AR control unit

Exchange of circuit board

Service kit instructions

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GRUNDFOS

English (GB) Service kit instructions

Original service instructions.

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1. General safety regulations

1.1 Purpose of this manual

The purpose of this manual is as follows:

- to provide guidance on installation and programming of an exchange circuit control of the **AR control unit**.

See the separate Installation and operating instructions for the **AR control unit**.

1.2 Symbols used in this document

Note ***Notes or instructions that make the job easier and ensure safe operation.***

2. Electrical connection of the new AR control unit circuit board

Connect the new AR control unit circuit board as follows:

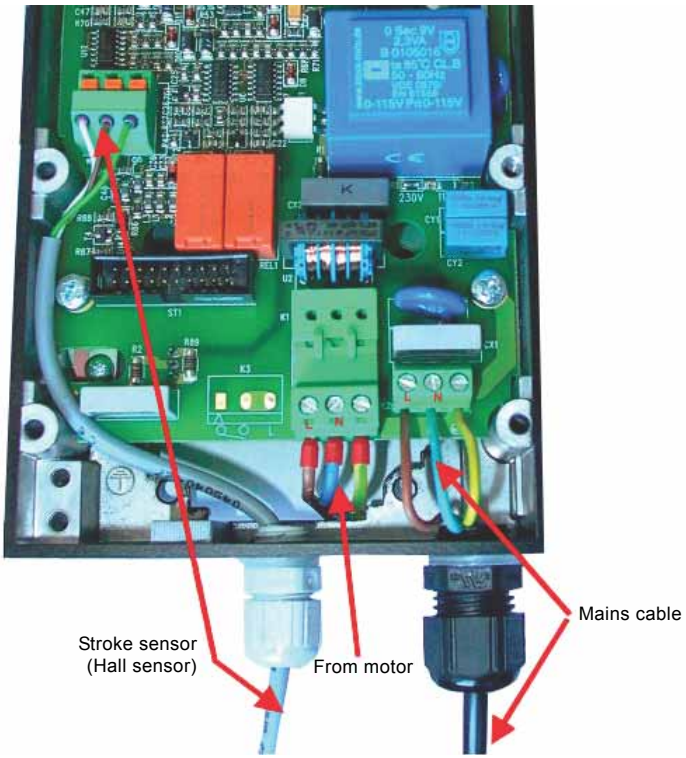

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Fig. 1 Electrical connection of the new AR control unit circuit board

3. Service level

Open the service level to modify the switch assignments of the electronics and adjust the gear setting after changing the AR control unit circuit board.

3.1 Switch assignment

Standard switch assignment of the AR control unit types:

Setting	E26	E28	E31
"1:OFF"	x		x
"1:ON"		x	
"2:NO"	x		
"2:NC"		x	x
"3:NO"	x		x
"3:NC"		x	
"4:NO"	x		x
"4:NC"		x	
"5:NO"	x	x	x
"5:NC"			
"6:NO"	x	x	x
"6:NC"			
"7:ON"	x	x	x
"7:OFF"			
"8:ON"			
"8:OFF"	x	x	x

3.1.1 Modifying the switch assignment

Note

You are modifying the default settings of your electronics, they will therefore differ from the technical data.

The service level can only be accessed when the power supply is being switched on.

1. Simultaneously press the "Menu" and "Down" keys, and hold them down.
2. Switch on the power supply.
   – The LED lights up green for approximately 3 seconds and then yellow.
3. Release the "Menu" and "Down" keys.
4. Press the "Start/Stop" key.
5. Press the "Up" key.
   – "Func" appears in the display.
6. Press the "Menu" key.
   – The service level is opened.

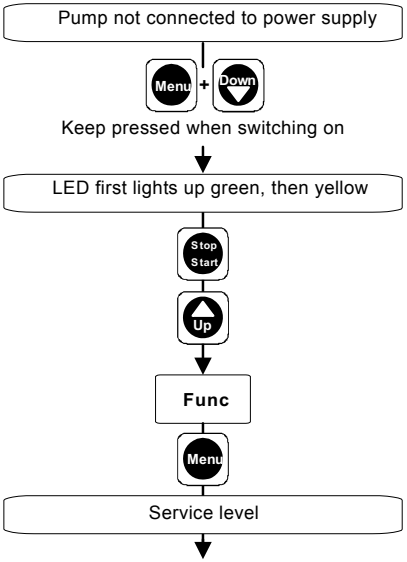

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Fig. 2 Service level

1. Navigate in the service level by repeatedly pressing the "Menu" key.
2. Use the "Up" and "Down" keys to modify the switch assignment in the relevant menu.
3. Press the "Start/Stop" key to:
   – Confirm the new settings
   – Exit the service level
   – Open the first function level.
4. Switch off the power supply.
5. Switch on the power supply.

