

LC 231, LC 241

50/60 Hz



be
think
innovate

1. Product introduction	3
Applications	3
Features	3
2. Product data	4
Type key for LC 231	4
Type key for LC 241	4
Type key for CU 241	4
Product range, single pump unit	5
Product range, dual pump unit	7
3. Construction	9
Control unit, LC 231	9
Control cabinet, LC 241	9
CU 241	9
IO 242	9
4. Functions	10
Operating panel	10
Description of selected functions	10
5. Installation	11
Mechanical installation	11
Electrical installation	11
6. Technical data for LC 231	12
Inputs and outputs	12
Dimensions	12
Operating conditions	12
7. Technical data for LC 241	13
Inputs and outputs	13
Dimensions	13
Operating conditions	13
8. Optional equipment for LC 24X	14
9. Accessories	16
Grundfos GO Remote	16
Additional accessories	16
10. Grundfos Product Center	19

1. Product introduction

The level-control unit is designed to control one or two pumps. It can be used in emptying and filling applications such as small commercial buildings, wastewater transport and tank-filling. The control unit switches the pump on and off according to the liquid level measured by level switches or a pressure sensor. When the start level is reached, the pump starts, and when the liquid level has been lowered to the stop level, the pump is stopped by the control unit. An alarm is indicated in case of, for example, high-water level in the tank or sensor failure. The control unit is available in two variants.

- LC 231 provides a compact solution with integrated motor protection.
- LC 241 is a cabinet solution allowing you to customise your setup.

Basic settings are configured via the operating panel and advanced settings are configured with Grundfos GO Remote.

The control unit can be fitted with a range of Grundfos communication modules to gain access to monitoring systems such as SCADA.

Applications

The product can be used for for following applications:

- network pumping stations
- main pumping stations
- commercial buildings
- municipal systems
- tank-filling applications.

Features

The main features for the control unit are the following:

- support of up to two pumps
- manual and automatic control of the pump
- advanced settings with Grundfos GO Remote via Bluetooth
- operating indication, such as pump running and actual water level
- 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
- antiseizing to prevent pump blockage
- automatic alternation of pumps in a dual pump setup.

2. Product data

Type key for LC 231

Example	LC 231	2x	1-9	DOL	PI
Pos.	1	2	3	4	5

Pos.	Description
1	Type: <ul style="list-style-type: none"> LC 231: wall-mounted version
2	Number of pumps supported
3	Current range of pump [A]
4	Starting method: <ul style="list-style-type: none"> DOL: direct-on-line
5	Panel type: <ul style="list-style-type: none"> PI: Plastic enclosure

Type key for LC 241

Example	LC 241	2x	9-26	DOL	30	150	1 x 230	PI	OPT
Pos.	1	2	3	4	5	6	7	8	9

Pos.	Description
1	Type: <ul style="list-style-type: none"> LC 241: panel version
2	Number of pumps supported
3	Current range of pumps [A]
4	Starting method: <ul style="list-style-type: none"> DOL: direct-on-line SD: star-delta SST: soft starter
5	Operating capacitor [μ F]
6	Starting capacitor [μ F]
7	Supply voltage [V]
8	Panel type: <ul style="list-style-type: none"> MI: Metal PI: Plastic
9	OPT: Options. <ul style="list-style-type: none"> BB: battery backup CT: Current transformer D: Fault light system E: Main switch F: Circuit breaker per pump H: ON/OFF/AUTO switch I: RCD panel J: RCD per pump K: Ex barrier analog 4-20 mA L: Ex barrier digital M: IO 241 N: DIN-mount electrode relay for two electrodes and REF (CLD4MA2DM24)

Type key for CU 241

Example	CU 241	1
Pos.	1	2

Pos.	Description
1	Type: <ul style="list-style-type: none"> CU 241
2	Number of pumps supported

Product range, single pump unit

1 x 230, 50/60 Hz, N, PE

Controller type	Rated current [A]	Starting method	Start/run capacitor [μF]	Cabinet material	Option	Product number
LC 241	1.9 - 6.3	DOL	-	Plastic	OPT: CT	99877141
LC 241	1.9 - 6.3	DOL	-	Plastic		99877142
LC 241	1.9 - 6.3	DOL	150 / 30	Plastic	OPT: CT	99877153
LC 241	1.9 - 6.3	DOL	150 / 30	Plastic		99877154
LC 241	5.7 - 12	DOL	-	Plastic	OPT: CT	99877167
LC 241	5.7 - 12	DOL	-	Plastic		99877168
LC 241	5.7 - 12	DOL	- / 30	Plastic	OPT: CT	99877169
LC 241	5.7 - 12	DOL	- / 30	Plastic		99877170
LC 241	5.7 - 12	DOL	150 / 30	Plastic	OPT: CT	99877171
LC 241	5.7 - 12	DOL	150 / 30	Plastic		99877172
LC 241	1.9 - 6.3	DOL	-	Plastic	OPT: E	99897032
LC 241	1.9 - 6.3	DOL	150 / 30	Plastic	OPT: E	99897043
LC 241	5.7 - 12	DOL	150 / 30	Plastic	OPT: E	99897048
LC 241	1.9 - 6.3	DOL	-	Plastic	OPT: E, F	99897056
LC 241	1.9 - 6.3	DOL	150 / 30	Plastic	OPT: E, F	99897057
LC 241	5.7 - 12	DOL	150 / 30	Plastic	OPT: E, F	99897062

