Energy Analyzers and Meters

Switching Life to Infinity

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Energy Analyzers

DIN Rail and Panel Type Energy Analyzers

Energy meters are devices that provide perfect readability with a white backlit LCD display, and are used for single-phase and three-phase energy measurements in residential and utility applications.

These devices measure and display various important electrical parameters, and also offer a communication port for remote reading and monitoring.

The bidirectional energy measurement feature makes them an ideal option for solar energy measurements as well.

Additionally, models with LoRa communication capability are available, as well as prepaid or generator tariff options.

Application Areas

- Shopping Malls
- Marinas
- Residences
- Airports
- Factories
- Holiday Resorts
- Prisons
- EV Charging Stations

Advantages

- Class 0.5 and Class 1 applications
- Competitive pricing
- Compatibility with all software via Modbus RTU protocol
- Measurement capacity up to 100 Amps
- Bidirectional measurement capability
- Smaller footprint compared to competitors
- High measurement accuracy classes
- Wide measurement range
- Billing of high-cost liquid fuels with generator tariff option
- Advantage of collecting payments from prepaid subscribers
- DIN rail mounting (35mm)
- Wide range of solutions: direct connection and current transformer models
- RS485 (Modbus) or wireless data transmission (LoRaWAN communication)
- Savings on cabling and labor costs
- Fewer failure points due to wireless feature
- Convertible to modular or panel type solutions (only with additional equipment for NDM70 series)
- Advantage of collecting payments from subscribers and prepaid collection
- Compatibility with direct connection and CT models with a wide range of solutions
- White backlit LCD display
- Scroll settings display feature
- Support for AMR (Automatic Meter Reading) and SCADA systems
- Multifunctional measurement
- Easy payment collection (prepaid type)

NDM30 / NDM30 Lora

NDM50 / NDM50 Lora

NDM70 / NDM70 Lora

NPM270BX

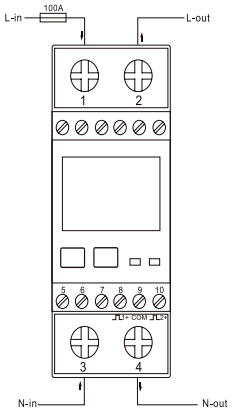
NPM270BX-ETH

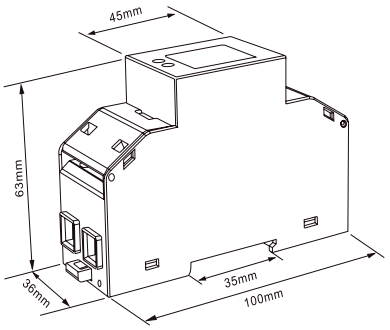
NPM290-5G / 5J

Energy Analyzers

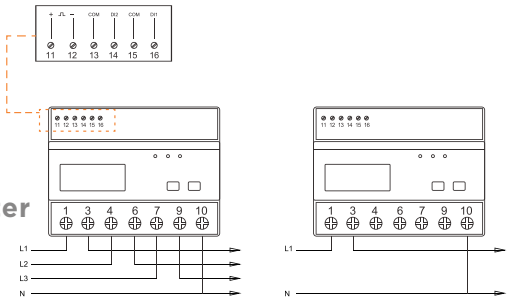
Wiring Diagram – Dimensions for DIN Rail and Panel Type Energy Analyzers

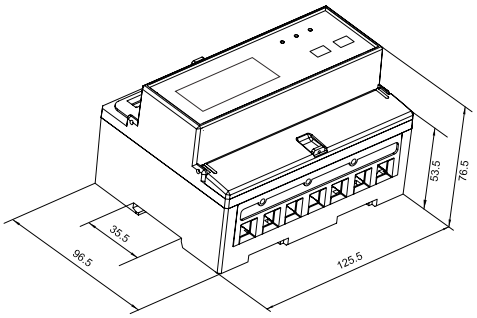
NDM30 - NDM30 Lora DIN Rail Type Single-Phase Electricity Meter



