# VerifEye™ Submetering Solutions

# SMARTer Metering. SMARTer Control. REAL Savings.
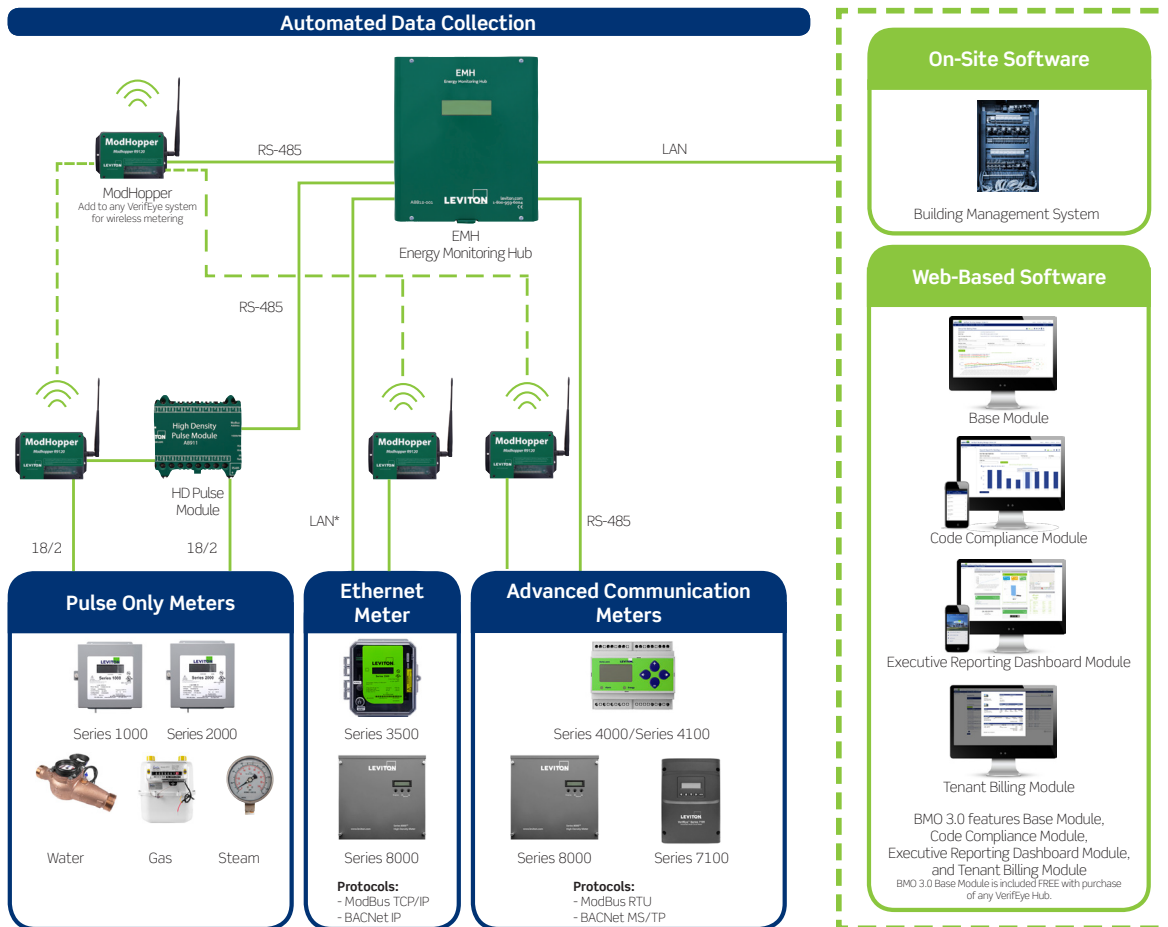
## THE BENEFITS OF SUBMETERING

VerifEye™ delivers a comprehensive line of leading-edge submeters, communication products and software solutions as the key building blocks to help you better manage costs and conserve energy.

From tenant billing to energy measurement & verification (M&V) software solutions, VerifEye offers cost-effective scalability and integration to provide you with the solution you need today that can be expanded in the future. This seamless solution enables smart metering, meets code compliance requirements and simplifies the complexities of allocating energy costs and billing tenants. Building owners and managers can minimize usage of electric, water, gas and other utilities for long-term cost savings. Organizations that monitor and manage energy usage are better able to compete, to achieve real savings, and to meet code compliance and building efficiency standards such as LEED, California Title 24 and ASHRAE 90.1.

For additional energy savings, combine VerifEye with Leviton lighting controls for a complete energy management solution from a single source.

### VerifEye delivers accurate information for:
• Load profiling & benchmarking

• Tenant billing/cost allocation

• Measurement & verification (M&V)

• Energy conservation programs

• Building codes and standards compliance

• Green initiatives including LEED certification

• Federal government energy program compliance

• Building management systems (AMR/BMS/EMS) integration



**Automated Data Collection**

ModHopper
Modhopper RV120
ModHopper
Add to any VerifEye system
for wireless metering

RS-485

EMH
Energy Monitoring Hub

RS-485

ModHopper
Modhopper RV120

High Density
Pulse Module
A8811

HD Pulse
Module

ModHopper
Modhopper RV120

ModHopper
Modhopper RV120

18/2    18/2    LAN*    RS-485

**Pulse Only Meters**

Series 1000    Series 2000

Water    Gas    Steam

**Ethernet Meter**

Series 3500

Series 8000

**Protocols:**
- ModBus TCP/IP
- BACNet IP

**Advanced Communication Meters**

Series 4000/Series 4100

Series 8000    Series 7100

**Protocols:**
- ModBus RTU
- BACNet MS/TP

LAN

**On-Site Software**

Building Management System

**Web-Based Software**

Base Module

Code Compliance Module

Executive Reporting Dashboard Module

Tenant Billing Module

BMO 3.0 features Base Module,
Code Compliance Module,
Executive Reporting Dashboard Module,
and Tenant Billing Module
BMO 3.0 Base Module is included FREE with purchase
of any VerifEye Hub.

*Note: ModBus TCP/IP Only

# Contents

**VerifEye Submetering Applications**

**VerifEye Submetering Solutions**

**VerifEye™ Smart Submetering Solutions**

# High-Rise Residential MDUs

## New Construction Projects

With a VerifEye submetering solution utilizing Series 8000 Multiple Point Meters, Leviton can be your single source for a complete tenant metering solution designed specifically to suit high-density applications such as high-rise multiple dwelling units. A solution built around the Series 8000 is especially cost-effective for new construction due to its capacity and flexibility. The Series 8000 submeter is easy to install and wire and allows complete flexibility to fit any project design and is configurable for any type of electrical service including:

**PUTTING IT ALL TOGETHER**
See pages 6-7

- 120/208V 1P3W (120/208V 3P4W service at the panel)
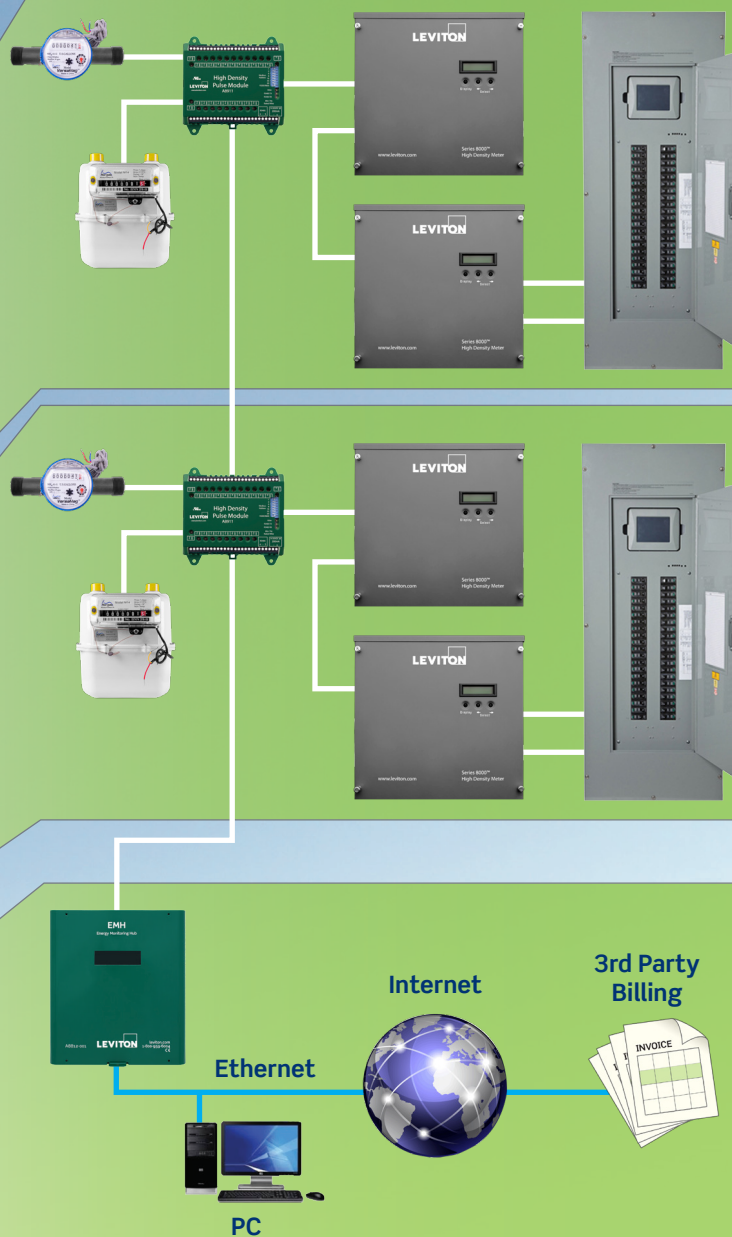- 120/240V 1P3W
- 120/208V 3P4W

### The Leviton Advantage

- Minimal wall space needed in electrical closets and reduced construction costs as compared to traditional metering
- Unique wiring harness minimizes installation labor and material cost (virtually eliminates the need to extend current transformer wires)
- Color coded current transformers to facilitate proper wiring
- Allows interface for water, gas, BTU, etc. meters into single communication system
- Leviton factory technicians provide system startup, programming and training services
- Open architecture provides flexibility to use your choice of third-party billing company or optional VerifEye BMO 3.0 Tenant Billing Module web-based software
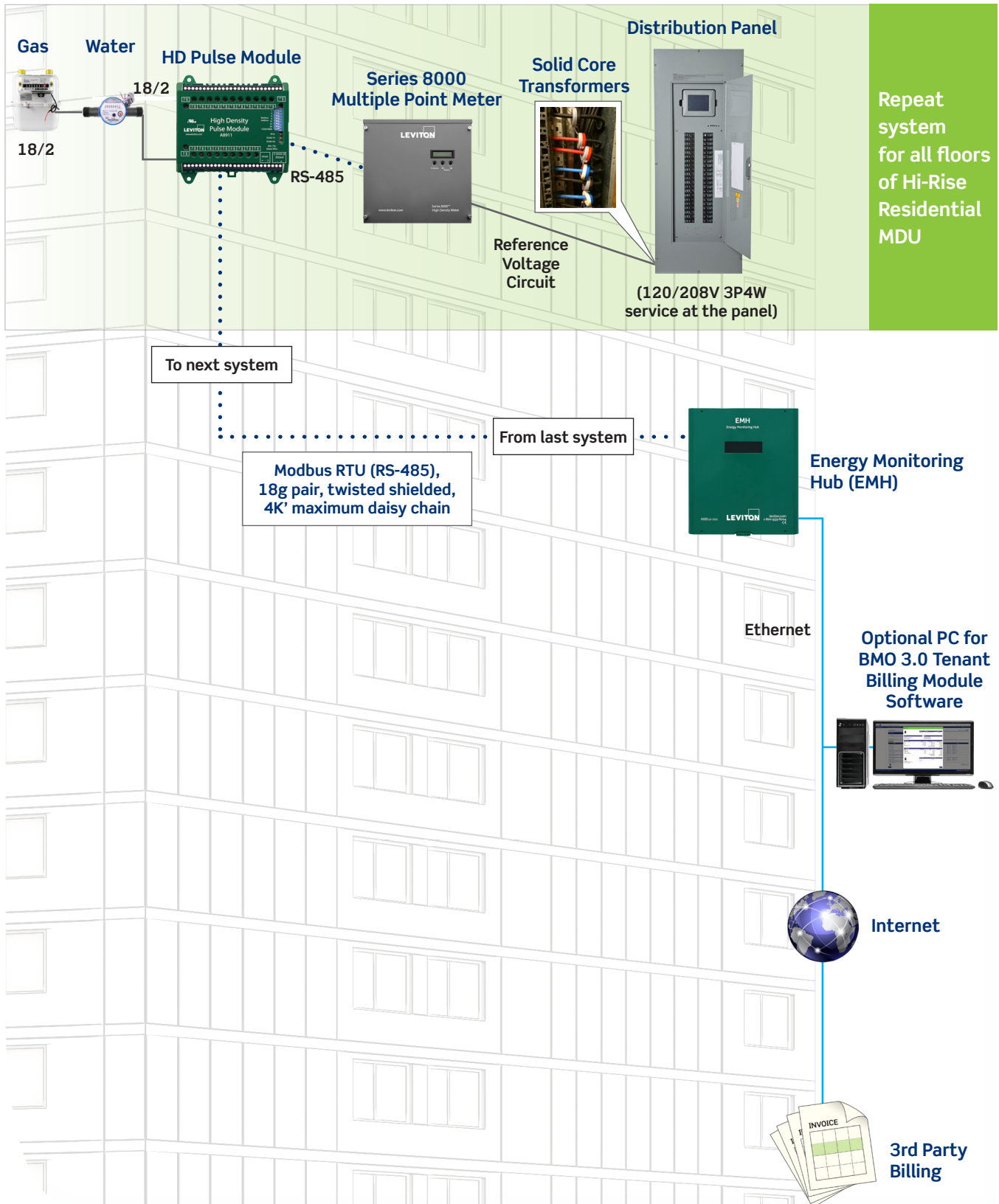
*Typical configuration
for each service
panel location

EMH
Energy Monitoring Hub

3rd Party
Billing

Internet

INVOICE

Ethernet

PC

High Density
Pulse Module

LEVITON

Series 8000™
High Density Meter

# PUTTING IT ALL TOGETHER



**Gas**  **Water**  **HD Pulse Module**

18/2

18/2

**Series 8000 Multiple Point Meter**

**Solid Core Transformers**

**Distribution Panel**

RS-485

Reference Voltage Circuit

(120/208V 3P4W service at the panel)

**Repeat system for all floors of Hi-Rise Residential MDU**

To next system

From last system

**Modbus RTU (RS-485), 18g pair, twisted shielded, 4K' maximum daisy chain**

**Energy Monitoring Hub (EMH)**

Ethernet

**Optional PC for BMO 3.0 Tenant Billing Module Software**

**Internet**

**3rd Party Billing**

INVOICE

# CORE LEVITON COMPONENTS

| High Rise Residential MDUs | | | |
|---|---|---|---|
| **Product** | **Voltage** | **Description** | **Cat. No.** |
| HD Pulse Module | — | HD Pulse Module, 23 inputs | A8911-023 |
| Series 8000 Multi-Point High Density Meter | 120/208V | Phase Config 8x3 with Terminal Strips | S8UTS-241 |
| | | Phase Config 12x2 with Terminal Strips | |
| | | Phase Config 24x1 with Terminal Strips | |
| | | Phase Config 8x3 with Wiring Harness | S8UWH-241 |
| | | Phase Config 12x2 with Wiring Harness | |
| | | Phase Config 24x1 with Wiring Harness | |
| Energy Monitoring Hub | — | Energy Monitoring Hub | A8812-000 |
| BMO 3.0 Tenant Billing Module Software | — | See www.leviton.com/verifeye for full listing and details | BMOSW-BIL |

Note: These are examples of applications but should not be considered limitations to product and solution capability. Please contact your local Leviton representative for design assistance.

**VeriEye™ Smart Submetering Solutions**

# Residential Multi-Dwelling Units

## Master Metered Buildings (Retrofit)

Ratio-based billing for utilities leaves much to be desired. There's nothing fair about a single, traveling salesperson in a two-bedroom unit paying the same share of the utilities as a family of four living in the same size unit. It's also nearly impossible to stabilize building owner profits because although MDU utility bills rise, it can be difficult to retain tenants if rents are hiked annually.

**PUTTING IT ALL TOGETHER**
See pages 10-11

Leviton's VerifEye submetering solution provides the ability to lower utility costs by billing each apartment unit for what is actually used. VerifEye offers a tenant metering solution with wireless communications that is ideally suited to retrofit MDU applications. The core of the system is a compact, flush-mount or surface mount Leviton Mini Meter that is installed in each unit along with a wireless transmitter.

