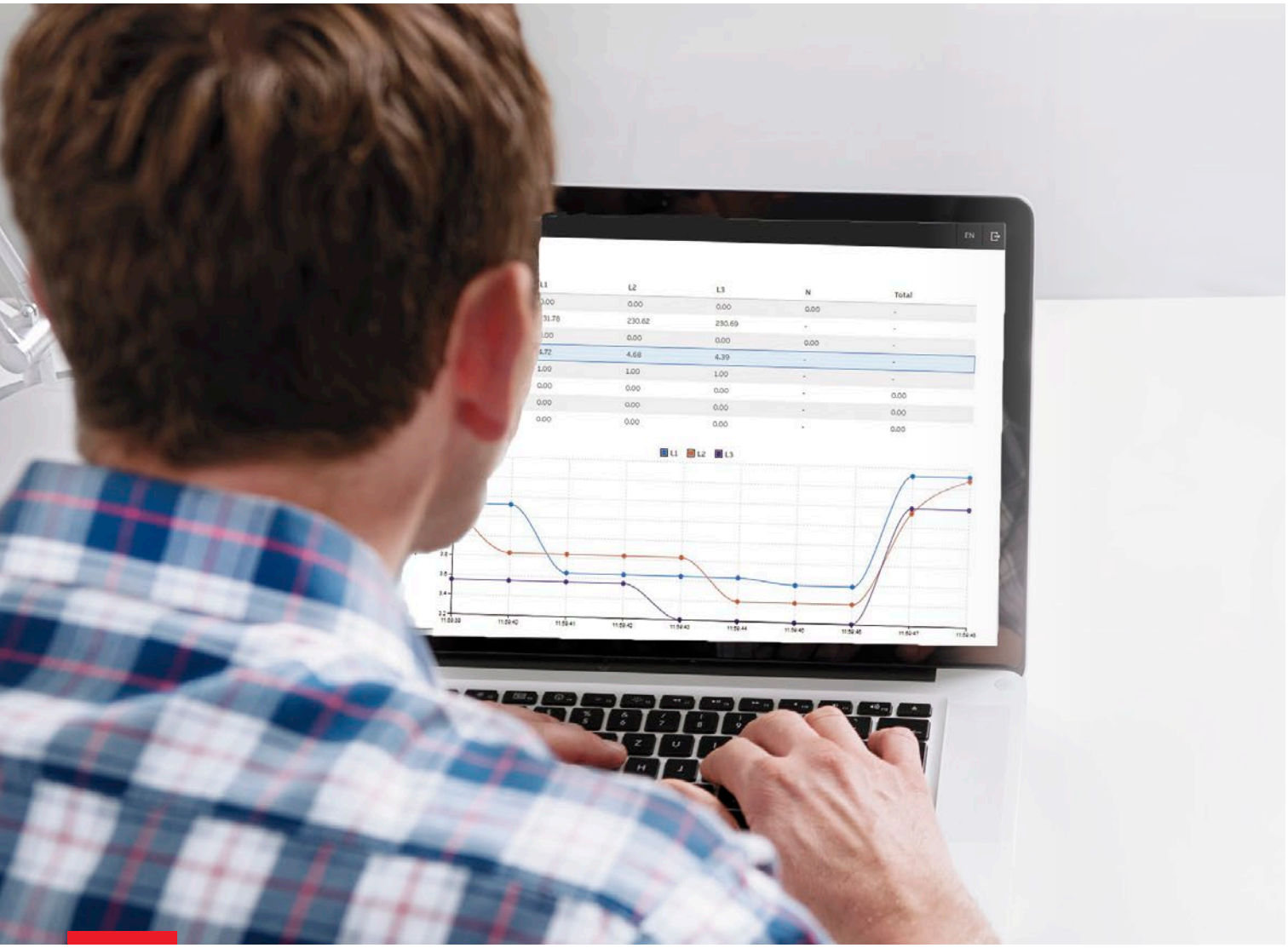


CMS – Circuit Monitoring System

Give your buildings a new dimension

- Clear visibility of energy consumption at branch level
- Easy retrofitting and upgrades
- Maximum reliability and security thanks to encryption
- Simplified installation and commissioning
- One sensor for all types of currents

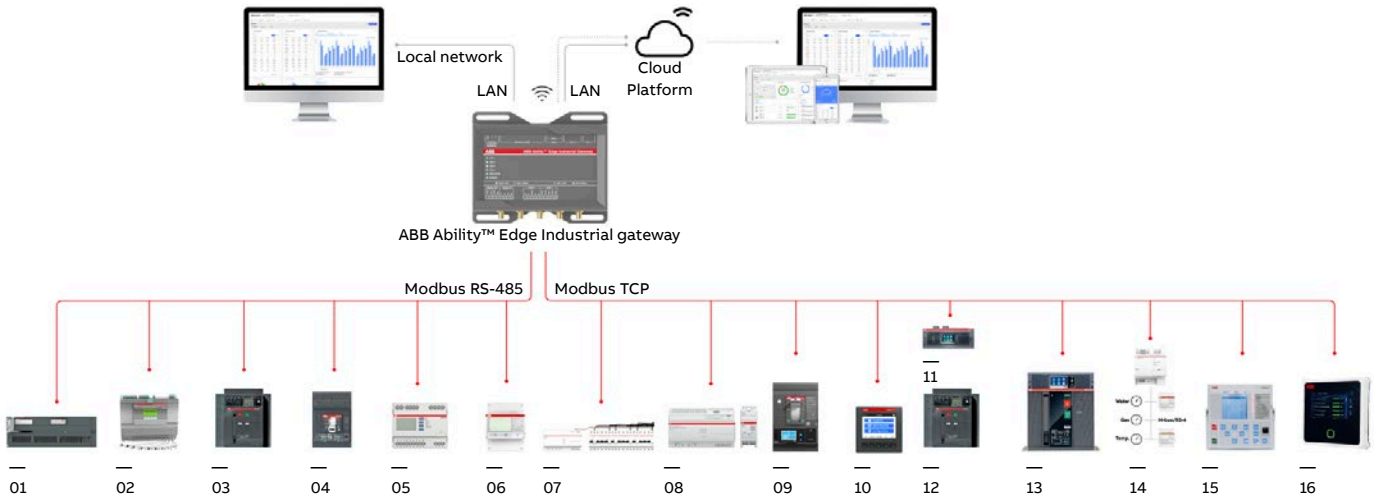
The Circuit Monitoring System (CMS) is a ultra-compact and high-performance multichannel measurement system for AC and DC branch monitoring.
It represents a complete solution for monitoring electrical parameters in distribution panels, enabling power monitoring and energy efficiency analysis in buildings and critical power applications.

Table of contents

Give your buildings a new dimension
Scalable solutions for energy and asset management

With the rise of digitalization and the Internet of Things (IoT), collection of data from the entire network for analysis becomes easier, enabling optimization of energy usage and assets. From monitoring energy consumption to control of operations and costs, connectivity-based solutions can improve energy efficiency while reducing costs.

To drive this digital transformation of public, commercial and industrial buildings and their power technologies ABB provides a scalable portfolio for energy and asset management. Depending on specific requirements of the installation, electrical installers, building owners, facility and energy managers can choose services ranging from on-site monitoring to cloud-based solutions. From design to operations stage, hardware and software meet customers' needs. "Give your buildings a new dimension" concept uses two proven energy monitoring solutions – the CMS-700 circuit-monitoring system and the EQmatic energy analyser – and integrates their functionalities with ABB Ability™ Energy and Asset Manager via the ABB Ability™ cloud. To set up the network and cloud connectivity in a new installation – or to upgrade existing facilities – just "plug & play" modules or devices are required.



