

# N30P DIGITAL PANEL METER

## FEATURES:

- 3-colour display**
- LPConfig compatible**
- MOD BUS**
- RS 485**
- Password protection**
- RTC**

**IP65**

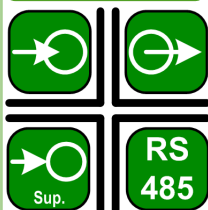
## INPUTS:



## OUTPUTS:

- 0...20 mA**
- 0...10 V**
- 2x**
- 2x**

## GALVANIC ISOLATION:



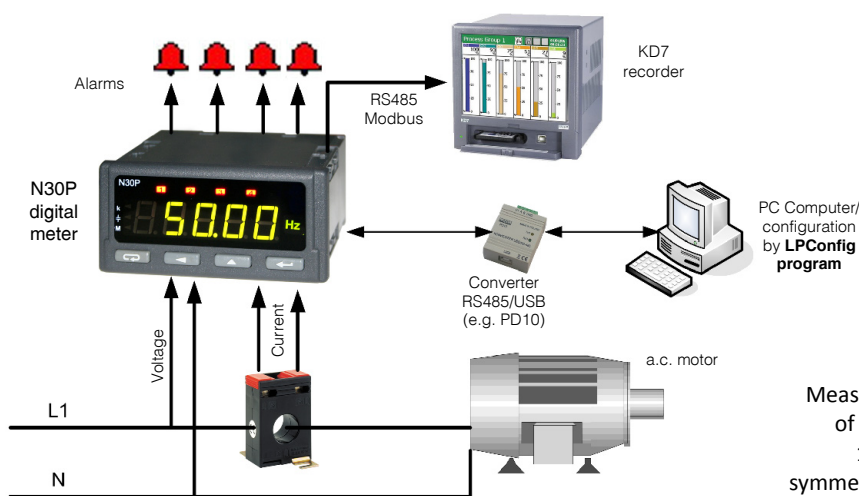
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- Measurement of single-phase network parameters: voltage, current, active, reactive and apparent power,  $\cos\phi$ ,  $\text{tg}\phi$ ,  $\phi$ , frequency, active, reactive and apparent energy, 15 minutes' active power, 10 minutes' voltage, 10 seconds' frequency.
- Three-colour display (14 mm high), in three intervals of the measured value.
- Meter programming from the keyboard or through the RS485 interface by means of the free delivered LPConfig program.
- Four alarm outputs with signalling by LED diodes, operating in 6 different modes.
- Storage of minimal and maximal values for all measured quantities.
- Conversion of any measured value into a 0/4...20 mA or 0...10 V analog signal.

## EXAMPLE OF APPLICATION



Measurement and recording of energy consumption in 1-phase or three-phase symmetrically loaded network

## INPUTS

Input kind	Measuring range	Min...max signal value	Ratio values
Voltage input	0...100 V or 0...400 V	0.05...1.2 Un	0.1...4000.0
Current input	0...1 A or 0...5 A	0.005...1.2 In	1...10000

## MEASURING RANGES

Measured value	Indication range	Measuring range	Basic error
Current 1 A/5 A	0.000...60 kA	0.02...6 A a.c.	± 0.2%
Voltage 100 V/400 V	0.0...192 MV	1...480 V a.c.	± 0.2%
Frequency	45.00...100.00 Hz	45.00...66.00...100.00 Hz	± 0.2%
Active power	-19999...99999 MW	-2.88 kW...1.40 W...2.88 kW	± 0.5%
Reactive power	-19999...99999 Mvar	-2.88 kvar...1.40 var...2.88 kvar	± 0.5%
Apparent power	0.00...99999 MVA	1.40 VA...2.88 kVA	± 0.5%
Coefficient PF	-1...1	-1...0...1	± 0.5%
Tangens $\phi$	-1.2...1.2	-1.2...0...1.2	± 1%
$\phi$	0...359	0...359	± 1%
Active energy	0...9 999 999.9 kWh	0...9 999 999.9 kWh	± 0.5%
Reactive energy	0...9 999 999.9 kVarh	0...9 999 999.9 kVarh	± 0.5%
Apparent energy	0...9 999 999.9 kVA	0...9 999 999.9 kVA	± 0.5%
Current time	0.00...23.59	0.00...23.59	1 sec/ 24 h

