

# MAGNA, UPE

Series 2000 circulator pumps



## Electrical data

### MAGNA/UPE

	<b>MAGNA</b> 25-40, 25-60, 25-80, 25-100, 32-40, 32-60, 32-80, 32-100, 40-60, 40-80, 40-100(D), 50-100	<b>MAGNA (D)</b> 32-120, 40-120, 50-60, 50-120, 65-60, 65-120	<b>UPE(D) FZ</b>
<b>Pump type</b>			
<b>Enclosure class</b>	IP44 (IEC 85)	IP44 (IEC 85)	IP44 (IEC 85)
<b>Insulation class</b>	F	F	H
<b>External start/stop input</b>	External potential-free switch. ★ Screened cable. Maximum contact load: 5 V, 10 mA.	External potential-free switch. Screened cable. Maximum contact load: 5 V, 10 mA.	External potential-free switch. Screened cable. Maximum contact load: 5 V, 0.5 mA.
<b>Setpoint signals</b>	GENI module ★	GENI module ★	<ul style="list-style-type: none"> <li>• <b>Min. curve input</b> External potential-free switch. Screened cable. Maximum contact load: 5 V, 0.5 mA.</li> <li>• <b>Input for analog 0-10 V signal</b> External signal: 0-10 VDC. Maximum contact load: 1 mA.</li> </ul>
<b>Signal output</b>	Internal potential-free changeover contact. ★ Screened cable. Maximum contact load: 250 VAC, 2 A. Minimum contact load: 5 VDC, 1 mA.	Internal potential-free changeover contact. Screened cable. Maximum contact load: 250 VAC, 2 A. Minimum contact load: 5 VDC, 1 mA.	Internal potential-free changeover contact. Screened cable. Maximum contact load: 250 VAC, 2 A. Minimum contact load: 5 VDC, 1 mA.
<b>Bus input</b>	GENI module ★ Grundfos Communication Interface Unit (CIU) for: <ul style="list-style-type: none"> <li>• LON</li> <li>• Modbus RTU</li> <li>• BACnet MS/TP</li> <li>• GSM/GPRS</li> <li>• Profibus.</li> </ul>	GENI module ★ LON module ★ Grundfos Communication Interface Unit (CIU) for: <ul style="list-style-type: none"> <li>• Modbus RTU</li> <li>• BACnet MS/TP</li> <li>• GSM/GPRS</li> <li>• Profibus.</li> </ul>	Grundfos GENIbus protocol. Screened cable. Lead cross section: 0.25 - 1 mm <sup>2</sup> . Maximum cable length: 1200 m.  Grundfos Communication Interface Unit (CIU) for: <ul style="list-style-type: none"> <li>• LON</li> <li>• Modbus RTU</li> <li>• BACnet MS/TP</li> <li>• GSM/GPRS</li> <li>• Profibus.</li> </ul>
<b>Supply voltage</b>	1 x 230-240 V - 10 %/+ 6 %, 50/60 Hz, PE	1 x 230-240 V - 10 %/+ 6 %, 50/60 Hz, PE	1 x 230 V - 10 %/+ 6 %, 50/60 Hz, PE
	The pump requires no external motor protection.		
<b>Earth leakage current</b>	$I_{leak} < 3.5 \text{ mA}$ The leakage currents are measured in accordance with EN 60335-1.		
<b>EMC</b>	EN 61800-3.		

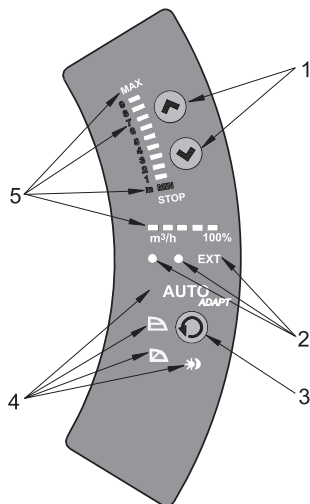
★ Expansion module

## Sound pressure level

	<b>MAGNA</b> 25-40, 25-60, 25-80, 25-100, 32-40, 32-60, 32-80, 32-100, 40-60, 40-80, 40-100(D), 50-100	<b>MAGNA (D)</b> 32-120, 40-120, 50-60, 50-120, 65-60, 65-120	<b>UPE(D)</b>
<b>Pump type</b>			
<b>Sound pressure level</b>	≤ 32 dB(A)	≤ 38 dB(A)	≤ 38 dB(A)

