

# Demand more than a pump

Full range of intelligent, high-efficiency circulators for heating, cooling, ground source heat pump systems and hot water recirculation applications



[grundfos.us](http://grundfos.us)

**GRUNDFOS** 

Possibility in every drop

# More than a pump

If you are looking for the best efficiency on the market combined with high intelligence and truly full range, look no further. The MAGNA3 is the obvious choice

## Reliable innovation

The MAGNA3 is a circulator pump based on the tried and tested MAGNA technology and our industry-leading experience with electronic pumps. With the permanent magnet motor, integrated frequency converter and intelligent control functions like AUTOADAPT, the result is a cutting-edge piece of intelligent technology that retains the unrivalled Grundfos reliability.

### Full range

– perfect fit and low life-cycle costs

### Best efficiency in the market

– minimize energy costs

### High intelligence

– gain complete control of your system

### Proven reliability

– based on 40 years of experience and 1 million test hours

### Easy installation

– save time and effort



# The highest standards, the greatest results

## Ready for range?

MAGNA3 is a truly full-range pump with more than 200 different single and twin circulators in cast iron or stainless steel. With the maximum of 60 ft head and a flow of 550 gpm. Get ready to specify a perfectly sized circulator pump for any HVAC application.

## The smart pump

MAGNA3 gives you opportunities with more intelligent control modes, building management communication and heat energy monitoring. It also allows you to save pump throttling valves in the system. MAGNA3 raises the bar for intelligent pumping.

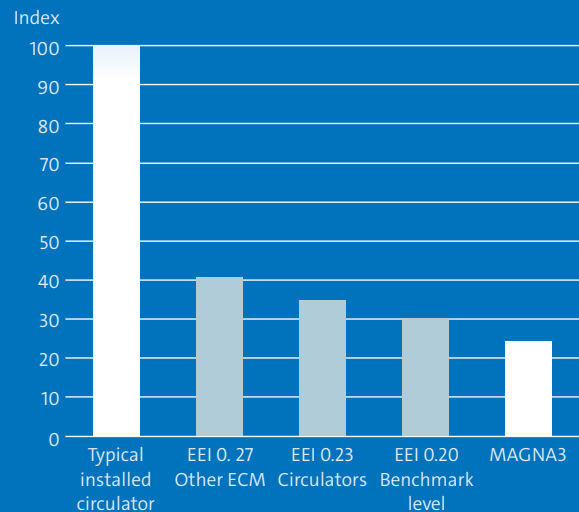
## Efficiently the best

In short, MAGNA3 is one of the most efficient circulators available on the market today. With the lowest Energy Efficiency Index (EEI) in the world, below 0.20, you can achieve energy savings of up to 75% compared to a typical installed circulator and thereby a remarkably fast return on investment.

## Reliable from A to Z

At Grundfos we do not take testing lightly. With 40 years of experience with electronically controlled pumps and 1 million test hours for the MAGNA3 in extreme conditions, including alternating pressure tests, high humidity tests as well as high and low-temperature tests, we are confident that this pump will serve you day in and day out for many years to come.

## Energy consumption





## Full-range efficiency

### Full range means perfect fit

The MAGNA3 range with maximum head of 60 ft and maximum flow of 550 gpm features more than 200 single and twin pumps in cast iron or stainless steel. This means that it is much easier to correctly size the MAGNA3 for any duty point and cut both purchase and energy costs in the process.

### MAGNA is always improving

Grundfos continues to set the pace for circulator pumps and is the obvious choice if you are looking for the most energy-efficient solution and fast return on investment.

The high efficiency is achieved through a combination of: MAGNA pump hydraulics which have been designed to ensure the best possible flow conditions, a compact stator design which eliminates unnecessary losses, a composite rotor can that minimizes energy losses and increases motor efficiency, and finally our energy-optimizing control functions. The result is a highly efficient and future-proof circulator with an EEI value that far surpasses even the stringent 2015 EuP requirements.

