

Access Control



# Future Security



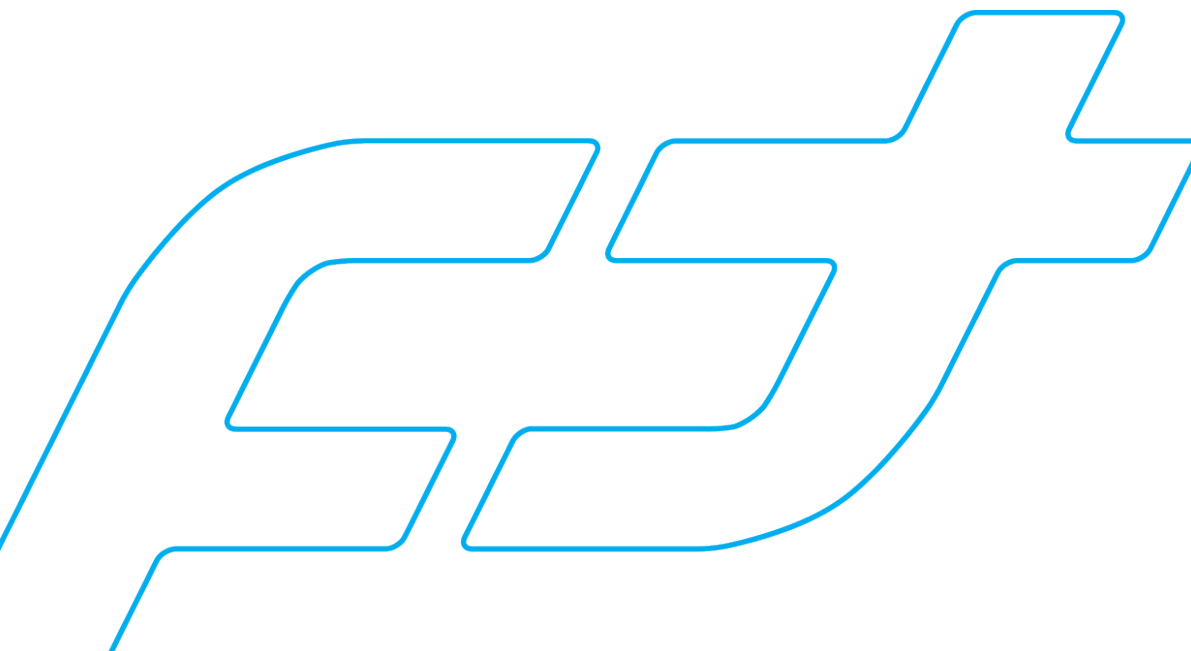


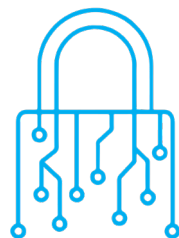
# Fault Tolerant



Fault tolerance is the ability of a system to maintain proper operation in the event of failures or faults in one or more of its components. If its operating quality decreases at all, the decrease is proportional to the severity of the failure, as compared to a naively designed system, in which even a small failure can lead to total breakdown. Fault tolerance is particularly sought after in high-availability, mission-critical, or even life-critical systems.

