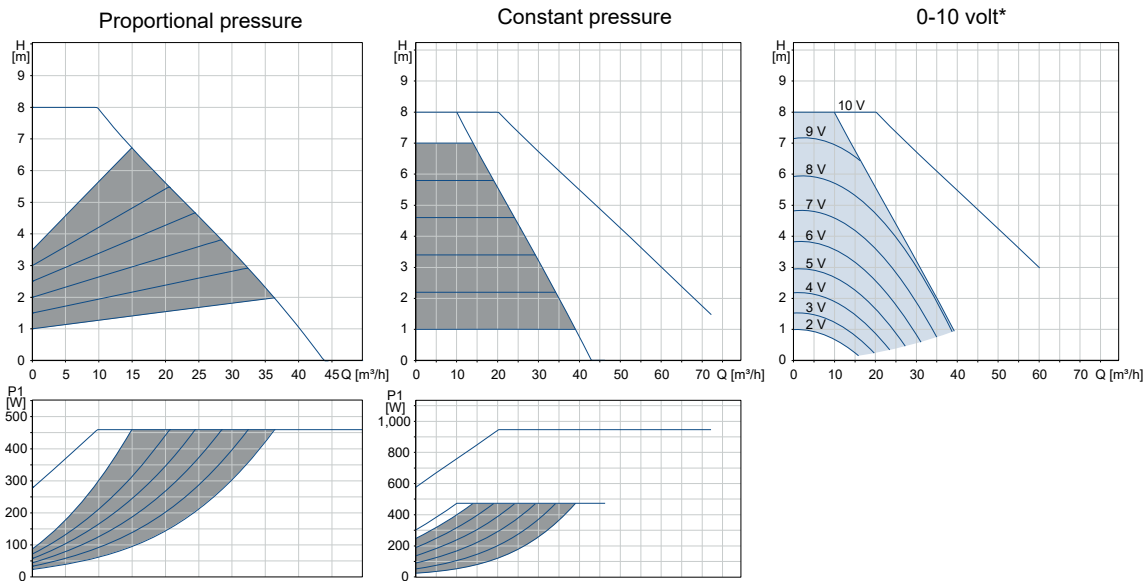
Specific EEI: 0.18.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 65-80 F (N)	340	204	84	164	73	133	133	74	312	386	94	65	119	130/145	185	14/19

■ MAGNA3 D 65-80 F
1 x 230 V, 50/60 Hz



TM079424

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

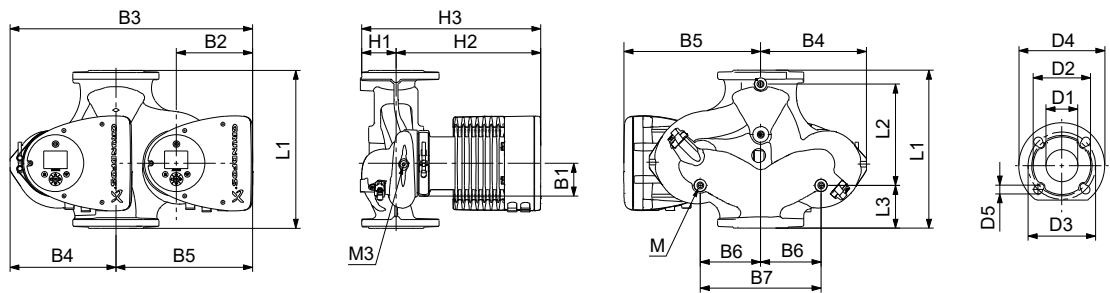
Speed	P1 [W]	I ₁ [A]
Min.	22	0.24
Max.	487	2.15

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
38.7	47.6	0.06

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.20.



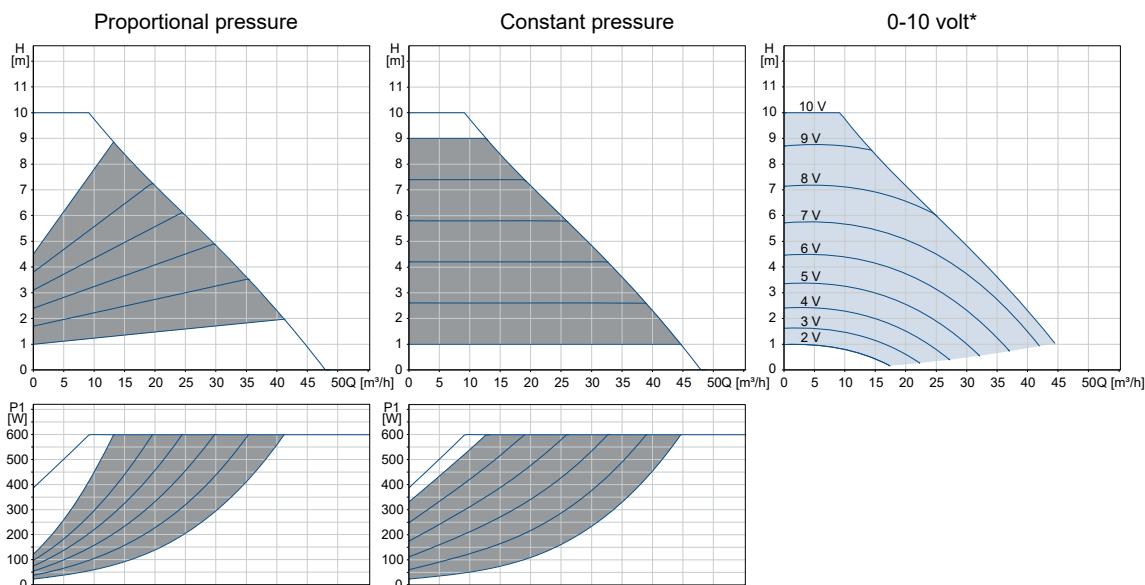
TM1040020

Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 65-80 F	340	218	92	92	204	84	522	228	294	130	260	77	312	389	65	119	130/145	185	14/19

M	M12
M3	Rp 1/4

MAGNA3 65-100 F (N)

1 x 230 V, 50/60 Hz



TM079425

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

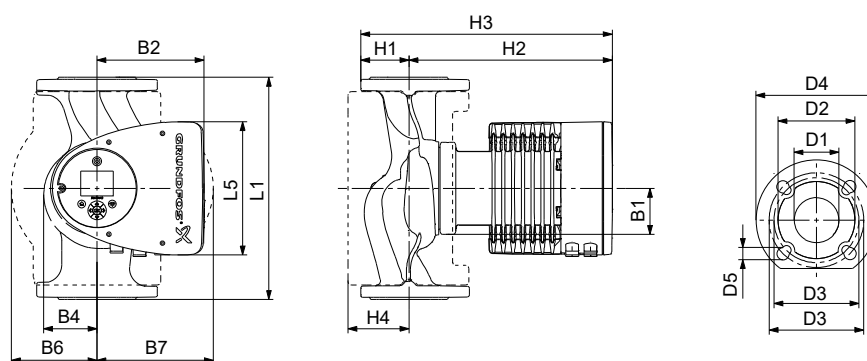
Speed	P1 [W]	I _l [A]
Min.	21	0.23
Max.	617	2.74

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
21.0	24.7	0.06

* External setpoint influence shown with a set point of H_{max}

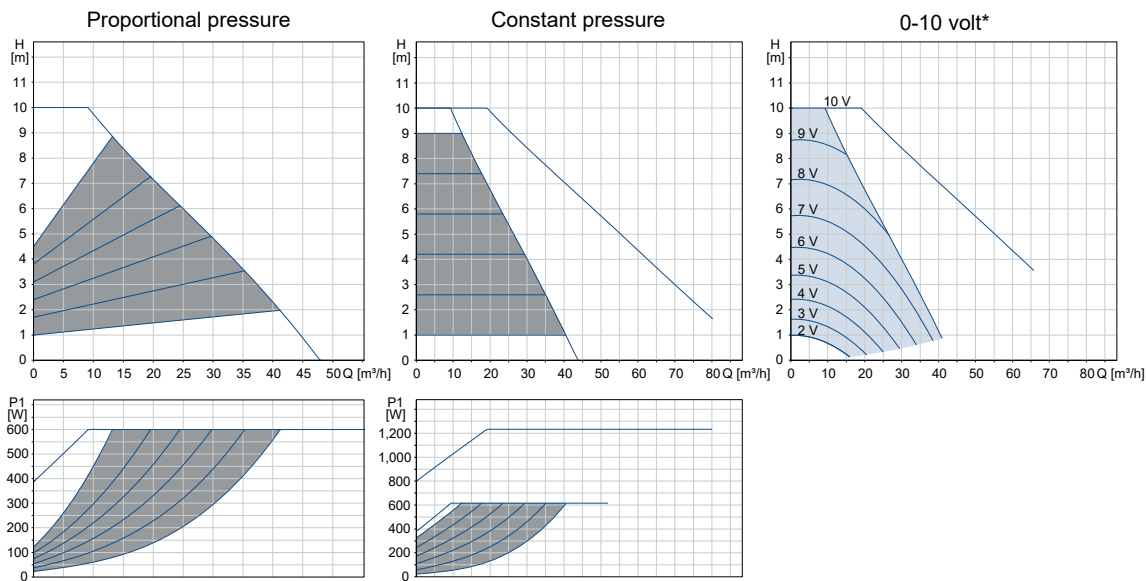
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.17.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 65-100 F (N)	340	204	84	164	73	133	133	74	312	386	94	65	119	130/145	185	14/19

■ MAGNA3 D 65-100 F
1 x 230 V, 50/60 Hz



TM079426

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

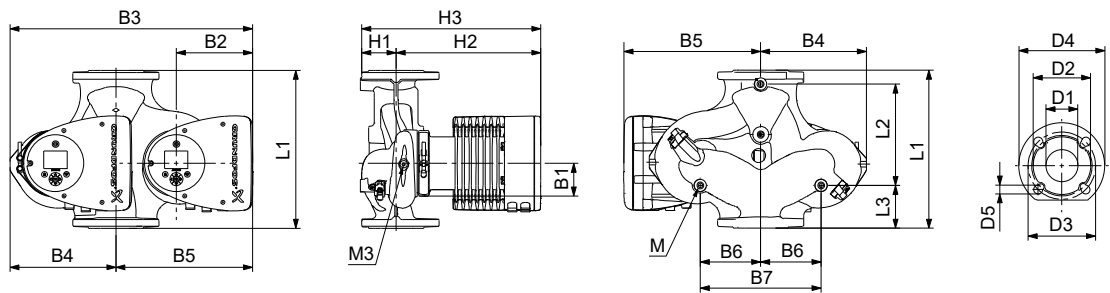
Speed	P1 [W]	I _l [A]
Min.	23	0.24
Max.	635	2.77

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
38.7	47.6	0.06

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.19.



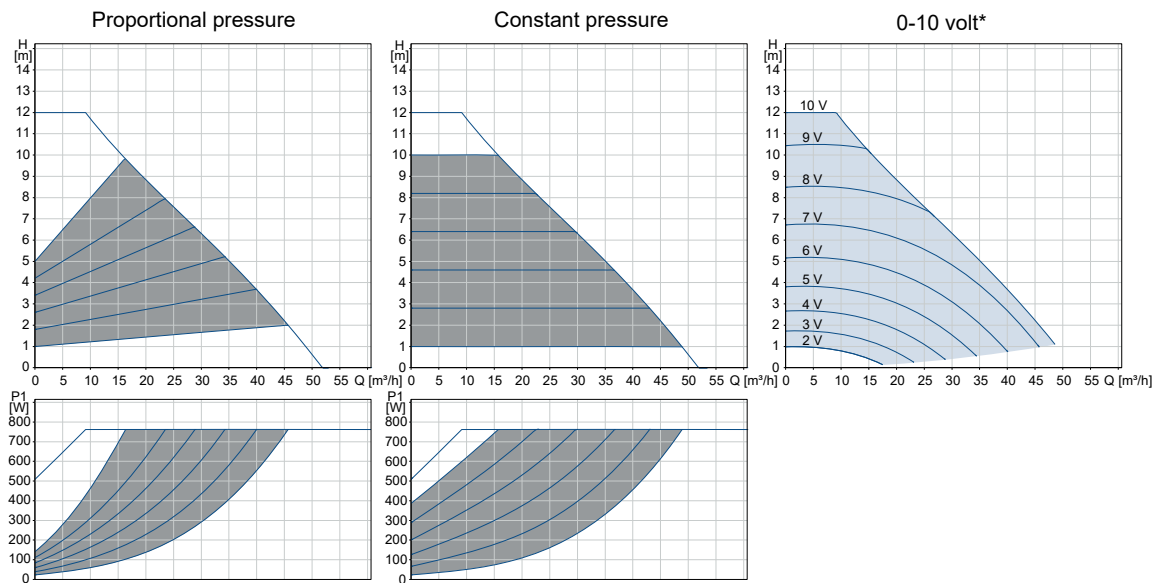
TM1040020

Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 65-100 F	340	218	92	92	204	84	522	228	294	130	260	77	312	389	65	119	130/145	185	14/19

M	M3
M12	Rp 1/4

MAGNA3 65-120 F (N)

1 x 230 V**, 50/60 Hz



TM079427

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

** For Japanese models, the voltage is 200-230 V

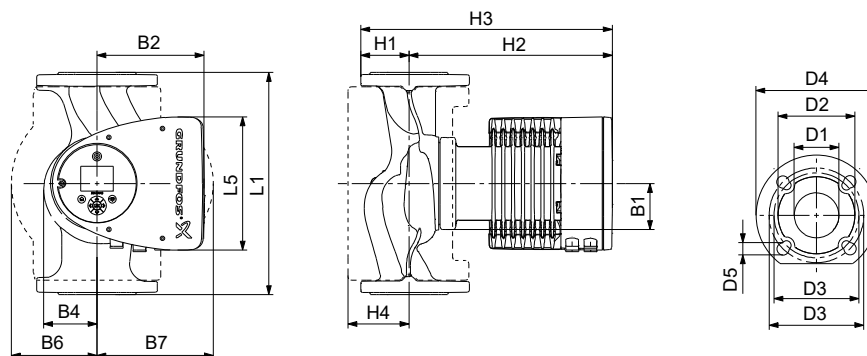
Speed	P1 [W]	I ₁ [A]
Min.	16	0.18
Max.	784	3.45

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
21.0	24.7	0.06

* External setpoint influence shown with a set point of H_{max}

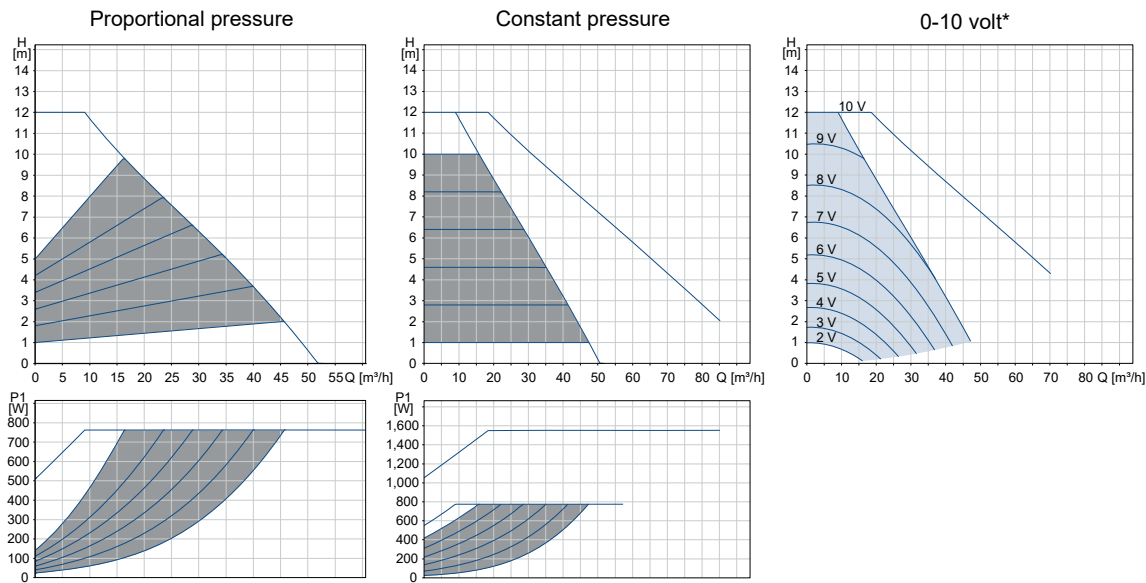
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.17.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 65-120 F (N)	340	204	84	164	73	133	133	74	312	386	94	65	119	130/145	185	14/19

■ MAGNA3 D 65-120 F
1 x 230 V, 50/60 Hz



TM079428

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

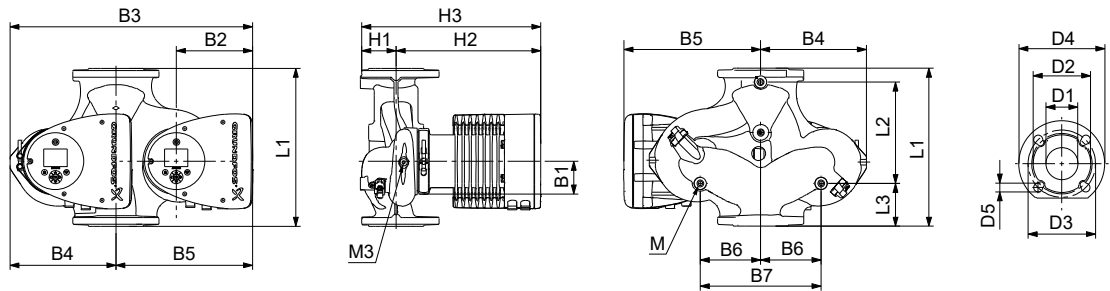
Speed	P1 [W]	I ₁ [A]
Min.	23	0.24
Max.	798	3.47

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
38.7	47.6	0.06

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.



