

BROCHURE

ReliaGear neXT integrated submetering panelboard

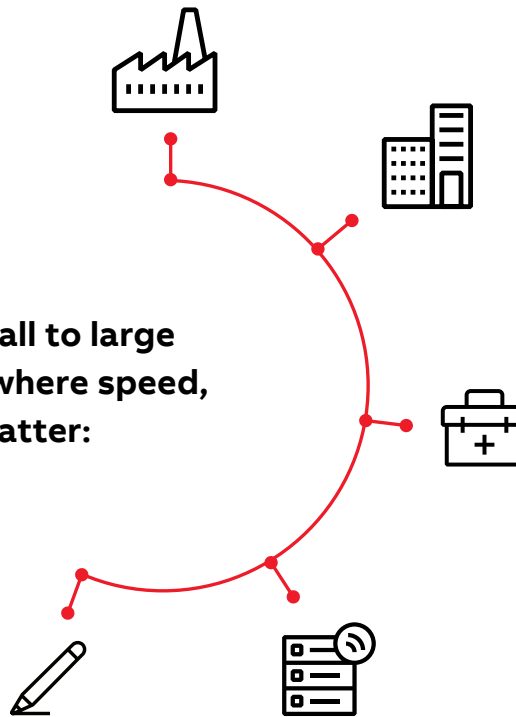
Revenue grade submetering RGM4500Q



The new ABB ReliaGear neXT submetering plug-in module combines the meters, current transformers, communications and overload protection into a single module that mounts inside a UL Listed factory-assembled panel. This solution can reliably allocate energy usage for commercial, industrial, institutional and residential applications. Accurate energy usage allocation allows facility managers to sub-bill tenants and manage, understand and reduce operational costs while also incentivizing tenants to conserve energy and lower their monthly bill.

Verticals and applications

ReliaGear neXT is ideal for small to large projects and any application where speed, reliability and performance matter:



- Industrial complexes
- Commercial buildings
- Residential developments
- Healthcare facilities
- Data centers
- Food and beverage facilities
- Infrastructure projects
- And more

Applications	Value added
Commercial/retail buildings (multi-tenant) - Office towers, shopping centers, hotels	Retail chains can minimize lighting/cooling levels at peak energy usage hours of the day to reduce expensive demand charges and lower energy costs
Residential buildings (multi-tenant) - Apartment buildings, condominiums	Detailed billing: tenants only responsible for their own energy usage
Universities/institutions	Monitor apartment/dorm energy usage Allocate energy usage by university department
Hospitals/pharmaceuticals	Monitor surge in energy consumption to alert and prevent downtime
Data centers	Establish energy usage by process and cost center Provides detailed energy data profiles Useful for energy analysis and energy planning Reduce peak demand Increase load factor Peak load shifting via billing time of day rates
Industrial/manufacturing/petrochemical	Monitor surge in energy consumption to alert and prevent downtime Determine equipment and location efficiency Understand which outlets/machines/devices are consuming the most energy

Features

Modular plug-in modules

- Submetering modules plug directly into the bus stack for easy assembly
- Based on number of circuits metered, metering module selected is optimized to save space
- 9X for 1–24 circuits
- 14X for 25–48 circuits

Revenue grade accuracy submetering

- Establish energy usage by process and cost center
- Determine tenant energy usage for billing
- Actual data promotes fair energy allocation
- Meter up to 48 circuits

Communications — Modbus RTU over standard 2-wire RS485

- Remote monitoring through communications to connect to Building Management System (BMS)
- Communication setting reset button

UL2808 XOBA rated current transformers

- Installer no longer has to wrestle large cables to fit into a CT mounted in a fixed location
 - Land the cables at the load side of the breaker and simply position the CT anywhere along that breaker cable and secure it directly to the cable with flexible zip ties
- Provide additional layer of safety when operating power meters

Real-time, per phase viewing of voltage, current, power factor, Watts, VARs, VA and frequency through communication or local display, no manual calculations required

Event reporting with time and date stamps

- Store up 1000 event logs for meter diagnostics or troubleshooting
- 60 Days of 5-minute interval data stored internally for all parameters
- Secure and reliable non-volatile flash memory
- 3-year battery backup for real-time clock (when power is lost)

Local LCD display

- Local monitoring for quick access to information
 - Monitor = 3.78" x 3.78" x 1.70" (96 mm x 96 mm x 43 mm)
 - LCD = 1.26" x 0.91" (32 mm x 23 mm)
 - 4 lines of text shown at once
- Easy and intuitive navigation to each meter device and meter point
 - Simply use the arrow keys to navigate the menus
 - Device meter readings are serial number based for easily discerning which CT and circuit value you are viewing
 - The display arrives factory set to match the configuration of the panel

Approvals and certification

- UL Listed
- Basic electricity: IEC 61557-12:2007
- Energy: ANSI-C12.20:2015
- Safety: UL61010-1-2012, UL61010-2-030:2012 CSA C22.2 NO 61010-1, CSA C22.2 NO 61010-2-030
- California Weights and Measures Certified (Quadlogic Qbrick 4 & 6)
- Certificate Number: 5876(b)-22

