Sensing. To manage power. M4M Network analyzers.

Enabling accurate energy efficiency evaluations and perfectly fitting the ABB solution for monitoring, optimization and control of electrical system.

- -50% Time for integration in the ABB turnkey solution
- -40% Time for installation and commissioning
- Digital turnkey solution for monitoring, optimization and control
- Improve reactivity and reduce uncoordinated maintenance

ABB’s M4M is the new fully-connected, state-of-the-art range of network analyzers, guaranteeing complete power quality analysis and accurate energy efficiency monitoring of all the energy assets: industrial and commercial buildings, facilities, data centers.

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Give Your Buildings a New Dimension

Scalable architecture managed as a single system

The “Give your buildings a new dimension” program highlights the further evolution in ABB’s digitalization of its low-voltage distribution technologies, setting new benchmarks for control and savings of small- and medium-sized commercial and industrial buildings.

—
01 M4M is natively and fully connected to ABB Ability™ Electrical Distribution Control System

Today’s smarter buildings, which interconnect digital energy monitoring and control devices, have attained levels of efficiency that were never possible before the emergence of the Internet of Things (IoTs) and scalable technology.

ABB Ability™ has expanded its digital portfolio of low-voltage devices with intelligent components connected to a common architecture that, together, promote the ability to ‘Give Your Buildings a New Dimension’ (GYBND).

Connected devices make field data available for analysis, enabling energy and operating cost savings of as much as 30 percent.

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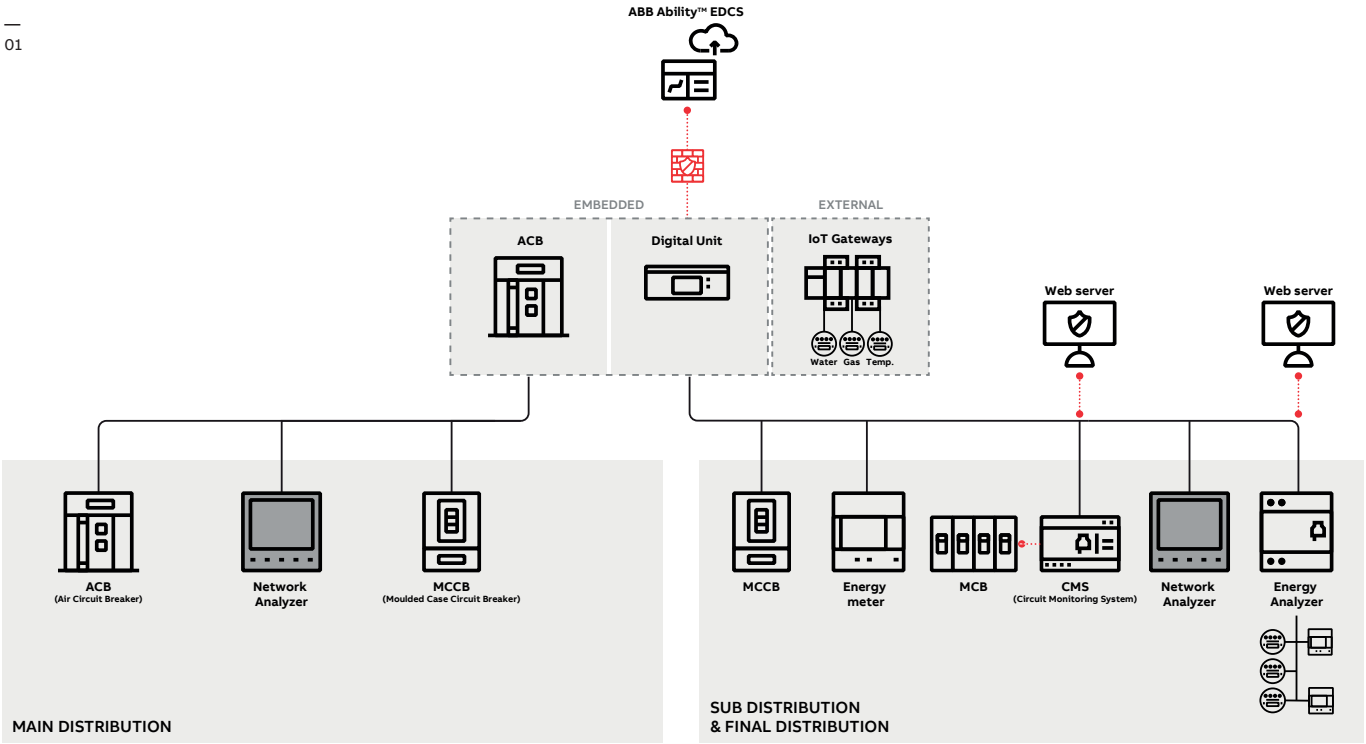



