

# ALPHA HWR, ALPHA CS



- 1. Product data . . . . . 3**
  - Product introduction . . . . . 3
  
- 2. ALPHA HWR . . . . . 7**
  - Product range . . . . . 7
  - Features . . . . . 7
  - Type key . . . . . 7
  - Technical data . . . . . 8
  - Nameplate . . . . . 8
  - Operating panel . . . . . 9
  - Performance curve . . . . . 10
  - Dimensions and weights . . . . . 10
  
- 3. ALPHA CS . . . . . 11**
  - Features . . . . . 11
  - Type key . . . . . 11
  - Technical data . . . . . 12
  - Nameplate . . . . . 12
  - Operating panel . . . . . 13
  - Performance curve . . . . . 14
  - Dimensions and weights . . . . . 14
  
- 4. Document quality feedback . . . . . 15**
  
- 5. Grundfos Product Center . . . . . 16**

## 1. Product data

### Product introduction



TM085887

Top row: ALPHA CS 15-55. Bottom row: ALPHA HWR 15-XX.

ALPHA HWR is designed for hot-water recirculation systems with a dedicated return line while ALPHA CS is designed for domestic hot-water recirculation systems without a dedicated return line.

#### ALPHA HWR 15-29/55

ALPHA HWR is designed for domestic hot-water recirculation systems with a dedicated return line. The circulator comes with an integrated estimator that estimates temperature, eliminating the need for an aquastat. The built-in digital timer makes it possible to schedule the pump's on/off hours, helping save energy when hot water is not required in the home.

#### ALPHA CS 15-55

ALPHA COMFORT SYSTEM is designed for domestic hot-water recirculation systems without a dedicated return line. The comfort system comes with a bypass valve with a thermal actuator. The built-in digital timer makes it possible to schedule the pump's on/off hours, helping save energy when hot water is not required in the home.

### Pumped liquids

The product is suitable for pumping clean, thin, non-aggressive and non-explosive liquids without solid particles or fibers or mineral oils.

If required, 50 % of the volume solution of glycol and water can be used. However, a decrease in pump performance may occur due to an increase in the viscosity of the solution. Contact the manufacturer for information regarding suitability of the pump for pumping other liquids.

The pump is designed to circulate water from 36 to 203 °F (2 to 95 °C) up to a maximum pressure of 175 psi (12 bar), depending on the variant.

## Applications

A domestic hot-water recirculation system maintains hot water at the plumbing fixtures and provides the comfort of instant hot water when needed. This solution saves water and energy by almost completely eliminating the waste that occurs when running water down the drain while waiting for hot water.

### Domestic hot-water recirculation system with dedicated return line

In this system, a dedicated return line is installed between the furthest fixture and the water heater. A pump is installed on the return line, circulating water from the hot-water source through the hot-water distribution system, returning to the hot-water source through the dedicated return line.

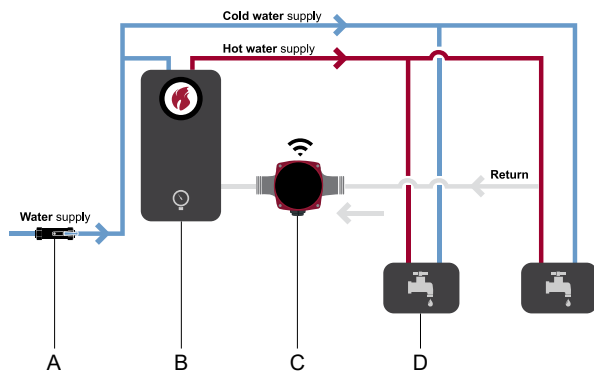


Diagram of ALPHA HWR installation

Pos.	Description
A	Shut-off valve, cold-water supply
B	Heater
C	ALPHA HWR
D	Faucet

### Domestic hot-water recirculation system without dedicated return line

Most hot-water systems do not have a dedicated return line. In this system, the cold-water line is used as the return line. A temperature actuated valve (Comfort Valve) is installed at the furthest fixture. This valve bypasses the hot water to the cold-water line so that the cold-water line can be used as the return line to the hot-water source. When the pump is running, the cold water in the hot-water line is forced into the cold-water line to be recirculated back to the hot-water source. When hot water reaches Comfort Valve, the valve automatically closes to prevent hot water from going into the cold-water line.