3 x 230/400, 50/60 Hz, N, PE

Controller type	Rated current [A]	Starting method	Cabinet material	Option	Product number
LC 241	0.8 - 2.7	DOL	Plastic	OPT: CT	99877119
LC 241	0.8 - 2.7	DOL	Plastic		99877120
LC 241	1.9 - 6.3	DOL	Plastic	OPT: CT	99877139
LC 241	1.9 - 6.3	DOL	Plastic		99877140
LC 241	5.7 - 12	DOL	Plastic	OPT: CT	99877164
LC 241	5.7 - 12	DOL	Plastic		99877165
LC 241	9 - 26	DOL	Plastic	OPT: CT	99877183
LC 241	9 - 26	DOL	Plastic		99877184
LC 241	10 - 30	SD	Metal	OPT: CT	99877189
LC 241	10 - 30	SD	Metal		99877190
LC 241	16 - 44	SD	Metal	OPT: CT	99877199
LC 241	16 - 44	SD	Metal		99877200
LC 241	26 - 65.5	SD	Metal	OPT: CT	99877205
LC 241	26 - 65.5	SD	Metal		99877206
LC 241	8 - 12	SST	Metal	OPT: CT	99877211
LC 241	8 - 12	SST	Metal		99877212
LC 241	10 - 16	SST	Metal	OPT: CT	99877217
LC 241	10 - 16	SST	Metal		99877218
LC 241	16 - 20	SST	Metal	OPT: CT	99877223
LC 241	16 - 20	SST	Metal		99877224
LC 241	20 - 25	SST	Metal	OPT: CT	99877229
LC 241	20 - 25	SST	Metal		99877230
LC 241	25 - 30	SST	Metal	OPT: CT	99877235
LC 241	25 - 30	SST	Metal		99877236
LC 241	30 - 42	SST	Metal	OPT: CT	99877241
LC 241	30 - 42	SST	Metal		99877242
LC 241	40 - 54	SST	Metal	OPT: CT	99877247
LC 241	40 - 54	SST	Metal		99877248
LC 241	52 - 65	SST	Metal	OPT: CT	99877257
LC 241	52 - 65	SST	Metal		99877258

Controller type	Rated current [A]	Starting method	Cabinet material	Option	Product number
LC 241	62 - 72	SST	Metal	OPT: CT	99877263
LC 241	62 - 72	SST	Metal		99877264
LC 241	0.8 - 2.7	DOL	Plastic	OPT: E	99897029
LC 241	1.9 - 6.3	DOL	Plastic	OPT: E	99897031
LC 241	5.7 - 12	DOL	Plastic	OPT: E	99897047
LC 241	9 - 26	DOL	Plastic	OPT: E	99897051
LC 241	0.8 - 2.7	DOL	Plastic	OPT: E, F	99897053
LC 241	1.9 - 6.3	DOL	Plastic	OPT: E, F	99897055
LC 241	5.7 - 12	DOL	Plastic	OPT: E, F	99897061
LC 241	9 - 26	DOL	Plastic	OPT: E, F	99897065
LC 241	10 - 30	SD	Metal	OPT: E	99897067
LC 241	16 - 44	SD	Metal	OPT: E	99897069
LC 241	26 - 65.5	SD	Metal	OPT: E	99897071
LC 241	10 - 30	SD	Metal	OPT: E, F	99897073
LC 241	16 - 44	SD	Metal	OPT: E, F	99897075
LC 241	26 - 65.5	SD	Metal	OPT: E, F	99897077
LC 241	8 - 12	SST	Metal	OPT: E	99897079
LC 241	10 - 16	SST	Metal	OPT: E	99897081
LC 241	16 - 20	SST	Metal	OPT: E	99897083
LC 241	20 - 25	SST	Metal	OPT: E	99897085
LC 241	25 - 30	SST	Metal	OPT: E	99897087
LC 241	30 - 42	SST	Metal	OPT: E	99897089
LC 241	40 - 54	SST	Metal	OPT: E	99897091
LC 241	52 - 65	SST	Metal	OPT: E	99897093
LC 241	62 - 72	SST	Metal	OPT: E	99897095

