Safety Manager Module (SMM)

The SMM acts as an interface between a Tricon controller and a Honeywell Universal Control Network (UCN), one of three principal networks of the TDC 3000 DCS. The SMM appears to the TDC 3000 as a safety node on the Universal Control Network (UCN), allowing the Tricon to manage process-critical points within the overall TDC 3000 environment. The SMM transmits all Tricon aliased data and diagnostic information to TDC 3000 operator workstations in display formats that are familiar to Honeywell operators.

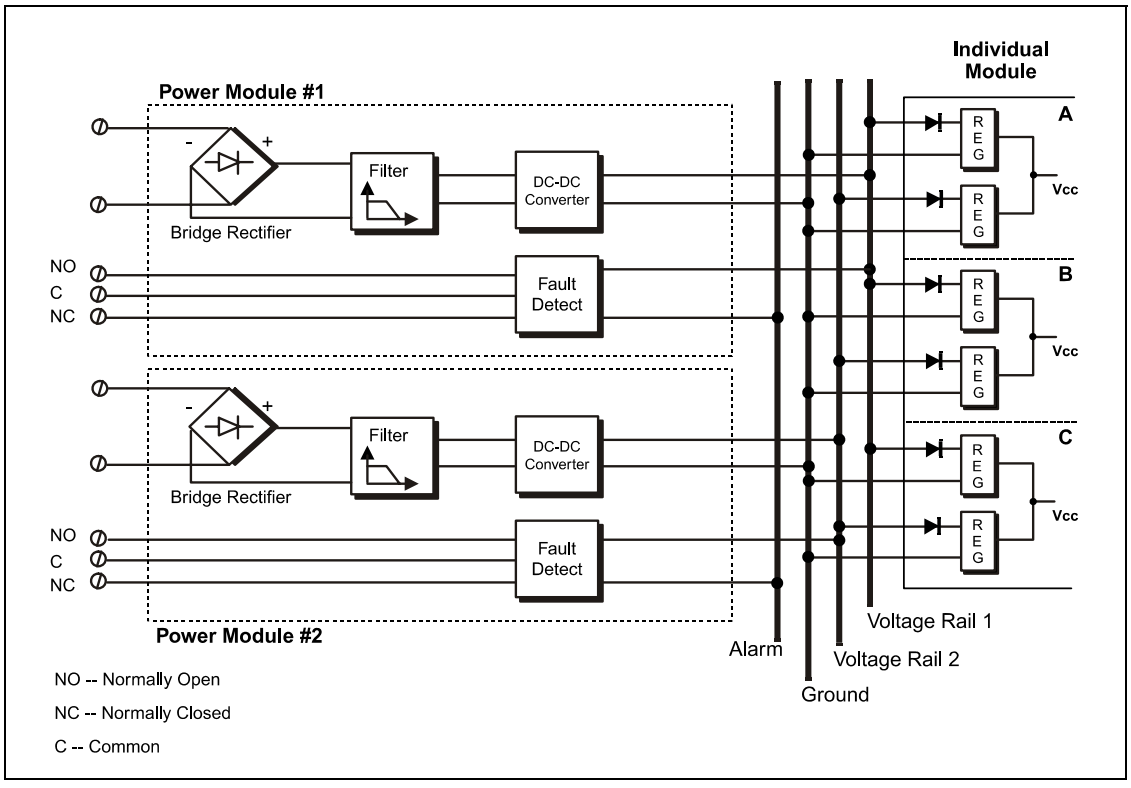
Advanced Communication Module (ACM)

The ACM acts as an interface between a Tricon controller and a Foxboro Intelligent Automation (I/A) Series DCS. The ACM appears to the Foxboro system as a safety node on the I/A Series Nodebus, allowing the Tricon to manage process-critical points within the overall I/A DCS environment. The ACM transmits all Tricon aliased data and diagnostic information to I/A operator workstations in display formats that are familiar to Foxboro operators.

See "Product Specifications" on page 17 for specifications of the TCM, EICM, NCM, SMM, HIM, and ACM.

Power Supply Modules

Each Tricon chassis houses two power modules arranged in a dual-redundant configuration. Each module derives power from the backplane and has independent power regulators for each channel. Each can support the power requirements for all the modules in the chassis in which it resides, and each feeds a separate power rail on the chassis backplane. The power modules have built-in diagnostic circuitry which checks for out-of-range voltages and over-temperature conditions. A short on a channel disables the power regulator rather than affecting the power bus.



