

NDM70 Lora Rail Type Three Phase Electricity Meter



NDM-70 Lora

Rail Type Three Phase Electricity Meter

Aktif NDM70-CT-LoRa, is an advanced multi-function three phase energy monitoring solution with built-in LoRaWAN module. It measures and displays the characteristics of single phase two wires(1p2w), single phase three wires(1p3w), three phase three wires(3p3w,) and three phase four wires(3p4w) supplies, including Kwh, kVARh, kW, kVA, PF, Frequency, Voltage, Current, dmd, THD etc. Energy is measured in terms of kWh, kVARh. Maximum demand current can be measured over preset periods of up to 60minutes. The requisite current input(s) are obtained via current transformers (CT). This meter can be configured to work with a wide range of CTs, giving the unit a wide range of operation. Configuration is password protected.

- Three phase 1/5A current transformer operated
- Wireless data transfer thanks to Lorawan communication,
- No cable and labor costs,
- Fewer failure points compared to wired systems due to wireless feature,
- Built-in LoRaWAN communication
- ETL, MID certified
- High accuracy, class 1/class 0.5s
- Confirmations/ Offline detection available
- Multi-parameters measurement
- Bi-directional measurement for kW and kWh
- Configurable pulsed output
- Support auto-upload mode for uploading data to back server actively.
- Download/ Upload time interval can be set or adjusted.
- Support auto-resume mode for suddenly power off of the gateway when resume.
- Wide range of LoRa frequency band (EU868/ AS923/CN433/CN470/AU915/US902 MHz, etc.)

Application Areas

- Shopping Malls
- Industrial Zones
- Electric Distribution Companies
- Marinas
- Residences
- Airports
- Factories
- Holiday Villages

Standards and Protocols

- Active Energy Accuracy: IEC 62053-21 Class 1 / EN50470-1/3
- Reactive Energy Accuracy: IEC 62053-23 Class 2



- Measurement Category: Per IEC61010-1 CAT III
- Dielectric Withstand : As per IEC 61010-1 Double Insulated front panel display
- Interface standard and protocol: LoRaWAN Specification 1.0.2
- Electromagnetic Compatibility: EN61326-1:2013 & EN61326-2-3:2013
- Low Voltage Directive: EN 61010_1:2010+A1:2019 & EN 61010-2-30-2010

Advantages

- Wireless data transmission via LoRaWAN communication,
- No cable and labor costs,
- Fewer failure points compared to wired systems due to wireless feature,
- Compatibility with rail-type application solutions,
- Can be converted to panel type with additional equipment,
- Class 0.5 and Class 1 application,
- Competitive prices,
- Compatibility with all software through Modbus RTU protocol communication,
- Wide range of solutions with direct and CT-operated models,
- Measurement capability up to 100 Amperes with direct type meters,
- Bidirectional measurement capability,
- Occupies less space compared to competitors,
- Proven reliability with unique design,
- Billing of high-cost liquid fuels with different tariff options for generator tariff types,
- Easy collection of payments from subscribers with prepaid types and the advantage of upfront payment collection,
- Higher measurement accuracy classes compared to analyzers,
- Wide measurement range.

Features

- VT Primary : 30 ~ 500000 Vac
- Un : 230 V L-N
- Measured Voltage with Over-range : 173 to 480 V AC L-L / 100 to 276 V AC L-N
- Impedance : 1MΩ
- Frequency range : 45-65Hz
- CT Ratings
- Primary :1-9999A
- Secondary :1A / 5A
- Measured Current with Over-range : 6A
- Withstand : Continuous 120A for 0.5 Seconds
- Impedance : < 1MΩ
- Frequency range : 45-65Hz
- Burden : < 0.036VA at 6A

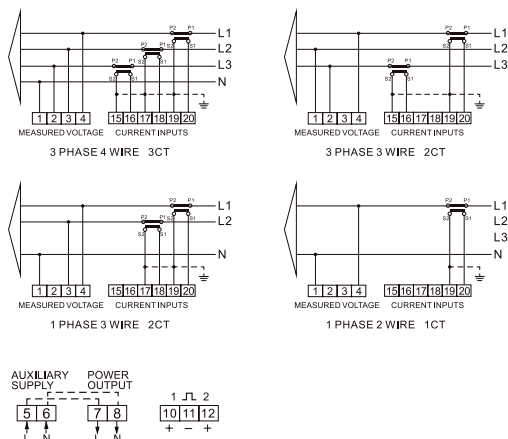
Accuracy

- Active Energy : IEC 62053-21 Class 1 / EN50470-1/3
- Reactive Energy : IEC 62053-23 Class 2
- Frequency : $\pm 0.2\%$
- Current : $\pm 0.5\%$
- Voltage : $\pm 0.5\%$
- Power : ± 0.01
- Power Factor : ± 0.01
- Data Update Rate : 1 second nominal
- Input-Voltage

Communications

- Interface standard and protocol : LoRaWAN Specification 1.0.2
- Frequency : EU868/AS923/AU915/ US902/ CN470/CN433
- LoRaWAN Classes : Class C
- Auto-upload : Max. 30 parameters
- Auto-upload Interval : Configurable
- Activation Way : OTAA or ABP

Wiring Diagram



- Output Power : 13dBm in transmission
- Coding Format : ASCII
- Communication Distance : 1500M in an open area

Auxiliary Power Supply

- Operating range : 85-275V AC / 120-380V DC
- Power Consumption : < 7VA/3.5W
- Frequency : 45 to 65 Hz
- Max. Reading : 9999999.9 kWh/ kVarh

Mechanical Characteristics

- Weight : 330g
- IP Degree of Protection : (IEC 60529)
- Dimensions (WxHxD) : 72x94.5x65mm
- Mounting : Din rail (DIN 43880)
- Material of meter case : Self-extinguishing UL 94 V-0
- Mechanical environment : M1

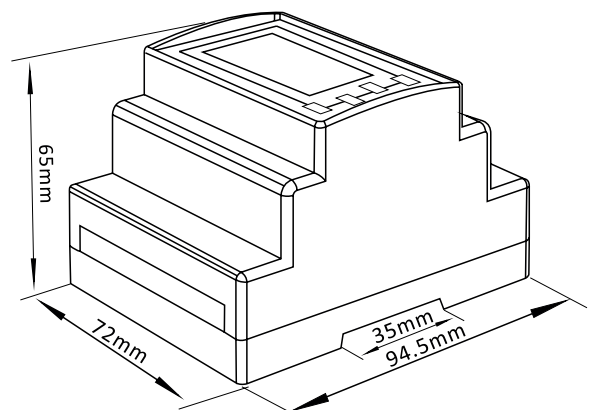
Safety

- Measurement Category : Per IEC61010-1 CAT III
- Current Inputs : Require external Current Transformer for Insulation
- Over voltage Category : CAT III
- Dielectric Withstand : As per IEC 61010-1 Double Insulated front panel display
- Protective Class : II

Environmental Characteristics

- Operating Temperature : -25 to 55°C
- Storage Temperature : -40 to 70°C
- Humidity Rating : < 95% RH at 50°C (non-condensing)
- Pollution Degree : 2
- Altitude : 2000m
- Vibration : 10Hz to 50Hz, IEC 60068-2-6

Dimensions





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