Foxboro™ DCS

G50 Server Enclosure

PSS 41H-2G50

Product Specification

December 2024

Legal Information

The information provided in this document contains general descriptions, technical characteristics and/or recommendations related to products/solutions.

This document is not intended as a substitute for a detailed study or operational and site-specific development or schematic plan. It is not to be used for determining suitability or reliability of the products/solutions for specific user applications. It is the duty of any such user to perform or have any professional expert of its choice (integrator, specifier or the like) perform the appropriate and comprehensive risk analysis, evaluation and testing of the products/solutions with respect to the relevant specific application or use thereof.

The Schneider Electric brand and any trademarks of Schneider Electric SE and its subsidiaries referred to in this document are the property of Schneider Electric SE or its subsidiaries. All other brands may be trademarks of their respective owner.

Schneider Electric does not grant any right or license for commercial use of the document or its content, except for a non-exclusive and personal license to consult it on an "as is" basis.

Schneider Electric reserves the right to make changes or updates with respect to or in the content of this document or the format thereof, at any time without notice.

To the extent permitted by applicable law, no responsibility or liability is assumed by Schneider Electric and its subsidiaries for any errors or omissions in the informational content of this document, as well as any non-intended use or misuse of the content thereof.

Overview

The EcoStruxure Foxboro DCS G50 server enclosure is a general purpose unit designed for housing compatible servers, switches, and related equipment on shelves or on its 19-inch racks. The G50 enclosure is available as a vented enclosure only.

The enclosure's rails provide 42 U of available vertical mounting space for rack-mounted or other equipment. The upper and lower halves of the enclosure are customizable, and may be either left empty or populated with various equipment configurations:

- Up to two sliding shelves; shelves can support the Windows® based tower workstations, such as the Model H92 workstation, depending on the size and ventilation requirements of the equipment.

  ⚠CAUTION

  RISK OF INJURY OR EQUIPMENT DAMAGE

  When using sliding shelves, only pull out one shelf at a time to help prevent the enclosure from becoming unbalanced.

  Failure to follow these instructions can result in injury or equipment damage.

- Equipment attached directly to the rails, such as the control network switches, depending on the sizing, power, cabling, and ventilation requirements of the equipment.

  NOTE: Typically, workstations and servers are installed for access from the enclosure front, while switches are installed for access from the enclosure rear.

The G50 enclosure is a free-standing, floor mounted unit with a NEMA 1 rating for location in protected indoor environmental areas. No fans are provided with this enclosure because all enclosed equipment (servers, switches, and so forth) are assumed to have their own fans. The G50 enclosure does not have an IP rating because air flow is allowed through ceiling, floor, doors, and all walls.

Features

- 600 w x 1,000 d x 2,000 mm (23.6 w x 39.4 d x 78.7 in) high enclosure, available as vented only
- Front and rear accessible 19-inch system rails, with 42 U of available vertical mounting space (1U = 44 mm (1.75 in))
- Enclosure front access with left- or right-side mounted door - rear access with half-width doors
- Main power entry includes 16 A, Type D, double pole circuit breakers for 120/240 V AC systems
- Enclosure selection for use in indoor NEMA 1 rated (not IP rated) temperature-controlled environments
- Enclosure can accommodate:
  - Up to two sliding shelves per enclosure for Foxboro DCS Standard Server (H90, H94, V91, V95) or Standard Workstations (H92, D96); each shelf with up to two pairs of power strips (16 A max/10 A per socket)
  - Rack-mounted equipment fixed directly to the 19-inch rails, such as the control network switches, depending on sizing, power, cabling, and ventilation requirements
- Compact design to minimize use of floor space with both front and rear access that allow maximum density of enclosures in a control room environment
- Bottom or top cable entry for power wiring, but can be customer configured for simultaneous top and bottom cable entry
- Up to four redundant power strips (four primary and four secondary) per enclosure (eight total)
- Conveniently placed eyebolts for transporting and lifting the enclosures
- A 100 mm (3.9 in) plinth — total enclosure height of 2,160 mm (85.0 in)
- Comfort handles with push button/keylocks
- Standard safety grounding studs

Sample Configurations

The G50 enclosure can fit a variety of servers, switches and their associated power supplies and support equipment.

These examples are provided as viable examples for configurations in this enclosure.