Architecture of Power Subsystem

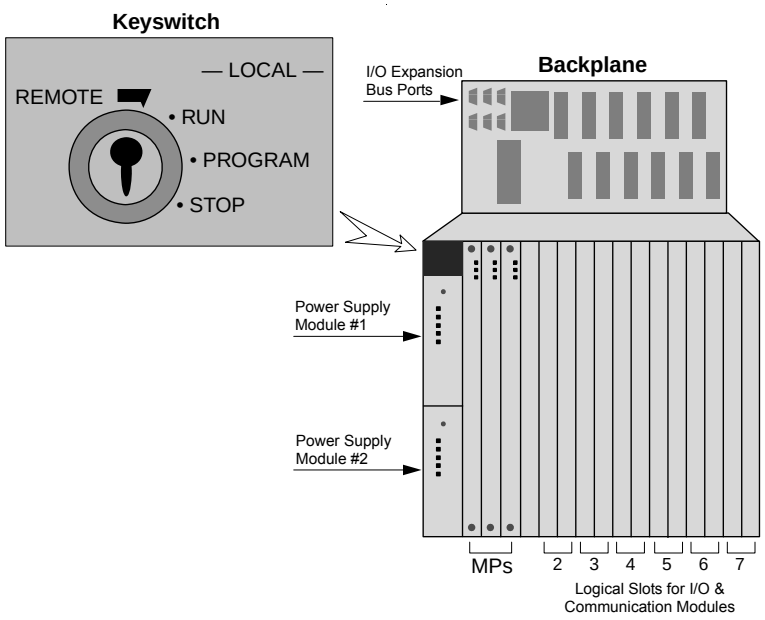
Chassis Options

A Tricon system is made up of one or more chassis assemblies which contain I/O and communication modules. The first chassis of a system is called the main chassis (model 8110). To enlarge a system, expansion chassis (model 8111) and/or RXM chassis (model 8112) can be added. (See "System Configuration" on page 11 for details.)

I/O Expansion Bus

Each chassis has six RS-485 I/O expansion bus ports at the top left corner of the backplane. There are two sets of ports for channels A, B, and C, providing for two triplicated serial communications paths between chassis. One set of cables is required for each expansion chassis and for the RXM chassis which houses the primary RXM module set. The standard length of a cable set (model 9000) is 6 feet—longer cables are available if needed.

The triplicated I/O bus transfers data between the I/O modules and the main processors at 375 kilobits per second. The communication bus runs between the main processors and the communication modules at 2 megabits per second.



Keyswitch for System Control

The main chassis has a four-position keyswitch which controls all the chassis in the system. The keyswitch setting is readable by Tricon controllers, TriStation software, and the control programs. Switch settings are:

RUN—Normal operation with read-only capability. The main processors execute the previously-loaded control program. Attempts to modify program variables by TriStation, Modbus masters or external hosts are rejected. However, an control program may call gated access functions to enable external host writes during a designated window of time.

PROGRAM—For program loading and checkout. Allows control of the Tricon system from the TriStation platform, including Download All and Download Change. Also allows writes to program variables by external hosts.

STOP—Stops reading inputs, forces non-retentive digital and analog outputs to 0, and halts the control program. (Retentive outputs retain the value they had before the keyswitch was turned to STOP.) The STOP setting can be used for installation and service of process-related equipment, *but is not required for service of the Tricon.*

REMOTE—Allows writes to program variables by TriStation and external hosts. (Download All and Download Change by TriStation are not allowed.) Modification of program logic is not allowed.

Mechanical Specifications

These specifications apply to Main, Expansion and RXM Chassis; Power Supply Modules; and other modules where indicated.

Overall Dimensions	19 in wide by 22.75 in high by 17.75 in deep (48.3 cm by 57.8 cm by 45.1 cm)
Chassis Fabrication	Black zinc-plated and welded cold-rolled steel
Approximate Weights	
Main or Expansion Chassis	54.0 lbs. (24.5 kg.)
Power Module	7.2 lbs. (3.3 kg.)
Main Processor	4.7 lbs. (2.1 kg.)
I/O Module	4.7 to 6.0 lbs. (2.1 kg. to 2.7 kg)
Communication Module	5.0 lbs. (2.3 kg.)
16-point Termination Panel	.09 lbs. (.04 kg.)
32-point Termination Panel	2.1 lbs. (.95 kg.)