Retrofit & Wireless Products

The advantages of using wireless interfaces throughout your power monitoring system are numerous and proven. Whether you install these products as part of a retrofit upgrade or as modules in a new build environment, ease of installation and commissioning will reap huge economic benefits.
Retrofit & Wireless Products

The PowerLogic wireless range is designed to retrofit existing switchboards and enhance the energy efficiency of buildings for many years.

These products are:

- Easy and cost-effective to install
- Able to collect a broad scop of electrical data
- Able to utilize a variety of meters to measure WAGES (Water, Air, Gas, Electricity, Steam) usage
- Transmit all data to a centralized data concentrator for detailed analysis
EM3500 series

The EM3500 Series DIN Rail Meter combines exceptional performance and easy installation to deliver a cost-effective solution for power monitoring applications.

The EM35xx can be installed on standard DIN rail or surface mounted as needed. Pulse output and phase alarms provide additional versatility.

Applications

**Capable of essential cost management:**

- Energy monitoring in building automation systems
- Renewable energy monitoring
- Commercial sub-metering
- Energy management
- Industrial monitoring
- Accurate cost allocation
The solution for
Markets that can benefit from a solution that includes PowerLogic EM3500 series meters:
• Buildings
• Industry
• Healthcare
• Data Centre and networks
• Infrastructure

Benefits

System integrators’ benefit
• Ease of integration
• Ease of setup
• Cost effectiveness

Panel builders’ benefit
• Ease of installation
• Cost effectiveness
• Aesthetically pleasing
• Simplified ordering

End users’ benefit
• Ease of use
• Precision metering & sub-billing
• Billing flexibility
• Comprehensive, consistent and superior performance

Competitive advantages
• DIN rail mounting option; easy installation
• Real energy output and phase loss alarm output
• 90-600 V AC; application versatility with fewer models to stock
• Bright backlit LCD; easy visibility in dark enclosures
• Data logging capability safeguard during power failures
• EM35xx models compatible with LVCTs from 5 A to 32000 A
• User-enabled password protection prevents tampering
• Native BACnet MS/TP support (no gateway)

Power management solutions
Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

Conformity of standards
• IEC 61557-12
• IEC 62053-22
• IEC 62053-24
• IEC 61010-1
• IEC 61000-4-2
• IEC 61000-4-3
• IEC 61000-4-4
• IEC 61000-4-5
• IEC 61000-4-6
• IEC 61000-4-8
• Etc.
EM3500 series

The data logging capability (EM3555 and EM3560) protects data in the event of a power failure. Modbus, pulse output, and phase alarms are all provided to suit a wide variety of applications. Additional pulse inputs on EM3560 provide an easy way to incorporate simple flow sensors to track gas, water, steam, or other energy forms using a BACnet system in addition to full monitoring of electrical energy.

EM35xxA (Pulse, Modbus, BACnet) models designed for use exclusively with Rogowski coil CTs where integrator and power supply for the CTs are built into the meter, resulting in fewer devices to purchase and faster to install. (Not recommended for high harmonic applications.)

The EM3555 models adds a bi-directional monitoring feature designed expressly for renewable energy applications, allowing measurement of power imported from the utility grid as well as power exported from the renewable energy source (e.g. solar panels). In this way, a facility administrator track all energy data, ensuring accuracy in billing and crediting.

• Features
  – All Models: A compact solution for panelboard monitoring
    – DIN rail mounting option; easy installation
    – ANSI 12.20 0.2% accuracy, IEC 62053-22 Class 0.2S for all 35xx models; great for cost allocation
    – ANSI C12.20 0.5% accuracy, IEC 62053-22 Class 0.2S for EM35xxA models
    – Real energy output and phase loss alarm output on EM3502(A), EM3550(A), and EM3555 models; one device serves multiple applications
    – 90-600 VAC; application versatility with fewer models to stock
    – Bright backlit LCD; easy visibility in dark enclosures
    – Data logging capability EM3555 & EM3560(A); safeguard during power failures
    – EM35xx models compatible with LVCTs from 5 A to 32000 A; wide range of service types
    – User-enabled password protection; prevents tampering
    – EM35xxA models are designed to work exclusively with Rogowski coil CTs 20-5000 A range. Eliminate site walks, save time and money. (Not recommended in high harmonic applications.)
    – System integration via Modbus EM355xx(A) or BACnet MS/TP EM356xx(A); convenient compatibility with existing systems
    – Native BACnet MS/TP support (no gateway) with serial rates up to 115.2 kbaud EM3560, EM3561, EM3560A, & EM3561A
  – EM3555 Models: An essential solution for Solar and other renewable energy applications
    – Bi-directional metering (4-quadrant); allows net metering
    – Data logging capability; ensures long term data retrieval
    – CSI approved
EM3500 series