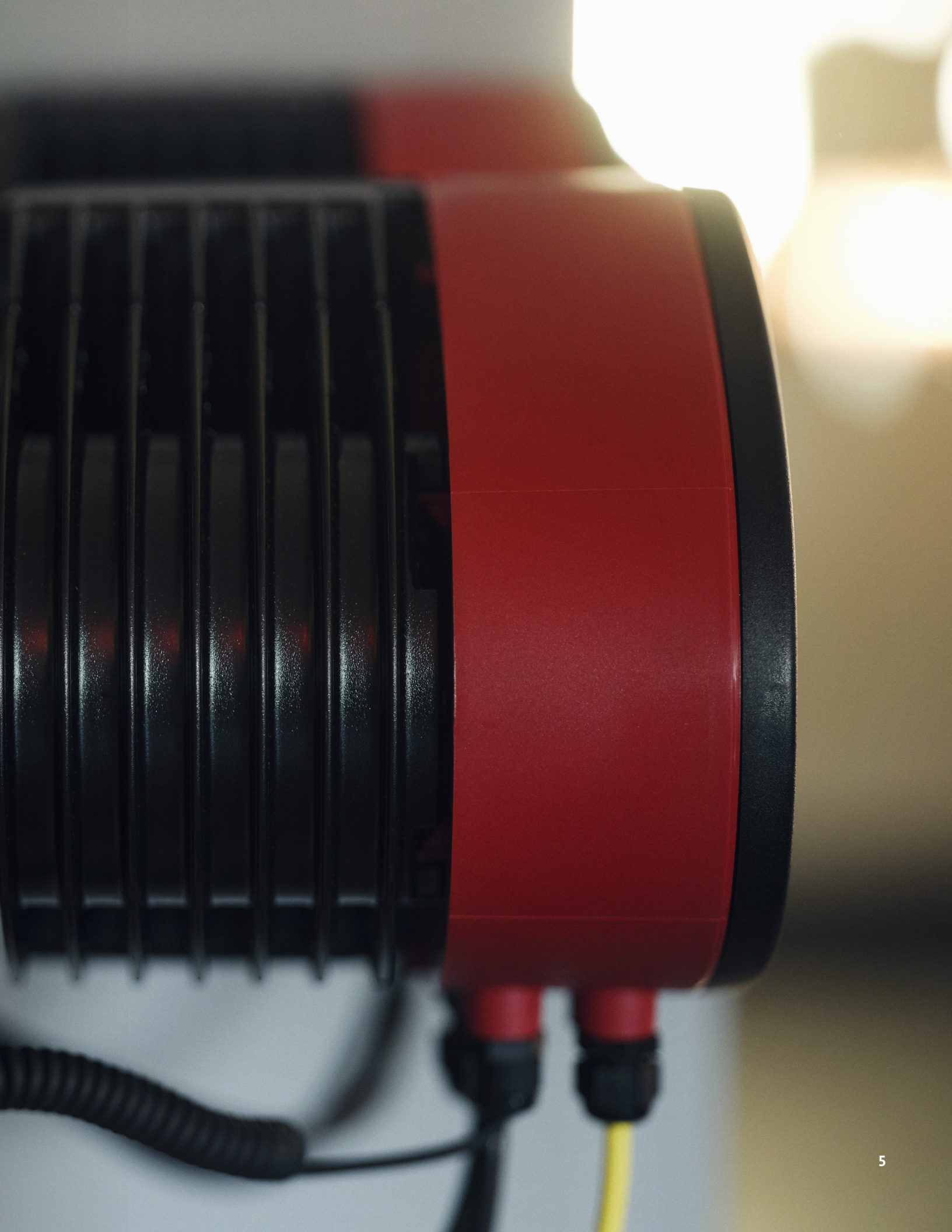
### The all-purpose circulator

MAGNA3 is the ideal pump for heating and cooling applications and it is also suitable for hot water systems. It is designed to handle liquids down to 14°F, which makes it suitable for both tough industrial tasks and ground source heat pump systems (GSHP). Furthermore, the liquid temperature (14°F to 230°F) is independent of the ambient temperature (-4°F to +104°F). So whether your project requires heating or cooling – MAGNA3 is the pump for you.

### Refurbish and save money

Did you know that a pump system refurbishment can result in energy savings of up to 80%?\* Grundfos offers several approaches to energy refurbishment, depending on the condition of your current pump system. For more information, please contact your local Grundfos representative.