Industrial
Plants
Commercial
Buildings
Public
Buildings

M4M Network Analyzers
Discover the benefits

M4M as a stand-alone network analyzer guarantees all power monitoring needs in the energy distribution system: from high-accuracy energy efficiency monitoring of electrical parameters to complete power quality analysis through advanced KPIs. Thanks to its connectivity capabilities, M4M can get leverage on the integration in ABB scalable energy and asset management solutions to monitor, optimize and control the complete electrical system.

—

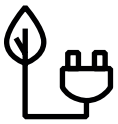
-50% Time for integration in the ABB turnkey solution

Full connectivity
Thanks to its Ability™ and Bluetooth integration, M4M benefits from the scalability of the ABB energy and asset management solution: from stand-alone visualization and commissioning via HMI or EPiC mobile APP and desktop software, to monitoring, optimization and control of the complete electrical system via ABB Ability™ Electrical Distribution Control System.

—

-40% Time for installation and commissioning

Simple and Intuitive
M4M makes configuration and operations simple and fast, from easy installation and wiring thanks to compact dimensions, all-removable terminals and Rogowski coils, to intuitive use and data access thanks to touchscreen color display, mobile APP and desktop software.



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Digital turnkey solution for monitoring, optimization and control

Energy Efficiency
ABB's M4M range of network analyzers gathers data from the electrical system and provides a complete power quality analysis and high-accuracy energy monitoring of electrical parameters and advanced power quality KPIs, enabling easy data aggregation and straightforward benchmark analyses through the ABB Ability™ EDCS cloud-computing platform.

—

Improve reactivity and reduce uncoordinated maintenance

Real-time supervision
M4M netwoyk analyzers make information easy to access from any area of the system, providing a comprehensive range of accurate data and interactive notifications that enhance reactivity to the events on the electrical system and improving of operations allows to avoid overloads, outages and uncoordinated maintenance.


Fully connected
to a single ABB solution
Quick installation
Easy selection
for every application
Smart commissioning
DESIGN AND SPECIFICATION
INSTALLATION AND COMMISSIONIG
ABB
M4M 30
Home
Graphs
Data Reading
Historicals
Configuration
Improve reactivity to
power quality events
Simple access to data
OPERATIONS AND MAINTENTANCE
Monitoring, optimization,
control of electrical system
Complete set of data
for energy efficiency analysis

Full Connectivity
Cloud-based power monitoring

Connectivity-based solutions increase awareness of resources and process behaviors: asset management can then be optimized through the control and monitoring of operations and costs.

M4M network analyzers ranges allow full connectivity and easy integration of submetering and power quality monitoring features, thanks to a complete set of communication protocols, matching high-accuracy standard requirements.

M4M exploits the scalability of the ABB solution, from stand-alone visualization and commissioning via HMI or EPiC mobile APP and desktop software, to monitoring, optimization and control of the complete electrical system via ABB Ability™.

At ABB we leverage internet of things' devices to drive digital transformation of buildings, by providing a scalable portfolio for energy and asset management.