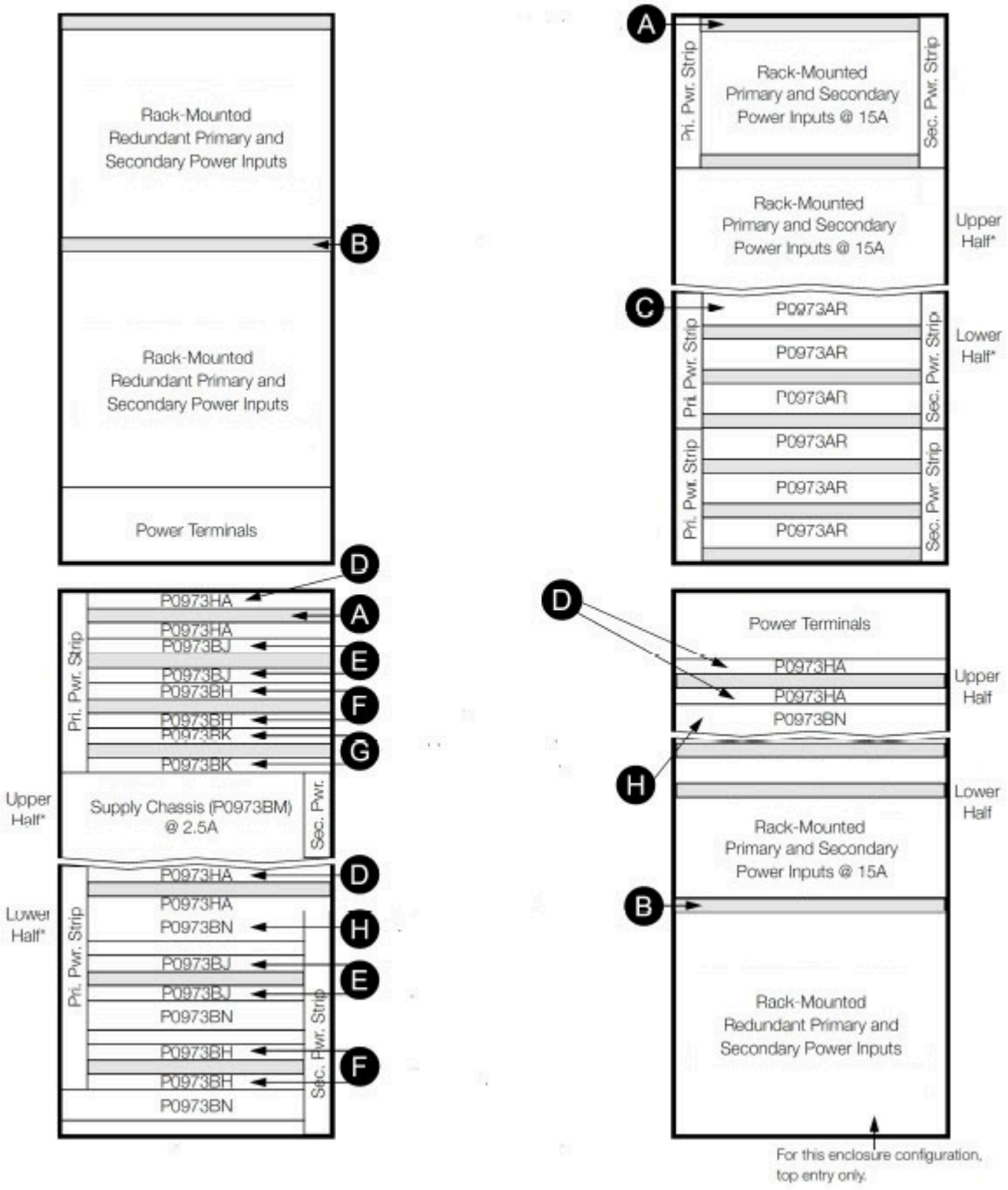
- Figure 1 shows configurations for the control network switches in the G50 enclosure.

  All switches must be installed in the G50 enclosure according to the site requirements listed in their documentation. See Site Planning for Switches, page 18 to locate the appropriate documentation.
- Figure 2 and Figure 3 show configurations for the servers or workstations in the G50 enclosure.

  In these images, the power strips are shown on the sides of the switches/servers to represent their association with the switches/servers on their half of the enclosure. In the field, power strips are mounted on front or rear side of the enclosure based on the configuration.

