

A photograph of an industrial facility at night, featuring a complex network of pipes, walkways, and tall distillation columns illuminated by bright lights against a dark blue sky.

# TIASTAR

Rugged, Reliable High Performance

## Motor Control Centers

Answers for industry.

**SIEMENS**

# Introducing the rugged, reliable high performance MCC that's delivered on time, on spec.

Today's motor control centers have come a long way since the first units were introduced in 1937. The modern motor control center needs to combine the best of time tested and proven practices with current technology and solutions.

Based on the Furnas System/89™ MCC introduced in 1980, Siemens TIASTAR MCCs combine time proven designs and components with the latest in technological advances to meet any application. No matter how customized your needs may be, you can be assured that you are getting a finished product that represents the state-of-the-art in motor control technology.

Every MCC begins with a modular, open architecture design. This enables us to build customized units which are simple to install, operate and service. Being a part of the largest and most diverse electrical equipment manufacturer in the world, we have the products and expertise to meet any specification, from traditional controls to complex communications systems.



## Siemens TIASTAR Motor Control Centers are packed with components and features to offer optimal motor control, communications, monitoring, protection, and automation interfacing.

The WL Circuit Breakers offer integrated communications over PROFIBUS to provide real-time data on breaker status and power utilization. Detailed power monitoring is available with PROFIBUS-DP communications via the PAC3200 Power Meter. Typically, this is installed at the incoming power supply to the TIASTAR Motor Control Center. Its monitoring information capabilities can be extended to the overall MCC line-up via transmitted data over the PLC/DS network.

Bit level communication requirements between the PLC/DCS and starter units can be provided by placing AS-Interface Slimline I/O module in individual MCC

units to reduce inter-connection wiring to the PLC. The modules communicate over an AS-Interface network to an AS-Interface master. The information is sent directly to the connected PLC via the high-level PROFIBUS-DP network.

Central to any motor control center, of course, are its starters. With the TIASTAR Motor Control Centers, the SIRIUS 3RW44 Reduced Voltage Starters are now an integral part. They can be easily integrated to the PROFIBUS-DP network via an optional communications interface. These units can be parameterized, controlled and even diagnosed remotely from the connected control system.



WL Circuit Breaker



PAC3200 Power Meter



AS-Interface Slimline Modules

Space savings are realized, too, when the same housing that encloses the starters can also house the electronic motor drives that are typically integral to a process or operation. The TIASTAR Motor Control Centers accommodate this need for Siemens full line of MM4 and 6SE70 variable frequency drives. Available up through 250HP for constant torque loads, the variable frequency drives can be readily interfaced with PROFIBUS DP allowing the user to get the status of the system, as well as control speed and other process parameters.

Automation interfacing for the TIASTAR Motor Control Center units is accomplished

easily by linking either SIMOCODE Pro C or SIMOCODE Pro V modular motor management systems to the high-level automation system by means of PROFIBUS-DP. Designed for constant speed motors, these modular units implement all the motor protection and control functions, operational, diagnostic and statistical data, plus organize communications data between the automation system and the motor feeder. Additionally, SIMOCODE provides the user with the ability to monitor power consumption of individual units for future energy management requirements.



SIRIUS 3RW44 Reduced Voltage Starters



MM4 and 6SE70 Variable Frequency Drives



SIMOCODE Pro C and SIMOCODE Pro V

# Motor Control Center



Siemens magnetic trip circuit breaker



Door mounted, operator panel for SIMOCODE Pro



PROFIBUS-DP Communications connected to each intelligent device



MM4 variable frequency drive with PROFIBUS-DP communication port





AS-Interface slimline module



FVNR starter installed with  
SIMOCODE Pro V



3RW40 and 3RW44 reduced  
voltage electronic soft starters



Door mounted keypad for MM4  
variable frequency drives



## Constructed to your exact specifications

### **It is all about choice**

Siemens TIASTAR MCCs have a wide range of features and options available to meet your specific requirements. From the standard isolated vertical bus to fully insulated vertical bus, standard 22mm to 30mm pilot devices, TIASTAR MCCs are built to your specifications and your requirements.

