

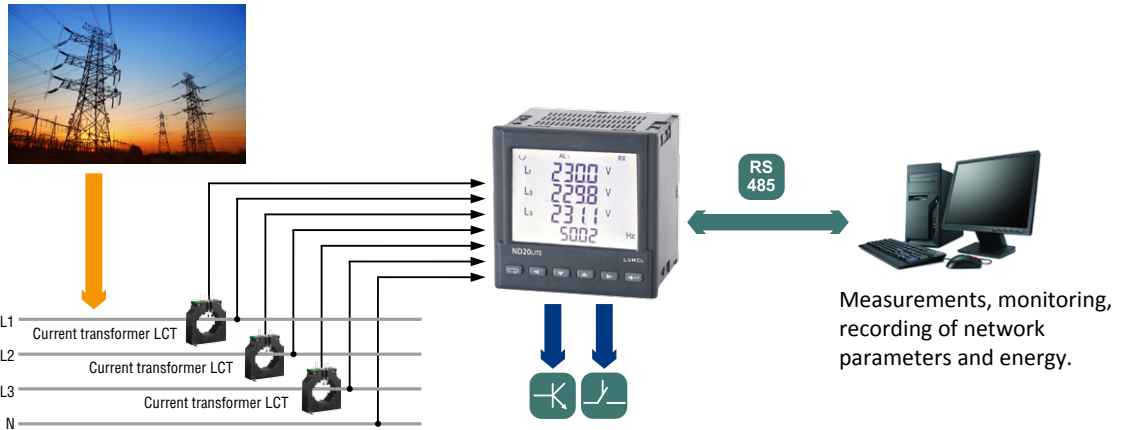
# ND20LITE METER OF NETWORK PARAMETERS

## 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

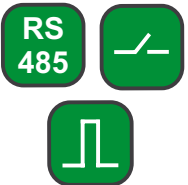


Measurements, monitoring, recording of network parameters and energy.

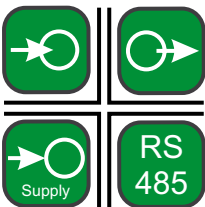
## INPUT:



## OUTPUTS:



## GALVANIC ISOLATION:



## MEASURED QUANTITIES AND MEASURING RANGES

Measured value	Indication range*	Measuring range	L1	L2	L3	Σ	Basic error
Current In 1 A 5 A	0.00 ... 12 kA 0.00 ... 60 kA	0.002 ... 1.200 A~ 0.010 ... 6.000 A~	•	•	•		±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~	•	•	•		±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~	•	•	•		±0.5% r
Frequency	47.0 .. 63.0 Hz	47.0...63.0 Hz	•	•	•		±0.2%mv
Active power	-9999 MW .. 0.00 W .. 9999 MW	-1.65 kW...1.4 W...1.65 kW	•	•	•	•	±0.5% r
Reactive power	-9999 Mvar .. 0.00 var ... 9999 Mvar	-1.65 kvar...1.4 var...1.65 kvar	•	•	•	•	±0.5% r
Apparent power	0.00 VA .. 9999 MVA	1.4 VA...1.65 kVA	•	•	•	•	±0.5% r
Power factor PF	-1 .. 0.. 1	-1...0...1	•	•	•	•	±1% r
Tangent j factor	-10.2...0...10.2	-1.2...0...1.2	•	•	•	•	±1% r
Cosinus φ	-1... 1	-1... 1	•	•	•	•	±1% r
φ	-180 ... 180	-180 ... 180	•	•	•		±0.5% r
Imported active energy	0 .. 99 999 999.9 kWh					•	±0.5% r
Exported active energy	0 .. 99 999 999.9 kWh					•	±0.5% r
Reactive inductive energy	0 .. 99 999 999.9 kvarh					•	±0.5% r
Reactive capacitive energy	0 .. 99 999 999.9 kvarh					•	±0.5% r
Apparent energy	0 .. 99 999 999.9 kVAh					•	±0.5% r
THD	0 .. 100%	0 .. 100%	•	•	•		±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

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## 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 backlight		
Weight	< 0.3 kg		
Overall dimensions	96 × 96 × 77 mm	panel cut-out: 92.5 <sup>+0.6</sup> × 92.5 <sup>+0.6</sup> mm	
Protection grade (acc. to EN 60529)	from frontal side: IP65	from terminal side: IP20	

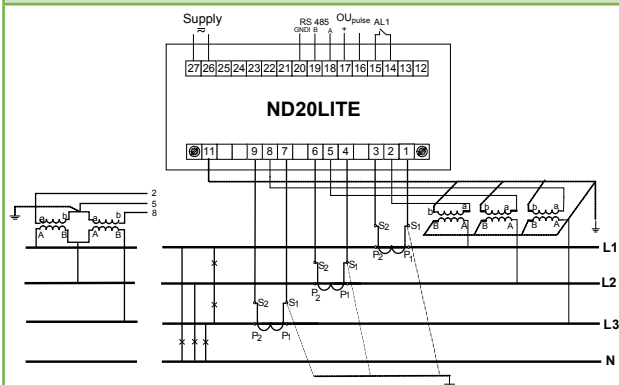
## RATED OPERATING CONDITIONS

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	
Installation category	III	
Pollution 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

Code	Description
<b>ND20LITE22100M1*</b>	3-phase power network meter ND20LITE current input 1A/5A, X/1A, X/5A, voltage input 3x57,7/100V, 3x69,3/120V, 3x230/400V RS-485 interface, supply 85-253Va.c. or 90-300V d.c., documentation and descriptions in Polish and English version, test certificate

\* Upon agreement, an option to order a calibration certificate for the product is available against payment. Then, in the execution code, in the place of the last character, enter the digit **2**, e.g. **ND20LITE22100M2**. The customer will then receive a standard test certificate and a calibration certificate (against payment).

## 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.

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

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