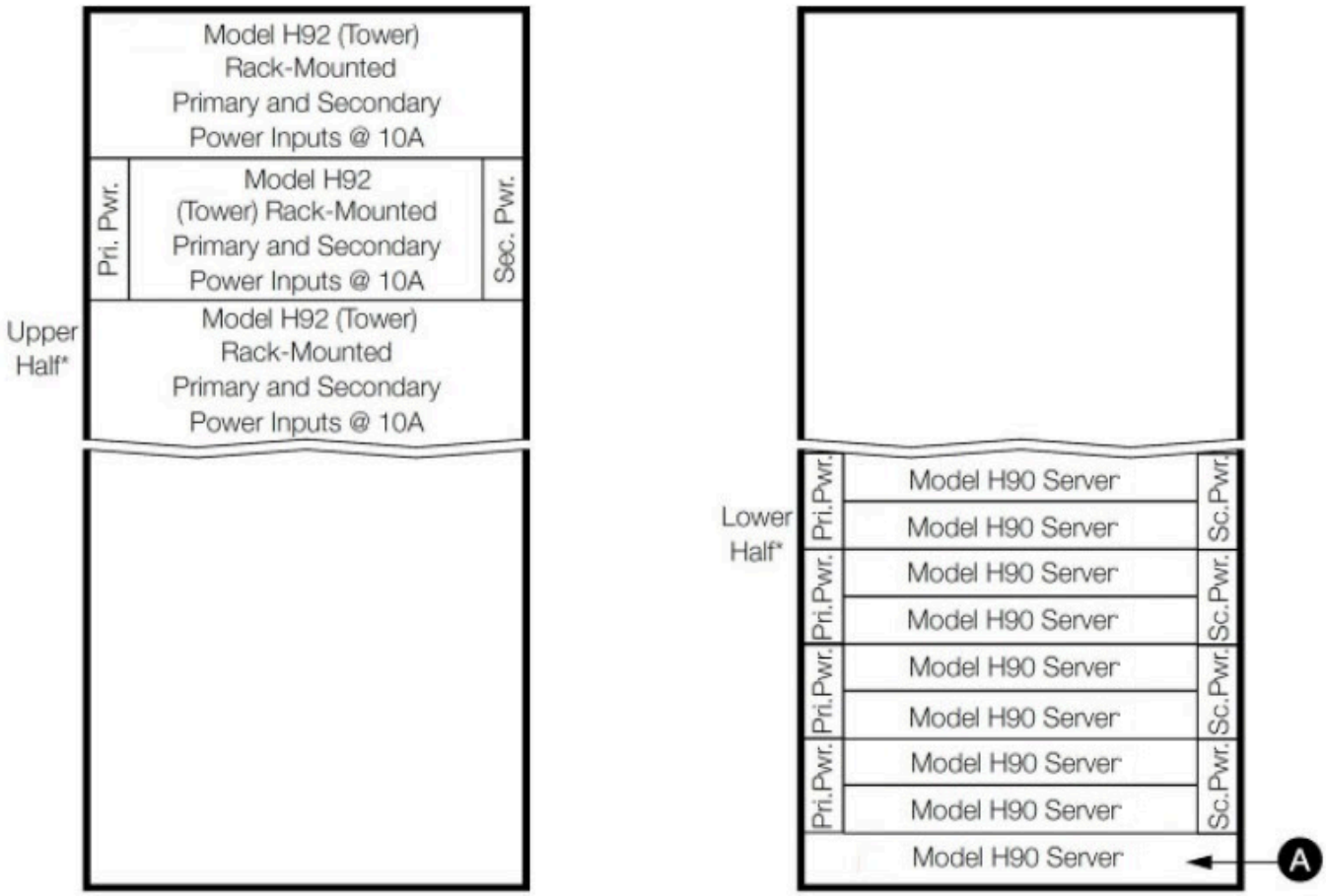
  The images show an example of H90 server placement inside the enclosure. The same configurations can be used for the H94, V91, and V95 servers.