Fully scalable portfolio of energy and asset management solutions

01 Switch disconnector fuses SlimLine XR Gold

02 Arc Flash active protection TVOC-2

03 Air circuit breaker SACE New Emax

04 Molded case circuit breaker Tmax T

05 Grid feeding monitoring relays CM-UFD

06 Energy Meters

07 Multi channel meter CMS700

08 Energy management Pro M InSite

09 Molded case circuit breaker Tmax XT

10 Network analyzer M4M

11 Digital unit Ekip UP

12 Air circuit breaker SACE New Emax

13 Air circuit breaker SACE Emax 2

14 Energy analyzer EQmatic

15 Protection relay REF615

16 Condition monitoring SWICOM

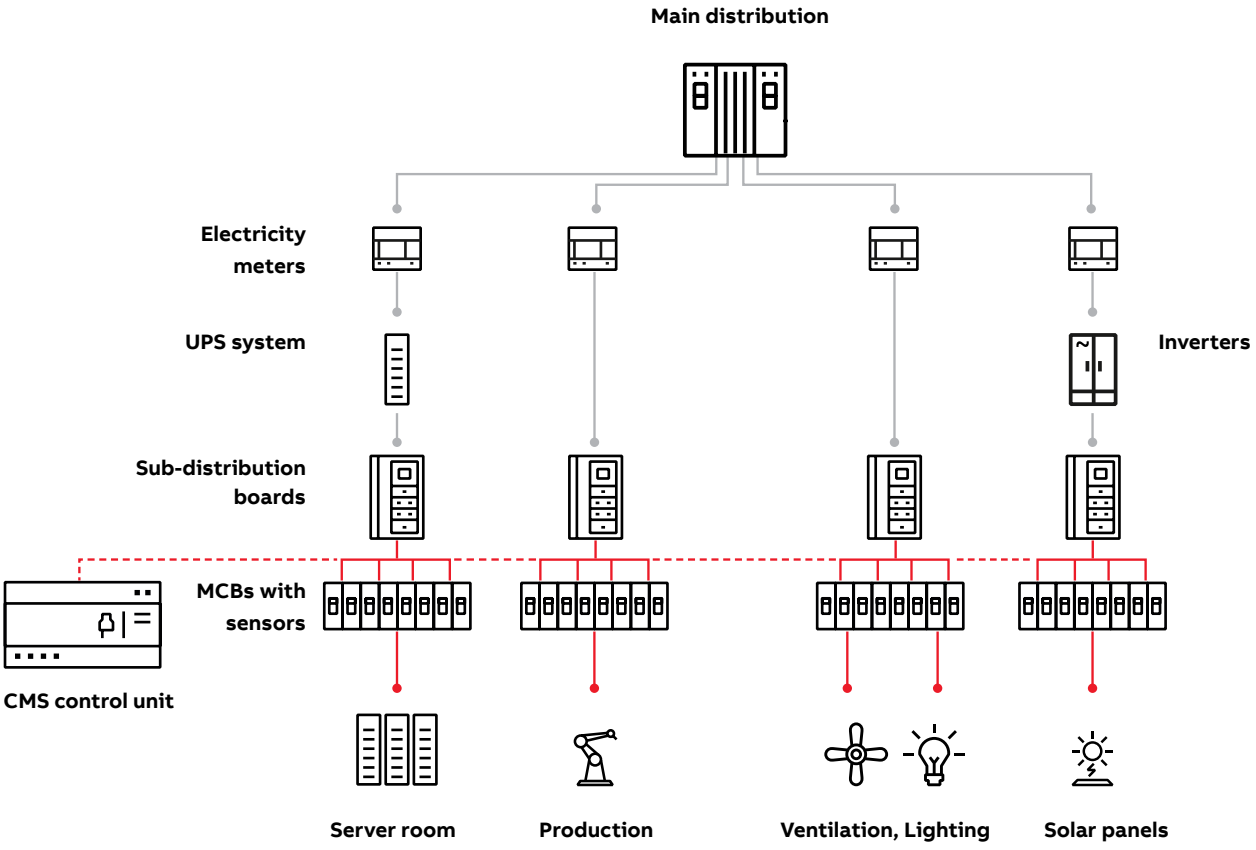

Upgrade
in 1 day
Save up to 30%
on operating costs
Save up to 20%
on energy bill

CMS - Circuit Monitoring System

Modularity and flexibility for every need

The CMS is a compact AC and DC multi-channel branch monitoring system, consisting of a control unit and sensors. The components can be easily installed and clearly arranged inside control and distribution cabinets, with minimum space requirements.

The design of the system guarantees reliability, maximum ease of use, a wide measurement range (up to 160 A), and maximum scalability in any application, from critical power to buildings. Moreover, the high modularity and flexibility of the CMS system makes it easy to upgrade and expand the solution at any time, ideal for retrofit applications in existing systems.



Design and Specification

OWNER
DESIGN CONSULTANT
ENGINEERING COMPANY

Energy transparency
Clear visibility of energy consumption is made possible at branch level.

Maximum reliability and security
Utmost data security in CMS-700 thanks to encrypted SNMP v3 and SSL certificate.

One sensor for all currents
Measurement of any kind of current – direct, alternating or mixed-up to 160A

Installation

INSTALLER
PANEL BUILDER
SYSTEM INTEGRATOR

Minimum space requirements
Everything needed for effective measurement is available in ultra-compact sensors.

Simplified installation
Save up to 30% of installation time thanks to quick mounting of sensors in only a few steps.

Smart commissioning
CMS system can be configured and put into operation in just a few minutes.

Easy retrofitting and upgrade
The system can be extended or modified at any time thanks to its flexibility and modularity.

Operations

OWNER
ENERGY MANAGER
MAINTENANCE PROVIDER
FACILITY MANAGER

Up-to-date system status
Branch current monitoring to improve system reliability and support continuous operations.

Increased responsiveness
Notification of alarms directly in the user mailbox through CMS-700 WebUI.

Energy efficiency
Identification of optimal load distribution and energy consumptions to reduce inefficiencies.

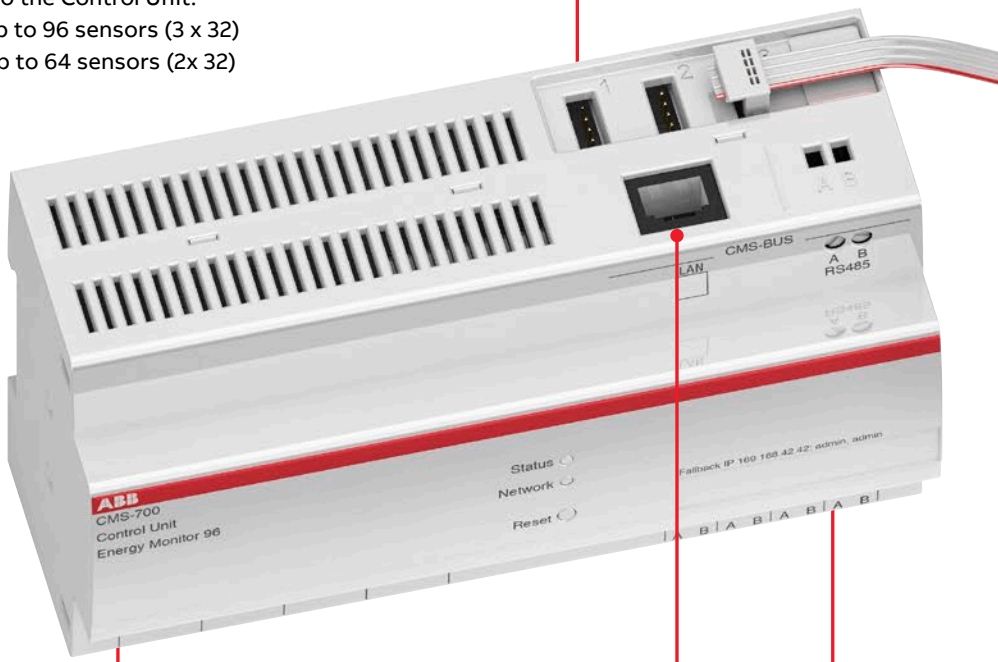
CMS System overview
Designed down to the finest detail

The quality of a measurement and monitoring system dependens on the strengths of the individual components and how well they interact. ABB's new CMS sets new and high standards.

Compactness, technology, measurement results, user friendliness and flexibility - every component and every feature of the CMS has been fully optimized in terms of practicality and functionality.

—
CMS-700 control unit in combination with open core CMS sensors.

CMS bus interface
Each bus interface allows up to 32 sensors connected to the Control Unit:
CMS-700: up to 96 sensors (3 x 32)
CMS-600: up to 64 sensors (2x 32)



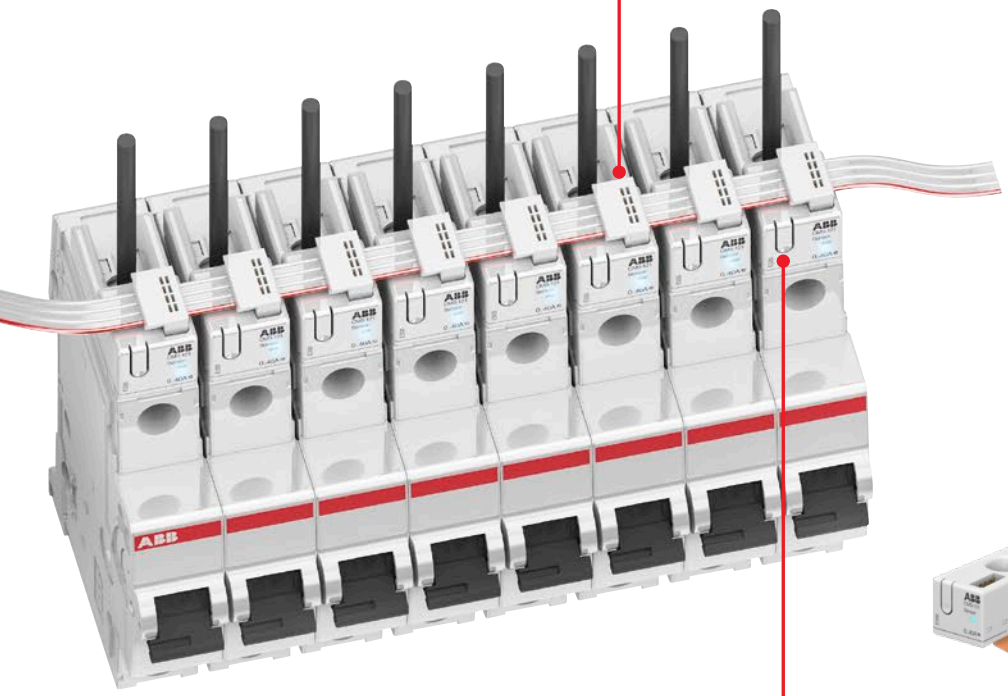
—
CMS-600

—
CMS-700

Control Unit
The control unit evaluates the measurement data picked up by the sensors, and makes it available via the provided interfaces.

