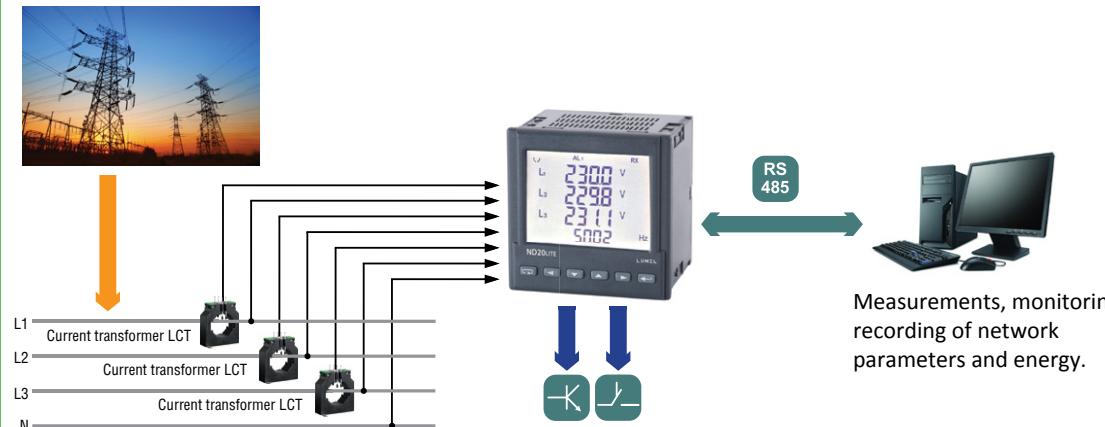


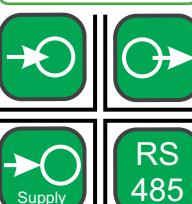
# ND20LITE METER OF NETWORK PARAMETERS

**FEATURES:**


- Measurement of power network parameters in 2,3 or 4-wire balanced and unbalanced systems.
- High accuracy class.
- Indications considering values of programmed ratios.
- THD.
- Backlit LCD 3.5" screen.
- Protection grade from the frontal side: IP65.
- Digital transmission to the master system through the RS-485 interface (MODBUS).
- Configurable alarm and pulse outputs (energy).
- Configuration of displayed pages.

**EXAMPLE OF APPLICATION**

**INPUT:**

**OUTPUTS:**

**GALVANIC ISOLATION:**


**Export department:**  
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353

Fax: +48 68 32 50 091  
e-mail: export@lumel.com.pl

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**MEASURED QUANTITIES AND MEASURING RANGES**

Measured value	Indication range*	Measuring range	L1	L2	L3	$\Sigma$	Basic error
Current In 1 A 5 A	0.00 ... 12 kA	0.002 ... 1.200 A~	•	•	•		$\pm 0.2\% r$
Voltage L-N 57.7 V 69.3 V 230 V	0.0 ... 280 kV 0.0 ... 333.0 kV 0.0 ... 1.104 MV	2.8 ... 70.0 V~ 3.4 ... 84 V~ 11.5 ... 276 V~	•	•	•		$\pm 0.2\% r$
Voltage L-L 100 V 400 V	0.0 ... 480 kV 0.0 ... 1.92 MV	5 ... 120 V~ 20 ... 480 V~	•	•	•		$\pm 0.5\% r$
Frequency	47.0 ... 63.0 Hz	47.0 ... 63.0 Hz	•	•	•		$\pm 0.2\% mv$
Active power	-9999 MW ... 0.00 W ... 9999 MW	-1.65 kW ... 1.4 W ... 1.65 kW	•	•	•		$\pm 0.5\% r$
Reactive power	-9999 Mvar ... 0.00 var ... 9999 Mvar	-1.65 kvar ... 1.4 var ... 1.65 kvar	•	•	•		$\pm 0.5\% r$
Apparent power	0.00 VA ... 9999 MVA	1.4 VA ... 1.65 KVA	•	•	•		$\pm 0.5\% r$
Power factor PF	-1 ... 0 ... 1	-1 ... 0 ... 1	•	•	•		$\pm 1\% r$
Tangent j factor	-10.2 ... 0 ... 10.2	-1.2 ... 0 ... 1.2	•	•	•		$\pm 1\% r$
Cosinus $\Phi$	-1 ... 1	-1 ... 1	•	•	•		$\pm 1\% r$
$\Phi$	-180 ... 180	-180 ... 180	•	•	•		$\pm 0.5\% r$
Imported active energy	0 ... 99 999 999.9 kWh					•	$\pm 0.5\% r$
Exported active energy	0 ... 99 999 999.9 kWh					•	$\pm 0.5\% r$
Reactive inductive energy	0 ... 99 999 999.9 kvarh					•	$\pm 0.5\% r$
Reactive capacitive energy	0 ... 99 999 999.9 kvarh					•	$\pm 0.5\% r$
Apparent energy	0 ... 99 999 999.9 kWh					•	$\pm 0.5\% r$
THD	0 ... 100%	0 ... 100%	•	•	•		$\pm 5\% r$