## OUTPUTS

Output kind	Properties
Relay output	<ul style="list-style-type: none"> <li>• 2 x relays, voltageless NO 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...20 mA, load resistance <math>\leq 500 \Omega</math></li> <li>• voltage programmable 0...10 V, load resistance <math>\geq 500 \Omega</math></li> <li>• resolution 0.01 % of the range</li> </ul>
Energy pulse output	<ul style="list-style-type: none"> <li>• OC type, passive; supply: voltage 18...27 V, current 10...27 mA; A class acc. to EN 62053-31</li> <li>• Output pulse constant: 5000 imp./kWh, independently of Ku and Ki settings</li> </ul>

## DIGITAL INTERFACES

Interface type	Transmission protocol	Modes	Baud rates
RS-485	MODBUS RTU	8N2, 8E1, 8O1, 8N1	4.8; 9.6; 19.2; 38.4 kbit/s

## EXTERNAL FEATURES

Readout field	5 digit LED display - indication range -19999..99999 digit height: 14 mm	three-colour 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 level (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) or d.c.	Power consumption < 6 VA
Temperature	ambient: -25...23...55°C	storage: -30...70°C
Relative humidity	25...95%	condensation inadmissible
Working position	any	
External magnetic field	0...400 A/m	
Short duration overload (5 s)	voltage input: 2Un (max. 1000 V)	current input: 10 In

## SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	Noise immunity	acc. to EN 61000-6-2
	Noise emission	acc. to EN 61000-6-4
Safety requirements		acc. to EN 61010-1

## SCHEMATY POŁĄCZEŃ

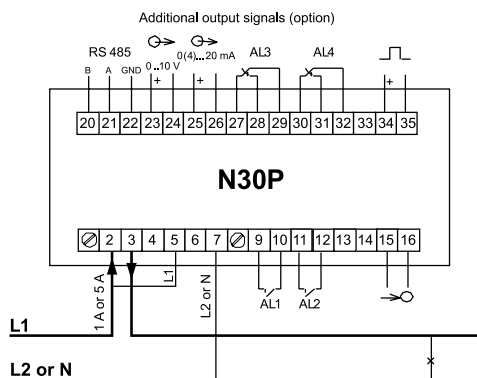


Fig. 1 Electrical connections of the N30P meter for direct measurements.

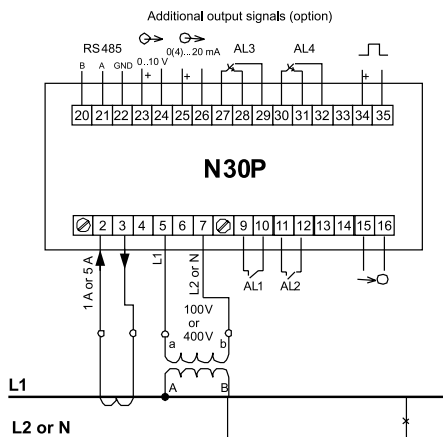


Fig. 2 Electrical connections of the N30P meter for indirect measurements.

## ORDERING

TABLE 1. ORDERING CODES:

	N30P -	X	X	XX	XX	X
Supply voltage:						
85..253 V a.c./d.c.		1				
20..40 V a.c./d.c.		2				
Additional outputs:						
lack			0			
pulse output, RS-485, analog outputs			1			
pulse output, RS-485, analog outputs			2			
switched-over relay outputs						
Unit:						
unit code acc. to the table 2				XX		
Kind of execution:						
standard						00
custom-made*						XX
Acceptance tests:						
without extra requirements						8
with an extra quality inspection certificate						7
acc. to customer's agreements						X

### Order example:

The code **N30P - 1 0 01 00 8** means  
**N30P** - programmable N30P panel digital meter  
**1** - supply: 85..253 V AC/DC  
**0** - lack of additional outputs  
**01** - unit "V" acc. to codes tabel 2  
**00** - standard execution  
**8** - without extra requirements

TABLE 2. CODES OF HIGHLIGHTED UNIT:

Code	Unit	Code	Unit	Code	Unit
00	lack of unit	20	kVAh	40	pcs
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	turns/min
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	m <sup>3</sup> /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	m <sup>3</sup> /h
15	MVA	35	l	55	kg/h
16	kWh	36	s	56	l/h
17	MWh	37	h		
18	kvarh	38	m <sup>3</sup>	XX	on order*
19	Mvarh	39	turns		

\* - the code will be established by the manufacturer

## SEE ALSO:



Free LPConfig software for easy programming. Available on our website



Current transformers with inputs from 5 A up to 6 kA, for more details look at our CURRENT TRANSFORMERS catalogue



N14 meter for measurement of three phase network parameters. For more details look at our MEASUREMENT OF POWER NETWORK PARAMETERS catalogue



For more information about products look at Product Guide 2009 catalogue or visit our website.

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