Propose a single solution to optimize costs and energy needs thanks to M4M which is automatically integrated in ABB Ability™ EDCS cloud-computing platform, enabling real-time monitoring widgets, historical trend analysis and power quality reporting.

Propose projects compliant with energy efficiency regulations. High-accuracy network analyzers class 0,5 according to IEC 61557-12, connecting to the cloud complete set of electrical parameters and power quality KPIs: from THD to individual harmonics.

Rogowski coil acceptance to integrate measurement functionalities and power quality analysis in any existing installation, easily transmitted to the cloud also in brownfield projects.

Scalable, fully connected, unique ABB solution

Meet energy efficiency requirements and regulations

Revamping of any existing installation

Complete integration in the ABB's scalable solutions for energy and asset management, to protect assets and optimize costs and energy needs

Simple and intuitive
Setting up a new benchmark

Thanks to its great user experience design, every user can become familiar with and competent in using the device at the very first contact.

M4M network analyzers reduce installation and commissioning time by up to 40%, thanks to easier configuration and simpler operations.

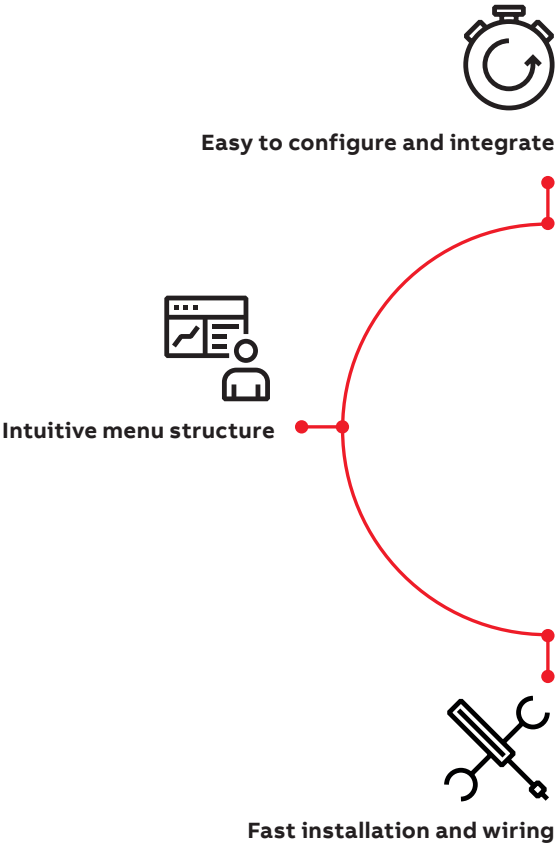
Easy installation and wiring are ensured by compact dimensions, all-removable terminals and Rogowski coils, while touchscreen color display and mobile APP integration increase the intuitiveness of use.

M4M network analyzers represent the new benchmark in terms of easiness of use and intuitiveness, throughout the whole device lifecycle.

Smart commissioning both locally and remotely, via mobile App and desktop software thanks to Bluetooth and embedded communication protocols, allowing to copy-paste the configuration of several devices and to simply integrate products in the system.

Touchscreen color graphic display and easy-to access App-structured menu make network analyzers' configuration and operation simple and quick, with interactive pop-ups and complete notifications.

All-removable terminals with vertical disposition allow fast installation and wiring of the compact 57mm-wide M4M, suitable for installation in any panel. Rogowski coils enable faster CT cabling with zero downtime.



Smart commissioning and intuitive visualization and data access, making configuration and operations simple and fast.

Energy efficiency
Power from data

Buildings are responsible for 36% of global final energy consumption and nearly 40% of total direct and indirect CO2 emissions, as reported by International Energy Agency.

Building owners and engineers need to re-design electrical network of their facilities and buildings in order to considerably reduce unnecessary energy use and achieve better efficiency.