This wireless system enables either staff or a third party billing company to generate accurate bills. The size of the components and minimal wiring required helps make this a relatively easy-to-install and cost-effective system, especially where risers feed multiple units. With a Leviton submetering solution, owners can allocate costs directly to the tenant and lower overall operating expenses. Get unbeatable accuracy for tenant billing applications and revenue-grade accuracy in a compact, cost-effective solution.

### The Leviton Advantage

- Equitable unit/common-area cost allocation and accurate tenant billing eliminates burden of rising and unpredictable expenses
- Easy-to-retrofit and robust wireless communication system with small footprint
- Compact, flush mount or surface mount meter enclosure designed for installation in smaller apartments
- Open architecture allows for easy integration of water and gas meters as well
- Open architecture provides flexibility to use a third-party billing company
- Scalable, wireless repeater network can be used to accommodate large sites or added in the future for new tenants and building expansions
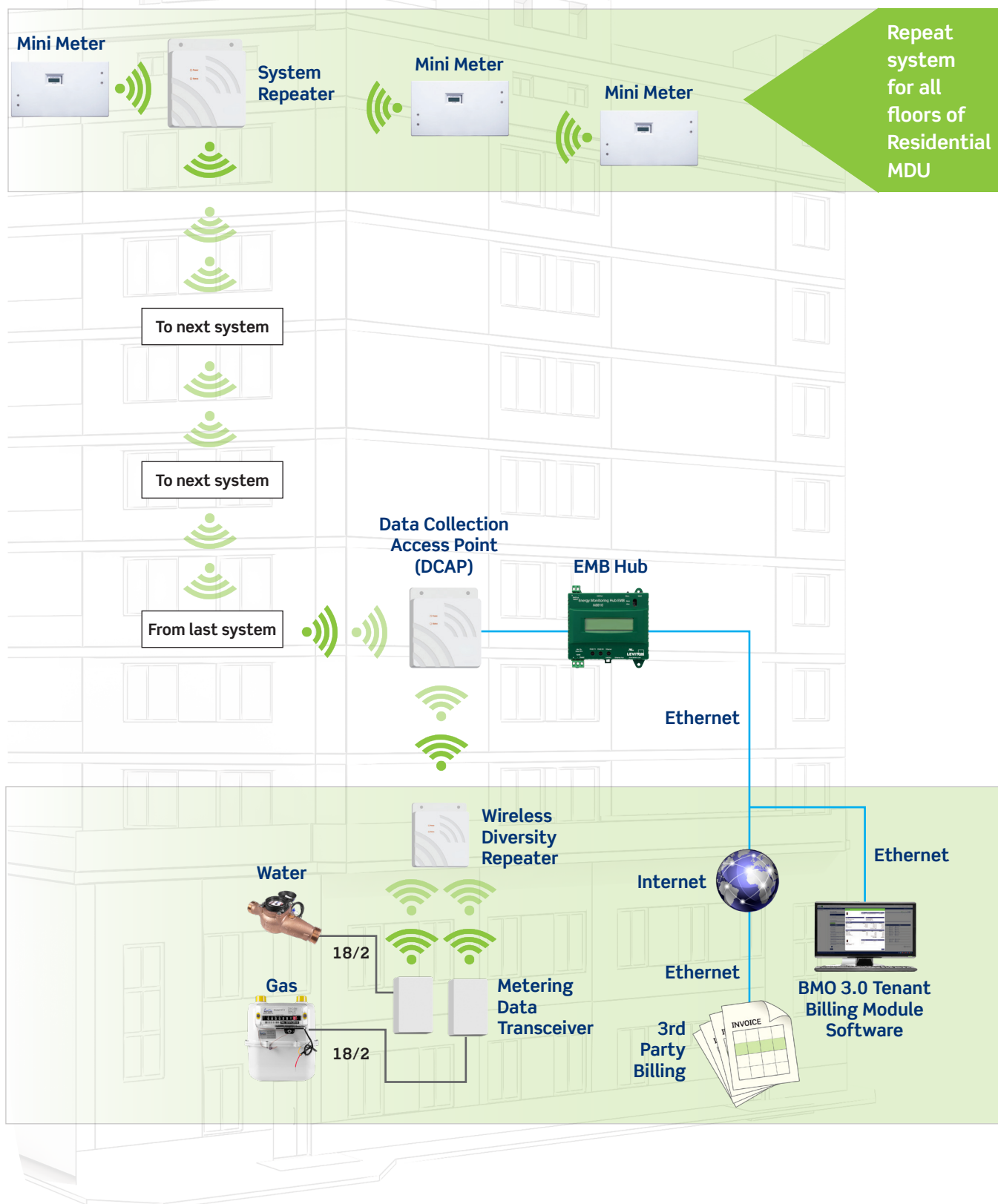
VerifEye™ Smart Submetering Solutions

Apt 1
Apt 2
Apt 3
3rd Floor

Apt 1
Apt 2
Apt 3
2nd Floor

Apt 1
Apt 2
Apt 3
1st Floor

Ground Floor

Ethernet

Internet

3rd Party Billing

PC

INVOICE

## Residential Multi-Dwelling Units
Master Metered Buildings (Retrofit)

# PUTTING IT ALL TOGETHER



Mini Meter

System Repeater

Mini Meter

Mini Meter

Repeat system for all floors of Residential MDU

To next system

To next system

From last system

Data Collection Access Point (DCAP)

EMB Hub

Ethernet

Wireless Diversity Repeater

Water

18/2

Gas

18/2

Metering Data Transceiver

Internet

Ethernet

Ethernet

3rd Party Billing

INVOICE

BMO 3.0 Tenant Billing Module Software

VerifEye™ Smart Submetering Solutions

# CORE LEVITON COMPONENTS

| Residential Multi-Dwelling Units | | | | |
|---|---|---|---|---|
| **Product** | **Voltage** | **Description** | **Amps** | **Cat. No.** |
| Mini Meter | 120/208V 3W or 120/240V 1PH 3W (Split Phase) | Indoor Enclosure Type, 2 Solid CTs | 100A | MK240-1SW |
| | | Indoor Enclosure Type, 2 Solid CTs | 200A | MK240-2SW |
| EMB Hub | — | Intelligent, flexible data acquisition server | — | A8810-000 |
| Wireless Diversity Repeater | — | Repeater, 5V, includes 5VDC 1A plug-in power supply and internal backup battery | — | T95RX-000 |
| Metering Data Transceiver | — | Meter Data Transceiver (MDT), battery input model battery powered, daily reads only (No TOU) | — | T70MB-SP0 |
| Data Concentrating Access Point* <br><br> * All DCAPs and Gateways shipped with 6VDC, minimum 1.5 Amp power supply, Ethernet cable and USB cable | — | Data Concentrating Access Point (DCAP), Low Capacity (150 meter points max), built-in radio receiver | — | T25DX-151 |
| | | DCAP, High Capacity (1000 meter points max), built-in radio receiver | — | T25DX-102 |
| BMO 3.0 Tenant Billing Module Software | — | See www.leviton.com/verifeye for full listing and details | — | BMOSW-BIL |

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**VerifEye™ Smart Submetering Solutions**

# Commercial Offices/ Mixed Use

## New Construction & Retrofit Applications

The benefits of implementing a cost-effective means of recovering utility costs, saving energy and reducing the carbon footprint can be substantial; even game changing. Whether for a small, two-story office building, a sprawling commercial office complex or a new mixed use facility, Leviton has the right combination of components and expertise to deliver the optimal solution.

**PUTTING IT
ALL TOGETHER**
See pages 14-15

There's no doubt that redirecting accountability for energy usage to tenants and streamlining accounting operations by installing and implementing a Leviton submetering solution is a win-win in the commercial office/mixed use space. Precise monitoring of tenant utilities and major building systems can generate substantial cost savings. For a facility to be considered state of the art, it must incorporate technologies such as VerifEye submetering solutions. Leviton's energy management software can be used to push meter data to third party billing companies, energy monitoring software solutions, energy dashboards on kiosks or big screens displaying building energy conservation statistics and tenant awareness/ sustainability messages.

### The Leviton Advantage

- Redirect responsibility for utility usage from property owners to tenants and encourage conservation

- Easy-to-install/retrofit metering system: minimally wired installation saves time and reduces labor costs

- Universal energy information system designed to meet or exceed all energy data project goals using open protocol system platform and interfaces

- Cost-effective and convenient method of monitoring usage for energy savings, code compliance and LEED measurement and verification

- Provides web-based access to real-time usage data and reports and accommodates third-party billing

- Set energy goals at the building or portfolio level with BMO 3.0 Executive Reporting Module

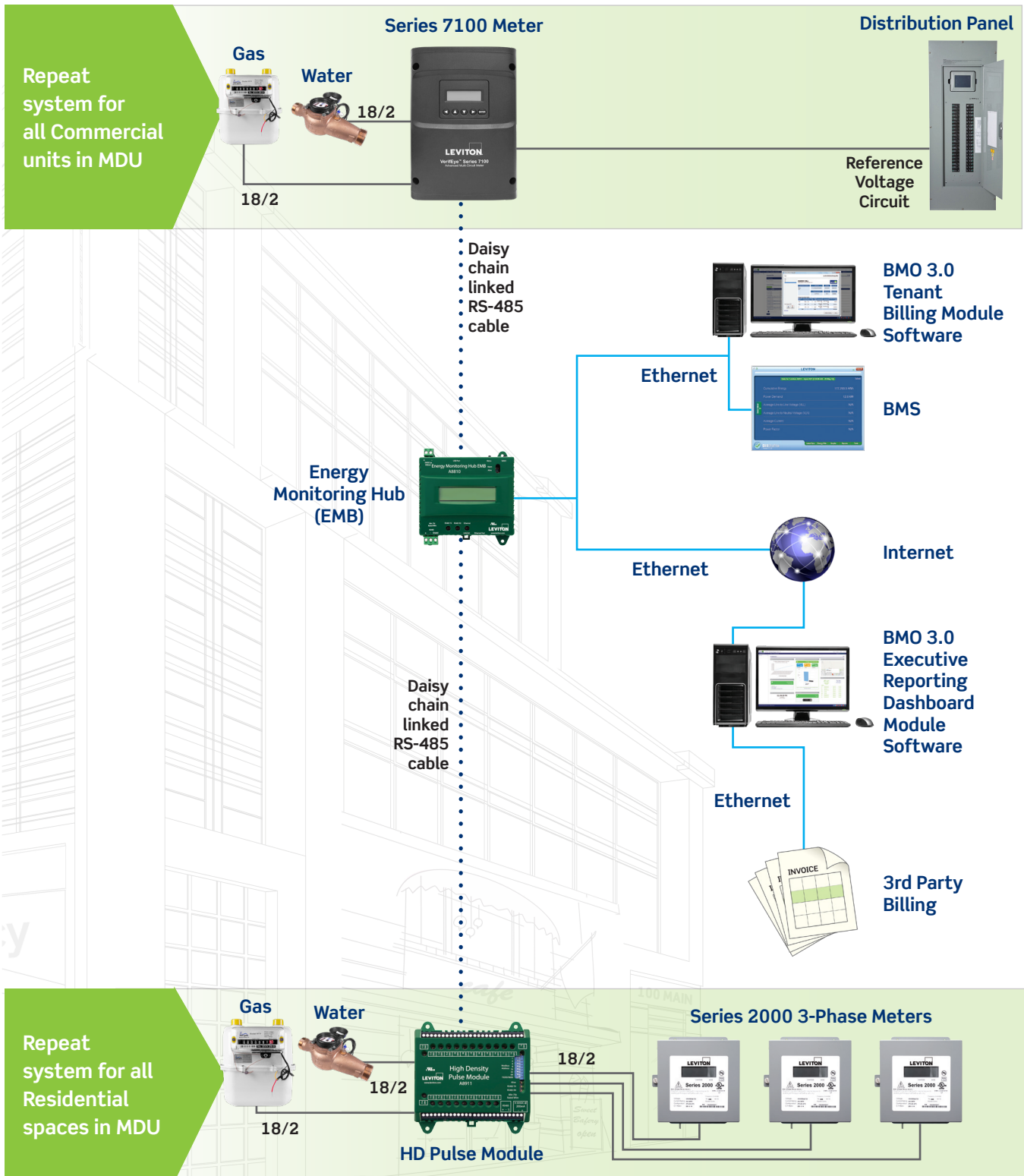- Access the Executive Reporting Module data remotely via the mobile app

Residential Units

Commercial Units

BMO 3.0 Tenant Billing Module Software

BMS

3rd Party Billing

BMO 3.0 Executive Reporting Dashboard Module Software

Internet

Ethernet

# PUTTING IT ALL TOGETHER

**VerifEye™ Smart Submetering Solutions**

**Repeat system for all Commercial units in MDU**

**Gas**

**Water**

18/2

18/2

**Series 7100 Meter**

**Distribution Panel**

Reference Voltage Circuit

Daisy chain linked RS-485 cable

**Energy Monitoring Hub (EMB)**

**Ethernet**

**BMO 3.0 Tenant Billing Module Software**

**BMS**

**Ethernet**

**Internet**

**BMO 3.0 Executive Reporting Dashboard Module Software**

**Ethernet**

**3rd Party Billing**

Daisy chain linked RS-485 cable

**Repeat system for all Residential spaces in MDU**

**Gas**

**Water**

18/2

18/2

18/2

**HD Pulse Module**

**Series 2000 3-Phase Meters**

14

# CORE LEVITON COMPONENTS

| Commercial Offices/Mixed Use | | | | |
|---|---|---|---|---|
| **Product** | **Voltage** | **Description** | **Amps** | **Cat. No.** |
| HD Pulse Module | — | HD Pulse Module, 23 inputs | — | A8911-023 |
| Series 7100 Meter | — | Series 7100 Dual Voltage, Branch Circuit Monitor, 48 inputs, LCD display, NEMA 1 enclosure | — | 71D48-000 |
| Energy Monitoring Hub EMB | — | Energy Monitoring Hub EMB ModBus/TCP/Ethernet | — | A8810-000 |
| Series 2000 3-Phase Meter | — | See www.leviton.com/verifeye for full listing and details | — | 2K208-xxx |
| BMO 3.0 Tenant Billing Module Software | — | See www.leviton.com/verifeye for full listing and details | — | BMOSW-BIL |
| BMO 3.0 Executive Reporting Dashboard Module Software | — | Expansion Module Software & Mobile App - Includes 10 Buildings with 50 Meter Points Per Building | — | BMOSW-EXE |

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VerifEye™ Smart Submetering Solutions
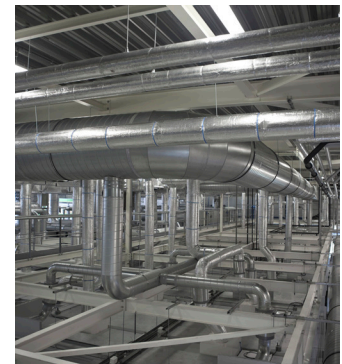
# Retail Malls

## New Construction & Retrofit Applications

Billing tenants for actual, measured usage on a regular basis and taking the uncertainty out of the equation makes sense for all parties. It improves cash flow, avoids end-of-year reconciliations and, in general, places responsibility for consumption where it belongs. But VerifEye submetering is more than just a tenant billing solution. All of our meters are designed to provide granular data on usage within specific areas or by individual loads that can be used to lower long-term energy usage.