UL rated structures have short circuit withstand ratings of 42,000 amps standard with ratings up to 100,000 amps optional. Plated copper horizontal bus is available in 600 amp through 2,500 amp ratings. Plated copper vertical bus is available in 300 amp and 600 amp ratings.

### **The safer, sturdier, more serviceable motor control center**

The structural integrity of our MCCs is apparent even before the plug-in units are installed. Heavy gauge steel is used for framing and side panels. Sections are separated by 14 gauge steel barriers that are formed to provide rigidity and durability.

Bus bar connections are made using two bolt connectors and require only front access for easy service.

Vertical ground bus is available with load ground terminals, reducing the cost of installation when using multi-conductor load cables.

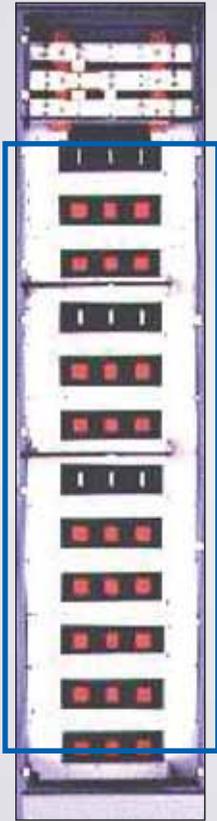
All wiring and components meet or exceed the requirements of UL, CSA, NEMA, EEMAC and NEC.

All pre-wired components are professionally harnessed to industrial terminal blocks.

Harnesses are held neatly in place. Round, full depth, wire tie rods are standard in each vertical wireway.

The rear of the vertical wireway, all mounting panels and the interior of all plug-in units, including the top and bottom, are painted providing improved visibility for easy wiring and inspection.

Individual units are assembled and installed to your exact specifications. Field modification of units within each section is simple. Modular units are fully interchangeable.



Standard isolated vertical bus design (rear view).

A grounded steel barrier and rugged vertical bus supports are featured on the standard isolated vertical bus assembly.



Optional isolated and insulated vertical bus

The optional isolated and insulated vertical bus assembly features glass filled polyester insulators that completely surround the vertical bus bars.

## Human Engineered Features

Many features have been designed into Siemens TIASTAR MCCs to provide greater safety and ease of operation. All components are front accessible and removable. Ample wiring space, large wireways and a clean layout add to the ease of inspection and servicing.

Power to the plug-in units is obtained through self-aligning, tin plated copper stabs. Stab clip wires are isolated phase to phase inside the stab housing. When a plug-in unit is moved to the test position, there is more than one inch of clearance between the unit stab and the vertical bus, electrically isolating the unit from the power bus.

All power bus connectors are made with a two-bolt U-shaped clamp, utilizing conical spring washers to maintain torque. Horizontal bus bars are isolated from the top horizontal wireway by a clear Lexan® barrier. The Lexan barrier allows for easy visual inspection of the horizontal bus and is easily removable when access to the bus is required.



Pilot devices are housed in a panel that mounts on the unit door for normal operation or the plug-in unit for removal or test.



Unit Terminal Blocks are conveniently mounted up front on a swing-out side barrier for ease in wiring and inspections.



A positive stop in the "TEST" position assures the user that the plug-in unit is fully disconnected from the vertical bus.

To avoid injury, the two stage draw-out mechanism brings the unit to a stop before removal.



The unit disconnect operating handle features a simple and rugged design. ON and OFF status is clearly indicated by position, words and color. When placed in the "park" position, the unit door can be opened without the handle interfering. On circuit breaker units, a TRIP indication is clearly indicated.



A copper clip on the side of the plug-in units engages the unit support bracket, grounding the unit at all times



Up to three padlocks may be used to lock the disconnect handle in the OFF position. The unit is locked in the test position with one padlock. A copper clip on the side of the plug-in units engages the unit support bracket, grounding the unit at all times.



A screw driver operated defeater mechanism allows access to an energized unit by authorized personnel.



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