OPERATING YOUR SUBMERSIBLE BOREHOLE PUMPS HAS NEVER BEEN MORE RELIABLE AND FLEXIBLE

PROTECTION & MONITORING FOR **GROUNDWATER INTAKE, LOWERING AND IRRIGATION AS WELL AS TANK APPLICATIONS**

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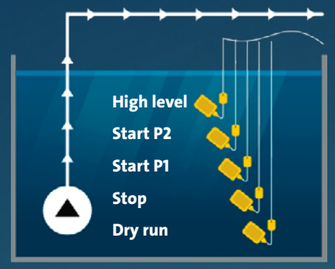
GRUNDFOS

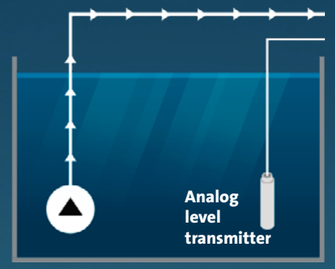
SEE HOW YOU **BENEFIT WITH A CONTROLLER** IN YOUR SUBMERSIBLE PUMP INSTALLATION

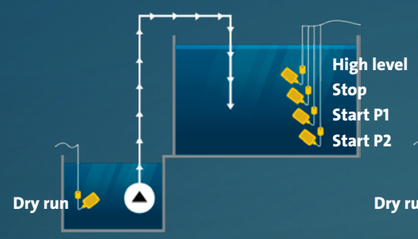
Designed for applications with one or two pumps, the Grundfos LC 232 and LC 242 controller is ideal for water intake applications in private installations or smaller waterworks as well as water lowering on construction sites. The controller is also ideal for tank emptying or filling applications with float switch or analogue level transmitter.

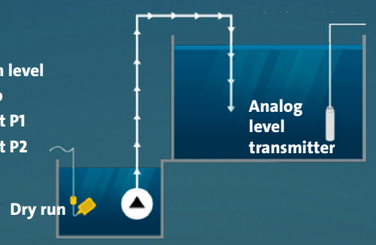
The controller is equipped with predefined settings to fit these applications for an easy start-up.

The LC 232 and LC 242 controller can support up to five control levels for both analogue level transmitter or float switch operation in e.g. tank applications or to avoid over pumping your borehole in water intake or irrigation applications.









EASY TO INSTALL, COMMISSION AND SET-UP FOR SMART OPERATION OF YOUR SUBMERSIBLE BOREHOLE PUMP

The Grundfos LC 232 and LC 242 controller offers a comprehensive range of features for complete pumping system monitoring and control and is protecting both pump and motor ensuring long and reliable operation

Unique operating panel with a fast and easy to understand overview
The controller has an intuitive user interface that can be used for daily status monitoring such as level, pump status, alarms, and manual control of the pumps.

The user interface provides a fast setup via a commissioning wizard. For more advanced configuration and adjustments the Grundfos GO mobile app gives full control over the many features.

The control unit features among others the following functions:
- Manual and automatic control of the pump
- Bluetooth pairing with Grundfos GO Remote
- Operating indication, such as power on and pump running
- Alarm and warning indication, such as power phase missing and high-water level
- Motor and phase failure protection
- Setting of stop delays matching the actual operating conditions

Easy SCADA integration
The controller integrates seamlessly into the Grundfos range of communication modules, ensuring an easy fit into any supervisory system such as SCADA.
The controller uses open protocols for connection to any SCADA system. These allow you to remote access your pump installation. You can control the pumps, change settings and access information such as alarms and operations data.

Scan here

to download your free version of Grundfos GO remote

WORK SMARTER **ON THE GO**

GRUNDFOS GO IN GENERAL

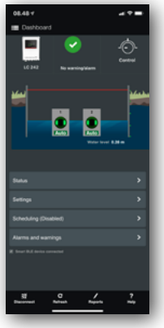
Grundfos GO is our comprehensive platform for mobile pump control. The controllers are supported by Grundfos GO directly via Bluetooth Smart technology, ensuring easy and seamless integration between the controller and the app.

