

# P30U TRANSDUCER OF TEMPERATURE AND STANDARD SIGNALS

## FEATURES:

- MOD BUS Slave
- MOD BUS Master
- MOD BUS Monitor
- eCon
- 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

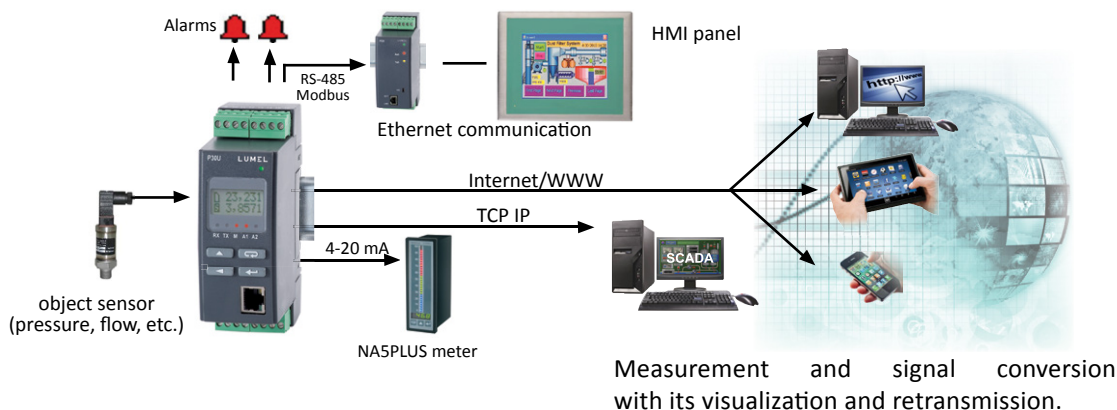
Export department:  
+48 68 45 75 139/ 233/  
276/ 386  
Fax: +48 68 32 54 091  
e-mail: export@lumel.com.pl

LUMEL S.A.  
ul. Sulechowska 1  
65-022 Zielona Góra  
POLAND  
**WWW.LUMEL.COM.PL**



- 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 up to 50 registers 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.			
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				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 up to 50 registers from one device. In this mode, it is not possible to poll the transducer by another Master device.	
	-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	

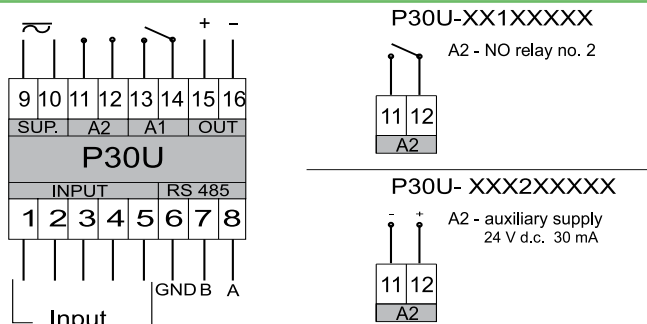
## RATED OPERATION CONDITIONS

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.

For more information about LUMEL products please visit our website:  
[www.lumel.com.pl](http://www.lumel.com.pl)

**Export department:**  
+48 68 45 75 139/ 233/  
276/ 386  
Fax: +48 68 32 54 091  
e-mail: [export@lumel.com.pl](mailto:export@lumel.com.pl)

LUMEL S.A.  
ul. Sulechowska 1  
65-022 Zielona Góra  
POLAND  
[WWW.LUMEL.COM.PL](http://WWW.LUMEL.COM.PL)