

- For measurement and display of physical values
- Current or voltage input (e.g. from CLM, ULM, HLM level meters)
- Up to 4 relay-outputs with direct function
- Front panel performance or wall-mounted case
- Isolated analog output 4 ... 20 mA (option)
- Power supply voltage 230 V or 24 V



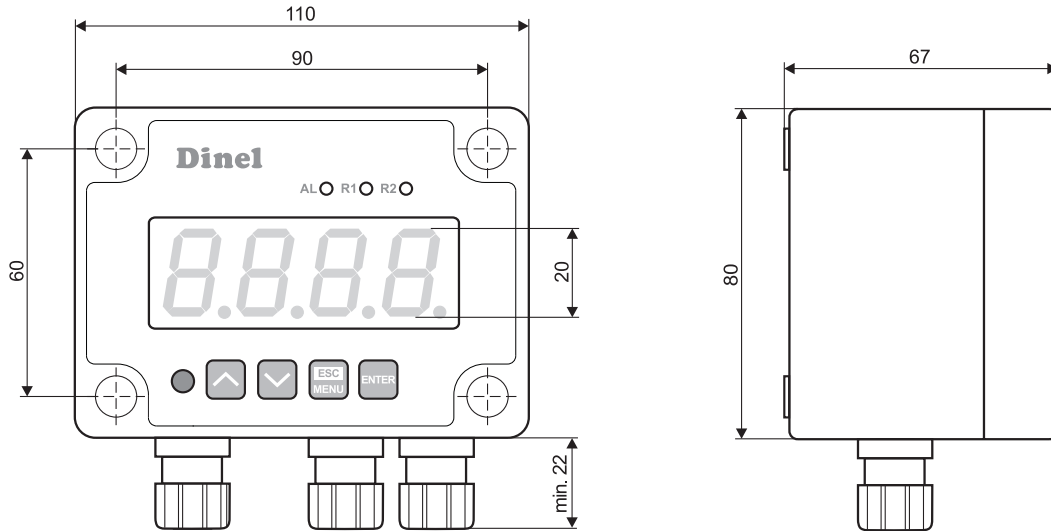
The **programmable display unit PDU** measures and displays wide range of physical values (level, pressure, flow, temperature, etc.). It is designed as a panelmeter, so its montage is provided onto a front panel cutout or as wall-mounted case. Terminal blocks are on rear side in panelmeter and inside in wall-mounted case. At the front panel there are four buttons for setting up all functions and LEDs for indication of limits (max. four) and LED for alarm. The device operates in the following modes: linear, square, root and user defined (max. 20 points). All settings are saved in EEPROM memory.

### FEATURES OF VARIANTS

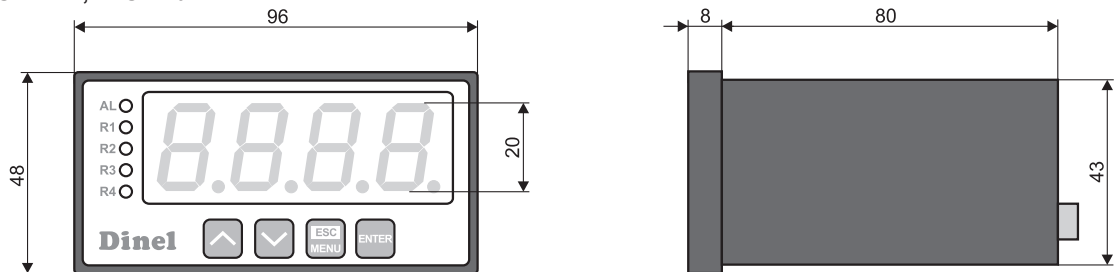
- PDU-420-W (A)** **2 relay outputs, wall-mounted case.** Power supply voltage 230 V or 24 V, communication interface RS-485 / Modbus RTU, support IR remote control RCW-1.
- PDU-420-P (B)** **2 relay outputs, front panel performance.** Power supply voltage 230 V or 24 V, communication interface RS-485 / Modbus RTU.
- PDU-421-P (B)** **2 relay outputs, front panel performance.** Power supply voltage 230 V or 24 V, communication interface RS-485 / Modbus RTU, support isolated analog output signal 4 ... 20 mA.
- PDU-440-P (B)** **4 relay outputs, front panel performance.** Power supply voltage 230 V or 24 V, communication interface RS-485 / Modbus RTU.
- RCW-1 (C)** **Infrared remote control** for settings parameters of unit without opening the tight case. Only for PDU-420-W unit. For detailed information see "Accessories" datasheet.

