Communication Interface

Com'X 200/Com'X 210/Com'X 510
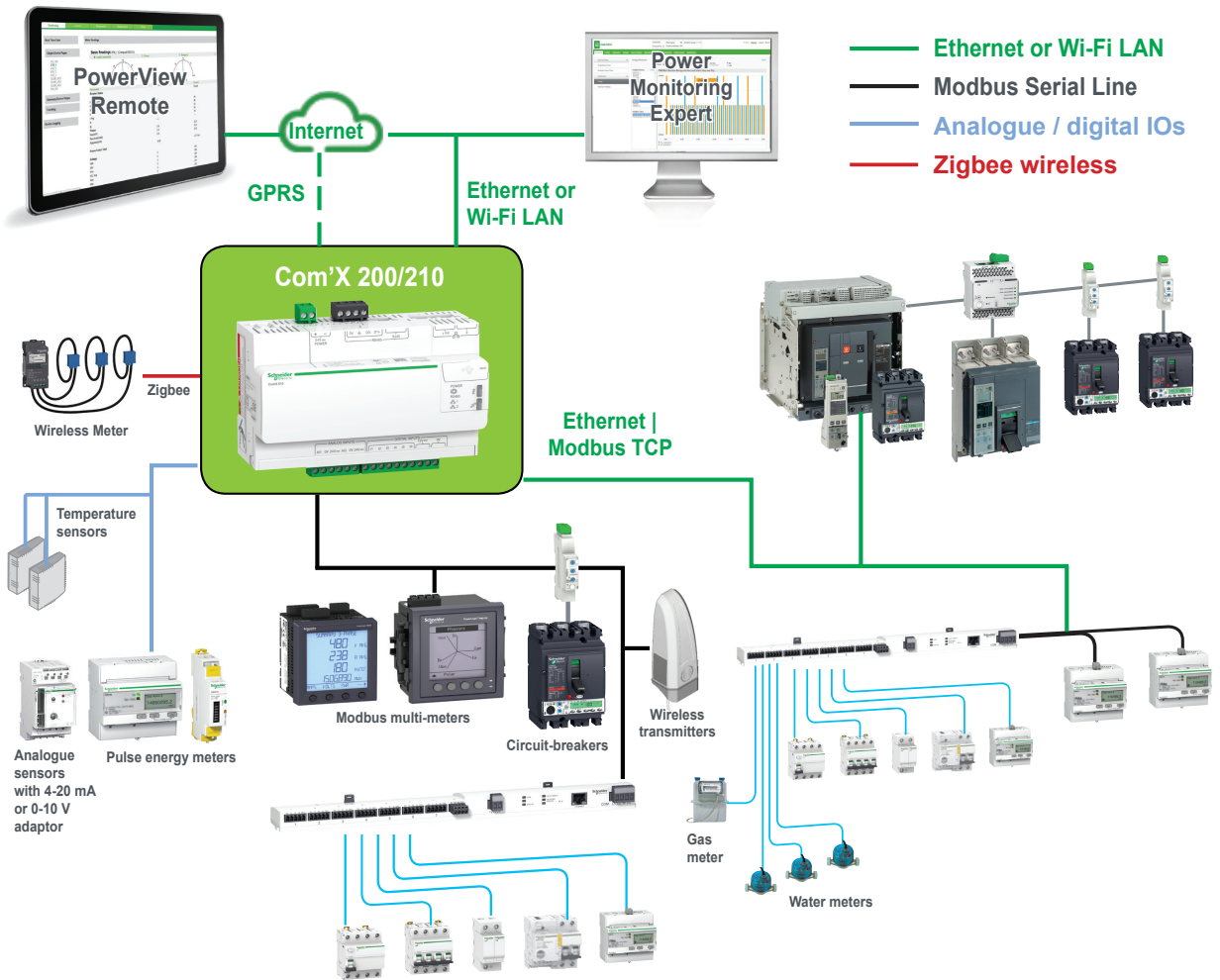
Technical data sheet

Schneider Electric

Com'X 200 / 210
Energy data loggers

Main functions

Legend:
- **Ethernet or Wi-Fi LAN** (green)
- **Modbus Serial Line** (black)
- **Analogue / digital IOs** (light blue)
- **Zigbee wireless** (red)

