LUMEL
EVERYTHING COUNTS

NMID30-2

DIN RAIL ENERGY COUNTER
100 A DIRECT CONNECTED
(MID CERTIFIED)

Features

- MID B+D Certified
- Class B (kWh) EC Directive 2004/22/EC
- Certified for Single & Three Phase
- Certified for Import / Export kWh

NMID30-2 is a new generation modern design power monitor that will measure and display electrical power quality parameters. It has been engineered to cover most applications (Single Phase and Three Phase networks / Built in Pulsed and RS485 Modbus / Import and Export kWh), replacing the need for several different models of this power meter.

As the demand for MID certified meters has increased, we have obtained annex B and D of the EC Directive 2004/22/EC. This power meter has been tested and certified for single or three phase networks and import and export active energy (kWh).

The NMID30-2 is produced to the highest quality and utilizes the latest microprocessor and technology. It has a blue backlit display and 16 different measuring parameters. This meter supports a maximum 100A Direct connection. Available with built in pulsed outputs and RS485 Modbus RTU it is fully compatible for integration with BMS and remote monitoring systems.

1. Parameters

- Phase to Phase Voltage
- Phase to Neutral voltage
- Frequency
- Voltage Total Harmonic, Distortion (THD), Current
- Neutral Current (Calculated)
- Current Max Demand
- Current Total Harmonic (THD)
- kW,kVA & kVAr
- Power Max Demand
- Power Factor
- Import kWh
- Export kWh
- Import kVarh
- Export kVArh
- Total kWh (Active Energy)
- Total kVarh (Reactive Energy)

2. Specifications

Measured Parameters
The unit can monitor and display the following parameters of a single phase two wire (1p2w), three phase three wire (3p3w) or three phase four wire (3p4w) system.

Voltage and Current

- Phase to neutral voltages 100 to 289V a.c. (not for 3p3w supplies).
- Voltages between phases 173 to 500V a.c. (3p supplies only).
- Percentage total voltage harmonic distortion (THD%) for each phase to N (not for 3p3w supplies).
- Percentage voltage THD% between phases (three phase supplies only).
- Current THD% for each phase

Power factor and Frequency and Max. Demand

- Frequency in Hz
- Instantaneous power:
- Power 0 to 99999 W
- Reactive power 0 to 99999 Var
- Volt-amps 0 to 99999 VA
- Maximum demanded power since last Demand reset Power factor
- Maximum neutral demand current, since the last Demand reset (for 3p4w supplies only)

Energy Measurements

Imported/Exported active energy	0 to 999999.9 kWh
Imported/Exported reactive energy	0 to 999999.9 kVArh
Total active energy	0 to 999999.9 kWh
Total reactive energy	0 to 999999.9 kVArh

Measured Inputs

Voltage inputs through 4-way fixed connector with 35mm² maximum stranded wire capacity. single phase two wire(1p2w), three phase three wire(3p3w) or three phase four wire(3p4w) unbalanced. Line frequency measured from L1 voltage or L3 voltage.

Nominal Voltage Input	(Ph+N) 100 to 289V (Ph+Ph) 173 to-500V
Max Continuous Voltage	120% of nominal
Nominal Input Current	10(100)A Direct Connected
Max Continuous Current	120% of nominal
Nominal Input Current Burden	0.5VA
Frequency	45-65Hz

Accuracy

Voltage	0·5% of range maximum
Current	0·5% of nominal
Frequency	0·2% of mid-frequency
Power factor	1% of unity (0.01)
Active power (W)	±1% of range maximum
Reactive power (VAr)	±1% of range maximum
Apparent power (VA)	±1% of range maximum
Active energy (Wh)	Class 1 IEC 62053-21
Reactive energy (VARh)	±1% of range maximum
Total harmonic distortion	1% up to 31st harmonic
Response time to step input	1s, typical, to >99% of final reading, at 50 Hz.

Auxiliary Supply

This meter is self-supplied through internal links.

Interfaces for External Monitoring

Three interfaces are provided:

- RS485 communication channel that can be programmed for Modbus RTU protocol
- Relay output indicating real-time measured energy.(configurable)
- Pulse output 3200imp/kWh (not configurable)

The Modbus configuration (baud rate etc.) and the pulse relay output assignments (kW/kVArh, import/export etc.) are configured through the set-up screens.

Pulse Output

Opto-coupler with potential free SPST-NO Contact (Contact range 5-27VDC / Max current input: Imin 2mA and Imax 27mA DC).

The pulse output can be set to generate pulses to represent kWh or kVArh.

Ratecan be set to generate 1 pulse per:
0.0025 = 2.5 Wh/VArh
0.01 = 10 Wh/VArh
0.1 = 100 Wh/VArh
1 = 1 kWh/kVArh
10 = 10 kWh/kVArh
100 = 100 kWh/kVArh

Pulse width200/100/60 ms.

RS485 Output for Modbus RTU

For Modbus RTU, the following RS485 communication parameters can be configured from the set-up menu:

Baudrate 2400, 4800, 9600, 19200, 38400
Paritynone (default) / odd / even
Stop bits1 or 2
RS485 network address 3-digit number, 1 to 247
Modbus™ Word order Hi/Lo byte order is set automatically to normal or reverse. It cannot be configured from the set-up menu.