Selection guide

Electrical characteristics

Inputs

Control Power, AC 50/60 Hz, 5 VA max.; 90 V min.
UL Maximums: 600 V L-L (347V L-N);
CE Maximums: 300 V L-N (520V L-L )

Control Power, DC 3W max., 125 to 300 V DC
(external DC current limiting required)

Voltage Input

UL: 90 V L-N to 600 V L-L;
CE: 90 V L-N to 300 V L

Current Input

Scaling 5 A to 32,000 A
Non “A” models only
20 A to 5000 A for “A” models only

Input Range 1/3 V and 1 V nominal LVCT (selectable)
Non “A” models only
Rogowski coil CTs only for “A” models

Pulse Inputs

(EM3560 & EM3560A) Two sets of contact inputs to pulse accumulators

Accuracy

Real Power and Energy 0.2 % (ANSI C12.20, IEC 62053-22 Class 0.2S)
EM35xx models only
0.5 % (ANSI C12.20, IEC 62053-22 Class 0.5S)
EM35xxA models only

Outputs

Alarm contacts: N.C. static

EM3502 Reactive energy pulse 30 VAC/DC

EM3550, EM3555, EM3550A RS-485 2-wire Modbus RTU
(1200 baud to 38.4 kbaud)

EM3560, EM3560A, EM3561, EM3561A RS-485 2-wire BACnet MS/TP
(9600 baud to 115.2 kbaud)

Mechanical characteristics

Mounting DIN Rail or 3-point screw mount

Environmental conditions

Operating temperature Range -30 °C to 70 °C

Storage Temperature Range -40 °C to 85 °C

Humidity Range <95 % RH non-condensing

Accessories

NEMA 4x enclosure (EM3500-ENC, pictured)
Split-core low voltage CTs (LVCTxx)
Fuse kits (EFP1, EFP2, EFP3)

Safety

US and Canada (cULus) UL508 (open type device)/CSA 22.2 No. 14-05
Europe (CE) EN61010-1 2001

Feature selection

<table>
<thead>
<tr>
<th>Commercial reference number</th>
<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>METSEEEM3502</td>
<td>EM3502</td>
<td>Pulse out only</td>
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<tr>
<td>METSEEEM3550</td>
<td>EM3550</td>
<td>Modbus - 2 quadrant</td>
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<tr>
<td>METSEEEM3555</td>
<td>EM3555</td>
<td>Modbus - 4 quadrant with logging</td>
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<tr>
<td>METSEEEM3560</td>
<td>EM3560</td>
<td>BACnet with logging</td>
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<tr>
<td>METSEEEM3502A</td>
<td>EM3502A</td>
<td>Pulse Rope CT model</td>
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<tr>
<td>METSEEEM3550A</td>
<td>EM3550A</td>
<td>Modbus Rope CT Model</td>
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<td>EM3560A</td>
<td>BACnet w/ logging Rope CT Model</td>
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<tr>
<td>METSEEEM3561A</td>
<td>EM3561A</td>
<td>BACnet without logging Rope CT Model</td>
</tr>
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</table>
EM3500 series