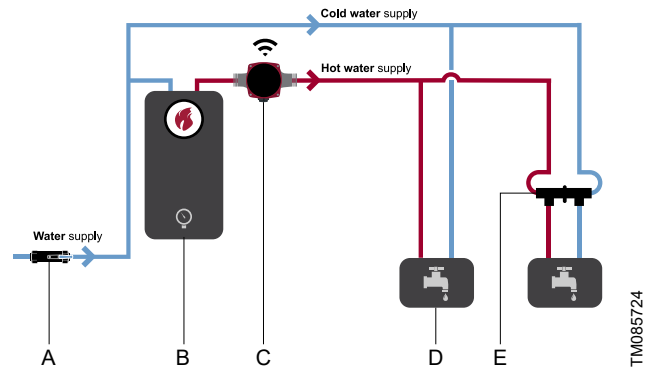


Diagram of ALPHA CS installation

Pos.	Description
A	Shut-off valve, cold-water supply
B	Heater
C	ALPHA CS
D	Faucet
E	Comfort Valve

## Control modes

### ALPHA HWR

ALPHA HWR can be set to the following control modes via the operating panel:

- temperature control - AUTOADAPT
- temperature control
- continuous operation - 24/7.

### Temperature control - AUTOADAPT

This control mode ensures comfort via the integrated temperature estimator and is suitable for all hot-water recirculation applications with a dedicated return line.

The pump adjusts the flow according to the temperature setpoint and ensures hot water is available throughout the house. At the same time, the pump also ensures that the minimum flow requirement to activate tankless water heaters is met. The flow rate automatically adjusts between 1 and 4 gpm while maintaining a temperature between 95 and 102 °F (35 and 39 °C).

### Temperature control

This control mode ensures comfort via flow limits based on predefined pipe diameters.

The pump maintains a temperature between 95 and 102 °F (35 and 39 °C). The setpoints have maximum flow limits that are based on predefined pipe diameters and are designed to reduce flow accelerated corrosion. The pump operates on its maximum curve until it reaches the flow limits which are defined as below:

- 1/2" 1.5 gpm)
- 3/4" (2.3 gpm)
- 1" (3.8 gpm).

### Continuous operation - 24/7

This control mode ensures comfort 24/7 through continuous operation in constant curve III with flow limits.

The flow limits are based on predefined pipe diameters and flow limits (see below) to reduce flow accelerated corrosion and noise in the system. The predefined flow limits can be changed via Grundfos GO.

- 1/2" 1.5 gpm)
- 3/4" (2.3 gpm)
- 1" (3.8 gpm).

### ALPHA CS

ALPHA CS can be set to the following control modes via the operating panel:

- AUTOADAPT
- continuous operation - 24/7.

### AUTOADAPT

This control mode ensures comfort via temperature controlled Comfort Valve actuation and is suitable for all hot-water recirculation applications without a dedicated return line.

During the first startup, the pump operates at its maximum curve with a flow limit of 1.2 gpm for at least 1 hour. During this initial startup procedure, the pump runs several cycles, each lasting 20 minutes (5 minutes on and 15 minutes standby) until the pump has learned the signature of a closed Comfort Valve based on changes in power and flow.

After the first startup, the pump automatically turns off when it detects a closed valve, enabling further energy savings.

### Continuous operation - 24/7

This control mode ensures comfort 24/7 through continuous operation in constant curve III with flow limits.

The flow limits are based on predefined pipe diameters and flow limits (see below) to reduce flow accelerated corrosion and noise in the system. The predefined flow limits can be changed via Grundfos GO.

- 1/2" 1.5 gpm)
- 3/4" (2.3 gpm)
- 1" (3.8 gpm).

## ALPHA HWR and ALPHA CS

ALPHA HWR and ALPHA CS can be set to the following control modes via the Grundfos GO app:

- cycle time control
- constant curve
- constant pressure
- constant flow.

### Cycle time control

The pump operates at its maximum curve, and it starts and stops based on time parameters. The default time parameters are 5 minutes on and 15 minutes off. The time parameters are adjustable through Grundfos Go.

### Constant curve

The pump operates at a constant curve, which means that it runs at constant speed or power. The pump performance follows the selected constant curve.

This control mode is recommended in systems replacing old three-speed circulators where the required performance is known.

### Constant pressure

The pump operates at a constant pressure which means the head is kept constant regardless of changes in the system. The pump performance follows the selected constant-pressure curve.

