

Add easy speed control to your pump

Save on energy costs and get closer to meeting your carbon net-zero targets

Grundfos CUE external variable frequency drive for pumps with motors up to 560 kW



GRUNDFOS 

Possibility in every drop

Maximum convenience, cost savings and safety first for your equipment and operators

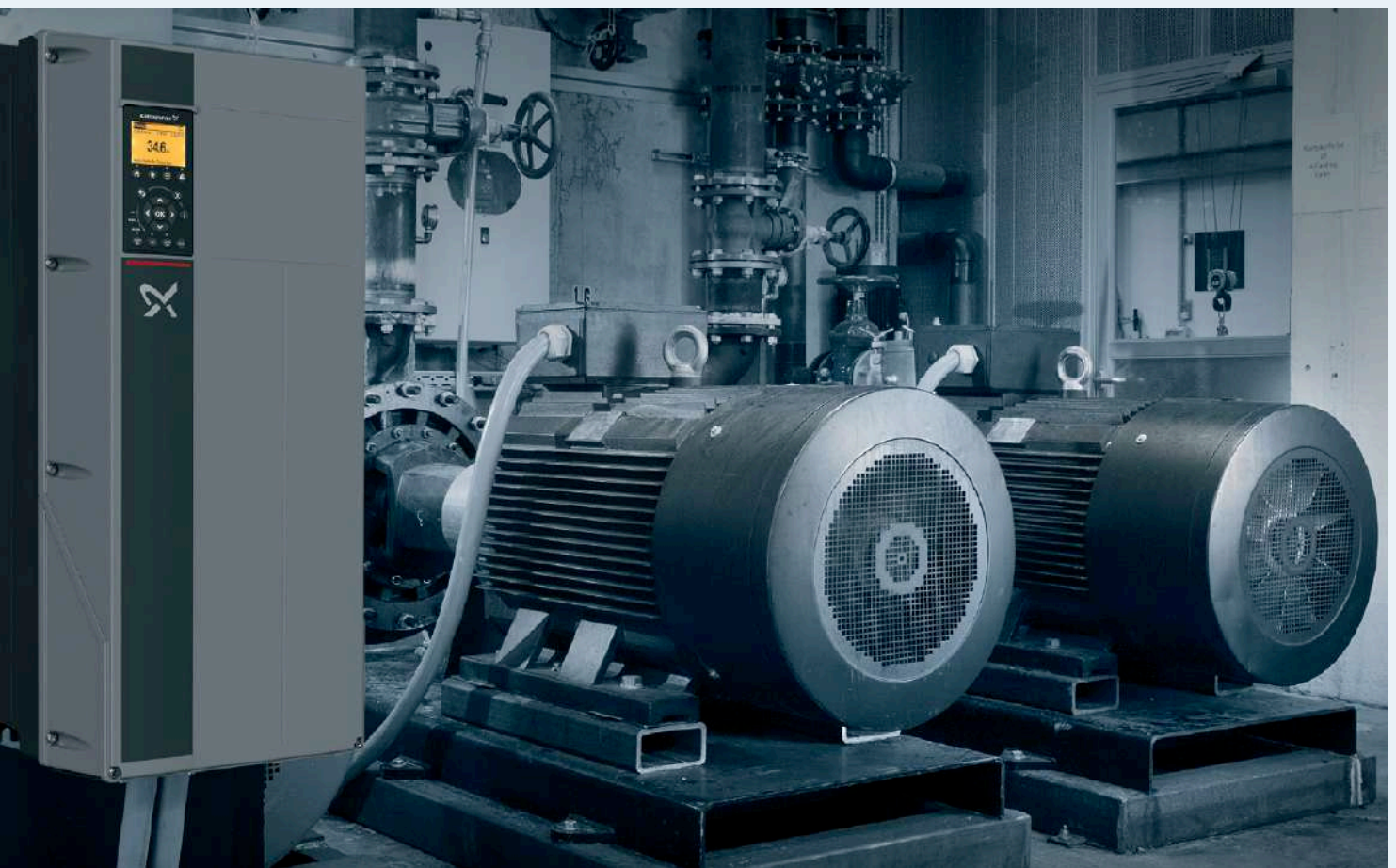
The Grundfos CUE is an external variable frequency drive that helps you unlock the potential for improving the energy efficiency of your pumps and systems. Available for motors up to 560 kW, the CUE is especially suitable for operation with Grundfos pump families. Adding a CUE is a cost-effective way to improve energy consumption, resulting in lower costs and reduced carbon emissions.

Improve energy efficiency and reduce the carbon footprint of your pumps:

- Reduces electricity consumption and carbon emissions, which decreases costs and contributes to meet your carbon net-zero targets
- Safe Torque Off (STO) is an integrated safety function (available as an option) that overrules all other operating modes and reduces risks to operators
- Simplifies handling of your drive from installation to commissioning and operation
- Built-in connectivity protocols make it easy to remotely monitor and control your system

Easily installed, commissioned and operated

For easy set-up, Grundfos CUE has a comprehensive but intuitive start-up guide that allows commissioning by entering simple inputs such as the pump type, motor type, control mode, sensor type, setpoint and multi-pump mode. Grundfos CUE will then automatically set all necessary parameters. 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 pump protection.



