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# tiastar<sup>TM</sup> Motor Control Centers with PROFINET

The easiest connection to the smartest controller

Answers for industry.



# PROFINET in tiastar™ Motor Control Centers

## The easiest connections to the smartest controllers

### Tiastar Motor Control Centers – the best gets even better

Siemens tiastar Motor Control Centers (MCC) deliver exceptional performance, a range of powerful options, and the extraordinary convenience and robust capabilities of PROFINET connectivity.



### Siemens tiastar MCCs enjoy a massive global installed base for a host of reasons:

- Ruggedness and reliability
- Arc resistance UL-witnessed IEEE c37.20.7 tested
- Available with integrated drives compliant to IEEE 519 requirements
- Energy management for optimized power consumption
- Advanced diagnostics for asset management and protection
- Redundant control ensures continuous production
- Space saving design, high density - reduced footprint
- Excellent component selection
- Simplicity in adding special components
- Ease of future modifications
- Reduced time needed for installation and startup
- The global resources of Siemens support and service

Now every tiastar model is also available preconfigured for PROFINET connectivity and complete compatibility. PROFINET cabling installed in each tiastar motor control center is industrially hardened, shielded, and 600V rated.

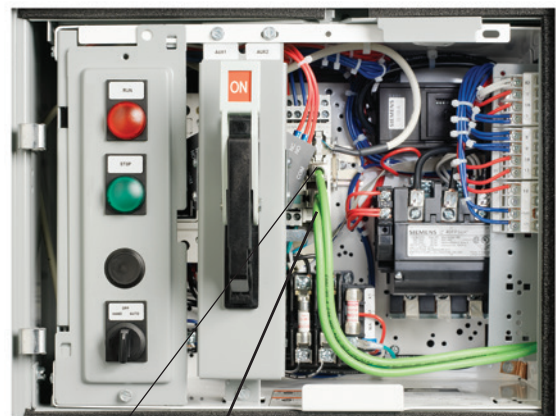


# PROFINET – The Global Standard

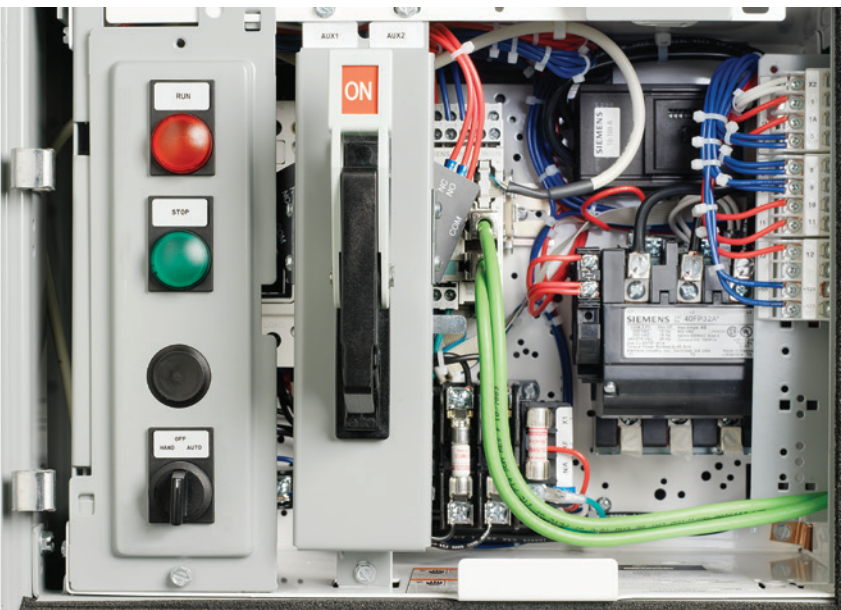
PROFINET is now the world's leading industrial Ethernet standard with millions of devices installed from a wide range of product vendors insuring the long-term viability of the standard and future-proofing today's installations. While PROFINET uses the same Ethernet as offices and IT departments around the world, its capabilities are enhanced significantly in order to meet the higher standards and environmental challenges of industrial applications.

Maintenance and servicing of PROFINET devices, like the tiastar MCC, is now possible from anywhere in the world via the internet. Network communication down to the individual motor control center cubicle level allows unprecedented control, protection and monitoring capabilities via familiar, Ethernet-based communication networks. The result of PROFINET's efficiency means optimal use of available user resources, and a significant increase in plant availability.