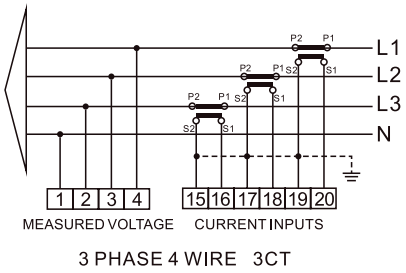


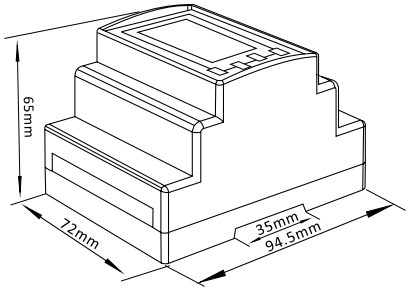
NDM50 NDM50 Lora DIN Rail Type Three-Phase Electricity Meter



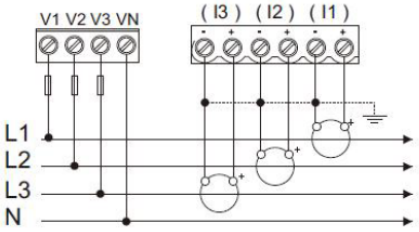


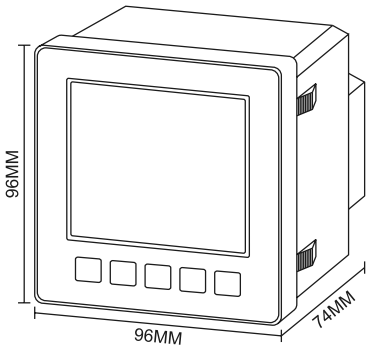
NDM70 NDM70 Lora DIN Rail Type Three-Phase Energy Analyzers



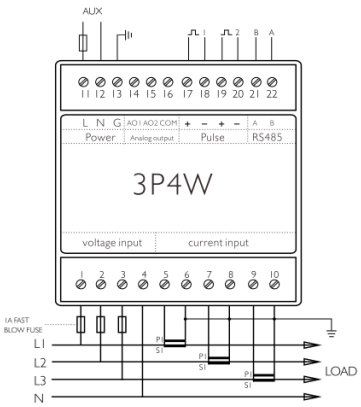


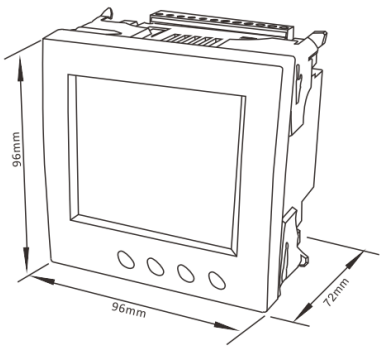
NPM270BX NPM270BX-ETH Series Panel Type Energy Analyzers