# DIMENSIONAL DRAWING

PDU-420-W



PDU-420-P, PDU-421-P, PDU-440-P

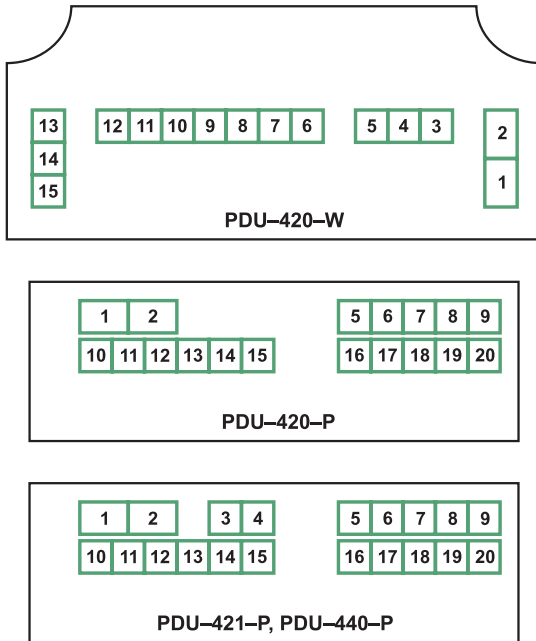


TECHNICAL SPECIFICATIONS			
		PDU-420-W	PDU-420-P, PDU-421-P, PDU-440-P
Mounting		Wall-mounted case	Front panel performance
Nominal supply voltage	Version 230 V Version 24 V	230 V AC ± 10% 24 V DC ± 15%	85 ... 260 V AC/DC 19 ... 50 V DC; 16 ... 35 V AC
Nominal power demand	Version 230 V Version 24 V	2.6 VA 4.5 W	4.5 W (4.5 VA)
Input		Current 0/4 ... 20 mA (input current limited to about 40 mA) Voltage 0/1 ... 5 V; 0/2 ... 10 V	
Input resistance		< 65 Ω (Current input); > 50 kΩ (Voltage input)	
Measuring range		from -999 to 9999, plus decimal point	
Accuracy		±0.25% (±one digit in the entire operation range)	
Display type		4 digit, LED, red	
Output		2 (Relay 1A / 250 V AC)	2 or 4 (Relay 1A / 250 V AC)
Sensor power supply output	Version 230 V Version 24 V	24 V DC ± 3 V, Max. 25 mA 24 V DC ± 15%, Max. 100 mA	24 V DC + 5% - 10% / Max. 100 mA
Active current output		-	0 ... 24 mA (PDU-421-P)
Communication interface		RS-485, 8N1 and 8N2, Modbus RTU, not separated	
Baud rate		1 200 ... 115 200 bit/s	
Ambient temperature range		0 ... +50°C; (-20 ... +50°C)*	0 ... +50°C
Storage temperature range		-10 ... +70°C; (-20 ... +70°C)*	-10 ... +70°C
Protection class	Front panel Terminals protection	IP65 IP65	IP40 (Standard); IP65 (Option)** IP20
Housing material		ABS + glass fibre	Noryl – GFN2S E1
Weight		Approx. 340 g	Approx. 210 g