This control mode is recommended in systems with multiple risers and thermally actuated balancing valves.

### Constant flow

The pump operates at a constant flow in the system regardless of the head.

This control mode is recommended when the pump is externally controlled, for example with an aquastat.

## 2. ALPHA HWR



ALPHA HWR is designed for domestic hot-water recirculation systems with a dedicated return line. The circulator comes with an integrated sensor that estimates temperature, eliminating the need for an aquastat. The built-in digital timer makes it possible to schedule the pump's on/off hours, helping save energy when hot water is not required in the home.

The new toolless, removable power connector results in fast and easy installation. Grundfos GO provides the ability to conveniently troubleshoot the system through the event log, run guided setup, set custom control modes and run software updates. Historical trend data for flow, head, estimated media temperature and on-cycle durations are available in the app.

### Product range

Model	Product number
ALPHA HWR 15-55 SU/T 115V 9H	92603111
ALPHA HWR 15-29 SU/T 115V 9H	92603113
ALPHA HWR 15-55 SF/T 115V 9H	92603110
ALPHA HWR 15-29 SF/T 115V 9H	92603112

### Features

- Built-in Bluetooth timer with battery backup
- integrated temperature estimator
- display readouts (flow, head, watts)
- touch user interface
- FLOWSENSE
- AUTOADAPT
- dry-running protection.

Grundfos GO features:

- guided setup that recommends modes and settings for each specific application
- ability to set a constant flow, minimum flow and maximum flow
- scheduling
- software update
- trend data showing historical data for flow rate, head, media temperature and on-cycle durations
- event log with overview of warnings and alarms
- replacement compatibility check.

Grundfos HOME features:

- scheduling.

### Type key

**Example: ALPHA HWR 15-29 SF/T 115V 9H**

Code	Explanation	Designation
ALPHA HWR	Grundfos circulator	Pump type
15	R 1/2" G1"	Nominal diameter
55	18 ft (5.5 m)	Max. head
29	9.5 ft (2.9 m)	
S	Stainless steel	Pump housing
U	Union	
F	Flange	Pipe connection
T	Integrated timer	
[ ]	Conduit box	Power connection
LC	Line cord	
115V	115 V	Voltage
230V	230 V	
3H	3 o'clock (right)	
6H	6 o'clock (below)	Control box positions
9H	9 o'clock (left)	
0H	12 o'clock (top)	



## Technical data

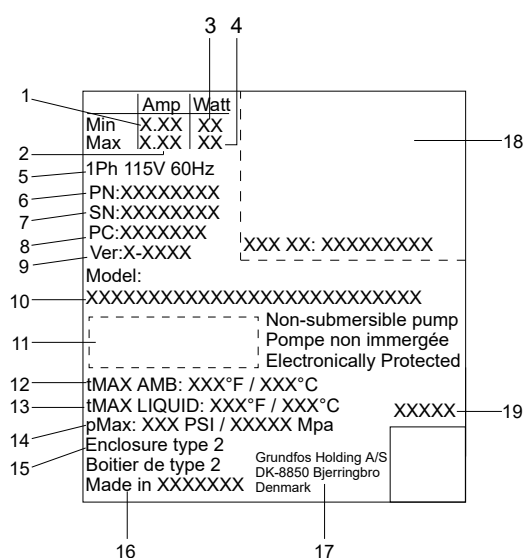
Flow rate (Q)	15-55: max. 13.6 gpm (3.1 m <sup>3</sup> /h)
	15-29: max. 11 gpm (2.5 m <sup>3</sup> /h)
Head (H)	15-55: max. 18 ft (5.5 m)
	15-29: max. 9.5 ft (2.9 m)
Supply voltage	1 × 115 V, ± 10 %, 60 Hz
Motor protection	The pump requires no external motor protection.
Power usage (approximate)	15-55: min. 2 - max. 38 W
	15-29: min. 2 - max. 21 W
Enclosure class	Indoor use only. Enclosure type 2.
Insulation class	F
Ambient temperature	32-131 °F (0-55 °C)
Liquid temperature	36-203 °F (2-95 °C) <sup>1)</sup>
Relative humidity	Max. 95 %
Max. outlet pressure	175 psi (12 bars) (1.2 MPa)
Sound pressure level	< 25 dB(A)
Approvals	cULus and FCC
	The product complies to limits for class B digital device, pursuant to Part 15 of the FCC Rules.
Port-to-port length	Flange: 6.5" (165 mm)
	Union: 5.9" (150 mm)
Pump housing	Stainless steel
Connection type	Flanged connection
	Union

<sup>1)</sup> Hard water deposits can occur at temperatures over 140 °F (60 °C).