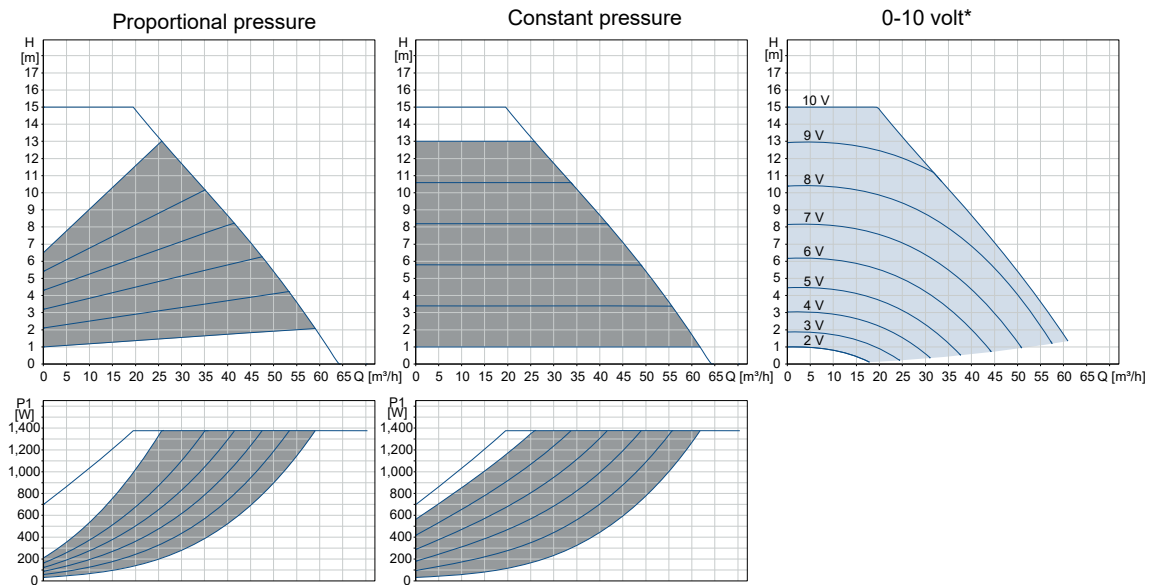
TM1040020

Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 65-120 F	340	218	92	92	204	84	522	228	294	130	260	77	312	389	65	119	130/145	185	14/19

M	M3
M12	Rp 1/4

MAGNA3 65-150 F (N)

1 x 230 V**, 50/60 Hz



TM079429

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

** For Japanese models, the voltage is 200-230 V

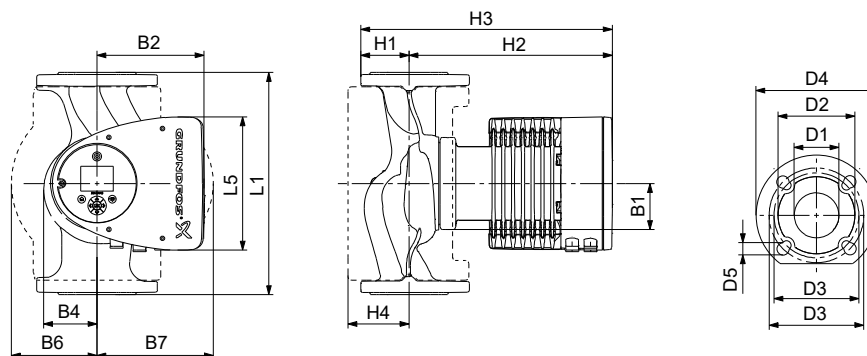
Speed	P1 [W]	I ₁ [A]
Min.	29	0.30
Max.	1409	6.18

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
24.0	27.8	0.06

* External setpoint influence shown with a set point of H_{max}

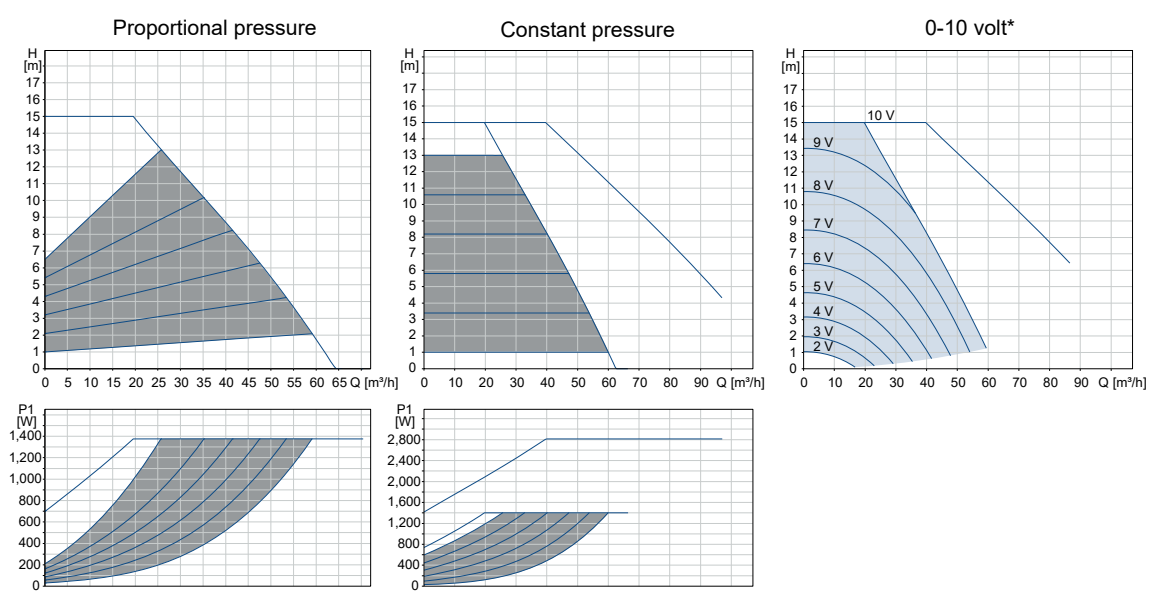
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Also available with:	Stainless-steel pump housing, type N.
Specific EEI:	0.17.



TM1040018

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 65-150 F (N)	340	204	84	164	73	133	133	74	312	386	94	65	119	130/145	185	14/19

■ MAGNA3 D 65-150 F
1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

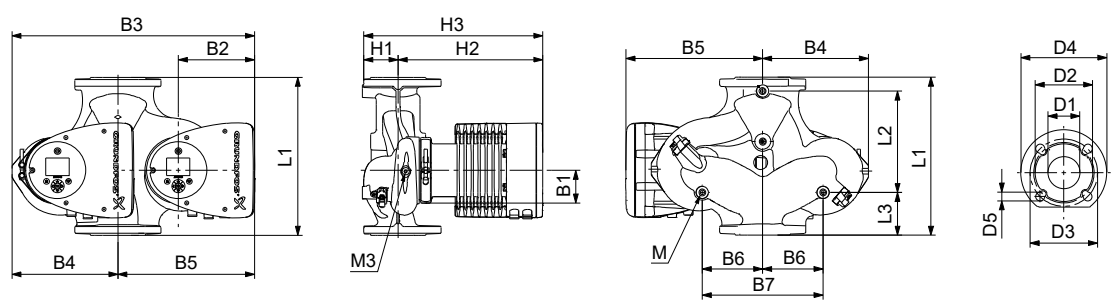
Speed	P1 [W]	I ₁ [A]
Min.	29	0.30
Max.	1442	6.30

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
44.6	53.7	0.06

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.

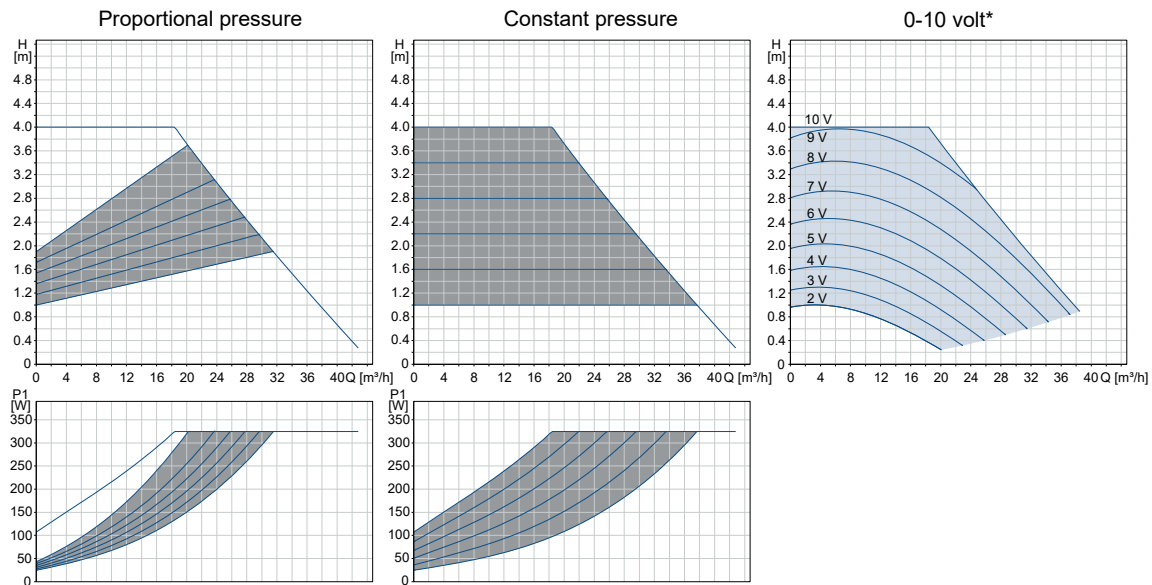


Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 65-150 F	340	218	92	92	204	84	522	228	294	130	260	77	312	389	65	119	130/145	185	14/19

M M3
Rp 1/4

■ MAGNA3 80-40 F

1 x 230 V, 50/60 Hz



TM079431

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

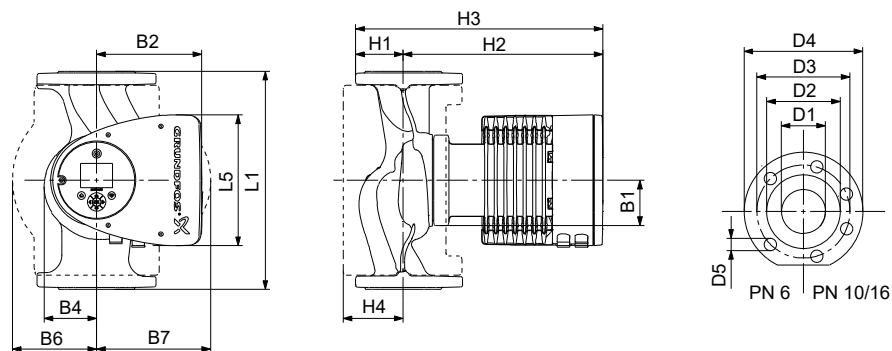
Speed	P1 [W]	I ₁ [A]
Min.	24	0.26
Max.	336	1.52

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
25.8	28.8	0.07

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.

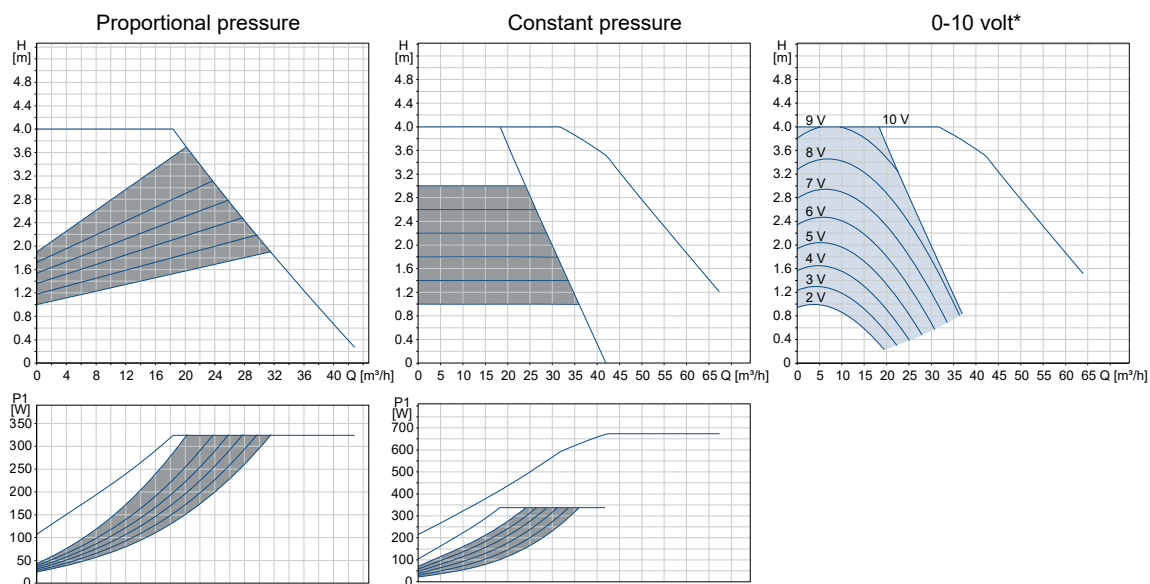


TM1040012

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 80-40 F	360	204	84	164	73	163	163	96	318	413	115	80	128	150/160	200	19

- **MAGNA3 D 80-40 F**

1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

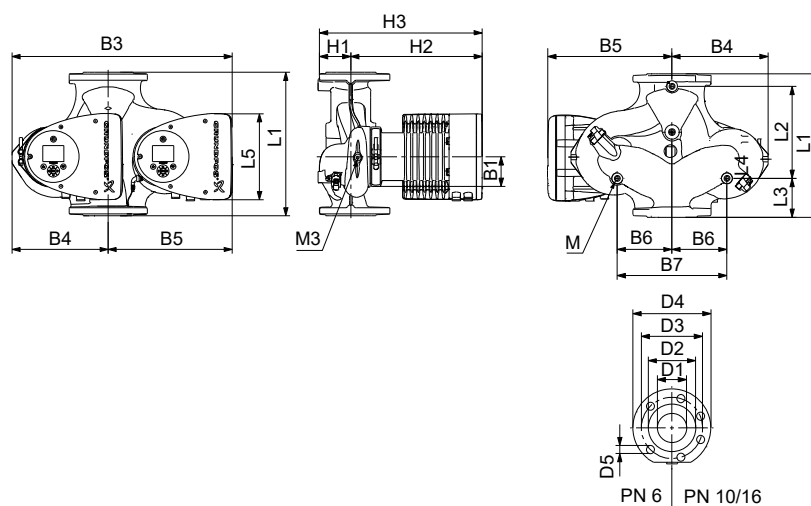
Speed	P1 [W]	I ₁ [A]
Min.	26	0.28
Max.	349	1.55

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m ³]
45.8	55.8	0.07

* External setpoint influence shown with a set point of H_{max}

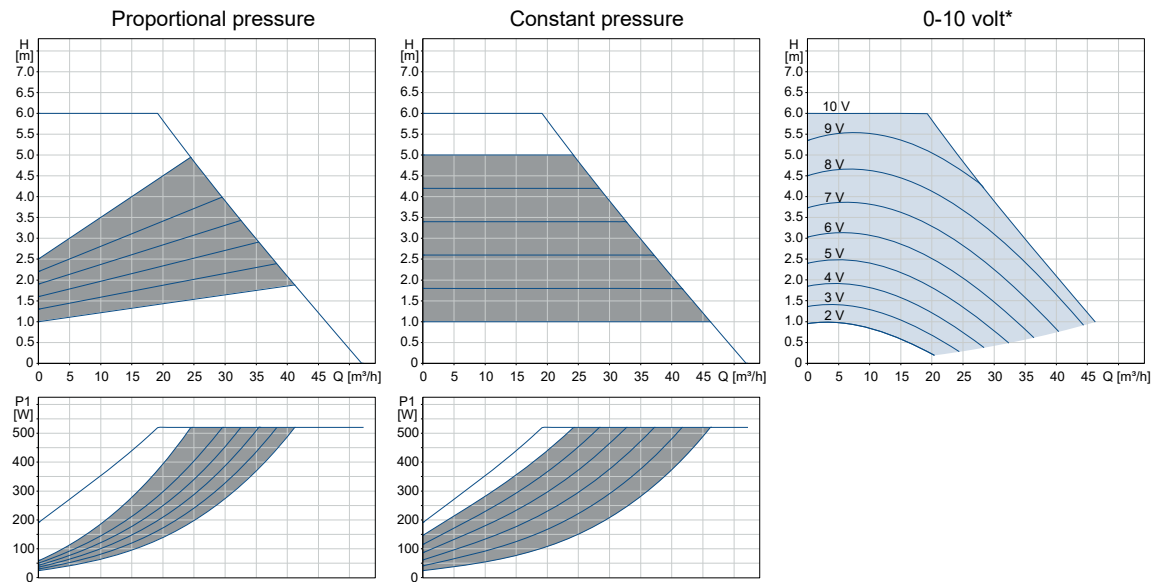
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.



Pump type	Dimensions [mm]																				
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5	M	M3
MAGNA3 D 80-40 F	360	218	102	102	204	84	538	244	294	130	260	97	318	415	80	128	150/160	200	19	M12	Rp 1/4

MAGNA3 80-60 F

1 x 230 V, 50/60 Hz



TM079433

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

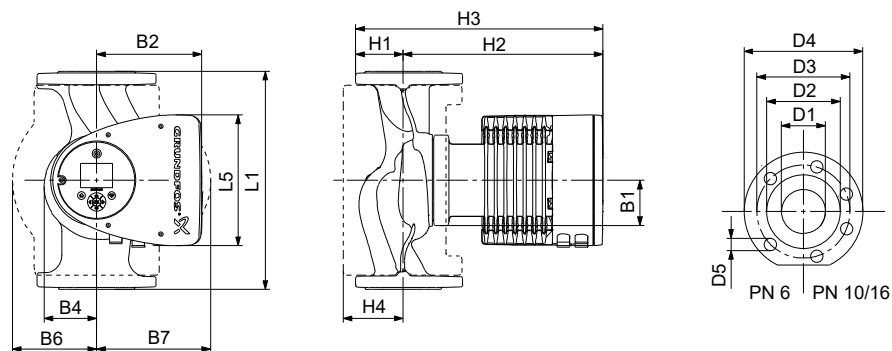
Speed	P1 [W]	I ₁ [A]
Min.	24	0.26
Max.	536	2.40

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
25.8	29.1	0.07

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.

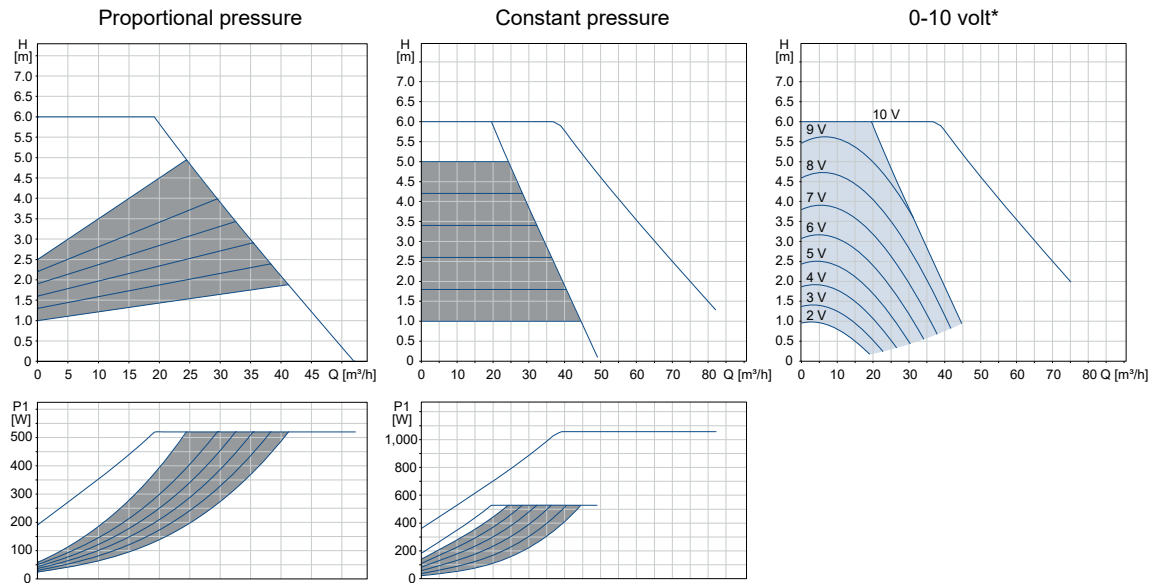


TM1040012

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 80-60 F	360	204	84	164	73	163	163	96	318	413	115	80	128	150/160	200	19

■ MAGNA3 D 80-60 F

1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

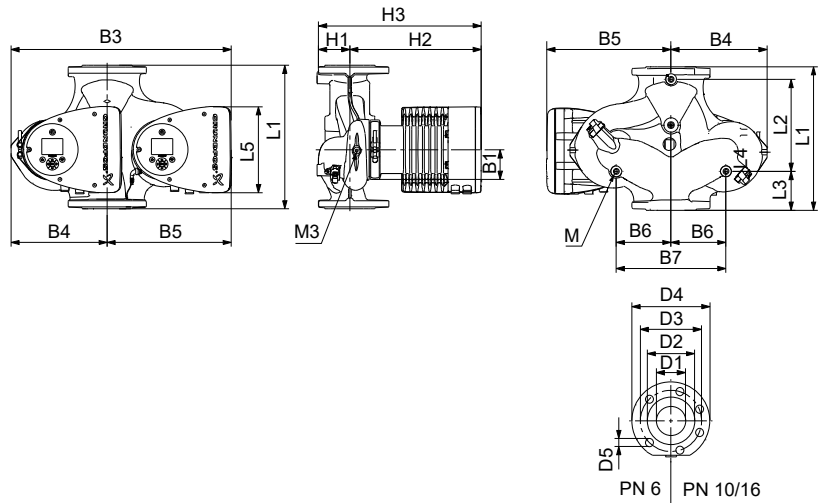
Speed	P1 [W]	I ₁ [A]
Min.	26	0.28
Max.	544	2.40

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
45.8	55.8	0.07

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.

