

# N30U DIGITAL PANEL METER

## Features

three-colour display

LPConfig Program

MOD BUS

RTC

21 points character

Password protection

IP65

## Inputs

10..10 V

20..20 mA

60 mV

60 mV

## Outputs

0..20 mA

0..10 V

2x

2x

RS 485

## Galvanic Isolation

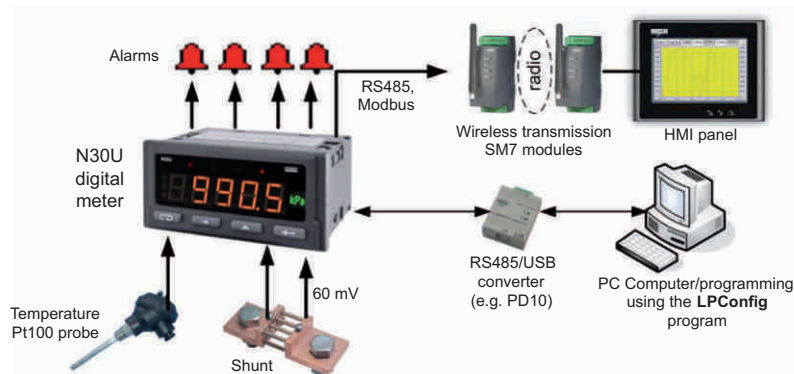
Supply

RS 485



- Measurement: temperature, resistance, standard signals.
- 3-colour display (14 mm high), programmable in 3 ranges of the measured value.
- Meter programming from keyboard or through the RS-485 interface by means of the free LPConfig program.
- 4 alarm outputs with signalling on LED diodes, working in 6 different modes.
- Conversion of any measured value into an analog signal 0/4...20 mA or 0...10 V.
- Storage of minimal and maximal values for all measured quantities.
- Supply of object transducers (ver. N30U-1XXXXXX).
- 21-point individual characteristic for the measured value.

## Example of Application



Measurement and visualization of analog standard signals: Pt100, TC, 20 mA, 60 mV, 10 V. Measured parameters are transmitted to the HMI operator panel through radio modules.

## Input

Input kind	Maximal measuring range	Class	Additional error
Pt100	-205...855°C (-200...850°C)	0.1	- due to automatic compensation of the reference junction temperature 1°C
Pt500			
Pt1000			
400 Ω	0...410 Ω (0...400 Ω)		- due to automatic compensation of the cable resistance for thermoresistors 0,5°C
4000 Ω	0...4010 Ω (0...4000 Ω)		
Thermocouple of J type	-200...1200 °C (-100...1200 °C)		
Thermocouple of K type	-200...1370 °C (-100...1370 °C)		
Thermocouple of N type	-200...1300 °C (-100...1300 °C)		
Thermocouple of E type	-200...1000 °C (-100...1000 °C)		
Thermocouple of R type	-50...1768 °C (-50...1760 °C)		
Thermocouple of S type	-50...1768 °C (-50...1760 °C)		
Voltage input 0...10 V	-13...13 V (-10...10 V)	- due to automatic compensation of the cables for resistance measurement 0,2Ω	
Current input	-24...24 mA (-20...20 mA)		
Voltage input	-10...63 mV (0...60 mV)		
Current time	00.00...23.59		0.5 sec./ 24h

## Outputs

Output kind	Properties	Remarks
Relay output	<ul style="list-style-type: none"> <li>• 2 x relays, voltageless NOC contacts load-carrying capacity 250 V a.c./ 0.5 A a.c.</li> <li>• 2 x relays, voltageless switched contacts load-carrying capacity 250 V a.c./ 0.5 A a.c.</li> </ul>	
Analog output	<ul style="list-style-type: none"> <li>• current programmable 0/4...20mA, load resistance ≤ 500 Ω</li> <li>• voltage programmable 0...10 V load resistance ≥ 500 Ω</li> </ul>	Error of analog output: <b>0.2% of the set range</b> Additional error from temperature changes: <b>50% of the class/10K</b>
OC output	• typu OC, passive npn, 30 V d.c./30 mA	Voltageless output
Auxiliary supply	• 24 V d.c./ 30mA	only for meter version: N30U-1XXXXXX

## Digital Interface

Interface type	transmission protocol	modes	baud rates
RS-485	MODBUS RTU	8N2, 8E1, 8O1, 8N1	4.8, 9.6, 19.2, 38.4, 57.6, 115.2 kbit/s



# N30U DIGITAL PANEL METER

## External Features

Readout field	5 digit LED display - indication range -19999..99999 digit height: 14 mm	three-color display (colour changes depending on displayed value): red, green, orange
Weight	< 0.2 kg	
Dimensions	96 ´ 48 ´ 93 mm	Panel cut-out: 92 <sup>+0,6</sup> ´ 45 <sup>+0,6</sup> mm
Protection grade (acc. to EN 60529)	from frontal side: IP65	from rear side: IP 10

