

# N43 RAIL MOUNTED POWER NETWORK METER

## FEATURES:



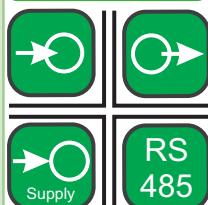
## INPUT:



## OUTPUTS:



## GALVANIC ISOLATION:



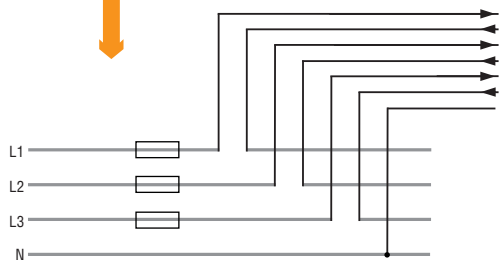
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- For direct (up to 63A) and indirect measurement, in 3 phase 4 wire/ 3 wire balanced and unbalanced systems.
- The measurement of: rms values of voltage and current, active, reactive and apparent power, active, reactive energy, power factors, frequency, THD.
- Indications considering values of programmed ratios.
- Programmable display pages.
- 3 programmable alarm outputs and 1 pulse output in standard version.
- Pulse output for monitoring of 3-phase active energy.
- Analog outputs after adding S4AO module.
- Digital transmission to the master system through the RS-485 interface (MODBUS).
- USB for configuration by using free eCon software.
- Modern design allows for installation of the meter in modular switchgear in accordance with EN 62208 (meter has a width of 6 modules) on 35 mm rail.

## EXAMPLE OF APPLICATION



RS 485  
Modbus



Measurements, monitoring,  
recording of network  
parameters and energy.

## MEASURED QUANTITIES AND MEASURING RANGES

| Measured value  | Measuring range   | L1 | L2 | L3 | Σ | Basic error** |
|---|---|----|----|----|---|---------------|
| Current In 1A/5A<br>1 A ~<br>5 A ~<br>63 A ~              | 0.002...1.20 A or kA *<br>0.010...6.00 A or kA *<br>0.10...76.0A~ | •  | •  | •  |   | ±0.5%         |
| Voltage L-N<br>57,7 V ~<br>230 V ~<br>290 V ~             | 2.80 ...70.0 V or kV*<br>10.0 ... 276 V~<br>14.0 ... 348 V~       | •  | •  | •  |   | ±0.5%         |
| Voltage L-L<br>100 V ~<br>400 V ~<br>500 V ~              | 5.00 ... 120 V or kV*<br>20.0 ... 480 V~<br>25.0 ... 600 V~       | •  | •  | •  |   | ±1%           |
| Frequency   | 47.0 ... 63.0 Hz  |    |    |    | • | ±0.5%         |
| Active power<br>/import or export/                        | 0.00 ... 999<br>W, kW or MW                                       | •  | •  | •  | • | ±1%           |
| Reactive power<br>/capacitive or inductive<br>indication/ | 0.00 ... 999<br>VAR, kVar or MVar                                 | •  | •  | •  | • | ±1%           |
| Apparent power  | 0.00 ... 999<br>VA, kVA or MVA                                    | •  | •  | •  | • | ±1%           |
| Active energy<br>/import or export/                       | 0.0 ... 999999.9<br>kWh or MWh                                    |    |    |    | • | ±1%           |
| Reactive energy<br>/capacitive or inductive indication/   | 0.0 ... 999999.9<br>kVarh or MVarh                                |    |    |    | • | ±1%           |
| Power factor PF   | -1 ... 0 ... 1  | •  | •  | •  | • | ±1%           |
| Tangent φ   | +1.2 ... 1 ...1.2   | •  | •  | •  | • | ±1%           |

\* depending on set current ratio:  
- tr\_U ratio (ratio of the voltage transformer: 0.1...4000.0)  
- tr\_I ratio (ratio of the current transformer: 1...10000)  
\*\* calculated for the nominal range In, Un

## OUTPUTS

| Kind of output | Properties  |
|----------------|---|
| Relay output   | • 3x programmable relay output, normally open voltageless contacts, load capacity 250 V~/0.5 A~ |
| Pulse output   | • 1 x pulse output, OC type, passive (for monitoring of active energy)                          |

## DIGITAL INTERFACE

| Type of interface | Transmission protocol | Mode               | Rate                        |
|-------------------|-----------------------|--------------------|-----------------------------|
| RS-485 Modbus     | MODBUS RTU            | 8N2, 8E1, 8O1, 8N1 | 4.8; 9.6; 19.2; 38.4 kbit/s |
| USB 1.1/ 2.0      | MODBUS RTU            | 8N2                | 9.6 kbit/s                  |

## EXTERNAL FEATURES

|                                     |   |                          |  |
|-------------------------------------|---|--------------------------|--|
| Readout field                       | LCD display, monochromatic with backlight |                          |  |
| Weight                              | < 0.3 kg                                  |                          |  |
| Overall dimensions                  | 105 × 110 × 60 mm                         |                          |  |
| Protection grade (acc. to EN 60529) | from housing side: IP50                   | from terminal side: IP00 |  |

