NMID33LITE

THREE-PHASE DIN RAIL AC ENERGY METER 100A

(MID CERTIFIED)

NMID33LITE

THREE-PHASE DIN RAIL ENERGY METER

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Overview:

NMID33LITE is a modern Three Phase Direct Connected Energy Meter designed for intended use in residential, commercial and light industrial Electrical Energy Metering. The meter is engineered using advanced microcontroller technology and is suitable for electrical parameter measurement and monitoring in 3 Phase 4 Wire, 3 Phase 3 Wire and 1 Phase 2 Wire Networks. It supports maximum 100 A current measurement on direct connection. It supports Tariff Counters selectable via Tariff Input. It displays parameters on bright intuitive LCD and also has Pulse Outputs and Impulse LED for energy monitoring. Meter housing is standard Din Rail Mount that allows ease of installation.

FEATURES

Direct Connection Meter:
NMID33LITE can safely measure 100A maximum current on direct connection, eliminating the use of expensive external CT for high current networks. Meter is also self-powered thus offer simplified connections.

Measured Electrical Parameters:
NMID33LITE is primarily for bidirectional Active, Reactive and Apparent Energy measurement but it also accurately measures important electrical parameters like Voltage, Current, Frequency, Active, Reactive and Apparent Power, and Power Factor in Three Phase and Single Phase Networks. The measured parameters can be viewed on display.

Demand:
The Demand parameter for Active Power (Import/Export), Reactive Power (Import/Export), Apparent Power and Current are calculated as per configurable Demand Integration time.

Pulse Outputs:
The NMID33LITE has two opto-isolated SO Outputs that can be configured for any one of the Active (Total/Import/Export), Reactive (Total/Import/Export) Energy parameter. The pulse width and rate of pulse output is onsite programmable.

Impulse LED:
The meter has Impulse LED which flash at rate of 1000 IMP/kWh indicating the Active Energy consumption.

Tariff Inputs:
The meter has two Tariff Inputs dedicated for selection of four tariff T1, T2, T3 and T4 selection. The opto-isolated Tariff Input is rated for a wide range of AC/DC voltage for operation.

Front Keys:
Three keys are provided for easy navigation and accessibility of different parameters and onsite programming of the meter.

LCD & Backlit:
The LCD has bold seven segment digits with bright white backlit for display of measurement parameters. Special symbols, units and bar graph are provided for effective display and easy onsite configuration.
Indications for communication status, active tariff, Tariff inputs and pulse outputs status are continuously available on screen. Measurement screen can be set as automatic scrolling or manual scrolling.

Multi Tariff and Partial Energy Counters:
The meter has Tariff Counters for energy accumulation which are selectable via Tariff Input. Energy for Tariff and Partial counters are Total/Import/Export Active Energy, Total/Import/Export Reactive Energy, Total Apparent Energy.

Compliance to Standards:

Accuracy Standard:	EN50470- 3: 2022 IEC62053-21
IP for water & dust:	IEC 60529
Plastic Flammability Standard:	UL 94
Safety Standard	62052-3: 2015