3 x 400, 50/60 Hz, PE

Controller type	Rated current [A]	Starting method	Cabinet material	Option	Product number
LC 241	0.8 - 2.7	DOL	Plastic	OPT: CT	99877133
LC 241	1.9 - 6.3	DOL	Plastic	OPT: CT	99877155
LC 241	5.7 - 12	DOL	Plastic	OPT: CT	99877173
LC 241	9 - 26	DOL	Plastic	OPT: CT	99877185
LC 241	10 - 30	SD	Metal	OPT: CT	99877191
LC 241	16 - 44	SD	Metal	OPT: CT	99877201
LC 241	26 - 65.5	SD	Metal	OPT: CT	99877207
LC 241	8 - 12	SST	Metal	OPT: CT	99877213
LC 241	10 - 16	SST	Metal	OPT: CT	99877219
LC 241	16 - 20	SST	Metal	OPT: CT	99877225
LC 241	20 - 25	SST	Metal	OPT: CT	99877231
LC 241	25 - 30	SST	Metal	OPT: CT	99877237
LC 241	30 - 42	SST	Metal	OPT: CT	99877243
LC 241	40 - 54	SST	Metal	OPT: CT	99877253
LC 241	52 - 65	SST	Metal	OPT: CT	99877259
LC 241	62 - 72	SST	Metal	OPT: CT	99877265

3 x 460, 50/60 Hz

Controller type	Rated current [A]	Starting method	Cabinet material	Variant	Product number
LC 231	1 - 12	DOL	Plastic	EU	99369644
LC 231	1 - 9.6	DOL	Plastic	US	99369651

Product range, dual pump unit

1 x 230, 50/60 Hz, N, PE

Controller type	Rated current [A]	Starting method	Start/run capacitor [μF]	Cabinet material	Option	Product number
LC 241	1.9 - 6.3	DOL	-	Plastic	OPT: CT	99877159
LC 241	1.9 - 6.3	DOL	-	Plastic		99877160
LC 241	1.9 - 6.3	DOL	150 / 30	Plastic	OPT: CT	99877161
LC 241	1.9 - 6.3	DOL	150 / 30	Plastic		99877162
LC 241	1.9 - 6.3	DOL	-	Plastic	OPT: E	99897045
LC 241	1.9 - 6.3	DOL	150 / 30	Plastic	OPT: E	99897046
LC 241	1.9 - 6.3	DOL	-	Plastic	OPT: E, F	99897059
LC 241	1.9 - 6.3	DOL	150 / 30	Plastic	OPT: E, F	99897060
LC 241	5.7 - 12	DOL	-	Plastic	OPT: CT	99877176
LC 241	5.7 - 12	DOL	-	Plastic		99877177
LC 241	5.7 - 12	DOL	- / 30	Plastic	OPT: CT	99877178
LC 241	5.7 - 12	DOL	- / 30	Plastic		99877179
LC 241	5.7 - 12	DOL	150 / 30	Plastic	OPT: CT	99877180
LC 241	5.7 - 12	DOL	150 / 30	Plastic		99877181
LC 241	5.7 - 12	DOL	150 / 30	Plastic	OPT: E	99897050
LC 241	5.7 - 12	DOL	150 / 30	Plastic	OPT: E, F	99897064

3 x 230/400, 50/60 Hz, N, PE

Controller type	Rated current [A]	Starting method	Cabinet material	Option	Product number
LC 241	0.8 - 2.7	DOL	Plastic	OPT: CT	99877134
LC 241	0.8 - 2.7	DOL	Plastic		99877135
LC 241	1.9 - 6.3	DOL	Plastic	OPT: CT	99877156
LC 241	1.9 - 6.3	DOL	Plastic		99877158
LC 241	5.7 - 12	DOL	Plastic	OPT: CT	99877174
LC 241	5.7 - 12	DOL	Plastic		99877175
LC 241	9 - 26	DOL	Plastic	OPT: CT	99877186
LC 241	9 - 26	DOL	Plastic		99877187
LC 241	10 - 30	SD	Metal	OPT: CT	99877192
LC 241	10 - 30	SD	Metal		99877197
LC 241	16 - 44	SD	Metal	OPT: CT	99877202
LC 241	16 - 44	SD	Metal		99877203
LC 241	26 - 65.5	SD	Metal	OPT: CT	99877208
LC 241	26 - 65.5	SD	Metal		99877209
LC 241	8 - 12	SST	Metal	OPT: CT	99877214
LC 241	8 - 12	SST	Metal		99877215
LC 241	10 - 16	SST	Metal	OPT: CT	99877220
LC 241	10 - 16	SST	Metal		99877221
LC 241	16 - 20	SST	Metal	OPT: CT	99877226
LC 241	16 - 20	SST	Metal		99877227
LC 241	20 - 25	SST	Metal	OPT: CT	99877232
LC 241	20 - 25	SST	Metal		99877233
LC 241	25 - 30	SST	Metal	OPT: CT	99877238
LC 241	25 - 30	SST	Metal		99877239
LC 241	30 - 42	SST	Metal	OPT: CT	99877244
LC 241	30 - 42	SST	Metal		99877245
LC 241	40 - 54	SST	Metal	OPT: CT	99877254
LC 241	40 - 54	SST	Metal		99877255
LC 241	52 - 65	SST	Metal	OPT: CT	99877260
LC 241	52 - 65	SST	Metal		99877261