\* Extra charge

\*\* With additional frame

## TERMINAL BLOCK



Term. No.	PDU-420-W	PDU-420-P	PDU-421-P	PDU-440-P
1	L / + (230 / 24V)	L / + (230 / 24V)	L / + (230 / 24V)	L / + (230 / 24V)
2	N / - (230 / 24V)	N / - (230 / 24V)	N / - (230 / 24V)	N / - (230 / 24V)
3	RE 2		- (Analog output)	RE 4
4	RE 2 / RE 1		+ (Analog output)	RE 4
5	RE 1	+U <sub>s</sub>	+U <sub>s</sub>	+U <sub>s</sub>
6	GND	GND	GND	GND
7	+U <sub>s</sub>	GND (RS 485)	GND (RS 485)	GND (RS 485)
8		B - (RS 485)	B - (RS 485)	B - (RS 485)
9	+ IN (Voltage)	A + (RS 485)	A + (RS 485)	A + (RS 485)
10	+ IN (Current)	RE 1	RE 1	RE 1
11	GND	RE 1	RE 1	RE 1
12		RE 2	RE 2	RE 2
13	GND (RS 485)	RE 2	RE 2	RE 2
14	B - (RS 485)			RE 3
15	A + (RS 485)			RE 3
16				
17		+ IN (Voltage)	+ IN (Voltage)	+ IN (Voltage)
18		+ IN (Current)	+ IN (Current)	+ IN (Current)
19		GND	GND	GND
20				

## ELECTRICAL CONNECTION

The unit is not equipped with an internal fuse or power supply circuit breaker. Because of this an external time-delay cut-out fuse with a small nominal current value must be used (recommended bipolar, max. 2A) and a power supply circuitbreaker located near the unit. In the case of using a monopolar fuse it must be mounted on the phase cable (L).

The power supply network cable diameter must be selected in such a way that in the case of a short circuit of the cable from the side of the unit the cable shall be protected against destruction with an electrical installation fuse.

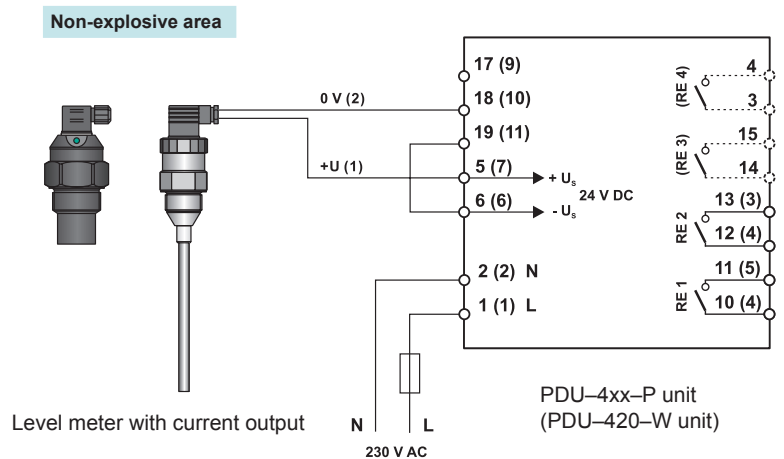


Fig. 1: Connection of 2-wire level meter with **current output** in **non-explosive area**

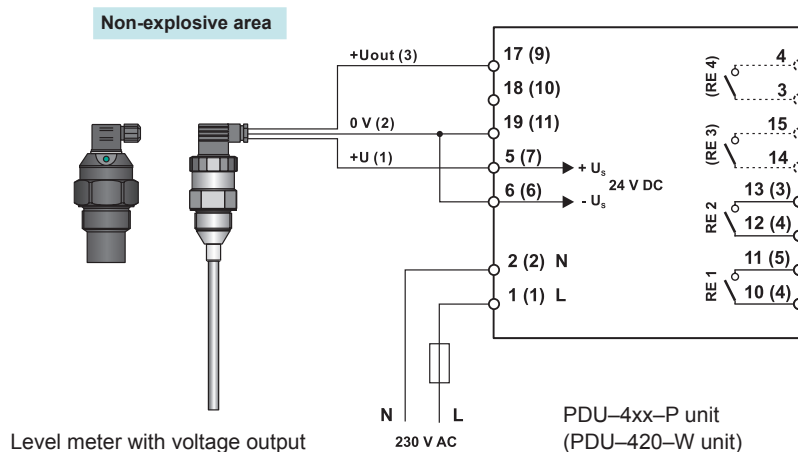


Fig. 2: Connection of 3-wire level meter with **voltage output** in **non-explosive area**