Note

If no key is pressed for approximately 30 seconds, the service level is exited and the first function level is opened.

1. Relay function (stroke/pre-empty signal selection)

"1:OFF" or "1:ON" appears in the display.

- Use the "Up" and "Down" keys to switch between:
  - "1:OFF" Relay function = stroke signal ("1/min" flashes in the display), and
  - "1:ON" Relay function = pre-empty signal (empty signal symbol flashes in the display)
- Press the "Menu" key (Confirm the setting and move on to the next menu item.), or
- press the "Start/Stop" key and switch the power supply off, then back on again. (Close the service level and confirm the setting.)

2. Remote off NO/NC input

"2:NO" or "2:NC" appears in the display ("Run" and "Stop" flash in the display)

- Use the "Up" and "Down" keys to switch between:
  - "2:NO" Remote off = NO contact, and
  - "2:NC" Remote off = NC contact
- Press the "Menu" key (Confirm the setting and move on to the next menu item.), or
- press the "Start/Stop" key and switch the power supply off, then back on again. (Close the service level and confirm the setting.)

3. Pre-empty signal NO/NC input

"3:NO" or "3:NC" appears in the display (empty signal symbol flashes in the display)

- Use the "Up" and "Down" keys to switch between:
  - "3:NO" Pre-empty signal = NO contact, and
  - "3:NC" Pre-empty signal = NC contact
- Press the "Menu" key (Confirm the setting and move on to the next menu item.), or
- press the "Start/Stop" key and switch the power supply off, then back on again. (Close the service level and confirm the setting.)

4. Empty signal NO/NC input

"4:NO" or "4:NC" appears in the display (empty signal symbol lights up in the display)

- Use the "Up" and "Down" keys to switch between:
  - "4:NO" Empty signal = NO contact, and
  - "4:NC" Empty signal = NC contact
- Press the "Menu" key, (Confirm the setting and move on to the next menu item.), or
- press the "Start/Stop" key and switch the power supply off, then back on again. (Close the service level and confirm the setting.)

5. Error signal NO/NC output

"5:NO" or "5:NC" appears in the display ("ERROR" flashes in the display)

- Use the "Up" and "Down" keys to switch between:
  - "5:NO" Error signal relay = NO contact, and
  - "5:NC" Error signal relay = NC contact
- Press the "Menu" key (Confirm the setting and move on to the next menu item.), or
- press the "Start/Stop" key and switch the power supply off, then back on again. (Close the service level and confirm the setting.)

6. NO/NC relay output (stroke/pre-empty/pulse)

"6:NO" or "6:NC" appears in the display ("1/min" and empty signal symbol flash in the display)

- Use the "Up" and "Down" keys to switch between:
  - "6:NO" Stroke/pre-empty signal relay = NO contact, and
  - "6:NC" Stroke/pre-empty signal relay = NC contact
- Press the "Menu" key (Confirm the setting and move on to the next menu item.), or
- press the "Start/Stop" key and switch the power supply off, then back on again. (Close the service level and confirm the setting.)

7. Hall sensor on/off

"7:ON" or "7:OFF" appears in the display ("bar" flashes in the display)

- Use the "Up" and "Down" keys to switch between:
  - "7:ON" Hall sensor = connected, and
  - "7:OFF" Hall sensor = not connected
- Press the "Menu" key (Confirm the setting and move on to the next menu item.), or
- Press the "Start/Stop" key. (Close the service level and confirm the setting.)

8. Locking "run" ON/OFF

The locking of the "Start/Stop" key against manual stopping of the pump can be enabled and disabled.

The display indicates "8:on" or "8:off" (the "RUN" symbol is displayed).

- Use the "Up" and "Down" keys to switch between:
  - "8:on" Locking "run" on, and
  - "8:off" Locking "run" off
- Press the "Start/Stop" key and switch the power supply off, then back on again. (Close the service level and confirm the setting.)