3. Save — PowerView Remote, Internet, GPRS, Ethernet or Wi-Fi LAN, Power Monitoring Expert

2. Connect — Wireless Meter (Zigbee), Com'X 200/210, Temperature sensors, Ethernet | Modbus TCP

1. Measure — Analogue sensors with 4-20 mA or 0-10 V adaptor, Pulse energy meters, Modbus multi-meters, Circuit-breakers, Wireless transmitters, Gas meter, Water meters

Data collector

Collects and stores energy data from up to 64 field devices, connected to either:
- Ethernet TCP/IP field network.
- Modbus Serial line network (up to 32 devices).
- Embedded digital and analogue inputs.

"Field devices" consist of :
- PowerLogic devices for power and energy monitoring.
- Masterpact or Compact circuit-breakers for protection and monitoring.
- Acti 9 protection devices, meters, remote controlled switches, etc.
- Water, Air, Gas, Electricity, and Steam consumption meters, from specialized manufacturers, delivering pulses as per standard (see table next page).
- Environmental sensors such as temperatures, humidity, and CO2 levels in a building, providing analogue information.
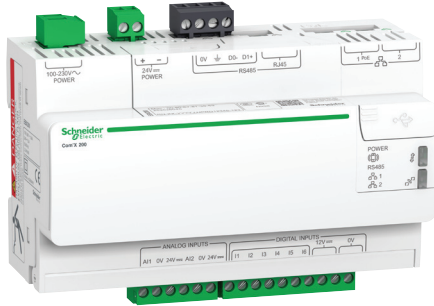
Data logging and storage capabilities include:
- Configurable logging interval, from every minute to once a week.
- Data storage duration of several weeks, depending on quanity of of collected data.

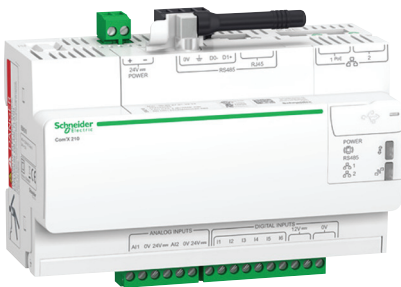*Energy Server Com'X 200 data logger*

Energy Server Com'X 210 data logger

Data publisher
Batches of collected data periodically transmitted to an Internet server, as:

■ XML files, for processing by StruxureWare™ web services, such as Facility Insights.
■ CSV files for viewing in Excel or transformed for upload into programs such as StruxureWare™ Power Monitoring Expert or any compatible software.
■ Support for Weather Sentry™.

Data publishing function supports 4 transfer protocols over Ethernet or Wi-Fi:

■ HTTP.
■ HTTPS.
■ FTP.
■ SMTP.

Additional functions

Gateway
If selected by the user, the Com'X 200/210 can also make all data from connected devices available in real-time:

■ In Modbus TCP/IP format over Ethernet or Wi-Fi.
■ For requests by an energy management software.
■ Gateway to Zigbee device data by external Modbus TCP/IP clients.