Figure 1 - Example Configurations for Foxboro DCS Control Network Switches in G50 Enclosure (Part 1)



A	Wire Management Area	E	24-Port Fiber Managed Switch (P0973BJ)
B	2U space above equipment	F	24-Port Copper Managed Switch (P0973BH)
C	Rack-Mounted Primary and Secondary Power Inputs @5A	G	8-Port Copper/8-Port Fiber Managed Switch (P0973BK)
D	24-Gigabit (SFP) Port Managed Switch (P0973HA)	H	2-Slot Redundant Power Supply Chassis @ 2.5A (P0973BN)

Figure 2 - Example Configurations for Foxboro DCS Workstations and Servers in G50 Enclosure (Part 1)

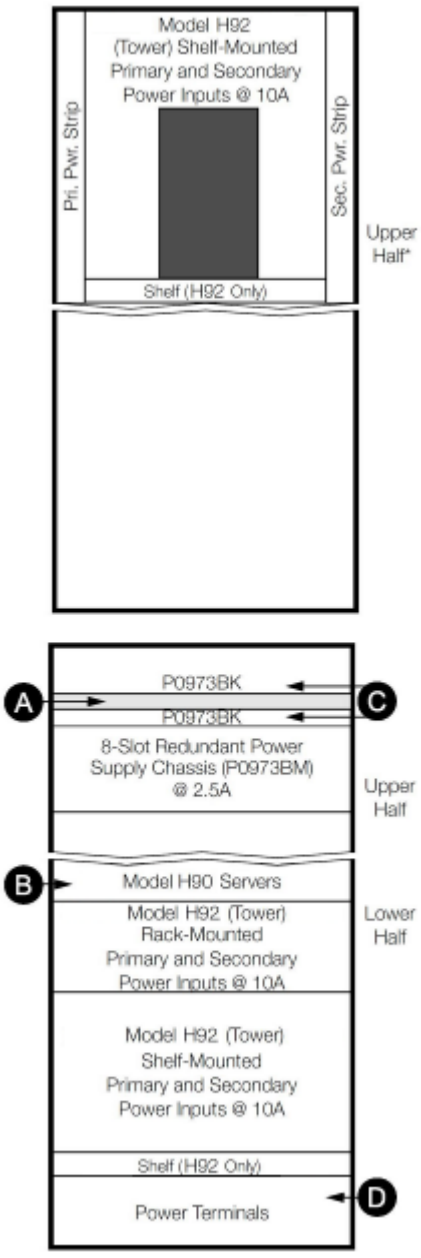


A	Wire Management Area

* Upper and lower half equipment configurations are interchangeable where specified (*). A G50 enclosure can have no more than four primary and four secondary power strips.

NOTE: All part numbers are subject to change. Other equipment can be installed, per its specifications.

Figure 3 - Example Configurations for Foxboro DCS Workstations and Servers in G50 Enclosure (Part 2)



A	Wire Management Area	C	8-Port Copper/8-Port Fiber Managed Switch (P0973BK)
B	Model H90 Servers Rack-Mounted Primary and Secondary Power Inputs @8A	D	For this enclosure configuration, bottom entry only

* Upper and lower half equipment configurations are interchangeable where specified (*).

NOTE: You must follow the installation guidelines provided in the switches' documentation. All part numbers are subject to change. Other equipment can be installed, per its specifications.

Baying G50 Enclosures

Multiple G50 enclosures can be installed connected to one another to maximize the use of floor space and ease of cabling. The enclosures can be bayed together using Kit P0931VV. For more information, see *Foxboro Evo™ Process Automation System and Triconex® Enclosures and Mounting Structures Site Planning and Installation User's Guide* (B0700AS).

National Electrical Manufacturers Association (NEMA) Rating

The metal enclosures provide the outer layer of protection for the equipment contained within to support a NEMA 1 rating. When the equipment includes covers or layers built into the equipment itself, a minimum of contaminants in the plant environment reaches the equipment, thus greatly extending its life.

The enclosures support convenient top or bottom cable entry for power wiring.

Equipment Mounting

All equipment installed in this enclosure must be attached to the 19-inch rails directly or indirectly via a sliding shelf.

NOTICE

POTENTIAL EQUIPMENT DAMAGE

- All equipment must be able to fit within the physical constraints of the enclosure with sufficient space for air flow and associated cabling, including cable routes, sufficient bend radius and dressing.
- All servers, switches, and similar equipment that require air intake must be installed to maintain a consistent air flow in a single direction in the enclosure. The air intakes for this equipment must face the same direction, and their exhausts must face the same direction to help ensure that no hot exhaust from one piece of equipment enters in the air intake of another.
- Verify that the front and rear doors on the enclosure allow for unrestricted air flow, and are not obstructed by objects such as print pockets.