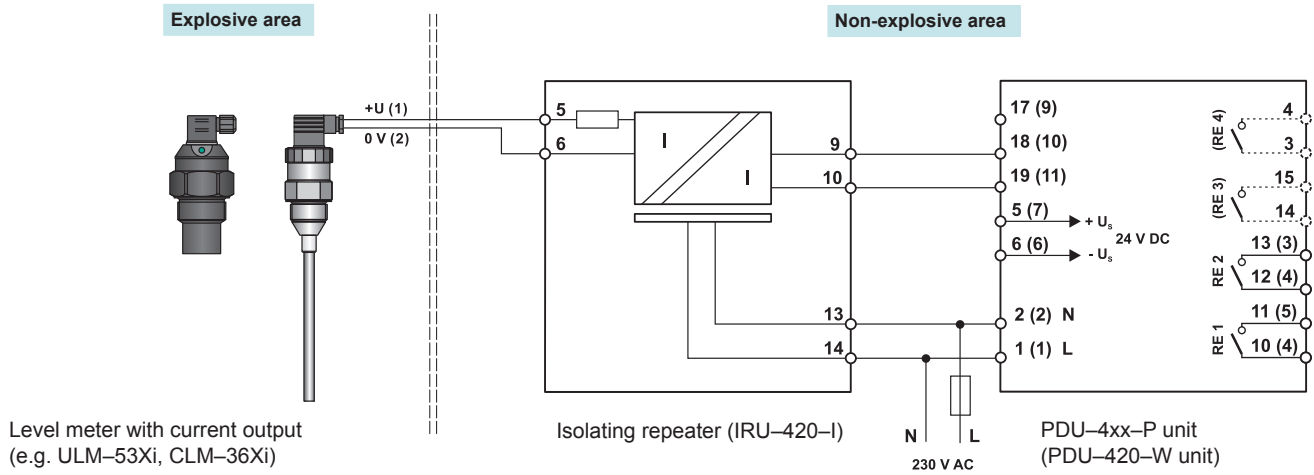


Fig. 3: Connection of 2-wire level meter with **current** output in **explosive area**

## STATUS SIGNALIZATION

LED indicators	Colour	For type	Function
"AL"	Red	All	<b>Shines</b> – Reaction for critical situation of terminal „+IN“ (user defined) <b>Dark</b> – Correct function
"R 1"	Red	All	<b>Shines</b> – The output relay RE 1 is closed <b>Dark</b> – The output relay RE 1 is open
"R 2!"	Red	All	<b>Shines</b> – The output relay RE 2 is closed <b>Dark</b> – The output relay RE 2 is open
"R 3"	Red	PDU-440-P	<b>Shines</b> – The output relay RE 3 is closed <b>Dark</b> – The output relay RE 3 is open
"R 4"	Red	PDU-440-P	<b>Shines</b> – The output relay RE 4 is closed <b>Dark</b> – The output relay RE 4 is open

## ORDER CODE

PDU- [ ] - [ ] - [ ]	Supply voltage:	<b>230V</b> – 230V AC/DC * <b>24V</b> – 24V AC/DC *
	Mounting:	<b>W</b> – Wall mounted case (only PDU-420-W) <b>P</b> – Front panel performance
	Type of unit:	<b>420</b> – 2 relay output (RE 1 and RE 2) <b>421</b> – 2 relay output (RE 1 and RE 2), analog output 4 ... 20 mA <b>440</b> – 4 relay output (RE 1, RE 2, RE 3 and RE 4)

\* See "Technical specifications" table for nominal supply voltage range

## CORRECT SPECIFICATIONS EXAMPLE

PDU-420-W-230V

(420) 2 relay output; (W) Wall-mounted case; (230V) Supply voltage range 230V AC ± 10%.

PDU-421-P-230V

(421) 2 relay output; (P) Front panel performance; (230V) Supply voltage range 85 ... 260V AC/DC.

PDU-440-P-24V

(440) 4 relay output; (P) Front panel performance; (24V) Supply voltage range 19 ... 50V DC (16 ... 35V AC).

## ACCESSORIES

### Standard (included in the unit price)

- 2 pcs of panel thickness mounting brackets (only for PDU-4xx-P)

### Optional (for extra charge)

- Infrared remote control RCW-1 (only for PDU-420-W)
  - Additional frame for IP65 protection class (only for PDU-4xx-P)
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## SAFETY, PROTECTION AND COMPATIBILITY

Electrical equipment of protection group II. Connection to mains only through fuse or overcurrent circuit breaker (Max. 2 A).  
Electrical safety according to EN 61010. EMC according to EN 61326.