Modbus packets can be sent from managing software to field devices through Modbus serial line or Modbus TCP/IP over Ethernet.
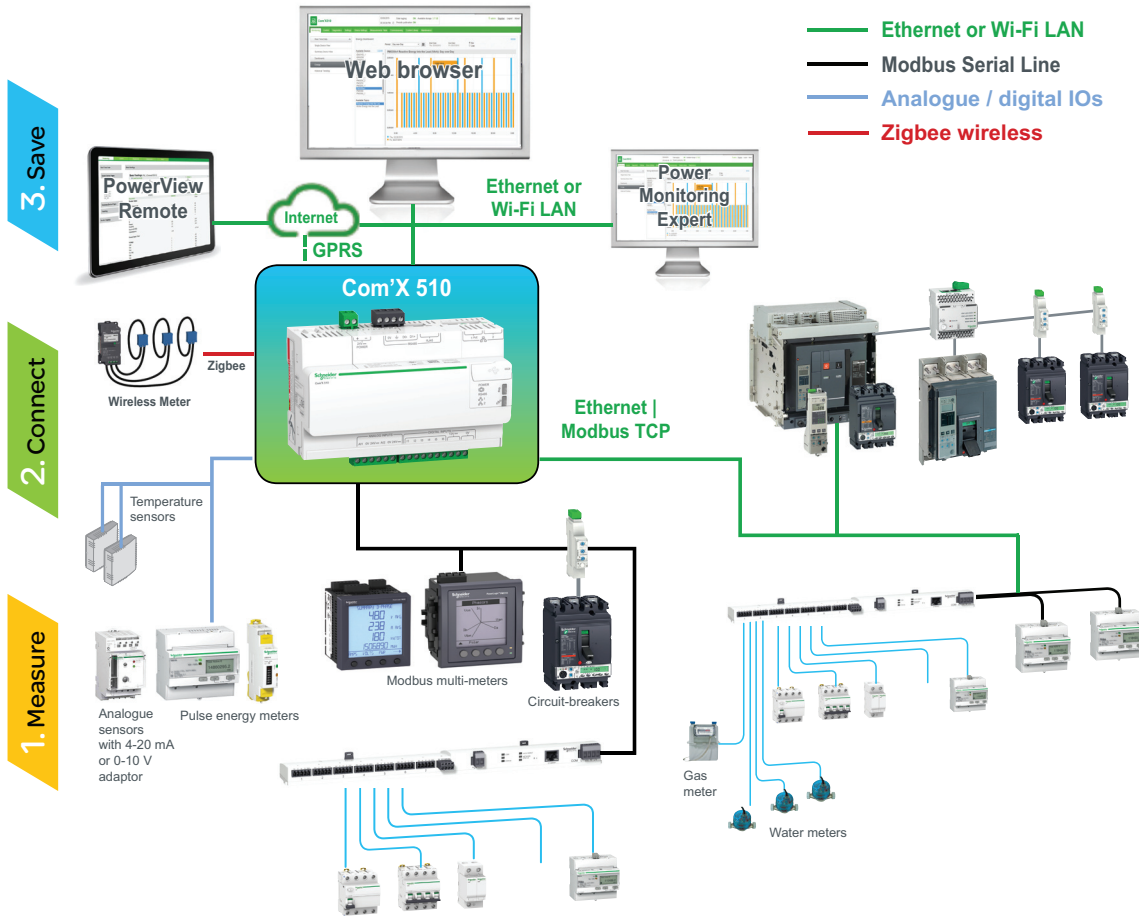
Com'X 200/210 Commercial reference numbers	
Com'X 200 data logger 24 V DC or 230 V AC power supplied	EBX200
Com'X 210 data logger 24 V DC power supplied UL rated	EBX210
Com'X Wi-Fi USB interface	EBXA-USB-WiFi
Com'X GPRS interface SIM card	EBXA-GPRS-SIM
Com'X GPRS interface	EBXA-GPRS
Com'X External GPRS antenna	EBXA-ANT-5M
Com'X Zigbee USB interface	EBXA-USB-Zigbee

Please see your Schneider Electric representative for complete ordering information.

Com'X 510
Energy server

Main functions

Legend:
- Ethernet or Wi-Fi LAN
- Modbus Serial Line
- Analogue / digital IOs
- Zigbee wireless

(Diagram labels): Web browser · PowerView Remote · Internet · GPRS · Ethernet or Wi-Fi LAN · Power Monitoring Expert · Com'X 510 · Zigbee · Wireless Meter · Temperature sensors · Ethernet | Modbus TCP · Analogue sensors with 4-20 mA or 0-10 V adaptor · Pulse energy meters · Modbus multi-meters · Circuit-breakers · Gas meter · Water meters

3. Save · 2. Connect · 1. Measure

Data collector
Collects and stores energy data from up to 64 field devices, connected to either:
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- Modbus Serial line network (up to 32 devices).
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"Field devices" consist of :
- PowerLogic meters for power and energy monitoring.
- Masterpact, Powerpact, or Compact circuit-breakers for protection and monitoring.
- Acti 9 protection devices, meters, remote controlled switches, etc.
- Water, Air, Gas, Electricity, and Steam consumption meters, from specialized manufacturers, delivering pulses as per standard (see table at end of this document).
- Environmental sensors such as temperatures, humidity, and CO2 levels in a building, providing analogue information.

