

# GRUNDFOS **CUE**

Easy installation, operation and  
control of pump speed



# Maximum convenience and advanced user interface

The Grundfos CUE is a variable frequency drive for the effective speed control of any Grundfos pump without integrated drives, irrespective of size or area of application. Grundfos CUE is an integral part of Grundfos iSOLUTIONS.

Offering simple installation and operation coupled with extensive control and monitoring possibilities, Grundfos CUE is perfectly suited for pump applications in the water or wastewater network, building services, or industrial pumping solutions.



## Pump family settings

A unique feature uses pre-programmed data for different Grundfos pump families. During installation, the correct values are set for specific pumps for optimum performance and protection of the pump.

## Control mode

Grundfos CUE provides a series of pre-defined application control modes:

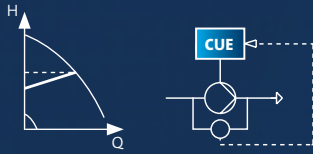
- Constant pressure with or without stop function
- Proportional Differential pressure

- Constant level with or without stop function
- Constant temperature
- Proportional pressure

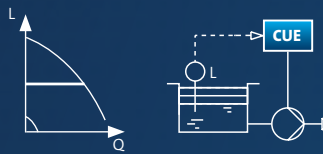
These pre-defined control modes make it simple to program the drive for the application. When controlled from an external source, the open loop control mode is used, supplying Grundfos CUE with information about the required speed.

## CONTROL MODE

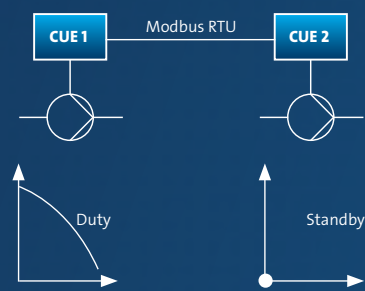
### PROPORTIONAL PRESSURE



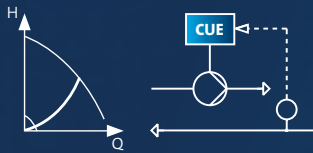
### CONSTANT LEVEL



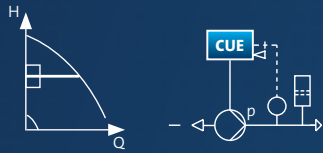
### DUTY/STANDBY OR DUTY/ASSIST



### TEMPERATURE CONTROL



### CONSTANT PRESSURE



### Intuitive start-up guide

For easy set-up, Grundfos CUE has a comprehensive start-up guide that allows commissioning simply by asking for your pump type, motor type, control mode, sensor type, setpoint and multi-pump mode. Grundfos CUE will then automatically set all necessary parameters.

Furthermore, the advanced HMI panel features:

- Favourites menu for one stop adjustment of setpoint, operating mode and control mode
- Main menu with password protection for advanced commissioning and troubleshooting without the need for additional tools
- Info key with comprehensive descriptions for easy settings and status – no manual required
- Logging for tuning the performance of the pump system

### Lowest operating cost

Grundfos CUE runs with the most energy efficient motor construction types for higher flexibility, and not least high pump system efficiency:

- Asynchronous induction motors,
- Permanent magnet motors,
- Synchronous reluctance motors,
- PM assisted SynRM.

### Highest efficiency motors reduce energy consumption

At Grundfos, our long-term 2030 water and climate ambitions are to do whatever we can to help achieve the United Nations Sustainable Development Goals, in particular 6 and 13.

Speed-controlled pumps contribute strongly to water-use efficiency across all sectors (SDG 6), and our focus on high-efficiency motors reduces energy consumption, in support of SDG 13.



For example, IE5 motor losses are over 30 % lower than IE3-rated motors, this alone reduces the energy consumption by 10 % with a typical pump load profile.

## Connect to the future of intelligent pump systems

### GRUNDFOS iSOLUTIONS



Grundfos iSOLUTIONS brings a new era of intelligence to pump systems and water technology with solutions that look beyond individual components and optimise the entire system.

Powered by our deep understanding of water, Grundfos iSOLUTIONS utilises intelligent pumps, cloud connectivity and digital services. Together they enable real-time monitoring, remote control, fault prediction and system optimisation to help you reach a new level of performance.

Learn more on [grundfos.com/isolutions](https://grundfos.com/isolutions)



# Superior performance through unique functionality

Grundfos CUE offers greater functionality, making it easy to use in a wide range of complex applications. The features listed below are pump type dependent.

- **Multi-pump function including alternating, back-up or cascade function**

The Multi-pump function makes it possible to control more parallel-coupled pumps without the need for an external controller. Four different multi-pump functions are available: Alternating time, Back-up, and Cascade control with either fixed or variable speed assist pumps.

- **Differential pressure control using two sensors**

Use two sensors instead of one differential sensor for running in differential pressure.

- **Proportional pressure and flow estimation**

Proportional pressure control on pumps with user adjustable control curve for pressure loss compensation.

- **Low flow stop function**

Improved energy optimisation, easy configuration and high comfort.

- **Dry running protection**

Protects the pump against failure due to dry running.

- **Limit Exceed function**

The pump reacts to a measured or an internal value exceeding a user-defined limit. The pump can either give an alarm/warning or change the operating mode, reducing the need for external controllers.

- **Setpoint influence**

The setpoint influence function makes it possible to influence the controller setpoint using measured values.

- **Standstill heating (anti-condensation heating)**

Standstill heating ensures that even during standstill periods, the motor windings are kept at a minimum temperature – heating both motor and terminal box.



# Dedicated functionality for Water Utilities

With dedicated functionality for water and wastewater networks, Grundfos CUE ensures fully optimised operation in these applications.