\* Based on a customer case: <https://www.grundfos.com/about-us/cases/dubai-buildings-unlock-up-to-80--energy-savings-with-simple-pump0>

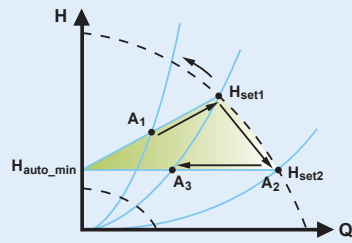


# Introducing your perfect control mode

## Intelligent control saves time and energy

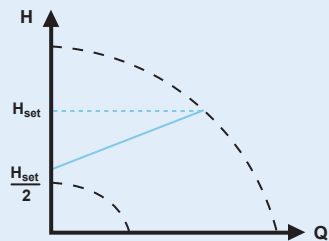
The MAGNA3 gives you the full range of control mode options you would expect from a state-of-the-art circulator pump. But the intelligent modes – AUTOADAPT and FLOWADAPT – set MAGNA3 apart from the competition. Furthermore, the FLOWLIMIT and Automatic Night Setback control functions are applicable with all MAGNA3 control modes.

## AUTOADAPT



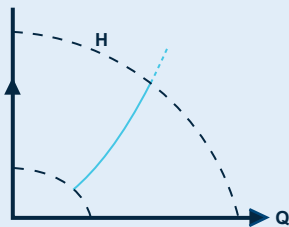
The AUTOADAPT function continuously adjusts the proportional pressure curve and automatically sets a more efficient one, without compromising comfort demands.

## Proportional pressure



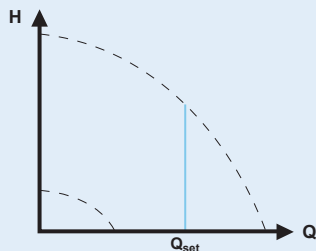
Proportional pressure mode is used in circulating systems. The pump continuously adapts its performance to the varying flow demand.

## Constant temperature



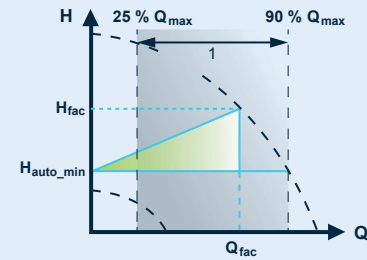
Constant temperature mode is used in variable flow systems within heating, where a constant liquid temperature at a user-defined point, is desired. The pump is in charge of the flow, and external controller for temperature regulation are made unnecessary.

## Constant flow



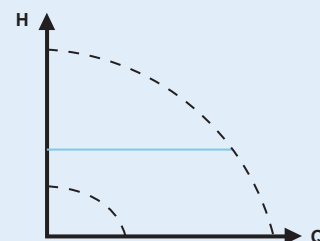
The pump maintains a constant flow in the system independently of the head. It is not possible to use an external sensor, instead, the pump uses its internal sensor. Note: Available for pumps with production code from 1838.

## FLOWADAPT



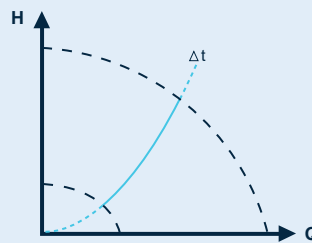
FLOWADAPT is a combination of AUTOADAPT and FLOWLIMIT. The MAGNA3 continuously monitors the flow rate ensuring that it is not exceeded. This will, in some cases, save the cost of a separate pump throttling valve.

## Constant pressure



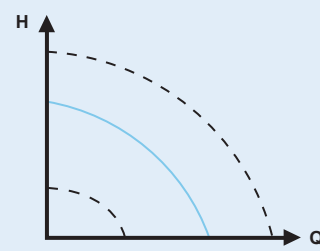
Constant pressure mode is suited for variable flow systems with very low pipe pressure losses, and in open systems where pipe pressure loss is subordinate to static head.

## 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.

## Constant curve



Constant curve mode is used when there is a demand for constant flow and constant head. The pump is adjusted to the desired duty point making pump throttling valves, which are traditionally required in this situation, obsolete.

# Intelligent solutions

## Built for building management

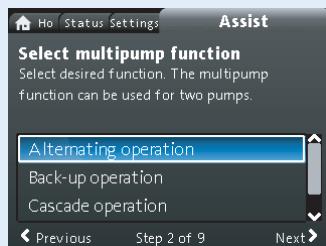
Optional CIM modules support all common fieldbus standards, making MAGNA3 the perfect addition to any BMS system.

## Heat energy monitoring

The heat energy monitor, enabled by installing an external sensor, has a typical flow estimation accuracy of +/-1% to +/-10%, depending on the duty point, and will save you the cost of installing a separate energy monitoring device within your system.