Data logging and storage capabilities include:
- Data logging period: configurable from every minute to once a week.
- Data storage duration: up to 2 years, depending on quantity of collected data.
- Able to set time and send reset instructions to field devices.

Embedded energy management software
The Com'X provides the end-user with immediate visibility into energy consumption throughout the site. As soon as the Com'X is connected to the Local Area Network (LAN), several web pages are accessible via any standard web browser, (without plug-in or additional components).

These web pages display real-time data as it is collected, in easy to understand tabular and summary formats. In addition, users can get simple analysis of historical data in bar graph or trending formats.
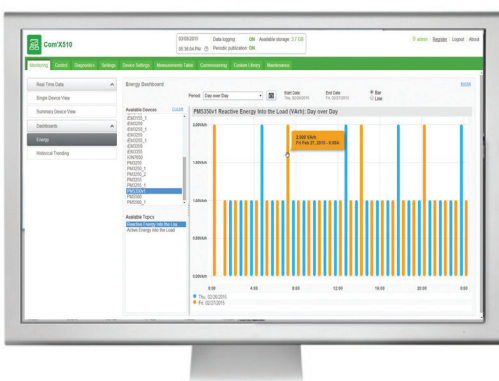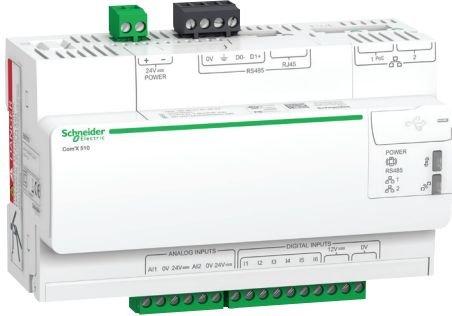

Energy dashboard comparing accumulated over time energy values (partial screen)

Com'X 510
Energy server

Energy Server Com'X 510 data logger

Additional functions

Data publisher
Batches of collected data can also be periodically transmitted to an Internet server, as:
■ XML files, for processing by StruxureWare™ web services, such as Facility Insights.
■ CSV files for viewing in Excel or transformed or uploading to programs such as StruxureWare™ Power Monitoring Expert or any compatible software.

Data publishing function supports 4 transfer protocols over Ethernet or Wi-Fi:
■ HTTP.
■ HTTPS.
■ FTP.
■ SMTP.

Gateway
■ If selected by the user, the Com'X510 can make data from connected devices available in real time:
■ In Modbus TCP/IP format over Ethernet or Wi-Fi.
■ For requests by energy management software.
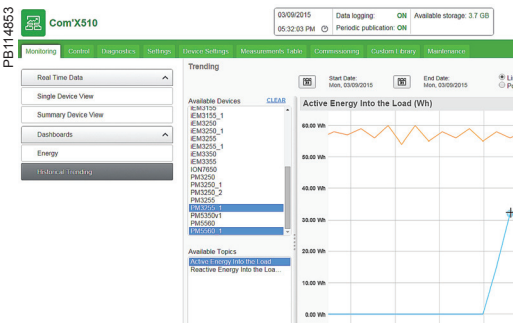■ Gateway to Zigbee device data by external Modbus TCP/IP clients.

Modbus packets can be sent from managing software to field devices through Modbus serial line or Modbus TCP/IP over Ethernet.

* Available in 2016 as full substitute for EGX300
■ Real-time Trending.
■ Custom Web Page Support.
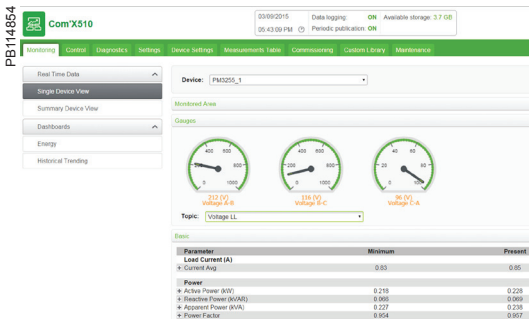
Raw data and measurements from one field device (partial screen)