Controller type	Rated current [A]	Starting method	Cabinet material	Option	Product number
LC 241	62 - 72	SST	Metal	OPT: CT	99877266
LC 241	62 - 72	SST	Metal		99877267
LC 241	0.8 - 2.7	DOL	Plastic	OPT: E	99897030
LC 241	1.9 - 6.3	DOL	Plastic	OPT: E	99897044
LC 241	5.7 - 16	DOL	Plastic	OPT: E	99897049
LC 241	9 - 26	DOL	Plastic	OPT: E	99897052
LC 241	0.8 - 2.7	DOL	Plastic	OPT: E, F	99897054
LC 241	1.9 - 6.3	DOL	Plastic	OPT: E, F	99897058
LC 241	5.7 - 12	DOL	Plastic	OPT: E, F	99897063
LC 241	9 - 26	DOL	Metal	OPT: E, F	99897066
LC 241	10 - 30	SD	Metal	OPT: E	99897068
LC 241	16 - 44	SD	Metal	OPT: E	99897070
LC 241	26 - 65.5	SD	Metal	OPT: E	99897072
LC 241	10 - 30	SD	Metal	OPT: E, F	99897074
LC 241	16 - 44	SD	Metal	OPT: E, F	99897076
LC 241	26 - 65.5	SD	Metal	OPT: E, F	99897078
LC 241	8 - 12	SST	Metal	OPT: E	99897080
LC 241	10 - 16	SST	Metal	OPT: E	99897082
LC 241	16 - 20	SST	Metal	OPT: E	99897084
LC 241	20 - 25	SST	Metal	OPT: E	99897086
LC 241	25 - 30	SST	Metal	OPT: E	99897088
LC 241	30 - 42	SST	Metal	OPT: E	99897090
LC 241	40 - 54	SST	Metal	OPT: E	99897092
LC 241	52 - 65	SST	Metal	OPT: E	99897094
LC 241	62 - 72	SST	Metal	OPT: E	99897096

3 x 400, 50/60 Hz, P

Controller type	Rated current [A]	Starting method	Cabinet material	Option	Product number
LC 241	0.8 - 2.7	DOL	Plastic	OPT: CT	99877138
LC 241	1.9 - 6.3	DOL	Plastic	OPT: CT	99877163
LC 241	5.7 - 12	DOL	Plastic	OPT: CT	99877182
LC 241	9 - 26	DOL	Plastic	OPT: CT	99877188
LC 241	10 - 30	SD	Metal	OPT: CT	99877198
LC 241	16 - 44	SD	Metal	OPT: CT	99877204
LC 241	26 - 65.5	SD	Metal	OPT: CT	99877210
LC 241	8 - 12	SST	Metal	OPT: CT	99877216
LC 241	10 - 16	SST	Metal	OPT: CT	99877222
LC 241	16 - 20	SST	Metal	OPT: CT	99877228
LC 241	20 - 25	SST	Metal	OPT: CT	99877234
LC 241	25 - 30	SST	Metal	OPT: CT	99877240
LC 241	30 - 42	SST	Metal	OPT: CT	99877246
LC 241	40 - 54	SST	Metal	OPT: CT	99877256
LC 241	52 - 65	SST	Metal	OPT: CT	99877262
LC 241	62 - 72	SST	Metal	OPT: CT	99877268

3 x 460, 50/60 Hz

Controller type	Rated current [A]	Starting method	Cabinet material	Variant	Product number
LC 231	1 - 9	DOL	Plastic	EU	99369650
LC 231	1 - 7.6	DOL	Plastic	US	99369652

3. Construction

Control unit, LC 231

LC 231 is a compact solution with certified motor protection and current measurement.

It is available in two versions:

- single pump
- dual pump.



Single pump version



Dual pump version

Control cabinet, LC 241

LC 241 is a cabinet solution, and it can be customised to meet specific demands. It offers motor protection via an electronic DIN rail.

It is available in two versions:

- single pump
- dual pump.