## No pump throttling valves

The FLOWLIMIT function and FLOWADAPT control mode allow you to set a maximum flow limit for your MAGNA3 pump. The pump continuously monitors the flow rate to ensure the desired maximum flow is not exceeded. This can eliminate the need for pump throttling valves and hereby improves the system's overall energy-efficiency. To meet system flow limitations, the pump will adjust its performance to a given setpoint, which dramatically cuts energy consumption.



## Wireless communication between two single pumps

MAGNA3 is supplied with wireless technology which enables it to connect to another MAGNA3 pump. Using the built-in wizard, connection

to a parallel coupled pump is quick and easily obtained. The two pumps are now controlled jointly in either cascade mode, alternating mode or pump back-up mode.

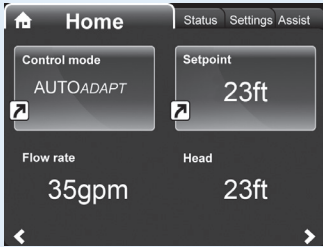
## Grundfos GO

The pump communicates wirelessly with Grundfos GO 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<sup>3</sup>
- set up multi-pump systems
- allocate the pump number making it possible to distinguish between pumps
- generate PDF reports with operating data, pump setup and warnings and alarms history
- application wizards – step by step guides to configure your pump in advanced applications.

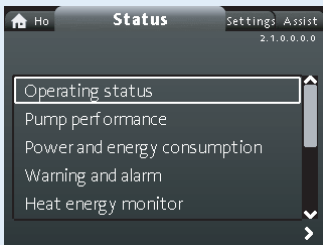
Furthermore, Grundfos GO includes assisted pump setup and assisted fault advice.





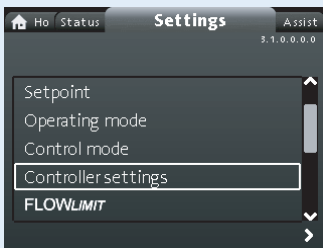
### Home menu

Easy access of up to four user-defined parameters via shortcuts



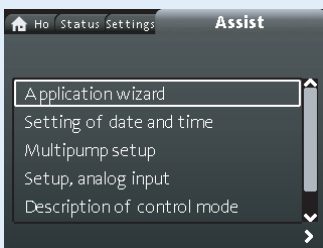
### Status menu

A complete overview of your pump and system performance



### Settings menu

Access to detailed pump settings including the setpoint, operating modes, and control modes



### Assist menu

Step-by-step guides to setting up and commissioning the pump

## More I/O for system intelligence

With the configurable relay and an analog input, the complete MAGNA3 I/O package allows for better system monitoring and optimal pump regulation.

### MAGNA3 I/O package

- 1 x analog input (0-10V/4-20mA) for differential pressure sensor, temperature control, heat energy monitoring or external set point
- 2 x relay outputs configurable as alarm, ready or operation
- 3 x digital inputs for external start/stop, max. curve and min. curve

## Easy optimization

The innovative 3D Work Log and Duty Point Over Time curve make optimization simple and accurate. The two features give you the details of the pump's performance since the day it was installed as well as the details of its operating conditions, such as average temperature and power consumption. Based on this, it is easy to find the optimal replacement pump, perfect optimization plan or carry out troubleshooting.

# Take a closer look

### Enhanced pump hydraulics

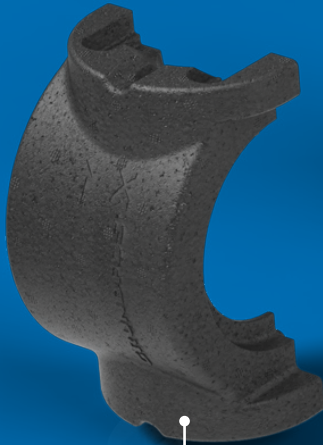
The pump hydraulics of MAGNA3 are refined to ensure the best possible flow conditions.

### Neodymium technology rotor

Magnetic rotor ensures high motor efficiency.

### Compact stator

The compact stator design eliminates unnecessary losses.



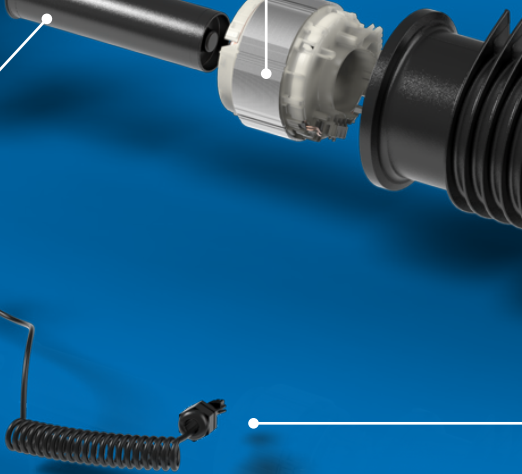
### Insulation shell for heating

These shells minimize heat losses from the pump housing.