## WATER NETWORKS

- **Pipe fill mode**  
Improve system reliability and prevent water hammering. Designed for both vertical and horizontal pipe systems to increase system performance and prevent water hammer in the application.
- **Low flow stop function**  
Improved energy optimisation, easy configuration and high comfort.
- **Built-in cascade control of two fixed-speed pumps**  
Increased flow by simple cascade option of up to two fixed speed pumps, easy set-up from the start-up guide.

## WASTEWATER NETWORKS

- **High overload and Constant torque**  
The torque characteristic is normally set to variable torque for centrifugal pumps. However, Grundfos CUE offers a constant torque characteristic optimised for:
  - higher starting torque,
  - axial pumps and positive displacement pumps, or
  - load shocks in wastewater pumps.
- **Stop at minimum speed function**  
Ensures that the pump will stop after a selected time when the controller is in saturation, forcing the pump to run at minimum speed.
- **Deragging**  
By preventing clogged impellers and getting rid of debris, less raggings prolongs pump lifetime and reduces service costs.



## Technical specifications

|                         |  |
|-------------------------|--|
| Built-in I/O            | Yes  |
| Digital inputs:         | 4  |
| Digital inputs/outputs: | 2  |
| Relay outputs:          | 2  |
| Analog inputs:          | 1 dedicated for sensor,<br>1 dedicated for external setpoint |
| Analog output:          | 1  |
| RS-485:                 | GENIbus, Modbus RTU,<br>and multi-pump                       |

## Accessories

### MCB114 sensor input module

Required for using differential pressure control using two sensors, or two Pt100/1000 inputs to be used in connection with motor bearings temperature measurement, or temperature measurement such as the media temperature.

### MCO101 cascade option module

Required for cascade of more than one additional variable speed pump.

### Variants

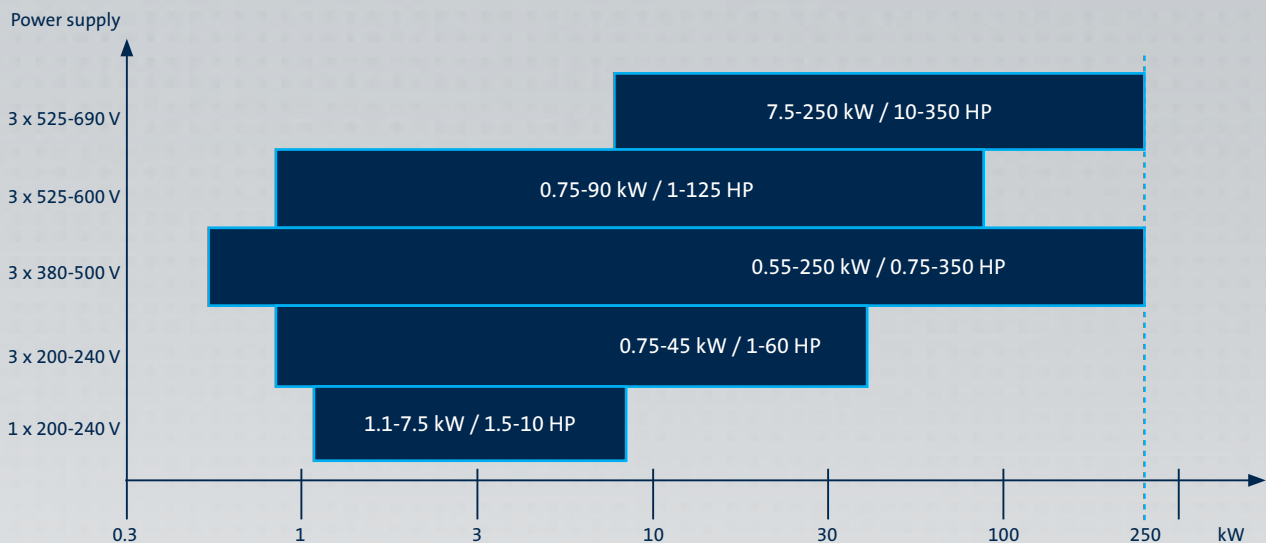
IP20/IP21/Nema 1 for cabinet installation

IP55/Nema 12 with mains disconnect for wall installation.

With or without one wire safe stop, safe torque off (STO).

Search for **CUE** on Grundfos Product Center

## Product Range



EMC filter for conducted emission according to IEC61800-3 Ed. 2.

- CUE rated 500 V or lower up to 90 kW: Build-in filter for household application (class C1)
- CUE rated 500 V or lower above 110 kW: Build-in filter for industrial application (class C2)
- CUE rated 525 V or more independent of power size: Build-in filter for industrial application (class C3)



## Grundfos Product Center

The Grundfos Product Center online tool lets you size pumps, browse the Grundfos product catalogue, find appropriate replacement pumps and find pumps for handling specific liquids.

- Search in the way that meets your needs by application, pump design or pump family
- Experience faster sizing thanks to a new intelligent “Quick Size” function
- Documentation includes pump curves, technical specs, CAD drawings, available spare parts, installation videos, and much more
- Optimised for your PC, tablet or smartphone

As a registered user you will have access to saved preferences, products and projects and recent browsing history.

Visit [www.product-selection.grundfos.com](http://www.product-selection.grundfos.com)



## Global reach and local support

Grundfos is a truly global company and is never far away.

Our unique global set-up provides you with benefits, including:

- Technical assistance to size your pumping system
- Expert know-how and support in your local language
- Web-based tools
- Fast spare parts delivery on every continent

Contact your Grundfos sales representative for further information or help matching a Grundfos CUE variable frequency drive to your Grundfos pump and application.





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