Failure to follow these instructions can result in equipment damage.

Input Power Cabling

The enclosures can be configured for bottom cable entry or top cable entry or modified by the customer for simultaneous top and bottom cable entry.

For the top cable entry version, customer power feeds enter through customer-configured cable glands.

For the bottom entry version, the power cables enter through removable gland plates, located at the bottom (inside) of the enclosure. The plates can be removed, drilled, or punched for cable routing.

Power and Grounding

Power wiring to the enclosure is routed through the bottom (through removable gland plates) or top of the enclosure. Customer-supplied dual power input feeds terminate at circuit breaker assemblies.

All enclosure structural elements are integrally grounded by the enclosure design to meet the appropriate industry regulations and standards.

Grounding

Two M8 studs (one for each enclosure side) provide a central ground point and dedicated grounding points when baying enclosures together.

Power Distribution

Each enclosure is available with a dedicated assembly for customer redundant main power. Power distribution is provided by 16 A, Type D, double pole circuit breakers for 120/240 VAC systems.

The enclosure can be ordered without these power distribution circuit breakers when the customer has requirements for power distribution specific to regional electrical codes.

Figure 4 - G50 Server Enclosure - Top View - Rails (Typical Dimensions Shown)

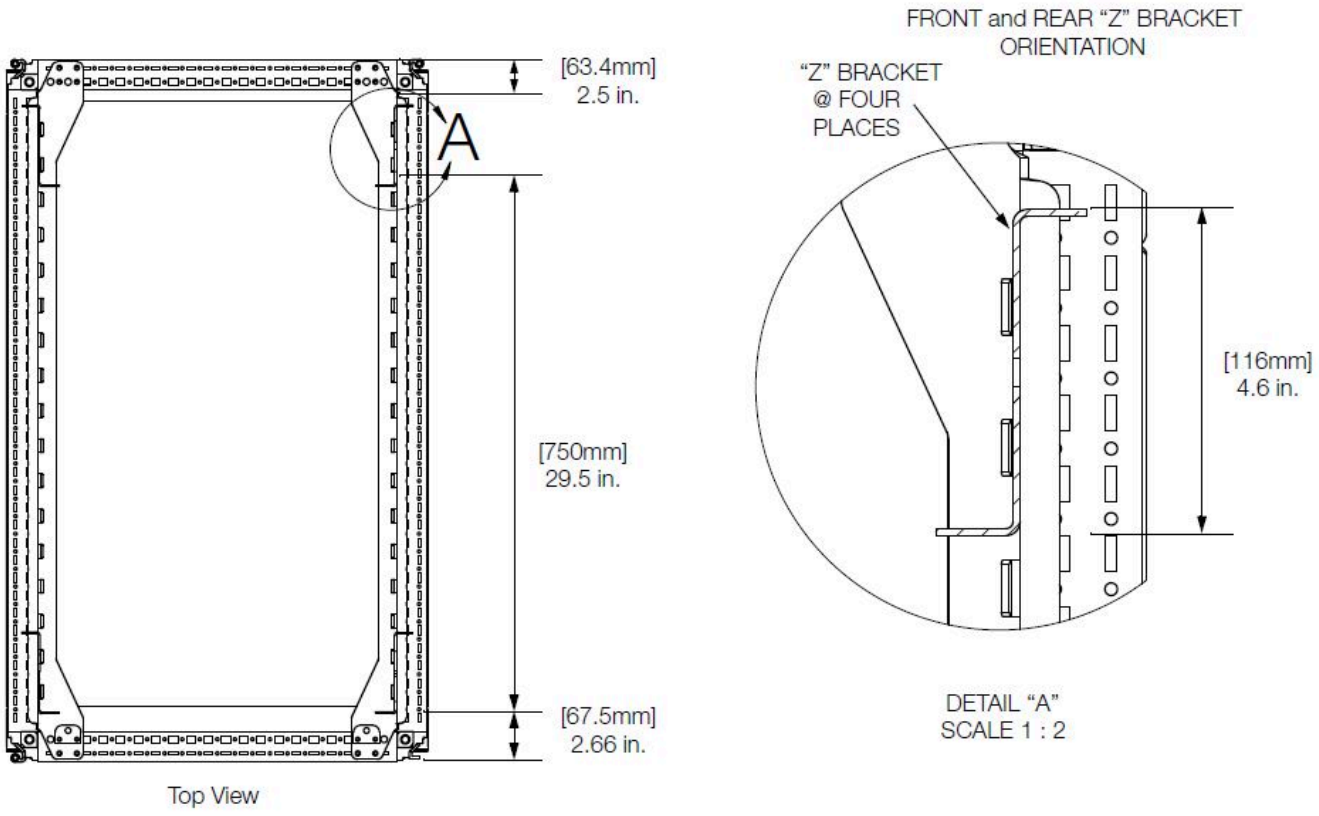
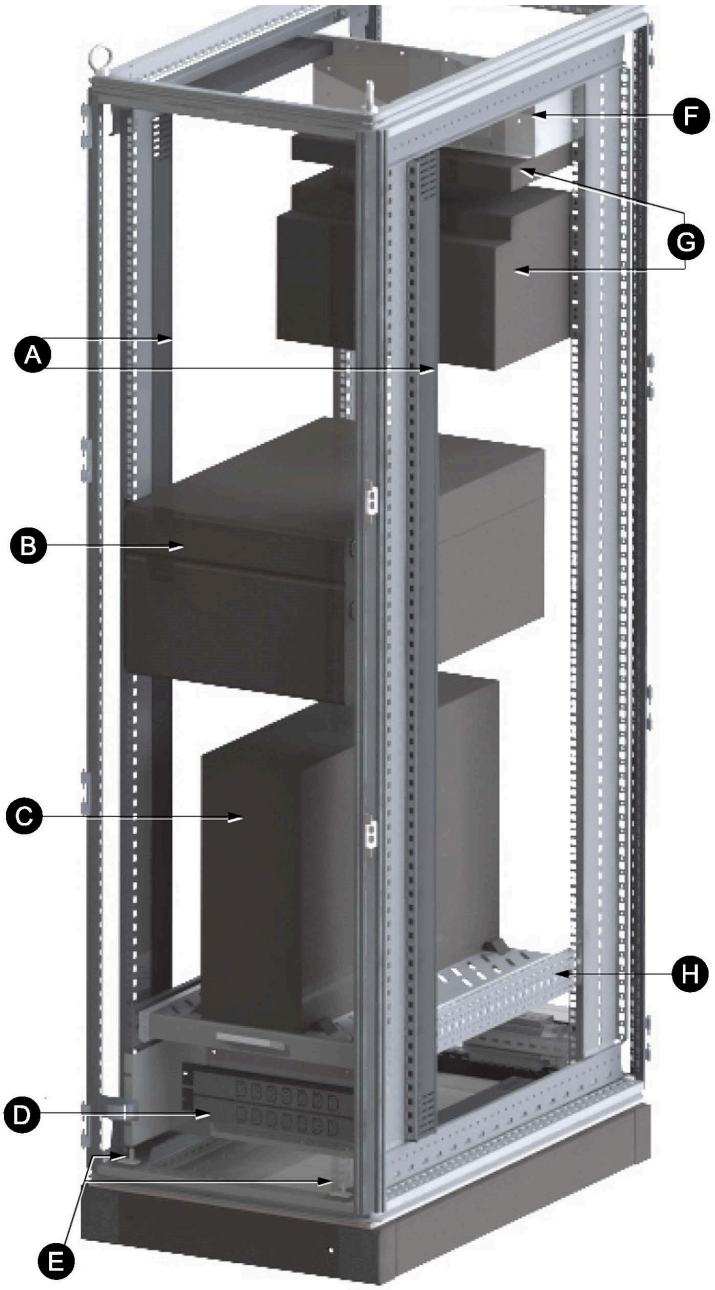
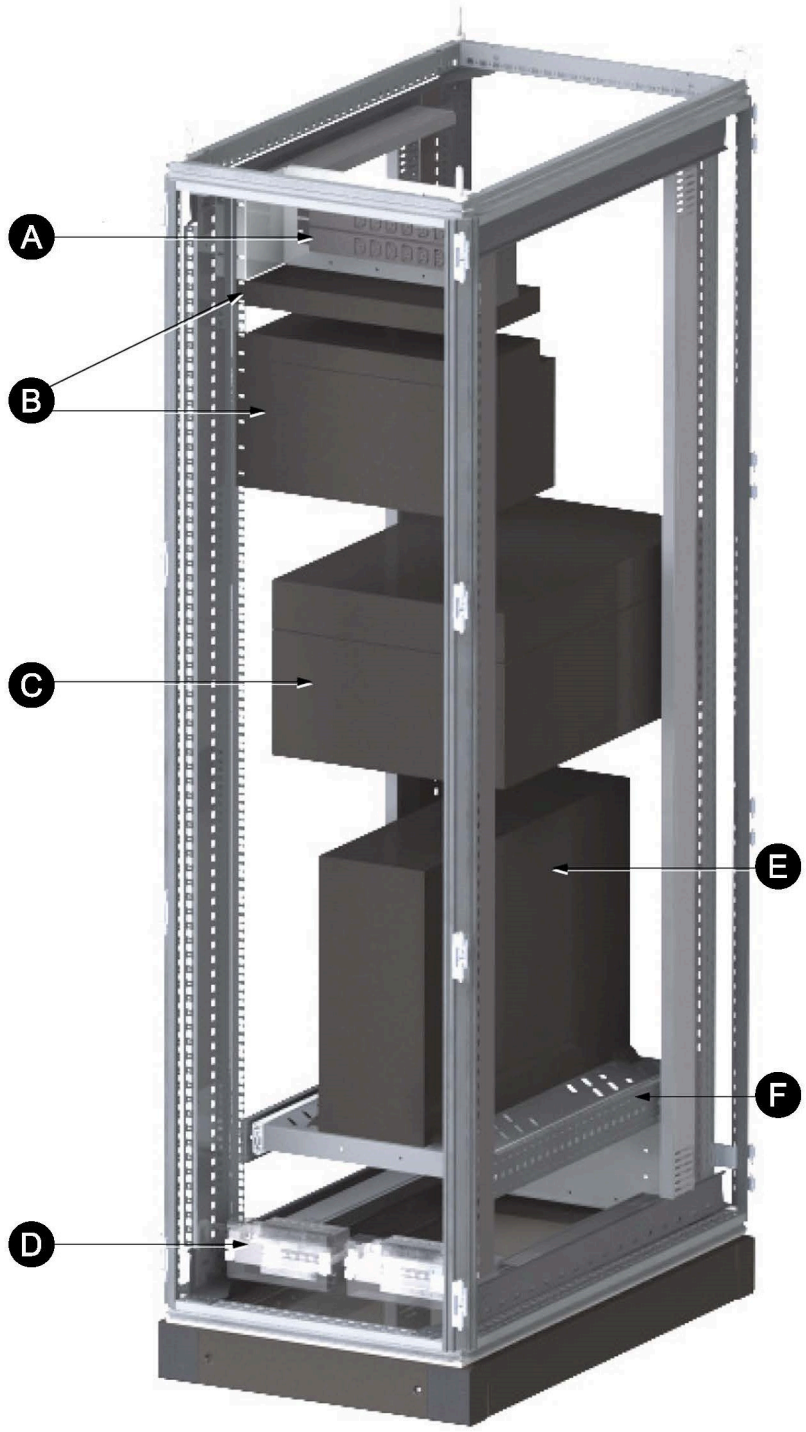