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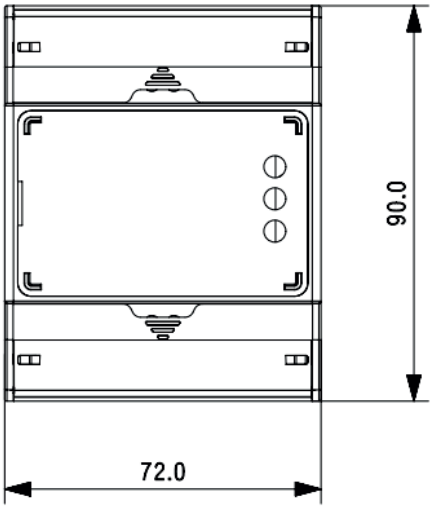
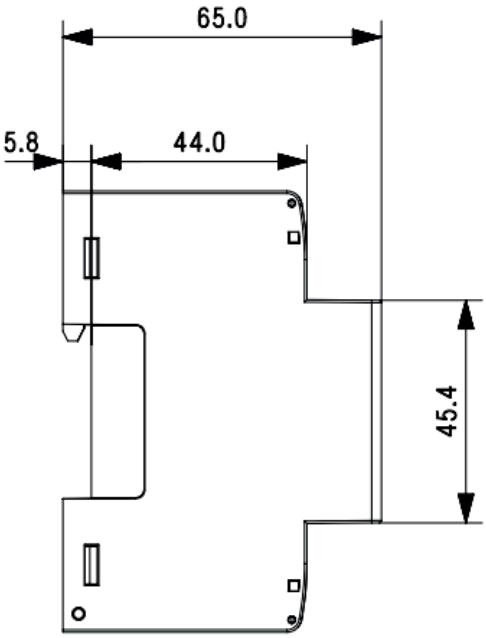
Dimensions Details:





TECHNICAL DATA

Measurement Parameters:	
Nominal Voltage (U_n)	230 VLN (400 VLL)
Operating Voltage Range	100 - 289 VLN (173 - 500 VLL)
Power consumption in Voltage Circuit	< 2 W (10 VA) per phase
Starting Current (I_{st} = 0.04*I_{tr})	20 mA
Minimum Current (I_{min} = 0.5*I_{tr})	250 mA
Transitional Current (I_{tr})	0.5 A
Nominal Current (I_{ref} = 10*I_{tr})	5 A
Maximum Current (Imax= 200*Itr)	100 A
Operating Current Range	0.25-5 A (100 A)
Short time Over-current	30*I_{max} for half-cycle at 50 Hz
Power consumption in Current Circuit	<1VA per phase
Nominal Frequency	50 Hz

Auxiliary Supply:	
Type	Self Powered

Reference Conditions for Accuracy:	
Reference Temperature	23°C ± 2°C
Input Voltage	Un ± 1%
Input Waveform	Sinusoidal (Distortion Factor <2%)
Input Frequency	50 Hz ± 0.3%

Accuracy:	
Active Energy (Import/Export)	Class B as per EN50470-3:2022 Class 1 as per IEC 62053-21
Reactive Energy (Import/Export)	± 2.0 %
Apparent Energy	± 1.0 %
Voltage	± 0.5% of range max
Current	± 0.5% of Nominal value
Frequency	± 0.2% of Mid frequency
Active Power	± 1% of range max
Reactive Power	± 1% of range max
Apparent Power	± 1% of range max
Power Factor	±1%
VTHD and ITHD	±4% (THD >=15%)

Pulse Outputs:	
SO1 and SO2	Passive Opto-isolated
Contact Ranges	5-27V DC, 27 mA DC (max)
Pulse Duration	60, 100 and 200 millisecond
Pulse Rate	0.01, 0.1, 1, 10, 100, 500 and 1000 pulse per kWh and kVARh
Parameters	Total/Import/Export kWh and kVARh

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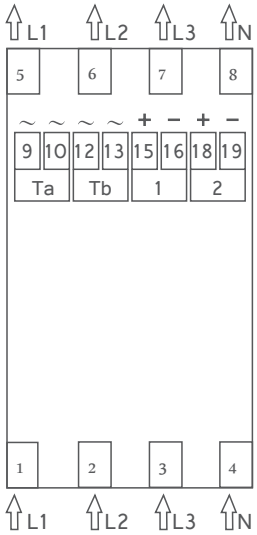
Connector Details:



1,2,3 :I-In
5,6,7 :I-Out
4 :Neutral-In
8 :Neutral-Out
15,16,18,19 :Pulse Output 1 & Pulse Output 2 Terminal
9,10,12,13 :Tariff input a & Tariff input b Terminal