Single pump version



Dual pump version

CU 241

The level-control unit switches the pump on and off according to the liquid level measured by level switches or a pressure sensor. When the start level is reached, the pump starts, and when the liquid level has been lowered to the stop level, the pump is stopped by the control unit. An alarm is indicated if for example the water level is too high in the tank or the sensor fails.



Single pump version



Dual pump version

Model	Product number
Single pump	99347490
Dual pump	99347488

IO 242

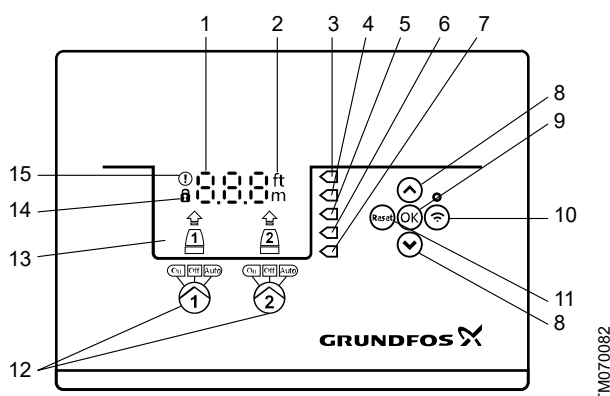
The IO 242 pump module is used together with other Grundfos controllers and modules, for example Grundfos CU 24X. The pump module provides analog and digital input signals for CU 24X. It also provides digital outputs used for external switch gear. When combined with a CU 24X control unit, it is possible to control one or two pumps, monitor the running conditions of the pumps and enable all connections to the sensors in pump motors or in the pit or tank.



Model	Product number
Pump module	99369842

4. Functions

Operating panel



The operating panel enables manual setting and monitoring of the system. This display is intuitive and you are guided step-by-step by the startup wizard during the first setup.

The display is available in a single pump version and a dual pump version.

Pos.	Description
1	Display
2	Units
3	High level
4	Start level, pump 2, if available
5	Start level
6	Stop level, pump 1 and pump 2, if available
7	Dry-running level
8	Up/Down buttons: <ul style="list-style-type: none"> Press these buttons to navigate between submenus or change the value settings.
9	OK button: <ul style="list-style-type: none"> Press this button to save changed values.
10	Connect button: <ul style="list-style-type: none"> Press this button to connect the control unit to Grundfos GO Remote via Bluetooth.
11	Reset button: <ul style="list-style-type: none"> Press this button during startup to reset settings and start over or to reset an alarm or warning.
12	Operating mode for the pump: <ul style="list-style-type: none"> On: The pump has been switched on manually. Off: The pump has been switched off manually. Auto: The pump is running automatically based on settings.
13	Display. It shows the pump status.
14	Lock symbol. <ul style="list-style-type: none"> If the symbol is lit, the control unit is locked from making changes.
15	Alarm and warning symbol: <ul style="list-style-type: none"> Red: alarm Yellow: warning.

Description of selected functions

Grundfos GO Remote support

With Grundfos GO Remote, you can monitor the product, change settings, collect data and make reports. A user-friendly interface provides you with all the information and help you need, as well as live pump data monitoring and easy-to-follow tips and guides.

You can use Grundfos GO Remote for the following functions:

- reading operating data
- reading warning and alarm indicators
- setting the control mode and the application (emptying or filling)
- setting the time (real-time clock)
- storing and recalling configuration.

Alarm and warning logs

The control unit can remember up to 20 alarms and warnings. The operating panel shows the alarm or warning code in the display. Using Grundfos GO Remote, you can see the alarm or warning including a short text describing the error.

Pump alternation

The control unit supports pump alternation which allows two pumps to start and stop alternately. The pump with the lowest number of running hours is always started first. The function ensures that the running hours of the pumps are the same. It is possible to set a time delay before the next pump is started.

Security settings

The control unit can be protected from unauthorised use. You can lock the operating panel so that it cannot be operated by others. You can also set PIN-code protection on Grundfos GO Remote.

Delays

The control unit supports a stop delay function. A stop delay is the time between the stop level being reached and the pump stopping. The function prevents the pump from starting and stopping too frequently and reduces water hammer in long pipes.

The control unit also supports another delay. The after-run delay, high level, is a delay that keeps the pump running after the high-level float switch is deactivated. If the analog level sensor is defective, the water level in the pit or tank is only controlled by the high-level float switch. To avoid too many starts and stops, the delay should be set to a time that allows the pump to drain the pit or tank to a degree without reaching the dry-run level.

Motor protection

The product incorporates current- and temperature-dependent motor protection. If the pump runs without water, becomes blocked or otherwise overloaded, it cuts out. When the motor has cooled sufficiently, it restarts automatically.