Selection guide

Empower selects the appropriate metering module based on:

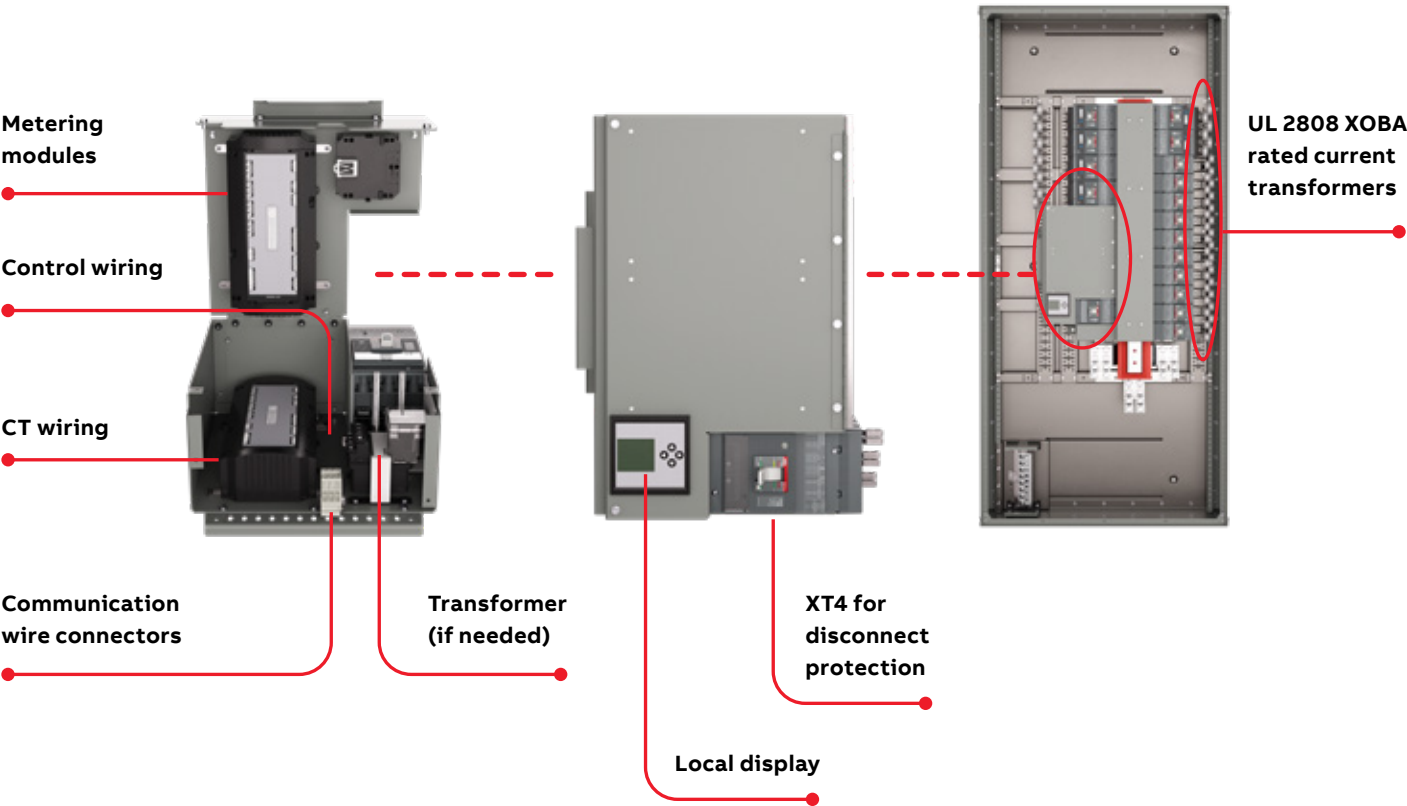
- Number of metered breakers
- 2/3 pole breaker selection
- Voltage

Number of meters	Maximum number of 2 pole metered breakers*	Maximum number of 3 pole metered breakers	Maximum number of circuits	X-space required
1	6	4	12	9X
2	12	8	24	9X
3	18	12	36	14X
4	24	16	48	14X

*2 pole available up to 240 V
All modules include display for local monitoring
1X space = 1.385"
Available in 40" and 45" wide enclosures

Each circuit breaker frame and current transformers in combination have specific requirements for the number of mounting positions (X-spaces). Please refer to the table below.

