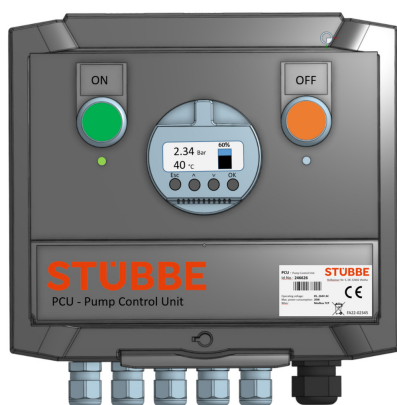


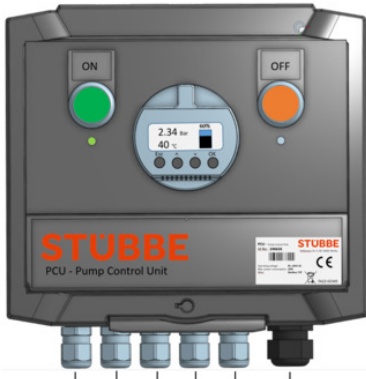
# PCU - PUMP CONTROL UNIT - PUMP MONITORING AND LEVEL CONTROL DATASHEET



## Characteristics

- protection of your pump
- Alarm signal before pump failure
- Different sensors can be connected: pressure, temperature and level
- Processing of sensor values and transmission to a higher-level system
- Connection of shielded sensor cables possible
- Wide-range power supply 100-240VAC
- Clear display of sensor values in Uni-Display
- Data logger function with date stamp
- Data storage on microSD in CSV format
- Menu navigation in German, English, Italian, Spanish and French
- Updates of the sensor firmware with the help of the UNI-Display
- Saving and transferring parameters to other units