- For overheating, the control unit offers thermal protection for the connected motors. Two types of thermal-protection sensors can be connected to the control unit: a PTC sensor (analog) and a thermal switch (digital).
- For motor overload, LC 23X is protected by internal software-based motor protection. LC 24X is protected by an electronic motor-protection relay.

5. Installation

Mechanical installation

Location

Install the product in a location that meets the following requirements:

- Place the product in a flood-safe place.
- Make sure that the ambient temperature is within the limits.
- Install the product as close as possible to the connected pumps, sensors, and accessories.
- The product must be protected from direct sunlight.
- The product must be easily accessible.
- We recommend that you install the product in a protective shed or enclosure to avoid direct sunlight and rain.

Electrical installation

The electrical connection and protection must be carried out in accordance with local regulations. Also observe the following requirements:

- Ensure that the product is suitable for the power supply to which it is to be connected.
- The power cables and pump cables must be connected correctly according to the relevant electrical diagram.
- The product must always be earthed correctly.
- The PTC and moisture sensors are connected correctly.
- I_{nom} and I_{start} match the panel.
- For LC 231, use standard version pumps only. Sensor versions are not possible.

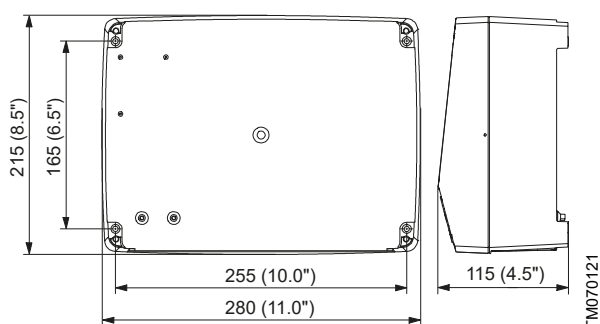
6. Technical data for LC 231

Inputs and outputs

The following inputs and outputs are available for LC 23X.

- 2 × DIO. Configurable digital input and output
- 2 × DI. Digital input
- 2 × CIO. Configurable input and output
- 1 (2) × configurable relay outputs
- 1 (2) × combined PTC and moisture switch input.

Dimensions



Dimensions of LC 23X

Operating conditions

Ambient temperature	Min. -25 °C (-13 °F) Max. 45 °C (113 °F)
Storage temperature	Min. -30 °C (-22 °F) Max. 60 °C (140 °F)
Altitude	Maximum 2000 m (6562 ft)
Pollution degree	Category 3
Enclosure class	IP54
Mains supply	1 x 110-240 V ± 10 %, PE 3 x 200-250 V ± 10 %, PE 3 x 250-460 V ± 10 %, N, PE
Frequency	50/60 Hz
Motor protection	Software class B Action type 2

7. Technical data for LC 241

Inputs and outputs

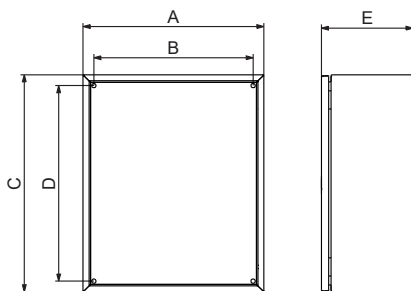
The following inputs and outputs are available:

- 4 × DI. Digital input
- 1 × ADI. Configurable analog or digital input
- 2 × REL. Configurable output relay
- 1 (2) × combined PTC and moisture switch input.

The following inputs and outputs are available for IO 241, if this optional module is included:

- 2 × DIO. Digital input or output
- 2 × DI. Digital input
- 4 × CIO. Configurable input or output
- 2 × REL. Configurable output relay.

Dimensions



TM072025

Type	Dimensions [mm] [inch]				
	A	B	C	D	E
Plastic cabinet	278 (10.9)	254 (10)	378 (14.9)	354 (13.9)	180 (7)
Plastic cabinet	278 (10.9)	254 (10)	558 (21.9)	534 (21)	130 (5.12)
Plastic cabinet	378 (14.9)	354 (13.9)	558 (21.9)	534 (21)	180 (7)
Metal cabinet	500 (19.7)	455 (17.9)	600 (23.6)	525 (20.7)	250 (9.8)
Metal cabinet	500 (19.7)	455 (17.9)	700 (27.6)	625 (23.6)	250 (9.8)

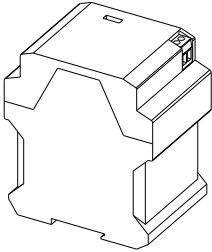
Operating conditions

Ambient temperature, Soft starter	Min. -5 °C (23 °F) Max. 40 °C (104 °F)
Ambient temperature, Direct-on-line	Min. -20 °C (-4 °F) Max. 45 °C (113 °F)
Ambient temperature, Star-delta	Min. -20 °C (-4 °F) Max. 45 °C (113 °F)
Enclosure class	IP54
Mains supply	1 × 230 V ± 10 %, PE 3 × 230/400 V ± 10 %, N, PE 3 × 400 V ± 10 %, PE
Frequency	50/60 Hz
EMC classification	Environment B

8. Optional equipment for LC 24X

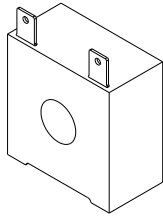
Below optional equipment may be part of standard range or is available as part of FPV and ETO.