M4M can easily be integrated in the ABB Ability™ EDCS cloud-computing platform, providing a unique, turnkey solution for monitoring, optimization and control of the electrical system, from protection to measurement, from field measurements to services.

M4M network analyzers provide a complete set of measurements and KPIs needed to set up a high-quality and effective energy management strategy.

Get a turnkey solution with ABB Ability™ EDCS which enables effective remote access to data collected from electrical distribution system, now including power metering data from M4M, for easy data aggregation and straightforward benchmark analysis

Monitor, optimize and control

Increase efficiency by avoiding penalties from utility thanks to the high reliability of measurement, compliant with main IEC accuracy standards. Datalogging of 1-year historical data, including max demand, load profiles and energy consumption trends.

Quick access to energy efficiency data

Reduce time needed to understand data, from stand-alone product to the complete system. Intuitive interfaces allow quick access to energy efficiency data and smart analyses, from the color graphic HMI and EPiC software for stand-alone device visualization, to system-view with ABB Ability™ EDCS dashboards.

Reduce energy wastage

Complete set of high-accuracy data, improving the energy efficiency of the electrical system and troubleshooting power quality problems

Improve energy efficiency...

...thanks to power monitoring

Real-time supervision
Taking informed actions

From 5 to 20% of production inefficiency is caused by downtime. A research conducted by Aberdeen reported the cost per hour of an unplanned downtime can cost up to $8,600.

M4M allow you to improve rectivity to any event on the electrical system in order to avoid overloads, outages and uncoordinated maintenance.

Collected data and user-defined alarms can flow into a remote system via embedded communication protocols (Modbus RTU, Modbus TCP/IP, Profibus DP-V0, BACnet/IP), making them easy to access from any area of the system.

M4M network analyzers support facility managers and building owners to keep under control the electrical system performances.

Alarms can be linked with user-defined logics to a complete set of power quality KPIs, acting on the system via embedded programmable I/O. Measurement of neutral line and calculation of ground current to avoid overloads and outages.

Remote and quick access to measured parameters, notifications and user-defined alarms from any area of the system through a smartphone, a tablet or a PC thanks to Bluetooth and embedded communication protocols, making maintenance faster.

Remote FW upgrade of M4M can be easily done via EPiC software without any impact on operations, guaranteeing to have the most updated and the most secure device, at any time.

Improve reactivity to power quality events

Remote and quick access to data

Have the most updated and secure product

Enhanced reactivity to the events on the electrical system, improving operations and allowing faster maintenance, at any time

Real-time supervision...

...to improve operations

Explore the new ranges

M4M network analyzers are available in two different versions which ensure all power monitoring needs, from basic to more complete power quality analysis.

EQUIPPED WITH GRAPHIC COLOR DISPLAY AND 5 PUSHBUTTONS KEYBOARD, M4M 20 RANGE ALLOWS COMPLETE MONITORING AND BASIC POWER QUALITY ANALYSIS.

EQUIPPED WITH TOUCHSCREEN COLOR DISPLAY, M4M 30 RANGE ALLOWS COMPLETE POWER QUALITY ANALYSIS AND ENERGY EFFICIENCY EVALUATIONS.

Graphic color display
M4M 20 and M4M 30 are equipped with a graphic color display and common app-based menu for an intuitive visualization.

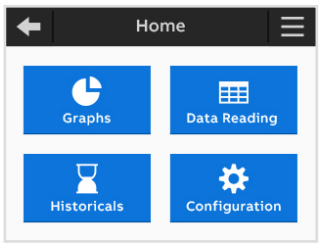
Bluetooth-enabled
All M4M network analyzers are equipped with Bluetooth module for smart commissioning via mobile app.

Full communication
A complete set of embedded communication protocols, including Modbus RTU, Modbus TCP/IP, Profibus DP-V0 and BACnet/IP

Input/Output
Control on the system thanks to I/O options including digital outputs, programmable I/O or programmable analogue outputs.