<table>
<thead>
<tr>
<th>EM3500 series</th>
<th>EM3550</th>
<th>EM3560</th>
<th>EM3561</th>
<th>EM3565</th>
<th>EM3562A</th>
<th>EM3565A</th>
<th>EM3566A</th>
<th>EM35651A</th>
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<tr>
<td><strong>Measurement Capability: Full Data Set</strong></td>
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<td>Bi-directional Energy Measurements</td>
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<td>Power (3-phase total and per phase): Real (kW), Reactive (kVAR), and Apparent (kVA)</td>
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<td>Y</td>
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<td>Power Factor: 3-phase average &amp; per phase</td>
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<td>Y</td>
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<td>Present Power Demand: Real (kW), Reactive (kVAR), and Apparent (kVA)</td>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>Import and Export totals of Present Power Demand: Real (kW), Reactive (kVAR), &amp; Apparent (kVA)</td>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>Current (3-phase average and per phase)</td>
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<td>Y</td>
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<td>Voltage: Line-Line and Line-Neutral (3-phase average and per phase)</td>
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<td>Frequency</td>
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<td>ANSI C12.20 0.5 % accuracy, IEC 62053-22 Class 0.5S</td>
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<td>Accumulated Net Energy: Real (kWh), Reactive (kVARh), and Apparent (kVAh)</td>
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<td>Import and Export Accumulators of Real and Apparent Energy</td>
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<td>Reactive Energy Accumulators by Quadrant (3-phase total &amp; per phase)</td>
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<td>Data Logging Configuration: Fixed or Rolling Block</td>
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<td>Demand Interval Configuration: External Sync to Comms</td>
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<td><strong>Data Logging (Store up to 60 days at 15-minute Interval)</strong></td>
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<td>Data Logging: 10 16-Bit Configurable (can include Date/Time) Data Buffers</td>
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<td>Y</td>
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<td>Data Logging: 3 Timestamped 32-Bit Configurable Data Buffers</td>
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<td>Y</td>
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<td>1 Pulse Output (N.O.)</td>
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<td>Y</td>
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<td>2 Pulse Outputs (N.O.)</td>
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<td>Y</td>
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<td>RS-485 Serial (Modbus RTU Protocol)</td>
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<td>RS-485 Serial (BACnet MS/TP Protocol)</td>
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<tr>
<td><strong>Inputs</strong></td>
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<td>2 Pulse Contact Accumulator Inputs</td>
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<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>1 Pulse Contact Accumulator Input</td>
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<td>Y</td>
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</tbody>
</table>

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**Display Screen Diagram**

[Diagram showing screen layout with various indicators and data fields]
EM3500 series

EM3500 dimensions

EM3500 connections

Two 5-character rows of display text.
Top row alphanumeric;
Bottom row numeric only

The red Alarm LED lights when any of the 3
phase voltages drop below the selected
threshold.

The green Energy LED lights momentarily each
time the Energy output pulse is active.

Please see EM3500 User Guide and EM3500 Installation Guide for safe and correct wiring
and connection information.
EM4200 series

The PowerLogic EM4200 Series Enercept power and energy meters provide a unique solution for measuring energy data.

Designed for simplicity, the range includes two main offers: System Calibrated and Flex. The EM4200 System Calibrated offers system accuracy, pre-mounted Current Transducers, with a simple to quote and order single part number.

The EM4200 Flex offers the flexibility of a wide range of Current Transducers to match most applications, no matter how varied.

Applications

**Capable of essential cost management:**

- Energy monitoring in building automation systems
- Renewable energy monitoring
- Energy management
- Commercial sub-metering
- Industrial monitoring
- Accurate cost allocation
## The solution for

Markets that can benefit from a solution that includes PowerLogic EM4200 series:
- Buildings
- Industry
- Healthcare
- Data centre and networks
- Infrastructure

## Benefits

### System integrators' benefit
- Ease of integration
- Ease of setup
- Cost effectiveness

### Panel builders' benefit
- Ease of installation
- Cost effectiveness
- Aesthetically pleasing
- Simplified ordering

### End users’ benefit
- Ease of use
- Precision metering & sub-billing
- Billing flexibility
- Comprehensive, consistent and superior performance

## Competitive advantages

- High reliability with high system, or meter accuracy.
- Single part to order a metering chain (System Calibrated).
- Supports a large range of Sensor options. Flex can adapt to CTs from 50 to 5000 A, or different Rogowski coil sizes rated for up to 5000 A.
- Modbus and BACnet protocols along with uni-directional and bi-directional feature sets.
- Wide 90 to 480 V AC input range.
- DIN rail or screw-mount options, including mounting bracket for easy installation.
- Seamless integration with EcoStruxure™ Power Management software products.

## Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

## Conformity of standards

- CAN/CSA-C22.2
- EN 61000-6-2
- EN 61000-6-4
- EN 61000-6-4 Class A
- EN 61010-1
- EN 61326-1
- FCC 47 CFR Part 15 Class A
- UL 61010-1

## Accuracy standards

### Flex models

- ANSI C12.20-2015 Class 0.2
- IEC 62053-24 Class 1S
- IEC 62053-22 Class 0.2S 0.2%
- IEC 62053-22 Class 0.5S

When used with 1/3 V CT (Meter accuracy):

- ANSI C12.1, 1%
- IEC 62053-22 Class 1S 1%

When used with Rogowski Coils (Meter accuracy):

- ANSI C12.1, 1%
- IEC 62053-22 Class 1S 1%
EM4200 series

The EM4200 meter series provides a highly flexible retrofit option ideal when adding metering to an existing building, or to integrate in an OEM solution. Designed to simplify the ordering process, the meter is declined in 2 major options:

System Calibrated offers the simplest way to order, deploy and meet requirements. The meter comes with pre-mounted Current Transducers (CT), or Rogowski Coils. A single reference provides a System calibrated accuracy meter with a 100, 200, 400A CT, or 5,000A Rogowski coil.