Option BB: backup battery



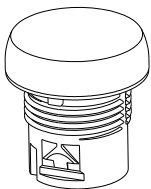
Battery backup to ensure that the CU and IO controller continue to monitor the system when there is no power supply (mains dropout).

Option CT: current transformer



The current transformer is used to measure the current drawn by the motor. The actual current can be seen in Grundfos GO Remote along with the accumulated energy usage. You need one current transformer per pump.

Option D: fault light system



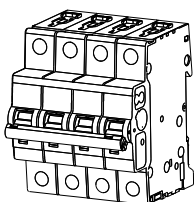
The fault light is on if a fault occurs in the system.

Option E: mains disconnect switch



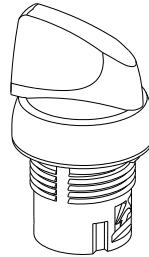
Mains switch to disconnect the power supply.

Option F: circuit breaker per pump



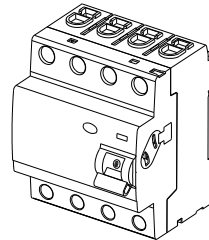
To ensure two different tripping mechanisms: the delayed thermal tripping mechanism for overload protection and the electromechanical tripping mechanism for short-circuit protection.

Option H: ON/OFF/AUTO switch



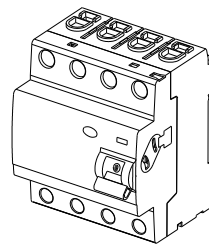
Manual switch to set the product in ON, OFF or AUTO mode.

Option I: RCD per panel



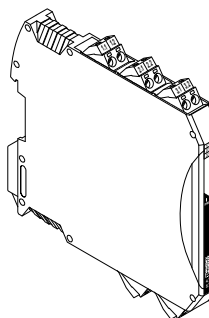
Residual Current Devices (RCDs) for the complete panel to protect people and installations against fault current to earth.

Option J: RCD per pump



Residual Current Devices (RCDs) for each pump to protect people and installations against fault current to earth.

Option K: Ex barrier, analog



An isolating amplifier for safe operation of proximity sensors and switches installed in the Ex area.

TM076288

TM072791

TM074477

TM076289

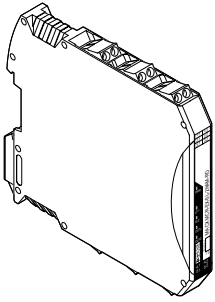
TM072790

TM076289

TM076297

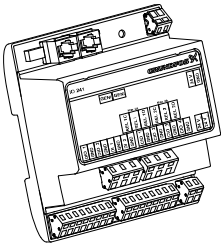
TM076291

TM072482

Option L: Ex barrier, digital

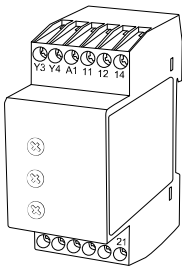
TM072481

An isolating amplifier for safe operation of proximity sensors and switches installed in the Ex area.

Option M: IO 241

TM072268

The IO 241 module is an optional module for gaining extra input and output signals. It can be connected to the Grundfos IO 242 pump module and Grundfos control unit CU 24X.

Option N: DIN-mount electrode relay for two electrodes and REF (CLD4MA2DM24)

TM072792

Conductive level controller for liquids. It has two outputs that can be used as digital signals.

9. Accessories





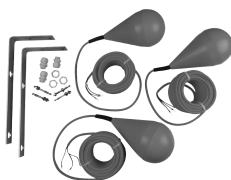

Grundfos GO Remote

The product is designed for Bluetooth communication with Grundfos GO Remote.


Grundfos GO Remote enables you to set functions and gives you access to status overviews, technical product information and current operating parameters.