Datalogger
Data logging features are available, from complete notification logs to flash memory and RTC for 1-year data logging of trends.

Rogowoski version
M4M Rogowski versions are compatible with ABB's R4M Rogowski coils for easy retrofit in existing installations.



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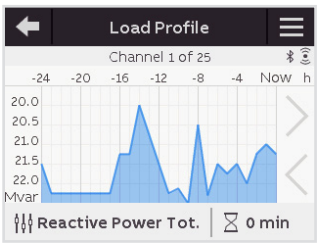

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01 M4M Homepage

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02 Trending graphs of load profiles

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03 R4M Rogowski coils

Comparing the two versions

M4M 20

M4M 30

Real-time		
TRMS current	•	•
TRMS voltage	•	•
Frequency	•	•
Active, Reactive and Apparent Power	•	•
Power Factor	•	•
Operating timer, countdown timer	•	•
Energy		
Active, Reactive and Apparent Energy	•	•
4 quadrants Energy (Import/Export)	•	•
Tariffs	/	•
Power Quality		
THD (I, VLN, VLL)	•	•
Individual Harmonics	/	40th
Unbalances (I, VLN, VLL)	/	•
Neutral current	Calculated	Measured
Phasors (I, VLN)	/	•
Waveforms (I, VLN, VLL)	/	•
Data recording and logs		
Single alarms	25	25
Warnings, alarms and errors logs	•	•
Complex alarms with logics	/	4
Demand values (average)	Basic	Advanced
Min/Max Demand values	Basic	Advanced
Energy Trending logs	/	•
RTC	/	•
HMI	**Graphic color**	**Graphic color touchscreen**
Graphs visualization	Basic	Advanced
Notifications	•	•
Homepage and favourite page	•	•
Password protection	•	•
Connectivity		
Automatic integration in ABB Ability™ EDCS	•	•
Bluetooth Low Energy	•	•
Communication Protocols	Modbus RTU, Modbus TCP/ IP, Profibus DP-V0, BACnet/IP	Modbus RTU, Modbus TCP/ IP, Profibus DP-V0, BACnet/IP
RJ45 Daisy Chain (Ethernet version)	/	•

Connectivity tools
ABB Ability™ Electrical Distribution Control System

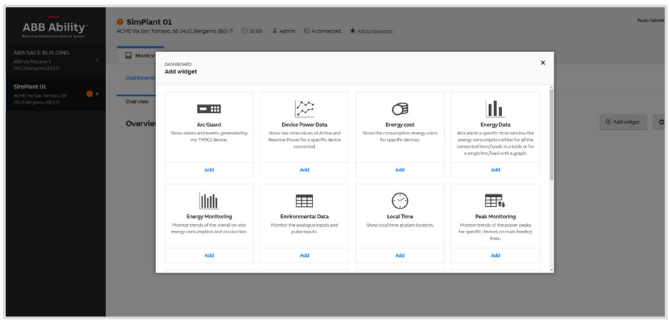
Automatically integrated and recognized in the ABB Ability™ EDCS cloud-computing platform, M4M is part of the ABB solution for monitoring, optimization, and control of the electrical system.

ABB Ability™ Electrical Distribution Control System (EDCS) is the cloud-computing platform designed to monitor, optimize, predict and control the electrical system.

M4M meters are automatically integrated and recognized in the ABB Ability™cloud: its data and functionalities are leveraged by the system to enhance operations and performances.

The cloud-computing platform collects data from protection and measuring devices within the electrical system, making it available anytime anywhere.
The user can supervise the electrical system and allocate costs but also implement an effective power management strategy to achieve energy savings.

ABB Ability™ EDCS also provides access on a multi-site level, simultaneously monitoring and comparing the performance of different facilities, as well as collecting and exporting data for historical trend analysis with on-demand queries or scheduled automatic reports.