3.2 Gear setting

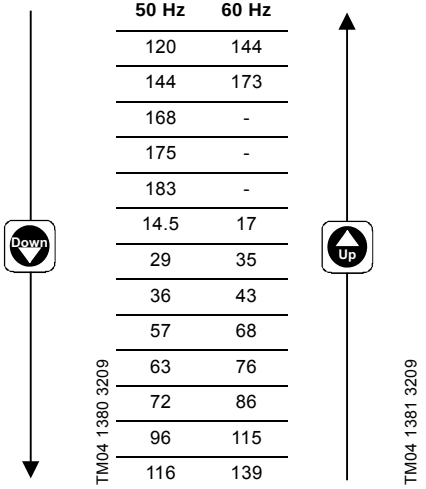
To open and adjust the gear setting:

- Out of menu 8. press the "Menu" key and hold it down for approximately 20 seconds.

"gear" appears in the display.

- Release the "Menu" key.

The following values are available (depending on the power supply frequency):



50 Hz	60 Hz
120	144
144	173
168	-
175	-
183	-
14.5	17
29	35
36	43
57	68
63	76
72	86
96	115
116	139

- Use the "Up" and "Down" keys to set the desired gear ratio.

Pump type DMX 221	50 Hz	60 Hz
	n/min	n/min
DMX 4-10	29	35
DMX 7-10	29	35
DMX 9-10	29	35
DMX 12-10	29	35
DMX 17-4	29	35
DMX 25-3	29	35
DMX 7.2-16	63	75
DMX 8-10	63	75
DMX 14-10	63	75
DMX 18-10	63	75
DMX 26-10	63	75
DMX 39-4	63	75
DMX 60-3	63	75
DMX 13.7-16	120	144
DMX 16-10	120	144
DMX 27-10	120	144
DMX 35-10	120	144
DMX 50-10	120	144
DMX 75-4	120	144
DMX 115-3	120	144

Pump type DMX 226	50 Hz	60 Hz
	n/min	n/min
DMX 24-8	29	35
DMX 52-8	63	76
DMX 100-8	120	144
DMX 142-8	168	-
DMX 37-5	29	35
DMX 82-5	63	76
DMX 160-5	120	144
DMX 224-5	168	-
DMX 60-3	29	35
DMX 130-3	63	76
DMX 255-3	120	144
DMX 380-3	168	-
DMX 67-10	57	68
DMX 132-10	120	144
DMX 190-10	175	-
DMX 190-8	175	-
DMX 95-8	57	68
DMX 199-8	120	144
DMX 280-8	175	-
DMX 280-6	175	-
DMX 152-6	57	68
DMX 321-6	120	144
DMX 321-4	120	144
DMX 460-6	175	-
DMX 460-3.5	175	-
DMX 249-3	57	68
DMX 315-3	72	86
DMX 525-3	120	144
DMX 765-3	175	-

Pump type DMH 251	50 Hz	60 Hz
	n/min	n/min
DMH 2.4-10	14	17
DMH 5-10	29	35
DMH 13-10	63	75
DMH 19-10	96	115
DMH 24-10	120	-
DMH 2.3-16	14	17
DMH 4.9-16	29	35
DMH 12-16	63	75
DMH 18-16	96	115
DMH 23-16	120	-
DMH 2.2-25	14	17
DMH 4.5-25	29	35
DMH 11-25	63	75
DMH 17-25	96	115
DMH 21-25	120	-

Pump type DMH 252	50 Hz	60 Hz
	n/min	n/min
DMH 11-10	29	35
DMH 24-10	63	75
DMH 37-10	96	115
DMH 46-10	120	-
DMH 10-16	29	35
DMH 23-16	63	75
DMH 36-16	96	115
DMH 45-16	120	144
DMH 54-16	144	-

Pump type DMH 253	50 Hz	60 Hz
	n/min	n/min
DMH 21-10	29	35
DMH 43-10	63	75
DMH 67-10	96	115
DMH 83-10	120	144
DMH 100-10	144	-

Pump type DMH 280	50 Hz	60 Hz
	n/min	n/min
DMH 0.6-200	29	35
DMH 1.3-200	63	76
DMH 2.2-200	96	115
DMH 2.5-200	120	144
DMH 3.3-200	144	-

Pump type DMH 281	50 Hz	60 Hz
	n/min	n/min
DMH 2-100	29	35
DMH 4.2-100	63	75
DMH 6.4-100	96	115
DMH 8-100	120	144
DMH 9.6-100	144	-

3.3 Store settings

Store all settings as follows:

- Out of menu 8. or "gear" press the "Start/Stop" and "Up" keys simultaneously.
  – "boot" appears in the display.
- Release the "Down" and "Up" keys.
  – Electronics and gear settings are stored now.

Subject to alterations.

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