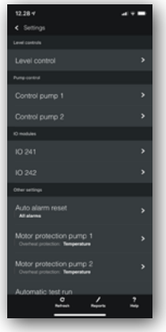
All detailed pump settings can be easily configured, monitored and commissioned via Grundfos GO. In advance this makes it possible to connect with your pumping system from the service car. You are guided step-by-step by the start-up wizard, ensuring your new pumping system is immediately up and running. The first time the control unit is switched on, the startup wizard will guide you through the basic settings.

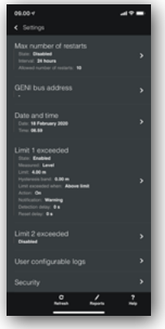
The simple and intuitive dashboard shows status for your installation. Here you can monitor the system and pumps at-a-glance, with shortcuts to alarms and warnings, manual pump control, and detailed status of your pumps.

You can also generate a complete report with settings and status of the installation here-and-now.

Optional features such power-on delay can be adjusted. Furthermore, the Grundfos GO app can also be used to store (backup) the complete set of settings from the controller or to copy the settings again and again for future installations, to minimise workload.







GRUNDFOS GO AND LC CONTROLLER

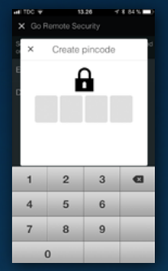
Automatic test run
The controller has an automatic test run function to prevent the pumps from choking or blocking due to limestone build-up or other deposits. Automatic test run is used in wells that is not running for a long period e.g. in irrigation. The automatic test run function ensures the pumps will start according to a defined interval and run for a few seconds.

Maximum number of restarts
The controller has a 'max number of restart' function to prevent pumps from cyclic restarting in case of blocking or other damage. This will protect the pumps and save energy. This function is very helpful in applications like irrigation and groundwater lowering where the load is distributed unevenly during the year.

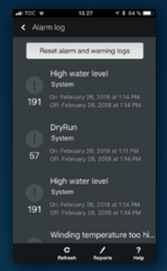
Maintenance indication of number of hours used
The controller has a built-in service indicator function that helps keep track of when service is needed. Just enter the desired time interval and the controller will generate a warning when the pump has been running for the specified period of time.

Configurable inputs and outputs (CIO)
The controller has a number of free inputs and outputs for extra sensors, for example outlet pressure. The Grundfos CIO ports (Configurable Input/Output) can be configured to fit almost any type of signal on the same physical terminals. CIO ports can be used as digital input/output, analogue input and Pt 100/1000 temperature inputs for flexible use in the actual application. The two relay outputs can be configured using Grundfos GO to show a variety of status information on a supervisory system or PLC.

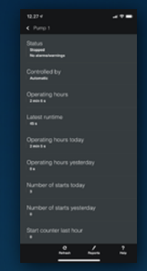
FUNCTIONS THAT WILL PROVIDE YOUR INSTALLATION **SAFETY AND RELIABILITY**



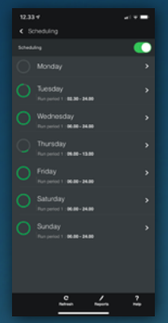
Pin code protected
Security is top of our mind. To safeguard your installation, we have implemented various ways to lock/protect the controller from unauthorised use. The display can be locked on two levels, and even access to the settings menu in Grundfos GO can be protected with a PIN code.



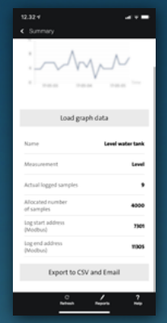
Alarm and warning log
The controller maintains a detailed alarm and warning log with the last 20 alerts. The alarm log can be accessed remotely via SCADA. You can also use Grundfos GO to inspect the logs in your own language for easy troubleshooting and remedial measures at the pumping system.



Historical functional data log
The controller provides historical data, to help and ensure effective operation. Pump system: Total on time, run time and energy consumption. Each pump: Operating hours, latest runtime, operating hours today and yesterday, number of starts today and yesterday, start counter last hour, energy consumption and motor current.



Scheduling
Makes it easy for to decide in which time of the day the controller is allowed to operate. This can beneficial in e.g. an irrigation application where the pump need to run during the hours of the day, where it's most efficient - lowest evaporation.