Breaker frame	CT current rating	Ampacity	X – Space required
XT1	50 A	0–50 A	3X
XT2			3X
FB 2P			2X
TEY 2P			2X
XT1	100 A	51 A–100 A	3X
XT2			3X
FB 2P			2X
TEY 2P			2X
TEY 2P	200 A	101 A–125 A	2X
A2		125 A–200 A	2X
XT2		101 A–125 A	3X
XT4		101 A–200 A	3X
A2	400 A	201 A–250 A	4X
XT4		201 A–250 A	5X
XT5		250 A–400 A	4X
XT5		401 A–600 A	6X
XT6/XT7	800 A	601 A–800 A	6X
XT7		1200 A	801 A–1200 A



Benefits

Installer benefits

Save valuable real estate

- ABB's fully integrated solution maximizes valuable real estate by combining meters, current transformers, communications, and overload protection into a single UL Listed, factory-assembled panel. It requires only a fraction of the space needed for traditional modular metering.
- Small footprint takes up less wall space than separate panels and meters
- From single phase to three-phase metering
 - Supports up to 48 current transformers

Save time

- Fully assembled and wired in the factory
- Factory assembled/wired internal meters minimize installation labor and time
- Factory installed/wired CTs eliminate lengthy wiring runs and wiring errors
- XOBA rated CTs allow for flexible CT mounting on outgoing cables. No mounting bracket required, just slide the CT over the cable and land it on the breaker
 - Installer no longer has to wrestle large cables to land on fixed CT mounting brackets
- Fully programmed in factory and ready for use in the field
 - Setup your metering system in ABB empower and the factory will configure the system and run the wires around the interior to the correct breaker for you. Land your cables at the load side of the breaker and simply position the CT anywhere along that breaker cable and secure it directly to the cable with flexible zip ties. If desired, hook it up to your building management system
- Common meter between ABB's power panelboards and switchboards

Facility manager benefits

Save money

- Promotes accountability at tenant level energy usage
 - Encourages energy conservation
- Reduce peak demand
- Increase load factor
- Negotiate better energy purchasing
- Peak load shifting via billing time of day rates
- Sustainability
 - LEED Certification – Satisfies “Building level electricity metering” requirement
 - Advanced energy metering = 1 unit credit towards LEED
 - Exceeds ASHRAE 90.1 requirement of +/- 1.0% accuracy for monitoring (see technical data table for % accuracy of each parameter)

Get smart

- Accurate energy usage data to provide sub-billing for tenants
- Build detailed energy data profiles
 - Useful for energy analysis and energy planning
- Determine equipment and location efficiency
 - Understand which loads/machines/devices are consuming the most energy
- Monitor common area usage for allocation
- Immediate access to granular consumption data
 - Preventative maintenance
- Verification of utility meter
- Verification of energy reduction goals at granular level

Tenant benefits

Visibility and ownership

- Detailing energy usage encourages tenant to conserve energy
 - Tenant can reduce energy consumption and save money
 - No longer is the tenant billed based on assumptions such as square footage of property, billed based on actual energy usage

Technical data

Technical data

Function	Parameter	Per metering point	Per channel	Accuracy (+/-)	Resolution (primary side)	Units
Real time parameters	Voltage	–	●	0.2%	0.01	V
	Current	●	●	0.2%	0.01	A
	Active power	●	●	0.5%	0.01	W
	Reactive power	●	●	0.5%	0.01	VAR
	Apparent power	●	●	0.5%	0.01	VAR
	Power factor	●	●	0.3%	0.001	–
	Frequency	●	–	0.05%	0.01	Hz
Accumulated data energy	Active energy +	●	●	0.5%	0.001	kWh
	Active energy -	●	●	0.5%	0.001	kWh
	Inductive reactive energy	●	●	0.5%	0.001	kVARh
	Capacitive reactive energy	●	●	0.5%	0.001	kVARh
	Apparent energy +	●	●	0.5%	0.001	kVAh
	Apparent energy -	●	●	0.5%	0.001	kVAh
Interval data (5-minute records)	Active energy +	●	●	0.5%	0.001	kWh
	Active energy -	●	●	0.5%	0.001	kWh
	Inductive reactive energy	●	●	0.5%	0.001	kVARh
	Capacitive reactive energy	●	●	0.5%	0.001	kVARh
	Apparent energy +	●	●	0.5%	0.001	kVAh
	Apparent energy -	●	●	0.5%	0.001	kVAh

Meter module details	
Maximum number of metered circuits	48
Measurement accuracy	ANSI C12.20/0.5
Frequency	60 Hz
Current transformers	15-1200A CTs 0.1 A output
Power supply	90-240VAC (+/- 10%)
Memory size	Flash - 16 MB, EPROM - 256 kB, FRAM - 64 kB
Operating temperature	-20 °C to 50 °C / -4 °F to 122 °F
Maximum altitude	2000 m / 6560 ft
Operating humidity	0% to 95% non-condensing
Pollution degree	2
Display	Backlit LCD display with controls

Panelboard details	
Panel type	ReliaGear neXT
Enclosure type	NEMA 1, 2, 3R, 4, 4X, 12
Services	3P3W, 3P4W
Voltages	Up to 600 V
Main amperage	250, 400, 600, 800, 1200
Main types	Main lug or main circuit breaker
Bus material	Copper, aluminum
Feeder types	FB, TEY, XT1, XT2, XT4, XT5, XT6, XT7
Feeder amps	15-1200A
Max fully rated AIC ratings	200 kAIC at 240 V 100 kAIC at 480 V 65 kAIC at 600 V
Or the lowest current interruption rating of any device installed, except as noted in the series rating listed with an integral or remote main breaker or fusible switch installed ahead of the power panel.	



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