- Suitable for harsh industrial environments
- Employ PROFIBUS-DP functionality over industrial ethernet
- No distance limits
- Flexible topologies
- Device communication, control, and diagnostics
- Deterministic, high-speed communication is ideal for critical data and I/O exchange
- No network device or data limits
- Wire, fiber optic, and wireless







# PROFINET in tiastar™ Motor Control Centers

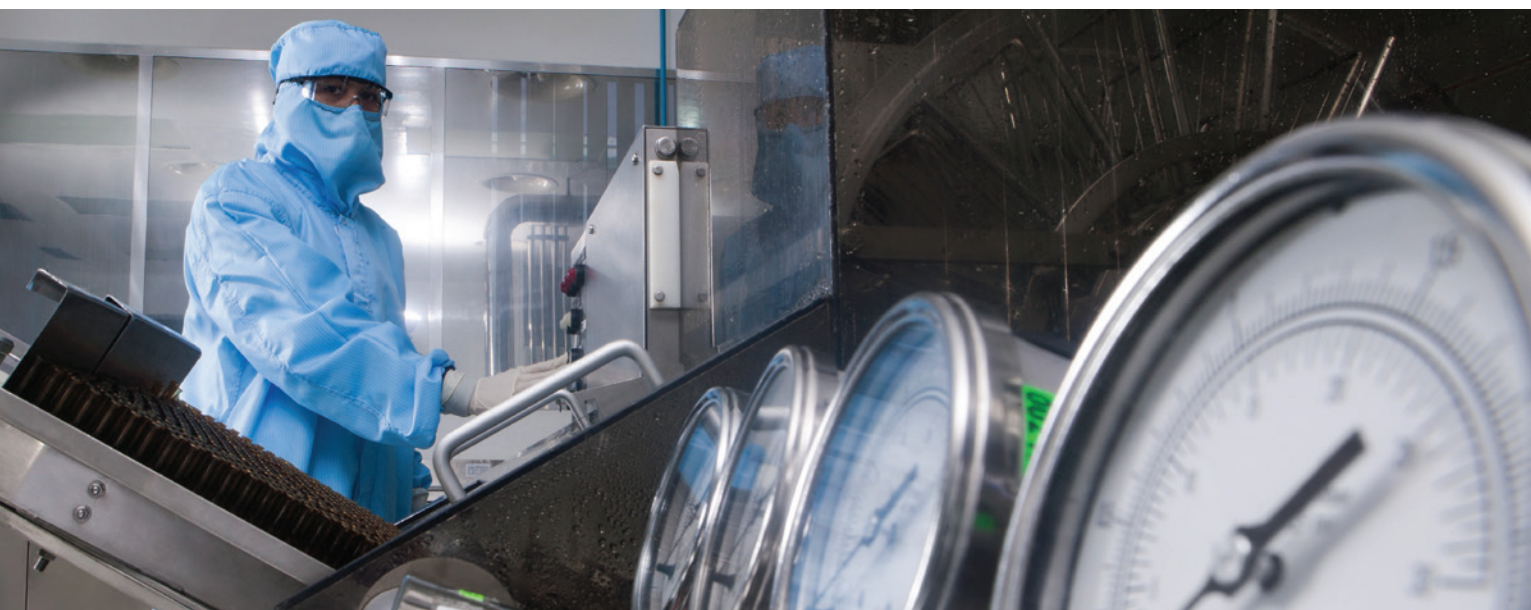
PROFINET combines time-tested and proven PROFIBUS capabilities with the familiarity, speed, and openness of Industrial Ethernet. Multiple communication “services” ensure that time-critical I/O communication is not compromised by large volumes of non-critical data, such as device parameters and/or diagnostic information.

One of the most important advantages involves built-in web pages that allow real-time access to vital status, diagnostic and monitoring data – from any remote location - without the need for product specific software.

## Choice of topology options

Tiastar MCCs with PROFINET communication can be supplied with star, redundant ring or straight line network topologies. Because the PROFINET communication protocol is provided on the individual communicating devices, no additional communication devices, such as protocol converters, or adapters are required. Redundant ring and straight line topologies are possible due to dual ports and integral network switches on each communicating device. Due to the compartmentalized construction of motor control centers, a star network topology provides the most operational flexibility when individual MCC units are taken out of service. Scalance industrially hardened, unmanaged, and managed Ethernet switches can be provided in the motor control center to facilitate various network topology options.



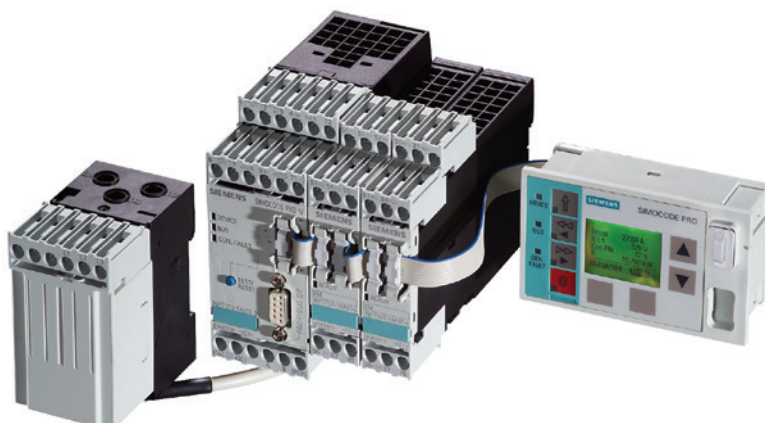


# PROFINET Components in tiastar™ Motor Control Centers

## Motor management system

SIMOCODE proV motor management system with PROFINET provides intelligent control and monitoring options for motor starter, contactor, and feeder units. An optional door-mounted operator panel with display allows for local control, and monitoring of all status, warning, fault, measured values, maintenance, and diagnostic data. Additionally, motor overload settings can be set through the operator panel.