*-Wikipedia*





Access Control



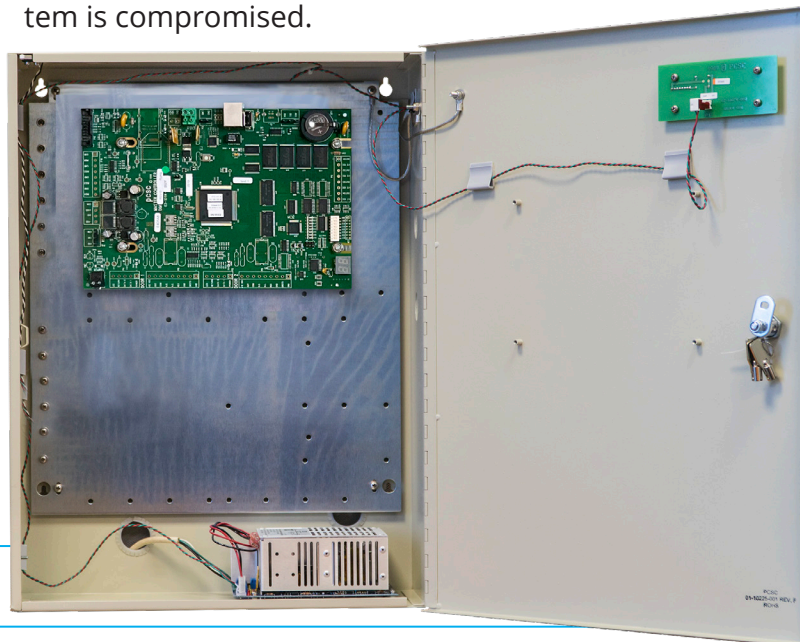
# The Fault Tolerant Architecture

The reliability of your System, Controller, and Communications are insured with the Fault Tolerant Architecture (FTA), providing controller redundancy with peer-to-peer administration and enhanced multiple communication paths. The proven Hydra management system with its inherent AI processes oversee an automated redundancy network for database, firmware levels and communication management for up to 8 controllers.

The FTA network provides the confidence of a 99.9% availability system, even during communication or controller failures or during a system maintenance. Communication is the "key" for a reliable system, without it, you will lose important alarm alerts and the ability to control your system.

Fault Tolerant Controller Standard Enclosure

The Fault Tolerant Access Architecture increases security through system availability and ensuring system reliability, as without it, your security system is compromised.



## Multiple Form Factors

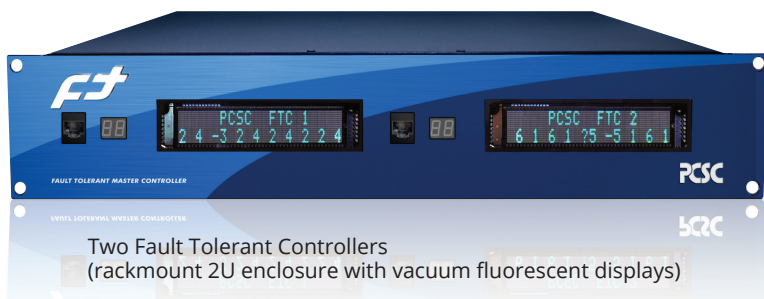
### Fault Tolerant Controller

The original patented Fault Tolerant Access Controller (FT), available in a **standard enclosure** or **2U rackmount** configuration. Featuring 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.

### Fault Tolerant Pro Controller

**A footprint that fits on the palm of your hand.** PCSC has designed a hardware independent controller, the Fault Tolerant Pro (FT Pro) Access Controller defining "Open Architecture" products in the security industry. Building upon the patented Fault Tolerant Architecture, the FT Pro is the high security door access controller of choice for the latest in technical advancements. Designed for easy installation in today's complex world.

Fault Tolerant Pro Controller  
(small footprint)



Two Fault Tolerant Controllers  
(rackmount 2U enclosure with vacuum fluorescent displays)





# Details

## 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
- AutoAlternateCommunicationRouting-3Types
- Access Action for Disabled Persons
- Supervisory Controlled Entry Authorization
- Onboard Rechargeable Battery Circuit
- 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
  - Each Cardholder Supports:
    - 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

- 32-bit or Quad Core 64-bit ARM Processor (FT Pro) and Architecture
- Processor is based on an ARM processor
- Solid State Memory
- Onboard Ethernet Communication
- Optional PoE
- Alternate Communication
- Optional Clique Network Status Display Panel
- FLASH Memory
- 5 State Alarm Monitoring
- Supervised Tamper
- Electronically Protected Power Input

## FT Controller Capacities

- FTA "Clique" Capacity: Maximum 8 FTC
  - Maximum 112 DIM
  - Unlimited "Cliques"
  - Maximum 224 Reader/Clique
- Cardholders:
  - 20,000 (standard) – 250,000+
- History Transactions:
  - 20,000 (standard) – 250,000+
- Each Cardholder Supports 16 Access Groups
- Simultaneous Multi Card Format Recognition
- Multiple Site Codes (16)
- Up to 672 Supervised Inputs

## Door Interface Module Features

### DDM – Dual Door Module

- 32-bit ARM Processor and Architecture
- Onboard Ethernet Communication
- PoE (optional)
- WirelessMeshCommunications (Optional)
- DualEthernetCommunications (Optional)
- FLASH Memory
- 3 Communication Ports
- Seven Segment Status Display
- Host Online Notification
- Tamper
- Separate Tamper Input
- Battery Charger Output
- 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

### 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

\* Please consult your PCSC representative for configuration availability.