Scenarios where a Grundfos CUE benefits your operations

For pumps with motors from 30 kW

The Grundfos MGE motor with built-in micro variable frequency drive is currently available up to 26 kW. An external drive lets you expand your installation.

Products without standard (norm) motors that cannot use MGE motors

These include borehole pumps, wastewater pumps, mixers and flowmakers and booster modules.

Driving a 3 phase motor from a 1 phase power supply

This is necessary where bigger motor sizes are needed; 1 phase motors are typically available up to 1.5/2.2 kW. With a CUE, it is possible to use pumps up to 7.5 kW with a 1 phase power supply, providing the mains supply can handle the higher current.

Environment unsuitable for standard motors with built-in drives

Harsh environments use is not recommended for an MGE motor, and an external drive installed away from the pump and motor is an option. In some cases, coating of the PCBs in the CUE might be needed, which is available on request.

Installation where the use of motors with built-in drives is not allowed

This is the case for customers, mostly industrial end-users or water companies, where the requirement is to separate the mechanical equipment from the electrical equipment.

Where motor specifications are not met by MGE motors

This applies in applications requiring special painting, a special enclosure class, reluctance motors, special cooling, construction or even brand.

Upgrading system efficiency while keeping existing pumps and motors

Whether for technical or financial reasons, the CUE presents a simple cost-efficient solution.

Other benefits from a CUE:

- Adding communication and integration capabilities in existing fixed speed pumps
- Adding pump control and multi-pump control in an existing installation
- Limiting hydraulic pressure surges



The image shows a large industrial pump system with multiple horizontal pipes. A blue arrow on one of the pipes indicates flow direction. To the right, a vertical control unit, the Grundfos CUE, is mounted. It has a small LCD screen displaying '0.00 bar' and '1.1 bar' and a keypad with buttons for 'On/Off', 'OK', and navigation arrows. The Grundfos logo is visible at the bottom of the control unit.

Process and energy-optimising benefits

Using a Grundfos CUE provides energy-saving benefits of pump speed control and adds functionalities such as efficient control modes and cascade operation, available for pumps up to 560 kW.

Higher energy efficiency and lower carbon emissions

Adding a Grundfos CUE to your pumps ensures a reduction in electricity consumption with lower carbon emissions, which results in lower costs and contributes to meet your carbon net-zero targets.

- Adjust pump speed based on system demand instead of throttling the system flow with a valve, which minimises system stress caused by excessive pressure, and reduced power consumption
- Easy data logging to highlight savings
- Simplifies calculation of carbon emissions that contribute to meet your carbon net-zero targets

Integrated STO improves operator safety and protects equipment

Machinery must meet local safety requirements, for example IEC 60204-1, and must not expose the operator to unnecessary risks. The Safe Torque Off (STO) is a safety function (available as an option) that immediately stops torque generation from the motor. Enabling the STO protection, when available, minimises the risk of harm to machine operators by overruling any other operating mode.

- Simplified risk assessment and CE certification for system builders
- Reduced risk of tool failure
- Safe environment to perform maintenance tasks or enter an area with electrical equipment

All-in-one solution for easy installation and commissioning

A perfect match with the pump motor that makes everything easier to handle, from installation to commissioning and operation.

- The Grundfos CUE is fine-tuned to run with most Grundfos pump families for trouble-free operation
- Reduced CAPEX in installed components and wiring costs
- A complete intelligent pump solution available from one supplier: Grundfos; for easier support and customer service
- Dedicated functionality for specific pump applications – no further programming required

Increased connectivity improves serviceability

The connectivity protocols built the Grundfos CUE make it easy to monitor and control your system remotely, improving pump serviceability:

- Accurately track performance with time-logged alarms and errors
- Ease troubleshooting and minimise downtime with product data, error codes and failure analysis sent automatically to your connected device
- Flexibility on how you choose to monitor and control the pump: manually, near-range via display on the drive, mid-range via integration with your SCADA system, and long-range connected to Grundfos Cloud solutions
- For SCADA we offer a wide range of BUS protocols using our CIM/CIU communication interfaces, such as Modbus RTU/TCP, PROFIBUS, PROFINET, BACnet and Ethernet

Pre-installed application control modes

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

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

The pre-installed control modes simplify commissioning the drive for the application. In addition to the control modes, the CUE can operate in open loop control (or constant curve mode) to adjust the speed depending on an speed signal from an external source such as a SCADA or BMS system.

Technical specifications

Built-in Inputs/Outputs	Yes
Digital inputs:	4
Digital inputs/outputs:	2
Relay outputs:	2
Analog inputs:	1 dedicated for sensor, 1 dedicated for external setpoint
Analog output:	1
RS-485:	GENibus, Modbus RTU, and multi-pump

Grundfos Product Center – find your optimal pump solution

Use the Grundfos Product Center online tool to size pumps, browse the Grundfos product catalogue, and find pumps for handling specific liquids.

www.product-selection.grundfos.com

Grundfos iSOLUTIONS – complete pump system control

The CUE adds speed control to your Grundfos pump and is the first step towards complete pump system control. Grundfos iSOLUTIONS adds auxiliary components for the specific application, allowing easy integration of pumps, drives, measurement, controls, protections and communication.

www.grundfos.to/isolutions