NPM290-5G NPM290-5J Series Panel Type Energy Analyzers





Energy Analyzers and Meters

NDM30 - NDM30 Lora DIN Rail Type Single-Phase Electricity Meter

	MODEL	
Standards	NDM30	NDM30 Lora
IEC62053-21	✓	✓
EN50470-1/3	✓	✓
IEC62053-23	✓	-
EN61326-1:2013	✓	-
EN61326-2-3:2013	✓	-
EN 61010_1:2010+A1:2019	✓	-
EN 61010-2-30-2010	✓	-
IEC 61000-4-3	-	✓
EN55022	-	✓
EN61326-1:2013 ve EN61326-2-3:2013	-	✓
EN 61010_1:2010+A1:2019 ve EN 61010-2-30-2010	-	✓
Specifications		
Nominal Voltage	120V or 230V AC	120V or 230V AC
Operating Voltage Range	80% ~ 120%	80% ~ 120%
Maximum Rated Current (Imax)	100A	100A
Operating Current Range	0.4% Ib - Imax	0.4% Ib - Imax
Overcurrent Withstand	30 Imax for 0.01 seconds	30 Imax for 0.01 seconds
Operating Frequency Range	50 Hz	50 or 60 Hz
Internal Power Consumption	< 2W / 10 VA	≤ 2W / 10 VA
Pulse Output 1	1000 imp/kWh (configurable)	1000 imp/kWh (configurable)
Pulse Output 2	1000 imp/kWh	1000 imp/kWh
AC Voltage Withstand	4 kV for 1 minute	4 kV for 1 minute
Protection Class	IP51	IP51
Impulse Voltage Withstand	6 kV - 1.2 µs waveform	-
Display	Backlit LCD	Backlit LCD
Maximum Reading	99,999.99 kWh	99,999.99 kWh
Accuracy		
Voltage	0,5%	0,5%
Current	0,5%	0,5%
Frequency	0,2%	0,2%
Power factor	1,0%	1,0%
Active Power	1,0%	1,0%
Reactive Power	1,0%	1,0%
Apparent Power	1,0%	1,0%
Active Energy	1,0%	2,0%
Environment		
Operating Temperature	-25°C to +55°C	-25°C to +55°C
Storage/Transport Temp.	-40°C to +70°C	-40°C to +70°C
Reference Temperature	23°C ± 2°C	23°C ± 2°C
Relative Humidity	0% to 95%, non-condensing	0% to 95%, non-condensing
Installation Category	CAT II	CAT III
Electromagnetic Environment	M1	M1
Pollution Degree	E2	E2
Communication		
Interface Standard & Protocol	RS485 Modbus RTU	LoRaWAN Specification 1.0.2
Frequency	-	EU868 / AS923 / AU915 / US902 / CN470 / CN433
LoRaWAN Classes	-	Class C
Automatic Upload	-	Max. 19 parameters
Auto Upload Interval	-	Configurable
Activation Method	-	OTAA or ABP
Output Power	-	13 dBm during transmission
Encoding Format	-	ASCII
Communication Range	Max 1200 m	1500 m in open area

Energy Analyzers and Meters

NDM50 - NDM50 Lora DIN Rail Type Three-Phase Electricity Meter

	MODEL	
Standards	NDM50	NDM50 Lora
IEC62053-21	✓	✓
IEC62053-22	✓	✓
IEC62053-23	✓	✓
EN61326-1:2013	-	✓
EN61326-2-3:2013	-	✓
EN 61010_1:2010+A1:2019	-	✓
EN 61010-2-30-2010	-	✓
Specifications		
Nominal Voltage	3x230/400 VAC	3x230/400 VAC
Operating Voltage	80%~120%	80%~120%
AC Voltage Limit	4KV for 1 minute	4KV for 1 minute
Pulse Interval Change	6KV-1.2μS	6KV-1.2μS
Base Current	10A	30 Imax for 0.01 seconds
Operational Current Range	0.4% Ib-Imax	0.4% Ib-Imax
Overcurrent Leakage	30 Imax for 0.01s	30 Imax for 0.01s
Operational Frequency Range	50 or 60Hz	50 or 60Hz
Internal Power Dissipation	< 2W/10VA	< 2W/10VA
Display	LCD	LCD
Maximum Reading	999999.99kWh	999999.99kWh
Accuracy		
Voltage	0,2%	0,2%
Current	0,2%	0,2%
Frequency	0,2%	0,2%
Power Factor	1,0%	1,0%
Active Power	0,5%	0,5%
Reactive Power	1,0%	1,0%
Apparent Power	0,5%	0,5%
Active Energy	0,5%	0,5%
Reactive Energy	2,0%	2,0%
Performance Criteria		
Operating Humidity	90% non-condensing	90% non-condensing
Storage Humidity	95% non-condensing	95% non-condensing
Operating Temperature	-25°C to +55°C	-25°C to +55°C
Storage Temperature	-40°C to +70°C	-40°C to +70°C
Reference Temperature	23°C ± 2°C	23°C ± 2°C
Installation Category	CAT III	CAT III
Mechanical Environment	M1	M1
Electromagnetic Environment	E2	E2
Protection Against Dust and Water Ingress	IP51	IP51
Protective Cost Meter	Class II	Class II
Electrostatic Transports	8kV contact / 15kV air gap	8kV contact / 15kV air gap
Electrical Fast Transients	4kV	4kV
Communication		
Interface Standard and Protocol	RS485 Modbus RTU	LoRaWAN Specification 1.0.2
Frequency	-	EU868/AS923/AU915/US902/CN470/ CN433
LoRaWAN Classes	-	Class C
Automatic Loading	-	Max. 19 parameters
Automatic Loading Interval	-	Configurable
Interaction Path	-	OTAA or ABP
Output Power	-	13dBm in transmit
Coding Format	-	ASCII
Communication Distance	Max 1200 m	1500m in open area
Pulse Output		
Pulse Output	1	1
Pulse Output Type	Passive	Passive
Pulse Output 1	Configurable	Configurable
Pulse Width	200 / 100 (default) / 60ms	200 / 100 (default) / 60ms

