

# P30U TRANSDUCER OF TEMPERATURE AND STANDARD SIGNALS

## FEATURES:

- MOD BUS Slave
- MOD BUS Master
- MOD BUS Monitor
- eCon Program
- SD/SDHC
- Firmware upgrade
- 21 points charact.
- RTC
- Password protection
- Ethernet
- www ftp

## INPUT:

- °C
- Ω
- DC
- RS 485

## OUTPUT:

- ↗
- ↘
- ⊕
- RS 485

## GALVANIC ISOLATION:

- ↔
- ↔
- Supply
- RS 485
- Ethernet

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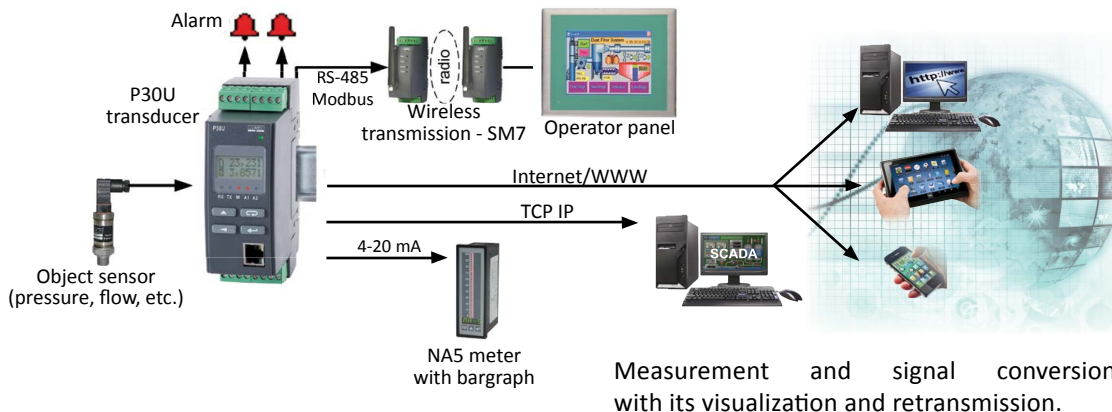
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✓ **NOTICE!**  
**NEW**  
functions!



- Universal measuring input.
- Version: standard, with SD card, **with Ethernet and internal memory.**
- Mathematical functions, i.a. **median filter function on measured value.**
- Individual characteristic (up to 21 points).
- 1 or 2 (option) alarm output.
- Built-in power supply of object transducers 24V d.c. (option).
- RS-485 interface Modbus RTU Slave, RTU Master or Monitor.
- **Modbus TCP Slave (option).**
- **Possibility to record one measuring value and simultaneously up to 50 read-out/ written values via RS-485 Modbus Master.**
- Data recording in internal memory, up to 4MB or in external SD/SDHC card or **internal file system memory (8 GB) (option).**
- Transducer programmable using buttons, eCon freeware (through RS-485 or **Ethernet**) or **any web browser (through Ethernet).**
- Firmware upgradeable by the user.

## EXAMPLE OF APPLICATION:



## INPUT

Input type	Nominal measuring range Z	Coefficient k *	Input type	Range	Minimal sub-range with class preservation
Voltage 10 V	-10...10 V	4	Thermocouple J type	0...400 °C	1
Voltage 24 V	-24...24 V	5		-200...1200 °C	2
Current	-20...20 mA	10	Thermocouple K type	0...400 °C	1
Resistance 400	0...400 Ω	4		-200...1370 °C	2
Resistance 2000	0...2000 Ω	2	Thermocouple S type	0...1760 °C	2
Resistance 5500	0...5500 Ω	2	Thermocouple N type	-20...420 °C	1
Pt100	-200...850 °C	5		-200...1300 °C	1
Pt250	-200...600 °C	4	Thermocouple E type	-40...260 °C	1
	-200...850 °C	3		-200...1000 °C	2
Pt500	-200...180 °C	3	Thermocouple R type	0...1760 °C	2
	-200...850 °C	3	Thermocouple T type	-200...400 °C	1
Pt1000	-200...250 °C	4	Thermocouple B type	400...1800 °C	1
	-200...850 °C	2			
Ni100	-60...180 °C	1	RS-485	In the Master mode of RS-485 interface, the transducer can poll <b>up to 50 registers</b> from one device, with implemented Modbus protocol, using RS-485 interface. In this mode, it is not possible to poll the transducer by another Master device.  In the Master mode of RS-485 interface, the transducer can monitor activity of the RS-485 connection and react (accept as a measured value) to the value of the frame of the selected slave device. The transducer can analyze <b>up to 50 registers from one device</b> . In this mode, it is not possible to poll the transducer by another Master device.	
Ni1000	-60...150 °C	2			
Ni100-LG	-60...180 °C	1			
Ni1000-LG	-60...180 °C	2			
Cu100	-50...180 °C	1			
Voltage mV	-5...20 mV	1			
	-75...75 mV	4			
	-200...200 mV	4			

Accuracy class = 0.1 with the exception of N, E and T thermocouples, where accuracy class = 0.2 and S, R, and B thermocouples, where accuracy class = 0.5.

k\* coefficient of narrowing the measuring range with keeping the accuracy class.