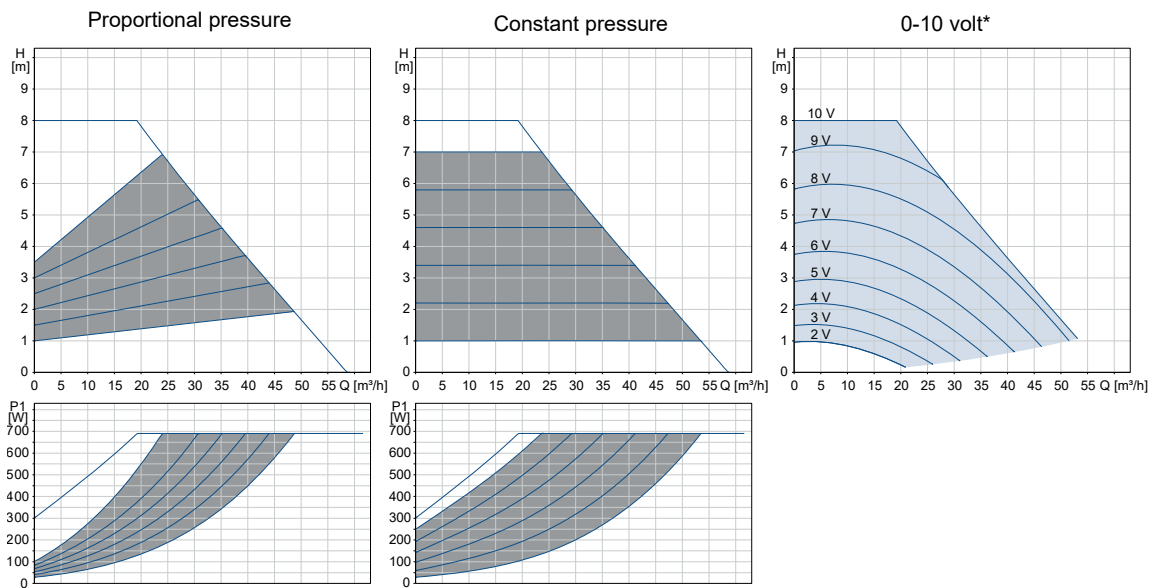


Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 80-60 F	360	218	102	102	204	84	538	244	294	130	260	97	318	415	80	128	150/160	200	19

M M12 Rp 1/4

MAGNA3 80-80 F

1 x 230 V, 50/60 Hz



TM079435

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

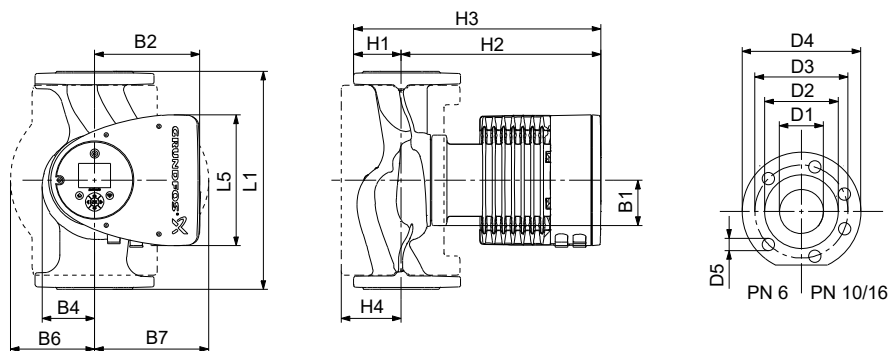
Speed	P1 [W]	I ₁ [A]
Min.	28	0.28
Max.	710	3.15

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
28.0	32.0	0.07

* External setpoint influence shown with a set point of H_{max}

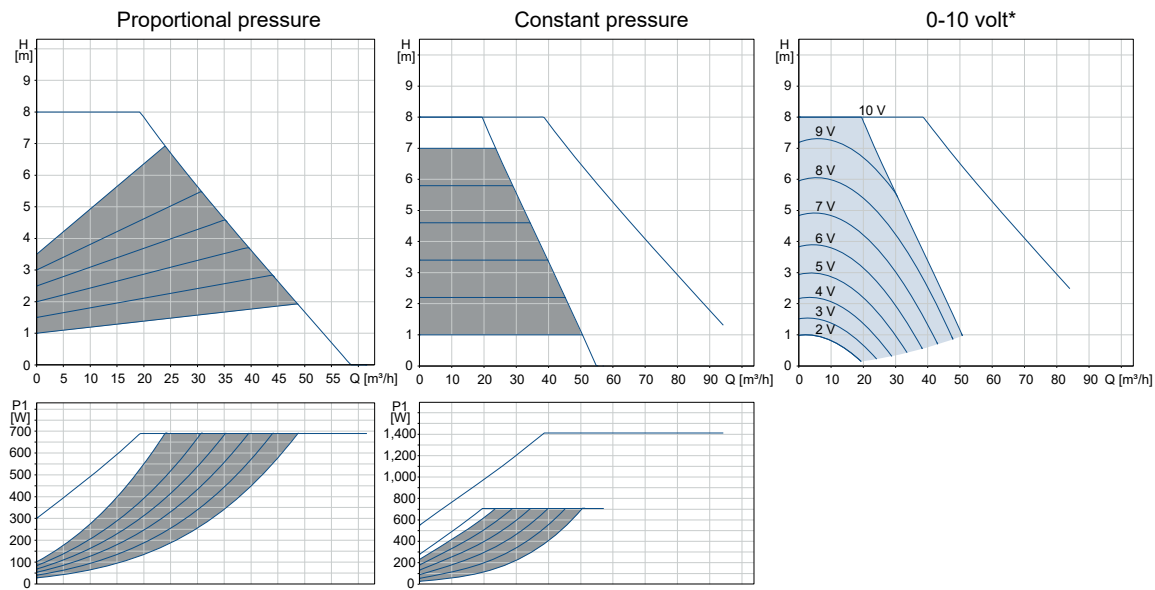
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.



TM1040012

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 80-80 F	360	204	84	164	73	163	163	96	318	413	115	80	128	150/160	200	19

■ MAGNA3 D 80-80 F
1 x 230 V, 50/60 Hz



TM079436

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

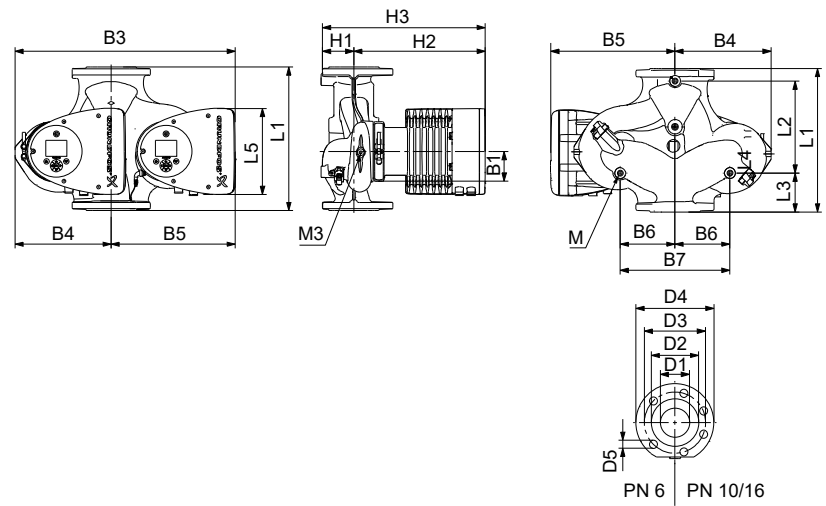
Speed	P1 [W]	I ₁ [A]
Min.	26	0.28
Max.	726	3.20

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
45.8	55.8	0.07

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.



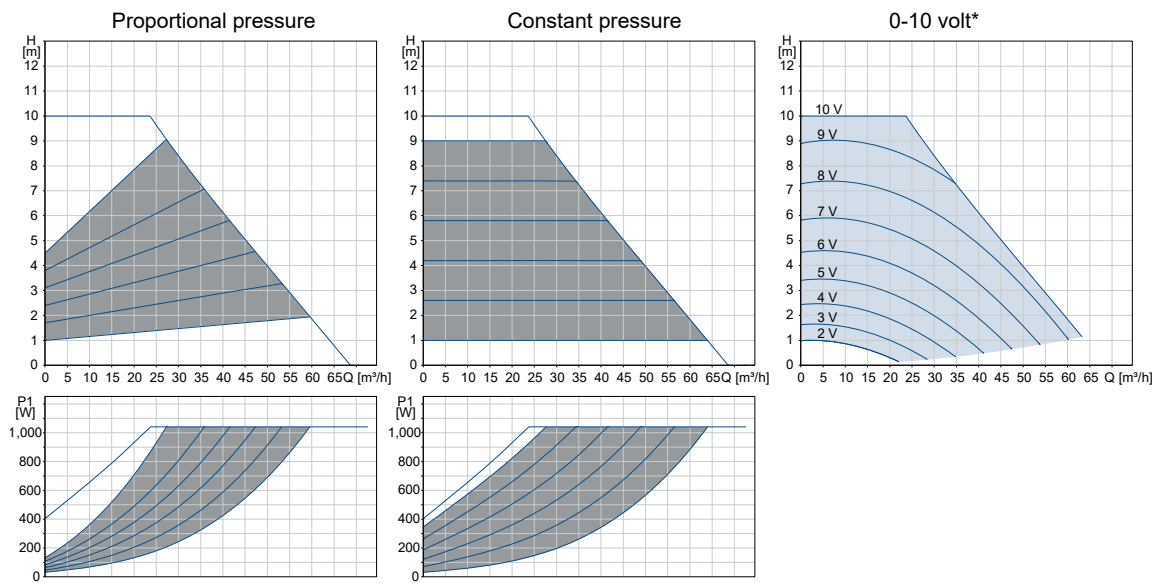
TM1040015

Pump type	Dimensions [mm]																			
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5	M
MAGNA3 D 80-80 F	360	218	102	102	204	84	538	244	294	130	260	97	318	415	80	128	150/160	200	19	M12

	Rp 1/4
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MAGNA3 80-100 F

1 x 230 V, 50/60 Hz



TM079437

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

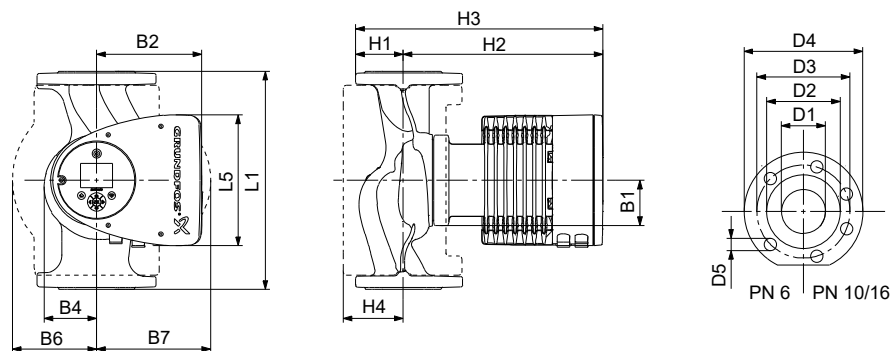
Speed	P1 [W]	I ₁ [A]
Min.	31	0.32
Max.	1055	4.69

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m ³]
28.8	32.6	0.07

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.

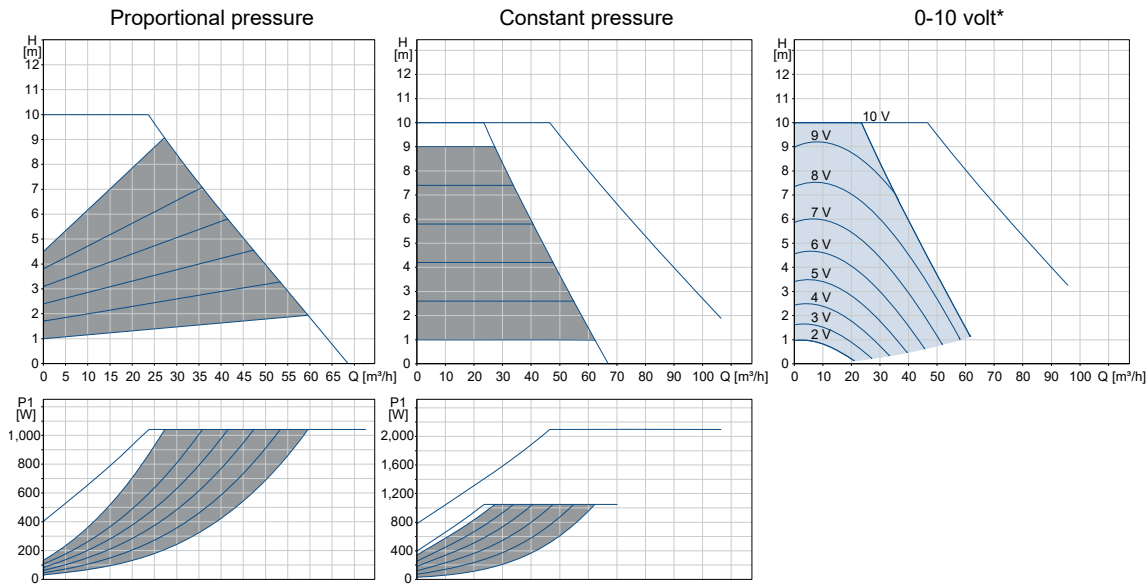


TM1040012

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 80-100 F	360	204	84	164	73	163	163	96	318	413	115	80	128	150/160	200	19

■ MAGNA3 D 80-100 F

1 x 230 V, 50/60 Hz



TM079438

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

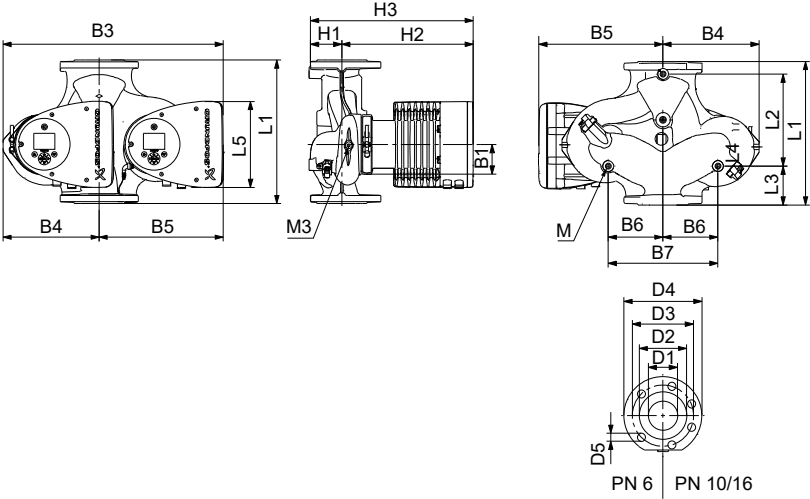
Speed	P1 [W]	I ₁ [A]
Min.	32	0.32
Max.	1082	4.78

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
51.6	63.4	0.07

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.



