

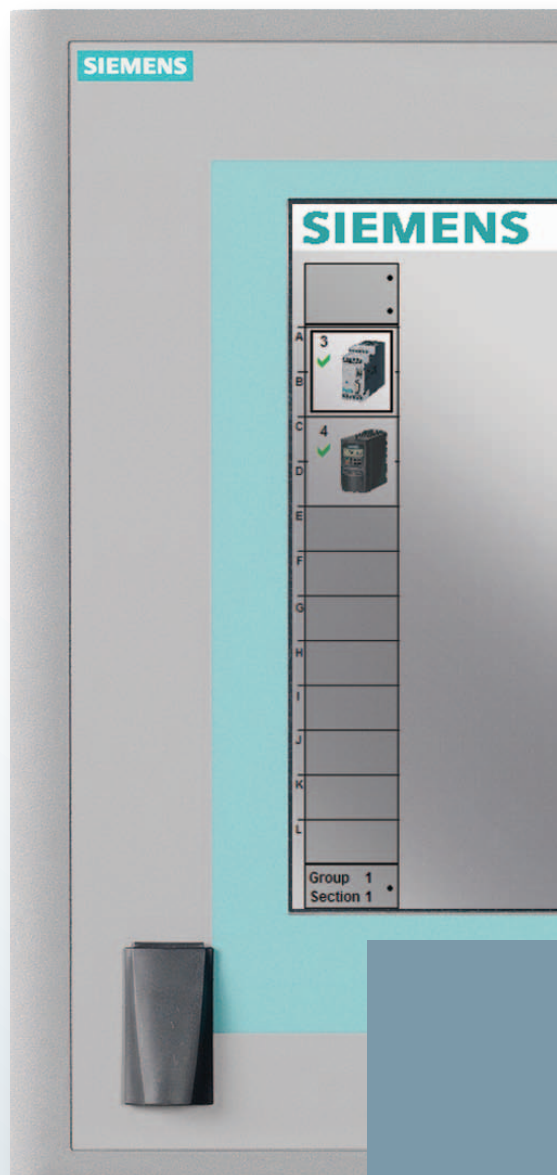
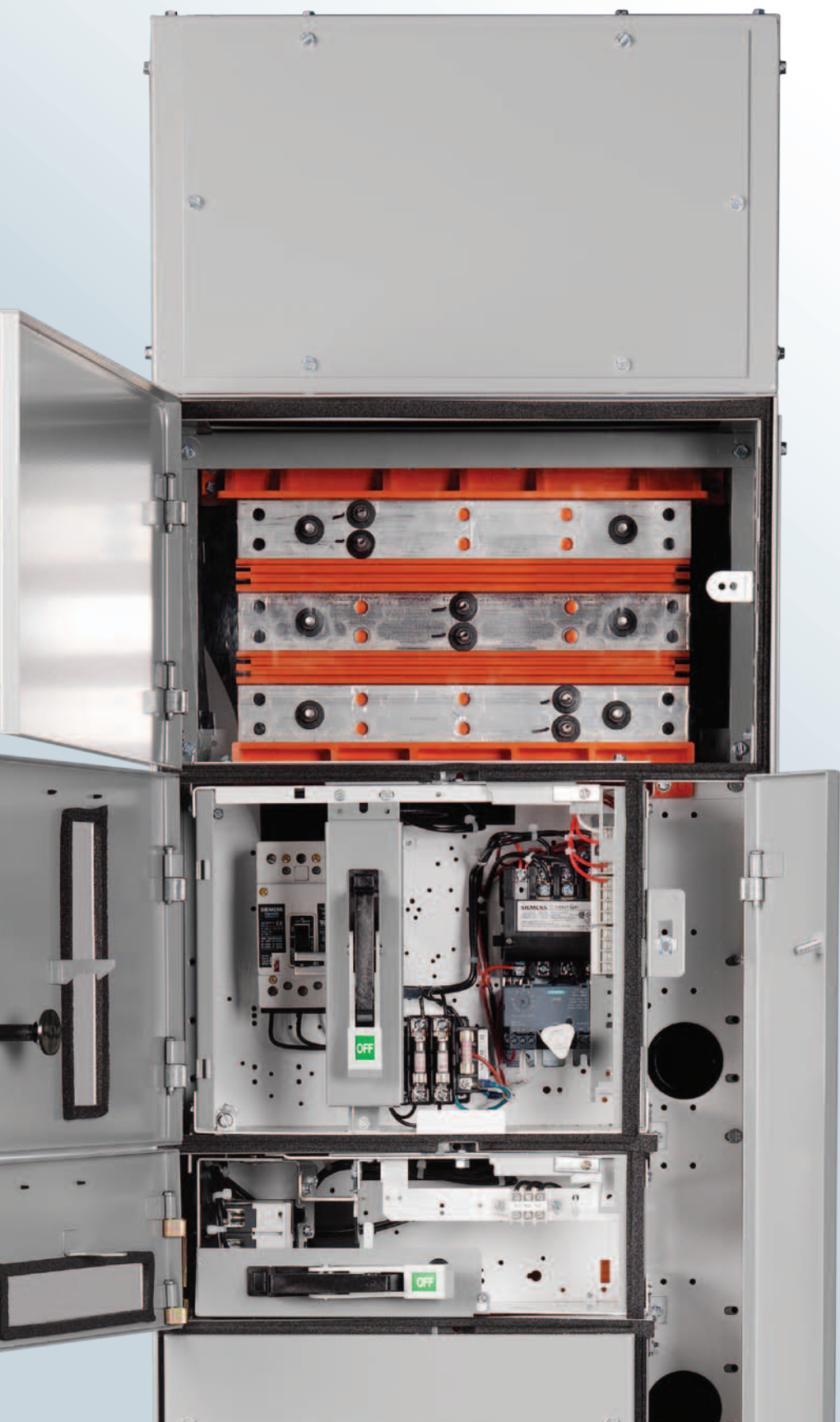
SIEMENS