Two different units are available depending on the application: CMS-600 and CMS-700.

Connection technology
Connecting the sensors to the control unit is extremely easy and requires no special tools. All sensors are connected to the control unit via a flexible flat cable and insulation piercing connectors. The positioning of sensors can be fully customized and placed where measurement is required.



Sensors
CMS sensors can be placed anywhere in the system, without any limitation. Easy initializing is guaranteed by the unique ID assigned to each sensors via Control Unit in just a few simple steps. All measurement functions are available right after commissioning.

Serial interfaces
Depending on the selected control unit, the following communication interfaces are available: RS485 (Modbus RTU), LAN (TCP/IP and Modbus TCP) , SNMP v1/v2 and v3 encrypted.

The web server integrated in the CMS-700 makes it possible to display the values via any Internet browser and to automatically export the files (via e-mail or FTP server).

CMS-700 Control Unit
Plug & Play energy monitoring

The CMS-700 control unit is the reliable solution for maximum transparency of energy consumption.

Using CMS-700 it is possible to measure and calculate electrical parameters from both the mains and the branches, in order to provide the most comprehensive set of information on the system.

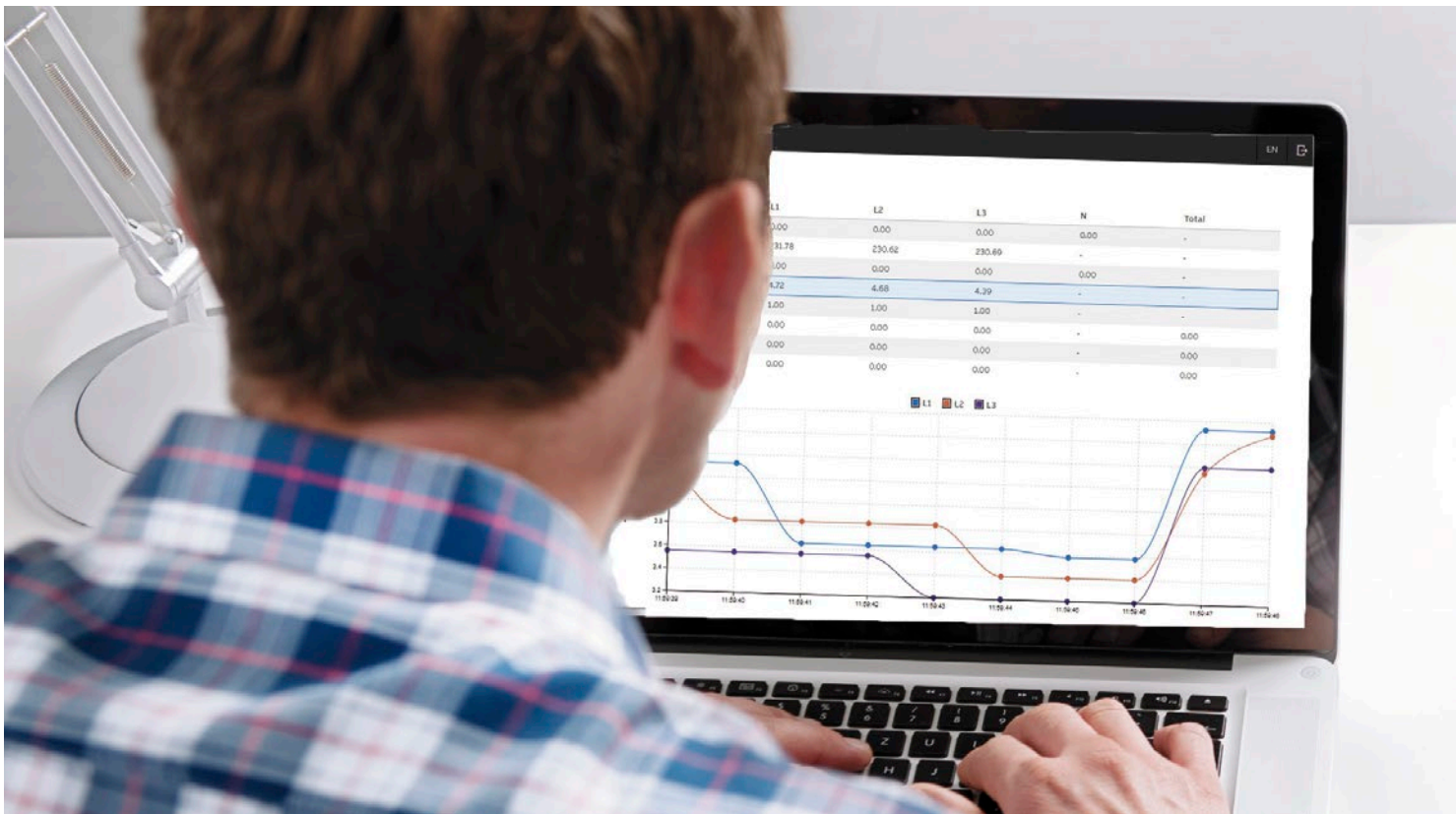
A maximum of 3x32 sensors can be connected to the CMS-700, allowing to simultaneously obtain AC and DC current as well as active energy from up to 96 branches.
At the mains side, the control unit allows to access the complete set of measurement data.

Complete set of embedded communication protocols is available to ensure smooth network implementation: Modbus RTU, Modbus TCP/IP and SNMP, including encrypted SNMP v3 for utmost data security.

As well as helping in the identification of potential savings related to energy consumption, CMS-700 allows to detect risky situations before they lead to service interruptions or load failures, improving system reliability and supporting continuous operations.

Smart commissioning of the system is guaranteed thanks to the CMS-700 integrated webserver, with no need of any external software to put into operation the CMS system.

—
Energy monitoring using the CMS-700 web server interface

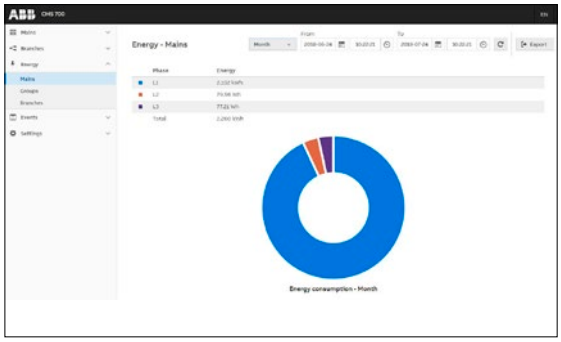


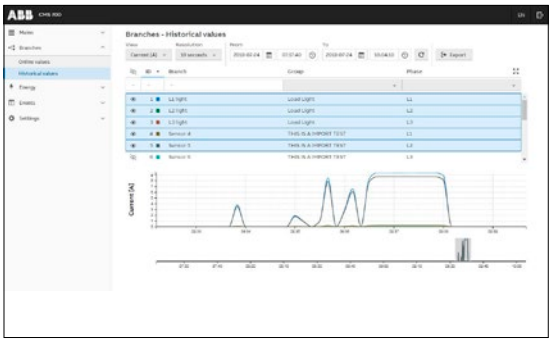
Access to CMS-700
Integrated web server

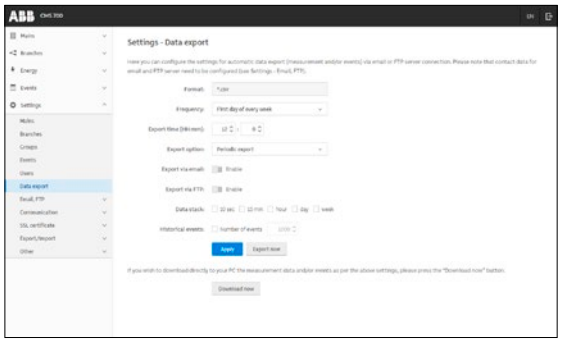
Thanks to the CMS-700 built-in web server, any web browser can be used to carry out the smart commissioning of the system, as well as easy visualization of online and historical measurement data.

Every parameter from both mains and branches can be visualized as instantaneous or historical value, with intuitive graphs that allow the user to quick analyze the measurement data. Data export to CSV files, mail or FTP is possible, according to user requirements.

The integrated alarm function can be fully managed via the webserver ensuring quick notification, via email or FTP, to unusual system status. This improves reactivity to potential issues and supports continuous operations. The whole commissioning phase of the CMS system can be carried out via the CMS-700 WebUI, from the sensor identification to the automatic data export settings. Moreover, the WebUI enables the FW update of the control unit at any time, ensuring to have the most advanced functionalities and the most secure device.







Access to CMS-700

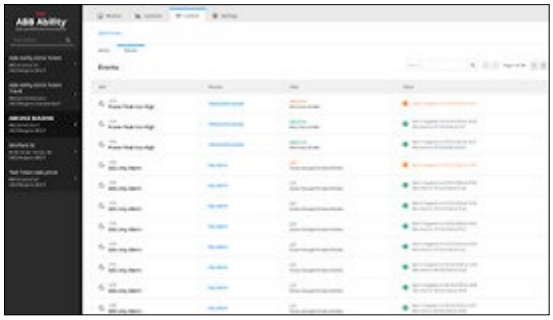
ABB Ability™ Energy and Asset Manager

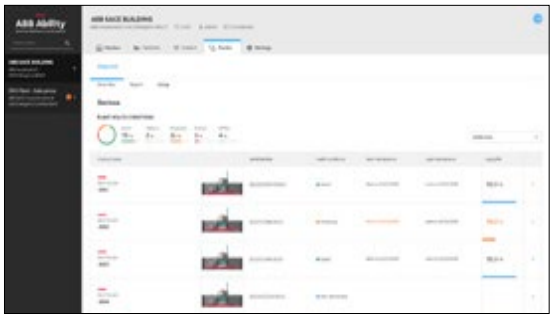
CMS-700 is automatically recognized in the ABB Ability™ Energy and Asset Manager, allowing the easy integration of its functionalities via the ABB Ability™ cloud.

