

# NTPM 100A / 110A - Smart Energy Sensor



## Features

- ✓ Measures over 100 electrical energy parameters
- ✓ Three-phase and single-phase installations
- ✓ Power quality analysis
- ✓ Full internet connectivity through standard Ethernet interface
- ✓ Embedded rule engine for event driven control
- ✓ Digital outputs for control functions
- ✓ Integrated alarm system
- ✓ Internal memory holds years of data
- ✓ Integrated webserver
- ✓ Web-based user interface
- ✓ DIN rail mount
- ✓ UL certified
- ✓ LVD and EMC compliant

## Overview

Unique solution that combines monitoring of electrical energy consumption, power quality analysis and management of electrical energy use in a single powerful instrument.

NTPM devices can be easily installed and use in any energy management scenario.

Built in Web server enables easy remote control and configuration, as well as real-time monitoring of measured parameters.

Real-time readings

Daily, weekly, monthly trends and graphs



## Electrical characteristics

### Power supply

<b>Voltage</b>	100-270 V AC $\pm 10\%$ Overvoltage category II per IEC 61010-1:2010
<b>Frequency</b>	50/60 Hz $\pm 10\%$
<b>Power consumption</b>	Max 2.5 W

### Voltage inputs

<b>Measured voltage (Un)</b>	Up to 400 V L-N / 690 V L-L (Wye) or 600 V L-L (Delta) UL listed up to 347 V L-N / 600 V L-L
<b>Measurement by voltage transformer</b>	Supported external VT with ratio up to 350
<b>Measurement category</b>	CAT III 600 V per IEC 61010-2-030
<b>Frequency range(configurable)</b>	47 – 53 Hz (50 Hz nominal) 57 – 63 Hz (60 Hz nominal)
<b>Network type</b>	Single-phase / Two-phase / Two-phase with neutral / Three-phase / Three-phase with neutral
<b>Impedance</b>	5 M $\Omega$
<b>Overload</b>	1.15 Un

### Current inputs

<b>Maximum CT primary</b>	5000 A
<b>Rated input current (Ib)</b>	5 A
<b>Supported CT</b>	Supported external CT with ration up to 1000
<b>Measured current</b>	Up to 5000 mA
<b>Starting current</b>	0.001 Ib
<b>Permissible current overload</b>	6A continuous 20 A 10 sec 50 A 1 sec
<b>Frequency range (configurable)</b>	47 – 53 (50 Hz nominal) 57 – 63 (60 Hz nominal)

### Measuring characteristics

<b>Accuracy class</b>	0.5
<b>Active power measurement precisions class</b>	0.5
<b>Reactive power measurement precision class</b>	0.5
<b>Power factor (PW) precision class</b>	0.5
<b>Frequency measurement precision class</b>	0.5
<b>Voltage harmonics</b>	up to 31 <sup>st</sup> harmonic
<b>Current harmonics</b>	up to 31 <sup>st</sup> harmonic
<b>Sampling rate</b>	64 samples / cycle

### Digital outputs

<b>Number of outputs</b>	3
<b>Type</b>	Form A solid state relay
<b>Maximum load voltage</b>	30 V AC / 60 V DC
<b>Maximum load current</b>	125 mA
<b>ON resistance</b>	8 $\Omega$
<b>Isolation</b>	2500 V RMS for 1 minute

## Communication

<b>Interfaces</b>	<b>10/100Mbps Ethernet</b>	1 port Modbus TCP, ICMP server, DHCP client, Lan Discovery, Web server
	<b>RS 485</b>	1 port Modbus RTU 2.5 kV RMS, double isolated
<b>Protocols</b>		Modbus TCP
		Modbus RTU

## Mechanical characteristics

<b>Dimensions</b>		88 x 94 x 58 mm (5 modules)
<b>Net weight</b>		300 g
<b>Case</b>	<b>Material</b>	Plastic, PC (UL 94 V-0)
	<b>Mounting</b>	35 mm DIN rail
	<b>IP degree of protection</b>	<IP40



## Environment

<b>Operating temperature</b>	-25 to 70 C°
<b>Storage temperature</b>	-40 to 80 C°
<b>Relative humidity</b>	5 to 95 % non-condensing
<b>Altitude</b>	<2000 m
<b>Pollution degree</b>	2

## EMC (Electromagnetic compatibility)

<b>Harmonic emissions</b>	IEC 61000-3-2	class A
<b>Flicker limitations</b>	IEC 61000-3-3	Compliant
<b>Immunity to ESD</b>	IEC 61000-4-2	Level 4
<b>Immunity to radiated fields</b>	IEC 61000-4-3	Level 3
<b>Immunity to fast transients</b>	IEC 61000-4-4	Level 4
<b>Immunity to surges</b>	IEC 61000-4-5	Level 4
<b>Conducted RF disturbances</b>	IEC 61000-4-6	Level 3
<b>Immunity to magnetic fields</b>	IEC 61000-4-8	Level 3
<b>Immunity to voltage dips and interruptions</b>	IEC 61000-4-11	Compliant
<b>Radiated RF emissions</b>	EN 55011 + EN 55016-2-3	Class A
<b>Conducted RF emissions</b>	EN 55011 + EN 55016-2-1	Class A

## Safety

	Compliant to Low Voltage Directive 2014/35/EU and EMC Directive 2014/30/EU
	UL certified
<b>Standards</b>	EN 61010-1:2010
	EN 61010-2-030:2010
	EN 61326-1:2013
	EN 61000-6-2:2005 + AC:2005
	EN 61000-6-4:2007 + A1:2011
<b>Protection class</b>	Class II according to EN 61010-1:2010 Double insulated for user accessible parts

## Sustainability

<b>EU RoHS Directive</b>	Compliant
<b>Toxic heavy metal free</b>	Yes
<b>Mercury free</b>	Yes
<b>WEEE</b>	At its end of service life, the product must be disposed of and recycled following specific waste collection regulations on EU markets.

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