**NOTE:** Minimal sub-range with keeping the accuracy class is z/k (it is freely programmable).

**Example:** 10 Z = -10...10V;

k = 10

Z/k = 2 V, so the minimal sub-range can be e.g. -1...1 V; 0...2 V; 5...7 V

## OUTPUT

Output type	Properties	Remarks
Analog	Current: 0/4...20 mA, load resistance ≤ 500 Ω Voltage: 0...10 V, load resistance ≥ 500 Ω	accuracy class: 0.1
Relay	1 or 2 relays; voltageless contacts – NO – maximum load 5A 30V d.c., 250V a.c.	
Supplying output	24 V d.c. / 30 mA (option)	

## DIGITAL INTERFACE

Interface type	Protocol	Baud rate
RS-485	Modbus RTU: 8N2, 8E1, 8O1, 8N1; Address 1...247	4.8, 9.6, 19.2, 38.4, 57.6, 115.2, 230.4, 256 kbit/s

## EXTERNAL FEATURES

Overall dimensions	45 x 120 x 100 mm	
Weight	< 0.25 kg	
Protection grade	for housing: IP40/ IP30	for terminals: IP20
Readout field	LCD 2 x 8	

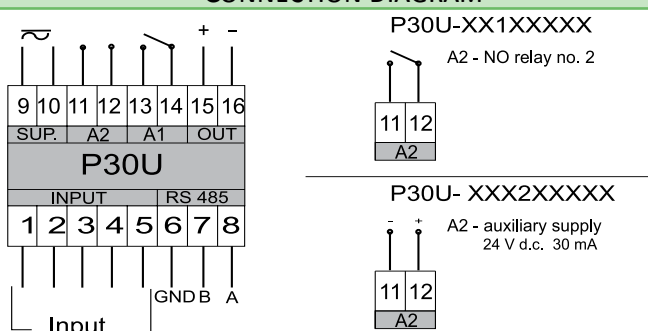
## RATED OPERATION CONDITIONS

Supply voltage	<ul style="list-style-type: none"> <li>85...253 V d.c. / a.c. (40...400 Hz)</li> <li>20...40 V a.c. (40...400 Hz) or 20...60 V d.c.</li> </ul>	Power consumption < 6 VA
Temperature	ambient: -25...23...+55°C	storage: -30...+70°C
Relative humidity	25...95 %	inadmissible condensation
Working position	any	

## SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	noise immunity	acc. EN 61000-6-2
	noise emissions	acc. EN 61000-6-4
Isolation between circuits	basic	acc. EN 61010-1
Pollution level	2	
Installation category	III	acc. EN 61010-1
Maximal phase-to-earth voltage	<ul style="list-style-type: none"> <li>for supply circuits 300 V</li> <li>for other circuits 50 V</li> </ul>	
Altitude above sea level	< 2000 m	

## CONNECTION DIAGRAM



## ORDERING

	P30U -	X	X	X	XX	X	X
<b>Analog output:</b>							
current (range 0/4...20 mA)		1					
voltage (0...10 V)		2					
<b>Additional equipment:</b>							
without any		0					
with external SD/SDHC slot		1					
with Ethernet interface and internal file system memory		2					
<b>Addition output:</b>							
NO relay, 5 A 30 V d.c., 250 V a.c.			1				
supply 24 V d.c. / 30 mA			2				
<b>Supply:</b>							
85...253 V a.c./d.c.			1				
20...40 V a.c., 20...60 d.c.			2				
<b>Version:</b>							
standard				00			
custom-made*				XX			
<b>Language version:</b>							
Polish					P		
English					E		
other*					X		
<b>Acceptance tests:</b>							
without extra requirements						0	
with an extra quality inspection certificate						1	
according to customer's request*						X	

### ACCESSORIES:

SD CARD	
Capacity	Ordering code
1 GB	20-199-00-00023
2 GB	20-199-00-00025

### Order example:

Code P30U-111100P0 means transducer execution with current output, slot for SD/SDHC card, with 2 alarm relays, 85...253 V a.c. / d.c. (40...400 Hz) power supply, standard version, Polish language, without extra requirements.

\* after agreeing with the manufacturer.

## SEE ALSO:



Temperature sensors



N30U meter



LUMEL - PROCESS software

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