## Inlet pressure

Liquid temperature [°F (°C)]	Min. inlet pressure [psi (bar)]
167 (75)	0.75 (0.05)
203 (95)	7.25 (0.5)
230 (110)	15.7 (1.08)

## Nameplate



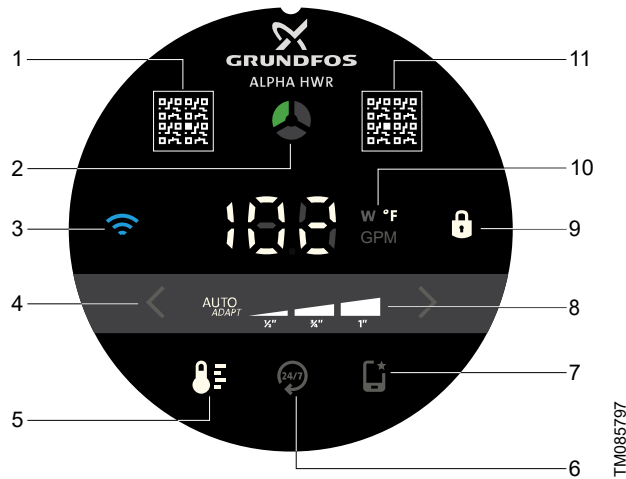
TM086572

Pos.	Description
1	Min. current consumption
2	Max. current consumption
3	Min. power consumption
4	Max. power consumption
5	Number of phases, voltage and frequency
6	Product number
7	Serial number
8	Factory code and production code (year and week)
9	Version letter and update number
10	Pump model
11	Enclosure class
12	Max. ambient temperature
13	Max. liquid temperature
14	Max. system pressure
15	Enclosure type
16	Country of origin
17	Grundfos address
18	Approvals
19	Combined legal product code



## Operating panel

LED symbols and buttons on the pump display

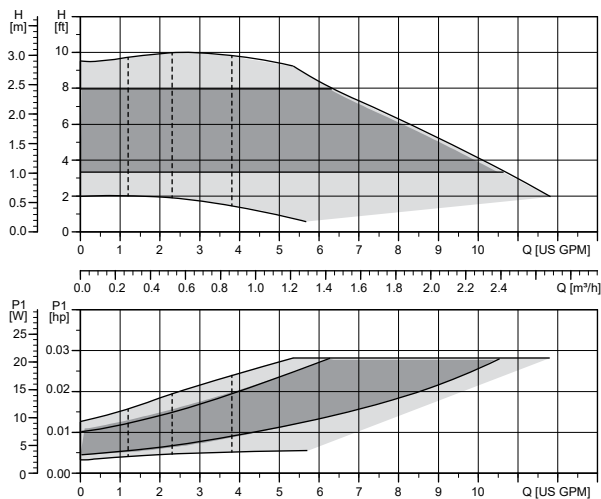


The operating panel has a touchscreen which means you can change settings by touching the icons on the operating panel.

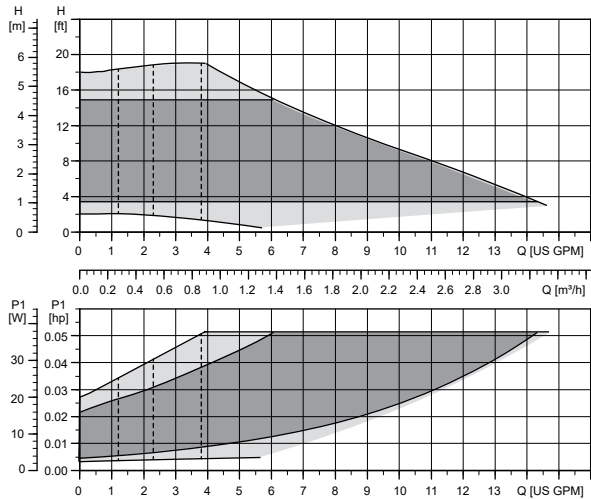
Pos.	Description
1	QR code for Grundfos Product Center
2	Grundfos mini Eye The indicator light shows the operating status of the product.
3	Connect If lit, the pump is connected to Grundfos GO via Bluetooth.
4	Settings for control modes Use the arrows to toggle between the control modes.
5	Control mode This indicates the selected control mode: AUTOADAPT or temperature controlled.
6	Always on
7	Grundfos GO The pump has been set via Grundfos GO.
8	Settings for the selected control mode 1/2", 3/4", 1" or AUTOADAPT
9	Lock This indicates that the operating panel is locked and no buttons can be used. It automatically locks after a few seconds. To unlock the panel, push and hold the icon for 1 second.
10	Unit The indicator light shows the unit used for the number to the left. W = Watt, °F = temperature and GPM = gallons per minute.
11	QR code for Grundfos GO and Grundfos HOME landing page