To set up the network and cloud connectivity in a new installation – or to upgrade existing facilities – just “plug & play” modules or devices are needed. The cloud connection for the whole switchboard can be established via Emax 2 or Ekip UP equipped with Ekip Com Hub, or through ABB Ability™ Edge Industrial gateway.

The ABB Ability™ Energy and Asset Manager is an innovative cloud-computing platform designed to make asset monitoring, control and optimization simple, gathering data from the devices installed in the power distribution system, including CMS-700.

The cloud-based platform also provides access on a multi-site level, simultaneously monitoring and comparing the performance of different facilities, as well as collecting and exporting data and historical trend analysis with on-demand queries or scheduled automatic reports.





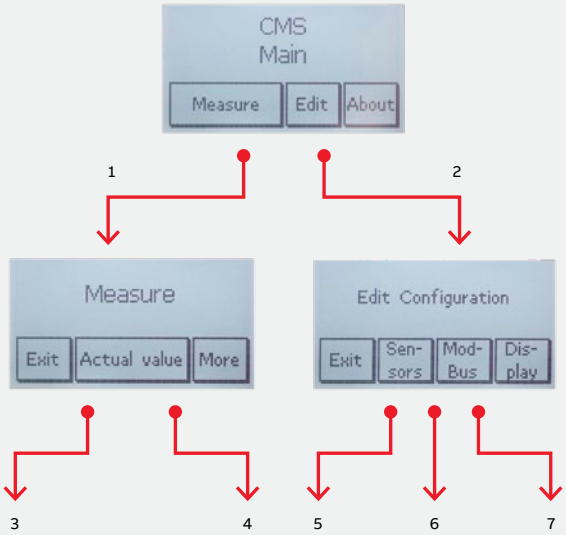
CMS-600 Control Unit
Compact current monitoring

The CMS-600 control unit is the compact solution for professional monitoring of the currents of each individual line.

The CMS-600 is able to measure AC and DC currents of up to 64 branches. Up to 64 sensors can be installed on 2 independent lines to each control unit.
For quick and easy use, the control unit is equipped with an illuminated touch display that simplifies the parameterization and control of the sensors. RS485 Modbus RTU interface allows users to remotely query and process measurement data, making the CMS-600 control unit easy to be integrated into an existing Modbus architecture.

Easy navigation of CMS-600 is ensured by the highly intuitive touch screen display. It takes just a few clicks to access al the desired functions and menus. User does not require any special training neither for system commissioning nor for operation.

Ideal in simple monitoring applications, CMS-600 can be used to monitor current level of individual lines in order to easily detect load level and overload conditions.



—
Transparent navigation menu
1 Measurement | 2 Configuration | 3 Display of current measurement values | 4 Display of max./min. values and threshold | 5 Initialization/parameterization of the sensors | 6 Modbus configuration | 7 Display settings

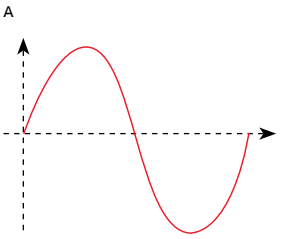
CMS sensors
High-level performance in a tiny space

Available in 18 or 25mm versions, CMS sensors guarantee maximum performance with ultimate compactness.

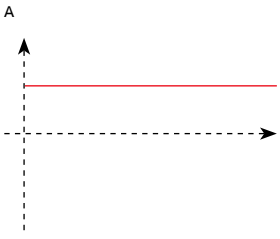
—
* All accuracy specifications refer to the relevant full scale value and apply at 25° C.

Reduced size, high performance: alternating (AC), continuous (DC) or mixed (TRMS) currents - CMS sensors detect and measure all types of currents up to 160A (TRMS).

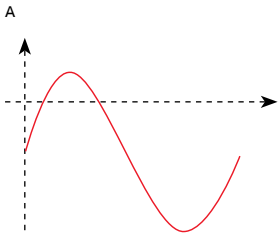
Since each sensor is equipped with its own microprocessor for signal processing, the measurement data is transmitted in digital format to the control unit via the bus interface. This minimizes the amount of cables required in the switchboards and maximizes the reliability of the measured value transmission.



—
Alternate Current (AC)



—
Direct Current (DC)



—
Mixed current

—
Open- core sensor

—
Solid-core sensor

Open-core sensors
The special U-shape form of the open-core sensors allows the retrofitting of existing installation, making sensors easy to adapt to different applications while keeping continuity of service. AC accuracy* of ≤ ± 1,0 % allows open-core sensors to be used in various monitoring applications.

Solid-core sensors
Available in 18mm and 25mm types, solid-core sensors offer AC measurement accuracy* of ≤ ± 0.5 %. This accuracy makes solid-core sensors suitable for all applications where high measurement precision is needed.

Maximum compatibility
Mounting flexibility for simple integration

Depending on the application, you can choose between two sets of sensors - one specifically designed for ABB installation devices, the other with an universal design to be installed on cables or DIN-rail.

Sensors for ABB devices

System pro M installation, SMISSLINE
The sensors of the CMS-120LA and CMS-120FH series can be used for easy retrofit installation on S200 MCBs, SMISSLINE devices and E90 fuseholders (1000VDC).

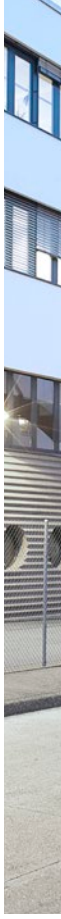
Mounting on S800 devices
The sensors of the CMS-100S8 and CMS-200S8 series can be mounted on all S800 high-performance switches with cage terminals.

Universal sensors

Mounting on DIN-Rail
The sensors of the CMS-120DR, CMS-100DR and CMS-200DR series are installed directly on a DIN rail using an enclosed adapter.

Clamp mounting on the cable
If space is a problem, the sensors of the CMS-120CA series, CMS-CMS-100CA and 200CA can be fixed directly on the cable to be measured using clamps (not supplied).

Applications
Flexibility and modularity



The CMS range offers users a simple and compact solution to guarantee energy efficiency and up-to-date system status, responding to the specific needs of different customers.

The design of the CMS system is based on extreme flexibility and modularity, making it suitable for applications in different sectors.

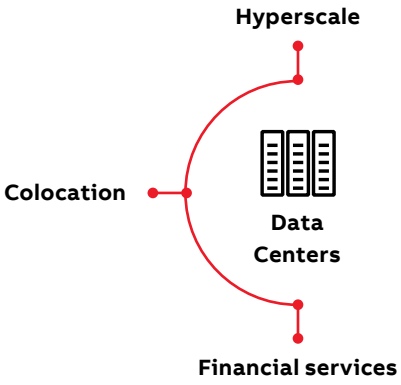
In **data centers**, CMS system can be installed to get clear visibility of energy consumption and detect risky situations before they lead to service interruptions or load failures.

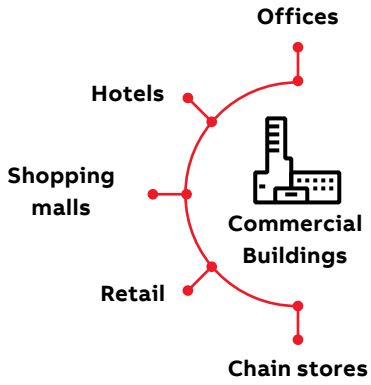
Retrofitting at single branch level allows to carry out brownfield extension in existing installations at any time.

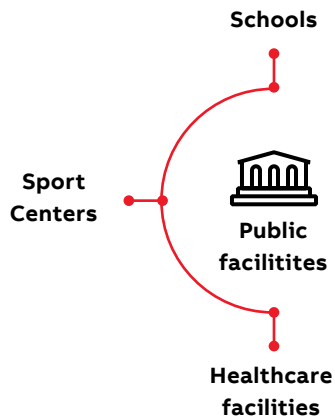
Commercial and public buildings can also leverage the CMS system to achieve higher energy efficiency and to have more detailed monitoring of their facility.

Offices, shopping malls, hotels, retail or chain stores can increase their awareness of energy consumption to improve performance.

Public facilities, such as schools, sport centers and healthcare facilities, can secure service continuity and develop predictive maintenance forecasts.







Applications
Current and power monitoring in data centers

Within critical power applications such as data centers, CMS-700 provides a reliable solution for measuring individual branch load circuits and presenting energy and power dashboards. In addition, it protects data centers against current-related system outages with an integrated alarm function.

