

# APN SERIES

## Power Monitors

APN Series Power Monitors measure three phases of current and voltage and computes 14 values necessary to track power usage. These monitors use current transformers to measure the amperes. The line voltage connects directly to the transducer, up to 600 VAC. The result is 14 data points in the RS485 **Modbus RTU** format. There is also a pulse contact which opens and closes as watt hours are accumulated. The APN can be configured to accept 5 A secondary current transformers or the safer ProteCT™ low voltage output CTs. Either type will produce an accurate set of data to help you save energy and avoid utility surcharges.



APN Power Monitor with **Modbus RTU** Output

### Power Monitoring Applications

#### Plant Energy Management

- Measure the power usage of a single piece of equipment, an area of a plant, or the entire facility.

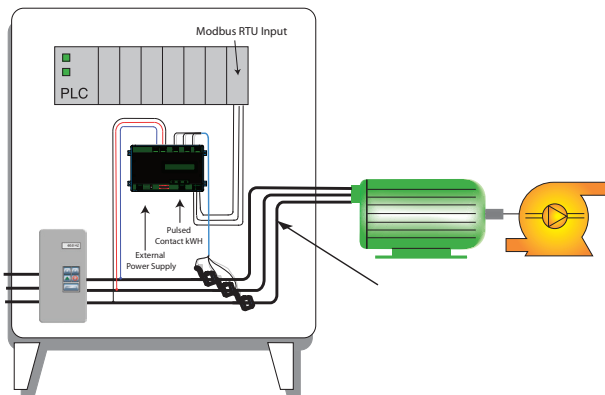
#### Conveyors

- Detect jams and overloads.
- Check that the belt is loaded properly by measuring the power consumption.

#### Pump Monitoring

- Detect dry run from clogged, intake, or discharge line.
- Monitor impeller cavitation and bearing wear.

#### Pump Jam & Suction Loss Protection



- For additional Application Examples, go to [www.nktechnologies.com/applications](http://www.nktechnologies.com/applications)

### OEMs

#### Test & Evaluation Units for OEMs

Free program expedites evaluation process. See page 3 for details.

### Power Monitoring Features

#### Modbus RTU Output

- RS485 communication protocol reduces the cost involved with proprietary data logging software.
- Compatible with most automation systems.

#### Externally Powered

- Improves reliability when used in conditions where power interruptions and voltage sags are common.

#### Compact DIN Rail\* or Panel Mounted Case

- Clearly labeled terminals provide quick installation.
- Low profile reduces cabinet depth requirements.

#### LED Displays Network Communication

- Provides quick visual indication that network is operational.

#### Finger Safe Terminals

- Safe and secure connectors.

#### UL/cUL Approved

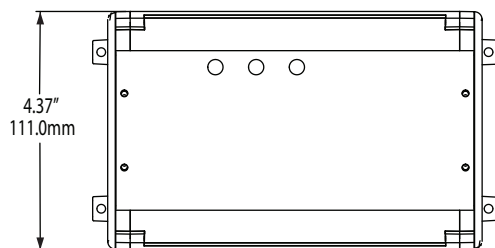
- Accepted worldwide.

\*For information on the DIN rail accessories kit, see page 147.

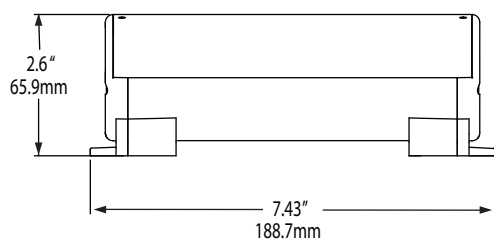


### Power Monitoring Dimensions

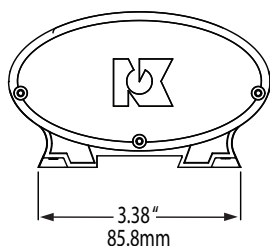
Case Front View



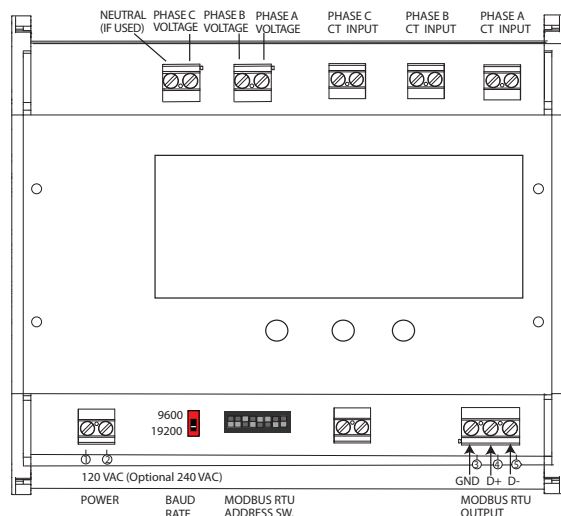
Case Top View



Case Side View



### Power Monitoring Connections



### Power Monitoring Specifications

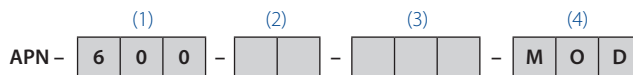
<b>Power Supply</b>	<ul style="list-style-type: none"> <li>• 24 VAC/DC (21–27 V)</li> <li>• 120 VAC (100–125 V)</li> <li>• 240 VAC (200–250 V)</li> </ul>
<b>Power Consumption</b>	<ul style="list-style-type: none"> <li>• 24 VAC/DC: &lt;100 mA</li> <li>• 120 VAC: &lt;50 mA</li> <li>• 240 VAC: &lt;25 mA</li> </ul>
<b>Measurement</b>	<ul style="list-style-type: none"> <li>5A CT input: 3000 A</li> <li>0.333 mV input: 1500 A</li> </ul>
<b>Primary Voltage</b>	100 to 600 VAC
<b>Output</b>	<ul style="list-style-type: none"> <li>• Modbus RTU - 14 Data Points</li> <li>• Pulsed Contact KWH</li> </ul>
<b>Accuracy</b>	<1% FS
<b>Response Time</b>	120 ms
<b>Isolation Voltage</b>	Tested to 4 KV
<b>Frequency Range</b>	50–60 Hz
<b>Case</b>	UL94 V-0 Flammability Rated
<b>Environmental</b>	<ul style="list-style-type: none"> <li>-4 to 122°F (-20 to 50°C)</li> <li>0–95% RH, non-condensing</li> </ul>
<b>Listings</b>	UL/cUL approved

### Power Monitoring Data Point Table

	Phase A	Phase B	Phase C	Type
<b>Current</b>	●	●	●	RMS
<b>Voltage</b>	●	●	●	RMS
<b>kW</b>	●	●	●	Active
<b>Power Factor</b>	●	●	●	Instantaneous
<b>Power Factor</b>				Average
<b>kWH</b>				Total

### Power Monitoring Ordering Information

Sample Model Number: APN-600-MV-120-MOD  
 AC power transducer, 600 VAC maximum input, ProteCT™ current inputs, 120 VAC powered, RS485 Modbus output with pulse contact for kWh.



(1) Maximum Primary Voltage

600	600 VAC
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(2) Current Input Type

MV	ProteCT™ current transformers, 333 mVAC secondary
5 A	5 A secondary current transformers

(3) Rating Power Supply

24U	24 VAC/DC (100 mA max.)
120	120 VAC (50 mA max.)
240	240 VAC (25 mA max.)

(4) Output Type

MOD	Modbus RTU (RS485), pulse contact for kWh
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Power Sensing Products