More than motors. Control your world.

The new Siemens tiastar™ Motor Control Centers

www.usa.siemens.com/mcc





SIEMENS

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Smart MCC

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TOUCH



Control that works beyond "motor on."

Introducing the all-new family of Siemens tiastar Motor Control Centers – reengineered to let you control more than just "motor on." With our new Arc Flash Resistant MCC being the first UL-witness-tested design in the market, the new tiastar line delivers the power to control risk, performance and productivity.

ALL NEW: Siemens tiastar will not only reinvigorate your operations, but also change the very way you think of motor control centers.

CONTENT

The Siemens Standard	02 – 03
The New tiastar Product Family	04 – 05
Features	06
Services and Safety	07 – 08
Technical Specifications	09

The tiastar Standard. It's all about you.

MADE IN AMERICA



All tiastar MCCs are manufactured at our plant in West Chicago. Established in 1969, the West Chicago facility encompasses more than 200,000 square feet. A recent capital investment to renovate and modernize the production facility has extended the product range capability of the plant.

The West Chicago plant employs an expansive and experienced workforce, with an average service period of 18 years per person. Some specialists have 40 years on the job!

This tremendous expertise and experience is the foundation of the plant's ability to offer customer-specific MCC layout design, exceptional flexibility for engineer-to-order projects and special function testing.

By basing production in the heart of the nation, we can reduce lead and production times to meet our customers' requirements in days instead of weeks.

ROBUST RELIABILITY



Siemens is a global powerhouse in electrical engineering and electronics. **tiastar Base, tiastar H2O, tiastar HD and tiastar Smart – our new tiastar product family – provides you with the feature sets you need: from general construction to offshore drilling, from water treatment to most advanced manufacturing processes.**

With 60+ years of experience, our solutions make us a reliable and experienced partner when it comes to making motor control management a key factor in your success.

We keep a constant eye on your total cost of ownership. With tiastar, we can offer you a complete and economical solution, delivering higher yield, lower costs, increased safety and more reliability right from the beginning – and throughout the life cycle of your facility.

Each of our long line of MCC products offers the time-tested, built-to-last durability of premium materials and components. Siemens tiastar, the name the market trusts, delivers the reliability and power to drive performance day and night.

TOTAL FLEXIBILITY



Everything about Siemens tiastar MCCs is designed with you in mind. **Our expansive West Chicago facility can build everything from proven traditional designs to custom, complex solutions representing the state-of-the-art motor control technology.**

Our new portfolio of tiastar designs integrates the precise feature sets you told us you needed to run your operations with greater efficiency and productivity.

Siemens components – including starters, circuit breakers, SIMOCODE pro motor management and communications – are specifically designed to work seamlessly with each other and with third-party equipment. **This high level of flexibility enables you to put the right products to use for your specific applications.**

Plus, upon delivery, every possible provision is made for installation, so you can adaptively place and utilize your MCC and make field modifications quickly and easily.