TECHNICAL DATA

Impulse LED:	
Impulse Rate	1000 pulse per kWh
Display Ranges:	
Active Energy	0-999999.99 kWh
Reactive Energy	0-999999.99 kVARh
Apparent Energy	0-999999.99 kVAh
Active Power	0-99999 W
Reactive Power	0-99999 VAR
Apparent Power	0-99999 VA
Tariff Input:	
0 V	Low
230 V	High
Installation:	
Installation	Indoor
Enclosure	IP51 (Front)
Housing	(4 Module DIN 43880)
Dimensions	72 mm X 90 mm X 65 mm
Weight	350 gm
Mounting	Snap-on 35 mm DIN Rail
Safety:	
Safety Standard	According to 62052-31:2015
Installation Category	III
Protective Class	II
Pollution Degree	2
AC Voltage Test	4kV for 1 Minute
Impulse Voltage Withstand	6 kV (1.2 microsecond waveform)
Housing flame Resistance	Flammability Class V-0 acc to UL-94, Self Extinguishing, Non-Dripping, Free of Halogen
Environmental Conditions:	
Mechanical Environment	M1
Electromagnetic Environment	E2
Operating Temperature	-25°C to +55°C
Storage/Transport Temperature	-40°C to +70°C
Relative Humidity	0... 95% (Non Condensing)
Altitude	< 2000 m
Wiring Guidelines:	
Current/Voltage Input Wire Size	6-25 mm^2 (use with insulated pin type lug)
Current/Voltage Tightening Torque	2.5 - 3.0 Nm
SO & Tariff input Wire Size	0.1 to 2.5 mm^2 (Solid/Stranded with insulated pin type lug)
SO & Tariff Input Tightening Torque	0.4 Nm

Measured Parameter System wise:

✓ : Available × : Not Available

Sr No	Parameters	3 Phase 4Wire	3Phase 3Wire	1Phase 2Wire
1.	Import Active Energy	✓	✓	✓
2.	Export Active Energy	✓	✓	✓
3.	Total Active Energy	✓	✓	✓
4.	Import Reactive Energy	✓	✓	✓
5.	Export Reactive Energy	✓	✓	✓
6.	Total Reactive Energy	✓	✓	✓
7.	Total Apparent Energy	✓	✓	✓
8.	T1 Import Active Energy	✓	✓	✓
9.	T1 Export Active Energy	✓	✓	✓
10.	T1 Total Active Energy	✓	✓	✓
11.	T1 Import Reactive Energy	✓	✓	✓
12	T1 Export Reactive Energy	✓	✓	✓
13.	T1 Total Reactive Energy	✓	✓	✓
14.	T1 Total Apparent Energy	✓	✓	✓
15.	T1 Partial Import Active Energy	✓	✓	✓
16.	T1 Partial Export Active Energy	✓	✓	✓
17.	T1 Partial Import Reactive Energy	✓	✓	✓
18.	T1 Partial Export Reactive Energy	✓	✓	✓
19.	T2 Import Active Energy	✓	✓	✓
20.	T2 Export Active Energy	✓	✓	✓
21.	T2 Total Active Energy	✓	✓	✓
22.	T2 Import Reactive Energy	✓	✓	✓
23.	T2 Export Reactive Energy	✓	✓	✓
24.	T2 Total Reactive Energy	✓	✓	✓
25.	T2 Total Apparent Energy	✓	✓	✓
26.	T2 Partial Import Active Energy	✓	✓	✓
27.	T2 Partial Export Active Energy	✓	✓	✓
28.	T2 Partial Import Reactive Energy	✓	✓	✓
29.	T2 Partial Export Reactive Energy	✓	✓	✓
30.	T3 Import Active Energy	✓	✓	✓
31.	T3 Export Active Energy	✓	✓	✓
32.	T3 Total Active Energy	✓	✓	✓
33.	T3 Import Reactive Energy	✓	✓	✓
34.	T3 Export Reactive Energy	✓	✓	✓
35.	T3 Total Reactive Energy	✓	✓	✓
36.	T3 Total Apparent Energy	✓	✓	✓
37.	T3 Partial Import Active Energy	✓	✓	✓
38.	T3 Partial Export Active Energy	✓	✓	✓
39.	T3 Partial Import Reactive Energy	✓	✓	✓
40.	T3 Partial Export Reactive Energy	✓	✓	✓
41.	T4 Import Active Energy	✓	✓	✓
42.	T4 Export Active Energy	✓	✓	✓
43.	T4 Total Active Energy	✓	✓	✓
44.	T4 Import Reactive Energy	✓	✓	✓
45.	T4 Export Reactive Energy	✓	✓	✓
46.	T4 Total Reactive Energy	✓	✓	✓
47.	T4 Total Apparent Energy	✓	✓	✓
48.	T4 Partial Import Active Energy	✓	✓	✓
49.	T4 Partial Export Active Energy	✓	✓	✓
50.	T4 Partial Import Reactive Energy	✓	✓	✓
51.	T4 Partial Export Reactive Energy	✓	✓	✓