\*\*All details and specifications are subject to verification and may change.

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

## At a Glance:

- Fault Tolerant Architecture
- Multiple Form Factors
- OEM Integration Capable with SDK
- Intuitive Installation
- Lower Costs

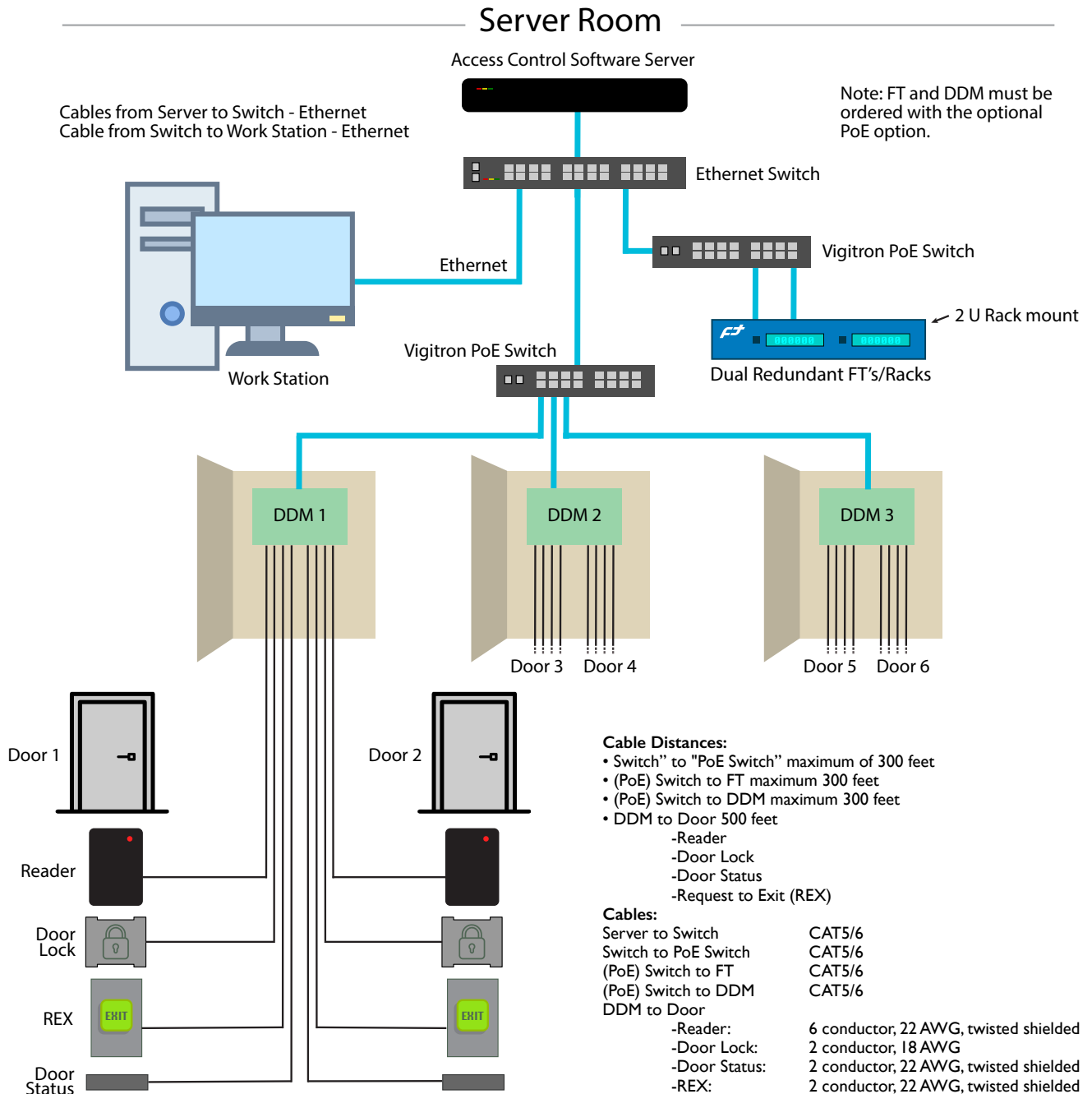


# Fault Tolerant Architecture - PoE

The Fault Tolerant architecture supports a global peer to peer network within each “Clique”. “One” Clique is limited to 8 Fault Tolerant Controllers supporting up to 112 door modules or a maximum of 224 readers. The Host System can administer an unlimited amount of FT Cliques.

**“Clique” Definition:**

Clique is a "sub system" within the "System" that supports up to 8 redundant FT controllers, meaning, automatic failover and 100% security during failure of 7 FT controllers. Within the Clique up to 112 door modules can be supported and depending on the door modules, support up to 224 readers. The Clique supports "global" inputs and outputs as well as cardholder anti-pass-back without Host intervention.