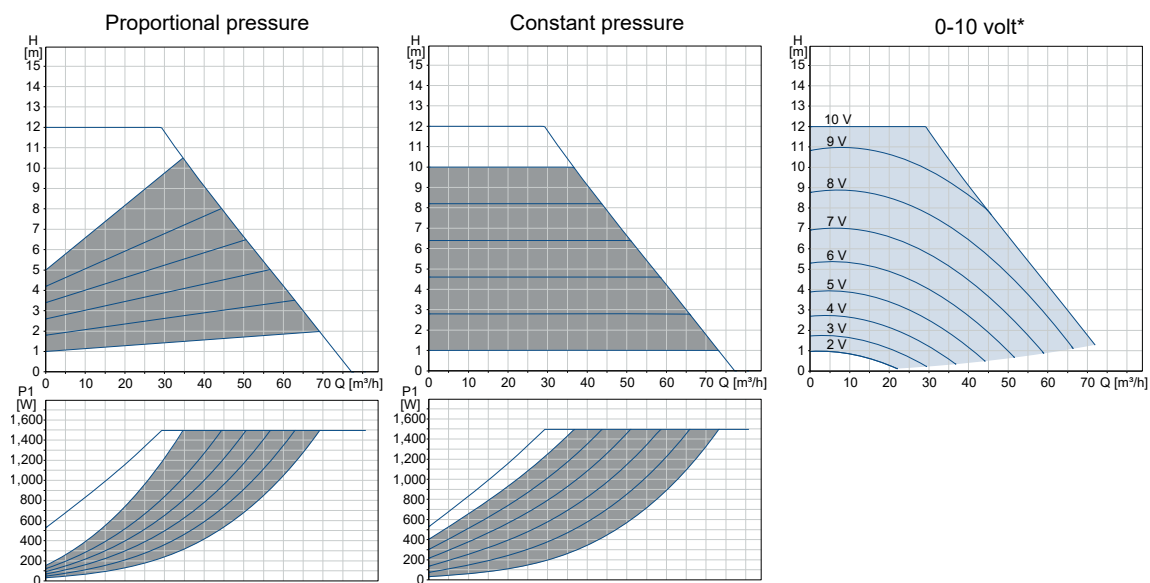
TM1040015

Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 80-100 F	360	218	102	102	204	84	538	244	294	130	260	97	318	415	80	128	150/160	200	19

	M	M3
	M12	Rp 1/4

MAGNA3 80-120 F

1 x 230 V**, 50/60 Hz



TM079439

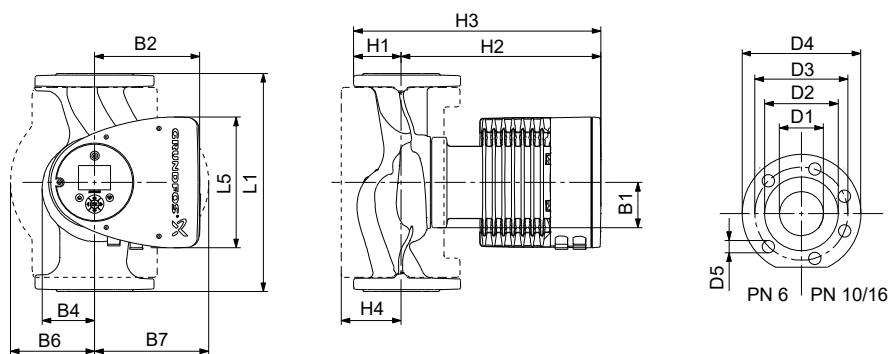
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*
** For Japanese models, the voltage is 200-230 V	

Speed	P1 [W]	I ₁ [A]
Min.	31	0.32
Max.	1500	6.65

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
28.8	32.6	0.07

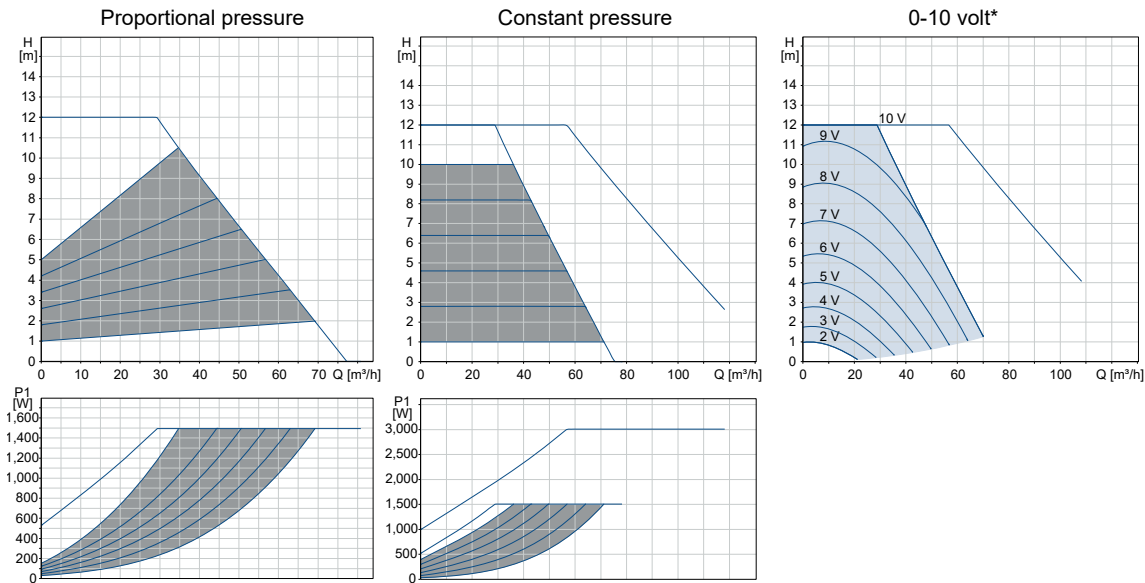
* External setpoint influence shown with a set point of H _{max}	
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.



TM1040012

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 80-120 F	360	204	84	164	73	163	163	96	318	413	115	80	128	150/160	200	19

■ MAGNA3 D 80-120 F
1 x 230 V, 50/60 Hz



TM079440

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

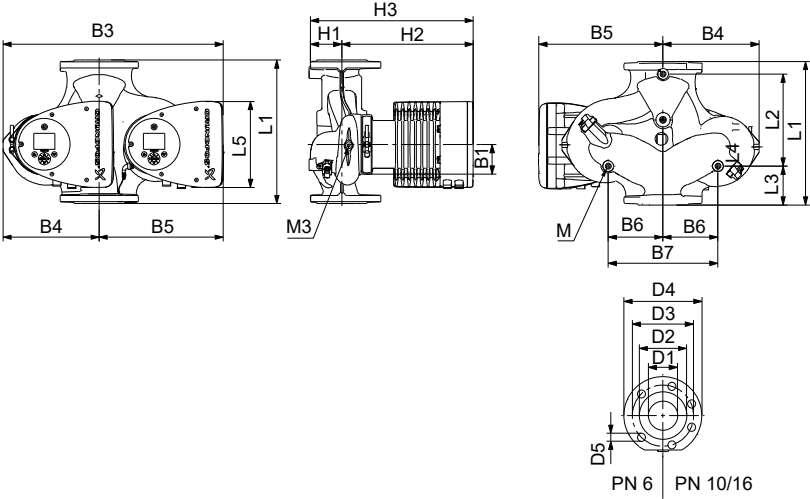
Speed	P1 [W]	I ₁ [A]
Min.	32	0.32
Max.	1554	6.86

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
51.6	63.1	0.07

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.18.



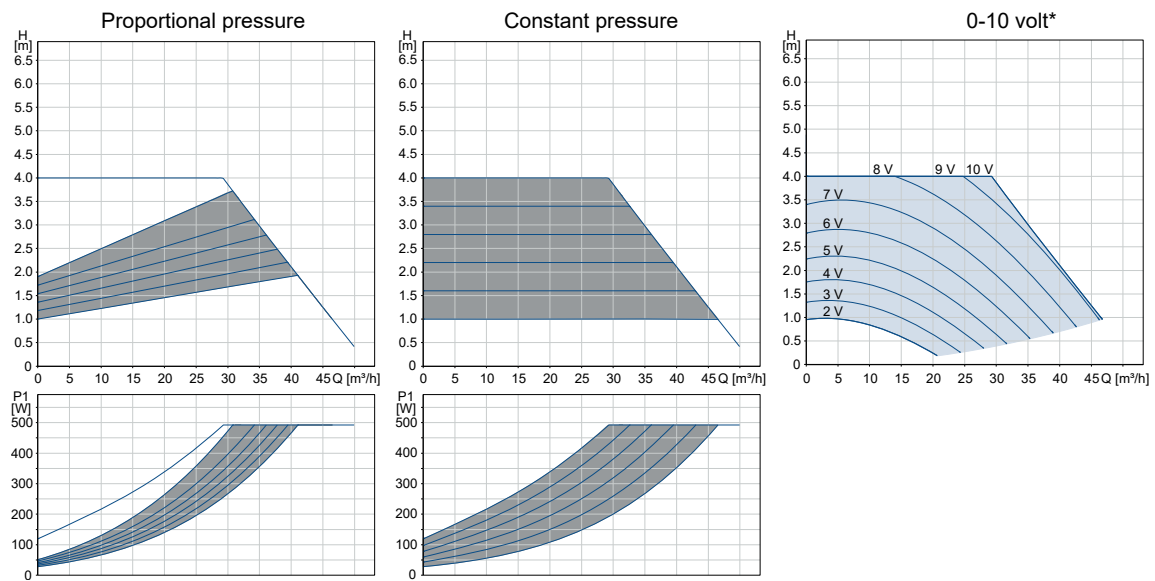
TM1040015

Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 80-120 F	360	218	102	102	204	84	538	244	294	130	260	97	318	415	80	128	150/160	200	19

M M3 Rp 1/4

MAGNA3 100-40 F

1 x 230 V, 50/60 Hz



TM079441

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

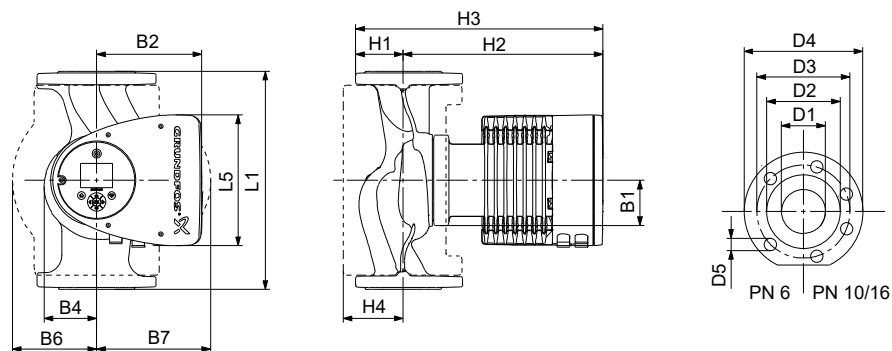
Speed	P1 [W]	I ₁ [A]
Min.	28	0.27
Max.	527	2.35

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
32.3	36.4	0.1

* External setpoint influence shown with a set point of H_{max}

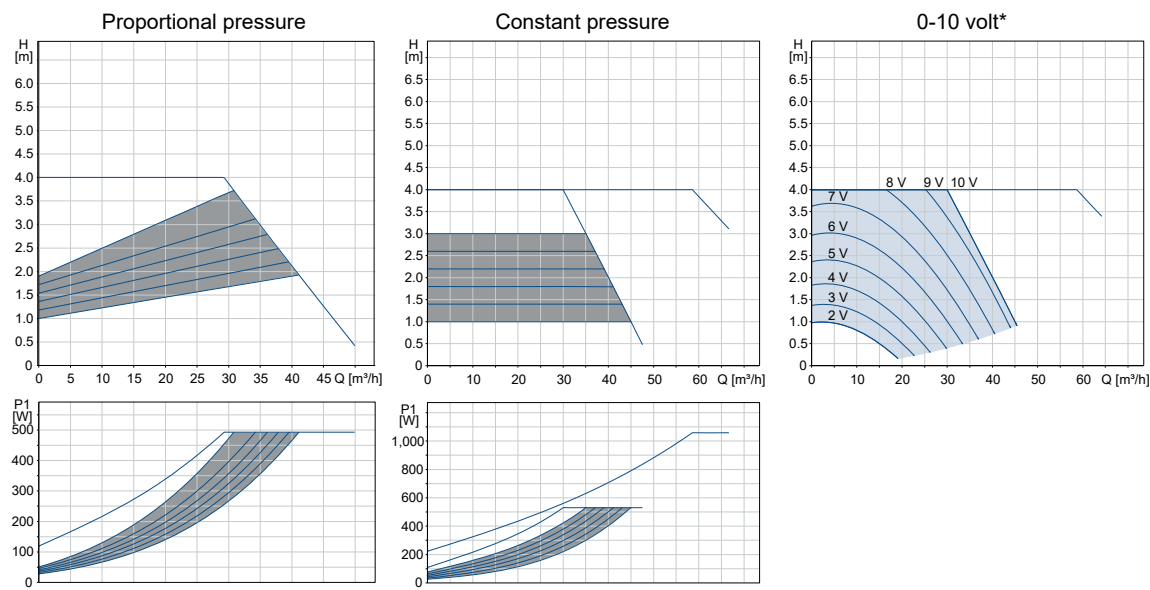
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.



TM1040012

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 100-40 F	450	204	84	164	73	178	178	103	330	433	120	100	160	180	220	19

■ MAGNA3 D 100-40 F
1 x 230 V, 50/60 Hz



TM079442

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

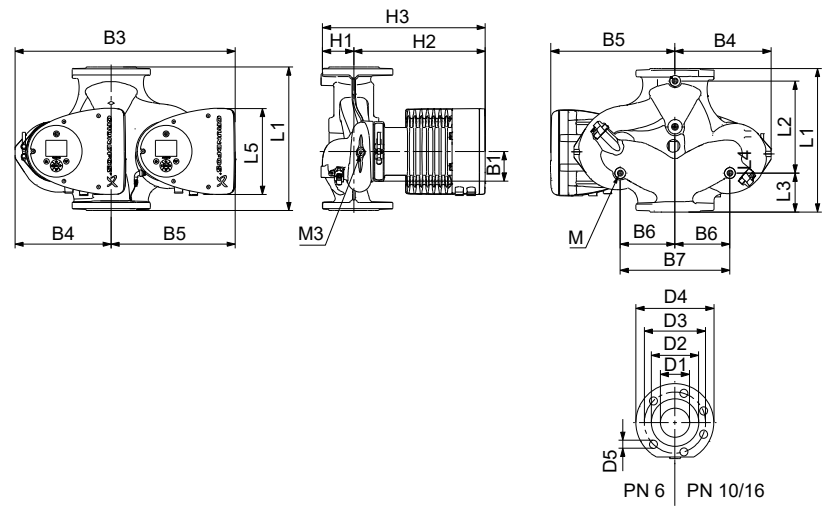
Speed	P1 [W]	I _l [A]
Min.	28	0.27
Max.	545	2.41

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
58.8	71.3	0.1

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.



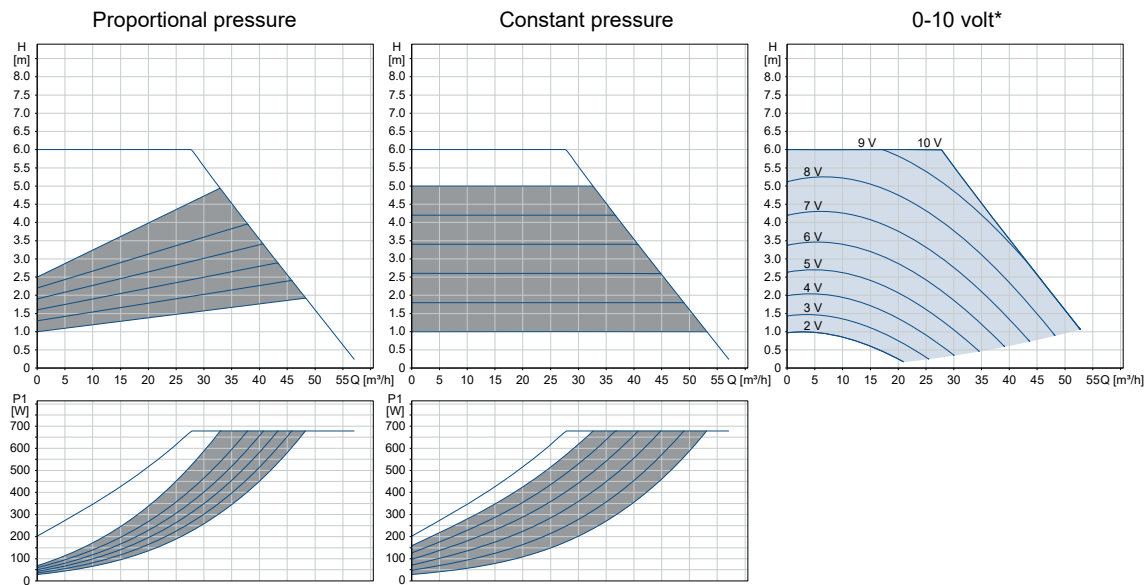
TM1040015

Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 100-40 F	450	243	147	147	204	84	551	252	299	135	270	103	330	434	100	160	180	220	19

M M3
Rp 1/4

MAGNA3 100-60 F

1 x 230 V, 50/60 Hz



TM079443

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

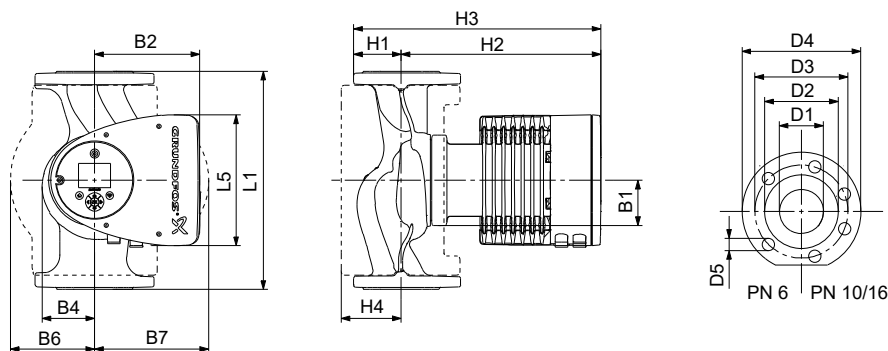
Speed	P1 [W]	I ₁ [A]
Min.	28	0.28
Max.	706	3.11

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m ³]
32.3	36.4	0.1

* External setpoint influence shown with a set point of H_{max}

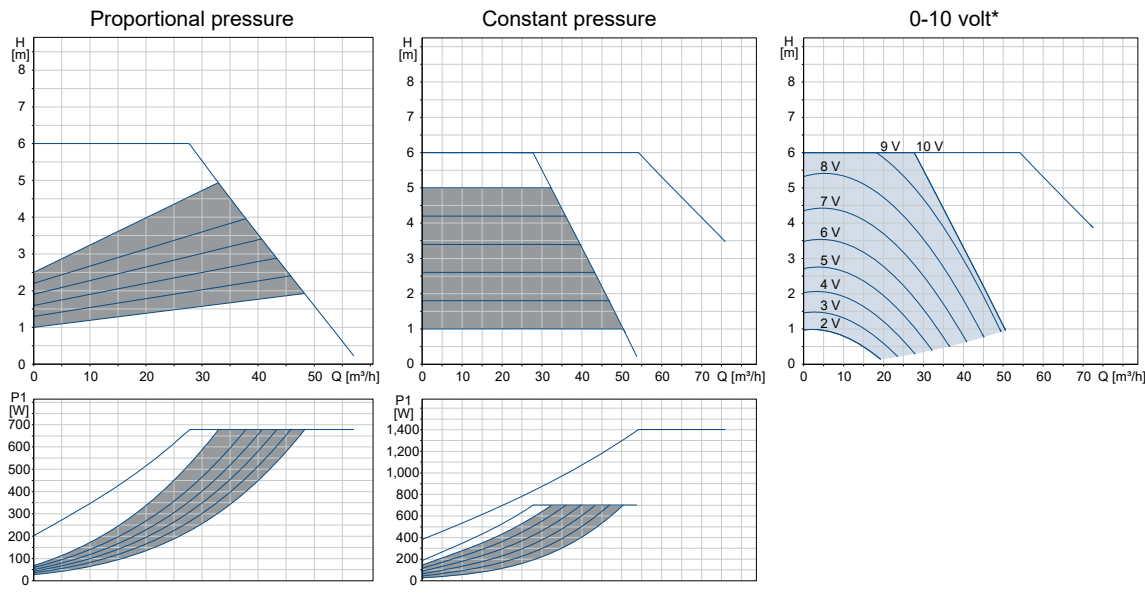
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.



TM1040012

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 100-60 F	450	204	84	164	73	178	178	103	330	433	120	100	160	180	220	19

■ MAGNA3 D 100-60 F
1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

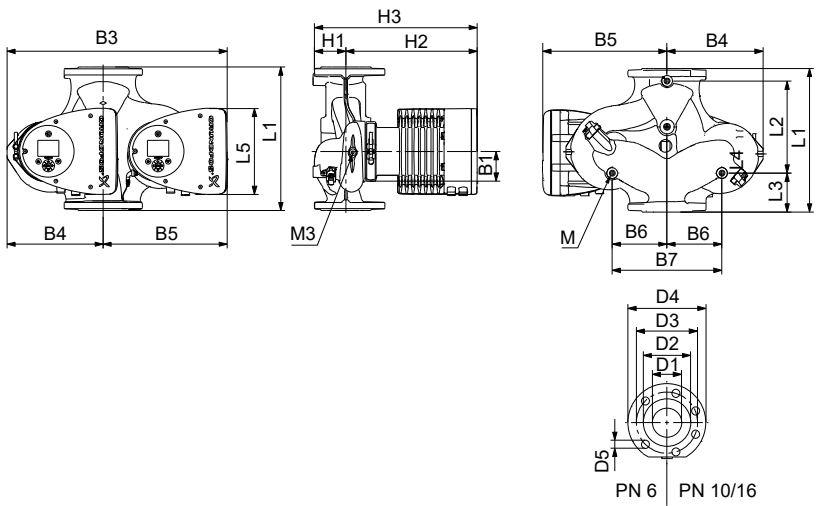
Speed	P1 [W]	I ₁ [A]
Min.	28	0.27
Max.	721	3.15

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
58.8	71.3	0.1

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.