## PUMP CONTROL UNIT

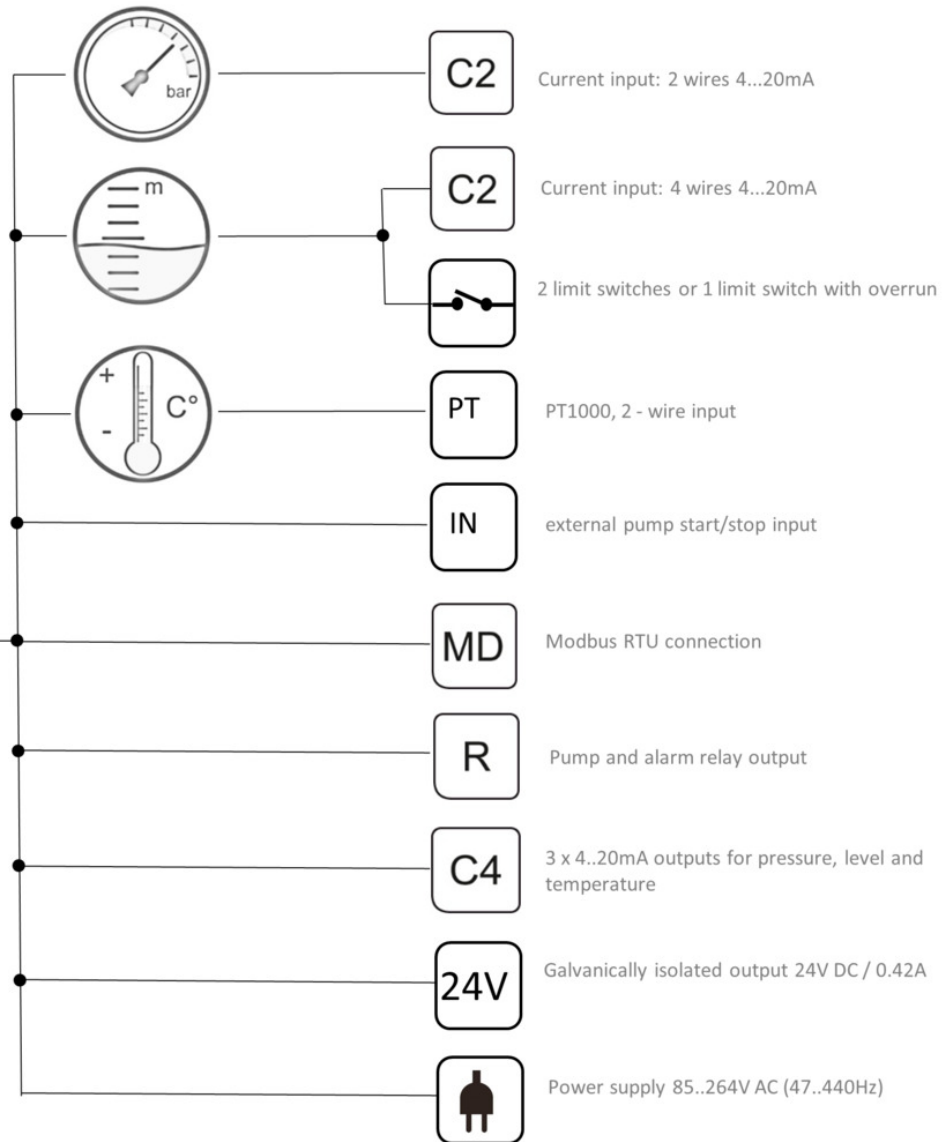


incl. Unidisplay



incl. transparent cover IP66

\*WLAN option



**PCU - Pump Control Unit - Pump monitoring and level control**

<b>Application</b>	- Processing of pressure, level and temperature sensors and control and monitoring of pumps
<b>Measuring category</b>	- pressure - level - temperature
<b>Connectable sensors</b>	- Pressure sensors from 0.5 to 16Bar - Temperature sensor PT1000 - Various continuous level sensors or also level limit switches as 3-point or 2-point controllers with overrun control
<b>STÜBBE resistance guide</b>	- <a href="http://www.stuebbe.com/pdf_resistance/300051.pdf">www.stuebbe.com/pdf_resistance/300051.pdf</a>
<b>Function</b>	- The unit measures and monitors the status of the pump with the connected sensors and switches it off as required.. - If a level sensor is also connected, the levels can also be monitored. In this case, the unit switches the pump on and off when the level exceeds or falls below the limit values. The limit values are adjustable - In accordance with DIN EN 61326-1, the immunity to interference has been tested for use in an industrial electromagnetic environment in accordance with Table 2
<b>Material housing (not in contact with the medium)</b>	- ABS - PC - PP
<b>Environmental conditions</b>	- Ambient temperature: 0–50 °C - Relative humidity: 20–85 % - Atmospheric ambient pressure: 0.8-1.1 bar
<b>Mounting position</b>	- Desk mounting - Wall mounting
<b>Type of protection</b>	- IP 66
<b>Signal input pressure</b>	- Current loop (C2): 4-20 mA, 2 wires, active (+24V)
<b>Signal input level</b>	- Current loop (C2): 4-20 mA, 2 wires, active (+24V) or up to 2 limit switches
<b>Signal input temperature</b>	- PT1000, 2-wire
<b>Relay outputs</b>	- 1 relay output pump relay, SPDT - 1 relay output alarm relay, SPDT
<b>Power supply output</b>	- Galvanically isolated output, 24V DC / 0.42A
<b>Interfaces</b>	- Modbus RTU, option: WLAN (Modbus TCP) - external keys operation (start, stop) - 3 analogue signal outputs, current loop (C4): 4-20 mA