*Historical trending comparing multiple devices or multiple topics (partial screen)*

Com'X 510 Commercial reference numbers	
Com'X 510 energy server 24 V DC power supplied UL rated	EBX510
Com'X Wi-Fi USB interface	EBXA-USB-WiFi
Com'X GPRS interface SIM card	EBXA-GPRS-SIM
Com'X GPRS interface	EBXA-GPRS
Com'X External GPRS antenna	EBXA-ANT-5M
Com'X Zigbee USB interface	EBXA-USB-Zigbee

Please see your Schneider Electric representative for complete ordering information.
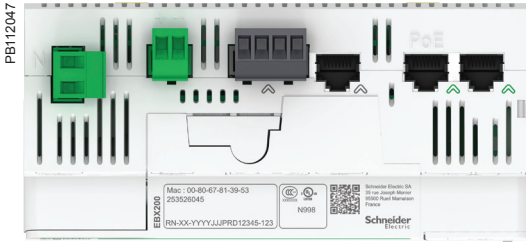
Connection points
1. Terminal block
2. RJ45 cable
3. Ethernet port #1
4. Ethernet port #2
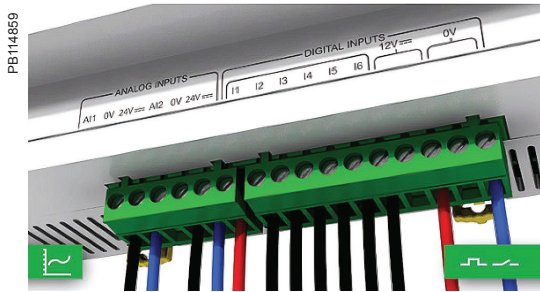
Power supply to analogue and digital inputs

Connectivity

Modbus SL /RS485 connections to field devices
■ By cable with RJ45 connector.

2 Ethernet ports
■ Used to either separate upstream connection from field devices network or to daisy chain Ethernet devices.
■ RJ45 10/100 Base connectors.
■ Static IP address.

Ethernet port #1
■ Connection to Local Area Network (LAN).
■ PoE Class 3 (802.3af) can act as main/backup power supply for the Com'X.
■ DHCP client.

Ethernet port # 2
■ Connection to field devices.
■ DHCP cleint or server.

Power supply to analogue and digital outputs
Outputs to supply sensors and inputs when Com'X is supplied through 24 V DC input on top:
■ 12 V DC– 60 mA for digital inputs.
■ 24 V DC for analogue inputs.
Compliant with electrical switchboard environment (temperature, electromagnetic compatibilty).

2 inputs for analogue sensors
■ PT100 or PT1000 temperature probes.
■ Various sensors (humidity, CO2, etc.) with 0-10 V output.
■ Various sensors with 4-20 mA output

6 inputs for dry contact sensors or pulse counters
■ Max 25 pulses per second (min duration 20 ms)
■ IEC 62053-31 Class A

Wi-Fi USB stick

Wi-Fi USB stick
■ As an alternative to publication over Ethernet, connects Com'X to the site Wi-Fi router for regular data transmission.
■ Can also be used for Com'X 510 configuration through one-to-one connection with laptop or tablet.
■ Simply plugs into USB port 2 under front cover.

GPRS modem

GPRS modem
■ For connection to the data processing server through cellular or user's APN network.
■ Also connect to Schneider Electric's Digital Service Platform.
■ Especially suitable for sites with no internet access.
■ Simply plugs into dedicated port under the front cover.

GPRS antenna
■ Improves GPRS signal strength in case of poor transmission conditions.
■ Recommended for Com'X located inside metallic electrical panels.

Zigbee dongle (not shown)
For connection to wireless digital enabled field devices such as PowerLogic EM4300 meters. Plugs into USB ports.

PowerLogic WT4200 wireless transmitters, connected to Modbus RS485, enables collecting data also from water, air, gas or steam meters.