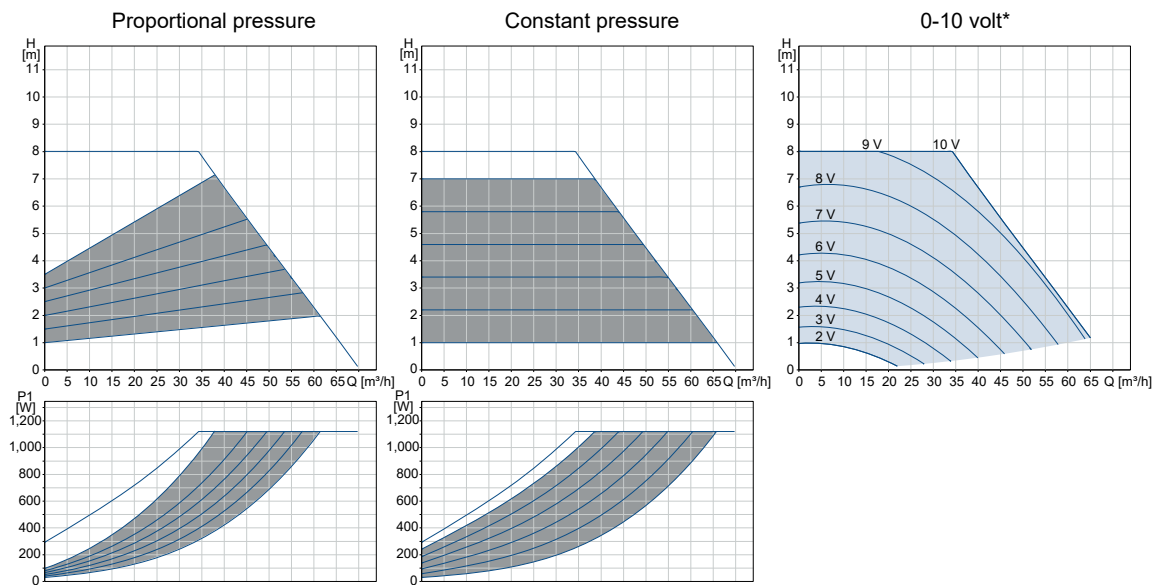


Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 100-60 F	450	243	147	147	204	84	551	252	299	135	270	103	330	434	100	160	180	220	19

M M3
Rp 1/4

MAGNA3 100-80 F

1 x 230 V, 50/60 Hz



TM079445

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

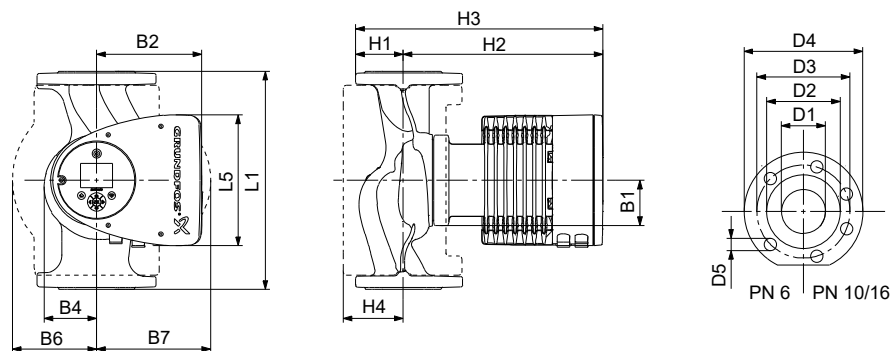
Speed	P1 [W]	I ₁ [A]
Min.	31	0.32
Max.	1149	5.06

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
33.1	37.3	0.1

* External setpoint influence shown with a set point of H_{max}

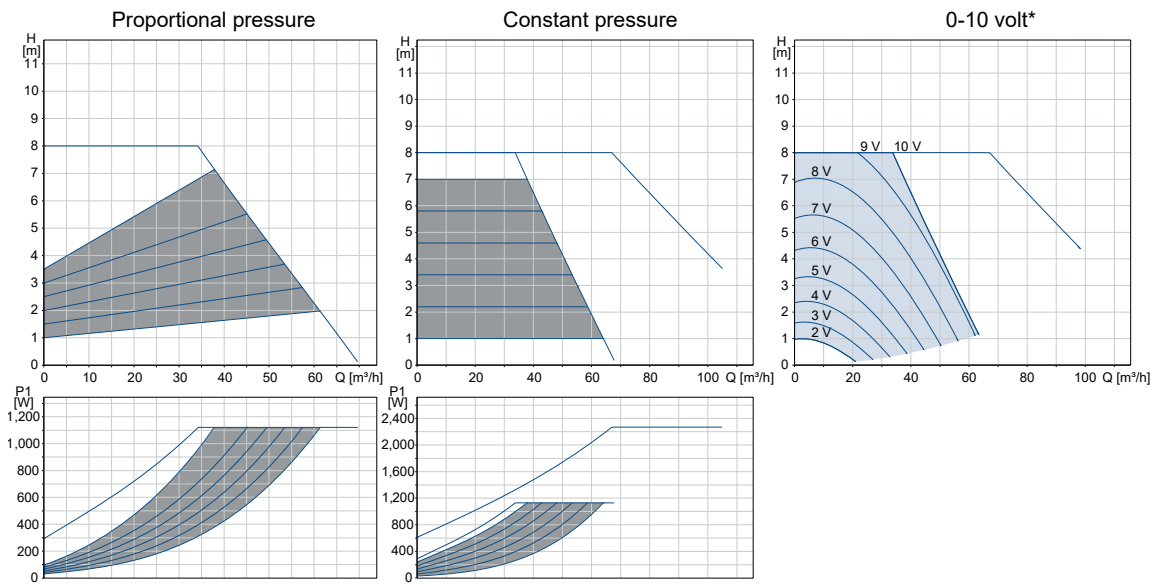
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.



TM1040012

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 100-80 F	450	204	84	164	73	178	178	103	330	433	120	100	160	180	220	19

■ MAGNA3 D 100-80 F
1 x 230 V, 50/60 Hz



TM079446

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

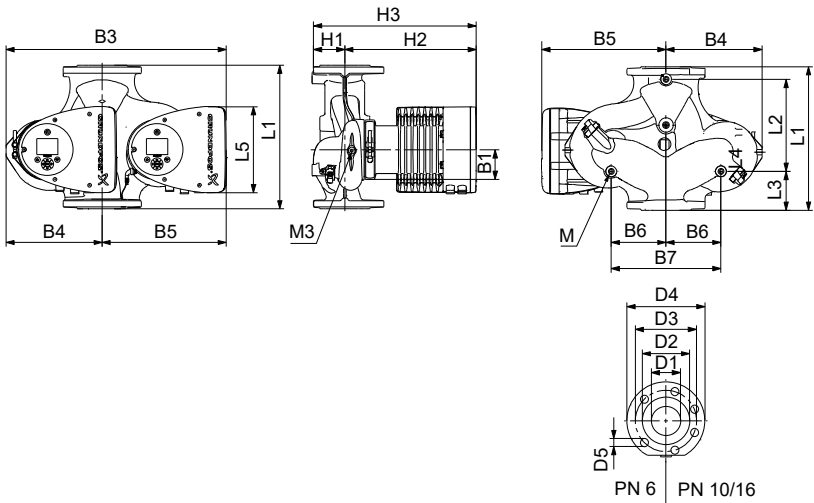
Speed	P1 [W]	I ₁ [A]
Min.	32	0.33
Max.	1161	5.08

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
60.4	73.2	0.1

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.

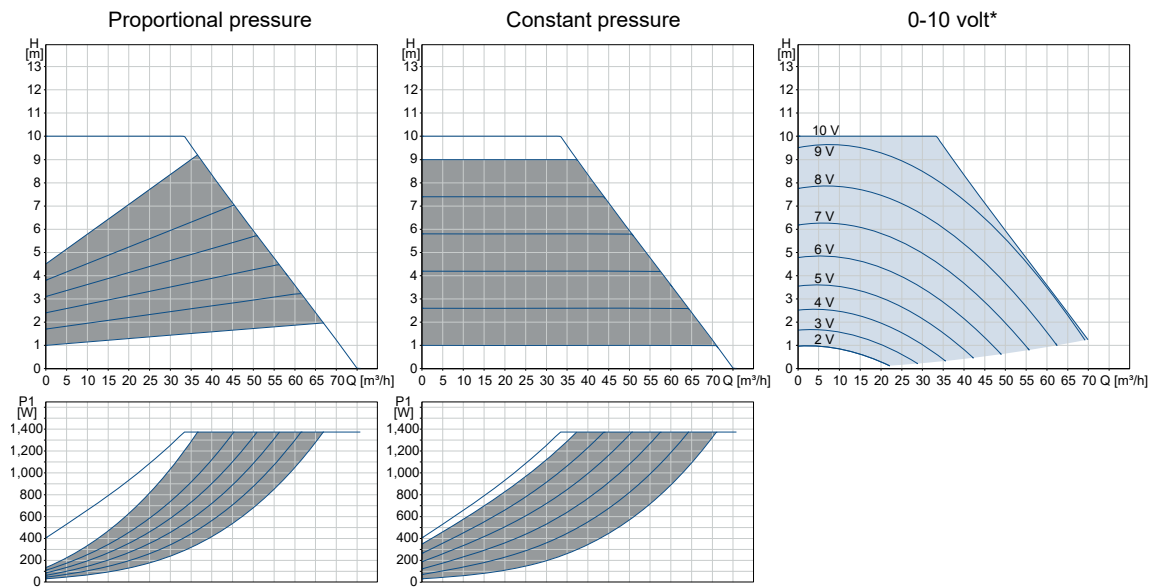


TM1040015

Pump type	Dimensions [mm]																			
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5	M
MAGNA3 D 100-80 F	450	243	147	147	204	84	551	252	299	135	270	103	330	434	100	160	180	220	19	M12 Rp 1/4

MAGNA3 100-100 F

1 x 230 V, 50/60 Hz



TM07947

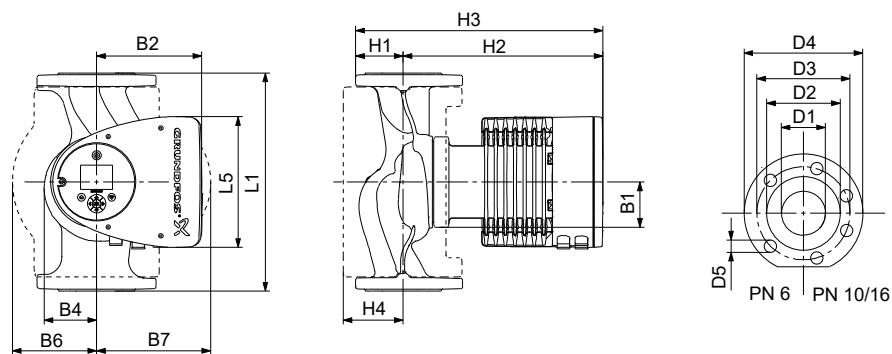
Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

Speed	P1 [W]	I ₁ [A]
Min.	31	0.32
Max.	1406	6.17

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
33.1	37.0	0.1

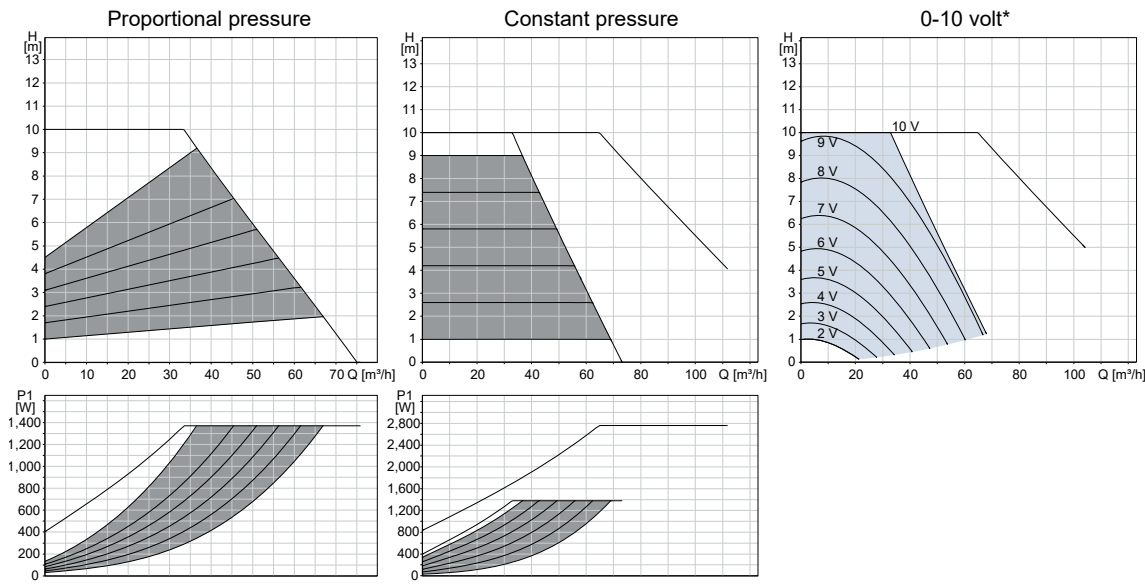
* External setpoint influence shown with a set point of H _{max}		
System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).	
Liquid temperature:	-10 to +110 °C (TF 110).	
Specific EEI:	0.17.	



TM1040012

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 100-100 F	450	204	84	164	73	178	178	103	330	433	120	100	160	180	220	19

MAGNA3 D 100-100 F
1 x 230 V, 50/60 Hz



Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

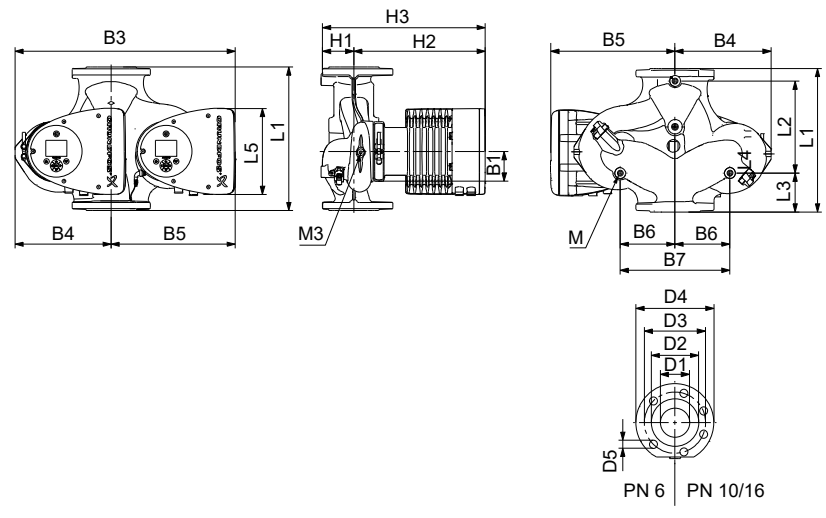
Speed	P1 [W]	I ₁ [A]
Min.	34	0.34
Max.	1415	6.17

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
60.4	73.2	0.1

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.



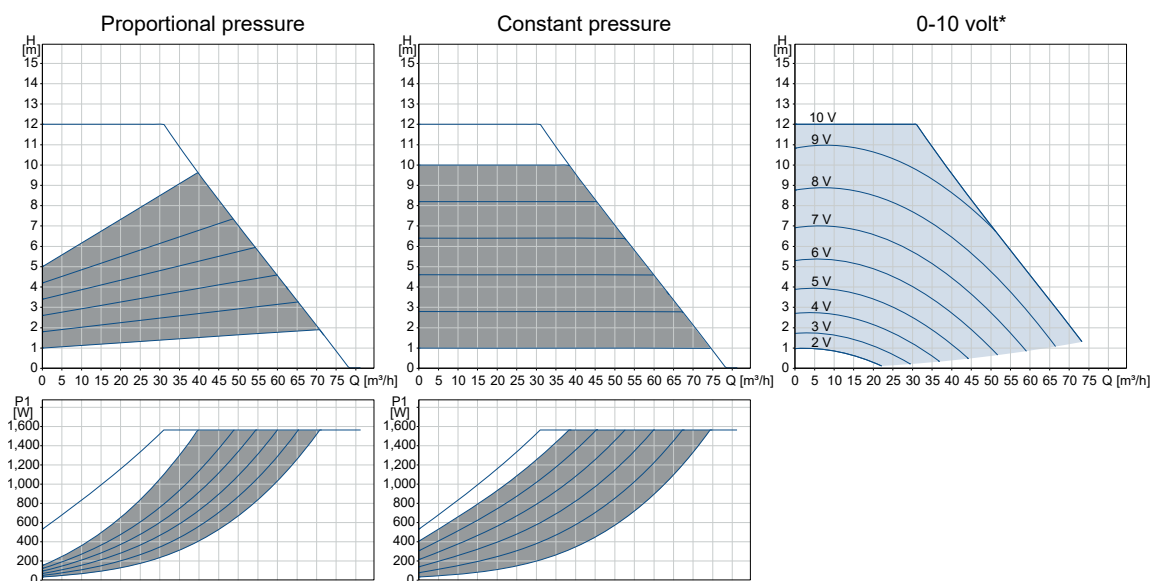
Pump type	Dimensions [mm]																			
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5	M
MAGNA3 D 100-100 F	450	243	147	147	204	84	551	252	299	135	270	103	330	434	100	160	180	220	19	M12

PN 6 PN 10/16

Rp 1/4

MAGNA3 100-120 F

1 x 230 V**, 50/60 Hz



TM079449

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*
** For Japanese models, the voltage is 200-230 V	

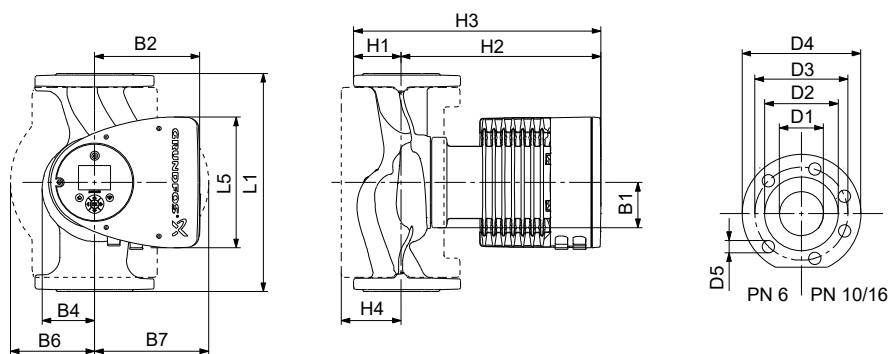
Speed	P1 [W]	I ₁ [A]
Min.	31	0.32
Max.	1600	7.00

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
33.1	37.0	0.1

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.