- SIMOCODE proV "Base Unit" with (4) inputs and (3) outputs (expandable to (12) inputs and (7) outputs)
- Modular current and current/voltage measuring modules allow direct monitoring of loads up to 630 amperes
- PTC binary thermistor input
- Internal ground fault protection
- Zero sequence ground fault protection (optional)
- Temperature inputs (up to 6 sensors (optional))
- Analog inputs (up to (4) and outputs up to (2) (optional))







### Starters

Our 3WR44 reduced voltage solid state starters provide reduced voltage starting of AC motors up to 900 horsepower. Also compatible with the optional door-mounted operator panel with display.

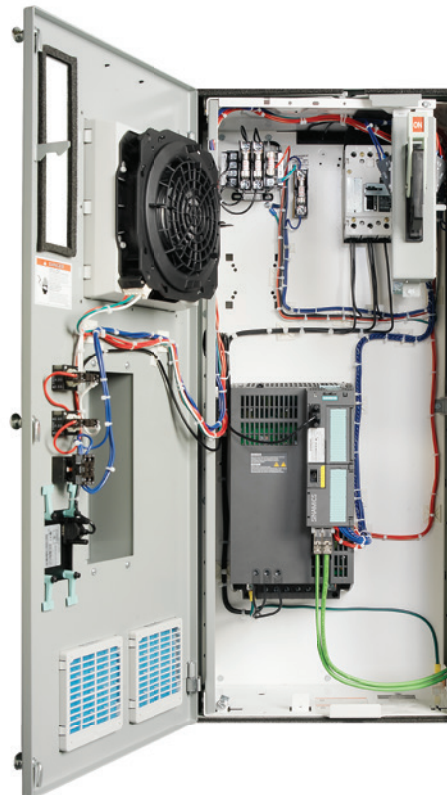
- (4) Programmable digital inputs and (4) programmable relay outputs
- Configuration and control via PROFINET communication with proper password authorization
- Communicated status, maintenance and diagnostic information
- Voltage ramp, torque control and breakaway pulse starting configurations
- Pump stop and torque controlled stop configuration

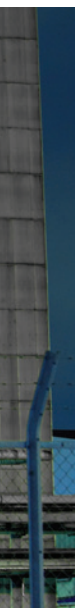


### Variable Frequency Drives

The G120 Variable Frequency Drives allow variable speed control and monitoring of AC motors, up to 200HP in tiastar Motor Control Centers.

- (9) Programmable digital inputs and (3) programmable relay outputs
- Programmable analog inputs (2) programmable analog outputs
- PTC binary input
- Basic Operator Panel (BOP) allows easy VFD configuration and transfer of VFD operating parameters from one VFD to another (optional)
- Fail-safe inputs (optional)
- Safe torque off function (optional)





## Access Power Monitoring

- PAC 3200 Power Meter

Complete power and power quality monitoring

Revenue accuracy

(6) Programmable limits

- (1) Programmable digital input
- (1) Programmable digital output

- PAC 4200 Power Meter

Complete power and power quality monitoring

Revenue accuracy

Harmonics monitoring up to 31st harmonic

(12) Programmable limits

- (2) Programmable digital input (expandable to (10) digital inputs)
- (2) Programmable digital output (expandable to (6) digital outputs)
- Event logging and time stamping of up to 4096 events



## Tiastar MCC, PROFINET, and Siemens

Whichever tiastar MCC is the perfect match for your application, the proven engineering efficiency of PROFINET is easily configured and managed through Siemens PC57 and TIA Portal software which means faster commissioning, optimized power consumption, improved safety, enhanced reliability, and effortless expandability.

If plant uptime is critical, no solution is more rugged or simple to integrate. One cable works for every purpose and facilitates rapid device replacement, which future-proofs your plant and your productivity.

Call Siemens today – we have answers for industry.





Find out more:  
[www.usa.siemens.com/mcc](http://www.usa.siemens.com/mcc)  
[www.usa.siemens.com/drives](http://www.usa.siemens.com/drives)

## Experience the game changing tiastar™ Motor Control Center

- Detailed information on tiastar MCC
- Access to technical documentation
  - Whitepapers
  - Installation guides
  - Drawings and wiring diagrams



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