Flex offers the flexibility required when the CT, or Rogowski coil, rating or size needs to further adapt to the site. CTs can range from 50 to 5,000A and Rogowski coils can be different sizes with a 5,000 A rating.

- General features
  - Uni and Bi-Directional metering to support power generation application.
  - Data logging.
  - Modbus and BACnet serial communication with auto-protocol and baud rate detection.
  - Configurable with or without power.
  - DIN rail or screw-mount options, including mounting brackets for easy installation.
  - Wide input range of 90 to 480 V AC.
  - Approvals: UL 61010-1, IEC/EN 61010-1

- System calibrated features
  - Three factory mounted and calibrated Current Transducers (100, 200 or 400 A), or Rogowski coils (5,000 A, 12” or 18” (304.8 mm or 457.2 mm)). Simplifies ordering and commissioning.
  - ANSI version only: Fuse packs factory mounted.
  - System Accuracy from 1% to 100% load:
    - Real Power and Energy: ANSI C12.1 1%, IEC 62053-22 Class 1S, 1%.
    - Reactive Power and Energy: IEC 62053-24 Class 1, 1%

- Flex features
  - Supports generic 1/3 V CTs from 50 to 5,000 A.
    Or 1/3 V 5,000 A Rogowski coils.
  - ANSI: Optional fuse packs available.
  - Meter Accuracy from 1% to 100% of load (CT mode):
    - Real Power and Energy: ANSI C12.20 0.2%,
      IEC 62053-22 Class 0.2S, 0.2%.
    - Reactive Power and Energy: IEC 62053-24 Class 1, 1%.
# EM4200 series

## EM4200 series selection guide

<table>
<thead>
<tr>
<th>Advantage</th>
<th>EM4200 Flex</th>
<th>EM4200 System Calibrated</th>
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</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
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</tr>
<tr>
<td>Market</td>
<td>IEC</td>
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<td>ANSI</td>
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<td>Single part to order</td>
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<td></td>
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<td>Factory mounted CTs/Rogowski coil</td>
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<td><strong>CT</strong></td>
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<tr>
<td>Rating</td>
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<td>Three 100, 200 or 400 A supplied</td>
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<tr>
<td>Type</td>
<td>1/3 V Solid or Split Core</td>
<td>Split Core</td>
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<td><strong>Rogowski Coil</strong></td>
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<tr>
<td>Rating</td>
<td>5000 A</td>
<td>Three 5000 A supplied</td>
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<td>0.2% with CTs</td>
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<td>0.5% with Rogowski Coil</td>
<td>0.5% with Rogowski Coil</td>
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<td><strong>Fuse pack</strong></td>
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<td>Option sold separately</td>
<td>Option sold separately</td>
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</tbody>
</table>

## EM4200 parts descriptions and advantages

### EM4200 Flex meter

- **Phase status indicators**
- **Meter status indicators**
- **CT rating selection** (rotary dial or via software)
- **Bus address setting**

### EM4200 System calibrated

- **Phase status indicators**
- **Meter status indicators**
- **No CT settings or push-pin connectors** (pre-mounted CTs)
- **Bus address setting**
EM4200 series

### Electrical characteristics

<table>
<thead>
<tr>
<th>EM4200 Flex</th>
<th>EM4200 System calibrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs</td>
<td>V1, V2, V3, Vn</td>
</tr>
<tr>
<td>Measured voltage</td>
<td>90 - 277 V AC L-N</td>
</tr>
<tr>
<td></td>
<td>UL max 480 V L-L</td>
</tr>
<tr>
<td></td>
<td>CE max 300 V L-N</td>
</tr>
<tr>
<td>Frequency range</td>
<td>50/60 Hz</td>
</tr>
</tbody>
</table>

### Mechanical characteristics

<table>
<thead>
<tr>
<th>Weight</th>
<th>Approx 1/0 kg (2.2 lb)</th>
<th>1.4 to 2.2 Kg (3.10 to 4.85 lb) (model dependent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>46.63 x 35.81 x 152.36 mm (1.84 x 1.41 x 6.0 in)</td>
<td>46.63 x 35.81 x 152.36 mm (1.84 x 1.41 x 6.0 in) (Meter alone), CT/Rogowski size varies with model</td>
</tr>
</tbody>
</table>

