# NT-PM100

## DIN Rail Mount Energy Management Sensor

- Three-phase and Single-phase measurement
- Measures over 100 different electrical energy parameters
- Provides power quality analysis
- Provides embedded rule engine for event-driven control of energy consumption
- Integrated alarm system
- Data archiving
- Integrated web server
- Maximum demand monitoring and analysis
- Ethernet and WiFi support



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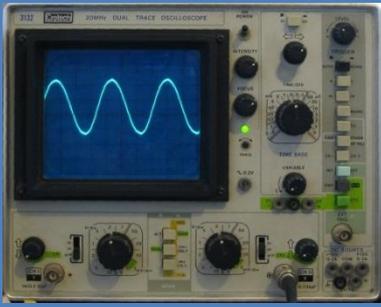
# Why Power Quality?

Good power quality is important because it has significant impact on energy consumption, devices connected to the power, their correct operation, and lifetime. Power disturbances can be caused by external (lightning strikes, faulty power lines etc.) or internal (faulty equipment, electric discharge etc.) factors. These disturbances influence your equipment causing it to degrade over time, and eventually completely fail. High-magnitude harmonic voltages are especially harmful, with following damaging effects:

- Cause malfunction of control devices, main signaling systems, and protective relays,
- Contribute to extra losses in capacitors, transformers, and rotating machines,
- Increase noise emitted by motors,
- Cause voltage amplification even at a remote point from the distorting load.

Therefore, it is very important to be able to analyze power quality in real time to protect your assets and decrease energy consumption.

## Applications

Netico's energy management sensors can be used for:

- Energy management in industrial, residential, office, retail and other facilities.
- Remote monitoring of switchboards and low and medium voltage connections.
- Monitoring of power quality for critical consumers.
- Management of renewable energy production resources.
- Energy management in modern data centers.
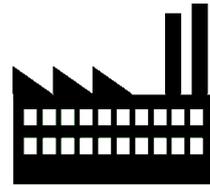
## Rich connectivity

There are three connection options available for interconnectivity with other equipment and IT infrastructure:

- 10/100Mbps Ethernet - optional
- IEEE 802.11b (Wi-Fi) - optional
- RS485 as a standard feature on all models.

The sensors support Modbus TCP, Modbus RTU, and XML protocols for information interchange.

## Power quality analysis

In addition to consumption, it is possible to monitor over 100 different parameters such as: Power Grid Frequency; RMS Voltage, RMS Current, Active Power, Reactive Power, Apparent Power and Power Factor of Each Phase; Total Active, Reactive and Apparent Power; Total Power Factor; Phase Missing / Line voltage sag detection and alarm; Total Active Energy; Positive/negative Active and Reactive Energy; Four-quadrant Reactive Energy; Fundamental Active and Reactive Power of Each Phase; Harmonic Active and Reactive Power of Each Phase; Voltage and Current Harmonic Content of Each Phase.
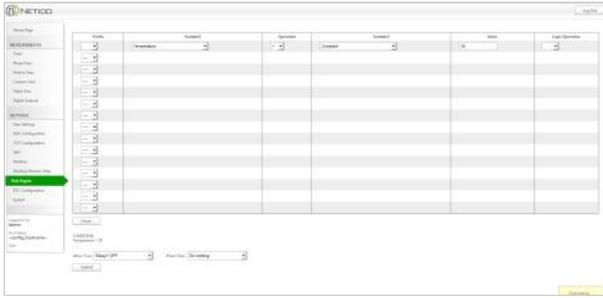
## Integrated web server

All NTPM100 software features are embedded in the device. No additional software is needed. A user only needs a computer with a web browser to access all of the functions, like:

- Real-time monitoring and control
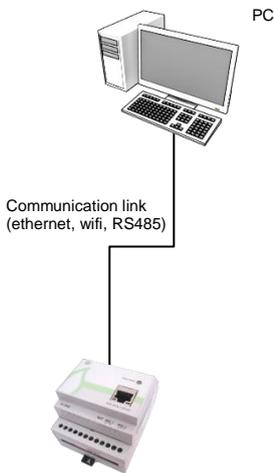- Device configuration
- Data archive analysis

## Control

Support for manual or event-driven relay control. The sensor provides two digital relay outputs as a standard feature. Embedded rule engine can generate alarms, events, and control relay actions based on real-time measurements combined in configurable set of rules to achieve concrete energy saving actions.
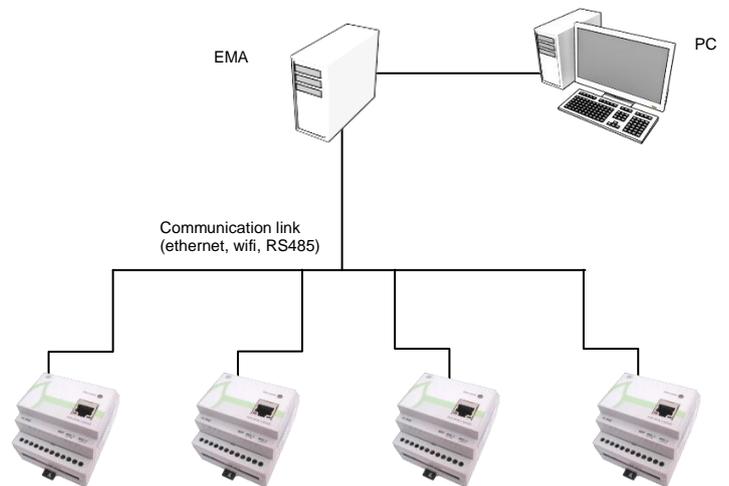


## Data archiving

Every sensor comes with embedded internal storage available for data archiving and used for local energy consumption reports and web server graphs and trends. It is possible to store all the measured data with 1-second resolution for a period of 1 month. In addition, it is possible to store the most important energy parameters measured on hourly bases for up to 10 years. The device supports optimized writing and read access for flash data storage to ensure long memory lifetime.



## Maximum Demand

Industrial companies often pay high electric bills for breaking kW Demand limit. Therefore monitoring and controlling demand is very important.
By monitoring actual demand, operators can make key decisions in real-time to optimize consumption and flow of work in the shop floor.

*NTPM 100/200 devices provide real-time tracking of energy demand within configurable time period (15, 30, 60 minutes) defined by the tariff system of the energy distribution company in the concrete usage scenario. Demand measurement is coupled with the rule engine enabling quick reaction in cases when the demand value comes close to the maximum set by the energy distribution company.*



PC

Communication link
(ethernet, wifi, RS485)

Standalone usage



EMA          PC

Communication link
(ethernet, wifi, RS485)

Used as system solution with Netico EMA (Energy Monitoring Appliance) – for monitoring large complex installations

| Selection guide | | | | |
|---|---|---|---|---|
| Model | NTPM100A/D | NTPM101A/D | NTPM110A/D | NTPM111A/D |
| RS485 | ● | ● | ● | ● |
| Ethernet | ● | - | ● | - |
| Wi-Fi | - | ● | - | ● |
| Display | - | - | ● | ● |
| Power quality analysis | ● | ● | ● | ● |
| Embedded Web Server | ● | ● | ● | ● |
| Power Supply | For all models it is possible to select AC or DC power supply, indicated by letters A or D respectively in the model number | | | |

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