### Performance curve

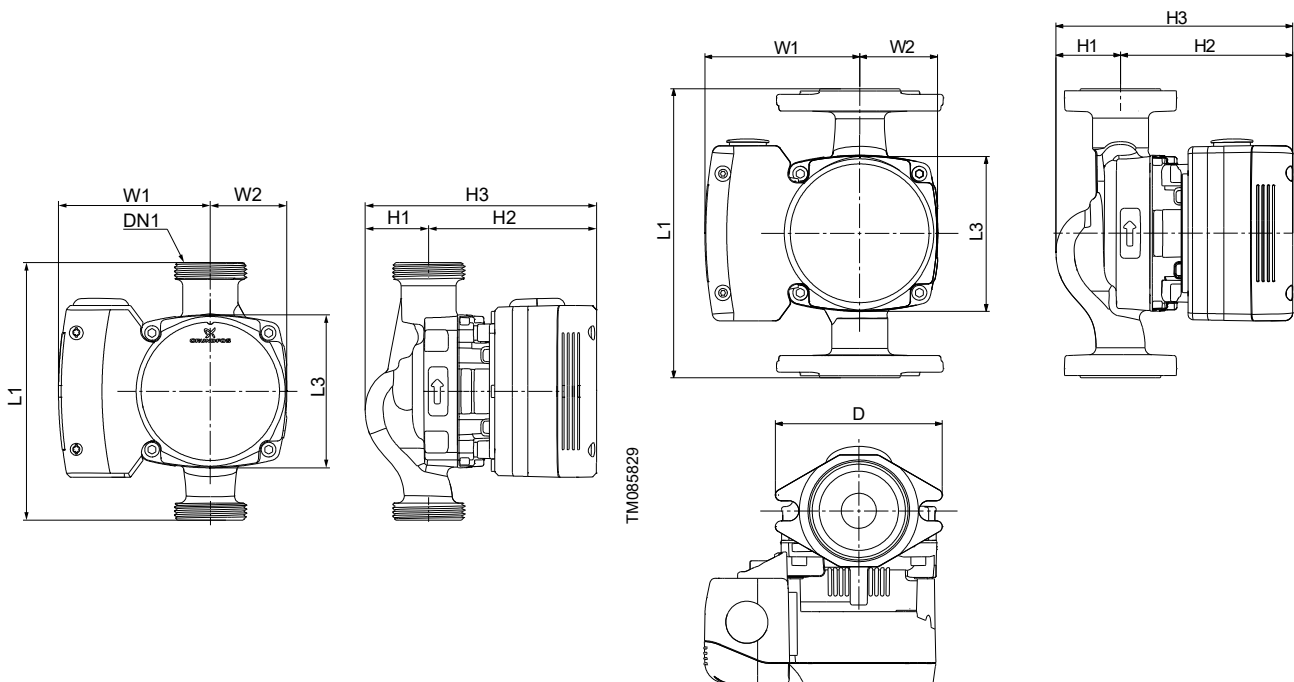
ALPHA HWR 15-29



ALPHA HWR 15-55



### Dimensions and weights



Model	Product number	Dimensions [inch (mm)]								Connection	Ship. wt. [lb (kg)]
		W1	W2	D	L1	L3	H1	H2	H3		
ALPHA HWR 15-XX SU/T 115V 9H	92603111 92603113	3.5 (88)	1.8 (45)	-	6 (150)	3.5 (89)	1.5 (37)	3.9 (98)	5.3 (135)	1 1/4"	6.2 (2.8)
ALPHA HWR 15-XX SF/T 115V 9H	92603110 92603112	3.5 (88)	1.8 (45)	3.7 (95)	6.5 (165)	3.5 (89)	1.5 (37)	3.9 (98)	5.3 (135)	GF 15/26	6.2 (2.8)

### 3. ALPHA CS



TM085783

#### ALPHA CS

ALPHA CS is designed for domestic hot-water recirculation systems without a dedicated return line. The comfort system comes with a bypass valve with a thermal actuator. The built-in digital timer makes it possible to schedule the pump's on/off hours, helping save energy when hot water is not required in the home.