Reference Conditions of Influence Quantities

Influence Quantities are variables that affect measurement errors to a minor degree. Accuracy is verified under nominal value (within the specified tolerance) of these conditions.

Ambient temperature	23°C ±1°C
Input waveform	50 or 60Hz ±2%
Input waveform	Sinusoidal (distortion factor < 0·005)
Auxiliary supply voltage	Nominal ±1%
Auxiliary supply frequency	Nominal ±1%
Auxiliary supply waveform (if AC)	Sinusoidal (distortion factor < 0·05)
Magnetic field of external origin	Terrestrial flux

Environment

Operating temperature	-25°C to +55°C*
Storage temperature	-40°C to +70°C*
Relative humidity	0 to 95%, non-condensing
Altitude	Up to 3000m
Warm up time	1 minute
Vibration	10Hz to 50Hz, IEC 60068-2-6, 2g
Shock	30g in 3 planes

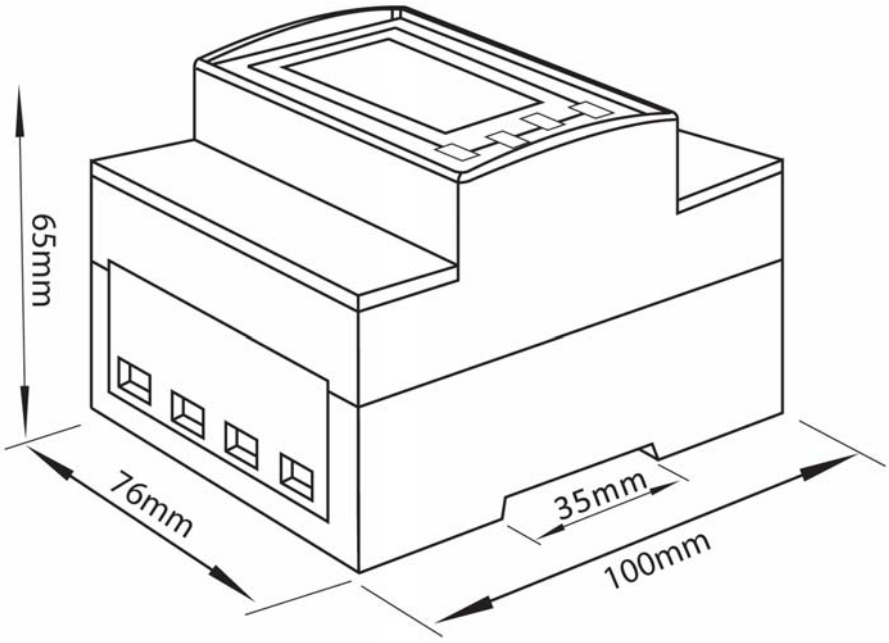
*Maximum operating and storage temperatures are in the context of typical daily and seasonal variation.

NMID30-2 DIN RAIL ENERGY COUNTER

Mechanics

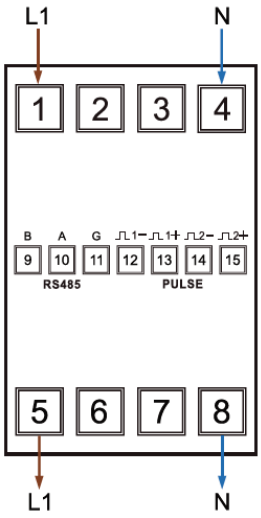
DIN rail dimensions	76 x 100 mm (WxH) per DIN 43880
Mounting	DIN rail (DIN 43880)
Sealing	IP51 indoor
Material Self-extinguishing	UL 94 V-0

3. Dimensions

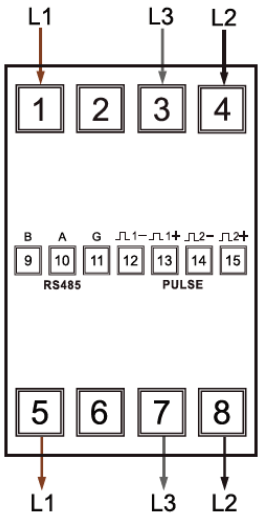


4. Installation

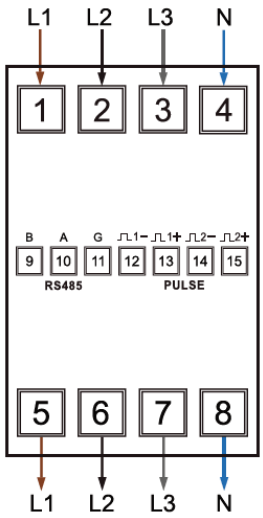
Single phase two wires



Three phase three wires



Three phase four wires



Specifications are subject to change without notice.

5. Ordering

The code **NMID30-2** means energy counter with MID certificate, with current input for direct measurement 100 A, with interface RS-485 Modbus RTU and two pulse outputs.

LUMEL S.A.
ul. Słubicka 4, 65-127 Zielona Góra, Poland
tel.: +48 68 45 75 100, fax +48 68 45 75 508
www.lumel.com.pl

Technical support:
tel.: (+48 68) 45 75 143, 45 75 141, 45 75 144, 45 75 140
e-mail: export@lumel.com.pl

Export department:
tel.: (+48 68) 45 75 130, 45 75 131, 45 75 132
e-mail: export@lumel.com.pl

Calibration & Attestation:
e-mail: laboratorium@lumel.com.pl