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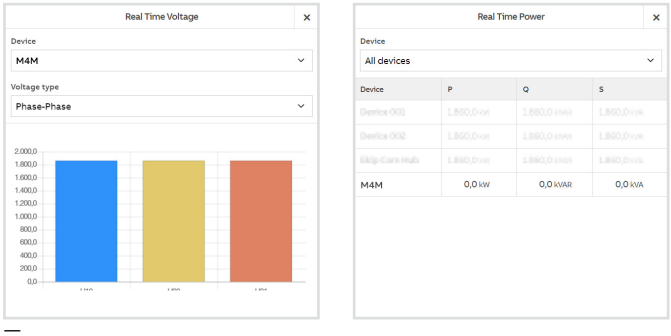
01 Widgets can be added and removed in the dashboard at any time, according to user's preferences.



02

02 Overview of parameters from different devices, like M4M, can be displayed as graphs and exported at any time for further analysis.

Connectivity tools
EPiC commissioning tool

From commissioning to stand-alone device visualization, Electrification Products intuitive Configurator (EPiC) is the unique ABB tool for supporting the user in the management of M4M network analyzers throughout the whole product lifecycle.

EPiC is ABB's unique commissioning tool for complete configuration and quick visualization of stand-alone devices.

All system parameters of different devices, including M4M, can be rapidly set and configured thanks to the easy and intuitive navigation pages of the software.

EPiC also provides to the customers a complete tool for compelling device visualization on a dashboard.
Every parameter can be visualized as instantaneous or historical value, with intuitive graphs that allow the user to quick analyze the measurement data.

Through EPiC software it is also possible to export and import the configuration from a M4M device to another.

Early notifications about unusual system status is ensured thanks to alarms and logs sent out over communications to EPiC, facilitating the identification and analysis of issues on the system.

EPiC is available both as desktop software (via Modbus RTU, Modbus TCP, Bluetooth) and mobile APP (via Bluetooth). M4M, thanks to embedded communication protocols and Bluetooth, is automatically integrate in EPiC tool.

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01 EPiC desktop software for stand-alone visualization, full commissioning and remote FW update of M4M network

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02 EPiC mobile APP software for quick visualization and smart commissioning of M4M network analyzers via Bluetooth

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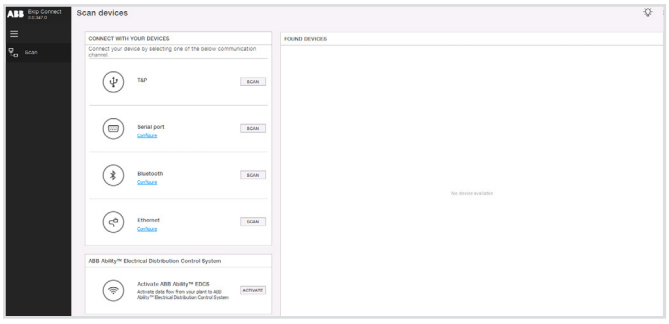

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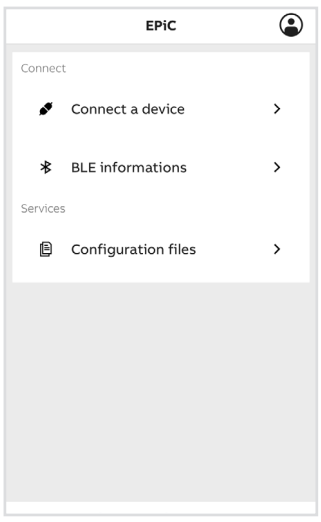