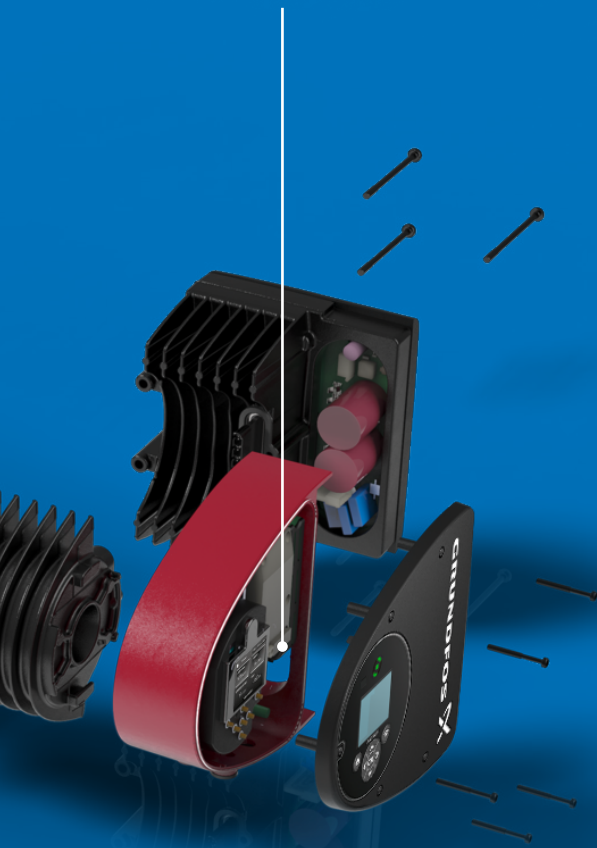
### Composite rotor can

The composite rotor can ensure low energy losses.



### Energy-optimizing algorithms

Features such as AUTOADAPT and FLOWADAPT contribute to significant energy savings.



### Patented sensor

Patented DeltaP and T sensor helps keep energy losses at a minimum.

### Reliability through generations

The MAGNA3 hardware is a third generation platform built on Grundfos' 80 years of pump experience, while the pump's self-protecting electronics prove that we are still the industry's electronic pump pioneers.

### 1 million test hours

At Grundfos, we believe in the value of thorough testing. The MAGNA3 has been submitted to more than 1 million test hours in extreme conditions, including alternating pressure tests, high humidity tests as well as high and low-temperature tests.

## Accessories

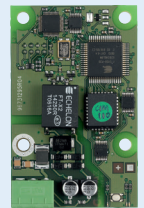
### Grundfos GO

Grundfos GO gives you intuitive handheld pump control and full access to the Grundfos online tools on the go.



### CIM modules

For connection to BMS, CIM modules with the following field-bus standards can be added: LON, Profibus, Modbus, SMS/GSM/GPRS, BACnet and ethernet. In addition, the GENIBus is also available.



# Product range

## Single pump

Pump type	Port-to-port length (in)	Single pump, cast iron		Single pump, stainless	
		115V	208-230V	115V	208-230V
MAGNA3 32-60 F	6-1/2"	98126820	98126820	98126822	98126826
MAGNA3 32-100 F	6-1/2"	98126824	98126824	98126826	98126830
MAGNA3 40-80 F	8-1/2"	98126800	98126828	98126802	98126834
MAGNA3 40-120 F	8-1/2"	98126804	98126832	98126806	98126838
MAGNA3 40-180 F	8-1/2"	98126808	98126836	98126810	98126842
MAGNA3 50-80 F	9-1/2"	98126812	98126840	98126814	98126846
MAGNA3 50-150 F	11"	981268016	98126844	98126818	98126850
MAGNA3 65-120 F	13-1/2"	98124696	98126848	98124702	98126854
MAGNA3 65-150 F	13-1/2"	—	98126852	—	98126858
MAGNA3 80-100 F	14-1/4"	—	98126856	—	98126862
MAGNA3 100-120 F	17-3/4"	—	98126860	—	98126862