## PCU - Pump Control Unit - Pump monitoring and level control

**Voltage supply** - 85..264V AC (47..440Hz)

**Output behaviour** - Power up: < 10s

**Weight** - 1100 g

**Frame size** - 229 x 204 x 76 mm

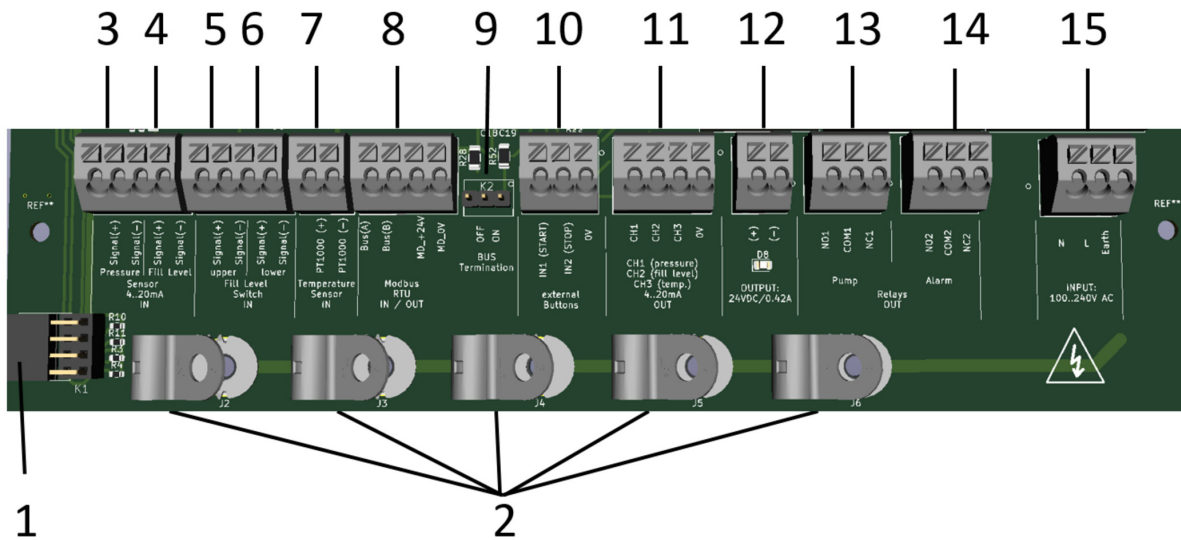
## PCU - Pump Control Unit - Pump monitoring and level control

### UNI display



- Can be used for all measuring instruments of the UNI display platform (PTM, HFT, HFB or UFM).
- Housing: ABS
- Cover: PA, transparent
- Display: illuminated LCD
- Operation: 4-key function
- Front film: polyester
- Data logger function with date stamp
- Firmware update possible
- Parameter settings can be saved and transmitted to other sensors.
- Storage function on a microSD card
- Battery: CR1220, 3 V
- The display unit can be removed from the sensor housing after the settings have been made
- The display unit is required for setting!

## PCU - Pump Control Unit - Pump monitoring and level control



**Abb. 3 terminal area for input and output**

1	WLAN Modul - Option
2	cable shield
3	Pressure Sensor Input 4..20mA 2-Wire - Tab. 3.1
4	Filling level Sensors Input 4..20mA 2-Wire - Tab. 3.2
5	Filling level - Limit Switch upper - Tab. 3.3
6	Filling level - Limit Switch lower - Tab. 3.3
7	Temperatur Sensor Eingang PT1000 - Tab. 3.4
8	Modbus RTU - Tab. 3.5
9	RS485 Termination Modbus RTU
10	external Buttons Operation - Tab. 3.6
11	Analogue output 4..20mA - Tab. 3.7
12	24V Output - Tab. 3.8
13	Pump Relay - Tab. 3.9
14	Alarm Relay - Tab. 3.10
15	Mains Connection -Tab. 3.11

**Table 3.1 PUMP CONTROL UNIT**

- Pressure Sensors	PTM - C2	tinyPTM - C2
Pressure, Sensor 4..20mA, IN, Signal(+)	PIN 1, M12 Connector	PIN 1, M12 Connector
Pressure, Sensor 4..20mA, IN, Signal(-)	PIN 2, M12 Connector	PIN 2, M12 Connector