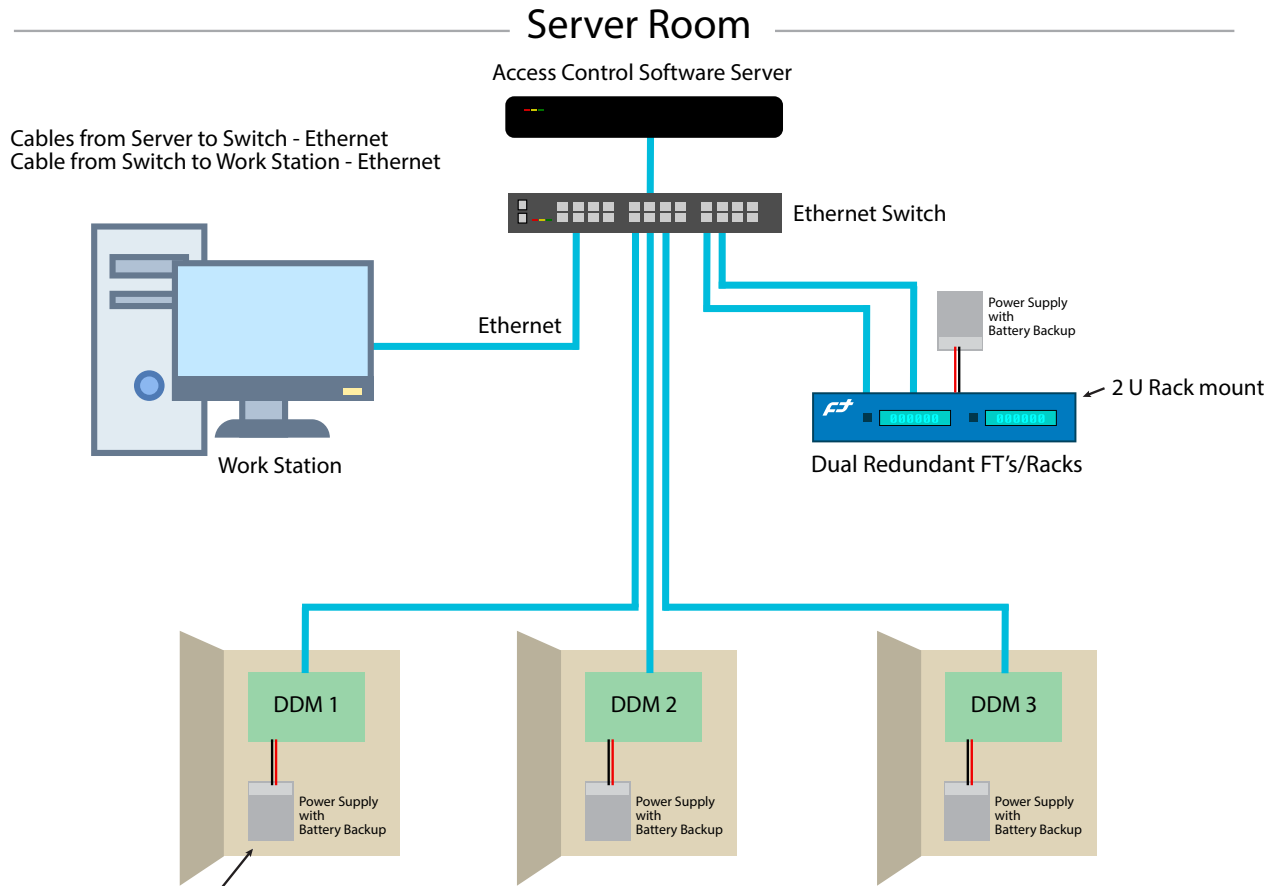


# Fault Tolerant Architecture - Non PoE

The Fault Tolerant architecture supports a global peer to peer network within each “Clique”. “One” Clique is limited to 8 Fault Tolerant Controllers supporting up to 112 door modules or a maximum of 224 readers. The Host System can administer an unlimited amount of FT Cliques.

**“Clique” Definition:**

Clique is a “sub system” within the “System” that supports up to 8 redundant FT controllers, meaning, automatic failover and 100% security during failure of 7 FT controllers. Within the Clique up to 112 door modules can be supported and depending on the door modules, support up to 224 readers. The Clique supports “global” inputs and outputs as well as cardholder anti-pass-back without Host intervention.



Cables from Server to Switch - Ethernet  
 Cable from Switch to Work Station - Ethernet

Note: PCSC Power Supply (“P6”) - 6 amp, with battery charger.

**Cable Distances:**

- DDM to Door 500 feet
  - Reader
  - Door Lock
  - Door Status
  - Request to Exit (REX)

**Cables:**

Server to Switch                      CAT5/6

**DDM to Door**

- Reader:                      6 conductor; 22 AWG, twisted shielded
- Door Lock:                      2 conductor; 18 AWG
- Door Status:                      2 conductor; 22 AWG, twisted shielded
- REX:                      2 conductor; 22 AWG, twisted shielded