The pump provides hot water in an instant to the hot-water faucets in your home. Since the solution utilizes the existing cold-water supply line as a return line in your home, no separate new return line is required. No electrical power is required under the sink.

The product moreover features:

- An integrated digital timer that eliminates the need for a physical programmable timer.
- Homeowner scheduling via the Grundfos HOME app.
- Plug and play control mode with AUTOADAPT.
- Easier selection with the Grundfos GO replacement compatibility check.
- Reduced risk of flow accelerated corrosion with flow limit.
- Reduced fluctuation in shower temperatures with FLOWSENSE.

#### Features

- Built-in Bluetooth timer with battery backup
- touch user interface
- FLOWSENSE
- AUTOADAPT
- dry-running protection.

Grundfos GO features:

- guided setup that recommends modes and settings for each specific application
- ability to set a constant flow, minimum flow and maximum flow
- scheduling
- software update
- trend data showing historical data for flow rate, head, media temperature and on-cycle durations
- event log with overview of warnings and alarms
- replacement compatibility check.

Grundfos HOME features:

- scheduling.

#### Type key

##### Example: ALPHA CS 15-55 SU7P/TLC 115V 9H

Code	Explanation	Designation
ALPHA CS	Grundfos circulator with Comfort Valve	Pump type
15	R 1/2" G1"	Nominal diameter
55	18 ft (5.5 m)	Max. head
S	Stainless steel	Pump housing
U	Union	Pipe connection
7P	3/4" NPT(M) × 3/4" NPT(F)	
T	Integrated timer	
LC	Line cord	Power connection
115V	115 V	Voltage
230V	230 V	
3H	3 o'clock (right)	Control box position
6H	6 o'clock (below)	
9H	9 o'clock (left)	
0H	12 o'clock (top)	

## Technical data

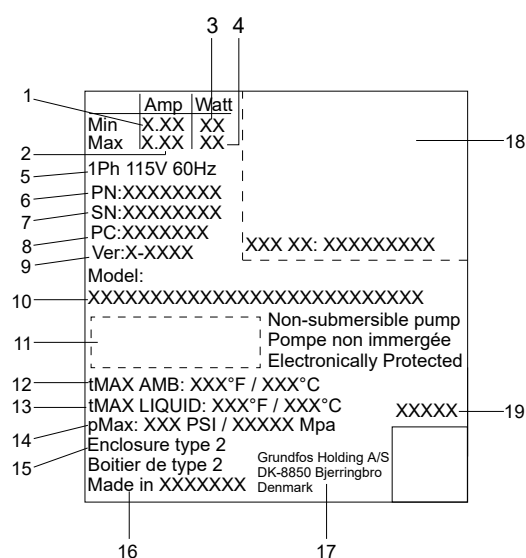
Flow rate(Q)	Max. 13.6 gpm (3.1 m <sup>3</sup> /h)
Head (H)	Max. 18 ft (5.5 m)
Supply voltage	1 × 115 V, ± 10 %, 60 Hz
Motor protection	The pump requires no external motor protection.
Power usage (approximate)	Min. 2 - max. 38 W
Enclosure class	Indoor use only. Enclosure type 2.
Insulation class	F
Ambient temperature	32-131 °F (0-55 °C)
Liquid temperature	36-203 °F (2-95 °C) <sup>2)</sup>
Relative humidity	Max. 95 %
Max. outlet pressure	175 psi (12 bars) (1.2 MPa)
Sound pressure level	< 25 dB(A)
Approvals	cULus and FCC  The product complies to limits for class B digital device, pursuant to Part 15 of the FCC Rules.
Port-to-port length	5.31" (135 mm)
Pump housing	Stainless steel
Connection type	3/4" NPT(M) × 3/4" NPT(F)
Connections	Comfort Valve: 1/2" NPS(M) Flex hose: 1/2" NPS(F) × 1/2" NPS(F) × 12"

2) Hard water deposits can occur at temperatures over 140 °F (60 °C).