### Environmental conditions

<table>
<thead>
<tr>
<th>Operating temperature</th>
<th>-30 °C to 70 °C (-22 to 158 °F)</th>
<th>0 to 70 °C (32 to 158 °F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage temperature</td>
<td>-40 °C to 85 °C (-40 to 185 °F)</td>
<td>With Split-Core CTs: -40 to 85 °C (-40 to 185 °F) With Rogowski Coils: -40 to 70 °C (-40 to 158 °F)</td>
</tr>
<tr>
<td>Humidity rating</td>
<td>&lt;95 % RH non-condensing</td>
<td>&lt;95 % RH non-condensing</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Indoor use only - not suitable for wet locations</td>
<td>Indoor use only - not suitable for wet locations</td>
</tr>
<tr>
<td>Altitude</td>
<td>3000 m (10,000 ft)</td>
<td>3000 m (10,000 ft)</td>
</tr>
<tr>
<td>Pollution degree</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

### Electromagnetic compatibility

- CAN/CSA-C22.2 En 61000-6-2
- En 61000-6-4 Class A
- En 61010-1
- En 61326-1 Class A
- FCC 47 CFR Part 15 Class A
- UL 61010-1

### Accuracy

- ANSI C12.20-2015 Class 0.2
- ANSI C12.20-2015 Class 0.2
- ANSI C12.20-2015 Class 0.2
- IEC 62053-24 Class 1S
- IEC 62053-24 Class 1S

### Commercial Reference Numbers

<table>
<thead>
<tr>
<th>Market</th>
<th>Commercial Reference</th>
<th>Rating</th>
<th>CTR type</th>
<th>CT size</th>
<th>Fuse pack</th>
<th>CT lead length</th>
<th>System calibrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEC</td>
<td>METSEEM4235</td>
<td>User choice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEC</td>
<td>METSEEM4235A12</td>
<td>Up to 5000 A (3 coils supplied)</td>
<td>Rogowski</td>
<td>12' (304.8 mm)</td>
<td>6 ft (1828.8 mm)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>IEC</td>
<td>METSEEM4235A18</td>
<td>Up to 5000 A (3 coils supplied)</td>
<td>Rogowski</td>
<td>18' (457.2 mm)</td>
<td>6 ft (1828.8 mm)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>IEC</td>
<td>METSEEM4235B101</td>
<td>100 A (3 CTs supplied)</td>
<td>Split core</td>
<td>6 ft (1828.8 mm)</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IEC</td>
<td>METSEEM4235B201</td>
<td>200 A (3 CTs supplied)</td>
<td>Split core</td>
<td>6 ft (1828.8 mm)</td>
<td>Yes</td>
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<td></td>
</tr>
<tr>
<td>IEC</td>
<td>METSEEM4235B401</td>
<td>400 A (3 CTs supplied)</td>
<td>Split core</td>
<td>6 ft (1828.8 mm)</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANSI</td>
<td>METSEEM4236</td>
<td>User choice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANSI</td>
<td>METSEEM4236A12</td>
<td>Up to 5000 A (3 coils supplied)</td>
<td>Rogowski</td>
<td>12' (304.8 mm)</td>
<td>6 ft (1828.8 mm)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>ANSI</td>
<td>METSEEM4236A18</td>
<td>Up to 5000 A (3 coils supplied)</td>
<td>Rogowski</td>
<td>18' (457.2 mm)</td>
<td>6 ft (1828.8 mm)</td>
<td>Yes</td>
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<tr>
<td>ANSI</td>
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<td>100 A (3 CTs supplied)</td>
<td>Split core</td>
<td>6 ft (1828.8 mm)</td>
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<td></td>
</tr>
<tr>
<td>ANSI</td>
<td>METSEEM4236B201</td>
<td>200 A (3 CTs supplied)</td>
<td>Split core</td>
<td>6 ft (1828.8 mm)</td>
<td>Yes</td>
<td></td>
<td></td>
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<tr>
<td>ANSI</td>
<td>METSEEM4236B401</td>
<td>400 A (3 CTs supplied)</td>
<td>Split core</td>
<td>6 ft (1828.8 mm)</td>
<td>Yes</td>
<td></td>
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</tr>
</tbody>
</table>
EM4200 series

EM4200 dimensions
EM4300 series

The PowerLogic wireless range is designed to retrofit existing switchboards, and enhance energy efficiency of buildings in operation for many years.