User configurable log
The controller provide the possibility to create a number of customised log series. This enables you to log on pump performance, input signals from the installation like water level in the tank, Pulse flow meter or even digital input like start/stop.

Pump and system protection
The controller warns you with an alarm in the event of current overload, pump overheating, dry running, high water level, incorrect phase sequences or missing phase, sensor inconsistency or failure, intrusion detected, cable theft, water on floor, too many restarts and moisture in pump

CONFIGURATION **OVERVIEW**

Grundfos LC controllers are available in the following configurations.

LC 232

A compact solution complete with certified motor protection

LC 242

A cabinet solution offering modularity and customisation

	LC 232	LC 242
One- and two-pump operation	•	•
3 phase 230/400 VAC (50/60 Hz)	•	•
1 phase 230 VAC (50/60 Hz)	•	•
Start and run capacitors for 1 phase systems		•
Direct on-line start method up to 12 A	•	•
Direct on-line start method up to 26 A		•
Star delta start method up to 65 A		•
Soft starter start method up to 72 A		•
Motor protection	Built-in	Electronic Overload Relay
Overheat protection via PTC	•	•
Plastic cabinet	•	•
Metal cabinet		•
IP 54/NEMA 3R	•	•
Built-in buzzer	•	•
Grundfos GO support via Bluetooth Smart	•	•
Supports Grundfos Communication Interface Module (CIM)*	•	•
Update to new features via USB	•	•
Customisation with additional options		As option
Current measurement	Built-in	As option
Application IO 2xDI, 2xDIO, 2xCIO, 2xNO/NC (Note 1)	•	
Application IO 242 with 4xDI, 1xADI, 2xNO/NC (Note 1)		•
Additional IO 241 with 2xDI, 2xDIO, 4xCIO, 2xNO/NC (Note 1)		As option
Scheduling		•
User configurable log		•
Limit exceeded		•

(Note 1)
DI: Digital input, e.g. flow switch operation, Dry run signal, Pulse flow meter, manual start and stop of pump etc.
ADI: Analog or digital input can be used for analog sensor [0-10 V, 4-20 mA, 0-20 mA, 0-5 V or 0.5 - 3.5 V] or a digital input.
CIO: Configurable input or output can be used both as input or output signal e.g. input from Pt100/Pt1000, Analog sensor, digital signal.
NO/NC: Relay – Normally open, normally closed
DIO: Can be used for digital output or input signal to other equipment e.g Dry run alarm.

Supported modules:
CIM 150 Profibus, CIM 200 Modbus RTU , CIM 260 3G/4G, CIM 280 GiC/GRM 3G/4G, CIM 300 BACnet, CIM 500 PROFINET Modbus TCP BACnet IP

ACCESSORIES FOR **LC CONTROLLER**

Float switches and analogue level transmitters
Add float switches or analogue pressures sensors, or a combination of the two, matched to your needs for alarms and warnings and daily control of your level control application.

Analouge level transmitter
Grundfos offers a wide range of analogue level transmitters for reliable and precise monitoring and control in your well or water tank.

Connectivity
The Grundfos fieldbus concept is the ideal solution for control of pump systems using Grundfos LC level controllers and are easy to install, commission and use. The Communication Interface module (CIM) enables wired and wireless connectivity through a range of industry-standard communication protocols, and full integration with SCADA systems and other cloud services.

Options
The LC 242 controllers can be ordered with the following options build-in from factory:

- Fault light indication
- ON/OFF/AUTO switch
- Electrode relay
- Battery backup
- Main switch
- Circuit breaker
- Residual Current Device (RCD)

Temperature protection of motor
Grundfos submersible motors can be equipped with a Pt100 or Pt1000 temperature sensor for monitoring of the motor conditions.

GRUNDFOS iSOLUTIONS

Grundfos iSOLUTIONS is a holistic systems approach by which intelligent technology adapts with precision to deliver optimal performance, total energy efficiency, and ultimate reliability.

Grundfos iSOLUTIONS offers state-of-the-art control and monitoring solutions for the full optimisation of pumping systems and offer smart solutions for existing and new systems to maximise system capacity while minimising maintenance requirement.

Grundfos supplies market-leading high efficiency pumps and equipment to meet the demands of water networks and to enhance system control and reliability in the harsh working environment of water applications.

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