SUPPORT & SERVICE



Realizing that any product is only as good as the service that supports it, Siemens has dramatically improved our level of customer service and support. **We've made it easier than ever to order, commission, maintain, upgrade and repair our tiastar motor control centers.**

Starting with our Fast Lane program, we have leveraged manufacturing efficiencies to build and deliver MCCs within days.

We have significantly improved our after-market support and offer a full line of

replacement components, renewal parts and aftermarket units to maintain the value and use of existing motor control centers. Siemens Aftermarket Program, with its 24x7 online portal, makes it easy to find parts, streamline ordering and improve support documentation, so **tiastar MCCs can keep your operations moving forward – long after initial purchase and use.**

www.usa.siemens.com/mcc-aftermarket

You told us what you needed; we listened.

Introducing the only MCC worth its spec.

By thinking beyond the standard MCC, and listening to your needs, we've raised the bar for all MCCs.

Innovative features available in new combinations – like the market's first UL-witnessed Arc Resistant MCC that includes high density design – allows you to maximize your return on cutting edge technology, while minimizing its complexity and risks.

As the largest and most diverse electrical equipment manufacturer in the world, Siemens offers the products and expertise to meet any specification. Even those you didn't know were possible.

Still thinking of MCCs as glorified switches?

Safer, smarter, smaller and all new: introducing the new game-changing family of Siemens tiastar MCCs – reengineered for winning performance.



		The New tiastar Product Family			
		tiastar-Base	tiastar-HD	tiastar-H2O	tiastar-Smart
Value Add	High Density Small Footprint	●	✓	●	
	Arc Resistance UL-witnessed IEEE C37.20.7 Testing	●	●	●	●
	Integrated Drives Compliance with IEEE 519	●	●	✓	●
	Energy Management Optimized Power Consumption	●		●	✓
	Advanced Diagnostics Asset Management & Protection			●	✓
	Redundant Control Ensures Continuous Production			●	✓
	Fast Lane Ships in Days	✓	●		

- ✓ Standard Feature
- Available as option *(not all options available together)*

The New tiastar™ Product Family

tiastar Base

What

Fastest shipping at an economical price point, yet robust and reliable, with Siemens reputation

Where

General Construction, Healthcare/Hospitals

Why

You demand reliable performance. Stay on time and on spec with a value-add power performer. Between our Fast Lane program (manufacturing in days) and durable construction, tiastar-Base offers robust, reliable performance fast and with no fuss.

- Turn orders around in days
- Reliability in performance, durability in construction
- The features you need at a value you'll appreciate

tiastar HD

What

Smallest footprint

Where

Warehouses, Food/Beverage, Oil & Gas, High Rises

Why

Anywhere physical space is at a premium, our high density design enables greater production capacity with a smaller footprint, while conforming with UL standards and reducing capital expenses. Our ultra-efficient 6" modular units for starters sizes 1–2 deliver the performance of traditional 12" buckets at half the space.

- Maintain equivalent production with fewer sections



tiastar H2O

What

High availability, reliable, industry-leading asset protection

Where

Municipal & Private W/WW Treatment

Why

The tiastar H2O is designed to meet the needs of the municipal water market. Robust performance is matched by standout energy efficiency, while optional asset management features and predictive diagnostics enable quick resolution of production issues.

- Increase service life of process equipment with active management of assets including pumps and motors
- Solutions that provide improved power quality (in line with IEEE 519 requirements) and energy savings that reduce energy bills
- Process control flexibility to increase overall operational performance



tiastar Smart

What

Operational transparency, easier troubleshooting, predictive diagnostics.

Where

Pharmaceuticals, High End Process Industries

Why

Translate raw data into usable information to yield maximum productivity with minimum overhead. Online diagnostics and asset management increase transparency and visibility into your process, enabling instant fault protections, automated variable adjustments and proactive problem prevention.

- Reduced downtime through the implementation of a predictive maintenance program, made possible by the increased amount of information available compared to existing systems.
- Integration into existing control systems without performance compromises given the superior features available with the PROFIBUS, PROFINET, and Modbus RTU networks.



Features that Reach Farther

Arc Flash Resistant

With UL-witnessed testing, tiastar sets the new standard in enhanced protection for your most valuable asset.

Siemens is the first manufacturer to implement IEEE C37.20.7-2007 Compliant Arc Resistant Motor Control Centers, with testing witnessed by the Underwriters Laboratory (UL). Decrease the risk of exposure to explosive arc flash incident energy to better protect your most valuable asset, your personnel.