Additional accessories


Analog level sensors

Product	Description	Product number
	Level Transmitter, S, 0-3 m c10 m P V BO	99488544
	Level Transmitter, S, 0-5 m c10 m P V BO	99488545
	Level Transmitter, S, 0-5 m c25 m P V BO	99488546
	Level Transmitter 404393 0-5 m c25 m F C BC EX1	99488548
	Level Transmitter, S, 0-10 m c25 m P V BO	99488552
	Level Transmitter, S, 0-2 m c10 m P V BO	99488553
	Level Transmitter, E, 0-50 m c100 m E E BC DWA	99488566
	Level Transmitter, E, 0-5 m c25 m F V BO	99488549
	Level Transmitter, W, 0-5 m c25 m P V BO	99488550
	Level Transmitter, junction box	99488577
	Level Transmitter, cable hanger	99488578
Level switches		
	Level switch MS1, 10 m cable	96003332
	Level switch MS1, 20 m cable	96003695
	Level switch MS1, 30 m cable	91073205
	10 m cable incl. mounting bracket, set of 2 pieces	62500013
	10 m cable incl. mounting bracket, set of 3 pieces	62500014
	10 m cable incl. mounting bracket, set of 4 pieces	62500015
	Weight of 300 g for cable stabilising	96003337




Alarms

Product	Description	Product number
	Signal lamp, 1 × 230 VAC for outdoor mounting	62500020


External main switch

Product	Description	Product number
	For supply cable, 25 A	96002511
	For supply cable, 40 A	96002512






Communication equipment

Product	Description	Product number	
	CIM 050	GENIbus 96824631	
	CIM 150	PROFIBUS DP 96824793	
	CIM 200	Modbus RTU 96824796	
	CIM 260	3G/4G 99439302 (EU) 99439306 (US)	
	CIM 280	Grundfos Utility Connect 99895383 (EU) 99895386 (US)	
	CIM 300	BACnet 96893770	
	CIM 500	Modbus TCP	98301408
		PROFINET IO	
		GRM IP	
		Antenna 2G/3G/4G	ø111 mm × 46 mm, 1.5 m cable 99518079
Antenna 2G/3G/4G		ø138 mm × 55 mm, 1.5 m cable, vandal proof 99229807	
	Back-up battery for CIM 260/280	99499908	

IO extension

Product	Description	Product number
	IO 241 module	99332827

Miscellaneous, for LC 231 only

Product	Description	Product number
	LC EX-BOX 4 x DI	99621732
	LC EX-BOX 1 x AI + 1 x DI	99621731
	LC pneumatic switch box	99734474
	M20 split cable gland kit	99587021
	M25 metal cable gland for 21 mm cable	99587019

10. 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.

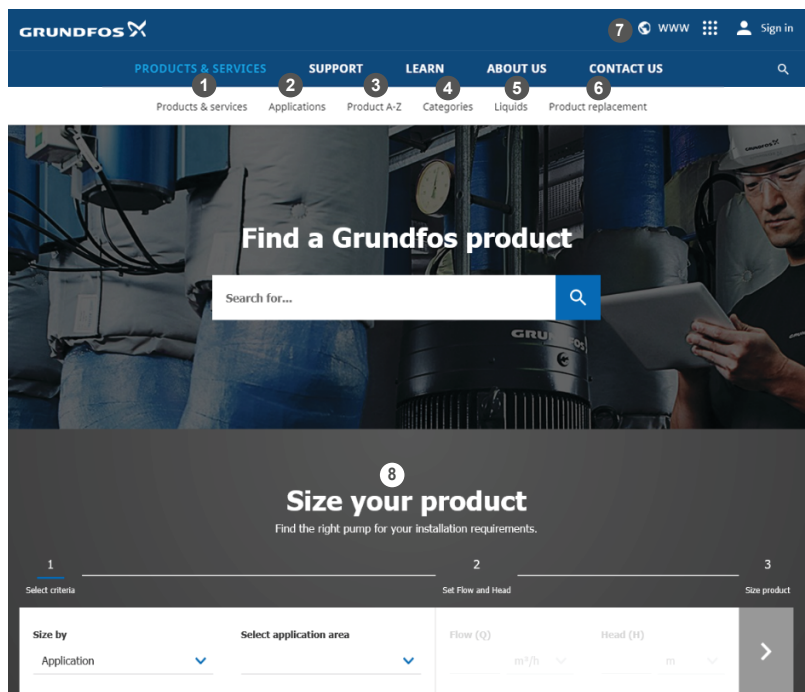
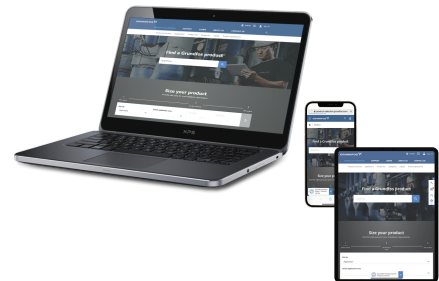
International view: <http://product-selection.grundfos.com>

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.



TM072383-1

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