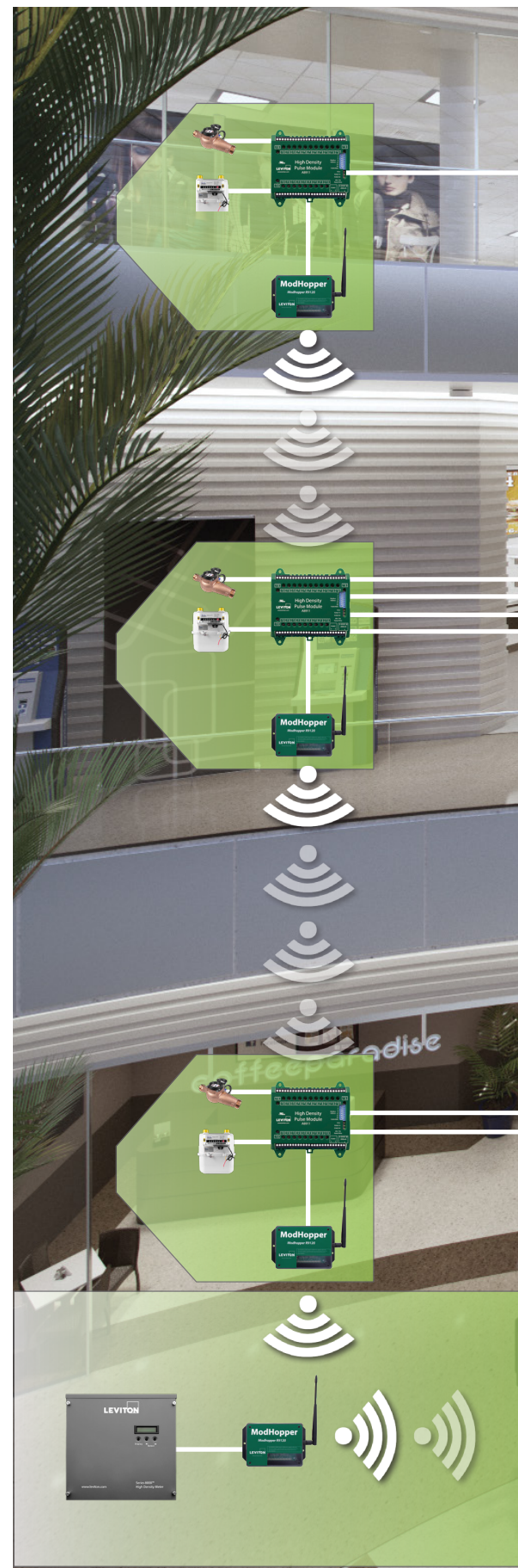**PUTTING IT ALL TOGETHER**
See pages 18-19

Submeters are a cost effective approach to tenant billing and energy management in a mall environment where space is routinely reconfigured to accommodate tenant turnover and planned improvements. That's because it is a cost-effective option that minimizes rewiring and disruption of retail operations during typical ongoing tenants' improvements.

Leviton VerifEye submetering features a range of devices that incorporate standard protocols, wireless options and split core CT technologies, making retrofits relatively easy and inexpensive. VerifEye submeters facilitate accurate tenant billing of electric, water, gas and other utility usage — and chargebacks for common area utilities.

### The Leviton Advantage

- Redirect responsibility for utility usage from property owners to tenants for improved cash flow

- The VerifEye ModHopper Wireless Transceiver provides a self-optimizing wireless mesh network between multiple meters for a full submetering solution at a fraction of the traditional cost

- Eliminate the need for costly wiring throughout a large facility with a wireless metering solution

- Open architecture data collection offers freedom to utilize any third party billing company or VerifEye™ BMO 3.0 Tenant Billing Module web-based software
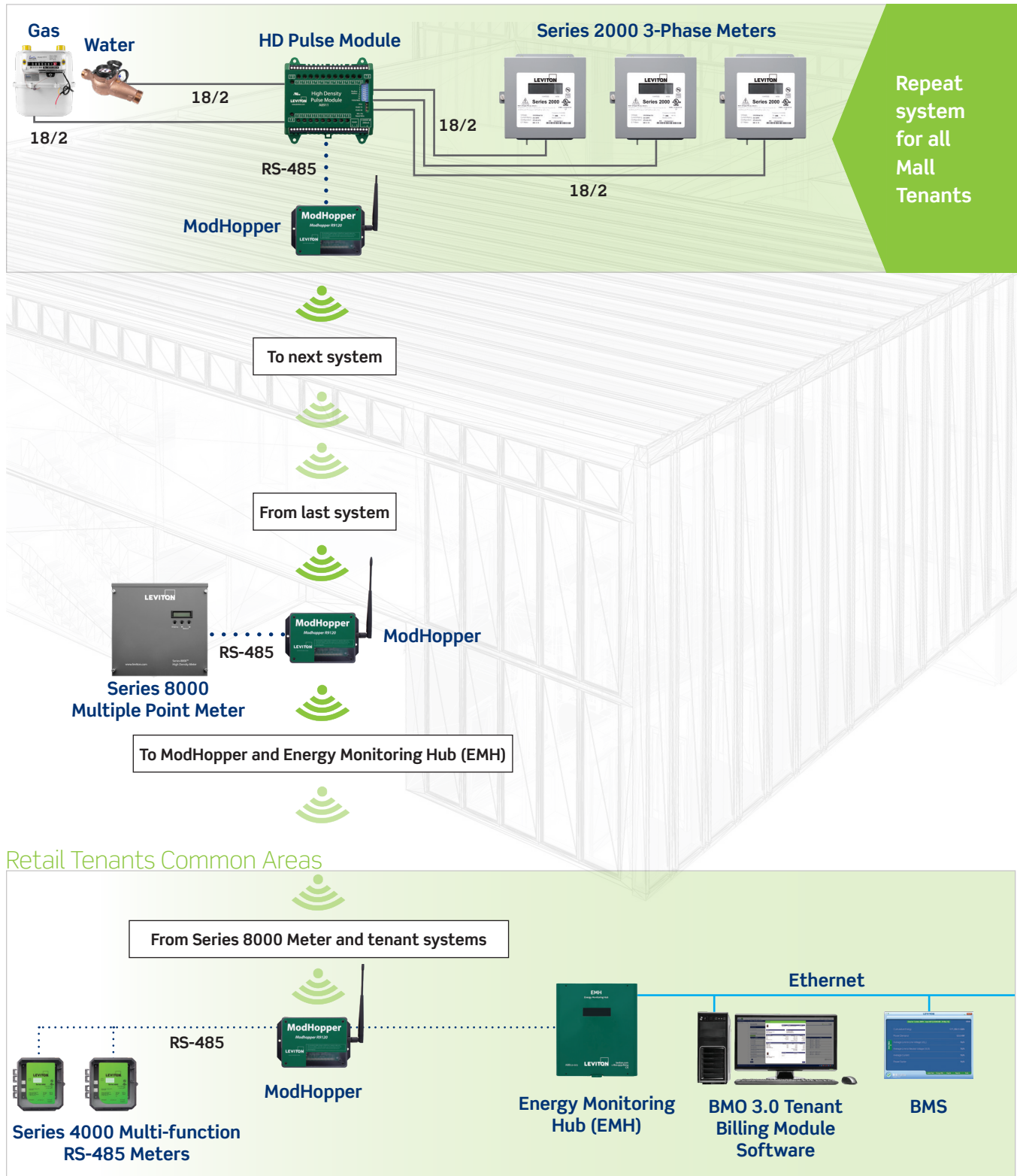
# FASHION SHOP

**BMO 3.0 Tenant
Billing Module Software**

**BMS**

ModHopper

EMH

Ethernet

Common
Area

VeriFEye™ Smart Submetering Solutions

# PUTTING IT ALL TOGETHER

**VerifEye™ Smart Submetering Solutions**

**Gas** **Water** **HD Pulse Module** **Series 2000 3-Phase Meters**

18/2

18/2

18/2

18/2

RS-485

**ModHopper**

**Repeat system for all Mall Tenants**

**To next system**

**From last system**

**Series 8000 Multiple Point Meter**

RS-485

**ModHopper**

**To ModHopper and Energy Monitoring Hub (EMH)**

## Retail Tenants Common Areas

**From Series 8000 Meter and tenant systems**

**Ethernet**

RS-485

**ModHopper**

**Series 4000 Multi-function RS-485 Meters**

**Energy Monitoring Hub (EMH)**

**BMO 3.0 Tenant Billing Module Software**

**BMS**

# CORE LEVITON COMPONENTS

| Retail Malls | | | |
|---|---|---|---|
| **Product** | **Voltage** | **Description** | **Cat. No.** |
| ModHopper | — | ModHopper | R9120-500 |
| High Density Pulse Module | — | High Density Pulse Module, 23 Inputs | A8911-023 |
| Series 2000 3-Phase Meter | — | See www.leviton.com/verifeye for full listing and details | 2K208-xxx |
| Series 4000 ModBus RTU | Universal 3PH 3W/4W | 100A, 3 Split Core CTs | 4KUMR-01M |
| | | 200A, 3 Split Core CTs | 4KUMR-02M |
| | | 400A, 3 Split Core CTs | 4KUMR-04M |
| | | 800A, 3 Split Core CTs | 4KUMR-08M |
| | | 20-5000A, 3, 12" Rogowski Coil CTs | 4KU MR-R12 |
| | | 20-5000A, 3, 18" Rogowski Coil CTs | 4KUMR-R18 |
| | | 20-5000A, 3, 24" Rogowski Coil CTs | 4KUMR-R24 |
| Series 8000 Multi-Point High Density Meter | 120/270V | Phase Config 24x1 with Wiring Harness | S8UWH-241 |
| Energy Monitoring Hub | — | Energy Monitoring Hub - Configured for Leviton Energy Manager | A8812-001 |
| | | Energy Monitoring Hub - Non-Configured | A8812-000 |
| BMO 3.0 Tenant Billing Module Software | — | See www.leviton.com/verifeye for full listing and details | BMOSW-BIL |

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**VerifEye™ Smart Submetering Solutions**

# Educational and Professional Campuses

## New Construction & Retrofit Applications

In the face of escalating utility costs, energy metering and monitoring provides a prime opportunity for substantial savings on college campuses. Modern educational facilities have become increasingly reliant on technology to improve the learning environment. Computers at every desk, sophisticated A/V equipment in every room, proliferation of personal mobile devices, etc.: all these devices and systems consume vast amounts of energy.

**PUTTING IT ALL TOGETHER**
See pages 22-23

Installing a Leviton VerifEye submetering system provides visibility into downstream energy usage that can be used to improve energy efficiency and distribute costs equitably. Identifying and correcting system inefficiencies and equipment problems using data provided by submeters can result in significant savings. Submeters provide the required data for energy and facility managers to understand where to focus their time and money.

VerifEye provides the right products to allow energy submetering from the whole building down to individual branch circuits on a single platform campus wide. Collected data can be sent to multiple stakeholders including energy monitoring software, EMS/BMS, dorm competition dashboards, ESCOs, etc.

### The Leviton Advantage

- Clear visibility into downstream energy data facilitates departmental cost allocation and aids in forecasting future energy needs

- Integration of multiple utilities (electric, water, gas and steam) into single data collection platform with open protocol data access

- Broad line of metering products and communication architecture platforms to suit a wide variety of environments

- Highly scalable system can be phased in to accommodate resource constraints and ease adoption

- Cost-effective and convenient method of monitoring usage for energy savings, code compliance and LEED measurement and verification



Data Center
Series 3500

Dormitory
Series 3500

VerifEye™ Smart Submetering Solutions
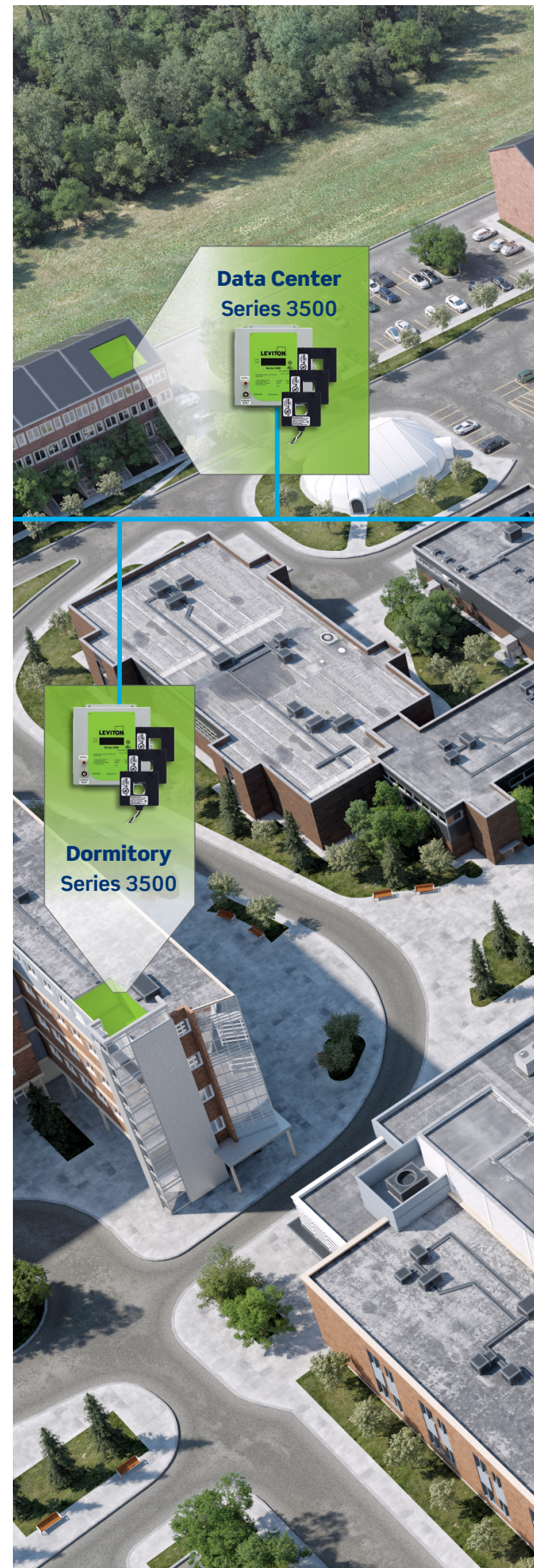
**Lecture Hall**
Series 8000
Multiple Point Meter