## Readings and settings on the pump

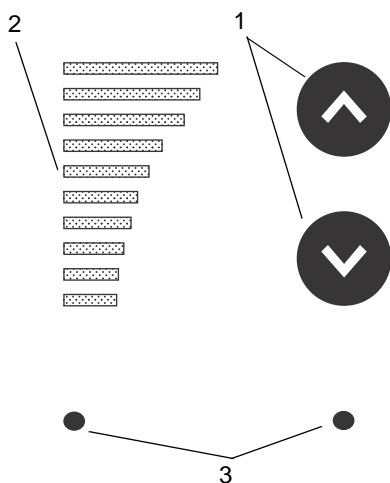
The control panel on the pump control box incorporates the basic functions for readings and settings.



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Fig. 10 MAGNA (D) control panel

Pos.	Description
1	Buttons for setting of head.
2	<ul style="list-style-type: none"> <li>Indicator lights for operating and fault indication.</li> <li>Symbol for indication of external control.</li> </ul>
3	Button for selection of control mode: AUTO <sub>ADAPT</sub> , proportional pressure, constant pressure and automatic night-time duty.
4	Light symbols for indication of control mode and night-time duty.
5	Light fields for indication of head, flow and operating mode.



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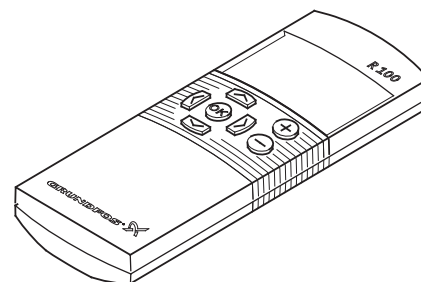
Fig. 11 UPE(D) control panel

Pos.	Description
1	Buttons for start/stop of the pump, setting of setpoint, control mode, min. and max. curve.
2	Light fields for indication of control mode and setpoint.
3	Indicator lights for operating and fault indication.

## Communication

Depending on pump type, MAGNA/UPE enables communication via

- wireless remote control, R100
- connection to an external alarm device
- digital input/output
- analog input.



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Fig. 12 R100 remote control

MAGNA/UPE is designed for wireless communication with the Grundfos R100 remote control.

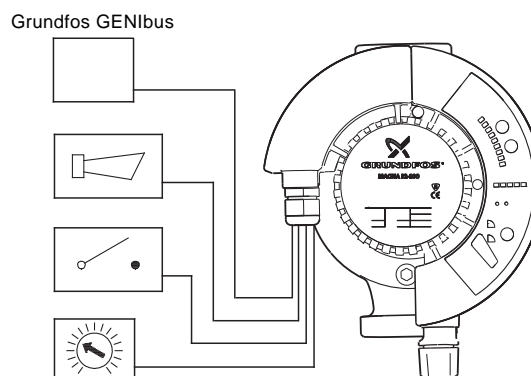
The R100 offers additional possibilities of setting and status displays for the pump.

The R100 can be used for the following functions:

- reading of operating data
- reading of fault indications
- setting of control mode
- setting of 0.1 m head increments
- selection of external setpoint signal
- allocation of pump number making it possible to distinguish between pumps in connection with parallel operation via bus
- selection of function for digital input.

The MAGNA/UPE has various inputs and outputs for external signals for forced-control functions.

Some functions may require an expansion module.



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Fig. 13 MAGNA with expansion module

## Mechanical installation

MAGNA/UPE is for indoor installation. The pump must be installed with horizontal motor shaft.

The pump may be installed in horizontal as well as vertical pipes.

Arrows on the pump housing indicate the liquid flow direction through the pump. The liquid flow direction can be horizontal or vertical, depending on the control box position.

The control box can be turned to various positions, depending on pump type. This is described in the installation and operating instructions.

The pump must be installed in such a way that strain from the pipework is not transferred to the pump housing.

The pump may be suspended direct in the pipes, provided the pipework can support the pump. If not, the pump must be installed on a mounting bracket or base plate.

To ensure cooling of motor and electronics, the following must be observed:

- Place the pump in such a way that sufficient cooling is ensured.
- The temperature of the cooling air must not exceed 40 °C.

## Insulation shells

The insulation shells delivered with the single-head MAGNA pumps are for heating applications and should be fitted as part of the installation.

Pump type	Insulation shells	
	For heating	For air-conditioning
MAGNA	Included on delivery	See <i>Insulation kits for MAGNA, air-conditioning</i>
UPE	Accessory	Not available

**Note:** Insulation shells are not available for twin-head pumps.

## Electrical connection

The electrical connection and protection should be carried out in accordance with local regulations.