## Inlet pressure

Liquid temperature [°F (°C)]	Min. inlet pressure [psi (bar)]
167 (75)	0.75 (0.05)
203 (95)	7.25 (0.5)
230 (110)	15.7 (1.08)

## Nameplate

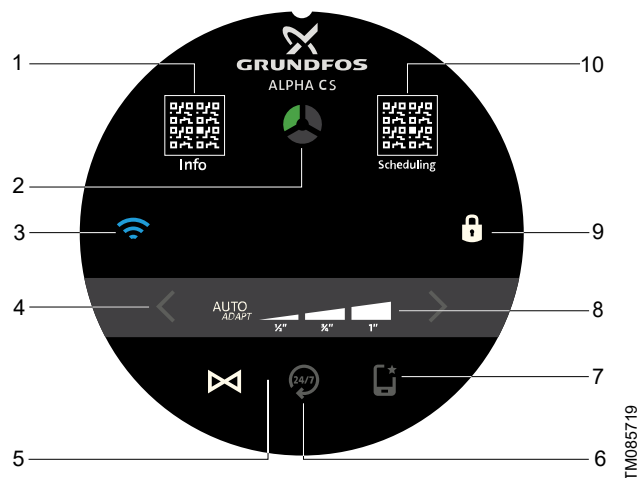


TM086572

Pos.	Description
1	Min. current consumption
2	Max. current consumption
3	Min. power consumption
4	Max. power consumption
5	Number of phases, voltage and frequency
6	Product number
7	Serial number
8	Factory code and production code (year and week)
9	Version letter and update number
10	Pump model
11	Enclosure class
12	Max. ambient temperature
13	Max. liquid temperature
14	Max. system pressure
15	Enclosure type
16	Country of origin
17	Grundfos address
18	Approvals
19	Combined legal product code

## Operating panel

LED symbols and buttons on the pump display

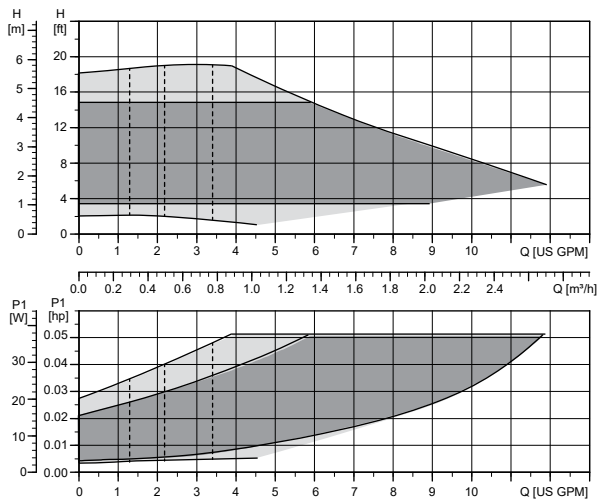


TM085719

Pos.	Description
1	QR code for Grundfos Product Center
2	Grundfos mini Eye The indicator light shows the operating status of the product.
3	Connect If lit, the pump is connected to Grundfos GO via Bluetooth.
4	Settings for control modes Use the arrows to toggle between the control modes.
5	Control mode You can select the control mode COMFORT SYSTEM AUTOADAPT.
6	Always on
7	Grundfos GO The pump has been set via Grundfos GO.
8	Settings for the selected control mode 1/2", 3/4", 1" or AUTOADAPT
9	Lock This indicates that the operating panel is locked and no buttons can be used. It automatically locks after a few seconds. To unlock the panel, push and hold the icon for 1 second.
10	QR code for Grundfos GO and Grundfos HOME landing page

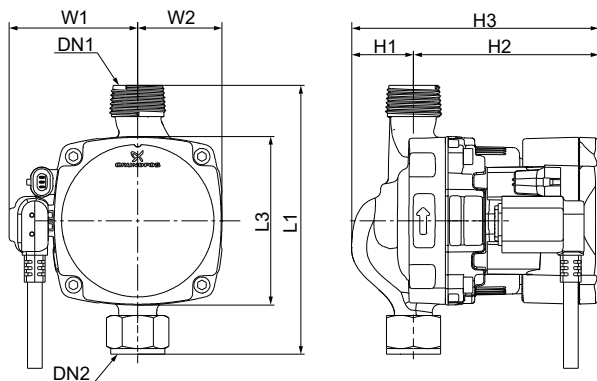
The operating panel has a touchscreen which means you can change settings by touching the icons on the operating panel.