- Reinforced enclosure and latching systems
- Internal venting system channels the flow of arc fault gases
- Type 2A accessibility for protection at the front, sides and back
- FULL SIDE SHEET isolates all sections within an MCC to prevent arc faults from propagating

Smart

tiastar Smart Motor Control Center offerings include state-of-the-art motor control technology components and features that offer optimal motor control, protection, power monitoring, communications, and automation interfacing. Siemens tiastar Smart MCC offers the highest performance among the Smart (intelligent) MCCs available today.

- **State-of-the-Art Smart Technology** - Connection to process control systems using the most important communication protocols: PROFIBUS, PROFINET, and Modbus RTU



- **Smart Components** - SIMOCODE Pro Smart motor controller, SIRIUS 3RW44 Soft Starters, and SINAMICS G120 Drives provide the best combination of performance and information to the customer.
- **Flexibility** - As your needs grow, available expansion modules offer new functionality.
- **Troubleshooting** - User friendly diagnostics tools enable quicker fault identification for easier troubleshooting of problems.

High Density

The right size: fit more control into less space, while retaining easy accessibility.

User-friendly engineering enables a smaller footprint. High-density design meets UL and NEMA standards while reducing unit size for NEMA sizes 1-4 starters and feeder units, leveraging the associated cost advantages.



- Up to 10% weight reduction and 25% smaller footprint¹
- Modular plug-in units are easy to install and remove

¹ Compared to standard design.

Integrated Drives

Save energy at the motor.

Variable frequency drives enable precision adjustment of rotation speeds to achieve higher performance and efficiency. Options are available allowing harmonic correction to meet IEEE 519 standards. By reducing harmonics (electrical noise), your operations can realize significant savings. Coupled with Smart MCCs, VFDs allow early warnings of potential production losses.