- The pump must be connected to an external mains switch.
- The pump must always be correctly earthed.
- The pump requires no external motor protection. The motor incorporates thermal protection against slow overloading and blocking (IEC 34-11: TP 211).
- When the pump is switched on via the mains, the pump will start after approx. 5 seconds.

**Note:** The number of starts and stops via the mains supply must not exceed 4 times per hour.

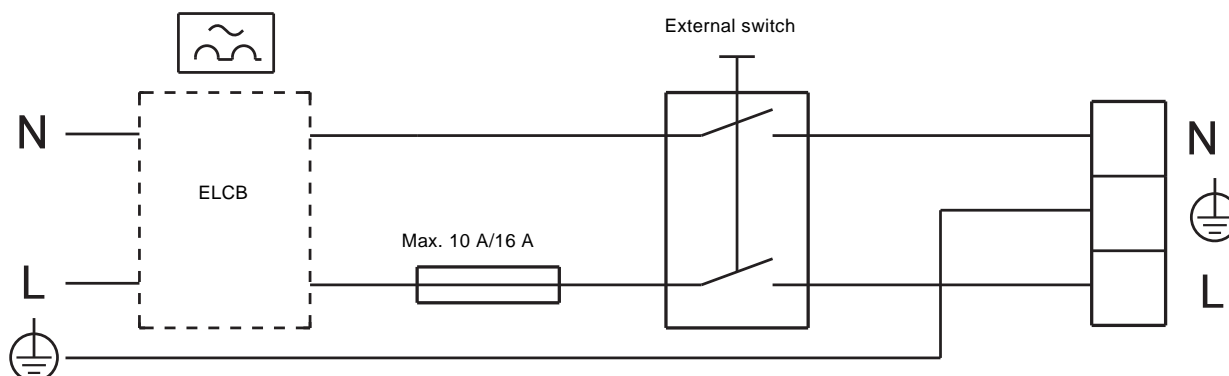
The pump mains connection must be made as shown in the diagrams on the following pages.

## Cables

Use screened cables (0.25 - 1.5 mm<sup>2</sup>) for external on/off switch, digital input, sensor and setpoint signals.

- All cables used must be heat-resistant up to at least +85 °C.
- All cables used must be installed in accordance with EN 60204-1.

## Wiring diagram



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Fig. 21 1 x 230-240 V - 10 %/+ 6 %, 50/60 Hz

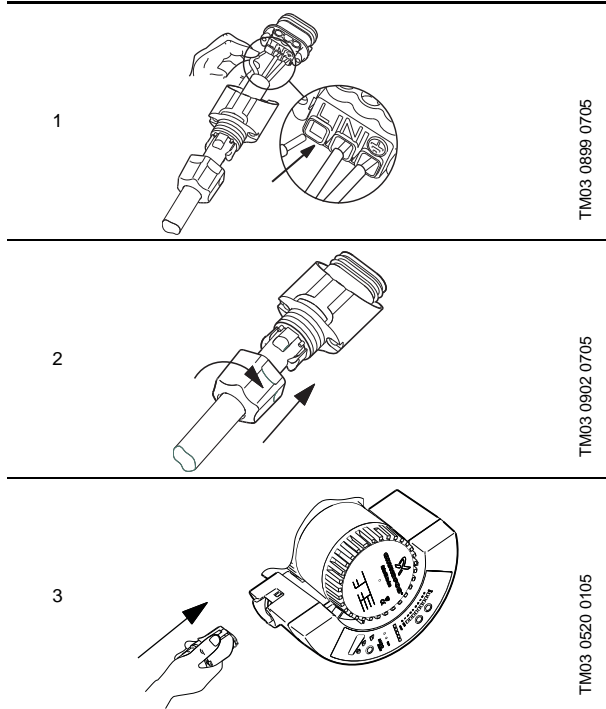
### Additional protection

If the pump is connected to an electric installation where an earth-leakage circuit breaker (ELCB) is used as an additional protection, the earth-leakage circuit breaker must be marked with the following symbols.

