

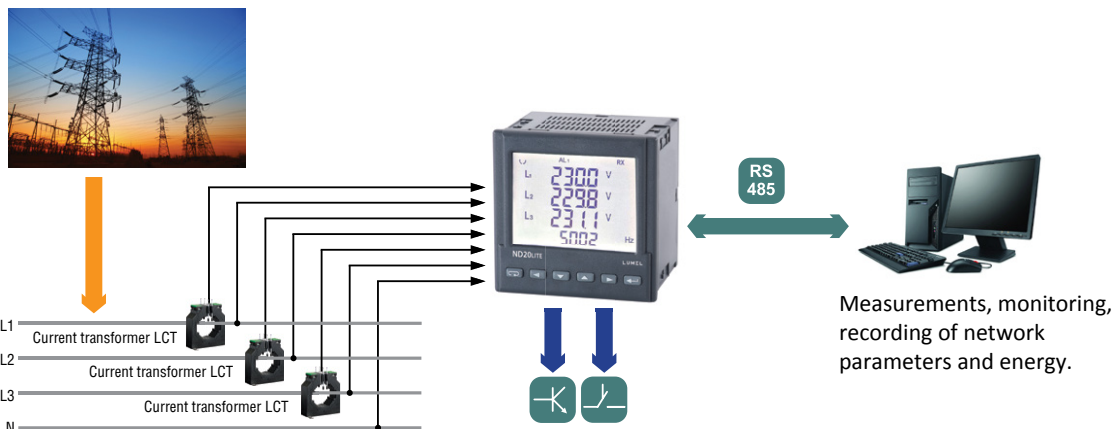
ND20LITE METER OF NETWORK PARAMETERS

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.

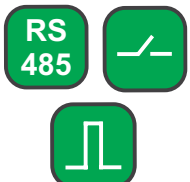
EXAMPLE OF APPLICATION



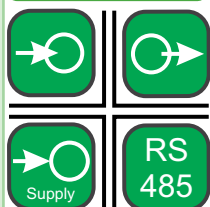
INPUT:



OUTPUTS:



GALVANIC ISOLATION:



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	0.002 ... 1.200 A \sim	•	•	•		$\pm 0.2\%$ 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 \sim 3.4 ... 84 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 j factor	-10.2...0...10.2	-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 kVAh					•	$\pm 0.5\%$ 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 \sim /0.5 A \sim
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 ^{+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.	
Temperature	ambient: -25...23...55°C	storage: -30...70°C
Relative humidity	25...95%	
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

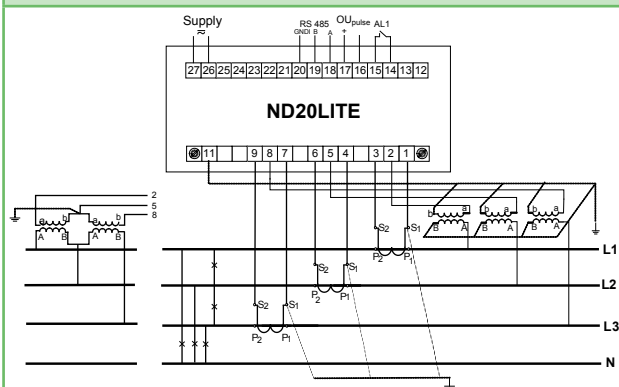


Fig 1. Meter connection diagrams in a 4-wire network.

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

ORDERING

ND20LITE -	X	X	X	XX	X	X
Current input In:						
1 / 5 A			2			
Voltage input (phase/ phase-to-phase) Un:						
3 x 57.7/100 V, 3 x 69.3/120 V, 3 x 230/400 V			2			
Supply voltage:						
85...253 V a.c., 90...300 V d.c.				1		
Version:						
standard					00	
custom-made*						XX
Language:						
Polish/English						M
other*						X
Acceptance tests:						
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.

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

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