### Performance curve



TM086532

### Dimensions and weights



TM085826

Model	Product number	Dimensions [inch (mm)]							Connection	Ship. wt. [lb (kg)]
		W1	W2	L1	L3	H1	H2	H3		
ALPHA CS 15-55	92603114	2.7	1.8	5.6	3.5	1.3	3.9	5.2	3/4" NPT(M) × 3/4" NPT(F)	5.3 (2.4)
SU7P/TLC 115V 9H		(68)	(45)	(142)	(89)	(33)	(98)	(131)		

## 4. Document quality feedback

To provide feedback about this document, scan the QR-code using your phone's camera or a QR code app.



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## 5. Grundfos Product Center

Online search and sizing tool to help you make the right choice.

From the international view, you can select your specific country to view the product range available to you.

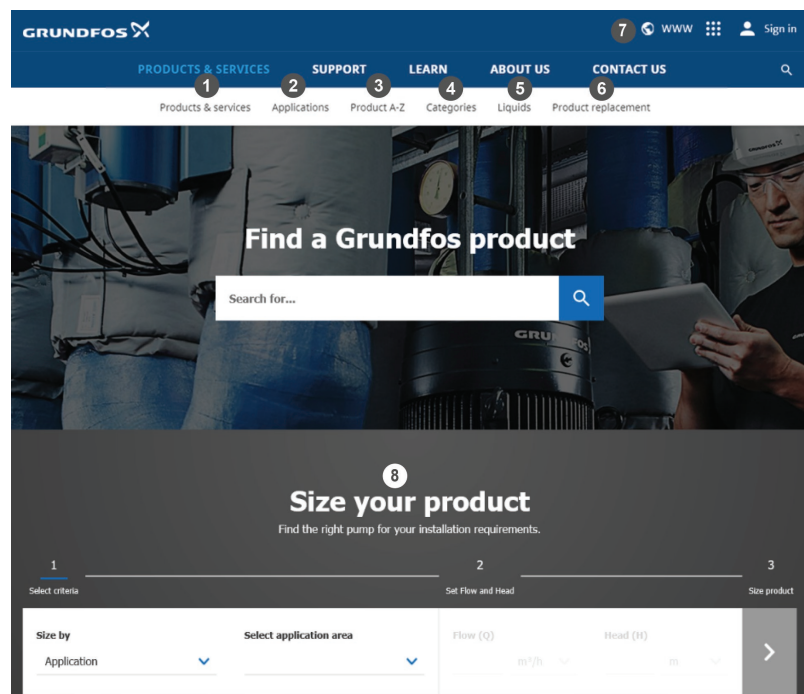
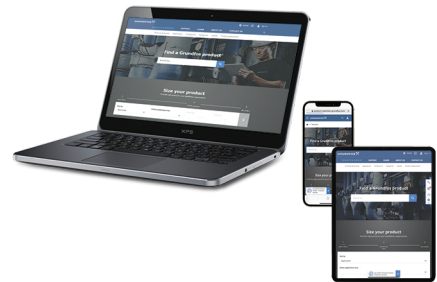
International view: <http://product-selection.grundfos.com>

### All the information you need in one place

Performance curves, technical specifications, pictures, dimensional drawings, motor curves, wiring diagrams, spare parts, service kits, 3D drawings, documents, system parts. The Product Center displays any recent and saved items - including complete projects - right on the main page.

### Downloads

On the product pages, you can download installation and operating instructions, data booklets, service instructions, etc., in PDF format.



When you select your country, you will see the menus below. Note that some menus may not be available depending on the country.

Example: <https://product-selection.grundfos.com/uk>

Pos.	Description
1	<b>Products &amp; services</b> enables you to find products and documents by typing a product number or name into the search field.
2	<b>Applications</b> enables you to choose an application to see how Grundfos can help you design and optimise your system.
3	<b>Products A-Z</b> enables you to look through a list of all the Grundfos products.
4	<b>Categories</b> enables you to look for a product category.
5	<b>Liquids</b> enables you to find pumps designed for aggressive, flammable or other special liquids.
6	<b>Product replacement</b> enables you to find a suitable replacement.
7	<b>WWW</b> enables you to select the country, which changes the language, the available product range and the structure of the website.
8	<b>Sizing</b> enables you to size a product based on your application and operating conditions.

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