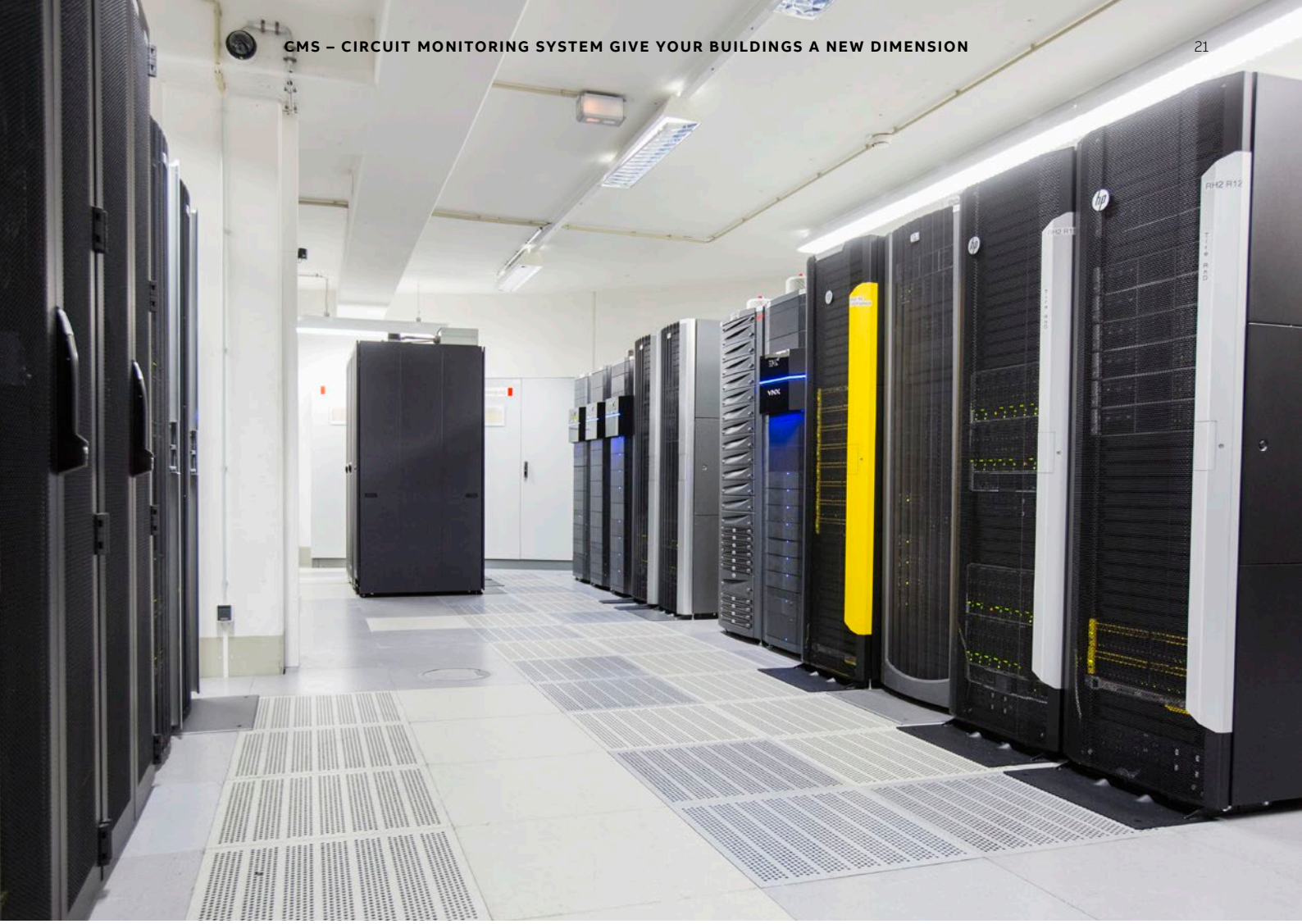
In this example the busbar trunking system, mounted overhead or under the raised floor of the server racks, is equipped with master and slave plug-in tap-off units. The proposed solution, suitable for new and existing installations, includes CMS-700 control unit in the master tap-off unit to measure the incoming side. Open-core CMS sensors are integrated into daisy-chained slave tap-off units to carry out energy monitoring of every single phase to the rack PDU.

The integrated webserver ensures an easy configuration and allows you to remotely check realtime online values as well as historical data without any additional external software.
On the other hand, Modbus and SNMP communication protocols allow the easy integration into higher level systems like DCIM or SCADA.

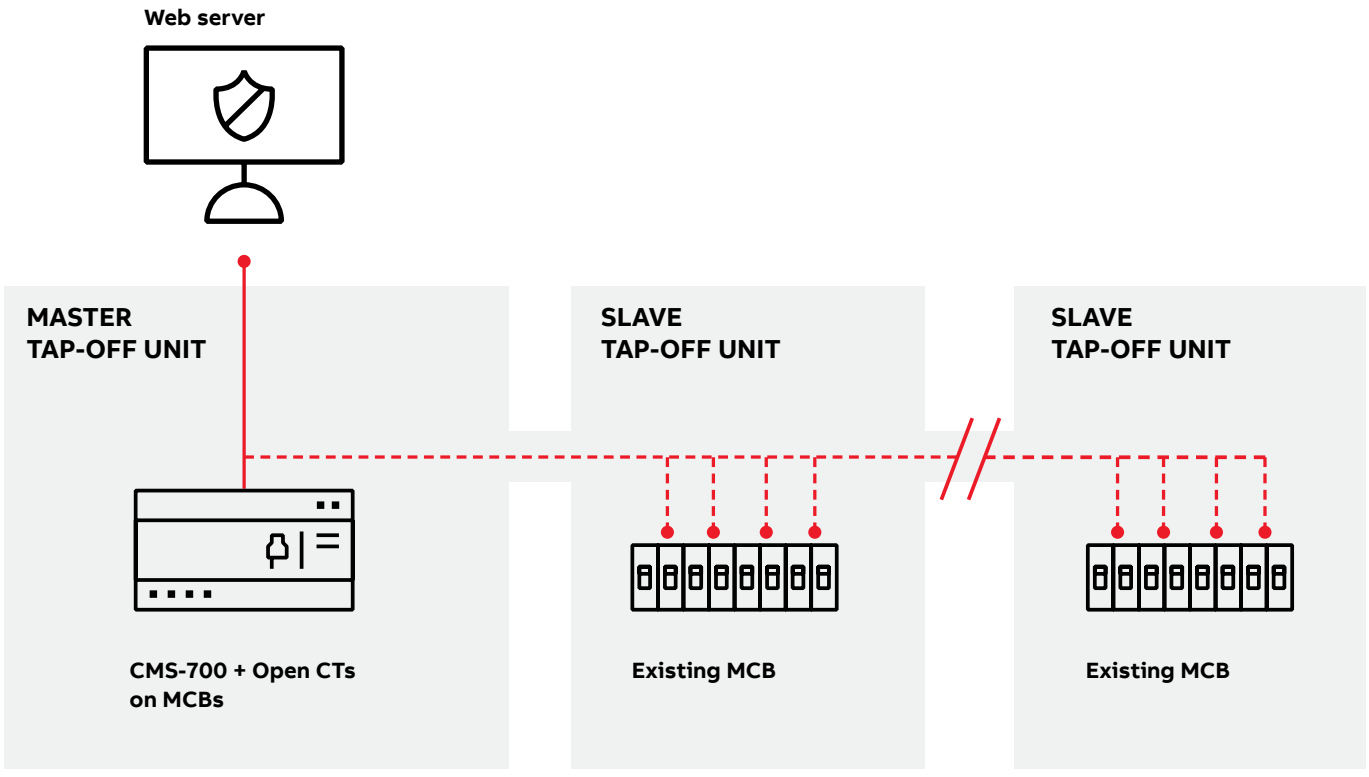
Design and Specification
Through this solution, the customer can simply and easily ensure optimal load distribution and efficient energy consumption

Installation
I can easily extend the solution when expanding the busbar trunking system, as well as retrofit into existing installations.

Operation
I can reduce downtime and improve system reliability by early detecting potential issues.



RJ45 Ethernet cable
CMS bus



Applications
Multi-site supervision for chain stores

Stores can be situated as single locations or as a shop in a shopping mall.

Current solutions gather data from all the different stores in order to analyze energy management, monitor energy consumption and improve energy efficiency. To aggregate and compare data from multiple locations, a cloud-based solution is essential.

Monitoring any store requires only an analogue installation. Water and gas consumption data are gathered from dedicated meters and sent digitally to the ABB Ability™ Edge Industrial gateway.

Electrical data and measurements are collected from energy meters, breakers and CMS-700 devices and transmitted to the ABB Ability™ Edge Industrial gateway via Modbus RTU. At the core of the solution, the ABB Ability™ Edge Industrial gateway mounted on the DIN rail gathers all the incoming data.