**Health Sciences**
Series 3500

**Facilities Management**
Energy Monitoring
Hub (EMH)

**Ethernet**

**Library**
Series 3500

**Faculty Hall**
Series 3500
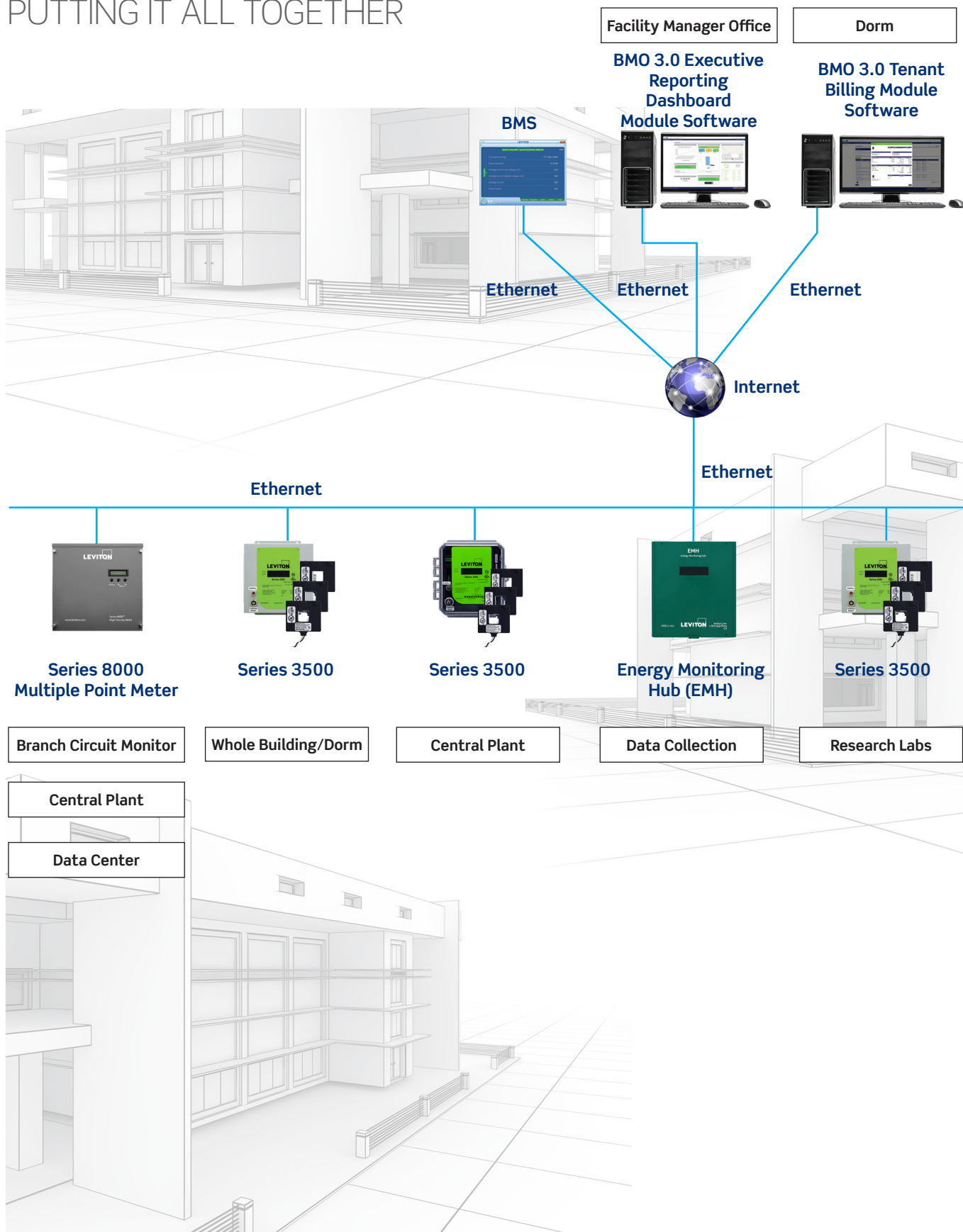
**Administration**
Series 3500

**Gymnasium**
Series 3500

**Research Lab**
Series 3500

VeriFEye™ Smart Submetering Solutions

## Educational and Professional Campuses
New Construction & Retrofit Applications

# PUTTING IT ALL TOGETHER

**Facility Manager Office**

**Dorm**

**BMO 3.0 Executive Reporting Dashboard Module Software**

**BMO 3.0 Tenant Billing Module Software**

**BMS**

**Ethernet**

**Ethernet**

**Ethernet**

**Internet**

**Ethernet**

**Ethernet**

**Series 8000 Multiple Point Meter**

**Series 3500**

**Series 3500**

**Energy Monitoring Hub (EMH)**

**Series 3500**

**Branch Circuit Monitor**

**Whole Building/Dorm**

**Central Plant**

**Data Collection**

**Research Labs**

**Central Plant**

**Data Center**

22

# CORE LEVITON COMPONENTS

| Educational and Professional Campuses | | | | |
|---|---|---|---|---|
| **Product** | **Voltage** | **Description** | **Amps** | **Cat. No.** |
| BMO 3.0 Tenant Billing Module Software | — | See www.leviton.com/verifeye for full listing and details | — | BMOSW-BIL |
| BMO 3.0 Executive Reporting Dashboard Module Software | — | Expansion Module Software & Mobile App - Includes 10 Buildings with 50 Meter Points Per Building | — | BMOSW-EXE |
| **Suggested Meters for Individual Buildings** | | | | |
| **Low Range — Gymnasium, Faculty Hall** | | | | |
| Series 3500 Ethernet Meter Kits* INDOOR ENCLOSURE<br>*Kits include meter, specified enclosure and required current transformers | 208-480VAC 3P 3W/4W | ModBus TCP/BACnet IP, 3 Split CTs | 100A | 3KUMT-01M |
| | | | 200A | 3KUMT-02M |
| | | | 400A | 3KUMT-04M |
| | | ModBus TCP/BACnet IP, 3 Solid CTs | 100A | 3KUMT-1SM |
| | | | 200A | 3KUMT-2SM |
| | | ModBus TCP/BACnet IP, 3 Split CTs | 3000A | 3KUMT-4SM |
| Series 3500 Ethernet Meter Kits* OUTDOOR ENCLOSURE<br>*Kits include meter, specified enclosure and required current transformers | 208-480VAC 3P 3W/4W | ModBus TCP/BACnet IP, 3 Split CTs | 100A | 3OUMT-01M |
| | | | 200A | 3OUMT-02M |
| | | | 400A | 3OUMT-04M |
| | | ModBus TCP/BACnet IP, 3 Solid CTs | 100A | 3OUMT-1SM |
| | | | 200A | 3OUMT-2SM |
| | | ModBus TCP/BACnet IP, 3 Solid CTs | 400A | 3OUMT-4SM |
| **Mid Range — Administration, Dormitory, Health Sciences, Library** | | | | |
| Series 3500 Ethernet Meter Kits* INDOOR ENCLOSURE<br>*Kits include meter, specified enclosure and required current transformers | 208-480VAC 3P 3W/4W | ModBus TCP/BACnet IP, 3 Split CTs | 400A | 3KUMT-04M |
| | | | 800A | 3KUMT-08M |
| | | ModBus TCP/BACnet IP, 3 Solid CTs | 200A | 3KUMT-2SM |
| | | ModBus TCP/BACnet IP, 3 Split CTs | 3000A | 3KUMT-30M |
| **High Range — Data Center. Research Lab** | | | | |
| Series 3500 Ethernet Meter Kits* INDOOR ENCLOSURE<br>*Kits include meter, specified enclosure and required current transformers | 208-480VAC 3P 3W/4W | ModBus TCP/BACnet IP, 3 Split CTs | 800A | 3KUMT-08M |
| | | | 1600A | 3KUMT-16M |
| | | ModBus TCP/BACnet IP, 3 Solid CTs | 3000A | 3KUMT-30M |
| | | ModBus TCP/BACnet IP, 3 Split CTs | 5000A | 3KUMT-50M |
| **Facilities Management** | | | | |
| Energy Monitoring Hub | — | Energy Monitoring Hub - Non-Configured | — | A8812-000 |
| **Lecture Hall** | | | | |
| Series 8000 Meter | 120/208V | Phase Config 8x3 with Terminal Strips | — | S8UTS-241 |
| | | Phase Config 12x2 with Terminal Strips | — | S8UTS-241 |
| | | Phase Config 24x1 with Terminal Strips | — | S8UTS-241 |
| | | Phase Config 8x3 with Wiring Harness | — | S8UWH-241 |
| | | Phase Config 12x2 with Wiring Harness | — | S8UWH-241 |
| | | Phase Config 24x1 with Wiring Harness | — | S8UWH-241 |

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VeriFEye™ Smart Submetering Solutions
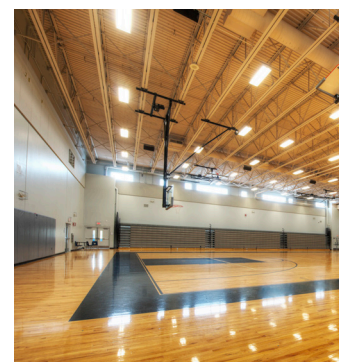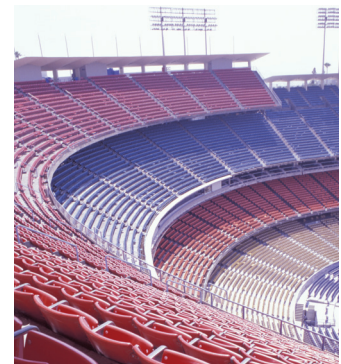
# Industrial/ Manufacturing Plants, Major Building Systems

## New Construction and Retrofit Applications

It takes a tremendous amount of energy to run manufacturing process equipment, lighting and HVAC systems within a typical plant. As major consumers of electricity and other utilities, factories and industrial facilities can achieve significant cost savings by improving equipment performance, by load shifting, and by eliminating wasteful consumption. In addition, accurate allocation of utility costs made possible through submetering can enhance management of per-unit production costs. Energy monitoring data can facilitate a robust energy management and improvement plan that if utilized properly, will provide significant savings opportunities.

**PUTTING IT ALL TOGETHER**
See pages 26-27

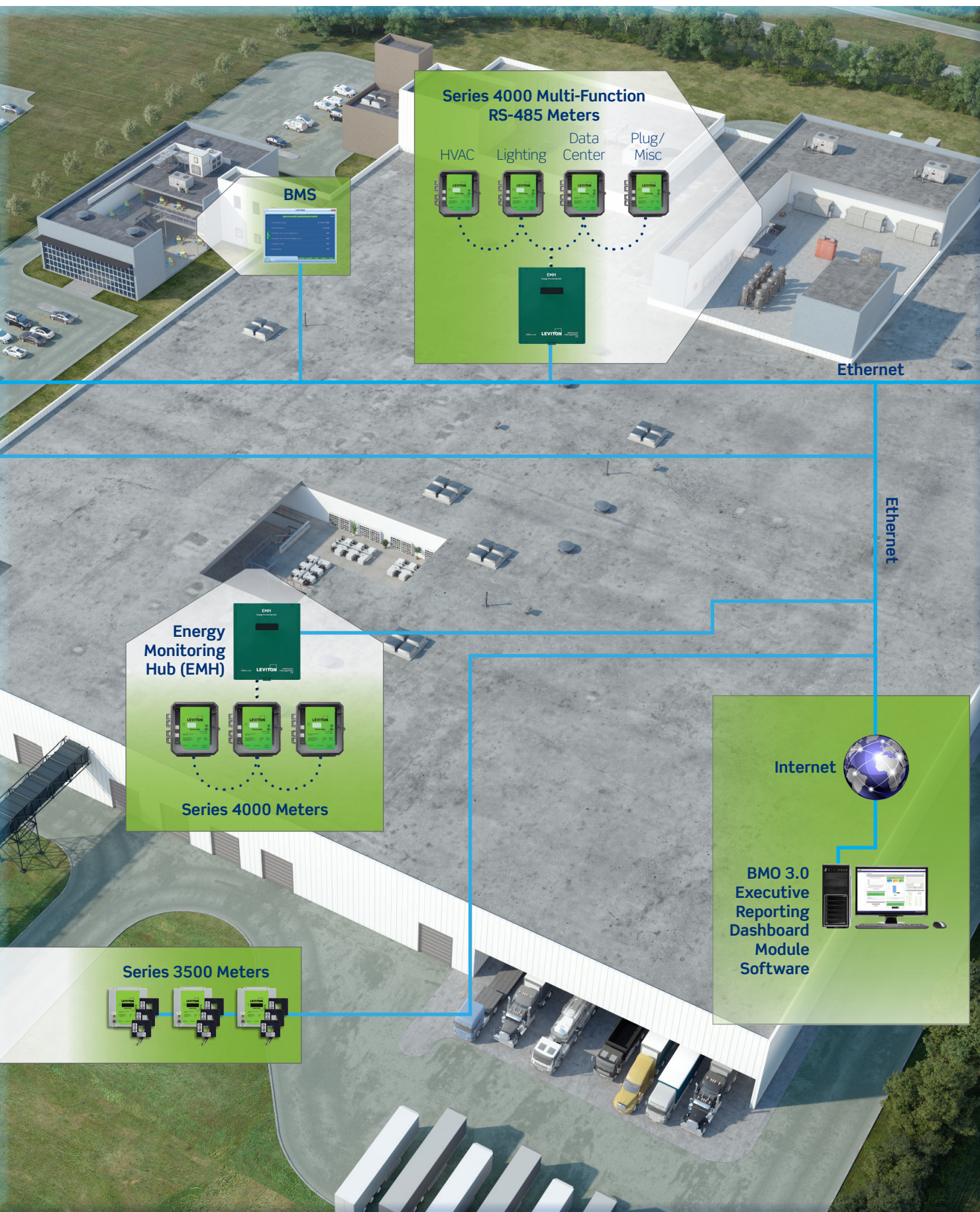In an environment where downtime can quickly erode profits, a submetering system that can be phased in without interrupting processing or production has measurable advantages. Leviton's VerifEye submetering system is extremely scalable so it can be installed in phases, while use of split-core transformers enables installation without power interruptions. Once in action, submetering provides facility managers and operators with valuable insight into the performance of the overall facility.

Leviton's VerifEye submetering system can help streamline demand analysis, production and administrative cost allocation, and equipment maintenance opportunities. The end result is a better bottom line.

### The Leviton Advantage

- Highly scalable system can be phased in so as not to interrupt daily operations

- Monitoring of processes, equipment and major building system loads for energy savings

- Ideal solution for departmental cost allocation

- Easy integration of utility data into building and energy management systems

- Versatile metering products accommodate split-core transformers or Rogowski Coil CTs for relatively easy retrofitting into any environment
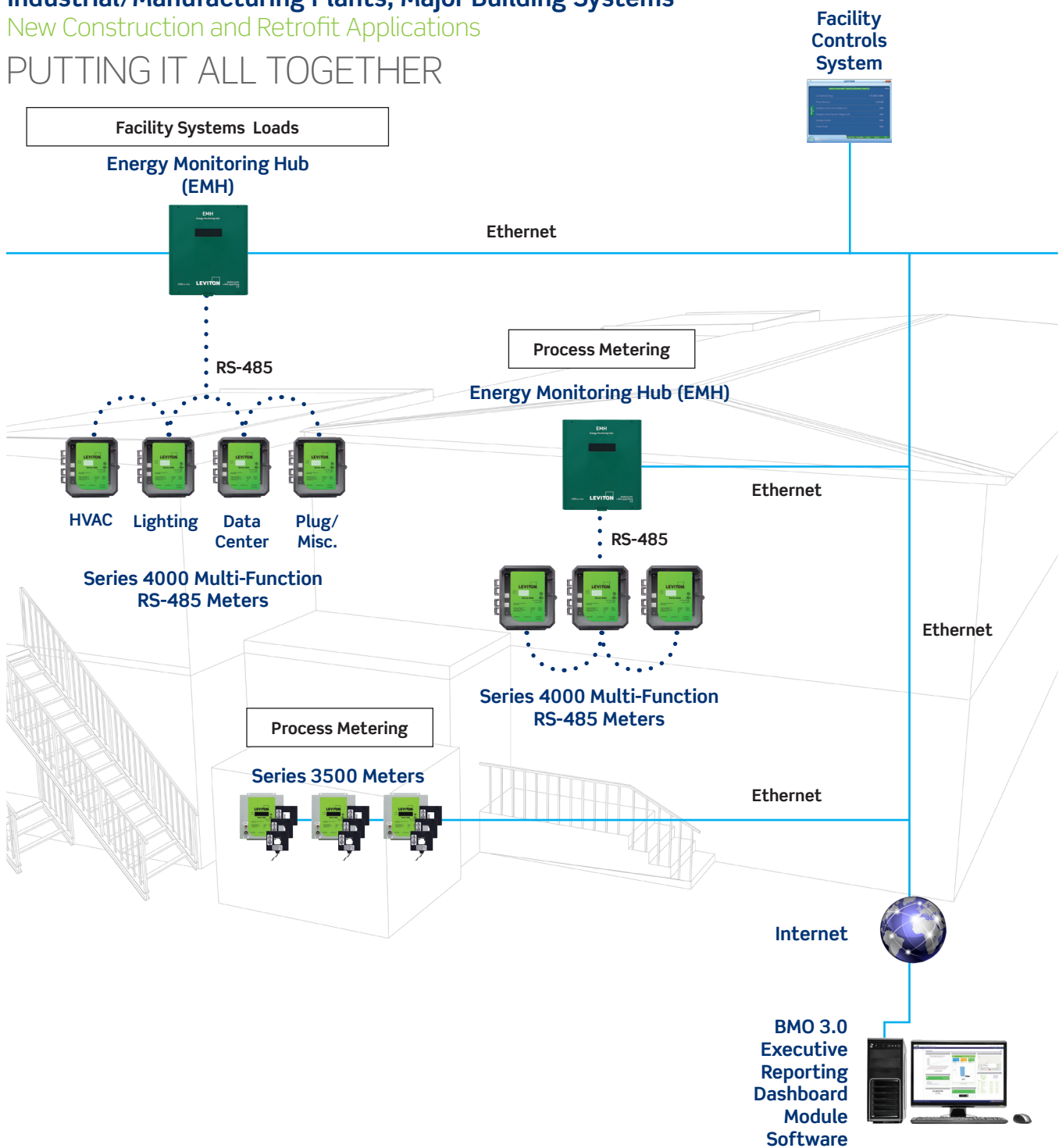
**Series 3500 Meters**

VerifEye™ Smart Submetering Solutions

24

**Series 4000 Multi-Function RS-485 Meters**

HVAC  Lighting  Data Center  Plug/Misc

EMH

**BMS**

**Ethernet**

**Ethernet**

**Energy Monitoring Hub (EMH)**

EMH

**Series 4000 Meters**

**Internet**

**BMO 3.0 Executive Reporting Dashboard Module Software**

**Series 3500 Meters**

# Industrial/Manufacturing Plants, Major Building Systems
## New Construction and Retrofit Applications
# PUTTING IT ALL TOGETHER

**Facility Controls System**

**Facility Systems Loads**

**Energy Monitoring Hub (EMH)**

Ethernet

**RS-485**

HVAC   Lighting   Data Center   Plug/Misc.