GPRS antenna
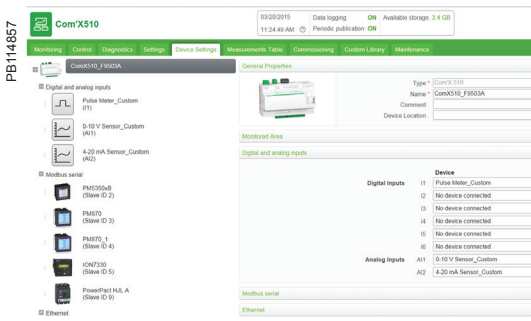
Device settings page (partial), as displayed after auto-discovery, enabling user to assign circuit identifications and select data for logging and publication.

Installation

■ DIN rail fitting (Front face IP40, terminals IP20).
■ Weight 450g.
■ Dimensions (HxWxD) 91mm x 144mm x 65.8mm.

Setup and configuration

Connection to LAN
As soon as they are connected to the LAN, it can be detected and assigned an IP address by DHCP. Your operating system's DPWS feature allows your computer to automatically recognize the device as Com'X. Embedded web pages are then immediately accessible by clicking each Com'X device icon or by typing the assigned IP address into your web browser.

Field device auto-discovery
The user-activated device discovery function automatically identifies all field devices connected to Modbus SL, Ethernet port or Zigbee dongle.
■ Schneider Electric devices display with the product image.
■ Other devices appear as "unknown," allowing the user to manually assign a device type.
■ User can assign their own device types.
Users can complete additional device identification fields, such as circuit ID or building zone.

Data selection for logging and publication
Web page configuration tabs allow you to configure, in just a few clicks, which connected field devices collect and publish data.

Advanced diagnostics and troubleshooting features
■ Modbus serial and TCP/IP device statistics.
■ Ethernet network statistics.
■ Communications check wizard.
■ Direct reading of register values from local and remote devices.

Additional features and benefits

■ Cybersecurity - works well with your cyber security architecture.
■ 2 Ethernet ports to separate upstream cloud connection, or to daisy chain with other Ethernet devices, from field device network.
■ Data storage in case of communications failure.
■ Local backup of configuration parameters - back up your system to a USB storage device and have it available for system restore or to duplicate the configuration on another box.

When associated with Schneider Electric Services:
■ Remotely managed (configuration backup, troubleshooting, parameter setting).
■
■ GPRS SIM contract management (with EBXA-GPRS-SIM).

*NOTE: For safe and correct installation of all products please consult the appropriate Schneider Electric **Installation Guide**.*

Com'X 200/210/510
Specifications

Com'X 200/210/510 Environment				
Operating temperature	-25° to +60°C (-13° to 140°F) Com'X 200			
	-25° to +70°C (-13° to 158°F) Com'X 210/510			
Storage temperature	-40° to +85°C (-40° to +185°F)			
GPRS dongle Operating temperature	-20° to +60°C (-4° to +140°F)			
GPRS dongle Storage temperature	-40° to +85°C (-40° to +185°F)			
Wif-Fi dongle Operating temperature	0° to +50°C (32° to +122°F)			
Wi-Fi dongle Storage temperature	-20° to +80°C (-4° to +176°F)			
Humidity	5 to 95% relative humidity (without condensation) at +55°C			
Pollution	Class III			
Safety standards / regulation				
International (CB scheme)	IEC 60950			
USA	UL 508			
USA	UL 60950 (Com'X 210 and Com'X 510 only)			
Canada	cUL 60950 (Com'X 210 and Com'X 510 only)			
Canada	cULus 508			
Europe	EN 60950			
Quality Brands				
	CE, UL			
Power Supply		Com'X 200	Com'X 210	Com'X 510
AC	100-230 V (+/- 15%)(50-60Hz)	■		
DC	24 V (+/- 10%)	■	■	■
Power over Ethernet	15.4 W DC	■	■	■
Max power	26 W max	■	■	■
Mechanical				
IP	Front face IP40, terminals IP20	■	■	■
Dimensions (HxWxD)	91 x 144 x 65.8 mm	■	■	■
Weight	450 g	■	■	■

As standards, specifications and designs develop from time to time, please ask for confirmation of the information given in this document.

Design: Schneider Electric
Photos: Schneider Electric

02-2016