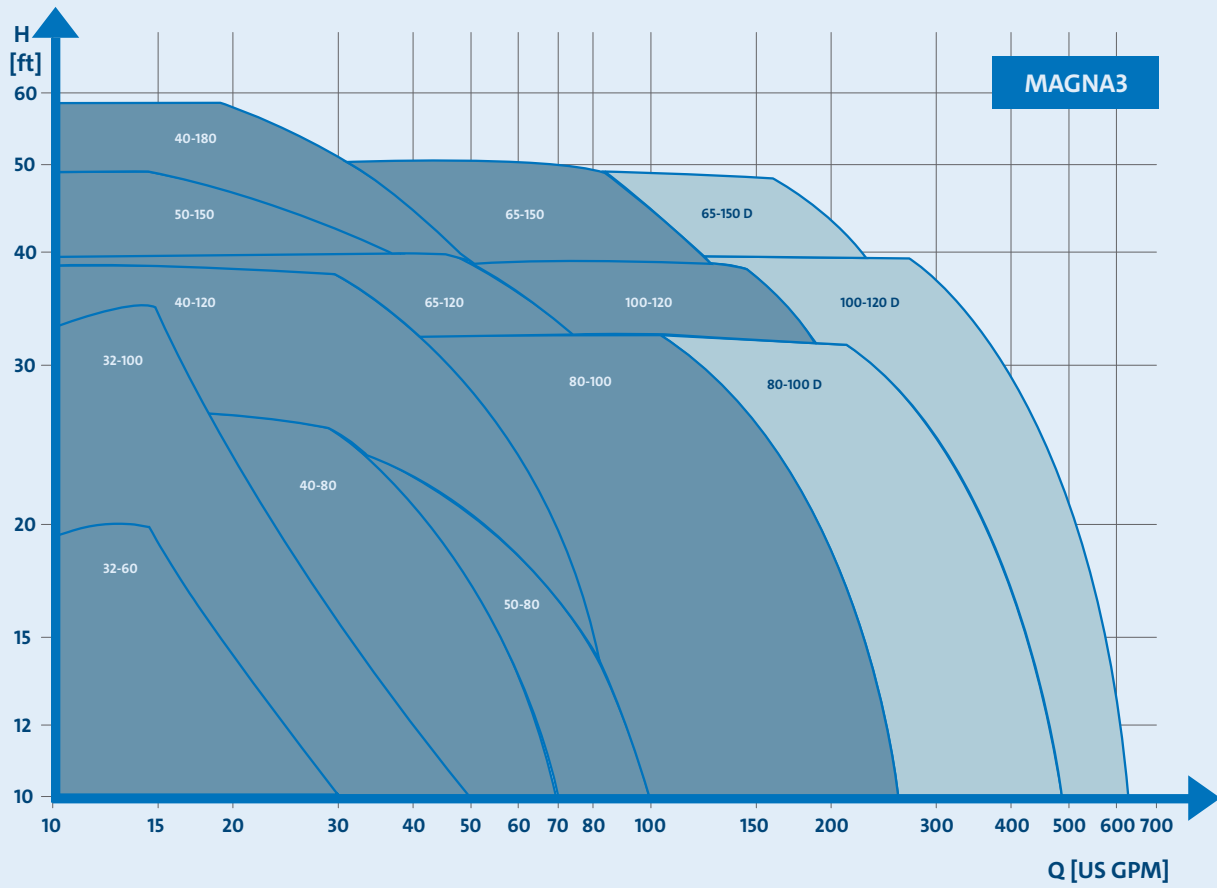
### Temperature range (all models):

Liquid temperature: 14°F up to 230°F

Ambient temperature: -4°F up to +104°F



### Performance range



# Product range

## Twin pump

Pump type	Twin pump, Cast Iron
	208-230V
MAGNA3 32-60 F	–
MAGNA3 32-100 F	–
MAGNA3 40-80 F	–
MAGNA3 40-120 F	–
MAGNA3 40-180 F	–
MAGNA3 50-80 F	–
MAGNA3 50-150 F	–
MAGNA3 65-120 F	–
MAGNA3 65-150 F	98126863
MAGNA3 80-100 F	98126864
MAGNA3 100-120 F	98126864

