Fault Tolerant FT™ Controller

A Higher Level of Reliability

ADVANCED CONTROLLER

Dual Door Module (DDM) circuit board

Single Door Module (SDM)

Fault Tolerant Security System U.S. Patent No. 7,644,299

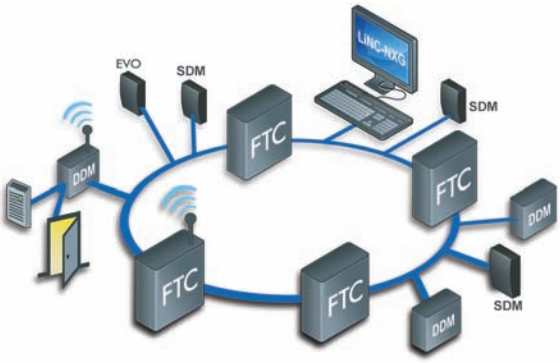
FT Master Controller configured with optional 19" 2U rackmount enclosure and optional dual vacuum fluorescent displays

PCSC offers the world's first Fault Tolerant (FT) controller series creating the highest level of reliability with its automated process of system recovery for access control, alarm monitoring and output control systems. The FT Architecture (FTA) is the next evolution of building security management designed with a Virtual Point Definition network, integrated peer-to-peer and redundant communications. The FT system is designed to automatically recover regardless of communication or controller failure.

The FT system may be designed with an "Active/Active" or "Active/Inactive" system architecture. If for any reason, a primary controller fails, an alternate controller shall automatically take over the duties of the failed controller. The progression of successors to a faulty controller shall continue to provide security without any degradation in system operations.

The FTA consists of one or more Fault Tolerant Controllers (FTC) and Door Interface Modules (DIM). The FTCs and DIMs are designed with an *Open Standards Operating System* utilizing *Hydra Protocol* to provide the highest level of system operations and reliability. The DIM is currently offered in a Dual Door Module (DDM) or Single Door Module (SDM).

PCSC's Hydra Protocol not only maintains communication integrity but also provides a network database manager to control system parameters, access, alarm and output data. Utilizing peer-to-peer communication, the Hydra Protocol communicates system updates with other FTCs within its network. Changes to data such as: cardholder, input and output statuses are automatically updated among the appropriate FTC. Hydra Protocol also contains a firmware management application to maintain firmware integrity of its DIMs. It maintains the approved firmware and firmware level and automatically updates older versions of DIM firmware, eliminating any security breach or service time.



The Fault Tolerant system utilizes a series of sub-systems, DIMs (Door Interface Modules) to ensure higher level security architecture, providing a simple installation and a low cost security solution.

LOGICAL INTELLIGENT NETWORK CONTROLLERS

PCSC

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Fault Tolerant FT™ Controller

System Standard Features

- Fault Tolerant Process
- Automatic Hot Cutover
- Fail Safe Operations
- Open Systems Platform
- Open Architecture Protocol
- Ethernet / PoE Communication
- Peer to Peer Communications
- Homeland Security Threat Level Control
- Auto Alternate Communication Routing-3 Types
- Access Action for Disabled Persons
- Supervisory Controlled Entry Authorization
- Onboard Rechargeable Battery Circuit
- Event Control Card Logic
- Cardholder or Card Group Action
- User Programmable Input Action
- Dynamic Input to Output or Group Output Linking
- Global Anti-Passback
- 3 Levels of Anti-Passback Control
- Automatic Card Activation and Deactivation by Date and Time
- User Configurable Cardholder and History Capacity
- User Selectable Input Monitoring Modes

High Security Features:

- "Threat Level" Card Authorization Logic
- Two Person Minimum Occupancy Rule
- Escort Capable and/or Required
- 5 State Alarm Monitoring
- 2 Stage Alarm Control
- Alarm Latching
- AC Power Fail Notification
- DC Low Power Notification
- Supervised Readers
- Supervised Tamper
- Supervised REX
- FIPS 201 and TWIC Compliant

System Hardware Features

FT Master Controller

- 32 Bit ARM Processor and Architecture
- Battery Backed Memory (1 year)
- Battery Backed Clock Calendar (1 year)
- Onboard Ethernet Communication
- 3 Communication Ports
- Seven Segment Status Display
- Host Online Notification
- FLASH Memory
- Supervised Tamper
- Battery Charger Output
- Electronically Protected Power Input
- PoE (optional)
- Vacuum Florescent Display (optional)
- USB Port (optional)

FT Master Controller Capacities

- 25,000 - 500,000 Cardholders (user configurable)
- 25,000 - 500,000 History Transactions (user configurable)
- 1 to 32 DIMs per Master Controller
- Simultaneous Multi Card Format Recognition
- Multiple Site Codes (16)
- 16 to 512 Five-State Inputs Supervision*
- 16 to 512 Temperature Monitoring*
- 16 to 512 Relay Outputs*

* Please consult your PCSC representative for configuration availability

Door Interface Module Features

DDM – Dual Door Module

- 32 Bit ARM Processor and Architecture
- Onboard Ethernet Communication
- PoE (optional)
- FLASH Memory
- 3 Communication Ports
- Seven Segment Status Display
- Host Online Notification
- Tamper
- Battery Charger Output
- Electronically Protected Power Input
- 5 State Alarm Monitoring
- 2 Weigand Reader Ports
- 2 Door Lock Form C Relay Outputs
- 2 REX Inputs
- 2 Door Position Inputs
- 2 Alarm Shunt Outputs
- 4 Voltage Outputs
- 4 Sense Inputs
- Powered Lock Output

SDM – Single Door Module

- 32 Bit CPU
- Onboard PoE Communication
- 1 Weigand Reader Port
- 1 Door Lock Form C Relay Output
- 1 REX Input
- 1 Door Position Input
- Powered Lock Output

Options and Upgrades

Second and Third Communication Port

Power Supply with Battery Charger

Enclosures:
2U - 19" Rack Mount Housing with Vacuum Fluorescent Display

Specifications

Power Consumption: Maximum 1.0 Amps @ 12 VDC

Environmental: 32°-115° F (0° - 46° C)

Humidity: 0 - 90% Non-Condensing

Enclosure Dimensions

16 AWG CRS Enclosure with Supervised Tamper, Lock, and Key

Medium (M): 18" h x 11.5" w x 6" d (45.7 cm x 29.2 cm x 15.2 cm)

Large (L): 21.6" h x 16.1" w x 5.7" d (55.4 cm x 40.9 cm x 14.5 cm)

Rackmount (2U): 3.5" h x 19" w x 13" d (8.9 cm x 48.3 cm x 36.8 cm)

Weight: (M) 25 lbs. (17.2 Kg), (L) 35 lbs. (24.2 Kg), (2U) 15 lbs. (6.8 Kg)

Cabling Requirements

Switch-to-FT Controller: Cat 5/6
Maximum 328 ft. (100 m)

Switch-to-DDM: Cat 5/6
Maximum 328 ft. (100 m)

Switch-to-SDM: Cat 5/6
Maximum 328 ft. (100 m)

DIM-to-Reader:
6 Conductors (22 AWG with Overall Shield)
Maximum 500 ft. (152 m)

DIM-to-Door Lock: 2 Conductors (18 AWG)
Maximum 2,000 ft. (609 m)

DIM-to-Door Status: 2 Conductors (22 AWG)
Maximum 2,000 ft. (609 m)

DIM-to-REX: 2 Conductors (22 AWG)
Additional 2 Conductor (18 AWG for Powered REX Devices)
Maximum 2,000 ft. (609 m)

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