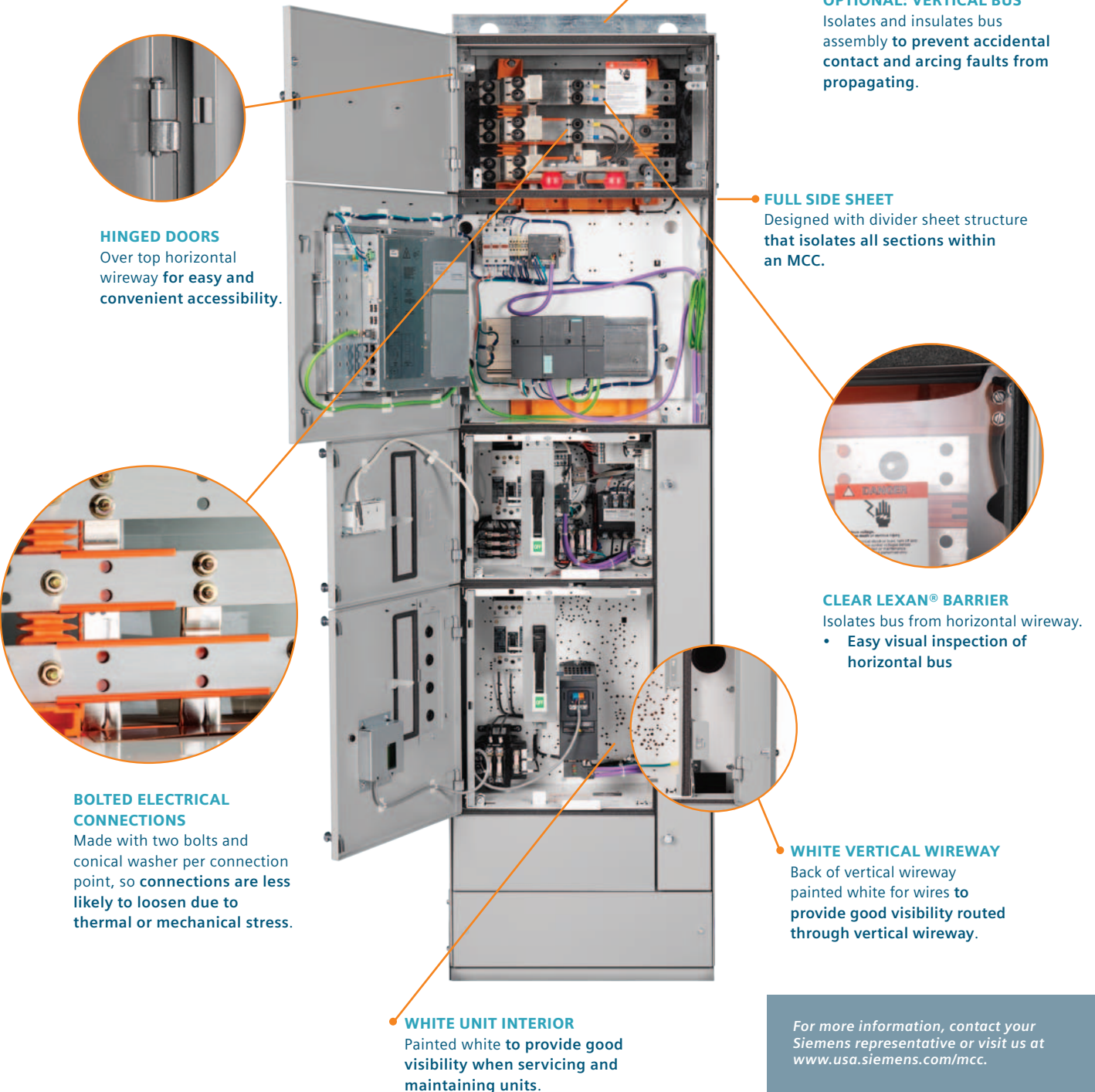


- Control fan, pump and compressor speeds precisely
- Improved power factor

Value Added Core Features

Structures

Siemens tiastar motor control centers are designed for easy serviceability and maintainability: every construction element is implemented for ease of use in accessing, operation and service of units and structures, while keeping operator and maintenance personnel safety in the forefront.



For more information, contact your Siemens representative or visit us at www.usa.siemens.com/mcc.

Always-Standard Core Features

Plug-In Units

From clever details – like terminals mounted on swing plates for the easiest access – to robust locking and handling mechanisms, each plug-in unit refines ease-of-use and flexibility without sacrificing power or safety.

UNIT OPERATING HANDLE

Long throw clearly indicates status

- Handle position clearly indicates equipment status (ON, TRIP or OFF)

STRUCTURE INTERLOCK

Specialized safety design prevents insertion or removal of plug-in unit when the operator handle is in the ON position.

RACKING LEVER

Specialized cam.

- Ensures the plug-in unit is fully inserted
- Disengages plug-in units from vertical bus during removal

TWO HANDLES

At top and bottom of unit, for easier installation and transportation of units.

POSITIVE STOP

In “test” position.

- Clearly indicates when the unit is withdrawn to “test” position
- Secures plug-in unit in place while in “test” position
- Prevents unit from accidentally falling out during removal

PILOT DEVICE PANEL MOUNTS

Dual location on unit door; easy removal.

- Improved service access to save time
- Easy mounting on unit for transportation, bench testing and accuracy of rewiring

SWING PLATE MOUNTED TERMINALS

Mounted terminals can be pivoted.

- During normal operation: locate terminals in unit, not vertical wireway
- For easy access: pivot terminals into vertical wireway for wiring and testing

POSITIVE UNIT GROUND

Contacts grounded support assembly at all times to ground unit any time it is in the structure.

SAFETY LOCK-OFF

While in “test” position.

- Partially withdraws unit to disconnect stabs from the vertical bus
- When unit reaches positive stop, it can be locked in place with up to two padlocks

For more information, contact your Siemens representative or visit us at www.usa.siemens.com/mcc.