**Series 4000 Multi-Function RS-485 Meters**

**Process Metering**

**Energy Monitoring Hub (EMH)**

Ethernet

**RS-485**

**Series 4000 Multi-Function RS-485 Meters**

Ethernet

**Process Metering**

**Series 3500 Meters**

Ethernet

**Internet**

**BMO 3.0 Executive Reporting Dashboard Module Software**

**VerifEye™ Smart Submetering Solutions**

# CORE LEVITON COMPONENTS

| Industrial/Manufacturing Plants, Major Building Systems | | | | |
|---|---|---|---|---|
| **Product** | **Voltage** | **Description** | **Amps** | **Cat. No.** |
| Series 4000 ModBus RTU | Universal 3PH 3W/4W | 100A, 3 Split Core CTs | — | 4KUMR-01M |
| | | 200A, 3 Split Core CTs | — | 4KUMR-02M |
| | | 400A, 3 Split Core CTs | — | 4KUMR-04M |
| | | 800A, 3 Split Core CTs | — | 4KUMR-08M |
| | | 20-5000A, 3, 12" Rogowski Coil CTs | — | 4KU MR-R12 |
| | | 20-5000A, 3, 18" Rogowski Coil CTs | — | 4KUMR-R18 |
| | | 20-5000A, 3, 24" Rogowski Coil CTs | — | 4KUMR-R24 |
| Series 3500 Ethernet Meter Kits* INDOOR ENCLOSURE *Kits include meter, specified enclosure and required current transformers | 208-480VAC 3P 3W/4W | ModBus TCP/BACnet IP, 3 Split CTs | 100A | 3KUMT-01M |
| | | | 200A | 3KUMT-02M |
| | | | 400A | 3KUMT-04M |
| | | | 800A | 3KUMT-08M |
| | | | 1600A | 3KUMT-16M |
| | | ModBus TCP/BACnet IP, 3 Solid CTs | 100A | 3KUMT-1SM |
| | | | 200A | 3KUMT-2SM |
| | | | 4000A | 3KUMT-30M |
| | | ModBus TCP/BACnet IP, 3 Split CTs | 3000A | 3KUMT-4SM |
| | | | 5000A | 3KUMT-50M |
| Energy Monitoring Hub | — | Energy Monitoring Hub - Non Configured | — | A8812-000 |
| BMO 3.0 Executive Reporting Dashboard Module Software | — | Expansion Module Software & Mobile App - Includes 10 Buildings with 50 Meter Points Per Building | — | BMOSW-EXE |

Note: These are examples of applications but should not be considered limitations to product and solution capability. Please contact your local Leviton representative for design assistance.











**VeriFEye™ Smart Submetering Solutions**
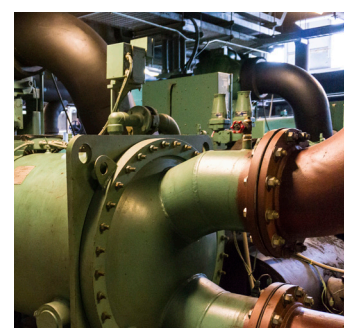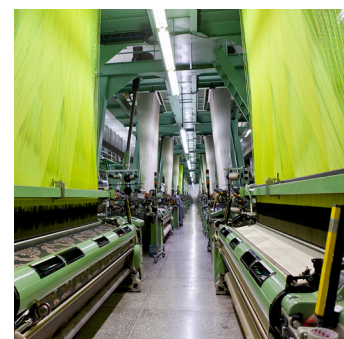
# VERIFEYE METERS

| Mini Meter MMU | Mini Meter Flush Mount | Mini Meter Kit with AMR | Mini Meter Outdoor | Series 8000 | Series 7000 and 7100 |
|---|---|---|---|---|---|

| | Multi-Family Residential | | Residential/Commercial | |
|---|---|---|---|---|
| **Specifications** | **Mini Meter™ Kits** | **Mini Meter Kits with AMR** | **Series 8000 High Density Multi-Circuit Meter** | **Series 7000 and 7100 Advanced Branch Circuit Monitor** |
| | **kWh Meter** | | **kWh Meter** | |
| **Phase/Wiring** | 1PH 2W<br>1PH 3W | | 1PH 2W<br>1PH 3W WYE<br>3PH 3W Delta<br>3PH 4W WYE | 1P/2W<br>2P/3W<br>3P/4W<br>3P/3W Delta |
| **Voltage Configurations** | 120/208/240 | | 120/208<br>120/240<br>240/416<br>277/480<br>480* | 90-346 Volts AC Line-to-Neutral,<br>600V Line-to-Line |
| **Amperages** | 100-200A | 200A | 100-5000A | 50-4000A |
| **Measuring Parameters** | kWh | | kWh Delivered and Received<br>kVarh Delivered and Received<br>VAR<br>PF<br>Peak Demand<br>Present Demand<br>Volts<br>Amps<br>Watts | Volts, Amps, kW, kVAR, kVA, aPF, dPF, kW demand, kVA demand, Import (Received), kWh, Export (Delivered), kWh, Net kWh, Import (Received) kVAh, Export (Delivered) kVAh, Net KVAh, Import (Received), kVARh, Export (Delivered), kVARh, Net kVARh, THD Theta, Frequency |
| **Communications Protocol (Standard)** | Isolated<br>Pulse Output | Embedded wireless transmitter | ModBus TCP<br>ModBus RTU (RS-485)<br>BACnet IP | ModBus RTU<br>ModBus TCP<br>BACnet MS/TP<br>BACnet |
| **Current Transformers Options** | Split Core<br>Solid Core | Solid Core | Split Core<br>Solid Core | Split Core<br>Solid Core<br>Rogowski Coil |
| **Enclosure Options** | **OEM Module**<br>**Indoor** Plastic Flush Mount NEMA 1<br>**Outdoor** NEMA 4X<br>**MMU** NEMA 4X | **Indoor** Flush Mount<br>**Indoor** Surface Mount | **Indoor** JIC Steel NEMA1 | **Indoor** Plastic NEMA 1 Panel Mount — no enclosure |
| **Display Type** | LCD or Mechanical Counter | LCD | Local LCD, Scroll | Local LCD, Scroll Buttons |
| **Accuracy** | C12.10 +/- 0.5% with paired CTs | C12.20 / 0.5% with paired CTs | C12.20 +/- 0.5% | C12.20 / 0.2% |
| **Multiple Meter Unit (MMU) Configurations** | Medium, 2-4 Meters<br>Large, 5-8 Meters<br>Extra-Large, 9-19 Meters | — | 3PH: 8x3<br>1PH 3W: 12x2, 9x2, 6x2, 3x2<br>1PH: 24x1 | 48 Inputs Configurable<br>3PH - 16x3 / 2PH - 24x2<br>1PH - 48x1 |
| **Data Storage** | Last Reading - Cumulative | | Last Reading - Cumulative Data in 15 min Intervals | Last reading - User Selectable |

*With potential transformer — consult factor for availability

**VerifEye™ Smart Submetering Solutions**

Series 1000 Indoor | Series 1000 Outdoor | Series 2000 Indoor | Series 2000 Outdoor | Series 3500 Indoor | Series 3500 Outdoor | Series 4000 and 4100 Indoor | Series 4000 and 4100 Outdoor

| | Commercial | | | | Commercial and Industrial |
|---|---|---|---|---|---|
| | **Series 1000 Single Phase Meter Kits** | **Series 2000 Three Phase Meter Kits** | **Series 3500 Multi-Function Ethernet Meter Kits** | **Series 4000 Industrial ModBus Meter Kits** | **Series 4100 Industrial ModBus RTU Bidirectional Meter Kits** |
| | **kWh Meter with Optional Demand** | | **Advanced kWh Meter with Communication** | | |
| **Phase/Wiring** | 1PH 2W / 1PH 3W | 1PH 2W, 1PH 3W WYE, 3PH 4W WYE | 1PH 2W, 1PH 3W WYE | 3PH 3W/4W | |
| **Voltage Configurations** | 120, 277 / 120/208, 120/240, 277/480 | 120/208, 277/480 | Max L-N Voltage 277VAC | Universal Voltage (90-600), L-N Voltage 347VAC | |
| **Amperages** | 100-800A | 100-1200A | 100-5000A | Split Core: 100, 200, 400, 800A, Rogowski: 50-5000A | |
| **Measuring Parameters** | kWh, Optional kW (peak demand reset) | | kWh, kW (peak demand reset), Meter Totals: kVAR, kVA, Power Factor & kW, By Phase: Volts, Watts, Amps, Power Factor, Interval Data | **Series 4000:** kVARh, kW, kVAR, kVA, Voltage L-L, L-N, Current, Power Factor, Frequency. **Series 4100:** kW, kVA and kVAR. Power factor: 3 phase average & per phase. Present power demand: Real (kW), reactive (kVAR) and apparent (kVA). Parameters are both delivered and received for the S4100 Meter | |
| **Communications Protocol (Standard)** | Isolated Pulse Output, 10WH or 1000WH pulse | | ModBus TCP/IP, Isolated Pulse Output, BACnet IP | ModBus/RTU, Isolated Pulse Output | ModBus/RTU w/Pulse Output or BACnet IP with Pulse Input |
| **Current Transformers Options** | Split Core, Solid Core | | | Split Core .333V secondary output only, Rogowski Coil: lengths available in 12", 18" and 24" | |
| **Enclosure Options** | **Indoor** JIC Steel NEMA 1, **Outdoor** NEMA 4X | **Indoor** JIC Steel NEMA 1, **Outdoor** NEMA 4X, **MMU** JIC Steel NEMA 1 | **Indoor** JIC Steel NEMA 1, **Outdoor** NEMA 4X | **Indoor** DIN Rail Mount, **Outdoor** NEMA 4X | |
| **Display Type** | Local LCD | | Local LCD, Scroll Buttons | | |
| **Accuracy** | C12.10 and C12.20 +/- 0.5% | | C12.10 +/-0.5% | C12.20 / 0.2% | |
| **Multiple Meter Unit (MMU) Configurations** | — | Medium, 2-4 Meters, Large, 5-8 Meters, Extra-Large, 9-19 Meters | — | | |
| **Data Storage** | Last Reading - Cumulative Peak Demand with Key Reset (optional) | | Last Reading - Cumulative Peak Demand with Key Reset Data in 15 min Intervals | Last Reading - Present and Peak Demand for kW and kVAR | |

VeriEye™ Smart Submetering Solutions

# MINI METER™

## EQUITABLE TENANT BILLING

Some multi-tenant residential properties include energy costs in rental fees and generally charge tenants for energy based on the square footage occupied. To be truly equitable, tenants should pay only for what they actually use. With Leviton Mini Meters, building managers can easily track and allocate energy usage costs fairly to multiple tenants, as well as recoup energy expenses from common-use areas (parking lots, hall lighting, etc.). Tenants benefit by paying only for the energy they use; and when they focus on conserving energy, they can see direct financial benefits from their efforts.

- kWh Meter

- 120V 1PH 2W and 120/208/240V 1PH 3W

- 100-200 Amps

- Pulse Output - standard feature

- Available in NEMA 4X indoor/outdoor individual meter enclosures and Multiple Meter Units (MMUs) from 2 to 19 meters

- Select surface mount and flush mount models include built in tamper-proof switch or built-in wireless AMR and temperature sensing capabilities

- Revenue grade accuracy: 0.5% accuracy class

- Use with split core or solid core CTs

- Up to three sets of CTs per phase can be paralleled per meter with no multipliers

- Mini Meter Kits are UL/cUL Listed Energy Usage Monitor per CCN FTRZ

Indoor Flush Mount
Mini Meter
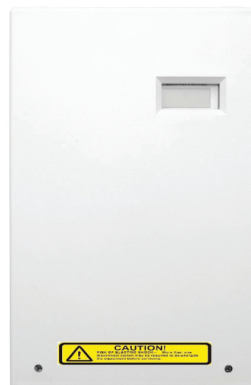
Indoor Surface Mount
Mini Meter

Outdoor
Mini Meter

Mini Meter with
Transceiver

# MINI METER KITS

Note: Kits include meter, specified enclosure and required current transformers

## MINI METER KITS - INDOOR FLUSH MOUNT ENCLOSURE

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| 120/208V 3W or 120/240V 1PH 3W (Split Phase) | 100A | 2 SOLID CTs | MK240-1SW |
| | 200A | | MK240-2SW |

## MINI METER KITS - OUTDOOR ENCLOSURE

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| 120/208V 3W or 120/240V 1PH 3W (Split Phase) | 100A | 2 SOLID CTs | MO240-1SW |
| | 200A | | MO240-2SW |
| 120/208V 2PH 3W or 120/240V 1PH 3W (Split Phase) | 100A | 2 Split CTs | MO240-01W |
| | 200A | | MO240-02W |

## MINI METER KITS WITH WIRELESS AMR - INDOOR FLUSH MOUNT ENCLOSURE*

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| 120/208/240V 1PH 3W with AMR (includes Time of Use (TOU) enabled kWh Transceiver and Tamper Proof Switch) | 200A | 2 SOLID CTs | 6W201-C02 |
| 120/208/240V 1PH 3W with AMR (includes Time of Use (TOU) and Delta Temperature enabled kWh Transceiver and Tamper Proof Switch) | | | 6W201-D02 |
| 120/208/240V 1PH 3W (includes Time of Use (TOU) and Delta Temperature Enabled kWh Transceiver and Tamper Proof Switch) | | | 6W201-E02 |

## MINI METER KITS WITH WIRELESS AMR - INDOOR SURFACE MOUNT ENCLOSURE*

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| 120/208/240V 1PH 3W with AMR | 200A | 2 SOLID CTs | 6PSMT-C02 |
| 120/240V 1PH 3W (includes Time of Use [TOU] enabled kWh Transceiver and Tamper Proof Switch) | | | MMSMT-C02 |
| 120/240V 1PH 3W with AMR (includes Time of Use [TOU] and Temperature enabled kWh Transceiver and Tamper Proof Switch) | | | MMSMT-D02 |
| 120/240V 1PH 3W with AMR (includes Time of Use [TOU] and Temperature enabled kWh Transceiver and Tamper Proof Switch) | | | MMSMT-E02 |

## WIRELESS REPEATER

| DESCRIPTION | CAT. NO. |
|---|---|
| Repeater, 5V, includes 5VDC 1A plug-in power supply and internal backup battery | T95RX-000 |

## WIRELESS DATA CONCENTRATING ACCESS POINTS (DCAPS)**

| DESCRIPTION | CAT. NO. |
|---|---|
| Data Concentrating Access Point (DCAP), Low Capacity (150 meter points max), built-in radio receiver | T25DX-151 |
| DCAP, High Capacity (1000 meter points max), built-in radio receiver | T25DX-102 |

*For a complete wireless Automatic Meter Reading (AMR) system, data transceivers and other wireless network components (DCAPs and Repeaters) are required as dictated by building construction
TOU = Time of Use, providing 15-minute time-stamped kWh interval data
**All DCAPs and Gateways shipped with 6VDC, minimum 1.5 Amp power supply, Ethernet cable and USB cable

## MULTIPLE METER UNITS (MMUs)

Leviton Multiple Meter Units (MMUs) come pre-wired per project configuration sheets with clearly labeled connections, minimizing the electrical installation time. All VerifEye MMUs are UL listed assemblies. Choose from an indoor steel model in 4/8/16 unit single- or three-phase configurations utilizing Series 2000 meters or a weatherproof outdoor enclosure in 4/8/19 unit single-phase configurations utilizing Mini Meters. All MMUs are configurable for individual projects and each meter order requires submittal of a Configuration Form. **Note:** All MMUs come with UL listed final enclosures. Go to leviton.com/verifeye for more information.