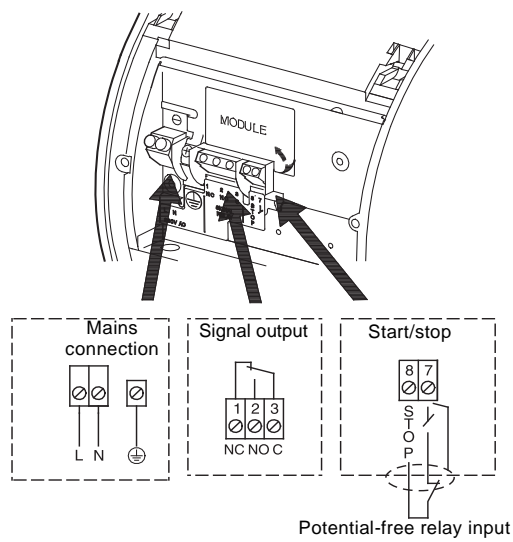


The earth-leakage circuit breaker must trip out when earth fault currents with DC content (pulsating DC) occur.

## MAGNA



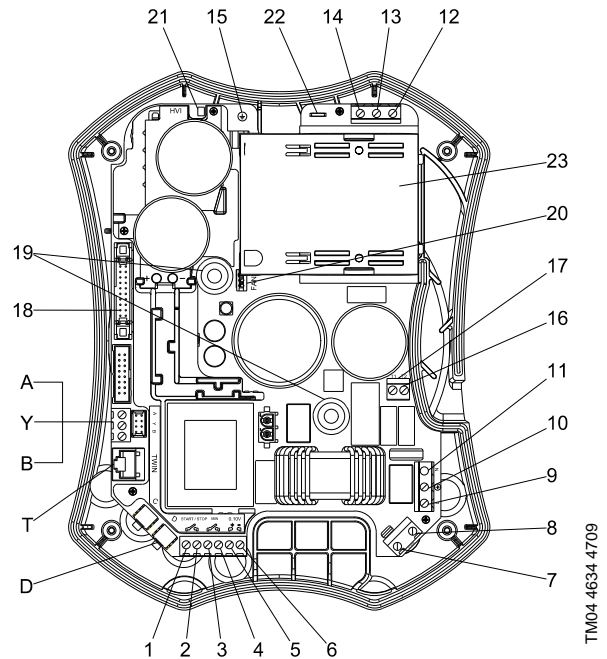
**Fig. 22** MAGNA 25-40, 25-60, 25-80, 25-100, 32-40, 32-60, 32-80, 32-100, 40-60, 40-80, 40-100(D), 50-100, mains connection with Alpha power plug



**Fig. 23** MAGNA 32-120, 40-120, 50-120, 65-120, 50-60, 65-60, mains connection

**Note:** If no external on/off switch is connected, the connection across terminals STOP and  $\downarrow$  should be maintained.