Applications
Ensuring power monitoring in your building

—
01 Comercial building
—
02 Data Center
—
03 Industrial building

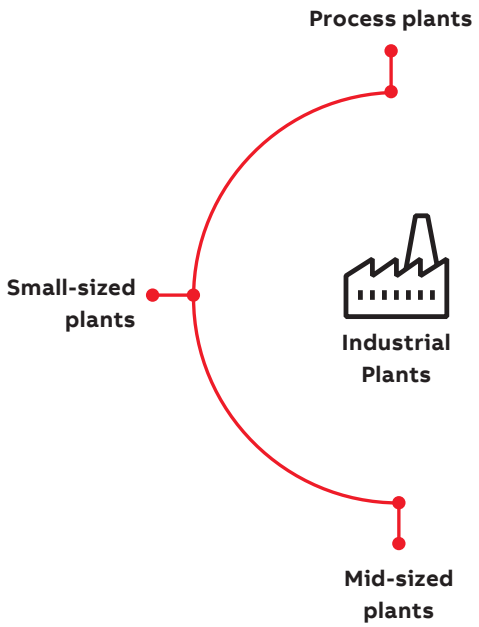
M4M network analyzers enable complete power quality analysis and accurate energy efficiency monitoring of all the energy assets: industrial and commercial buildings, facilities, data centers.

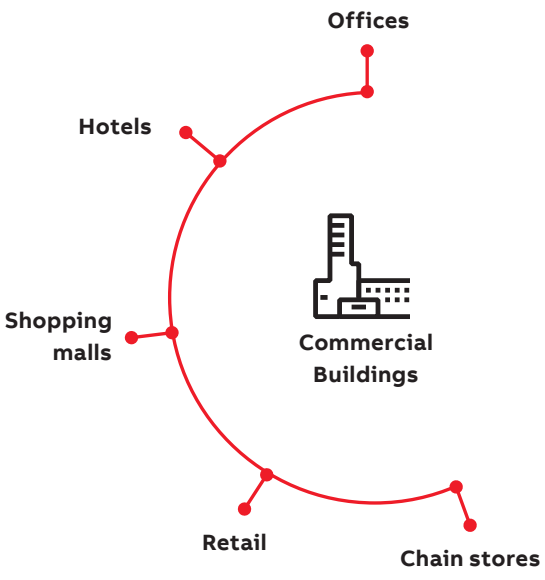
M4M range represents the perfect choice for sub-metering inside sub-distribution boards and power quality monitoring in main distribution boards and power centers.

In **industrial plants**, power network monitoring and control carried out by M4M allows to avoid outages, equipment damage, failures and interruption of any critical operation.
Furthermore, the improvement of the energy performance made possible by M4M reduces greenhouse gas emissions and operational energy costs for the facility.

Inside **commercial buildings**, M4M network analyzers support towards an efficient and rational use of energy, also ensuring accurate sub-billing of different individual departments or tenants. Moreover, avoiding fees and penalties from the utility is made easy thanks to demand power monitoring.

In **data centers**, M4M allows to fully monitor power quality and power reliability, and easily detect in which part of the data center harmonics are created. This allows to prevent damages to installed equipment and avoid any operational impact.






Coutts

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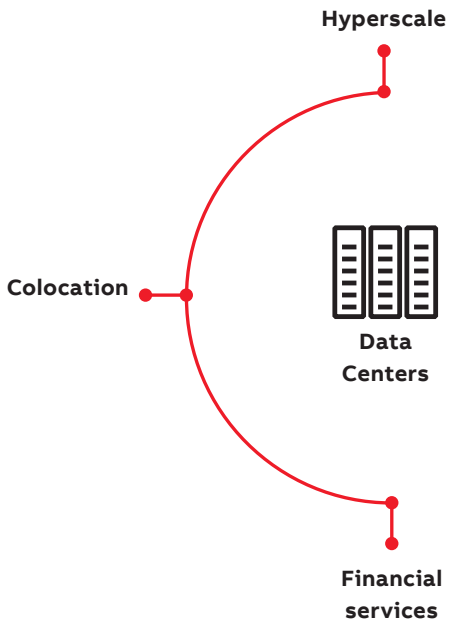
Hyperscale
Colocation
Data
Centers
Financial
services

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