## MULTIPLE METER UNITS (MMUs)

### MINI METER MMUs

| VOLTAGE | DESCRIPTION | CAT. NO. |
|---|---|---|
| **MEDIUM MINI METER MMU, 2-4 METERS** | | |
| 120/240V 1PH 3W | 2 Dual Element Meters | 6M202-CFG |
| | 3 Dual Element Meters | 6M203-CFG |
| | 4 Dual Element Meters | 6M204-CFG |
| 120/208V 3PH 4W | 2 Dual Element Meters | 6M302-CFG |
| | 3 Dual Element Meters | 6M303-CFG |
| | 4 Dual Element Meters | 6M304-CFG |

| VOLTAGE | DESCRIPTION | CAT. NO. |
|---|---|---|
| **LARGE MINI METER MMU, 5-8 METERS** | | |
| 120/240V 1PH 3W | 5 Dual Element Meters | 6L205-CFG |
| | 6 Dual Element Meters | 6L206-CFG |
| | 7 Dual Element Meters | 6L207-CFG |
| | 8 Dual Element Meters | 6L208-CFG |
| 120/208V 3PH 4W | 5 Dual Element Meters | 6L305-CFG |
| | 6 Dual Element Meters | 6L306-CFG |
| | 7 Dual Element Meters | 6L307-CFG |
| | 8 Dual Element Meters | 6L308-CFG |

| VOLTAGE | DESCRIPTION | CAT. NO. |
|---|---|---|
| **EXTRA-LARGE MINI METER MMU, 9-19 METERS, NEMA 4X ENCLOSURE** | | |
| 120/240V 1PH 3W | 9 Dual Element Meters | 6X209-CFG |
| | 10 Dual Element Meters | 6X210-CFG |
| | 11 Dual Element Meters | 6X211-CFG |
| | 12 Dual Element Meters | 6X212-CFG |
| | 13 Dual Element Meters | 6X213-CFG |
| | 14 Dual Element Meters | 6X214-CFG |
| | 15 Dual Element Meters | 6X215-CFG |
| | 16 Dual Element Meters | 6X216-CFG |
| | 17 Dual Element Meters | 6X217-CFG |
| | 18 Dual Element Meters | 6X218-CFG |
| | 19 Dual Element Meters | 6X219-CFG |
| 120/208V 3PH 4W | 9 Dual Element Meters | 6X309-CFG |
| | 10 Dual Element Meters | 6X310-CFG |
| | 11 Dual Element Meters | 6X311-CFG |
| | 12 Dual Element Meters | 6X312-CFG |
| | 13 Dual Element Meters | 6X313-CFG |
| | 14 Dual Element Meters | 6X314-CFG |
| | 15 Dual Element Meters | 6X315-CFG |
| | 16 Dual Element Meters | 6X316-CFG |
| | 17 Dual Element Meters | 6X317-CFG |
| | 18 Dual Element Meters | 6X318-CFG |
| | 19 Dual Element Meters | 6X319-CFG |

### SERIES 2000 MMUs

| VOLTAGE | DESCRIPTION | CAT. NO. |
|---|---|---|
| **MEDIUM SERIES 2000 MMU, 2-4 METERS** | | |
| 120/208V 3PH 4W | 2 Three Element Meters | 2M202-CFG |
| | 3 Three Element Meters | 2M203-CFG |
| | 4 Three Element Meters | 2M204-CFG |
| 277/480V 3PH 4W | 2 Three Element Meters | 2M402-CFG |
| | 3 Three Element Meters | 2M403-CFG |
| | 4 Three Element Meters | 2M404-CFG |

| VOLTAGE | DESCRIPTION | CAT. NO. |
|---|---|---|
| **LARGE SERIES 2000 MMU, 5-8 METERS** | | |
| 120/208V 3PH 4W | 5 Three Element Meters | 2L205-CFG |
| | 6 Three Element Meters | 2L206-CFG |
| | 7 Three Element Meters | 2L207-CFG |
| | 8 Three Element Meters | 2L208-CFG |
| 277/480V 3PH 4W | 5 Three Element Meters | 2L405-CFG |
| | 6 Three Element Meters | 2L406-CFG |
| | 7 Three Element Meters | 2L407-CFG |
| | 8 Three Element Meters | 2L408-CFG |

| VOLTAGE | DESCRIPTION | CAT. NO. |
|---|---|---|
| **EXTRA-LARGE SERIES 2000 MMU, 9-16 METERS, NEMA 4X ENCLOSURE** | | |
| 120/208V 3PH 4W | 9 Three Element Meters | 2X209-CFG |
| | 10 Three Element Meters | 2X210-CFG |
| | 11 Three Element Meters | 2X211-CFG |
| | 12 Three Element Meters | 2X212-CFG |
| | 13 Three Element Meters | 2X213-CFG |
| | 14 Three Element Meters | 2X214-CFG |
| | 15 Three Element Meters | 2X215-CFG |
| | 16 Three Element Meters | 2X216-CFG |
| 277/480V 3PH 4W | 9 Three Element Meters | 2X409-CFG |
| | 10 Three Element Meters | 2X410-CFG |
| | 11 Three Element Meters | 2X411-CFG |
| | 12 Three Element Meters | 2X412-CFG |
| | 13 Three Element Meters | 2X413-CFG |
| | 14 Three Element Meters | 2X414-CFG |
| | 15 Three Element Meters | 2X415-CFG |
| | 16 Three Element Meters | 2X416-CFG |



Mini Meter
Medium Multiple Meter Unit (MMU)



Mini Meter
Large Multiple Meter Unit (MMU)



Series 2000
Multiple Meter Unit (MMU)

# MINI METER MULTIPLE METER UNITS (MMU) KITS

Leviton Mini Meter Multiple Meter Units (MMUs) Kits offer immediate, off-the-shelf installation and easy specification for multi-tenant submetering applications. The MMUs are designed to meter multiple single phase (120/208/240V 3PH 4W) loads originating from a single, high density distribution panel. Each Mini Meter installed in an MMU is a 0.5% accurate revenue grade meter.

- Smaller total mounting footprint than individual meters

- Reduced hardware requirements (conduit, wire, short circuit protection devices, etc.)

- Reduced installation time

- Individual meters in one enclosure enhances produce reliability

- No configuration form needed

- Kitted with CTs for revenue grade metering

## MINI METER MULTIPLE METER UNITS (MMU) KITS

### MINI METER MMU KITS

| VOLTAGE | DESCRIPTION | CAT. NO. |
|---------|-------------|----------|
| **MEDIUM MINI METER MMU, 2-4 METERS, NEMA 4X ENCLOSURE, 200A CTS** | | |
| 120/208V 3P/4W | 2 Dual Element Meters, Kitted with CTs | 6M302-KIT |
| | 3 Dual Element Meters, Kitted with CTs | 6M303-KIT |
| | 4 Dual Element Meters, Kitted with CTs | 6M304-KIT |
| **LARGE MINI METER MMU, 5-8 METERS, NEMA 4X ENCLSOURE, 200A CTS** | | |
| 120/208V 3P/4W | 5 Dual Element Meters, Kitted with CTs | 6L305-KIT |
| | 6 Dual Element Meters, Kitted with CTs | 6L306-KIT |
| | 7 Dual Element Meters, Kitted with CTs | 6L307-KIT |
| | 8 Dual Element Meters, Kitted with CTs | 6L308-KIT |
| **EXTRA LARGE MINI METER MMU, 9-18 METERS, NEMA 4X ENCLOSURE, 200A CTS** | | |
| 120/208V 3P/4W | 9 Dual Element Meters, Kitted with CTs | 6X309-KIT |
| | 10 Dual Element Meters, Kitted with CTs | 6X310-KIT |
| | 11 Dual Element Meters, Kitted with CTs | 6X311-KIT |
| | 12 Dual Element Meters, Kitted with CTs | 6X312-KIT |
| | 13 Dual Element Meters, Kitted with CTs | 6X313-KIT |
| | 14 Dual Element Meters, Kitted with CTs | 6X314-KIT |
| | 15 Dual Element Meters, Kitted with CTs | 6X315-KIT |
| | 16 Dual Element Meters, Kitted with CTs | 6X316-KIT |
| | 17 Dual Element Meters, Kitted with CTs | 6X317-KIT |
| | 18 Dual Element Meters, Kitted with CTs | 6X318-KIT |



Mini Meter
Multiple Meter Unit (MMU) Kits

## SERIES 8000 MULTI-POINT HIGH DENSITY METERS

The Series 8000 Multi-Point High Density Meters are designed to meter high density applications such as multi-tenant office and residential buildings, medium-sized retail stores, institutional facilities and branch circuit monitoring. For easy data accessibility, the Series 8000 design is based on an open protocol network to transmit data over ModBus, BACnet and Ethernet. Combining revenue-grade electrical submetering with building automation communications technology, the Series 8000 complies with all regulatory electric safety and communications requirements and meets stringent ANSI 0.5 % Accuracy Class standards.

- Allows for revenue grade metering of up to 24 individual circuits in one device

- Monitors up to 24 current transformers:
  - 8 circuits, 3 phase loads
  - 12 circuits, 2 phase loads
  - 24 circuits, 1 phase loads

- 100-5,000 Amp current transformers

- Native communications protocol—ModBus TCP, ModBus RTU (RS-485) and BACnet IP standard

- Measures kW hours, kW demand, volts, amps

- Interval and net metering

- Two onboard pulse channels available for co-located meters with contact closures



Series 8000 Meter

## SERIES 8000 MULTI-POINT HIGH DENSITY METERS

| VOLTAGE | DESCRIPTION | CAT. NO. |
|---|---|---|
| **MULTI-FAMILY RESIDENTIAL** | | |
| 120/208/240V | Phase Config 3x2 with Wiring Harness | S8120-032 |
| | Phase Config 6x2 with Wiring Harness | S8120-062 |
| | Phase Config 9x2 with Wiring Harness | S8120-092 |
| | Phase Config 12x2 with Wiring Harness | S8120-122 |
| 120/208V | Phase Config 8x3 with Terminal Strips | S8UTS-241 |
| | Phase Config 12x2 with Terminal Strips | |
| | Phase Config 24x1 with Terminal Strips | |
| 120/208V | Phase Config 8x3 with Wiring Harness | S8UWH-241 |
| | Phase Config 12x2 with Wiring Harness | |
| | Phase Config 24x1 with Wiring Harness | |

| | | |
|---|---|---|
| **COMMERCIAL & INDUSTRIAL** | | |
| 277/480V | Phase Config 8x3 with Terminal Strips | 277TS-241 |
| | Phase Config 12x2 with Terminal Strips | |
| | Phase Config 24x1 with Terminal Strips | |
| 277/480V | Phase Config 8x3 with Wiring Harness | 277WH-241 |
| | Phase Config 12x2 with Wiring Harness | |
| | Phase Config 24x1 with Wiring Harness | |

CHOOSING BETWEEN A WIRING HARNESS AND TERMINAL STRIPS

- **Wiring harnesses offer a less labor intensive solution when all CTs are located in one panel** like in a multi-family high rise project. This eliminates the need to extend CT wires out of the panel.

- **Terminal strips are ideal for installers who prefer to land each wire and not use a color-coded wiring harness**. For CTs located in different panels or different locations with a switchboard, terminal strips offer an easier solution with the ability to extend the current transformer wiring back to the meter location for termination. Terminal strip models also carry a slightly higher cost and should be considered with the project budget.

# SERIES 7000 AND 7100 ADVANCED BRANCH CIRCUIT MONITORS

The VerifEye™ Series 7000 and 7100 Advanced Branch Circuit Monitors are cost-effective solutions for electrical load management. The Series 7000 and 7100 platforms are ideal for high density, branch circuit monitoring applications in both new construction and retrofit applications. The Series 7000 and 7100 monitors up to 48 branch circuits with one single meter board.

- 48 independent, user-defined inputs
- 2 independent sets of reference voltage inputs allow for simultaneous monitoring of multiple systems
- Line powered from 90-600V, phase-to-phase
- Meets ANSI & IEC metering system accuracy requirements including branch CTs
- Supports solid core, split core and Rogowski Coil CTs
- Meter board features:
  - Easy access terminals for CT wiring, removable connectors
  - Available with or without display embedded options
- Reports volts, amps, power, demand and energy for each circuit— each Series 7000 covers a complete 42 breaker panelboard plus mains for a total of 48 circuits
- Provides multi-phase totals for loads with any combination of 1-, 2-, and 3-pole breaker positions
- User-configurable alarm thresholds register for improved load management
- Selectable phase orientation and number of circuits
- Limited 5-year warranty



Series 7000 Embedded - with Display



Series 7000 Embedded - No Display

## SERIES 7000 AND 7100 ADVANCED BRANCH CIRCUIT MONITORS

| VOLTAGE | DESCRIPTION | CAT. NO. |
|---|---|---|
| 90-346 Volts AC Line-to-Neutral, 600V Line-to-Line | Series 7000 Dual Voltage, Embedded Panel Mount (no enclosure) Branch Circuit Monitor, 48 inputs, LCD display | 70D48-000 |
| | Series 7000 Dual Voltage, Embedded Panel Mount (no enclosure) Branch Circuit Monitor, 48 inputs, no display | 70N48-000 |
| | Series 7100 Dual Voltage, Branch Circuit Monitor, 48 inputs, LCD display, NEMA 1 enclosure | 71D48-000 |

**COMPATIBLE CT OPTIONS***

| AMP | DESCRIPTION | CAT. NO. |
|---|---|---|
| 50 | Split Core CT, 333mV, 0.4" | CTV5X-WA4 |
| 100 | Split Core CT, 333mV, 1.6" x 2.1" | CTV01-K21 |
| 200 | Split Core CT, 333mV, 2.2" x 2.8" | CTV02-K21 |
| 400 | Split Core CT, 333mV, 6.0" x 5.2" | CTV04-K40 |
| 800 | Split Core CT, 333mV, 6.0" x 5.2" | CTV08-K40 |
| 100 | Solid Core CT, 333mV, 0.75" (19mm) ID | CDV01-K19 |
| 200 | Solid Core CT, 333mV, 0.75" (19mm) ID | CDV02-K19 |
| 400 | Solid Core CT, 333mV, 1.0" (25mm) ID | CDV04-K25 |
| 5-4000A | Rogowski Coil CT 16", 131mV/1000A @ 60Hz, 109.2mV/1000A @ 50Hz | CRV50-LR2 |
| 5-4000A | Rogowski Coil CT 24", 131mV/1000A @ 60Hz, 109.2mV/1000A @ 50Hz | CRV50-LR4 |

*333mV CTs, sold separately



Series 7100

# SERIES 1000 SINGLE PHASE METERS

- kWh meter with optional Peak Demand functionality (includes Reset Key)
- 100 - 800 Amps
- Isolated Pulse output - standard feature
- Large LCD Display
- Revenue grade accuracy: 0.5% accuracy class
- Use with split core or solid core CTs
- UL listed



Series 1000 Meter
Outdoor



Series 1000 Meter
Indoor

# SERIES 1000 SINGLE PHASE METER KITS

Note: Kits include meter, specified enclosure and required current transformers

## INDOOR ENCLOSURE

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| 120V 1PH 2W | 100 | 1 Split CT | 1K120-01W |
| | 200 | | 1K120-02W |
| | 400 | | 1K120-04W |
| | 800 | | 1K120-08W |
| | 100 | 1 SOLID CT | 1K120-1SW |
| | 200 | | 1K120-2SW |
| 120/208V 1PH 3W or 120/240V 1PH 3W (Split Phase) | 100 | 2 Split CTs | 1K240-01W |
| | 200 | | 1K240-02W |
| | 400 | | 1K240-04W |
| | 800 | | 1K240-08W |
| | 100 | 2 SOLID CTs | 1K240-1SW |
| | 200 | | 1K240-2SW |
| 277V 1PH 2W | 100 | 1 Split CT | 1K277-01W |
| | 200 | | 1K277-02W |
| | 400 | | 1K277-04W |
| | 800 | | 1K277-08W |
| | 100 | 1 SOLID CT | 1K277-1SW |
| | 200 | | 1K277-2SW |

## OUTDOOR ENCLOSURE

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| 120V 1PH 2W | 100 | 1 Split CT | 1O120-01W |
| | 200 | | 1O120-02W |
| | 400 | | 1O120-04W |
| | 800 | | 1O120-08W |
| 120/208V 1PH 3W or 120/240V 1PH 3W (Split Phase) | 100 | 2 Split CTs | 1O240-01W |
| | 200 | | 1O240-02W |
| | 400 | | 1O240-04W |
| | 800 | | 1O240-08W |
| 277V 1PH 2W | 100 | 1 Split CT | 1O277-01W |
| | 200 | | 1O277-02W |
| | 400 | | 1O277-04W |
| | 800 | | 1O277-08W |

# SERIES 2000 THREE PHASE METERS

- kWh meter with optional Peak Demand functionality (includes Reset Key)

- 120/208V or 277/480V 3PH 4W WYE only

- 100 - 1200 Amps

- Isolated Pulse output—standard feature

- Large LCD Display

- Revenue grade accuracy: 0.5% accuracy class

- Use with split core or solid core CTs

- UL listed



Series 2000 Meter
Outdoor



Series 2000 Meter
Indoor

## SERIES 2000 THREE PHASE METER KITS

Note: Kits include meter, specified enclosure and required current transformers

### INDOOR ENCLOSURE

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| 120/208V 3PH 4W WYE kWh Meter | 100 | 3 Split CTs | 2K208-01W |
| | 200 | | 2K208-02W |
| | 400 | | 2K208-04W |
| | 800 | | 2K208-08W |
| | 1200 | | 2K208-12W |
| | 100 | 3 SOLID CTs | 2K208-1SW |
| | 200 | | 2K208-2SW |
| 277/480V 3PH 4W WYE kWh Meter | 100 | 3 Split CTs | 2K480-01W |
| | 200 | | 2K480-02W |
| | 400 | | 2K480-04W |
| | 800 | | 2K480-08W |
| | 1200 | | 2K480-12W |
| | 100 | 3 SOLID CTs | 2K480-1SW |
| | 200 | | 2K480-2SW |
| 120/208V 3PH 4W WYE Demand Meter | 100 | 3 Split CTs | 2K208-01D |
| | 200 | | 2K208-02D |
| | 400 | | 2K208-04D |
| | 800 | | 2K208-08D |
| | 1200 | | 2K208-12D |
| 277/480V 3PH 4W WYE Demand Meter | 100 | | 2K480-01D |
| | 200 | | 2K480-02D |
| | 400 | | 2K480-04D |
| | 800 | | 2K480-08D |
| | 1200 | | 2K480-12D |

