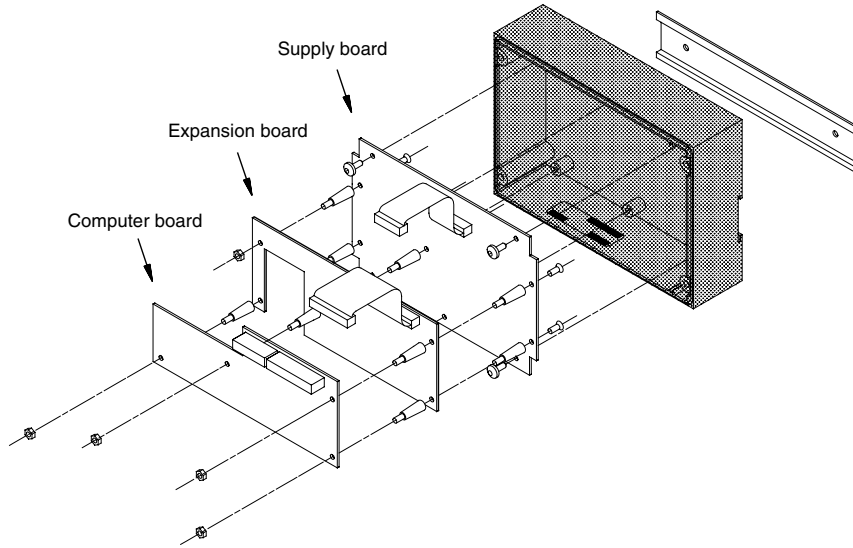


GRUNDFOS INSTRUCTIONS

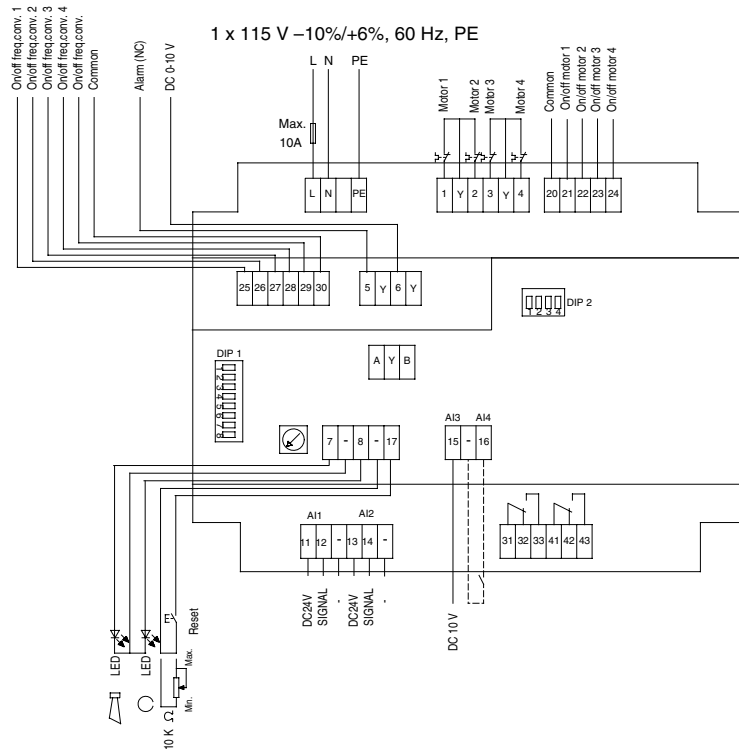
**PFU 2000/9, 60 Hz**

Ⓜ Installation instructions





TM00 2740 0294



TM01 7634 4799

Terminal designation or number	Function PFU 2000/9	Technical data
L, N, PE	Voltage supply for PFU 2000.	1 x 115 V –10%/+6%, 60 Hz, PE.
A, Y, B	Communication among the units in the GRUNDFOS Pump Management System 2000.	GRUNDFOS bus. RS-485, GRUNDFOS bus protocol.
1 - 4	Analog/digital input for motor protection. Motors 1, 2, 3, 4.	PTC or thermal switch (NC). PTC according to DIN 44081 or 44082.
5	Monitoring of integrated frequency converter.	NC contact.
6	Analog control signal for integrated frequency converter.	0-10 VDC.
7	Connection of external LED (fault).	Positive (anode), max. 5 mA.
8	Connection of external LED (operation).	Positive (anode), max. 5 mA.
11 and 13	24 VDC supply for transmitter.	Max. 70 mA.
12	<b>Analog input 1:</b> Actual value in the system. <b>Note:</b> In systems <b>without</b> PMU 2000, pressure transmitters with the following possible signal values are typically used: 0-10 V, 0-20 mA and 4-20 mA. In systems <b>with</b> PMU 2000, pressure, differential-pressure or temperature transmitters can be used.	0-10 V, 0-20 mA, 4-20 mA. <b>NTC 50:</b> Measuring range: –25 °C to +50 °C. Resistance value at 25 °C: 30 kΩ. <b>NTC 150:</b> Measuring range: 0 °C to +150 °C. Resistance value at 25 °C: 100 kΩ.
14	<b>Analog input 2:</b> Input for pressure, pre-pressure, flow-pipe and return-pipe temperature measuring. <b>Note:</b> In all systems <b>without</b> PMU 2000, this input is always used for pre-pressure measuring. The input signal can be inverted by means of the DIP 1 contact 4.	0-10 V, 0-20 mA, 4-20 mA. On/off contact (digital). <b>NTC 50:</b> Measuring range: –25 °C to +50 °C. Resistance value at 25 °C: 30 kΩ. <b>NTC 150:</b> Measuring range: 0 °C to +150 °C. Resistance value at 25 °C: 100 kΩ.
15	<b>Analog input 3:</b> Signal for remote setting of setpoint. <b>Note:</b> In systems <b>without</b> PMU 2000, only 0-10 VDC can be used.	0-10 VDC. 0-20 mA. 4-20 mA.
16	<b>Digital input 4</b> (without PMU 2000): For pressure boosting and water supply applications, input 4 is laid out for a flow switch. For heating, air-conditioning and ventilation systems, input 4 is laid out for an external on/off switch.	Max. contact load: 12 V / 12 mA.
17	Connection of external reset button, for instance in the front cover of the control cabinet, or external potentiometer for the setting of setpoint.	Max. contact load: 12 V / 12 mA.
20 and 30	Contact coil voltage.	
29	Integrated frequency converter on/off.	
21, 22, 23, 24	On/off of motors 1, 2, 3, 4. Mains operation.	Max. contact load: 250 V / 8 A, AC1.
25, 26, 27, 28	On/off of motors 1, 2, 3, 4. Integrated frequency converter operation.	Max. contact load: 250 V / 8 A, AC1.
31 - 33	Fault signal relay.	Potential-free changeover contacts.
41 - 43	Operating signal relay.	Max. contact load: 250 V / 0.5 A, AC1.

**BE > THINK > INNOVATE >**

Being responsible is our foundation  
Thinking ahead makes it possible  
Innovation is the essence

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