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Measured Parameter System wise contd.:

✓ : Available × : Not Available

52.	L1, L2, L3 Import Active Energy	✓	×	×
53.	L1, L2, L3 Export Active Energy	✓	×	×
54.	L1, L2, L3 Total Active Energy	✓	×	×
55.	L1, L2, L3 Import Reactive Energy	✓	×	×
56.	L1, L2, L3 Export Reactive Energy	✓	×	×
57.	L1, L2, L3 Total Reactive Energy	✓	×	×
58.	L1, L2, L3 Total Apparent Energy	✓	×	×
59.	Partial Import Active Energy	✓	✓	✓
60.	Partial Export Active Energy	✓	✓	✓
61.	Partial Total Active Energy	✓	✓	✓
62.	Partial Import Reactive Energy	✓	✓	✓
63.	Partial Export Reactive Energy	✓	✓	✓
64.	Partial Total Reactive Energy	✓	✓	✓
65.	Partial Total Apparent Energy	✓	✓	✓
66	Current Max Demand	✓	✓	✓
67.	kVA Max Demand	✓	✓	✓
68.	kW Max Demand	✓	✓	✓
69.	kVar Max Demand	✓	✓	✓
70.	Import kW Max Demand	✓	✓	✓
71.	Export kW Max Demand	✓	✓	✓
72.	Import kVar Max Demand	✓	✓	✓
73.	Export kVar Max Demand	✓	✓	✓
74.	L1, L2, L3 Current Max Demand	✓	✓	×
75.	System Voltage	✓	✓	✓
76.	L1, L2, L3 Voltage	✓	×	×
77.	L12, L23, L31 Voltage	✓	✓	×
78.	System Current	✓	✓	✓
79.	L1, L2, L3 Current	✓	✓	×
80.	Frequency	✓	✓	✓
81.	System Active Power	✓	✓	✓
82.	L1, L2, L3 Active Power	✓	×	×
83.	System Reactive Power	✓	✓	✓
84.	L1, L2, L3 Reactive Power	✓	×	×
85.	System Apparent Power	✓	✓	✓
86.	L1, L2, L3 Apparent Power	✓	×	×
87.	System Power Factor	✓	✓	✓
88.	L1, L2, L3 Power Factor	✓	×	×
89.	System Phase Angle	✓	✓	✓
90.	L1, L2, L3 Phase Angle	✓	×	×
91.	System Voltage THD	✓	✓	✓
92.	L1, L2, L3 Voltage THD	✓	×	×
93.	System Current THD	✓	✓	✓
94.	L1, L2, L3 Current THD	✓	×	×

Order Code:

NMID33LITE
3 Phase Direct Connected Energy Meter with Input voltage 100-289VLN, 0.25-5 A (100A), 2 SO Output and 2 Tariff Inputs with CE Certification.

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