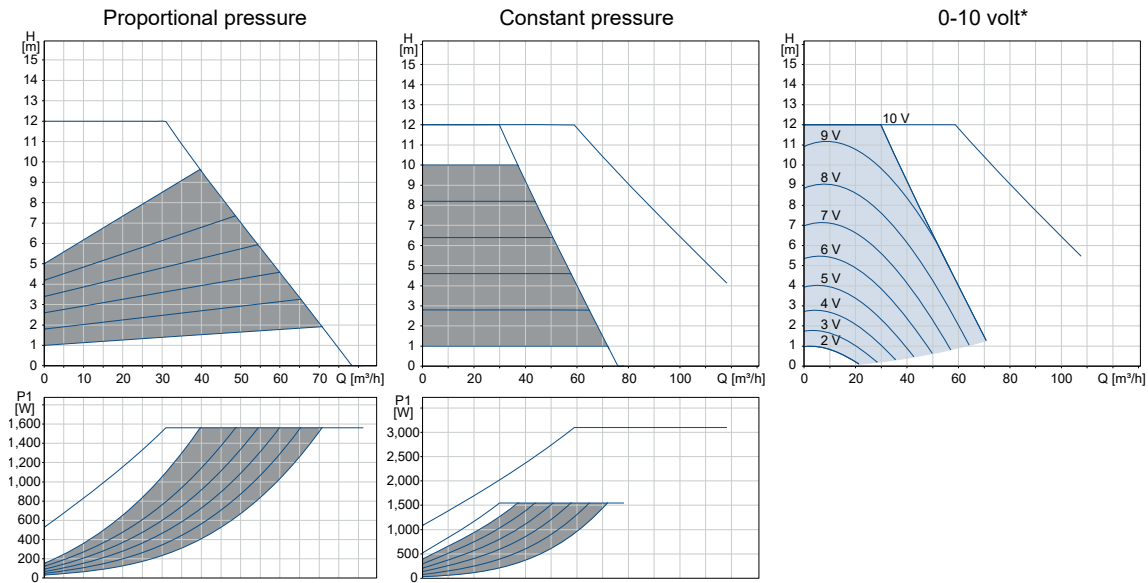


TM1040012

Pump type	Dimensions [mm]															
	L1	L5	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5
MAGNA3 100-120 F	450	204	84	164	73	178	178	103	330	433	120	100	160	180	220	19

■ MAGNA3 D 100-120 F

1 x 230 V, 50/60 Hz



TM079450

Pos.	Description
Column 1	Proportional pressure
Column 2	Constant pressure
Column 3	0-10 volt*

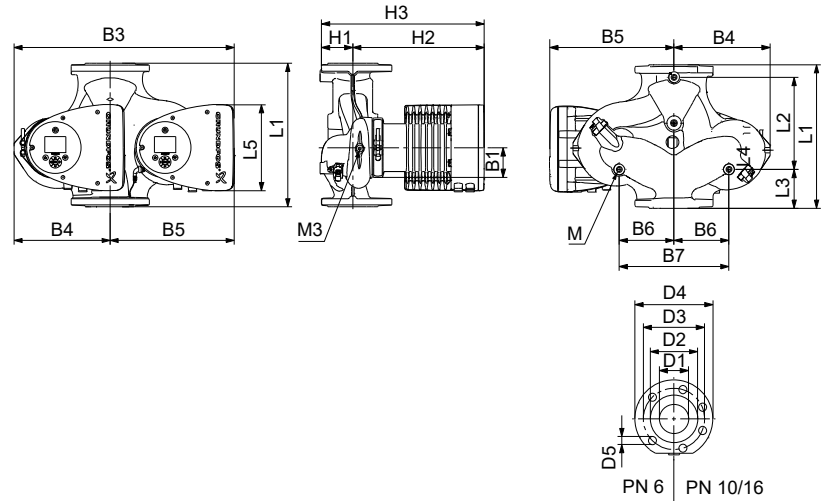
Speed	P1 [W]	I ₁ [A]
Min.	35	0.35
Max.	1586	6.89

The pump incorporates overload protection.

Net weights [kg]	Gross weights [kg]	Ship. vol. [m³]
60.4	72.8	0.1

* External setpoint influence shown with a set point of H_{max}

System pressure:	Max. 1.0 MPa (10 bar). Also available as max. 1.6 MPa (16 bar).
Liquid temperature:	-10 to +110 °C (TF 110).
Specific EEI:	0.17.



TM1040015

Pump type	Dimensions [mm]																		
	L1	L2	L3	L4	L5	B1	B3	B4	B5	B6	B7	H1	H2	H3	D1	D2	D3	D4	D5
MAGNA3 D 100-120 F	450	243	147	147	204	84	551	252	299	135	270	103	330	434	100	160	180	220	19

M M12 M3 Rp 1/4

11. Accessories

Insulating shells for applications with ice buildup

The accessory is for single-head MAGNA pumps used in applications with ice buildup.

The accessory set consists of two polyurethane (PUR) shells and metal clamps to ensure tight assembly.



TM086789

Fitting the insulating shells to a MAGNA3 pump

The dimensions of the insulating shells differ from those of the insulating shells for heating systems. You can use the insulating shells for both stainless-steel and cast-iron pumps.

Pump type	Product number
MAGNA3 25-40/60/80/100/120 (N)	98354534
MAGNA3 32-40/60/80/100/120 (N)	98354535
MAGNA3 32-40/60/80/100 F (N)	98354536
MAGNA3 32-120 F (N)	98063287
MAGNA3 40-40/60 F (N)	98354537
MAGNA3 40-80/100 F (N)	98063288
MAGNA3 40-120/150/180 F (N)	98145675
MAGNA3 50-40/60/80 F (N)	98063289
MAGNA3 50-100/120/150/180 F (N)	98145676
MAGNA3 65-40/60/80/100/120 F (N)	96913593
MAGNA3 65-150 F (N) ²⁾	99608813
MAGNA3 80-40/60/80/100/120 F ²⁾	98134265
MAGNA3 100-40/60/80/100/120 F ²⁾	96913589

²⁾ If the control box of the pump is turned, the insulating shells are not applicable. Please contact Grundfos.

Specifications:

- Specific volume resistance greater than or equal to $10^{15} \Omega \text{cm}$, DIN 60093
- thermal conductivity at 10 °C 0.036 W/mK and at 40 °C 0.039 W/mK, DIN 52612
- density $33 \pm 5 \text{ kg/m}^3$, ISO 845
- working temperature range -40 to +90 °C, ISO 2796.

Condensation jacket

This accessory is intended for MAGNA pumps used in cooling applications, where temperature differentials can lead to condensation and water dripping from the pump. The condensation jacket minimizes condensation on the surface of the pump. Any remaining condensation will remain in the jacket and evaporate.

The condensation jacket is intended for condensing applications characterized by:

- Media temperature below 40 °C
- media temperature below ambient temperature
- high relative air humidity (RH)
- pump operation with low power consumption
- intermittent pump operation.



TM088154

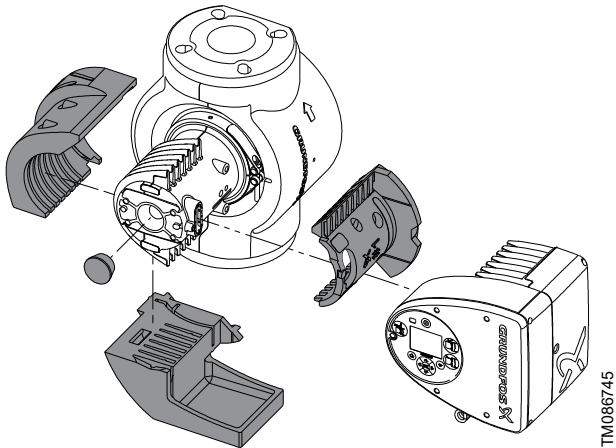
Condensation jacket fitted on a flanged pump

Condensation jacket for pumps with threaded pipe connection

Pump type	Product number	Product number
	1 kit	5 kits
MAGNA3 25-40/60/80/100/120	93242058	93242059
MAGNA3 32-40/60/80/100/120		

Condensation jacket for pumps with flanged pipe connection

Pump type	Product number	Product number
	1 kit	5 kits
MAGNA3 32-120 F	93085317	93085318
MAGNA3 40-80/100/120/150/180		
MAGNA3 50-40/60/80/100/120/150/180		
MAGNA3 65-40/60/80/100/120/150		
MAGNA3 80-40/60/80/100/120		
MAGNA3 100-40/60/80/100/120		



Example of condensation jacket shells (marked with grey)

Related information

[Ambient conditions](#)

Cable glands, M16

Kit with 10 M16 cable glands is suitable for cable diameters between 2.5 - 8 mm.

Kit	Product number
M16 cable glands, 10 pcs.	99502646

CIM modules

A CIM module is an add-on Communication Interface Module. The CIM module enables data transmission between the pump and an external system, for example a BMS or SCADA system.

The CIM module communicates via fieldbus protocols. The following CIM modules are available:

Module	Fieldbus protocol	Product number
CIM 050	GENIbus	96824631
CIM 100	LonWorks	96824797
CIM 110	LonWorks for Twinpump	96824798
CIM 150	PROFIBUS DP	96824793
CIM 200	Modbus RTU	96824796
CIM 260-EU ³⁾	EU 3G/4G cellular	99439302
CIM 280-EU GIC GEN2 ⁴⁾	Cellular GiC	99895383
CIM 280-US GIC GEN2 ⁴⁾	Cellular GiC	99895386
CIM 300	BACnet MS/TP	96893770
CIM 500	Ethernet	98301408
CIM 550 Ethernet GIC	GiC	92546689

³⁾ CIM 260-EU and CIM 280-EU GIC GEN2 is for Europe only.

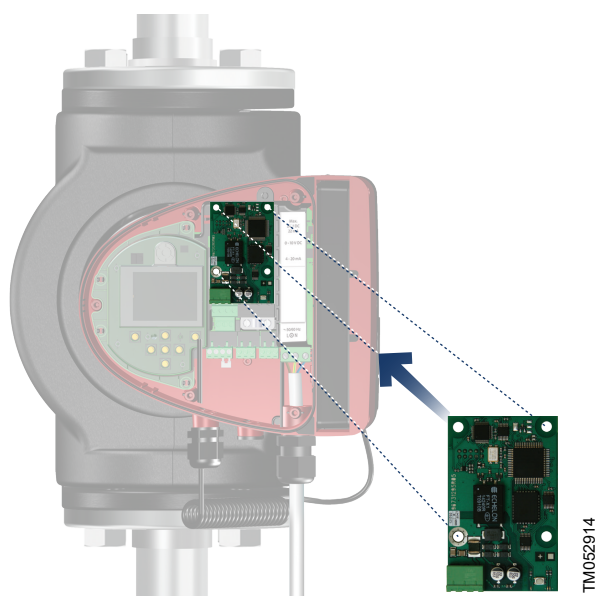
⁴⁾ CIM 280-US GIC GEN2 is for USA/Canada only.

Note: Use booster functional profiles for twin-head pumps.

For further information about data communication via CIM modules, see the CIM documentation available in Grundfos Product Center.

Location of CIM module

The CIM module is fitted behind the front cover.



Location of CIM module

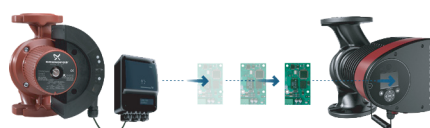
For installation instructions, please go to:



net.grundfos.com/qr/i/92662525

Reuse of CIM modules

You can reuse a CIM module in a CIU unit used together with Grundfos MAGNA in MAGNA3. You must re-configure the CIM module before you use it in a MAGNA3 pump. Contact your local Grundfos company.



Reusing CIM modules

ALPHA plug accessories



ALPHA plugs

Pos.	Description	Product number
1	ALPHA plug, standard plug connection	98284561
2	ALPHA angle plug, standard angle plug connection	98610291
3	ALPHA plug, 90° bend, including 4 m cable	96884669

Grundfos Remote Management

Application	Description	Product number
CIM 270	Grundfos Remote Management (requires a contract with Grundfos and a SIM card).	96898815
GSM antenna for roof mounting	Antenna for use on top of metal cabinets. Vandal-proof. 2-metre cable. Quad band (global use).	97631956
GSM antenna for desk mounting	Antenna for general-purpose application, for example inside plastic cabinets. To be fixed with the double-adhesive tape supplied. 4-metre cable. Quad band (global use).	97631957

For a GRM contract, contact your local Grundfos company.

Grundfos GO Remote

Grundfos GO Remote is used for infrared or radio communication with the pumps.

MI 301

The Grundfos GO Remote MI 301 module has built-in infrared and radio communication. Use MI 301 in conjunction with an Android or iOS-based smart device with a Bluetooth connection. MI 301 has a rechargeable Li-ion battery and must be charged separately.



TM053890

MI 301

Supplied with the product:

- Grundfos MI 301
- battery charger
- quick guide.

Product numbers

Grundfos GO Remote variant	Product number
Grundfos MI 301	98046408

External Grundfos sensors

Combined relative-pressure and temperature transmitter

Sensor	Type	Supplier	Measuring range [bar]	Measuring range [°C]	Transmitter output [VDC]	Power supply [VDC]	Process connection	Product number
Combined pressure and temperature sensor	RPI T2	Grundfos	0-16	-10/+120	0-10	16.6 - 30	G 1/2	98355521

Note: MAGNA3 has only one analog input.

MDS sensor

Sensor	Type	Supplier	Measuring range [bar]	Measuring range [°C]	Transmitter output [VDC]	Power supply [VDC]	Process connection	Product number
MDS sensor	DPS Sensor	Grundfos	0-2	-30 to 120	-	5	-	93058298

Note: The MDS sensor is an alternative condensation-robust sensor. The cable is moulded to the sensor and not plug-connected. The cable cannot be disconnected from the sensor.

DPI V.2 transmitter

Combined differential-pressure and temperature transmitter

Scope of delivery:

- DPI V.2 transmitter
- open 2 m cable with M12 connection in one end
- capillary tube with fitting
- quick guide.



TM047866

DPI V.2 transmitter

Sensor	Measuring range [bar]	Measuring range [°C]	Transmitter output	Power supply [VDC]	Temperature measurement	O-ring EPDM ⁵⁾	Process connection	Product number
Grundfos DPI	0 - 0.6	0-100	4-20 mA	12.5 - 30		•		97747194
			0-10 VDC	16.5 - 30	•	•		97747202
Grundfos DPI	0 - 1.0	0-100	4-20 mA	12.5 - 30		•		97747195
			0-10 VDC	16.5 - 30	•	•	G 1/2	97747203
Grundfos DPI	0 - 1.6	0-100	4-20 mA	12.5 - 30		•		97747196
			0-10 VDC	16.5 - 30	•	•	G 1/2	97747204
Grundfos DPI	0 - 2.5	0-100	4-20 mA	12.5 - 30		•		97747197
			0-10 VDC	16.5 - 30	•	•	G 1/2	97747205

⁵⁾ **Note:** EPDM: approved for potable water.

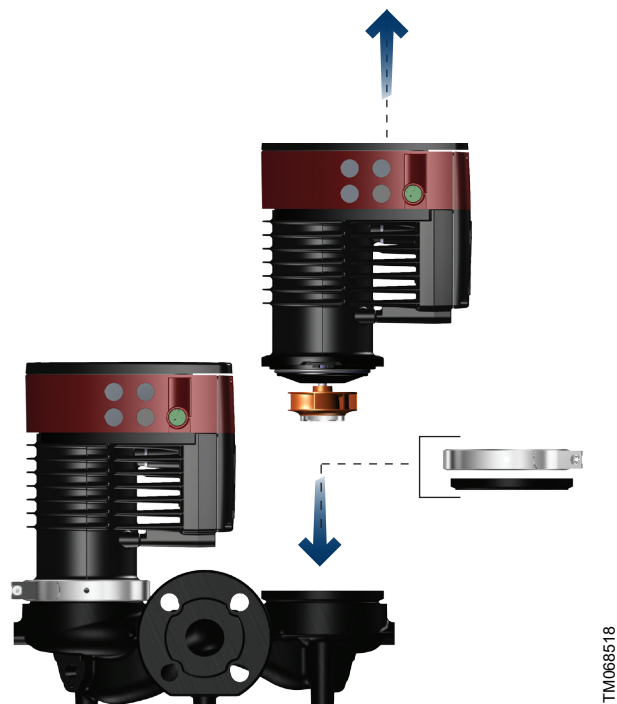
Cable for sensors

Description	Length [m]	Product number
Screened cable	2.0	98374260
	5.0	98374271

Blanking flange

The accessory is used to blank off the opening when one of the pump heads of a twin-head pump is removed for service to enable uninterrupted operation of the other pump.

The accessory set consists of a blanking flange and a fastener set.



Position of blanking flange

Pump type	Product number
MAGNA3 D 32-40/60/80/100 (F)	98159373
MAGNA3 D 40-40/60 F	
MAGNA3 D 32-120 F	98159372
MAGNA3 D 40-80/100/120/150/180 F	
MAGNA3 D 50-40/60/80/100/120/150/180 F	
MAGNA3 D 65-40/60/80/100/120/150 F	
MAGNA3 D 80-40/60/80/100/120 F	
MAGNA3 D 100-40/60/80/100/120 F	

Pipe connections

The accessory is designed to go from the pump to the pipe, working as an adapter with a specific extension length depending on the adapter type.

The accessory set includes everything you need for installation.