Energy Analyzers

NDM70 - NDM70 Lora DIN Rail Type Three-Phase Energy Analyzers

	MODEL	
Standards	NDM70	NDM70 Lora
IEC62053-21	✓	✓
IEC 62053-23	-	✓
EN50470-1/3	✓	✓
EN61326-1:2013	✓	✓
EN61326-2-3:2013	✓	✓
EN 61010_1:2010+A1:2019	✓	✓
EN 61010-2-30-2010	✓	✓
Features		
Nominal Voltage	3x230/400 VAC	173 to 480 V AC L-L / 100 to 276 V AC L-N
Operating Voltage	80%~120%	85~275V AC / 120~380V DC
AC Voltage Withstand	4KV for 1 minute	-
Impact Voltage Withstand	6KV-1.2μS	-
Base Current	1A/5A CT or 40mA/100mV/333mV CT input	1A/5A
Operational Current Range	0.4% Ib-Imax	-
Overcurrent Withstand	20 Imax for 0.5s	-
Operational Frequency Range	50 or 60Hz	45~65Hz
Internal Power Consumption	< 2W/10VA	<7VA/3.5W
Display	LCD	LCD
Maximum Reading	9999999.9 kWh/kVarh	9999999.9 kWh/ kVArh
Accuracy		
Voltage	0.5%	0.5%
Current	0.5%	0.5%
Frequency	0.2%	0.2%
Power Factor	1.0%	1.0%
Active Power	1.0%	1.0%
Reactive Power	1.0%	-
Apparent Power	1.0%	-
Active Energy	1.0%	1.0%
Reactive Energy	2.0%	2.0%
Performance Criteria		
Operating Humidity	<90% (non-condensing)	<95% (non-condensing)
Storage Humidity	<95% (non-condensing)	-
Operating temperature	-25°C to +55°C	-25°C to +55°C
Storage temperature	-40°C to +70°C	-40°C to +70°C
Reference temperature	23°C± 2°C	-
Installation category	CAT III	CAT III
Mechanical environment	M1	M1
Electromagnetic environment	E2	-
Protection against dust and water ingress	IP51	IP51
Protection Class	Class II	Class II
Communication		
Interface Standard and Protocol	RS485 Modbus RTU	LoRaWAN Specification 1.0.2
Frequency	-	EU868/AS923/AU915/US902/CN470/ CN433
LoRaWAN Classes	-	Class C
Automatic Loading	-	Max. 19 parameters
Automatic Loading Interval	-	Configurable
Activation Path	-	OTAA or ABP
Output Power	-	13dBm in transmit
Coding Format	-	ASCII
Communication Distance	Max 1200m	1500m in open area