## RATED OPERATING CONDITIONS

|                         |   |  |
|-------------------------|---|--|
| Supply voltage          | 85...253 V a.c., 90...300 V d.c.<br>20...40 V a.c., 20...60 V d.c.              |  |
| Temperature             | ambient: -10...23...55°C  |  |
| Relative humidity       | 0...95%   | inadmissible condensation  |
| Operating position      | any   |  |
| External magnetic field | 0...40...400 A/m  |  |
| Short duration overload | voltage inputs (5 sec): 2 Un  | current inputs:<br>- 1 sec. 50 A (for version In 1 A/ 5 A)<br>- 1 sec. 630 A (for version In 63 A) |
| Power consumption       | - in the supply circuit ≤ 4 VA,<br>- in the voltage and current circuits ≤ 2 VA |  |

## SAFETY AND COMPATIBILITY REQUIREMENTS

|                               |                    |                      |
|-------------------------------|--------------------|----------------------|
| Electromagnetic compatibility | noise immunity     | acc. to EN 61000-6-2 |
|                               | noise emissions    | acc. to EN 61000-6-4 |
| Safety requirements           | acc. to EN 61010-1 |                      |

## ELECTRIC CONNECTIONS

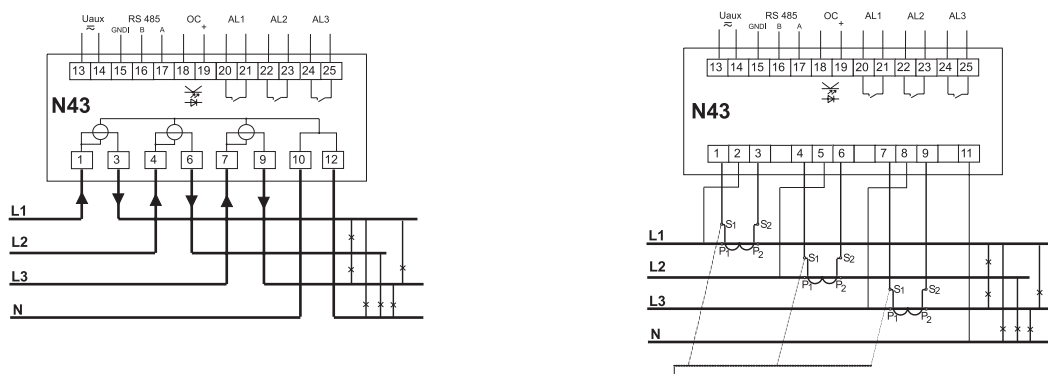


Fig 1. Meter connection diagrams.

## ORDERING

| RAIL-MOUNTED NETWORK METER N43 -                 | X | X | X | XX | X | X |
|--|---|---|---|----|---|---|
| <b>Current input In:</b>                         |   |   |   |    |   |   |
| 1 A/5 A (X/1; X/5)                               | 1 |   |   |    |   |   |
| 63 A   | 2 |   |   |    |   |   |
| <b>Voltage input (phase/ phase-to-phase) Un:</b> |   |   |   |    |   |   |
| 3 x 57.7/100 V                                   |   | 1 |   |    |   |   |
| 3 x 230/400 V                                    |   | 2 |   |    |   |   |
| 3 x 290/500 V                                    |   | 3 |   |    |   |   |
| <b>Auxiliary supply:</b>                         |   |   |   |    |   |   |
| 85...253 V a.c., 90...300 V d.c.                 |   |   | 1 |    |   |   |
| 20...40 V a.c., 20...60 V d.c.                   |   |   | 2 |    |   |   |
| <b>Version:</b>                                  |   |   |   |    |   |   |
| standard   |   |   |   | 00 |   |   |
| custom-made*                                     |   |   |   | XX |   |   |
| <b>Language:</b>                                 |   |   |   |    |   |   |
| Polish   |   |   |   |    | P |   |
| English  |   |   |   |    | E |   |
| other*   |   |   |   |    | X |   |
| <b>Acceptance tests:</b>                         |   |   |   |    |   |   |
| without extra quality requirements               |   |   |   |    |   | 0 |
| with an extra quality inspection certificate     |   |   |   |    |   | 1 |
| acc. to customer's request*                      |   |   |   |    |   | X |

\* - after agreeing with the manufacturer

## EXAMPLE OF ORDER:

The code **N43 - 2 2 1 00 E 0** means:

- N43** - meter of network parameters of N43 type
- 2** - current input: 63 A
- 2** - input voltage (phase/phase-to-phase) Un = 3 x 230 V/ 400 V
- 1** - auxiliary supply: 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.



S4AO - module of 4 analog outputs



ND20 - power network meter.



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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