It achieves this by monitoring energy consumption, to detect potential savings, and monitoring operation of the electrical system, to optimize service to the building occupants.

Applications

Electrical circuits and load monitoring

- Energy management
- Sub-billing/tenant metering
- Equipment sub-billing
- Energy cost allocation
The solution for
Markets that can benefit from a solution that includes PowerLogic EM4300 series meters:
- Buildings
- Industry
- Healthcare
- Data centre and networks
- Infrastructure

Benefits

**System integrators’ benefit**
- Ease of integration
- Ease of setup
- Cost effectiveness

**Panel builders’ benefit**
- Ease of installation
- Cost effectiveness
- Aesthetically pleasing
- Simplified ordering

**End users’ benefit**
- Ease of use
- Precision metering & sub-billing
- Billing flexibility
- Comprehensive, consistent and superior performance

Competitive advantages
- Easy to install and operate
- Flexible current sensors, immediately fitted around any cable or bar without disconnection
- Minimal interruption to supply and operations
- Equipment can be scaled and implemented over time
- Broad, accurate scope of collected data

Power management solutions
Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

Conformity of standards
- IEC 61557-12
- IEC 62053-22
- IEC 62053-24
- IEC 61010-1
- IEC 61000-4-2
- IEC 61000-4-3
- IEC 61000-4-4
- IEC 61000-4-5
- IEC 61000-4-6
- IEC 61000-4-8
PowerLogic wireless range is designed to retrofit existing switchboards, and enhance energy efficiency of buildings in operation for many years, by:

- Monitoring energy consumption, to detect potential savings.
- Monitoring operation of the electrical system, to optimize service to the building occupants.
- PowerLogic EM4300 meters collect a broad scope of electrical data, from the distribution line they are fitted on.
- PowerLogic WT4100/4200 transmitters collect data from various meters (water, air, gas, steam etc.) with pulse outputs.

Collected data from both these sources are transmitted to a data concentrator, which enables their reading by various energy management services and software.

For data concentrators of various types, see:

- **Com’X for Ethernet networks**
  

- **SmartStruXure Lite MPM managers for BACnet, EnOcean, CANbus nest works**
  
EM4300 series

• Functions
  – Electrical circuits and loads monitoring, through a combination of power and energy metering with wireless communication.

• Features and benefits
  – Installation time and therefore total cost of ownership is minimized thanks to:
    – Wireless communication.
    – Attached flexible current sensors, immediately fitted around any cable or bar without disconnection. Power-off time to fit several meters in a switchboard in a matter of minutes.
  – Equipment can be scaled over time, according to savings fields identification, or other matters of interest.
  – Broad scope of collected data make PowerLogic EM4300 of high added-value for:
    – Energy management.
    – Energy cost allocations.
    – Electrical network management and supervision.

• Collected information
  – Energy: active, reactive, apparent, phase by phase and aggregated.
  – Active, reactive and apparent powers, power factor.
  – RMS Voltage and frequency.
  – Maximum RMS current and minimum RMS voltage over the last minutes (1 to 30).

• Wireless data transmission
  – Zigbee Pro HA protocol.
  – 2.4 GHz radio frequency.
  – Maximum power: 10 mW (10 dBm).
  – Compatible with Com’X 200/210 Data loggers, Com’X 510 Energy Servers, and MPM gateways.

• RF Operating range
  – The recommended distances between the meter and the receiver are shown here:
    – Wireless meters are inside electrical switchboards.
    – Wireless receivers are located in the technical room with up to 10 metres range.
    – Location of each element has to match distances as described on the picture.
    – All barriers, walls or pipes have to be considered during the installation. Moving an element by few centimetres can increase or decrease the wireless transmission performance.
    – Checking the LQI (Link Quality Index) is recommended to build a robust network.

Note: Do not install the meter if there is a solid concrete wall between the meter and the gateway. See appropriate Installation Guide for this product.
EM4300 series

Technical characteristics

Control power
- Powered by L1-N measured input voltage: 90 V to 300 V - 50/60 Hz
- Maximum supply current: 0.4 A
- Maximum burden: 2.0 W

Measurement characteristics
- Input voltage: 90 V to 300 V
- Frequency range: 50 Hz to 60 Hz
- Current range: 0 % to 120 % of rated value (200, 500, 1000 or 2000 A)
- Current sensors: 3 attached to the meter and calibrated as a single unit
- Accuracy: 1 % on active energy (3-phase with neutral) 2 % accuracy for EM4399