Energy Analyzers

NPM270BX - NPM270BX-ETH Series Panel Type Energy Analyzers

	MODEL	
Standards	NPM270BX	NPM270BX-ETH
IEC62053-21	✓	-
IEC62053-22	-	✓
IEC 62053-23	✓	✓
IEC61557-12	-	✓
EN50470-1/3	-	✓
IEC61000-3-2	-	✓
IEC61000-4-2,3,4,5,6,8,11	-	✓
EN55011 Class A	-	✓
EN61326-1:2013	✓	✓
EN61326-2-3:2013	✓	✓
EN 61010_1:2010+A1:2019	✓	✓
EN 61010-2-30-2010	✓	✓
Specifications		
Nominal voltage	3x230/400V	3x230/400V
Operating voltage	65-275V AC / 80-380V DC	85-275V AC / 120-380V DC
Base current	5A	5mA-6A
Overcurrent resistance	20 Imax for 0.5s	Continuous 8A 120A 0.5 Second
Operational frequency range	45-65Hz	45-65Hz
Internal power consumption	< 2W/10VA	< 7VA/3.5W
Display	LCD	LCD
Maximum reading	8 digits, up to 9999999.9 kWh	8 digits, up to 9999999.9 kWh
Accuracy		
Voltage	0,5%	0,2%
Current	0,5%	0,2%
Frequency	0,2%	1,0%
Power factor	1,0%	1,0%
Active power	1,0%	0,5%
Active energy	1,0%	0,5%
Reactive energy	2,0%	2,0%
Performance criteria		
Relative humidity	<95% (non-condensing)	<95% (non-condensing)
Operating temperature	-25°C to +55°C	-25°C to +55°C
Storage temperature	-40°C to +70°C	-40°C to +70°C
Installation category	-	CAT III
Mechanical environment	-	M1
Protection against dust and water ingress	IP51	IP51
Protection class	-	Class II
Communication		
Interface standard and protocol	Modbus RTU (RS485)	Modbus RTU (RS485) and Ethernet
Type	2-wire half duplex	2-wire half duplex
Baud rate	2400,4800, 9600, 19200, 38400bps	2400bps-38400bps
Address	1 to 247	1 to 247
Parity	None (default), Odd, Even	None (default), Single, Dual
Stop bit	1 or 2	1 or 2
Communication distance	Max 1000 m	Max 1000m

Energy Analyzers

NPM290-5G - NPM290-5J Series Panel Type Energy Analyzers

	MODEL	
Standards	NPM290-5G	NPM290-5J
IEC62053-22	✓	✓
IEC 62053-23	✓	✓
IEC61557-12	✓	✓
EN50470-1/3	✓	✓
IEC61000-3-2	✓	✓
IEC61000-4-2,3,4,5,6,8,11	✓	✓
EN55011 Class A	✓	✓
EN61326-1:2013	✓	✓
EN61326-2-3:2013	✓	✓
EN 61010_1:2010+A1:2019	✓	✓
EN 61010-2-30-2010	✓	✓
Specifications		
Nominal voltage	3x230/400V	3x230/400V
Operating voltage	85~275V AC / 120~380V DC	85~275V AC / 120~380V DC
Base current	5mA~6A	5mA~6A
Overcurrent resistance	Continuous 8A 120A 0.5 Second	Continuous 8A 120A 0.5 Second
Operational frequency range	45~65Hz	45~65Hz
Internal power consumption	< 7VA/3.5W	< 7VA/3.5W
Display	LCD	LCD
Maximum reading	8 digits, up to 9999999.9 kWh	8 digits, up to 9999999.9 kWh
Accuracy		
Voltage	0.2%	0.2%
Current	0.2%	0.2%
Frequency	1.0%	1.0%
Power factor	1.0%	1.0%
Active power	0.5%	0.5%
Active energy	0.5%	0.5%
Reactive energy	2.0%	2.0%
Performance criteria		
Relative humidity	<95% (non-condensing)	<95% (non-condensing)
Operating temperature	-25°C to +55°C	-25°C to +55°C
Storage temperature	-40°C to +70°C	-40°C to +70°C
Installation category	CAT III	CAT III
Mechanical environment	M1	M1
Protection against dust and water ingress	IP51	IP51
Protection class	Class II	Class II
Communication and Outputs		
Interface standard and protocol	Modbus RTU (RS485)	Modbus RTU (RS485) and Ethernet
Type	2-wire half duplex	2-wire half duplex
Baud rate	2400bps~38400bps	2400bps~38400bps
Address	1 to 247	1 to 247
Parity	None (default), Single, Dual	None (default), Single, Pair
Stop bit	1 or 2	1 or 2
Communication distance	Max 1000 m	Max 1000 m
Digital input	4	4
Digital output	2	2

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