

Do you need a Motor Control Center that communicates with your network?

Model 6 Motor Control Centers communicate via PROFIBUS.

## Model 6 Motor Control Centers with PROFIBUS Communications

Square D® Model 6 Motor Control Centers featuring PROFIBUS communications provide an effective method of connecting centralized control to widely distributed I/O. The PROFIBUS cabling consists of a single multi-conductor cable that functions as a replacement for the bundles of hardwiring that typically interconnect the units in the motor control center (MCC). This configuration provides substantial savings associated with reduction in wiring and labor that more than justifies its integration in the MCC. Functionally, each MCC device connected to the PROFIBUS system becomes a node on the network.



The Model 6 Motor Control Center can be connected directly to a PROFIBUS network and supports:

- Altivar® 61 and 71 Variable Frequency Drives with PROFIBUS Communications Card
- Full-Voltage Starter with TeSys® T Motor Management Controller with PROFIBUS Communication
- Altistart® 48 Soft Starter with PROFIBUS

## PROFIBUS Communications

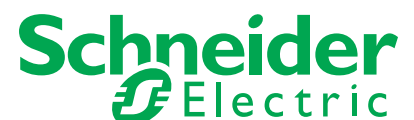
PROFIBUS is one of the world's most popular fieldbus technologies in discrete process control. This proven technology is mature and is ideal for supporting modern automation systems. PROFIBUS supports trunkline-dropline configuration with active line terminators and baud rates up to 12MB/second. The maximum number of nodes, which can be connected in one network is 32 without a repeater.

## Product Benefits

- Remote Monitoring Capability – Monitor systems remotely, program and configure during run-time.
- Reduce Downtime – Diagnostics provide predictive failure warnings and troubleshooting.
- Reduction in System Interwiring – Network cable eliminates bundles of hard-wired I/O.
- Common Network – PROFIBUS is a widely accepted network standard.
- Lower Installation Cost – Intelligent MCCs reduce the total installation cost by up to 20%.
- Ease of Configuration – Networking allows the removal, replacement and reconfiguration of MCC units without disrupting the running process.



by Schneider Electric



## PROFIBUS Communication Cabling Solution

The cabling system used for connection of PROFIBUS components in Model 6 Motor Control Centers provides complete integration of communication throughout the MCC. Model 6 Motor Control Center with PROFIBUS utilizes RS485 transmission technology consisting of shielded, twisted pair copper cable. This method is simple to use and allows step-by-step commissioning of each node without influencing other nodes. Optional termination styles permit the customer to choose the method of integration with host systems.

The PROFIBUS trunk is located in the bottom horizontal wireway, providing excellent protection and isolation from the horizontal bus (located in the top of the MCC). The cabling solution utilizes a 5 pin micro-style tap for truck and drop connections. For improved reliability a single tee junction resides at the bottom of every section, connecting the dropline to the trunk. Each pre-molded dropline routed in the vertical wireway contains six taps spaced 12" apart. All unused tap connectors are capped at the factory.

A 36" "pigtail" cable connects the tee in the drop cable to the PROFIBUS component located in the MCC unit. One end of the pigtail cable terminates with a micro-style connector for connection to the drop cable tap and the other end terminates on the Profibus device in the MCC unit.

Effective isolation between the network cabling and high voltage/ current cabling in the MCC is accomplished by taking advantage of the industry-leading full-depth wireway of the Model 6 Motor Control Center. Isolation is provided between the communication cabling and load cables routed in the vertical wireway by the communication barrier installed within the wireway.

The communication barrier prevents mechanical damage of the communication cable when routing load cables inside the MCC. The barrier allows access to the communication cabling for configuration changes without removal of the barrier. By distributing the trunk cabling in the horizontal wireway at the bottom of the Model 6 Motor Control Center, significant isolation from the horizontal bus at the top of the MCC is maintained.



Trunk cable shown with communication barrier

## Model 6 Motor Control Center with PROFIBUS

The TeSys T controller integrated in the Model 6 Motor Control Center allows flexibility for various I/O choices. I/O choices include:

- Six discrete inputs
- Three relay outputs
- Ground CT input
- PTC input
- 24VDC or 120VAC, 50/60Hz
- Supports explicit messaging, poll, change of state and cyclic I/O messages
- Network status LED on front of unit



NEMA Size 1 Starter Unit

## TeSys® T Motor Management Controller

The TeSys T Motor Management Controller can be directly connected to a PROFIBUS network for data acquisition and control. Users gain access to motor data variables and system process control through “onboard” I/O when utilizing PROFIBUS communication. Functionality for over/under voltage, over/under current, ground fault and phase failure/unbalance protection is included. In addition, when combined with PLC interwiring, this module provides an independent data acquisition and control system.

### Standard Unit

- Six discrete inputs and three relay outputs
- RJ45 port for connection to Expansion Module, HMI or PC
- Status indicating LEDs
  - HMI communication
  - Power
  - Alarm – Indicates warning or fault condition
  - Fallback – Indicates communication loss on active control source
  - PLC communication – Network status
- Fault relay – 1 N.O. and 1 N.C.
- Ground fault CT input
- PTC input



TeSys T Motor Management Controller component shown with PROFIBUS Communication Protocol control

## TeSys T controllers offer increased protection, control and monitoring capabilities

### TeSys T Expansion Module

- Voltage monitoring
- Four additional logic inputs
- RJ45 port for connection to HMI or PC
- Status indicating LEDs
  - Power
  - Input status



Optional expansion module

### HMI (Human Machine Interface)

- LCD display
- Status LEDs
- Local control functions
- Real time value display
- Parameter configuration
- Alarm monitoring



Optional HMI for configuration, control and display



Altivar 61 and 71 AC Drives

## Altivar 61 and 71 AC Drives

The Altivar 61 and 71 AC Drive families connect to a PROFIBUS network via the optional communication card. The communication card provides the means to control, configure and collect data over the PROFIBUS network.

Altivar 61 and 71 AC Drives have an internally mounted communication card, which allows the drive to be integrated into the control or manufacturing process, without additional components or costs.

- Drives are accessible from a single point
- Monitor and change setpoints using PROFIBUS
- Remote diagnostic



Altistart 48 Soft Start

## Altistart 48 Soft Start

The Altistart 48 Soft Start connects to a PROFIBUS network via the optional communication module. The module, a serial communication adapter, provides the network pathway for the PROFIBUS network. The integrated Altistart 48 Soft Start also offers benefits via a PROFIBUS network, including:

- Control of starting torque and/or current limit
- Optimal ramp control during soft starting
- Choices between three modes of stopping: freewheel, deceleration or InTele Braking

Make the most of your energy<sup>SM</sup>

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