**Table 3.1 PUMP CONTROL UNIT**

- Pressure Sensors	PTM - C2	tinyPTM - C2
Pressure, Sensor 4..20mA, IN, Signal(+)	PIN 1, M12 Connector	PIN 1, M12 Connector
Pressure, Sensor 4..20mA, IN, Signal(-)	PIN 2, M12 Connector	PIN 2, M12 Connector

**Table 3.3 PUMP CONTROL UNIT**

- Level limit switch	BZE / BSS	NIS	CFP	CGS	CLS
Filling Level, upper Switch, IN, Signal(+)	Pin 1, Re.-Connector	PIN 1	2 NO	NO	NO
Filling Level, upper Switch, IN, Signal(-)	Pin 2, Re.-Connector	PIN 3	COM	COM	COM
Filling Level, lower Switch, IN, Signal(+)	Pin 1, Re.-Connector	PIN 1	3 NO	-	-
Filling Level, lower Switch, IN, Signal(-)	Pin 2, Re.-Connector	PIN 3	COM	-	-

## PCU - Pump Control Unit - Pump monitoring and level control

**Table 3.4 PUMP CONTROL UNIT  
- Temperature Sensor** **Platinum - Resistor**

Temperature Sensor, IN, PT1000 (+)	PT1000
Temperature Sensor, IN, PT1000 (-)	PT1000

**Table 3.5 PUMP CONTROL UNIT  
- Modbus RTU** **Slaves**      **Master WLAN Modul**      **Master external**

Modbus RTU Bus(A)	BUS(A)	internal	BUS(A)
Modbus RTU Bus(A)	BUS(B)	internal	BUS(B)
Modbus RTU MD_24V Ausgang	max. 200mA	internal	-
Modbus RTU MD_0V	GND	internal	GND

**Table 3.6 PUMP CONTROL UNIT  
- external Buttons** **Taster**      **SPS / PLC**

external Buttons, IN1 (START)	NO	open Drain/Collektor, NO, 24V min.
external Buttons, IN2 (STOP)	NO	open Drain/Collektor, NO, 24V min.
external Buttons, 0V	GND	GND

**Table 3.7 PUMP CONTROL UNIT  
- Analogue output** **SPS / PLC**

4..20mA, out, CH1 (pressure)	4..20mA, 4-Wire, active transmitter
4..20mA, out, CH2 (fill level)	4..20mA, 4-Wire, active transmitter
4..20mA, out, CH3 (temp.)	4..20mA, 4-Wire, active transmitter
4..20mA, 0V	GND

**Table 3.8  
PUMP CONTROL UNIT - 24V Output** **Electrical load**

24VDC/0.42A OUTPUT, (+)	+24V DC, maximal 0.42A
24VDC/0.42A OUTPUT, (-)	GND

**Table 3.9  
PUMP CONTROL UNIT - Relay output Pump** **Electrical load**

Pump Relay, OUT, (NO1)	maximum 60 VDC / 250 VAC / 7A
Pump Relay, OUT, (COM1)	maximum 60 VDC / 250 VAC / 7A
Pump Relay, OUT, (NC1)	maximum 60 VDC / 250 VAC / 7A

**Table 3.10  
PUMP CONTROL UNIT - Relay output Alarm** **Electrical load**

Alarm Relay, OUT, (NO2)	maximum 60 VDC / 250 VAC / 7A
Alarm Relay, OUT, (COM2)	maximum 60 VDC / 250 VAC / 7A
Alarm Relay, OUT, (NC2)	maximum 60 VDC / 250 VAC / 7A

**Table 3.11  
PUMP CONTROL UNIT - Mains** **Modul Spannungsversorgung**

100..240V AC, Input, (N)	Neutral (blue cable)
100..240V AC, Input, (L)	Phase (black cable)
100..240V AC, Input, (Earth)	Earth (yellow/green cable)