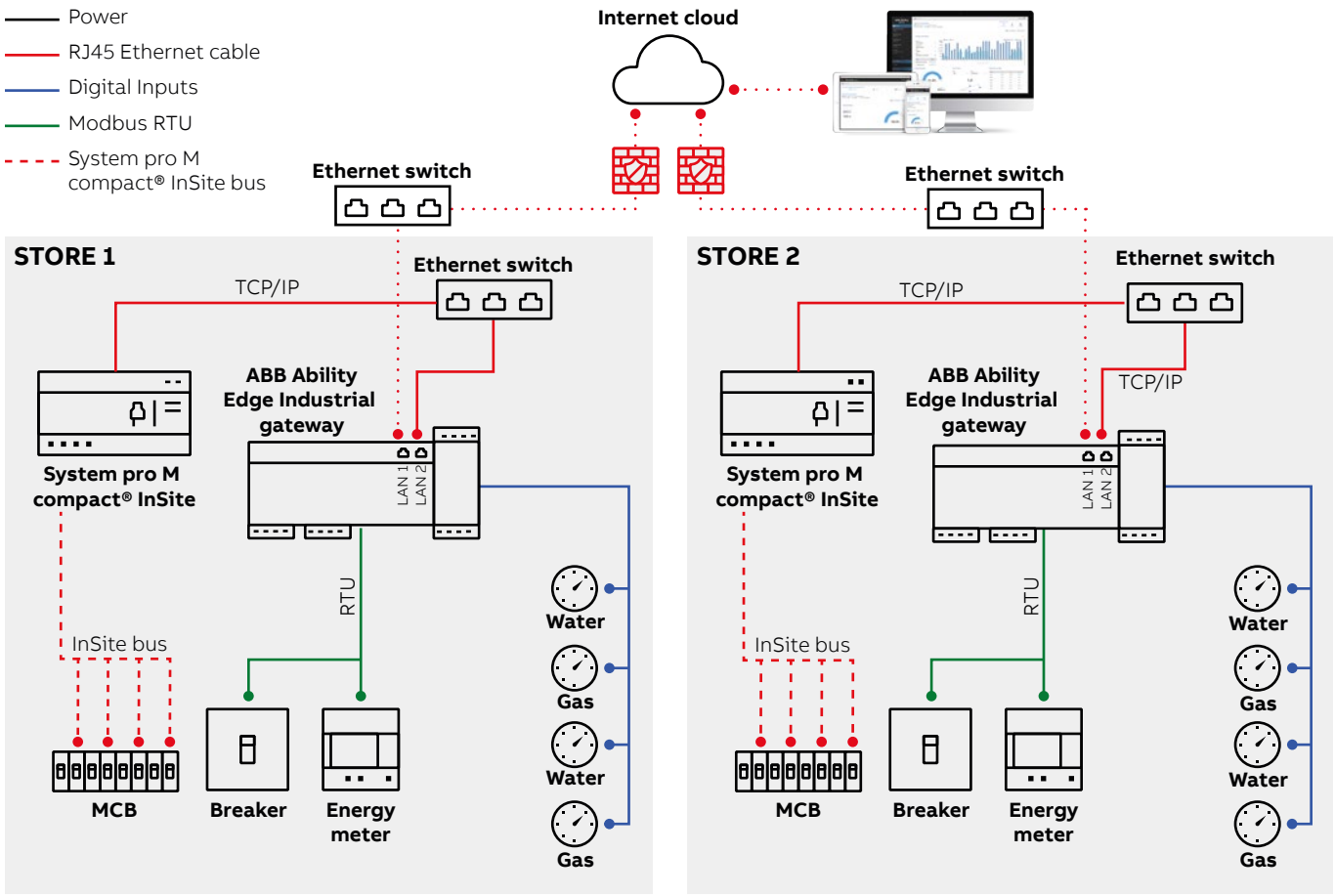
Data from all the stores then goes to the cloud via Ethernet or wireless connections for further analysis.

Design and Specification
While guaranteeing fast payback, this solution can ensure compliance or higher class on efficiency standards.

Installation
Deploying a multi-site monitoring solution,
I can reduce installation time and components.

Operation
Introducing a single intuitive digital solution,
I can guarantee continuous operation and allocate effectively energy consumptions.


NINE WEST
50%
VR ZONE
Windows


Power
RJ45 Ethernet cable
Digital Inputs
Modbus RTU
System pro M compact® InSite bus
Internet cloud
Ethernet switch
Ethernet switch
STORE 1
TCP/IP
Ethernet switch
System pro M compact® InSite
ABB Ability Edge Industrial gateway
LAN 1
LAN 2
RTU
InSite bus
Water
Gas
Water
Gas
MCB
Breaker
Energy meter
STORE 2
Ethernet switch
TCP/IP
TCP/IP
System pro M compact® InSite
ABB Ability Edge Industrial gateway
LAN 1
LAN 2
RTU
InSite bus
Water
Gas
Water
Gas
MCB
Breaker
Energy meter

Applications
Retrofitting and upgrading public buildings

For public buildings such as schools, a retrofit solution can bring rapid benefits without replacing existing components.

With accurate performance monitoring of the installation, devices can be managed more efficiently, producing savings in maintenance and energy costs.

In this scenario, the Ekip UP and the ABB Ability™ Edge Industrial gateway collect data from field devices.

The Ekip UP is connected to the breakers and, via an Ethernet switch, to the Ekip Signalling. The breakers measure energy and power quality, while Ekip Signalling modules send information about status, alarms and the number of operations.

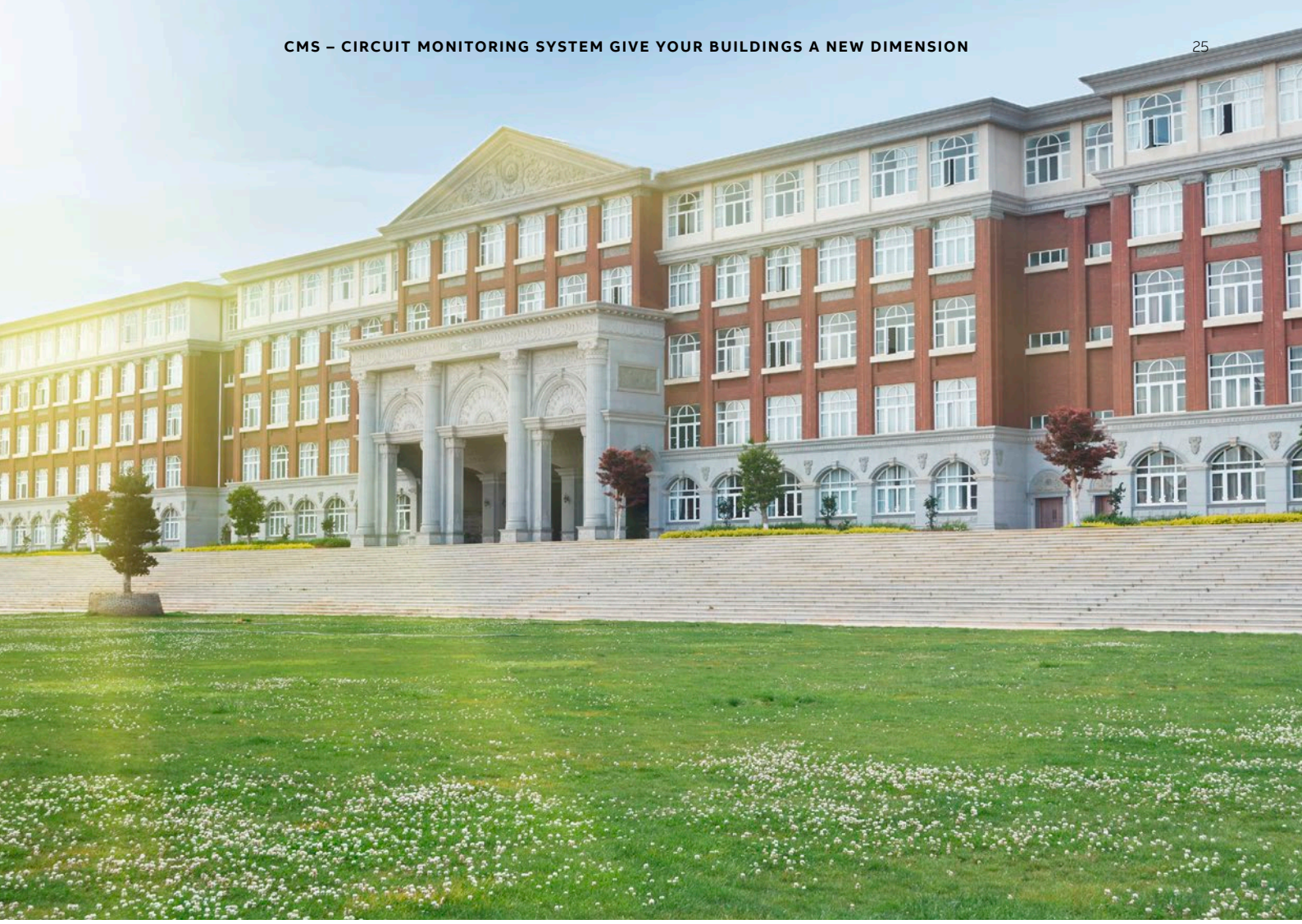
The CMS-700 in the panel is responsible for branch monitoring and is connected to the Ekip UP via Modbus TCP/IP. In order to monitor consumption, another panel is provided with the ABB Ability™ Edge Industrial gateway to gather data from gas, water and energy meters and from breakers.