# Fault Tolerant Architecture - Multi Campus

## Dual FT Controllers / Rack



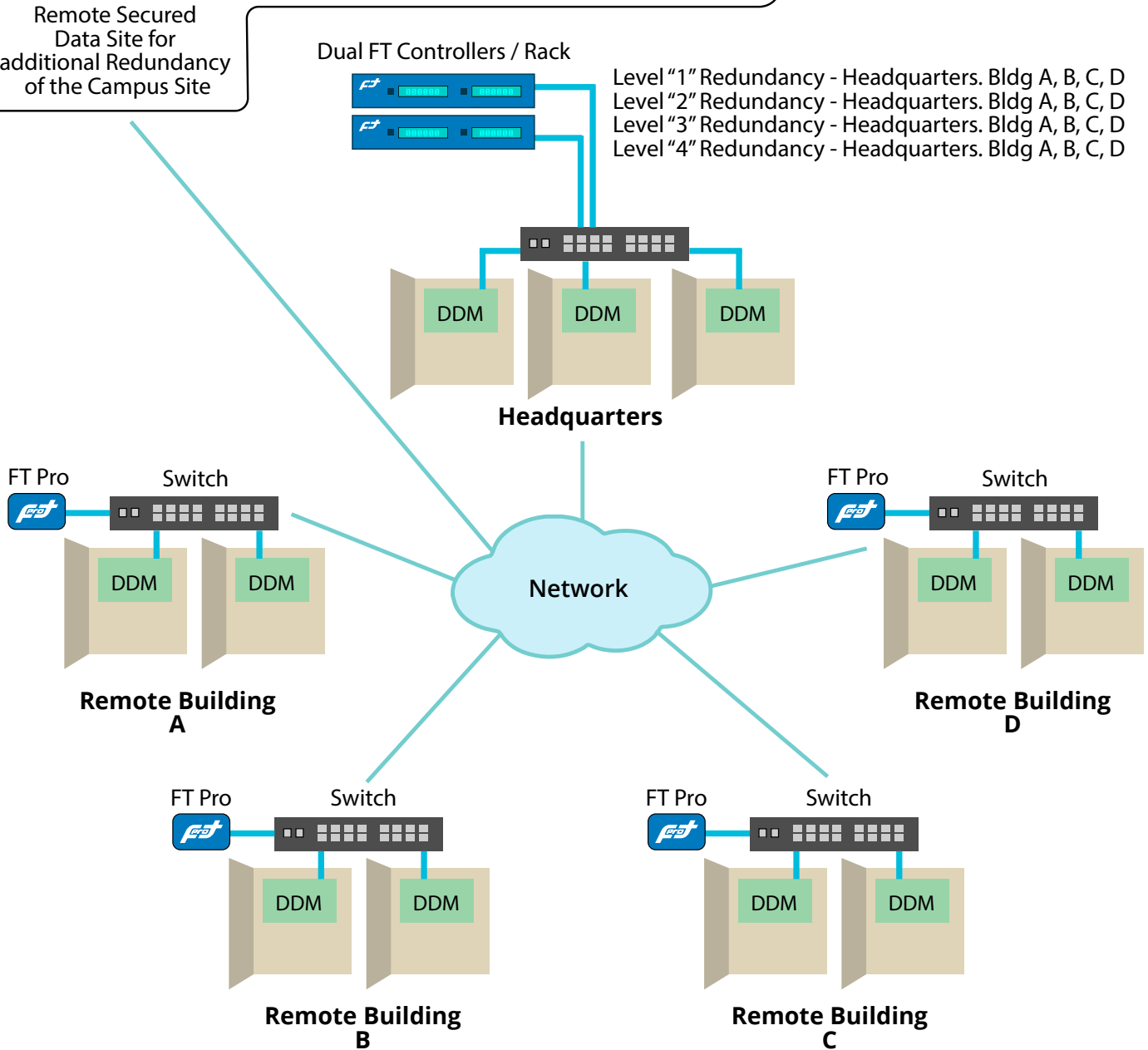
- Level "5" Redundancy - Headquarters. Bldg A, B, C, D
- Level "6" Redundancy - Headquarters. Bldg A, B, C, D
- Level "7" Redundancy - Headquarters. Bldg A, B, C, D
- Level "8" Redundancy - Headquarters. Bldg A, B, C, D