## Rated Operating Conditions

Supply voltage	85...253 V a.c. (40...400 Hz) or d.c., 20...40 V a.c. (40...400 Hz), 20...60 V d.c.	power consumption < 6 VA
Temperature	ambient: -25...23...55°C	storage: -30...70°C
Relative humidity	25...95%	condensation inadmissible
Operating position	any	
External magnetic field	0...400 A/m	

## Safety And Compatibility Requirements

Electromagnetic compatibility	Noise immunity	acc. to EN 61000-6-2
	Noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic	acc. to EN 61010-1
Pollution grade	2	
Installation category	III	
Maximal phase-to-earth operating voltage	for the supply circuit: 300 V for remaining circuits: 50 V	
Altitude above sea level	< 2000 m	

## Connection Diagrams

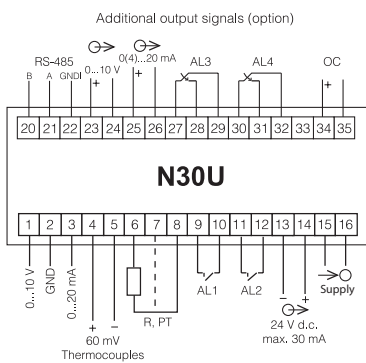


Fig. 1 Description of signals on connection strips.

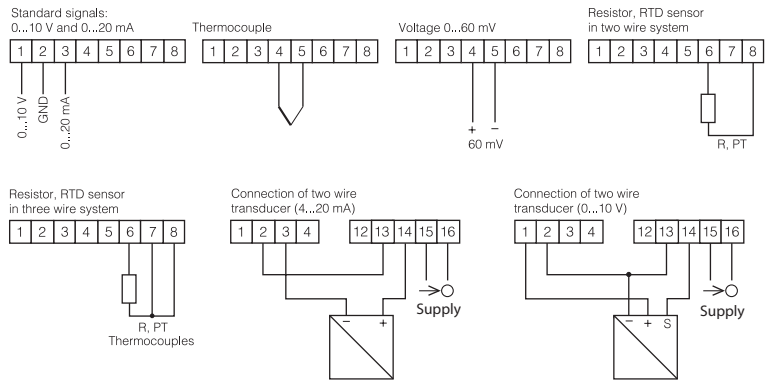


Fig. 2 Ways of the meter connection.

See Also



KD7 recorder with MODBUS master protocol for recording data measured by N30U.



Shunts for measurement DC current from 5A up to 15 kA. For more details see our ANALOG METERS catalogue.

## Ordering

Table 1. Ordering codes:

N30U -	X	X	XX	XX	X	X
<b>Supply:</b>						
85...253 V AC (40...400Hz); 90...320 VDC	1					
20...40 V AC (40...400Hz); 20...60 V DC	2					
<b>Additional outputs:</b>						
lack	0					
OC output, RS485 (port 2), analog outputs	1					
OC output, RS485, analog outputs						
switched-over relay outputs	2					
<b>Unit:</b>						
unit code Acc. to the table 1			XX			
<b>Version:</b>						
standard			00			
custom-made*			XX			
<b>Language:</b>						
Polish					P	
English					E	
other*					X	
<b>Acceptance tests:</b>						
Without extra requirements						8
With an extra quality inspection certificate						7
Acc. to customer's request*						X

Order example: The code N30U - 1 0 26 00 E 0 means  
**N30U** - programmable N30U digital panel meter  
**1** - supply: 85...253 V a.c./d.c.  
**0** - lack of additional outputs  
**26** - unit "C" acc. to table 2  
**00** - standard option  
**E** - English language  
**0** - without extra requirements

Table 2. Codes of highlighted unit:

Code	Unit	Code	Unit	Code	Unit
00	lack of unit	20	kVAh	40	szt.
01	V	21	MVAh	41	imp
02	A	22	Hz	42	rps
03	mV	23	kHz	43	m/s
04	kV	24	Ω	44	l/s
05	mA	25	kΩ	45	obrot/ymin
06	kA	26	°C	46	rpm
07	W	27	°F	47	mm/min
08	kW	28	K	48	m/min
09	MW	29	%	49	l/min
10	var	30	%RH	50	m³/min
11	kvar	31	pH	51	pcs/h
12	Mvar	32	kg	52	m/h
13	VA	33	bar	53	km/h
14	kVA	34	m	54	m³/h
15	MVA	35	l	55	kg/h
16	kWh	36	s	56	l/h
17	MWh	37	h		
18	kvarh	38	m³	XX	on order*
19	Mvarh	39	obrot/y		

\* - after agreeing with the manufacturer