Thread-thread adapters

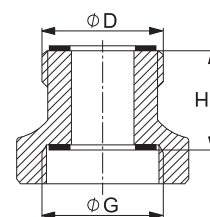
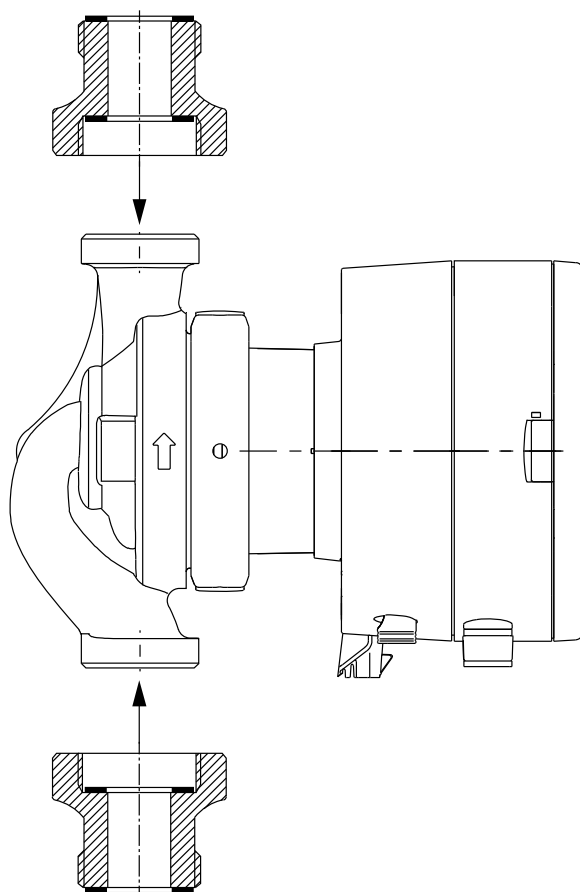


Figure 1

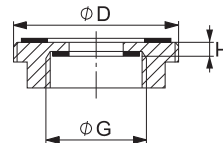


Figure 2

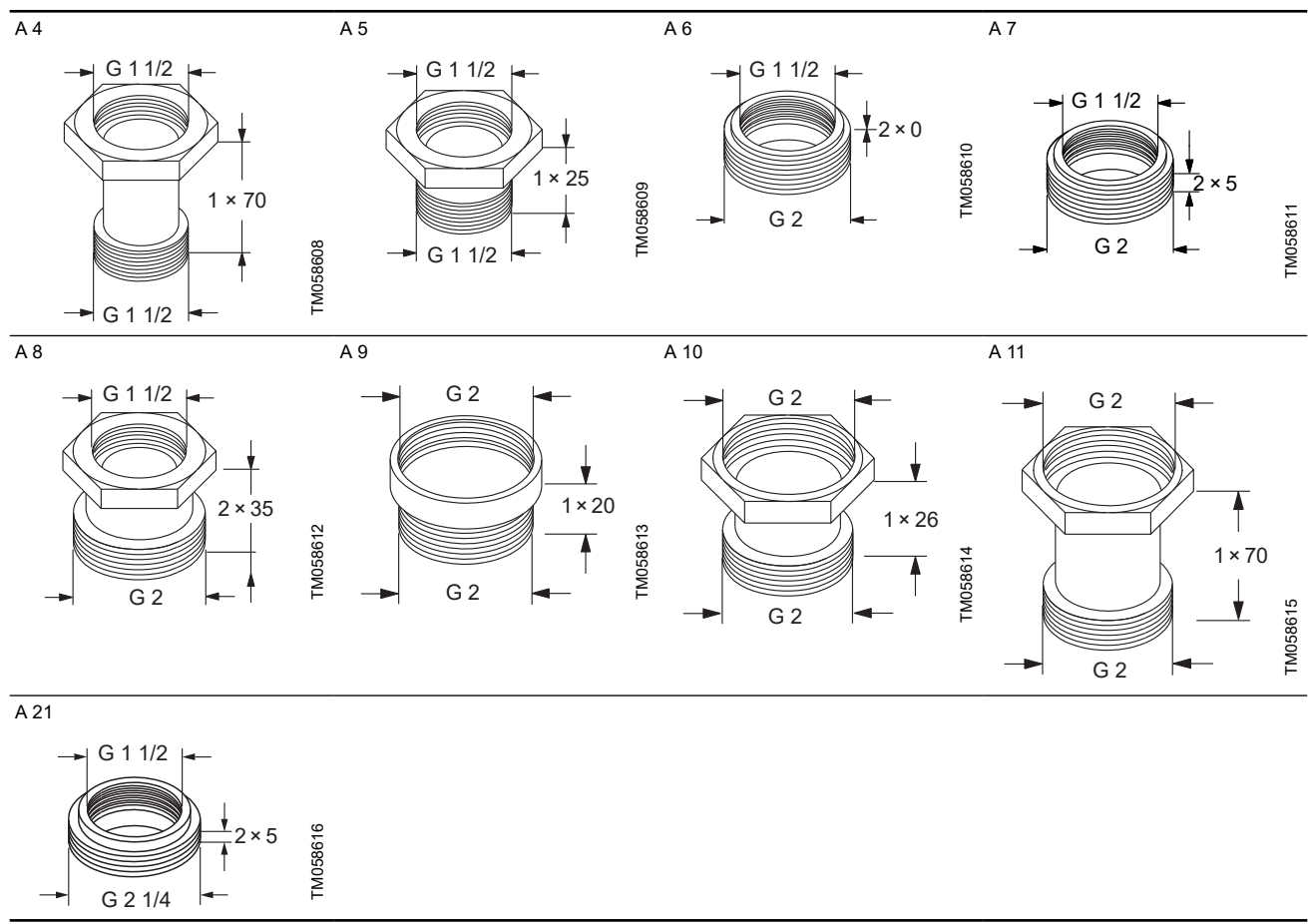
TM058617

TM058618

TM079454

Example of thread-thread adapters

New pump connection G	Union nut connection D	Adapter length H [mm]	Adapter type	Figure	Material	Product number PN 10
G 1 1/2	G 1 1/2	1 × 70	A 4	1	Cast iron (GG)	535043
	G 1 1/2	1 × 25	A 5	1	Cast iron (GG)	535044
	G 2	2 × 0	A 6	2	Brass (Ms)	535045
	G 2	2 × 5	A 7	2	Bronze (Rg)	535046
	G 2	2 × 35	A 8	1	Cast iron (GG)	535047
	G 2 1/4	2 × 5	A 21	2	Cast iron (GG)	535114
G 2	G 2	1 × 20	A 9	1	Bronze (Rg)	535048
	G 2	1 × 26	A 10	1	Cast iron (GG)	535049
	G 2	1 × 70	A 11	1	Cast iron (GG)	535050



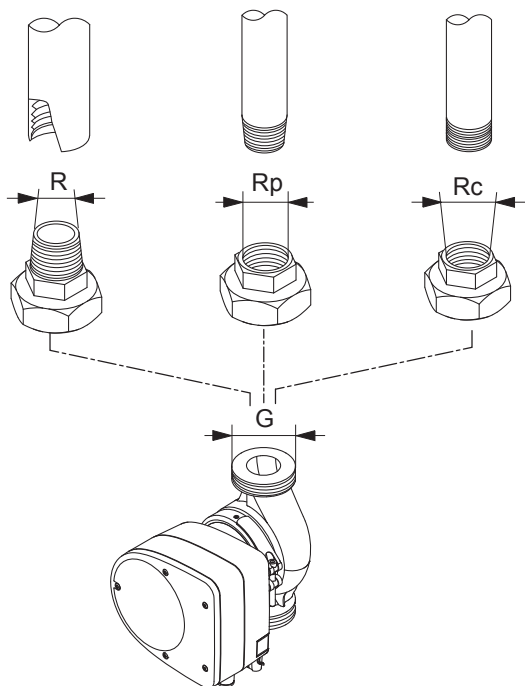
Thread types

G-threads have a cylindrical form in accordance with the EN-ISO 228-1 standard.

R-threads have a conical form in accordance with the ISO 7-1 standard.

In the case of a thread of size 1 1/2", for example, the threads are specified as G1 1/2 or R1 1/2. Male G-threads (cylindrical) can only be screwed into female G-threads.

Male R-threads (conical) can be screwed into female G or R-threads.



TM060438

G-thread and R-thread

Thread-flange adapters

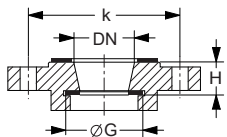
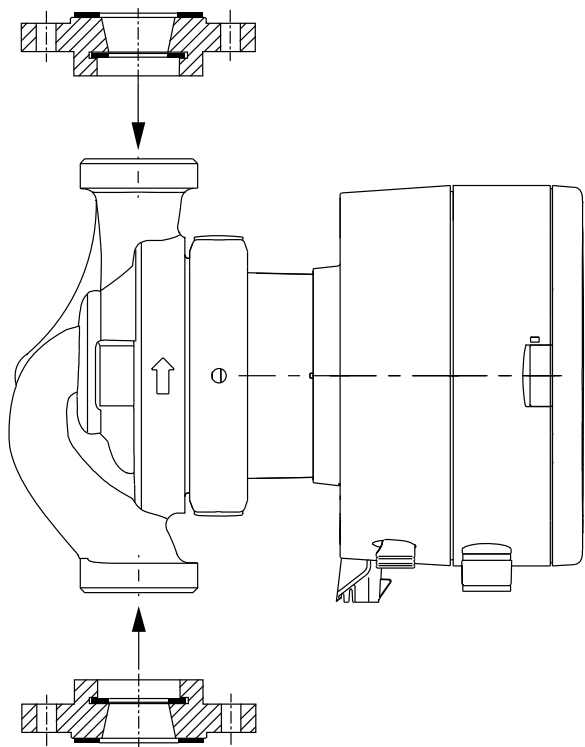


Figure 3

TM060450

TM079455

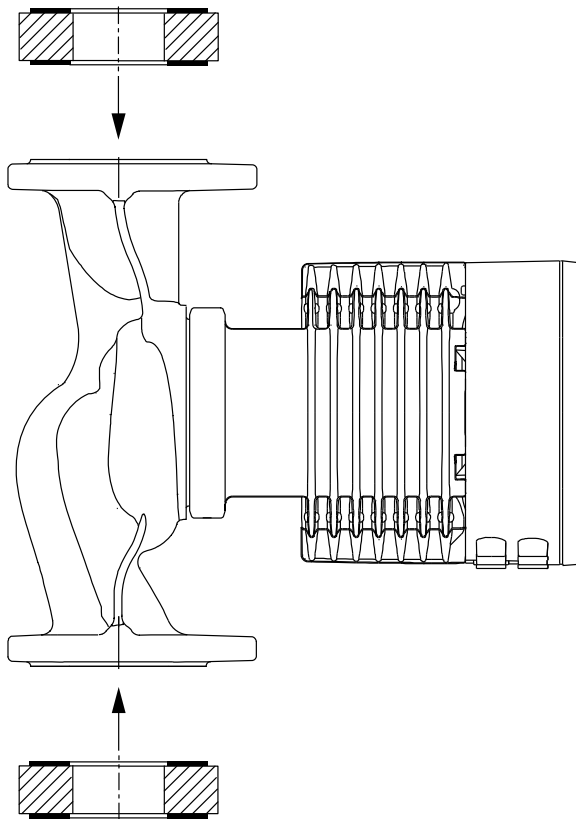
Example of thread-flange adapters

New pump Connection G	Flange Connection DN	Adapter length H [mm]	k [mm]	Adapter type	Figure	Material	Product number PN 6	Product number PN 10
G 1 1/2	DN 32 ⁶⁾	2 × 0	90	A 16	3	Cast iron (GG)	535055 ⁷⁾	535055 ⁷⁾
	DN 32	2 × 20	90	A 14	3	Cast iron (GG)	535053	
	DN 40	2 × 20	100	A 17	3	Cast iron (GG)	535056	
	DN 50	1 × 20	110	A 19	3	Steel (St)	535058	
G 2	DN 32 ⁶⁾	1 × 10	90	A 22	3	Cast iron (GG)	535115 ⁷⁾	535115 ⁷⁾
	DN 32	2 × 20	90	A 15	3	Cast iron (GG)	535054	
	DN 40	2 × 20	100	A 18	3	Cast iron (GG)	98614387 ⁷⁾	98614387 ⁷⁾
	DN 50	2 × 20	110	A 20	3	Cast iron (GG)	98614411 ⁷⁾	98614411 ⁷⁾

6) Grundfos square flange
7) Combination flange PN 6/PN 10

A 14 TM060428	A 15 TM060429	A 16 TM060430	A 17 TM060431
A 18 TM060432	A 19 TM060433	A 20 TM060434	A 22 TM060435

Flange-flange adapters



TM079457

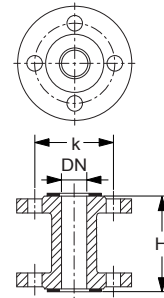


Figure 4

TM060449

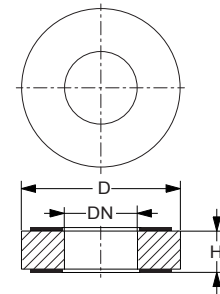
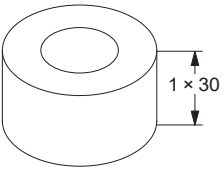
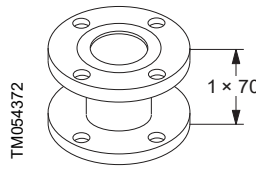
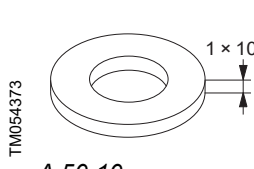
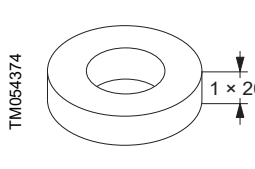
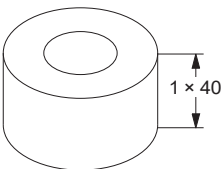
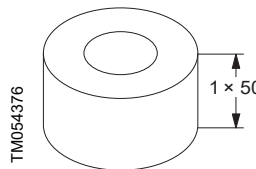
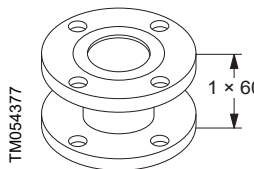
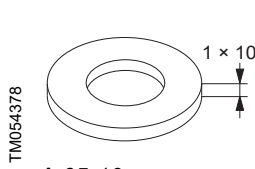
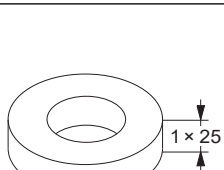
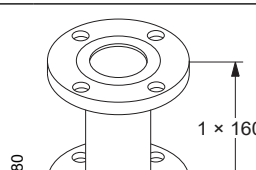
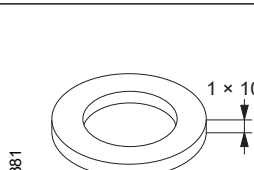
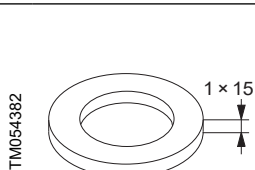
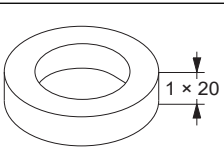
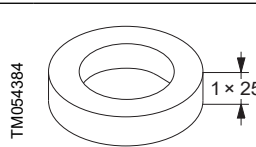
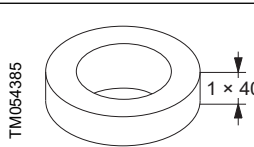
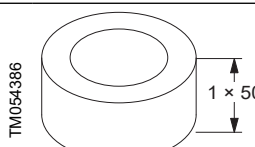
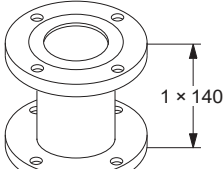
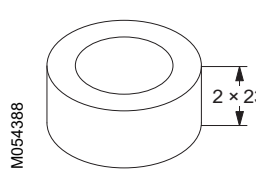


Figure 5

TM060451

Example of flange-flange adapters

New pump Connection DN	Adapter length H [mm]	k [mm] PN 6	k [mm] PN 10	D [mm] PN 6	D [mm] PN 10	Adapter type	Figure	Material	Product number PN 6	Product number PN 10/16
DN 40	1 × 70	100	110			A 40-70	5	Steel (St)	539921	539721
	1 × 30			82	88	A 40-30	4	Steel (St)	96281076	96608515
DN 50	1 × 10			90	102	A 50-10	4	Steel (St)	549921	549821
	1 × 20			90	102	A 50-20	4	Steel (St)	549922	549822
	1 × 40			90	102	A 50-40	4	Steel (St)	96281077	96608516
	1 × 50			90	102	A 50-50	4	Steel (St)	549923	549823
	1 × 60	110	125			A 50-60	5	Steel (St)	549924	549824
	1 × 10			110	122	A 65-10	4	Steel (St)	559921	559821
DN 65	1 × 25			110	122	A 65-25	4	Steel (St)	559922	559822
	1 × 160	130	145			A 65-160	5	Steel (St)	559923	559823
DN 80	1 × 10			127	138	A 80-10	4	Steel (St)	569921	569821
	1 × 15			127	138	A 80-15	4	Steel (St)	569922	569822
	1 × 20			127	138	A 80-20	4	Steel (St)	569923	569823
	1 × 25			127	138	A 80-25	4	Steel (St)	569924	569824
	1 × 40			127	138	A 80-40	4	Steel (St)	569925	569825
	1 × 50			127	138	A 80-50	4	Steel (St)	569926	569826
	1 × 140	150	165			A 80-140	5	Steel (St)	569927	569827
DN 100	2 × 23				106	A 100-50	4	Steel (St)		96545610

 A 40-30	 A 40-70	 A 50-10	 A 50-20	
 A 50-40	 A 50-50	 A 50-60	 A 65-10	
 A 65-25	 A 65-160	 A 80-10	 A 80-15	
 A 80-20	 A 80-25	 A 80-40	 A 80-50	
 A 80-140	 A 100-50			

12. Product numbers

Single-head pumps

Pump type	Port-to-port length [mm]	Threaded pipe connection			Section
		Cast iron		Stainless steel	
		PN 10	PN 16	PN 10	
MAGNA3 25-40 (N)	180	97924244	97924249	97924336	MAGNA3 25-40 (N)
MAGNA3 25-60 (N)	180	97924245	97924250	97924337	MAGNA3 25-60 (N)
MAGNA3 25-80 (N)	180	97924246	97924251	97924338	MAGNA3 25-80 (N)
MAGNA3 25-100 (N)	180	97924247	97924252	97924339	MAGNA3 25-100 (N)
MAGNA3 25-120 (N)	180	97924248	97924253	97924340	MAGNA3 25-120 (N)
MAGNA3 32-40 (N)	180	97924254	97924260	97924341	MAGNA3 32-40 (N)
MAGNA3 32-60 (N)	180	97924255	97924261	97924342	MAGNA3 32-60 (N)
MAGNA3 32-80 (N)	180	97924256	97924262	97924343	MAGNA3 32-80 (N)
MAGNA3 32-100 (N)	180	97924257	97924263	97924344	MAGNA3 32-100 (N)
MAGNA3 32-120 (N)	180	98609707	98609709	98609711	MAGNA3 32-120 (N)