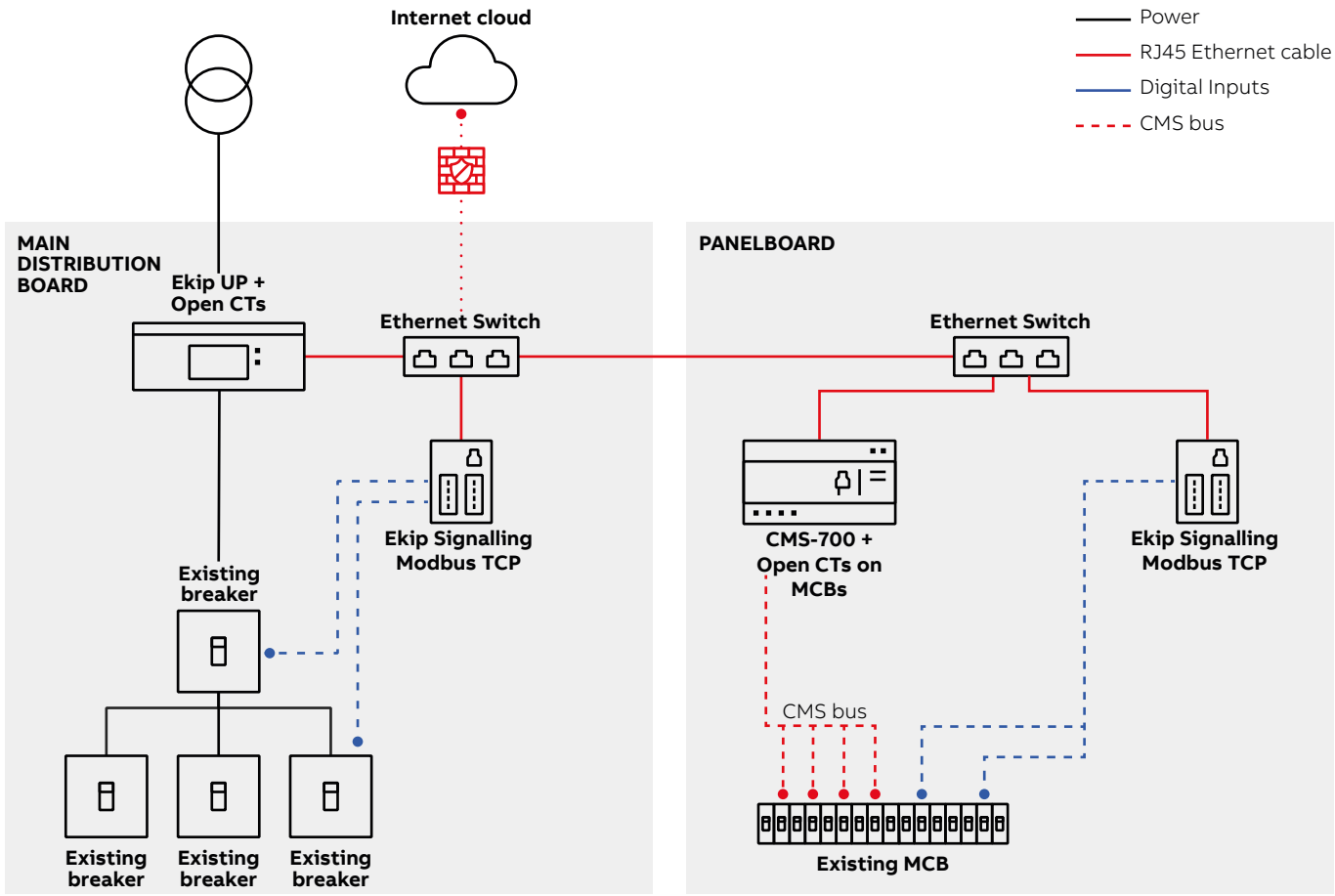
This data, together with information collected by the Ekip UP, then goes to the cloud and is made available on ABB Ability™ Energy and Asset Manager for further analysis.

Design and Specification
I will easily upgrade the existing facilities, ensuring a very fast payback.

Installation
Through plug&play components and commissioning, I can upgrade the existing distribution and panel boards. I don't have to replace anything.

Operation
With this solution I can start saving on operating costs, also on multi-site, through an intuitive and simple solution while catching up with efficiency standards and regulations.




Internet cloud
Power
RJ45 Ethernet cable
Digital Inputs
CMS bus
MAIN DISTRIBUTION BOARD
Ekip UP + Open CTs
Ethernet Switch
Ekip Signalling Modbus TCP
Existing breaker
Existing breaker
Existing breaker
Existing breaker
PANELBOARD
Ethernet Switch
CMS-700 + Open CTs on MCBs
Ekip Signalling Modbus TCP
CMS bus
Existing MCB

Technical data

CMS components overview

Specifications	CMS-600 Control Unit	CMS-700 Control Unit
CMS Sensors		
Sensors	64 (2x32)	96 (3x32)
Control Unit		
Direct power supply 80-277 V AC		●
Power supply via external 24 V DC power supply	●	
Voltage measurement		●
Current measurement (via external CT)		●
Active, reactive and apparent power measurement (via external CT)		●
Power		●
Values calculated for individual sensors		
Power (uses the current measured by the sensor, taking the voltage and the power factor over time from the control unit)		●
Power (uses the current measured by the sensor, taking the voltage and the power factor from the control unit)		●
Interface		
RS485	●	●
LAN		●
Protocols		
Modbus RTU	●	●
Modbus TCP/IP		●
SNMP (v1, v2 and v3 encrypted)		●
Visualization		
Integrated web server		●
Touch display	●	
Exporting CSV data		●
Certifications		
IEC 61010-1	●	●
UL 508/ CSA C22.2 No. 14	●	●

CMS components overview

Sensors overview

		System Pro M, SMISSLINE		S800	DIN rail	Cable tie
						
Mounting method	for all MCBs, RCDs, RCBOs with twin terminals	for MCBs (S200, SMISSLINE) and RCBOs (SMISSLINE)	for fuse holders E90	for all S800 devices with cage terminals	universally usable	universally usable
Open-core sensors						
AC accuracy* of ≤ ± 1.0% The laying method influences the accuracy.						
18-mm overall width						
CMS-120xx (80 A)	CMS-120PS	CMS-120LA	-		CMS-120DR	CMS-120CA
CMS-121xx (40 A)	CMS-121PS	CMS-121LA	CMS-121FH		CMS-121DR	CMS-121CA
CMS-122xx (20 A)	CMS-122PS	CMS-122LA	CMS-122FH		CMS-122DR	CMS-122CA
Solid-core sensors						
AC accuracy* of ≤ ± 0.5%						
18-mm overall width						
CMS-100xx (80 A)	CMS-100PS			CMS-100S8	CMS-100DR	CMS-100CA
CMS-101xx (40 A)	CMS-101PS			CMS-101S8	CMS-101DR	CMS-101CA
CMS-102xx (20 A)	CMS-102PS			CMS-102S8	CMS-102DR	CMS-102CA
25-mm overall width						
CMS-200xx (160 A)				CMS-200S8	CMS-200DR	CMS-200CA
CMS-201xx (80 A)				CMS-201S8	CMS-201DR	CMS-201CA
CMS-202xx (40 A)				CMS-202S8	CMS-202DR	CMS-202CA

* All accuracy specifications refer to the relevant full scale value and apply to 25°C

Technical specifications

CMS-600

CMS-600 Control Unit

Supply voltage	[V DC]	24 (± 10 %)
Power loss	[W]	4-24 (depending on the number of sensors)
Interface		2-wire RS485
Protocol		Modbus RTU
Data transmission speed	[Baud]	2400… 115200
Refresh time		≤1 sec. with max. 64 sensors
Insulation voltage	[V AC]	400
Screw terminals		0.5 … 2.5 mm2, max. 0.6 Nm
Installation method		35-mm DIN Rail (DIN 50022)
Dimensions	[mm]	71.8 x 87.0 x 64.9 (4 DIN modules)
Operating temperature	[°C]	– 25 … +70
Storage temperature	[°C]	– 40 … +85
Reference standards		IEC 61010-1 UL 508/CSA C22.2 no. 14

CMS-700

CMS-700 Control Unit

IEC61010-1		
Supply voltage	[VAC]	90-240 (L1-N)
Voltage measurement range	[VAC]	90-240 (L1-N, L2-N, L3-N)
UL 508 / CSA C22.2 No. 14		
Supply voltage	[VAC]	80-277 (L1-N)
Voltage measurement range	[VAC]	80-277 (L1-N, L2-N, L3-N)
General		
Frequency	[Hz]	50 / 60
Power consumption (L1-N)	[W]	5 … 40 (depending on the number of sensors)
Measurement range, current transformer, secondary side	A	nominal: 5 max: 6
Modbus RTU data rate	[Baud]	2-wire RS485, 2400 … 115200
Data update speed		≤1 sec. with max. 96 sensors
LAN	[Mbit/s]	100
Cable cross-section	[mm²]	1.0.. 2.5 mm², max. 0.8 Nm
Installation method		35-mm DIN Rail (DIN 50022)
Protection degree Overvoltage category Altitude	 [m]	IP20 II 2000
Dimensions	[mm]	160.0 x 87.0 x 64.9 (9 DIN modules)
Operating temperature	[°C]	– 25 … +60
Storage temperature	[°C]	– 40 … +85
Standards		
Electrical safety		IEC 61010-1, UL 508, CSA C22.2 No.14
EMC		EC61326-1

Mains accuracy	
Voltage	± 1 %
Current	± 1 %
Harmonic components (up to 2500Hz)	± 1 %
Active power	± 2 %
Apparent power	± 2 %
Reactive power	± 2 %
Power Factor	± 0.2 %