Mechanical characteristics
- Degree of protection (for indoor use only, not suitable for wet locations): IP20, IK06
- Insulation: Class II (IEC 61010-1 CAT III 300 V)

Environmental characteristics
- Operating temperature: -10 °C to 55 °C
- Moisture withstand: 5 % to 90 % relative humidity, non-condensing, maximum dewpoint 38 °C
- Pollution degree: 2
- Voltage surges: Category III
- Altitude: 2000 m above sea-level

Standards compliance
- Safety: IEC/EN 61010-1 ed. 3, UL 61010-1 ed. 3
- Electromagnetic compatibility: EN 61326-1:2013
- Wireless communication: FCC CFR Part 15, subparts B and C

Feature selection

<table>
<thead>
<tr>
<th>Commercial ref no</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>METSEEM4302</td>
<td>EM4302 - 200 A, 55 mm</td>
</tr>
<tr>
<td>METSEEM4305</td>
<td>EM4305 - 500 A, 55 mm</td>
</tr>
<tr>
<td>METSEEM4310</td>
<td>EM4310 - 1000 A, 125 mm</td>
</tr>
<tr>
<td>METSEEM4320</td>
<td>EM4320 - 2000 A, 125 mm</td>
</tr>
<tr>
<td>METSEEM4399</td>
<td>EM4399 - 1000 A, 55 mm</td>
</tr>
</tbody>
</table>
EM4300 series

**Mounting**

- DIN-rail or flat surface.
- Flexible current sensors around conductor to be monitored. Max inner Ø 55 or 125 mm. For safe and correct mounting, refer to the installation guide.

See appropriate Installation Guide for further information.

**Dimensions**

Install the meter away from panel edges

<table>
<thead>
<tr>
<th>Model</th>
<th>I (A)</th>
<th>Ø (mm)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM4302</td>
<td>200</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>EM4305</td>
<td>500</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>EM4310</td>
<td>1000</td>
<td>125</td>
<td></td>
</tr>
<tr>
<td>EM4320</td>
<td>2000</td>
<td>125</td>
<td></td>
</tr>
<tr>
<td>EM4399</td>
<td>1000</td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>

*Please consult your Schneider Electric representative.*
WT4100/4200

The PowerLogic WT4100/4200 wireless metering solution is ideal for hazardous environments or installations that are remote or on difficult terrain.

This long-range radio frequency (RF) wireless solution consists of transmitters and a receiver. Typically, repeaters are also installed and located between the transmitter and receiver to boost the transmission signal when the line-of-sight distance between the transmitter and receiver is greater than the transmitter's range.

Applications

Capable of essential cost management:

- Sub-billing/tenant metering
- Equipment sub-billing
- Energy cost allocation
The solution for
Markets that can benefit from a solution that includes PowerLogic WT4100/4200 series meters:
• Buildings
• Industry
• Healthcare
• Data centre and networks
• Infrastructure

Benefits

System integrators’ benefit
• Ease of integration
• Ease of setup
• Cost effectiveness

Panel builders’ benefit
• Ease of installation
• Cost effectiveness
• Aesthetically pleasing
• Simplified ordering

End users’ benefit
• Ease of use
• Precision metering & sub-billing
• Billing flexibility
• Comprehensive, consistent and superior performance

Competitive advantages
• Easy to install and operate
• Reduced wiring and maintenance costs
• Water flowmeter fast magnetic connection
• Effective in hazardous or explosive environments
• Wireless repeaters multiply transmission distances

Power management solutions
Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

Conformity of standards
• IEC 61557-12
• IEC 62053-22
• IEC 62053-24
• IEC 61010-1
• IEC 61000-4-2
• IEC 61000-4-3
• IEC 61000-4-4
• IEC 61000-4-5
• IEC 61000-4-6
• IEC 61000-4-8
This long-range radio frequency (RF) wireless solution consists of transmitters and a receiver. Typically, repeaters are also installed and located between the transmitter and receiver to boost the transmission signal when the line-of-sight distance between the transmitter and receiver is greater than the transmitter’s range.

Physical obstructions, such as buildings, reduce the effective transmission range of a transmitter, so repeaters are also installed in these situations. The wireless devices are grouped according to model numbers, and these identify a device’s RF transmission frequency. It is common for countries to limit RF transmission to a specific radio frequency.

- WT4200 series, WR4200 series, WA4200 series, 169 MHz for Europe
- WT4100 series, WR4100 series, WA4100 series, 153 MHz for USA and Canada

(Before installing and operating the wireless devices, check the rules and restrictions on RF transmission for your country and make sure your devices’ transmission frequency matches the allowed radio frequency.)