Technical Specifications

Feature Set	Element	Specifications Available	Feature Set	Element	Specifications Available
HORIZONTAL BUS	Ratings	600A, 800A, 1200A, 1600A, 2000A, 2500A (NEMA1)	ACCESS POWER METERING DEVICES	PAC3100, PAC3200, PAC4200	
	Material Options	Copper with tin or silver plating, or Aluminum with tin plating (for 600-1200A, 65kA)		Overload Relay	Class 5, 10, 15, 20, 25, 30, or 40
	Bus Bracing	Bus Bracing: 42K AIC, 65K AIC, 100K AIC	SIMOCODE-PRO OVERLOAD	Phase Monitor	Phase imbalance, reversal and loss
VERTICAL BUS	Options	Standard (white grounded steel, isolated) and Optional (orange glass-filled polyester sandwich, insulated and isolated)		Over Current Relay	"Jam" protection
	Ratings	300A, 600A, 800A		Under Current Relay	Loss of load protection
	Bus Bracing	Bus Bracing: 42K AIC, 65K AIC, 100K AIC		Built-in Ground Fault	30% differential
MAIN DISCONNECT TYPES	Siemens Molded Case Circuit Breakers	<ul style="list-style-type: none"> • SENTRON (ED through RD Frame) • VL breakers (EG) • Digital Solid State SENTRON Sensitrip III (SMD through SPD Frame) • WL breakers 		I/O	4 inputs and 3 outputs on basic unit – expandable to 12 inputs and 7 outputs
	Fusible Disconnect	<ul style="list-style-type: none"> • Fusible Switch through 200A • SENTRON Molded Case Switch with Fuse Block 400A through 1200A 		Relay Outputs	6A @ 115VAC, 3A @ 230VAC
	No Disconnect	Main Lug Only sized for incoming cables		Logic	Pre-defined control functions, timers, counters, truth tables, etc.
	Special Scenarios Available	<ul style="list-style-type: none"> • Main-Tie-Main Arrangements • Automatic Transfer Switches • Bolted Pressure Switches • Contact Factory for more information 		Remote Programming	Over PROFIBUS or PROFINET
DISCONNECT TYPES FOR STARTER AND FEEDER UNITS	Siemens Molded Case Circuit Breakers	<ul style="list-style-type: none"> • MCP or Thermal-Magnetic for Starter units • Thermal-Magnetic for Feeder Units • Circuit Breaker and Fusible can be mixed in an MCC 	VARIABLE FREQUENCY DRIVES	PROFIBUS-DP Communication	% motor current, number of starts, number of trips, operating hours, current at last trip, etc.
	Fusible Disconnect	<ul style="list-style-type: none"> • Fusible Switch through 200A • SENTRON Molded Case Switch with Fuse Block 400A through 1200A 		SINAMICS G120	Ratings: Up through 350HP at 480V (Low Overload), up through 300HP at 480V (High Overload).
STARTERS AND CONTACTORS	Siemens Magnetic Starters and Contactors	<ul style="list-style-type: none"> • NEMA rated – Sizes 0 through 6 • Vacuum NEMA rated – Sizes 4, 5 and 6 • 100kA short circuit protection when protected with Class R fuses to 600V or Circuit Breaker to 480V • Easy coil access • Large silver cadmium contacts 	SIRIUS REDUCED VOLTAGE SOLID STATE STARTERS	3RW40 Soft Starts	<ul style="list-style-type: none"> • Available to 300HP at 480V • Internal Automatic Bypass standard • 2 phase Control Technology • Integrated Overload protection
				3RW44 High End Soft Starts	<ul style="list-style-type: none"> • Available to 800HP at 480V • Internal Automatic Bypass standard • 3 phase Control Technology • Integrated Overload Protection • Optional PROFIBUS communication
OVERLOAD RELAY OPTIONS	Standard	<i>Thermal Bimetal Ambient Compensated Overload Relay</i> <ul style="list-style-type: none"> • +/- 15% Setting of Nominal Trip Current • Optional Normally Open Contact for Alarm Circuit (SPDT) • Class 10 or Class 20 Protection 	PILOT DEVICES	Standard 22mm	<ul style="list-style-type: none"> • SIRIUS 3S Pilot Devices • LED Pilot Light • Plastic, NEMA Type 4
				Optional 30mm	<ul style="list-style-type: none"> • Class 52 Pilot Devices • Oil tight • Transformer type Pilot Light • Optional LED • Meets Type 3, 4, 12, and 13 specifications
	Optional	<i>ESP200 Solid State Overload Relay</i> <ul style="list-style-type: none"> • Solid State, Heaterless design with Class 5, 10, 20 or 30 Protection • Optional NO Alarm Contact • Each overload has at least a 4:1 current adjustment range with the adjustment dial reading out in full load amps • High accuracy trip curves; < 1% repeat trip accuracy • True phase loss protection; trips within 3 seconds 	PANELBOARDS AND TRANSFORMERS	Lighting Panelboards	<ul style="list-style-type: none"> • 18, 30, or 42 circuit available • Fits in standard 20" wide structure
				Distribution Transformers	<ul style="list-style-type: none"> • Single Phase with Integrated Disconnect through 2kVA • Single Phase with Separate Feeder through 45kVA • Three Phase with Separate Feeder through 45kVA –

Subject to change without prior notice
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Siemens Industry, Inc.
Industry Automation Division
3333 Old Milton Parkway
Alpharetta, GA 30005

1-800-241-4453
info.us@siemens.com

www.usa.siemens.com/mcc