Technical specifications

CMS-120LA

CMS-120FH

CMS-120PS

CMS-120DR

CMS-120CA

Open core sensors 18 mm

Sensor type			CMS-120xx	CMS-121xx	CMS-122xx
Measurement range		[A]	80	40	20
Measurement method			TRMS, AC 50 / 60 Hz, DC		
Peak value of the distorted wave-form			≤ 1.5	≤ 3	≤ 6
AC accuracy (TA = 25 °C)*			≤ ± 1 %		
AC* temperature coefficient			≤ ± 0.04 %		
AC accuracy (TA = 25 °C)*			≤ ± 1.2 %	≤ ± 1.4 %	≤ ± 1.8 %
DC* temperature coefficient			≤ ± 0.14 %	≤ ± 0.24 %	≤ ± 0.44 %
Resolution		[A]	0.01		
Internal sampling rate		[Hz]	5000		
Respond time (±1 %)		[sec]	Type 0.34		
Max. diameter of the cable		[mm]	9.6		
Insulation			690 V AC /1500 V DC		
Operating temperature		[°C]	– 25 ... +70 / – 40 ... +85		
Size	CMS-120PS series	[mm]	17.4 x 41.0 x 26.5		
	CMS-120CA series	[mm]	17.4 x 41.0 x 29.0		
	CMS-120DR series	[mm]	17.4 x 51.5 x 43.2		
	CMS-120LA series	[mm]	17.4 x 41.0 x 38.9		
	CMS-120FH series	[mm]	17.4 x 41.0 x 38.9		
Reference standard			IEC 61010-1 | UL508 / CSA C22.2 No 14		

* All accuracy specifications refer to full scale value and apply at 25° C.
In the case of open-core sensors, the position of the cable affects accuracy.

CMS-120PS

CMS-120PS

CMS-120DR

CMS-120CA

Solid-core sensors 18 mm

Sensor type			CMS-100xx	CMS-101xx	CMS-102xx
Measurement range		[A]	80	40	20
Measurement method			TRMS, AC 50 / 60 Hz, DC		
Peak value of the distorted wave-form			≤ 1.5	≤ 3	≤ 6
AC accuracy (TA = 25 °C)*			≤ ± 0.5 %		
AC* temperature coefficient			≤ ± 0.036 %		
AC accuracy (TA = 25 °C)*			≤ ± 0.7 %	≤ ± 1.0 %	≤ ± 1.7 %
DC* temperature coefficient			≤ ± 0.047 %	≤ ± 0.059 %	≤ ± 0.084 %
Resolution		[A]	0.01		
Internal sampling rate		[Hz]	5000		
Respond time (±1 %)		[sec]	Type 0.25		
Max. diameter of the cable		[mm]	10		
Insulation		[V]	690 V AC /1500 V DC		
Operating temperature		[°C]	– 25 ... +70 / – 40 ... +85		
Size	CMS-100PS series	[mm]	17.4 x 41.0 x 26.5		
	CMS-100S8 series	[mm]	26.5 x 45.5 x 31.8		
	CMS-100DR series	[mm]	17.4 x 51.5 x 43.2		
	CMS-100CA series	[mm]	17.4 x 41.0 x 29.0		
Reference standard			IEC 61010-1 | UL508 / CSA C22.2 No 14		

* All accuracy specifications refer to the relevant full scale value and apply at 25° C.

—
CMS-120PS

—
CMS-120DR

—
CMS-120CA

—
Solid-core sensors 25 mm

Sensor type			CMS-200xx	CMS-201xx	CMS-202xx
Measurement range		[A]	160	80	40
Measurement method			TRMS, AC 50 / 60 Hz, DC		
Peak value of the distorted wave-form			≤ 1.5	≤ 3	≤ 6
AC accuracy (TA = +25°C)*			≤ ± 0.5 %		
AC* temperature coefficient			≤ ± 0.036 %		
AC accuracy (TA = +25°C)*			≤ ± 0.7 %	≤ ± 1.0 %	≤ ± 1.7 %
DC* temperature coefficient			≤ ± 0.047 %	≤ ± 0.059 %	≤ ± 0.084 %
Resolution		[A]	0.01		
Internal sampling rate		[Hz]	5000		
Respond time (±1 %)		[sec]	Type 0.25		
Max. diameter of the cable		[mm]	15		
Insulation		[V]	690 V AC / 1500 V DC		
Operating temperature		[°C]	– 25 ... + 70 / – 40 ... + 85		
Size	CMS-200S8 series	[mm]	26.5 x 43.0 x 38.5		
	CMS-200DR series	[mm]	25.4 x 43.0 x 43.2		
	CMS-200CA series	[mm]	25.4 x 43.0 x 35.7		
Reference standard			IEC 61010-1 | UL508 / CSA C22.2 No 14		

* All accuracy specifications refer to the relevant full scale value and apply at 25 °C.

Order information

Open-core sensors

	Description Type	ABB code	Weight of 1 unit (kg)	Unit conf. (Pcs)
Open-core sensors 18 mm for retrofit of MCBs (S200, SMISSLINE) and RCBOs (SMISSLINE)				
80 A	CMS-120LA	2CCA880225R0001	0.012	1
40 A	CMS-121LA	2CCA880226R0001	0.012	1
20 A	CMS-122LA	2CCA880227R0001	0.012	1
Open-core sensors 18 mm for retrofit of E90 fuseholders 1000VDC				
40 A	CMS-121FH	2CCA880216R0001	0.012	1
20 A	CMS-122FH	2CCA880217R0001	0.012	1
Open-core sensors 18 mm for pro M and SMISSLINE devices with twin terminals				
80 A	CMS-120PS	2CCA880210R0001	0.012	1
40 A	CMS-121PS	2CCA880211R0001	0.012	1
20 A	CMS-122PS	2CCA880212R0001	0.012	1
Open-core sensors 18 mm for DIN-rail (universal use)				
80 A	CMS-120DR	2CCA880240R0001	0.015	1
40 A	CMS-121DR	2CCA880241R0001	0.015	1
20 A	CMS-122DR	2CCA880242R0001	0.015	1
Open-core sensors 18 mm for cable tie mounting (universal use)				
80 A	CMS-120CA	2CCA880220R0001	0.011	1
40 A	CMS-121CA	2CCA880221R0001	0.011	1
20 A	CMS-122CA	2CCA880222R0001	0.011	1

Solid-core sensors

	Description Type	ABB code	Weight of 1 unit (kg)	Unit conf. (Pcs)
Solid-core sensors 18 mm for S800 devices with cage terminals				
80 A	CMS-100S8	2CCA880124R0001	0.014	1
40 A	CMS-101S8	2CCA880125R0001	0.014	1
20 A	CMS-102S8	2CCA880126R0001	0.014	1
Solid-core sensors 18 mm for pro M & SMISSLINE installation devices with twin terminals				
80 A	CMS-100PS	2CCA880100R0001	0.012	1
40 A	CMS-101PS	2CCA880101R0001	0.012	1
20 A	CMS-102PS	2CCA880102R0001	0.012	1
Solid-core sensors 18 mm for DIN rail mounting (universally usable)				
80 A	CMS-100DR	2CCA880128R0001	0.015	1
40 A	CMS-101DR	2CCA880129R0001	0.015	1
20 A	CMS-102DR	2CCA880130R0001	0.015	1
Solid-core sensors 18 mm for cable tie mounting (universally usable)				
80 A	CMS-100CA	2CCA880107R0001	0.011	1
40 A	CMS-101CA	2CCA880108R0001	0.011	1
20 A	CMS-102CA	2CCA880109R0001	0.011	1
Solid-core sensors 25 mm for S800 devices with cage terminals				
160 A	CMS-200S8	2CCA880136R0001	0.028	1
80 A	CMS-201S8	2CCA880137R0001	0.028	1
40 A	CMS-202S8	2CCA880138R0001	0.028	1

—

Solid-core sensors

	Description Type	ABB code	Weight of 1 unit (kg)	Unit conf. (Pcs)
Solid-core sensors 25 mm for DIN-rail mounting (universal use)				
160 A	CMS-200DR	2CCA880132R0001	0.030	1
80 A	CMS-201DR	2CCA880133R0001	0.030	1
40 A	CMS-202DR	2CCA880134R0001	0.030	1
Solid-core sensors 25 mm for cable tie mounting (universal use)				
160 A	CMS-200CA	2CCA880117R0001	0.026	1
80 A	CMS-201CA	2CCA880118R0001	0.026	1
40 A	CMS-202CA	2CCA880119R0001	0.026	1

—

Control Unit

	Description Type	ABB code	Weight of 1 unit (kg)	Unit conf. (Pcs)
CMS-600 Control Unit	CMS-600	2CCA880000R0001	0.153	1
CMS-700 Control Unit	CMS-700	2CCA880700R0001	0.329	1

—

Accessories

	Description Type	ABB code	Weight of 1 unit (kg)	Unit conf. (Pcs)
2 m flat cable	CMS-800	2CCA880148R0001	0.017	1
5 m flat cable	CMS-802	2CCA880331R0001	0.045	1
10 m Flat cable	CMS-803	2CCA880332R0001	0.090	1
30 m Flat cable	CMS-805	2CCA880333R0001	0.270	1
Connector set (35 pcs)	CMS-820	2CCA880145R0001	0.024	35

Further information
We reserve the right to make technical modifications and change the contents of this document without notice.
ABB does not assume any liability for the presence of possible errors or insufficient information in this document.

—

ABB Group

ABB Electrification
Smart Buildings Division

www.abb.com/lowvoltage

2CCC481003C0202 - Rev C 09.2020