\* Depending on the set tr\_U ratio (ratio of the voltage transformer: 0.1...4000.0) and tr\_I ratio (ratio of the current transformer: 1...10000)

r - of the range

mv - of the measured value

**OUTPUTS**

Kind of output	Properties
Relay output	• programmable relay output, normally open voltageless contacts, load capacity 250 V~/0.5 A~
Pulse output of active or reactive energy	• 1 OC type, passive

## SEE ALSO:



Free eCon program  
for programming  
LUMEL's products.  
Available on our  
internet website.



Current  
transformers.



P43 - three-phase  
transducer of power  
network parameters.

## DIGITAL INTERFACE

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

## EXTERNAL FEATURES

Readout field	LCD 3.5" screen, specialized, monochromatic with backlit	
Weight	< 0.3 kg	
Overall dimensions	96 x 96 x 77 mm	panel cut-out: 92.5 <sup>+0.6</sup> x 92.5 <sup>+0.6</sup> mm
Protection grade (acc. to EN 60529)	from frontal side: IP65	from terminal side: IP20

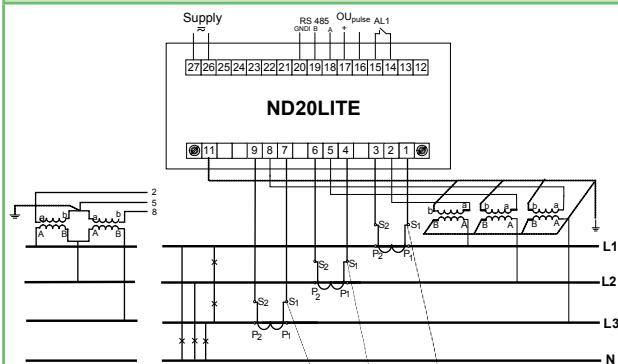
## RATED OPERATING CONDITIONS

Supply voltage	85...253 V a.c., 90...300 V d.c.	
Temperature	ambient: -25...+23...55°C	storage: -30...70°C
Relative humidity	25...95%	inadmissible condensation
Operating position	any	
External magnetic field	0...40...400 A/m	
Short duration overload (1 s)	voltage input: 2Un (max. 1000 V)	current input: 10 In
Power consumption	- in the supply circuit ≤ 6 VA, - in the voltage and current circuits ≤ 0.05 VA	

## SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	noise immunity	acc. to 61326-1 Class A: Industrial env.
	noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic	acc. to EN 61010-1
Installation category	III	
Polution level	2	
Maximal phase-to-earth voltage	- for supply and measuring circuits: 300 V - for other circuits: 50 V	
Altitude a.s.l.	< 2000m	

## ELECTRIC CONNECTIONS



### Connections:

- direct, semi-indirect and indirect one-phase measurement,
- direct measurement in a 3-wire network,
- semi-indirect measurement in a 3-wire network,
- indirect measurement with the use of 3 current transformers and 2 or 3 voltage transformers in a 3-wire network,
- direct measurement in a 4-wire network,
- semi-indirect measurement in a 4-wire network,
- indirect measurement with the use of 3 current transformers and 2 or 3 voltage transformers in a 4-wire network

Fig 1. Meter connection diagrams in a 4-wire network.

## ORDERING

ND20LITE -	X	X	X	XX	X	X
<b>Current input In:</b>						
1 / 5 A	2					
<b>Voltage input (phase/ phase-to-phase) Un:</b>						
3 x 57.7/100 V, 3 x 69.3/120 V, 3 x 230/400 V	2					
<b>Supply voltage:</b>						
85...253 V a.c., 90...300 V d.c.	1					
<b>Version:</b>						
standard	00					
custom-made*	XX					
<b>Language:</b>						
Polish/English	M					
other*	X					
<b>Acceptance tests:</b>						
with an extra quality inspection certificate	1					
with calibration certificate	2					
acc. to customer's request	X					

\* - after agreeing with the manufacturer

### EXAMPLE OF ORDER:

The code ND20LITE 22100M1 means:

**ND20LITE** - meter of network parameters of ND20LITE type  
**2** - programmable input current ranges: 1 A or 5 A  
**2** - input voltage (phase/phase-to-phase) Un =  
 3 x 57.7/100 V, 3 x 69.3/120 V, 3 x 230/400 V  
**1** - supply voltage: 85...253 V a.c./ 90...300 V d.c.  
**00** - standard version  
**M** - Polish/English language version  
**1** - with an extra quality inspection certificate.

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