### OUTDOOR ENCLOSURE

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| 120/208V 3PH 4W WYE kWh Meter | 100 | 3 Split CTs | 2O208-01W |
| | 200 | | 2O208-02W |
| | 400 | | 2O208-04W |
| | 800 | | 2O208-08W |
| | 1200 | | 2O208-12W |
| 277/480V 3PH 4W WYE kWh Meter | 100 | | 2O480-01W |
| | 200 | | 2O480-02W |
| | 400 | | 2O480-04W |
| | 800 | | 2O480-08W |
| | 1200 | | 2O480-12W |

## SERIES 3500 MULTI-FUNCTION ETHERNET METERS

- Communications Protocol
  - ModBus TCP/IP or BACnet IP
  - Isolated pulse output

- Universal voltage for 120-480V

- Measured Parameters
  - Total Meter:          - Per Phase:
    - kWh/kW              - Voltage L-N
    - kVAh                - Current
    - kVA and kVAR        - Watts
    - Power Factor        - VA, VAR
    - Line Frequency      - Power Factor
                          - Voltage L-L

- Large LCD display with scroll feature

- Revenue grade accuracy: 0.5% accuracy class

- Installation diagnostics

- Low voltage detection

- Real time clock with battery backup for TOU reading

- Use with split core or solid core CTs

- Indoor JIC steel and outdoor (NEMA 4X) enclosure options

- UL/cUL Listed Energy Usage Monitor per CCN FTRZ



Series 3500
Outdoor Meter

## SERIES 3500 METER KITS

### INDOOR ENCLOSURE

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| 208-480V AC 3P 3W/4W ModBus TCP/ BACnet IP | 100 | 3 Split CTs | 3KUMT-01M |
| | 200 | | 3KUMT-02M |
| | 400 | | 3KUMT-04M |
| | 800 | | 3KUMT-08M |
| | 1600 | | 3KUMT-16M |
| | 3000 | | 3KUMT-30M |
| | 5000 | | 3KUMT-50M |
| | 100 | 3 SOLID CTs | 3KUMT-1SM |
| | 200 | | 3KUMT-2SM |
| | 400 | | 3KUMT-4SM |

### OUTDOOR ENCLOSURE

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| 208-480V AC 3P 3W/4W ModBus TCP/ BACnet IP | 100 | 3 Split CTs | 3OUMT-01M |
| | 200 | | 3OUMT-02M |
| | 400 | | 3OUMT-04M |
| | 800 | | 3OUMT-08M |
| | 1600 | | 3OUMT-16M |
| | 3000 | | 3OUMT-30M |
| | 5000 | | 3OUMT-50M |
| | 100 | 3 Solid CTs | 3OUMT-1SM |
| | 200 | | 3OUMT-2SM |
| | 400 | | 3OUMT-4SM |

**NOTE:** Kits include meter, specified enclosure and required current transformers

## SERIES 4000 INDUSTRIAL MODBUS METER KITS

Series 4000 Industrial ModBus Meter Kits are revenue-grade (ANSI C12.20 Class 0.2%) kWh electrical meters. The Series 4000 Kits include a DIN rail mount, 3-phase, advanced communication meter with split core or flexible rope-style Rogowski CTs for compact or irregular shaped conductors. Combinations of serial communication, pulse output and phase alarms are provided to suit a wide variety of applications.

- Industrial Temperature Range of -22 to 158°F (30 to 70°C)

- Energy monitoring for AMR/BAS/BMS/EMS systems

- DIN Rail options available

- Options for 100, 200, 400 and 800A Split Core CTs and Rogowski CTs (50-5000A)

- ANSI 12.20 0.2% accuracy, IEC 62053-22 Class 0.2S

- Real energy output and phase loss alarm output

- User-enabled password protection to protect meter from tampering

- Bright, backlit LCD for installation in dark areas and viewing real time data

- AMR/BAS system integration via ModBus RTU- RS-485 2-wire with shield

- 90-600VAC (50/60Hz) versatility including 347V (L-N) and 600V (L-L) with fewer models to stock



Series 4000 DIN Rail Mount



Series 4000 Outdoor NEMA Enclosure

**VeriEye™ Smart Submetering Solutions**

## SERIES 4000 MODBUS METER KITS

### INDOOR DIN RAIL MOUNT KITS

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| **Universal** 3PH 3W/4W | 100 | Split Core CTs | 4KUMR-01M |
| | 200 | | 4KUMR-02M |
| | 400 | | 4KUMR-04M |
| | 800 | | 4KUMR-08M |
| | 50-5000 | 12" Rogowski Coil CTs | 4KUMR-R12 |
| | 50-5000 | 18" Rogowski Coil CTs | 4KUMR-R18 |
| | 50-5000 | 24" Rogowski Coil CTs | 4KUMR-R24 |

### COMPONENTS

| AMPS | DESCRIPTION | CAT. NO. |
|---|---|---|
| 100 | Split Core CTs | CTV01-K21 |
| 200 | | CTV02-K21 |
| 400 | | CTV04-K40 |
| 800 | | CTV08-K40 |
| — | Fuse Pack, 1/2A, 600VAC, slow blow | CTV00-FK3 |
| 20-5000 | 12" Rogowski Coil CTs | CRV50-K62 |
| | 18" Rogowski Coil CTs | CRV50-K93 |
| | 24" Rogowski Coil CTs | CRV50-KC2 |

### STANDALONE METERS ONLY

| | | | |
|---|---|---|---|
| **Universal** 3PH 3W/4W | 100, 200, 400, 800 | Split Core CTs Only | 4KUMR-00M |
| **Universal** 3PH 3W/4W | 50-5000 | Rogowski Coil CTs Only | 4KUMR-00R |

### OUTDOOR NEMA ENCLOSURE KITS

| | | | |
|---|---|---|---|
| **Universal** 3PH 3W/4W | 100 | Split Core CTs | 4OUMR-01M |
| | 200 | | 4OUMR-02M |
| | 400 | | 4OUMR-04M |
| | 800 | | 4OUMR-08M |
| | 50-5000 | 12" Rogowski Coil CTs | 4OUMR-R12 |
| | 50-5000 | 18" Rogowski Coil CTs | 4OUMR-R18 |
| | 50-5000 | 24" Rogowski Coil CTs | 4OUMR-R24 |

## SERIES 4100 BIDIRECTIONAL MODBUS RTU OR BACNET MS/TP METER KITS

The VerifEye Series 4100 Bidirectional ModBus RTU or BACnet MS/TP Meter Kits feature bidirectional monitoring specifically designed for renewable energy applications. The Series 4100 Meter Kits measure power imported from the utility grid and power exported from renewable energy source like solar panels. The Series 4100 Meter Kits are available in a standalone DIN rail mount or NEMA 4X enclosures and come with either split core or flexible rope-style Rogowski Current Transformers (CTs).



Series 4100 DIN Rail Mount

- Bidirectional energy monitoring

- Industrial temperature range: -22 to 158°F (-30 to 70°C)

- 50/60 Hz

- Options for 100, 200, 400, and 800A Split Core CTs and Rogowski CTs (50-5000A)

- DIN rail mount option available

- User-enabled password protection to protect meter from tampering

- Bright, backlit LCD for installation in dark areas and viewing real time data

- Renewable energy applications

- AMR/BAS system integration via ModBus RTU or BACnet MS/TP - RS-485 Serial

- CSI approval for California Solar Initiative

- 90-600V versatility (347V L-N max)



Series 4100 Outdoor NEMA Enclosure

## SERIES 4100 BIDIRECTIONAL MODBUS RTU AND BACNET MS/TP METER KITS

### INDOOR DIN RAIL MOUNT MODBUS METER KITS

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| Universal 3PH 3W/4W ModBus RTU | 100 | Split Core CTs | 4DUMR-01M |
| | 200 | | 4DUMR-02M |
| | 400 | | 4DUMR-04M |
| | 800 | | 4DUMR-08M |
| | 50-5000 | 12" Rogowski Coil CTs | 4DUMR-12R |
| | 50-5000 | 18" Rogowski Coil CTs | 4DUMR-18R |
| | 50-5000 | 24" Rogowski Coil CTs | 4DUMR-24R |

### OUTDOOR NEMA ENCLOSURE - MODBUS METER KITS

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| Universal 3PH 3W/4W ModBus RTU | 100 | Split Core CTs | 41OUM-01M |
| | 200 | | 41OUM-02M |
| | 400 | | 41OUM-04M |
| | 800 | | 41OUM-08M |
| | 50-5000 | 12" Rogowski Coil CTs | 41OUM-12R |
| | 50-5000 | 18" Rogowski Coil CTs | 41OUM-18R |
| | 50-5000 | 24" Rogowski Coil CTs | 41OUM-24R |

### INDOOR DIN RAIL MOUNT BACNET MS/TP METER KITS

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| Universal 3PH 3W/4W BACnet MS/TP | 100 | Split Core CTs | 4DUBM-01B |
| | 200 | | 4DUBM-02B |
| | 400 | | 4DUBM-04B |
| | 800 | | 4DUBM-08B |
| | 50-5000 | 12" Rogowski Coil CTs | 4DUBM-12R |
| | 50-5000 | 18" Rogowski Coil CTs | 4DUBM-18R |
| | 50-5000 | 24" Rogowski Coil CTs | 4DUBM-24R |

### OUTDOOR NEMA ENCLOSURE - BACNET MS/TP METER KITS

| VOLTAGE | AMPS | CTS INCLUDED | CAT. NO. |
|---|---|---|---|
| Universal 3PH 3W/4W BACnet MS/TP | 100 | Split Core CTs | 41OUB-01B |
| | 200 | | 41OUB-02B |
| | 400 | | 41OUB-04B |
| | 800 | | 41OUB-08B |
| | 50-5000 | 12" Rogowski Coil CTs | 41OUB-12R |
| | 50-5000 | 18" Rogowski Coil CTs | 41OUB-18R |
| | 50-5000 | 24" Rogowski Coil CTs | 41OUB-24R |

# CURRENT TRANSFORMERS

The better the equipment, the better the measurement. Leviton meters utilize highly accurate current transformers for revenue-grade performance certified to ANSI standards. Competing products use current sensors that do not provide the same level of performance. Leviton Meter Kits include Split Core, Rogowski Coil, or Solid Core Current Transformers (CTs) for high-quality, long-term accuracy and reliability. For added safety, all Leviton current transformers come with built-in voltage suppression devices that prevent hazardous voltages from developing on CT secondaries should they become disconnected from a meter with load current present. Compact and cost-effective solid core CTs slip over power lines to measure the electrical current flowing through the line. For solid core CT installation, power must be de-energized and the circuit opened, in order to slip the CT over the power line.

## CURRENT TRANSFORMERS

### SOLID CORE—FOR USE WITH SERIES 1000, 2000, 3500 AND 8000 METERS, MINI METERS AND MMUs ONLY

| AMP | DESCRIPTION | CAT. NO. |
|---|---|---|
| 100:0.1A | Solid Core, 0.72", Black | CDA01-K12 |
| | Solid Core, 0.72", Blue | CDA01-L12 |
| | Solid Core, 0.72", Red | CDA01-R12 |
| 200:0.1A | Solid Core, 0.72", Black | CDA02-K12 |
| | Solid Core, 0.72", Blue | CDA02-L12 |
| | Solid Core, 0.72", Red | CDA02-R12 |
| 400:0.1A* | Solid Core, 1.5", Black | CDF04-K24 |

*Not for use with Mini Meters

### SPLIT CORE—FOR USE WITH SERIES 1000, 2000, 3500, 8000, MINI METERS METERS AND MULTIPLE METER UNITS (MMUs) ONLY

| AMP | DESCRIPTION | CAT. NO. |
|---|---|---|
| 100:0.1A | Split Core, .75" x .75" | CTD01-K16 |
| 200:0.1A | Split Core, 1" x 1" | CTD02-K16 |
| 400:0.1A | Split Core, 1.5", x 1.5" | CTD04-K23 |
| 800:0.1A | Split Core, 3" x 3.5" | CTC08-K46 |
| 1200:0.1A | Split Core, 4" x 6" | CTC12-K46 |
| 1600:0.1A | Split Core, 4" x 6" | CTC16-K96 |
| 3000:0.1A | Split Core, 5" x 7" | CTC30-57B |
| 5000:0.1A | Split Core, 5" x 7" | CTC50-57B |

### SPLIT CORE—FOR USE WITH SERIES 4000, 4100 INDUSTRIAL MODBUS METER KITS AND SERIES 7000 AND 7100 METERS ONLY

| AMP | DESCRIPTION | CAT. NO. |
|---|---|---|
| 50:0.333V | Split Core, 0.4" | CTV5X-WA4 |
| 100:0.333V | Split Core, 1.6" x 2.1" | CTV01-K21 |
| 200:0.333V | Split Core, 2.2" x 2.8" | CTV02-K21 |
| 400:0.333V | Split Core, 6" x 5.2" | CTV04-K40 |
| 800:0.333V | Split Core, 6" x 5.2" | CTV08-K40 |

### ROGOWSKI COIL—FOR USE WITH SERIES 4000 AND 4100 INDUSTRIAL MODBUS METER KITS ONLY

| AMP | DESCRIPTION | CAT. NO. |
|---|---|---|
| 50-5000A | Rogowski Coil, 12" | CRV50-K62 |
| | Rogowski Coil, 18" | CRV50-K93 |
| | Rogowski Coil, 24" | CRV50-KC2 |

### ROGOWSKI COIL—FOR USE WITH SERIES 7000 AND 7100 METERS ONLY

| AMP | DESCRIPTION | CAT. NO. |
|---|---|---|
| 50-4000A | Rogowski Coil, 16" | CRV50-LR2 |
| | Rogowski Coil, 124" | CRV50-LR4 |



Solid Core Current Transformers
100A, 200A, 400A, 100mA/333mV available



Split Core Current Transformers
100A-5,000A 100mA available



Split Core Current Transformers
100A-5000A .333mV available



Rogowski Coil Current Transformer
50A-5000A available

# WATER METERS

Address a wide range of water measurement and verification applications with Leviton water meter solutions. Water meter options include polymer and bronze models. These meters offer a cost-effective, reliable solution for incorporating water tenant billing and other metering projects. They are compatible with automated reading hardware and wireless AMR transmitters, simplifying integration into other metering and building systems.

## COMMERCIAL & RESIDENTIAL WATER METERS

- Meets all AWWA standards
- California CTEP and NTEP approved models available for hot and cold applications
- High quality long-life parts
- Tamper detection
- NSF-61-G
- Pulse output
- Designed for water tenant billing applications
- Compatible with wireless AMR solutions
- Register units—US gallons

## LEVITON WATER METERS

### COMMERCIAL WATER METERS

| DESCRIPTION | CAT. NO. |
|---|---|
| 3/4-in by 5/8-in Bronze Water Meter with Couplings | WMC75-BU1 |
| 1-in Bronze Cold Water Meter with Couplings | WMC10-BU1 |
| 1.5-in Bronze Cold Water Meter with Couplings | WMC15-BU1 |
| 2-in Bronze Cold Water Meter with Couplings | WMC20-BU1 |
| 3/4-in Bronze Hot Water Meter with Couplings | WMH75-BU1 |
| 1-in Bronze Hot Water Meter with Couplings | WMH10-BU1 |
| 1.5-in Bronze Hot Water Meter with Couplings | WMH15-BU1 |
| 2-in Bronze Hot Water Meter with Couplings | WMH20-BU1 |

### RESIDENTIAL WATER METERS

| DESCRIPTION | CAT. NO. |
|---|---|
| 3/4-in Cold Water Meter – CA certified, couplings sold separately | WMC75-PC1 |
| 3/4-in Hot Water Meter – CA certified, couplings sold separately | WMH75-PC1 |
| 3/4-in Meter Couplings, Polymer Set (2) | WMX75-PZ1 |
| 3/4-in Spacer Tube, Polymer | WMX75-PY1 |



Residential Polymer
Cold Water Meter



Residential Polymer
Cold Water Meter



Commercial Bronze
Hot Water Meter
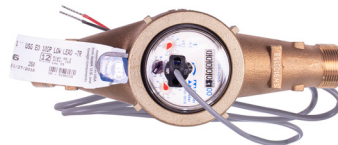


Commercial Bronze
Multi-Jet Cold Water Meter

## GAS METERS

Gas meter options offer a cost-effective, reliable solution for incorporating gas tenant billing and other metering projects. They are compatible with automated reading hardware and wireless AMR transmitters, simplifying integration into other metering and building systems.