Pump type	Port-to-port length [mm]	Flange connection					Section
		Cast iron			Stainless steel		
		PN 6	PN 10	PN 6/10	PN 16	PN 6/10	
MAGNA3 32-40 F (N)	220			98333834	98333832	98333836	MAGNA3 32-40 F (N)
MAGNA3 32-60 F (N)	220			98333854	98333852	98333856	MAGNA3 32-60 F (N)
MAGNA3 32-80 F (N)	220			98333874	98333872	98333876	MAGNA3 32-80 F (N)
MAGNA3 32-100 F (N)	220			97924258	97924264	97924345	MAGNA3 32-100 F (N)
MAGNA3 32-120 F (N)	220			97924259	97924265	97924346	MAGNA3 32-120 F (N)
MAGNA3 40-40 F (N)	220			97924266	97924273	97924347	MAGNA3 40-40 F (N)
MAGNA3 40-60 F (N)	220			97924267	97924274	97924348	MAGNA3 40-60 F (N)
MAGNA3 40-80 F (N)	220			97924268	97924275	97924349	MAGNA3 40-80 F (N)
MAGNA3 40-100 F (N)	220			97924269	97924276	97924350	MAGNA3 40-100 F (N)
MAGNA3 40-120 F (N)	250			97924270	97924277	97924351	MAGNA3 40-120 F (N)
MAGNA3 40-150 F (N)	250			97924271	97924278	97924352	MAGNA3 40-150 F (N)
MAGNA3 40-180 F (N)	250			97924272	97924279	97924353	MAGNA3 40-180 F (N)
MAGNA3 50-40 F (N)	240			97924280	97924287	97924354	MAGNA3 50-40 F (N)
MAGNA3 50-60 F (N)	240			97924281	97924288	97924355	MAGNA3 50-60 F (N)
MAGNA3 50-80 F (N)	240			97924282	97924289	97924356	MAGNA3 50-80 F (N)
MAGNA3 50-100 F (N)	280			97924283	97924290	97924357	MAGNA3 50-100 F (N)
MAGNA3 50-120 F (N)	280			97924284	97924291	97924358	MAGNA3 50-120 F (N)
MAGNA3 50-150 F (N)	280			97924285	97924292	97924359	MAGNA3 50-150 F (N)
MAGNA3 50-180 F (N)	280			97924286	97924293	97924360	MAGNA3 50-180 F (N)
MAGNA3 65-40 F (N)	340			97924294	97924300	97924361	MAGNA3 65-40 F (N)
MAGNA3 65-60 F (N)	340			97924295	97924301	97924362	MAGNA3 65-60 F (N)
MAGNA3 65-80 F (N)	340			97924296	97924302	97924363	MAGNA3 65-80 F (N)
MAGNA3 65-100 F (N)	340			97924297	97924303	97924364	MAGNA3 65-100 F (N)
MAGNA3 65-120 F (N)	340			97924298	97924304	97924365	MAGNA3 65-120 F (N)
MAGNA3 65-150 F (N)	340			97924299	97924305	97924366	MAGNA3 65-150 F (N)
MAGNA3 80-40 F	360	97924306	97924316		97924326		MAGNA3 80-40 F
MAGNA3 80-60 F	360	97924307	97924317		97924327		MAGNA3 80-60 F
MAGNA3 80-80 F	360	97924308	97924318		97924328		MAGNA3 80-80 F
MAGNA3 80-100 F	360	97924309	97924319		97924329		MAGNA3 80-100 F
MAGNA3 80-120 F	360	97924310	97924320		97924330		MAGNA3 80-120 F
MAGNA3 100-40 F	450	97924311	97924321		97924331		MAGNA3 100-40 F
MAGNA3 100-60 F	450	97924312	97924322		97924332		MAGNA3 100-60 F

Pump type	Port-to-port length [mm]	Flange connection					Section
		Cast iron				Stainless steel	
		PN 6	PN 10	PN 6/10	PN 16	PN 6/10	
MAGNA3 100-80 F	450	97924313	97924323		97924333		MAGNA3 100-80 F
MAGNA3 100-100 F	450	97924314	97924324		97924334		MAGNA3 100-100 F
MAGNA3 100-120 F	450	97924315	97924325		97924335		MAGNA3 100-120 F

Twin-head pumps

Pump type	Port-to-port length [mm]	Threaded pipe connection		Section
		Cast iron		
		PN 10	PN 16	
MAGNA3 D 32-40	180	97924449	97924455	MAGNA3 D 32-40
MAGNA3 D 32-60	180	97924450	97924456	MAGNA3 D 32-60
MAGNA3 D 32-80	180	97924451	97924457	MAGNA3 D 32-80
MAGNA3 D 32-100	180	97924452	97924458	MAGNA3 D 32-100

Pump type	Port-to-port length [mm]	Flange connection				Section
		Cast iron				
		PN 6	PN 10	PN 6/10	PN 16	
MAGNA3 D 32-40 F	220			98333840	98333838	MAGNA3 D 32-40 F
MAGNA3 D 32-60 F	220			98333860	98333858	MAGNA3 D 32-60 F
MAGNA3 D 32-80 F	220			98333880	98333878	MAGNA3 D 32-80 F
MAGNA3 D 32-100 F	220			97924453	97924459	MAGNA3 D 32-100 F
MAGNA3 D 32-120 F	220			97924454	97924460	MAGNA3 D 32-120 F
MAGNA3 D 40-40 F	220			97924461	97924468	MAGNA3 D 40-40 F
MAGNA3 D 40-60 F	220			97924462	97924469	MAGNA3 D 40-60 F
MAGNA3 D 40-80 F	220			97924463	97924470	MAGNA3 D 40-80 F
MAGNA3 D 40-100 F	220			97924464	97924471	MAGNA3 D 40-100 F
MAGNA3 D 40-120 F	250			97924465	97924472	MAGNA3 D 40-120 F
MAGNA3 D 40-150 F	250			97924466	97924473	MAGNA3 D 40-150 F
MAGNA3 D 40-180 F	250			97924467	97924474	MAGNA3 D 40-180 F
MAGNA3 D 50-40 F	240			97924475	97924482	MAGNA3 D 50-40 F
MAGNA3 D 50-60 F	240			97924476	97924483	MAGNA3 D 50-60 F
MAGNA3 D 50-80 F	240			97924477	97924484	MAGNA3 D 50-80 F
MAGNA3 D 50-100 F	280			97924478	97924485	MAGNA3 D 50-100 F
MAGNA3 D 50-120 F	280			97924479	97924486	MAGNA3 D 50-120 F
MAGNA3 D 50-150 F	280			97924480	97924487	MAGNA3 D 50-150 F
MAGNA3 D 50-180 F	280			97924481	97924488	MAGNA3 D 50-180 F
MAGNA3 D 65-40 F	340			97924489	97924495	MAGNA3 D 65-40 F
MAGNA3 D 65-60 F	340			97924490	97924496	MAGNA3 D 65-60 F
MAGNA3 D 65-80 F	340			97924491	97924497	MAGNA3 D 65-80 F
MAGNA3 D 65-100 F	340			97924492	97924498	MAGNA3 D 65-100 F
MAGNA3 D 65-120 F	340			97924493	97924499	MAGNA3 D 65-120 F
MAGNA3 D 65-150 F	340			97924494	97924500	MAGNA3 D 65-150 F
MAGNA3 D 80-40 F	360	97924501	97924511		97924521	MAGNA3 D 80-40 F
MAGNA3 D 80-60 F	360	97924502	97924512		97924522	MAGNA3 D 80-60 F
MAGNA3 D 80-80 F	360	97924503	97924513		97924523	MAGNA3 D 80-80 F
MAGNA3 D 80-100 F	360	97924504	97924514		97924524	MAGNA3 D 80-100 F
MAGNA3 D 80-120 F	360	97924505	97924515		97924525	MAGNA3 D 80-120 F
MAGNA3 D 100-40 F	450	97924506	97924516		97924526	MAGNA3 D 100-40 F
MAGNA3 D 100-60 F	450	97924507	97924517		97924527	MAGNA3 D 100-60 F
MAGNA3 D 100-80 F	450	97924508	97924518		97924528	MAGNA3 D 100-80 F
MAGNA3 D 100-100 F	450	97924509	97924519		97924529	MAGNA3 D 100-100 F
MAGNA3 D 100-120 F	450	97924510	97924520		97924530	MAGNA3 D 100-120 F

13. MAGNA3 for the German market

Single-head pumps

Pump type	Port-to-port length [mm]	Threaded pipe connection			Section
		Cast iron		Stainless steel	
		PN 10	PN 16	PN 10	
MAGNA3 25-40 (N)	180	97924623	97924628	97924716	MAGNA3 25-40 (N)
MAGNA3 25-60 (N)	180	97924624	97924629	97924717	MAGNA3 25-60 (N)
MAGNA3 25-80 (N)	180	97924625	97924630	97924718	MAGNA3 25-80 (N)
MAGNA3 25-100 (N)	180	97924626	97924631	97924719	MAGNA3 25-100 (N)
MAGNA3 25-120 (N)	180	97924627	97924632	97924720	MAGNA3 25-120 (N)
MAGNA3 32-40 (N)	180	97924633	97924639	97924721	MAGNA3 32-40 (N)
MAGNA3 32-60 (N)	180	97924634	97924640	97924722	MAGNA3 32-60 (N)
MAGNA3 32-80 (N)	180	97924635	97924641	97924723	MAGNA3 32-80 (N)
MAGNA3 32-100 (N)	180	97924636	97924642	97924724	MAGNA3 32-100 (N)
MAGNA3 32-120 (N)	180	98609708	98609710	98609712	MAGNA3 32-120 (N)

Pump type	Port-to-port length [mm]	Flange connection					Section
		Cast iron				Stainless steel	
		PN 6	PN 10	PN 6/10	PN 16	PN 6/10	
MAGNA3 32-40 F (N)	220			98333835	98333833	98333837	MAGNA3 32-40 F (N)
MAGNA3 32-60 F (N)	220			98333855	98333853	98333857	MAGNA3 32-60 F (N)
MAGNA3 32-80 F (N)	220			98333875	98333873	98333877	MAGNA3 32-80 F (N)
MAGNA3 32-100 F (N)	220			97924637	97924643	97924725	MAGNA3 32-100 F (N)
MAGNA3 32-120 F (N)	220			97924638	97924644	97924726	MAGNA3 32-120 F (N)
MAGNA3 40-40 F (N)	220			97924645	97924652	97924727	MAGNA3 40-40 F (N)
MAGNA3 40-60 F (N)	220			97924646	97924653	97924728	MAGNA3 40-60 F (N)
MAGNA3 40-80 F (N)	220			97924647	97924654	97924729	MAGNA3 40-80 F (N)
MAGNA3 40-100 F (N)	220			97924648	97924655	97924730	MAGNA3 40-100 F (N)
MAGNA3 40-120 F (N)	250			97924649	97924656	97924731	MAGNA3 40-120 F (N)
MAGNA3 40-150 F (N)	250			97924650	97924657	97924732	MAGNA3 40-150 F (N)
MAGNA3 40-180 F (N)	250			97924651	97924658	97924733	MAGNA3 40-180 F (N)
MAGNA3 50-40 F (N)	240			97924659	97924666	97924734	MAGNA3 50-40 F (N)
MAGNA3 50-60 F (N)	240			97924660	97924668	97924735	MAGNA3 50-60 F (N)
MAGNA3 50-80 F (N)	240			97924661	97924669	97924736	MAGNA3 50-80 F (N)
MAGNA3 50-100 F (N)	280			97924662	97924670	97924737	MAGNA3 50-100 F (N)
MAGNA3 50-120 F (N)	280			97924663	97924671	97924738	MAGNA3 50-120 F (N)
MAGNA3 50-150 F (N)	280			97924664	97924672	97924739	MAGNA3 50-150 F (N)
MAGNA3 50-180 F (N)	280			97924665	97924673	97924740	MAGNA3 50-180 F (N)
MAGNA3 65-40 F (N)	340			97924674	97924680	97924741	MAGNA3 65-40 F (N)
MAGNA3 65-60 F (N)	340			97924675	97924681	97924742	MAGNA3 65-60 F (N)
MAGNA3 65-80 F (N)	340			97924676	97924682	97924743	MAGNA3 65-80 F (N)
MAGNA3 65-100 F (N)	340			97924677	97924683	97924744	MAGNA3 65-100 F (N)
MAGNA3 65-120 F (N)	340			97924678	97924684	97924745	MAGNA3 65-120 F (N)
MAGNA3 65-150 F (N)	340			97924679	97924685	97924746	MAGNA3 65-150 F (N)
MAGNA3 80-40 F	360	97924686	97924696		97924706		MAGNA3 80-40 F
MAGNA3 80-60 F	360	97924687	97924697		97924707		MAGNA3 80-60 F
MAGNA3 80-80 F	360	97924688	97924698		97924708		MAGNA3 80-80 F
MAGNA3 80-100 F	360	97924689	97924699		97924709		MAGNA3 80-100 F
MAGNA3 80-120 F	360	97924690	97924700		97924710		MAGNA3 80-120 F
MAGNA3 100-40 F	450	97924691	97924701		97924711		MAGNA3 100-40 F

Pump type	Port-to-port length [mm]	Flange connection					Section
		Cast iron				Stainless steel	
		PN 6	PN 10	PN 6/10	PN 16	PN 6/10	
MAGNA3 100-60 F	450	97924692	97924702		97924712		MAGNA3 100-60 F
MAGNA3 100-80 F	450	97924693	97924703		97924713		MAGNA3 100-80 F
MAGNA3 100-100 F	450	97924694	97924704		97924714		MAGNA3 100-100 F
MAGNA3 100-120 F	450	97924695	97924705		97924715		MAGNA3 100-120 F

Twin-head pumps

Pump type	Port-to-port length [mm]	Threaded pipe connection				Section
		Cast iron				
		PN 10		PN 16		
MAGNA3 D 32-40	180			97924829	97924835	MAGNA3 D 32-40
MAGNA3 D 32-60	180			97924830	97924836	MAGNA3 D 32-60
MAGNA3 D 32-80	180			97924831	97924837	MAGNA3 D 32-80
MAGNA3 D 32-100	180			97924832	97924838	MAGNA3 D 32-100
Pump type	Port-to-port length [mm]	Flange connection				Section
		Cast iron				
		PN 6	PN 10	PN 6/10	PN 16	
MAGNA3 D 32-40 F	220			98333841	98333839	MAGNA3 D 32-40 F
MAGNA3 D 32-60 F	220			98333861	98333859	MAGNA3 D 32-60 F
MAGNA3 D 32-80 F	220			98333881	98333879	MAGNA3 D 32-80 F
MAGNA3 D 32-100 F	220			97924833	97924839	MAGNA3 D 32-100 F
MAGNA3 D 32-120 F	220			97924834	97924840	MAGNA3 D 32-120 F
MAGNA3 D 40-40 F	220			97924841	97924848	MAGNA3 D 40-40 F
MAGNA3 D 40-60 F	220			97924842	97924849	MAGNA3 D 40-60 F
MAGNA3 D 40-80 F	220			97924843	97924850	MAGNA3 D 40-80 F
MAGNA3 D 40-100 F	220			97924844	97924851	MAGNA3 D 40-100 F
MAGNA3 D 40-120 F	250			97924845	97924852	MAGNA3 D 40-120 F
MAGNA3 D 40-150 F	250			97924846	97924853	MAGNA3 D 40-150 F
MAGNA3 D 40-180 F	250			97924847	97924854	MAGNA3 D 40-180 F
MAGNA3 D 50-40 F	240			97924855	97924862	MAGNA3 D 50-40 F
MAGNA3 D 50-60 F	240			97924856	97924863	MAGNA3 D 50-60 F
MAGNA3 D 50-80 F	240			97924857	97924864	MAGNA3 D 50-80 F
MAGNA3 D 50-100 F	280			97924858	97924865	MAGNA3 D 50-100 F
MAGNA3 D 50-120 F	280			97924859	97924866	MAGNA3 D 50-120 F
MAGNA3 D 50-150 F	280			97924860	97924867	MAGNA3 D 50-150 F
MAGNA3 D 50-180 F	280			97924861	97924868	MAGNA3 D 50-180 F
MAGNA3 D 65-40 F	340			97924869	97924875	MAGNA3 D 65-40 F
MAGNA3 D 65-60 F	340			97924870	97924876	MAGNA3 D 65-60 F
MAGNA3 D 65-80 F	340			97924871	97924877	MAGNA3 D 65-80 F
MAGNA3 D 65-100 F	340			97924872	97924878	MAGNA3 D 65-100 F
MAGNA3 D 65-120 F	340			97924873	97924879	MAGNA3 D 65-120 F
MAGNA3 D 65-150 F	340			97924874	97924880	MAGNA3 D 65-150 F
MAGNA3 D 80-40 F	360	97924881	97924891		97924901	MAGNA3 D 80-40 F
MAGNA3 D 80-60 F	360	97924882	97924892		97924902	MAGNA3 D 80-60 F
MAGNA3 D 80-80 F	360	97924883	97924893		97924903	MAGNA3 D 80-80 F
MAGNA3 D 80-100 F	360	97924884	97924894		97924904	MAGNA3 D 80-100 F
MAGNA3 D 80-120 F	360	97924885	97924895		97924905	MAGNA3 D 80-120 F
MAGNA3 D 100-40 F	450	97924886	97924896		97924906	MAGNA3 D 100-40 F
MAGNA3 D 100-60 F	450	97924887	97924897		97924907	MAGNA3 D 100-60 F
MAGNA3 D 100-80 F	450	97924888	97924898		97924908	MAGNA3 D 100-80 F
MAGNA3 D 100-100 F	450	97924889	97924899		97924909	MAGNA3 D 100-100 F
MAGNA3 D 100-120 F	450	97924890	97924900		97924910	MAGNA3 D 100-120 F

14. MAGNA3 for the Japanese market

Single-head pumps

Pump type	Port-to-port length [mm]	Flanged connection		Section
		Cast iron		
		PN 6/10	PN 10	
MAGNA3 40-120 F	250	99424893		. MAGNA3 40-120 F (N)
MAGNA3 50-120 F	280	99424895		. MAGNA3 50-120 F (N)
MAGNA3 50-150 F	280	99424867		. MAGNA3 50-150 F (N)
MAGNA3 50-180 F	280	99424866		. MAGNA3 50-180 F (N)
MAGNA3 65-120 F	340	99424898		. MAGNA3 65-120 F (N)
MAGNA3 65-150 F	340	99424868		. MAGNA3 65-150 F (N)
MAGNA3 80-120 F	360		99424900	. MAGNA3 80-120 F
MAGNA3 100-120 F	450		99424901	. MAGNA3 100-120 F

15. Grundfos Product Center

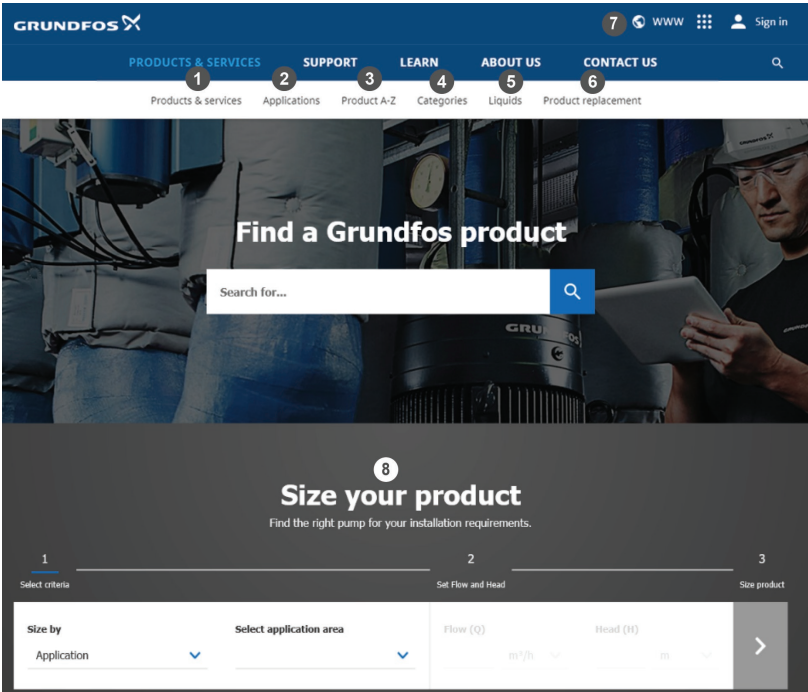
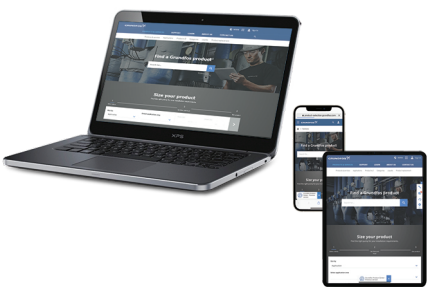
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