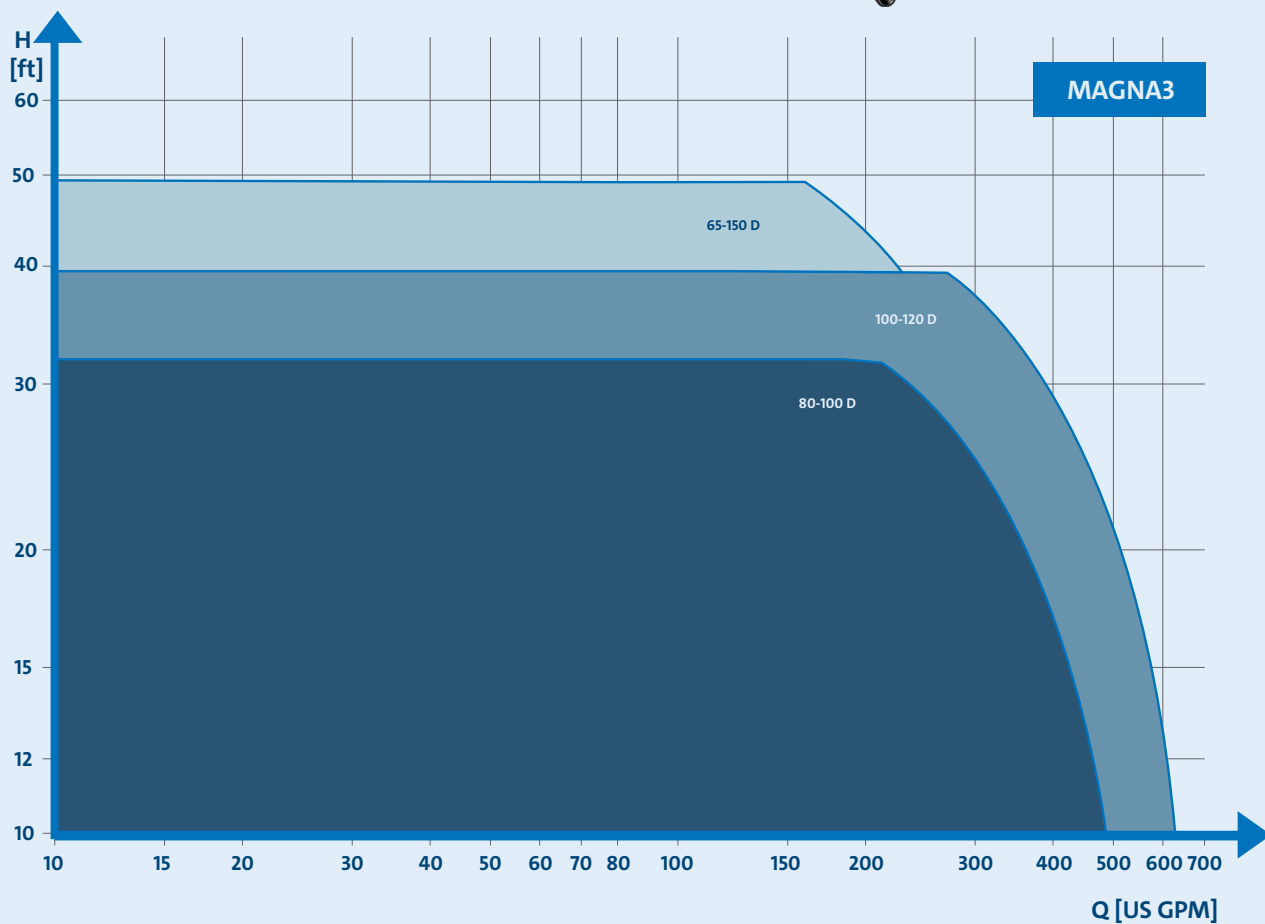
### Temperature range (all models):

Liquid temperature: 14°F up to 230°F

Ambient temperature: -4°F up to +104°F



### Performance range



### **MAGNA3**

We offer a complete range of MAGNA3 pumps with unrivalled efficiency, intelligent technology to match your every need and the well-known Grundfos reliability based on 80 years of experience.

#### **The full Grundfos product range covers all building application areas:**

- Pressure boosting
- Heating
- Cooling
- Water disinfection
- Wastewater handling

For more information, visit:

[grundfos.us/magna3](http://grundfos.us/magna3)

Visit [grundfos.us/pei](http://grundfos.us/pei) to learn more about Department of Energy (DOE) pump energy index (PEI) requirements and PEI ratings on specific Grundfos models.