

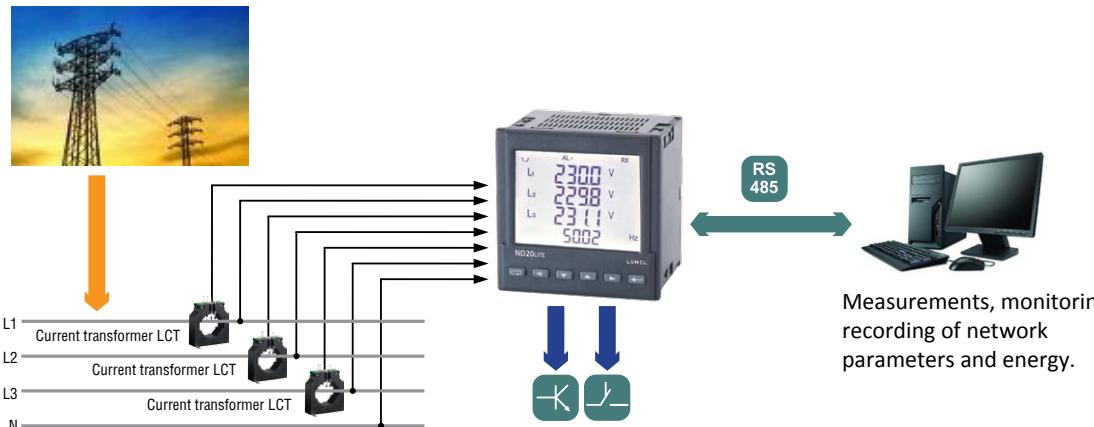
ND20LITE METER OF NETWORK PARAMETERS

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.

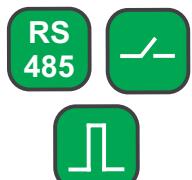
EXAMPLE OF APPLICATION



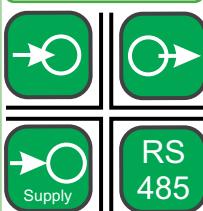
INPUT:



OUTPUTS:



GALVANIC ISOLATION:



Export department:
+48 68 45 75 139/321/368
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

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 \sim 0.010 ... 6.000 A \sim	•	•	•	$\pm 0.2\%$ r
Voltage L-N	57,7 V 230 V	0.0 ... 280 kV 0.0 ... 1.104 MV	2.8 ... 70.0 V \sim 11.5 ... 276 V \sim	•	•	•	$\pm 0.2\%$ r
Voltage L-L	100 V 400 V	0.0 ... 480 kV 0.0 ... 1.92 MV	5 ... 120 V \sim 20 ... 480 V \sim	•	•	•	$\pm 0.5\%$ 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 ϕ		-1.2 ... 0 ... 1.2	-1.2 ... 0 ... 1.2	•	•	•	$\pm 1\%$ r
Cosinus ϕ		-1 ... 1	-1 ... 1	•	•	•	$\pm 1\%$ r
ϕ	-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%	•	•	•		$\pm 5\%$

* 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 \sim /0.5 A \sim
Pulse output of active or reactive energy	• 1 OC type, passive

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 × 96 × 77 mm	panel cut-out: 92.5 ^{+0.6} × 92.5 ^{+0.6} mm
Protection grade (acc. to EN 60529)	from frontal side: IP65	from terminal side: IP20

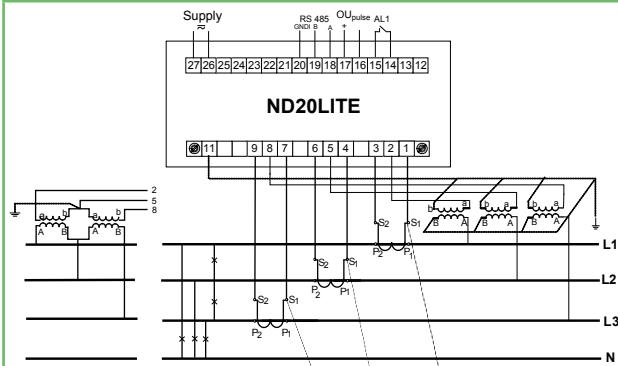
RATED OPERATING CONDITIONS

Supply voltage	85...253 V a.c., 90...300 V d.c., 20...40 V a.c., 20...60 V d.c.	
Temperature	ambient: -25...+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 EN 61000-6-2
	noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic	
Installation category	III	
Polution level	2	
Maximal phase-to-earth voltage	- for supply and measuring circuits: 300 V - for other circuits: 50 V	acc. to EN 61010-1
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
Current input In:						
1 A (X/1)	1					
5 A (X/5)	2					
Voltage input (phase/ phase-to-phase) Un:						
3 x 57.7/100 V	1					
3 x 230/400 V	2					
Supply voltage:						
85...253 V a.c., 90...300 V d.c.	1					
20...40 V a.c., 20...60 V d.c.	2					
Version:				00		
standard				00		
custom-made*				XX		
Language:					P	
Polish					E	
English					X	
other*						
Acceptance tests:				0		
without extra quality requirements				1		
with an extra quality inspection certificate				X		
acc. to customer's request						

* - after agreeing with the manufacturer

EXAMPLE OF ORDER:

The code ND20LITE - 2 2 1 00 E 0 means:

ND20LITE - meter of network parameters of ND20LITE type
 2 - current input: 5A (X/5)
 2 - input voltage (phase/phase-to-phase) Un =
 3 x 230 V / 400 V
 1 - supply voltage: 85...253 V a.c. / 90...300 V d.c.
 00 - standard version
 E - all descriptions and user's manual in English
 0 - without extra quality requirements.

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

Export department:
 +48 68 45 75 139/ 321/ 368
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