Remote Secured Data Site for additional Redundancy of the Campus Site

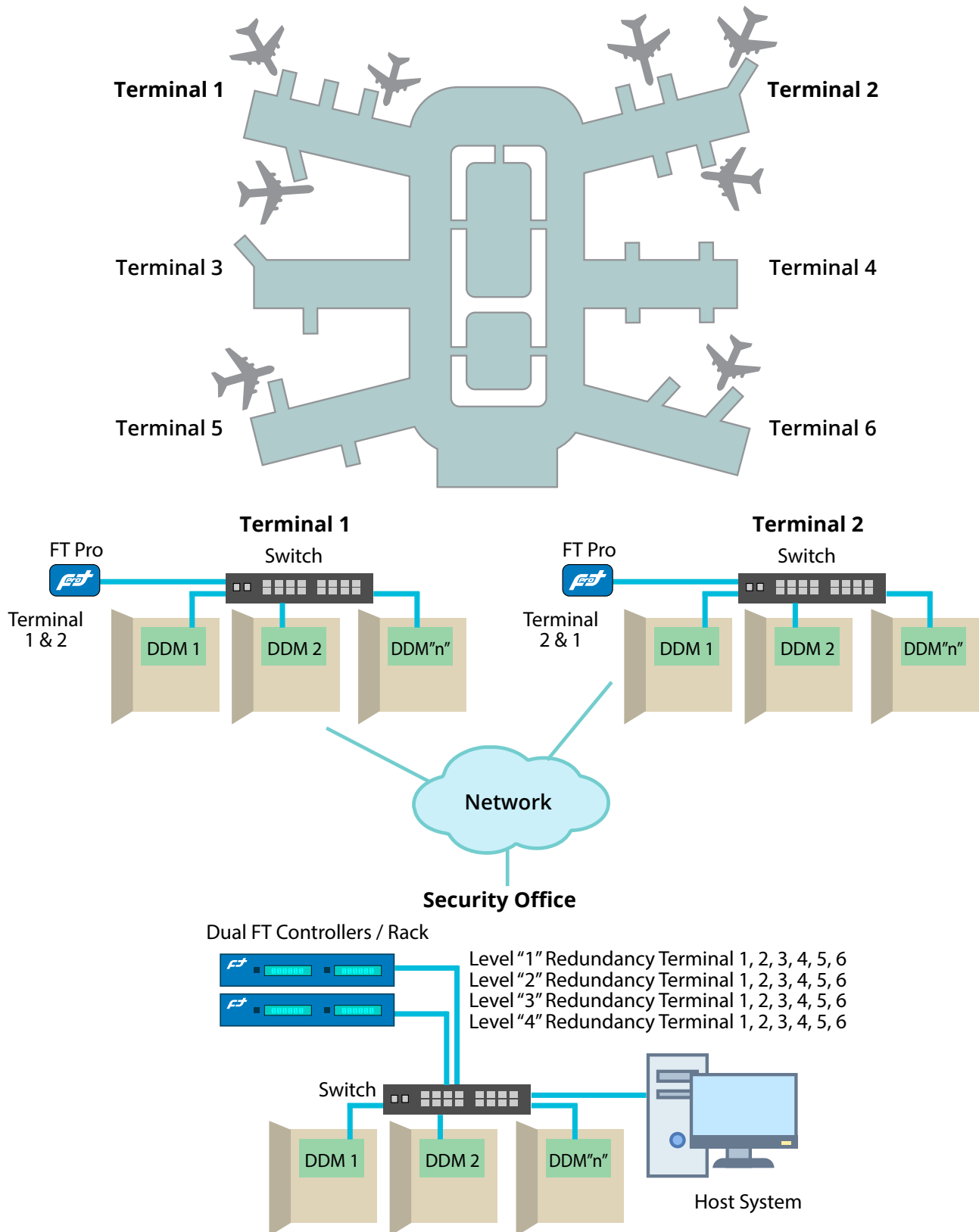
## Dual FT Controllers / Rack



- Level "1" Redundancy - Headquarters. Bldg A, B, C, D
- Level "2" Redundancy - Headquarters. Bldg A, B, C, D
- Level "3" Redundancy - Headquarters. Bldg A, B, C, D
- Level "4" Redundancy - Headquarters. Bldg A, B, C, D



# Fault Tolerant Architecture - Airports







# Specifications

Description	Details
Power:	Maximum 1.0 Amps @ 12 VDC
Recommended Power Supply:	P6 Universal Supply
Communications:	Ethernet, PoE
Relay Rating:	Form C 2.0 Amps @24 VDC
Environmental:	32°-115° F (0°- 46° C)
Humidity:	0 - 90% Non-Condensing
Enclosure / Dimensions:	16 AWG CRS enclosure with Tamper, Lock, and Key
Medium:	18"h x 11.5"w x 6"d (45.7 cm x 29.2 cm x 15.2cm)
Large:	21.6"h x 16.1"w x 5.7"d (55.4 cm x 40.9 cm x 14.5 cm)
Rackmount:	2U - 19" Rack Mount Housing with Vacuum Fluorescent Display
Weight:	(Medium) 25 lbs. (17.2 Kg), (Large) 35 lbs. (24.2 Kg), (Rackmount 2U) 15 lbs. (6.8 Kg)

## Cabling Requirements

Controller-to-Door:	Reader: 6 Conductors, Maximum 500 ft. (152 m) or 2,000 ft. (609 m), 22 AWG, stranded, twisted
Door Strike:	2 Conductors Maximum 2,000 ft. (609 m), 18 AWG, stranded, twisted
Door Status:	2 Conductors Maximum 2,000 ft. (609 m), twisted shielded
REX:	2 Conductors Maximum 2,000 ft. (609 m), 22 AWG, stranded, twisted
Controller-to-Input-Point:	2 Conductors Maximum 2,000 ft. (609 m), twisted shielded