- **Main components**
  - **Transmitter Pulse counters** - This Modbus device pulse counter transmitter detects and counts pulses from a meter’s pulse output. It can count pulses with a 0.1 to 10 Hz frequency and the value is transmitted once every 15 minutes.
  - **Water pit pulse counter** - Designed for use with a water flowmeter and is easily installed by magnetic force to cast-iron covers.
  - **ATEX-rated pulse counter** - Designed for use with devices such as a gas meter, compliant with ATEX II 3G and Ex ic IIA T3 for use in hazardous or explosive environments.
  - **Receiver** - The gateway between sensors (transmitters) and the Modbus network. Data can be accessed via Modbus using a Com’X or EGX gateway device.
  - **Wireless repeater** - This device extends the operating range between transmitters and receivers.

### Feature selection

<table>
<thead>
<tr>
<th>Commercial ref. no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>METSEWT4211</td>
<td>WT4211 Single Pulse counting 169 MHz</td>
</tr>
<tr>
<td>METSEWT4216</td>
<td>WT4216 Single Pulse counting Water Pit 169 MHz</td>
</tr>
<tr>
<td>METSEWT4214</td>
<td>WT4214 Single Pulse counting ATEX 169 MHz</td>
</tr>
<tr>
<td>METSEWT4212</td>
<td>WT4212 Dual Pulse counting 169 MHz</td>
</tr>
<tr>
<td>METSEWT4232</td>
<td>WT4232 Alarm Status Dual 169 MHz</td>
</tr>
<tr>
<td>METSEWT4222</td>
<td>WT4222 Analog 0-10 V Dual 169 MHz</td>
</tr>
<tr>
<td>METSEWT4241</td>
<td>WT4241 Temperature Single Internal 169 MHz</td>
</tr>
<tr>
<td>METSEWT4200</td>
<td>WT4200 Modbus Receiver 169 MHz</td>
</tr>
<tr>
<td>METSEWT4290</td>
<td>WT4290 Repeater 169 MHz</td>
</tr>
<tr>
<td>METSEWT4275</td>
<td>WT4275 Dipole Antenna 169 MHz</td>
</tr>
<tr>
<td>METSEWT4277</td>
<td>WT4277 Whip Antenna 169 MHz</td>
</tr>
<tr>
<td>METSEWT4214</td>
<td>WT4111 Single Pulse counting 153 MHz</td>
</tr>
<tr>
<td>METSEWT4290</td>
<td>WT4112 Dual Pulse counting 153 MHz</td>
</tr>
<tr>
<td>METSEWR4100</td>
<td>WT4132 Alarm Status Dual 153 MHz</td>
</tr>
<tr>
<td>METSEWR4190</td>
<td>WT4122 Analog 0-10 V Dual 153 MHz</td>
</tr>
<tr>
<td>METSEWR4290</td>
<td>WT4141 Temperature Single Internal 153 MHz</td>
</tr>
<tr>
<td>METSEWA4175</td>
<td>WT4100 Modbus Receiver 153 MHz</td>
</tr>
<tr>
<td>METSEWA4275</td>
<td>WT4190 Repeater 153 MHz</td>
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<tr>
<td>METSEWA4177</td>
<td>WT4175 Dipole Antenna 153 MHz</td>
</tr>
<tr>
<td>METSEWA4277</td>
<td>WT4177 Whip Antenna 153 MHz</td>
</tr>
<tr>
<td>METSEWA4182</td>
<td>WA4282 5 m antenna extension cable 169 MHz</td>
</tr>
<tr>
<td>METSEWA4282</td>
<td>WA4284 10 m antenna extension cable 169 MHz</td>
</tr>
</tbody>
</table>

(For USA and Canada)
EM4100/4200

Pulse counter parts

A  Antenna location
B  Reed switch location
C  Single channel (2 wire)
D  Dual channel (4 wire)
E  Internal temperature sensor
F  Serial # (transmitter ID)

A  Mounting magnet
B  Reed switch location
C  Input wiring
D  Serial # (transmitter ID)

A  Antenna
B  Reed switch location
C  Input wiring connector
D  Serial # (transmitter ID)

Extension cable

Dipole antenna (left) and whip antenna (right)
EM4100/4200

WT4100/4200 dimensions

Single pulse, water pit
EM4100/4200

Receiver, repeater, and antenna options

Receiver, repeater, and antenna dimensions