## UPE(D)



**Fig. 24** UPE(D), terminals inside the control box

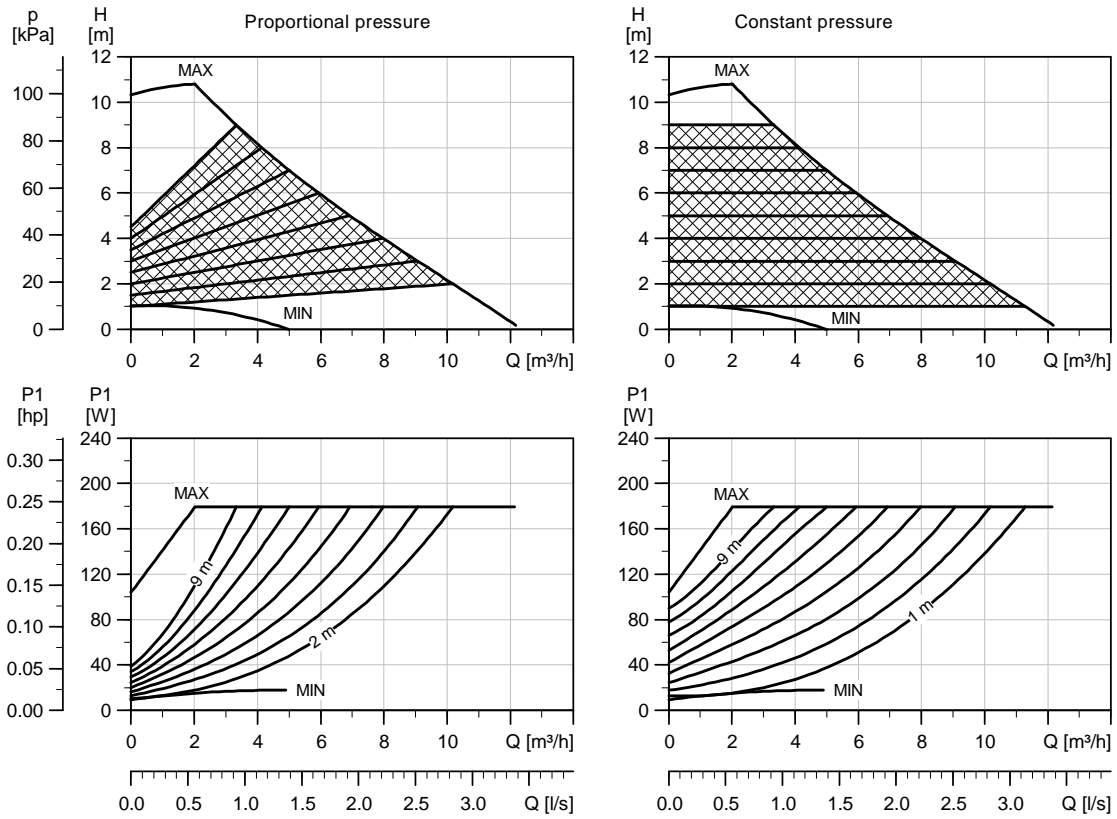
Pos.	Description
A, Y, B	Terminal block for GENibus
T	Terminal block for twin-head pump
D	Terminal block for pressure and temperature sensor on the pump (standard)
1, 2 (START/STOP)	Terminals for external start/stop (connect only contacts with no voltage)
3, 4 (MIN.)	Terminals for min. curve input (connect only contacts with no voltage)
5, 6 (0-10 V)	Terminals for external analog input 0-10 VDC Terminal 5 = +10 V Terminal 6 = 0 V
7, 8 (ALARM)	Terminal block for remote alarm contact. Maximum load: 250 VAC, 5 A.
9, 10, 11	Terminals for supply voltage, 1 x 230 V, 50-60 Hz Terminal 9 = Line (L) Terminal 10 = Earth ( $\oplus$ ) Terminal 11 = Neutral (N)
12, 13, 14	Terminals for connection of motor cables Terminal 12 = brown lead Terminal 13 = grey lead Terminal 14 = black lead
15	Motor earthing screw
16, 17	Terminals for connection of motor protector, white lead (T1, T2)
18	Terminal for control panel
19	Control panel retaining screws
20	Terminal for fan
21	High-voltage indicator
22	Terminal for screened motor cable
23	Fan

**Single-head pumps** must be connected as shown above.

### Twin-head pumps

Both pump heads must be connected to the mains.

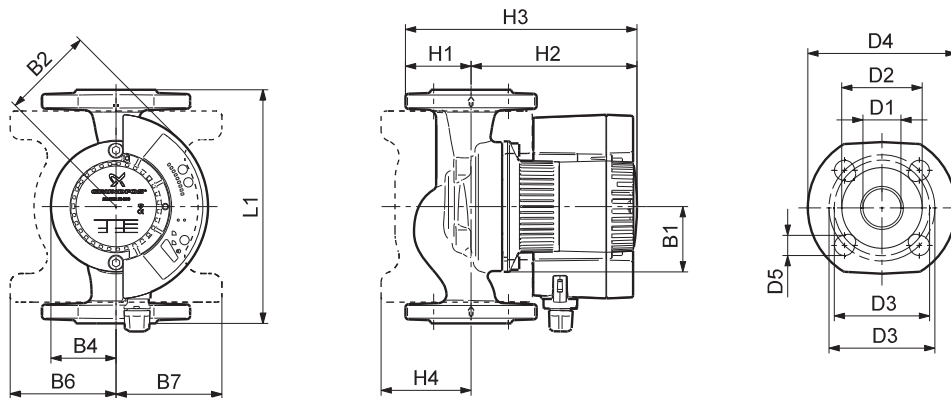
## MAGNA 50-100 F



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### Electrical data

$U_n$ [V]		$P_1$ [W]	$I_{1/1}$ [A]
1 x 230-240	Min.	10	0.1
	Max.	180	1.26



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### Dimensions and weights

Pump type	Dimensions [mm]																Weight [kg]		Ship. vol. [m³]
	L1	B1	B2	B4	B6	B7	H1	H2	H3	H4	D1	D2	D3	D4	D5	PN	Gross		
MAGNA 50-100 F	240	62	87	62	104	104	73	163	73	140	88	50	99	100/125	165	19	6/10	10.2	0.017

<b>V7089107</b> 0111
Repl. V7089107 0710

**GB**

ECM: 1069323

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