• AMR/AMI compatible

• Tamper-resistant

• Pulse output

• Compatible with Wireless AMR

• 400 CFH Meter's Easy Turn design allows for a drastically simplified installation

## LEVITON GAS METERS

| DESCRIPTION | CAT. NO. |
|---|---|
| Residential Gas Meter with pulse output, 0.75-in NPT connectors included | GMP75-201 |
| 250 CFH Gas Meter with temp condensation and pulse output, 1-in connector set included | GMP10-251 |
| 400 CFH Commercial Gas Meter with temp condensation and pulse output, includes 1-in or 1.5-in connector set | GMP15-401 |

Gas Meter

## VERIFEYE COMMUNICATION PRODUCTS
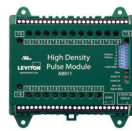


| Energy Monitoring Hub (EMH) | EMB Hub | EMB HubLite | High Density Pulse Module | Flex I/O Module | ModHopper |

| Specifications | | Data Acquisition Hubs (ModBus Master) | | | Input/Output Module | | Wireless ModBus/ Pulse Transceiver |
|---|---|---|---|---|---|---|---|
| | | Energy Monitoring Hub (EMH)* | EMB Hub* | EMB HubLite* | High Density Pulse Module | Flex I/O Module | ModHopper |
| | | A8812 | A8810 | A7810 | A8911 | A8332 | R9120 |
| | Communication Protocols | ModBus RTU ModBus TCP TCP/IP PPP HTTP/HTML FTP NTP XML SNMP-Trap BACnet IP | | ModBus TCP TCP/IP PPP HTTP/HTML FTP NTP XML SNMP-Trap BACnet IP | ModBus RTU | | ModBus RTU |
| | Applications | Use with an Ethernet (LAN) connection to push-or-pull data via HTTP, XML, and FTP<br><br>Connect to web-based (IP-based) software dashboards, energy information management systems and demand response systems | | | Use with EMH to take advantage of plug-in communication<br><br>Use with ModHopper for wireless communication<br><br>Push-or-pull meter data to VerifEye kiosks and software applications | | Designed specifically for wireless submetering<br><br>Collect meter data from multiple buildings over long distances<br><br>Self-healing mesh network using frequency agile technology |

HOW TO SELECT THE APPROPRIATE DATA ACQUISITION HUB

| | ModBus TCP | ModBus RTU | 4 Pulse Inputs Onboard | 8 Flex Inputs On Board** | Requires Separately Ordered Power Supply |
|---|---|---|---|---|---|
| A8812-000 EMH | X | X | - | X | - |
| A8810-000 EMB Hub | X | X | - | - | X |
| A7810-000 EMB HubLite | X | - | X | - | X |

** Pulse, analog, status and resistive

*VerifEye BMO 3.0 Base Module software is free with purchase of a VerifEye Hub.

## METERING COMMUNICATIONS SYSTEMS

To create a data network between Leviton submeters and stakeholders (BAS, third party billing, Building Manager Online (BMO) 3.0), Leviton offers Metering Communication Systems. These solutions transmit data from meters to end systems, creating a seamless transition between data collection and data display. Leviton Metering Communications Systems also enable facilities to create metering systems that can easily share data through open protocols such as ModBus, and IP-based data transfer through HTTP/FTP of .csv or XML files. The results are robust and reliable networks scalable to accommodate future expansion, with data made accessible from any internal or external location.

## DATA ACQUISITION HUBS
### ENERGY MONITORING HUBS

Data Acquisition Hubs, including the Energy Monitoring Hub (EMH), EMB and EMB HubLite are intelligent, flexible data acquisition servers allowing users to collect energy data from meters and environmental sensors. As an additional advantage, VerifEye BMO 3.0 Base Module online software is included at no cost with purchase of any VerifEye Data Acquisition Hub. Designed to connect to IP-based applications such as enterprise energy management, demand response and smart grid programs, Hub servers allow you to connect thousands of energy points, benchmark energy usage and reduce energy costs.

- Collects and logs data from connected wired or wireless devices based on user-set intervals

- Pushes or pulls data via HTTP, XML, FTP or any custom protocol using an Ethernet (LAN) connection

- No software required—information can be accessed through any web browser in any location

- Plug and play connectivity

- Compatible with nearly any front-end software platform allowing customers to use a variety of reporting tools

- Push or pull meter data to energy dashboards, kiosks and software applications

- Monitor performance of critical systems (lighting, HVAC, PDUs, inverters, etc.)

### DATA ACQUISITION HUBS*

| DESCRIPTION | CAT. NO. |
| --- | --- |
| Energy Monitoring Hub | A8812-000 |
| EMB Hub | A8810-000 |
| EMB HubLite | A7810-000 |
| Power Supply for EMB Hub and EMB HubLite | YBM07-001 |

Refer to page 16 for the EMH+ Integrated Meter and Energy Monitoring Hub
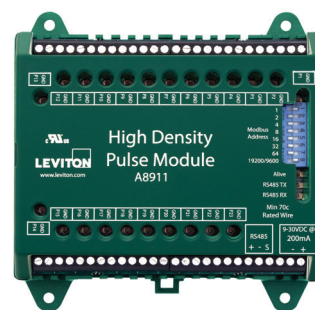

Energy Monitoring Hub


EMB Hub


EMB HubLite

**VerifEye™ Smart Submetering Solutions**

*VerifEye BMO 3.0 Base Module software is free with purchase of a VerifEye Hub.

# INPUT/OUTPUT MODULES

### HIGH DENSITY PULSE MODULE

The High Density Pulse Module provides a convenient way to expand a VerifEye metering system by connecting the HD Pulse Module to an Energy Monitoring Hub (EMH) and/or ModHopper for system expansion. The HD Pulse Module accepts up to 23 standard pulse meters or sensors and can function as a slave device with any ModBus master. This data can easily be integrated to a network of other critical energy sensors to provide a comprehensive energy monitoring solution. The HD Pulse Module is ideal for applications with a high density of pulse output devices, giving users access to meters that would previously require manual reading.

- External communications handled via shielded twisted pair 18-22 gauge wire allowing communication up to 4,000 ft and pulse input communications up to 200 ft using 18-24 gauge control wire

- DIN or wall mounting make installations quick and easy

- Device verification—LED indicators for each pulse input allow for fast indication and verification of pulses to reduce installation and troubleshooting time

- Non-volatile memory retains configuration and pulse count totals during power failures for reliable data collection and retention

- Easily add pulse meters to ModBus network for a scalable, open protocol solution

- Field upgradable firmware for user-friendly future upgrades and expansion

- Pulse output value is user selectable (ex: industry standard is 1 pulse per 1 kWh)
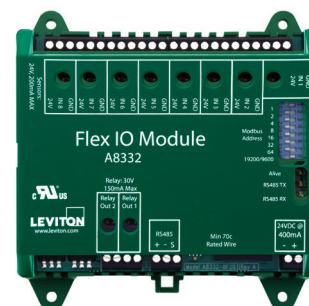


High Density Pulse Module

### FLEX I/O MODULE

The Flex I/O Module is a cost-effective way to collect data from meters or sensors and bring the information into a ModBus network or energy monitoring system. As a stand-alone or bundled package, the Flex I/O Module can be incorporated with data acquisition and metering devices to provide a cost-effective energy monitoring solution. The Flex I/O Module is compatible with virtually any ModBus master, allowing customers the flexibility to use it in existing ModBus networks. Use with the VerifEye Energy Monitoring Hub (EMH).

- Easily add meters and sensors to the ModBus network

- 8x user selectable inputs

- 2x output relays for manual controls or pulse replication

- Non-volatile memory

- Industrial temperature range of -22 to 158°F (-30 to 70°C)

- LEDs for visual verification/status reduce installation and troubleshooting time

- Din or wall mount for easy installation

- Field upgradable firmware for user-friendly future upgrades and expansion



Flex I/O Module

## INPUT/OUTPUT MODULES

| DESCRIPTION | CAT. NO. |
| --- | --- |
| High Density Pulse Module, 23 Inputs | A8911-000 |
| Flex I/O Module, 8 User Selectable Inputs, 2 Relay Outputs | A8332-000 |
| DIN Rail Mount Power Supply, +24VDC | PST24-I10 |

## MODHOPPER
### WIRELESS

The ModHopper is designed with breakthrough mesh technology that makes connecting ModBus RTU (RS-485) and pulse devices simple and cost effective. Our "smart" ModHopper transceivers eliminate the need for costly wiring runs allowing users to wirelessly capture meter data in the most challenging retrofit and campus environments. Collect data from meter points in existing buildings with minimum down-time or disruption of day-to-day operations.

- Designed specifically for wireless metering and VerifEye submetering solutions for guaranteed compatibility

- No software or programming required and devices automatically configure when powered, reducing labor costs and installation time

- Wireless "mesh" network—self-healing, self-optimizing for ease of installation and maintenance

- Connect up to 32 ModBus and 2 pulse devices per ModHopper for the ultimate expandable solution

- Long distance communication (3,000 ft indoor/14 miles LOS Outdoors) for flexibility of placement and easier future expansion

- Multiple independent network capability

- Reliable, constant two-way communication and packet verification

- Point to multi-point communication

- Field upgradable firmware for user-friendly future upgrades and expansion

ModHopper

### WIRELESS MODBUS/PULSE TRANSCEIVER

| DESCRIPTION | CAT. NO. |
|---|---|
| ModHopper and Power Supply | R9120-500 |
| High Gain Antenna for ModHopper | R9120-ANT |

### NEMA COMMUNICATION BUNDLES

NEMA Communication Bundles combine VerifEye's Data Acquisition Products into one enclosure for a VerifEye-exclusive, all-in-one-bundled communication solution for indoor use. All VerifEye NEMA communication bundles have one part number and are factory pre-assembled for ease of ordering eliminating the need for field assembly.

### NEMA COMMUNICATION BUNDLES

| DESCRIPTION | CAT. NO. |
|---|---|
| Energy Monitoring EMB Hub with Line Voltage Power Supply, NEMA 4X Enclosure | A8810-PS1 |
| Energy Monitoring EMB HubLite with Line Voltage Power Supply, NEMA 4X Enclosure | A7810-PS1 |
| HD Pulse Module with Line Voltage Power Supply, NEMA 4X Enclosure | A8911-PS1 |
| Flex I/O Module with Line Voltage Power Supply, NEMA 4X Enclosure | A8332-PS1 |

# VERIFEYE SOFTWARE PRODUCTS

**VerifEye™ Smart Submetering Solutions**

| Specifications | Measurement & Verification (M&V) Software | | | Tenant Billing Software |
|---|---|---|---|---|
| | **Base Module** | **Code Compliance Module** | **Executive Reporting Dashboard Module** | **Tenant Billing Module** |
| | **Web-Based Software** | **Web-Based Software and App** | **Web-Based Software and App** | **Web-Based Software** |
| **Key Features** | • Provides a summary of energy profiles to help identify high and low consumption as well as energy usage patterns for user defined intervals<br>• View building status, consumption and alarms<br>• Export energy usage data<br>• Display energy usage graphs<br>• Included at no cost with the purchase of any VerifEye Data Acquisition Hub | • Allows a single building to meet code compliance requirements for energy information<br>• Create virtual meters to report aggregated loads for lighting, HVAC, etc. and compare energy cost information<br>• Generate date-based reports for whole building energy sources such as electric, gas and steam as well as end use category energy users such as lighting, plug load, HVAC and more<br>• Receive push notifications via the Code Compliance mobile app<br>• Provides a summary of energy profiles to help identify high and low consumption as well as trending patterns for user defined intervals<br>• Can be used to comply with ASHRAE 90.1 2013, ASHRAE 90.1 2016, and 2019 Title 24 service metering and disaggregation of electrical circuits requirements | • Link multiple building profiles and view multiple buildings and portfolios on multiple Hubs<br>• Configure graphical Executive Dashboard to display user defined data and periods using a wide array of graphical options<br>• View building information updated in 15-minute intervals—energy usage, measured parameters, cost metrics and more<br>• Set goals for energy usage at the building or portfolio level<br>• Create virtual meters to report aggregated loads for lighting, HVAC, etc.<br>• Receive push notifications via the Dashboard mobile app<br>• Generate date-based reports for any user defined parameter including energy, demand and cost for any meter point | • Allows multiple buildings and portfolios to be managed from one application<br>• Create virtual meters to allocate common area costs<br>• Establish tenant portfolio and assign any meter to any tenant<br>• Create tariffs for use at the entire building level—simple, tiered or time of use (TOU)<br>• Generate tenant invoices for any user selected data range<br>• View management summary reports for each billing period<br>• Export invoices as PDFs<br>• Provides a graphical representation of energy usage data to support tenant bills<br>• Ideal for the commercial MDU market or any multi-space facility where individual tenant invoice creation is required |

## BUILDING MANAGER ONLINE (BMO) 3.0

BMO 3.0 web-based software delivers several high performing expansion module options to provide end users with quick and easy information for energy monitoring and tenant billing applications. For added flexibility, user pre-configured reports, alerts, and alarms set up in the Code Compliance and Executive Reporting Dashboard Modules can be accessed remotely via a mobile app optimized for Android and Apple smart devices.

## BUILDING MANAGER ONLINE (BMO) 3.0  EXPANSION MODULES

| DESCRIPTION | CAT. NO. |
|---|---|
| VerifEye BMO 3.0 Code Compliance Expansion Module, Single Building with up to 50 meter points, Software & Mobile App (1 module per building) | BMOSW-COD |
| VerifEye BMO 3.0 Executive Reporting Dashboard Expansion Module, 10 Buildings with 50 meter points each (up to 500 meter points), Software and Mobile App | BMOSW-EXE |
| VerifEye BMO 3.0 Tenant Billing Expansion Module, 10 Buildings with with 50 meter points each (up to 50 meter points) | BMOSW-BIL |
| VerifEye™ BMO 3.0 Additional 50 Meter Points added to existing building | BMOSW-MTR |
| VerifEye™ BMO 3.0 Additional Building(s) with 50 metering points each (Executive Reporting Dashboard and Tenant Billing Modules Only) | BMOSW-ADD |



BMO 3.0
Executive Reporting
Dashboard

## ANNUAL DATA STORAGE FEES (Purchase required annually after one year initial activation)

| DESCRIPTION | CAT. NO. |
|---|---|
| 1-50 Meter Points | BMOSW-TR1 |
| 51-100 Meter Points | BMOSW-TR2 |
| 101-250 Meter Points | BMOSW-TR3 |
| 251-1,000 Meter Points | BMOSW-TR4 |

## BMO SERVICE PLANS

| DESCRIPTION | CAT. NO. |
|---|---|
| VerifEye BMO 3.0 Short Term Support Service Plan, 90 Days | BMOSW-STP |
| VerifEye BMO 3.0 Short Term Support Service Plan, 120 Days | BMOSW-LTP |

# Service and Support
## During Every Step of the Process

There is much more to measuring and managing a facility's energy than just installing a meter or two. System design, product selection, installation and service: it all has to come together. That's where Leviton service and support options come in. We'll help you design your system and make the right product selections so you can create an energy management system that does exactly what you want it to do while saving electricity, billing tenants and meeting codes and standards.

It all starts with the Leviton sales representative. Our metering specialists are here to support you every step of the way. They can perform on-site facility audits and suggest specific products and strategies for improving energy monitoring and management.

### Exclusive Wealth of Resources

- **Exclusive Training** - contact your local Leviton representative to have a meter expert provide training in person or online exclusively for your team

- **ASHRAE 90.1, IECC and California Title 24 Apps** - simplifies metering requirements and provides examples for common applications - available for Android and Apple devices - download at **www.leviton.com/apps**

- **ASHRAE Web Portal** - access application diagrams and product solutions – visit **www.leviton.com/ashrae**

- **IECC Web Portal -** access application diagrams and product solutions -visit **www.leviton.com/iecc**

- **Title 24 Web Portal** - access application diagrams and product solutions – visit **www.leviton.com/title24**

- **ez-Learn™** – get Leviton smart from the comfort of your home or office with this exclusive 24/7 online training – go to **www.leviton.com/ezlearn**

- Field service engineers for top-level support

- Factory commissioning service

- Dedicated technical support via phone at **800-959-6004**

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