Figure 5 - G50 Server Enclosure With Server, Bottom Entry, Front View



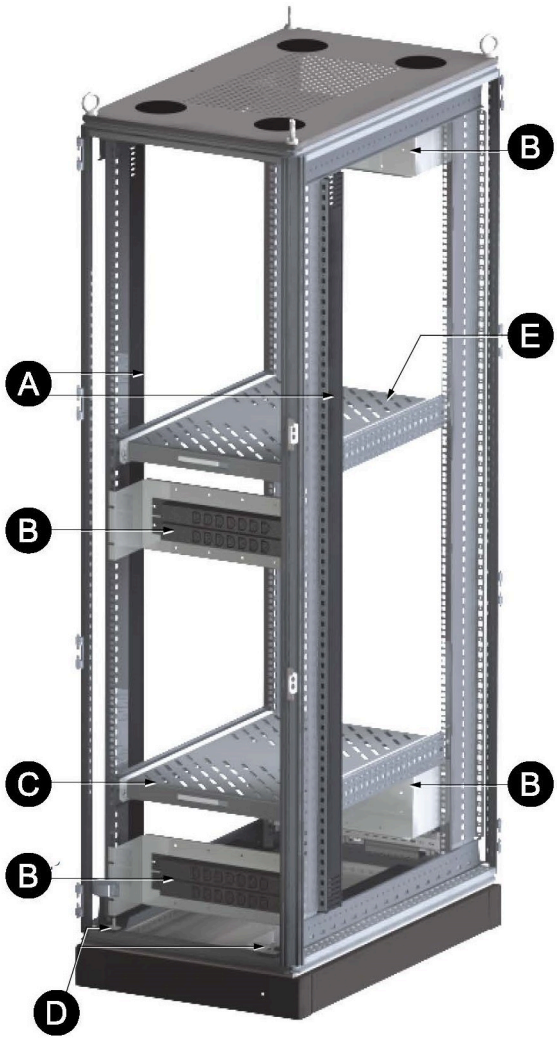
A	25 mm x 75 mm (1 in x 3 in) Wire Duct for AC Power Distribution	E	Protective Ground Studs
B	(Representative) Tower PC Server/Workstation Form Factor Secured to Rails (Not Supplied)	F	Redundant AC Power Strip Outlets (IEC)
C	(Representative) Tower PC Server/Workstation Form Factor (Not Supplied)	G	(Representative) Foxboro-Provided Switch Form Factor (Not Supplied)
D	Redundant AC Power Strip Outlets (IEC)	H	Lower Single Sliding Shelf Option

Figure 6 - G50 Server Enclosure With Server, Bottom Entry, Rear View



A	Redundant AC Power Strip Outlets (IEC)	D	Primary and Secondary Power Circuit Breaker Assemblies
B	(Representative) Foxboro-Provided Switch Form Factor (Not Supplied)	E	Representative Tower PC Server/Workstation Form Factor (Not Supplied)
C	(Representative) Tower PC Server/Workstation Form Factor Secured to Rails (Not Supplied)	F	Lower Single Sliding Shelf Option

Figure 7 - G50 Server Enclosure, Empty, Bottom Entry, Front View

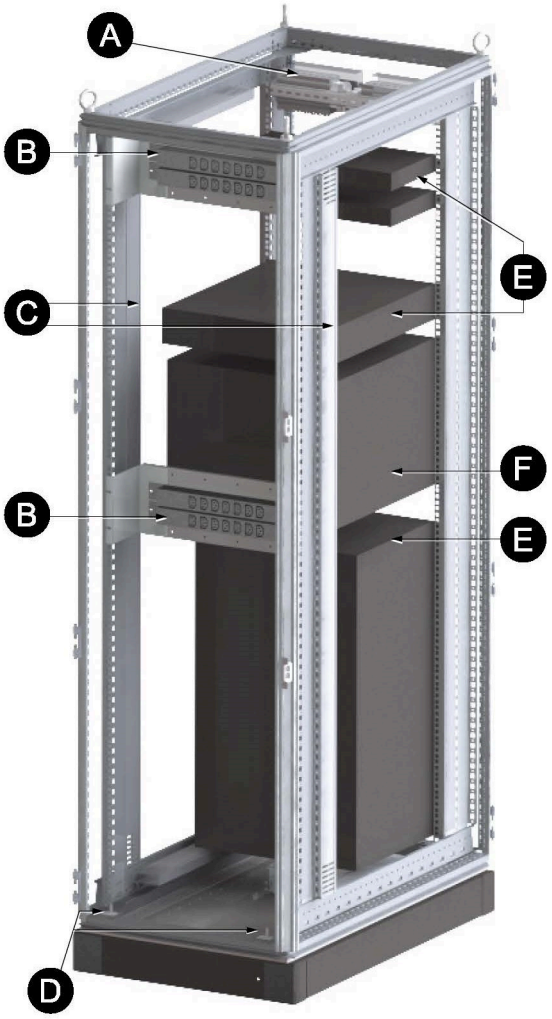


A	25 mm x 75 mm (1 in x 3 in) Wire Duct for AC Power Distribution
B	Redundant AC Power Strip Outlets (IEC)
C	Lower Single Sliding Shelf Option
D	Protective Ground Studs
E	Upper Sliding Shelf Option

Figure 8 - G50 Server Enclosure, Empty, Bottom Entry, Rear View

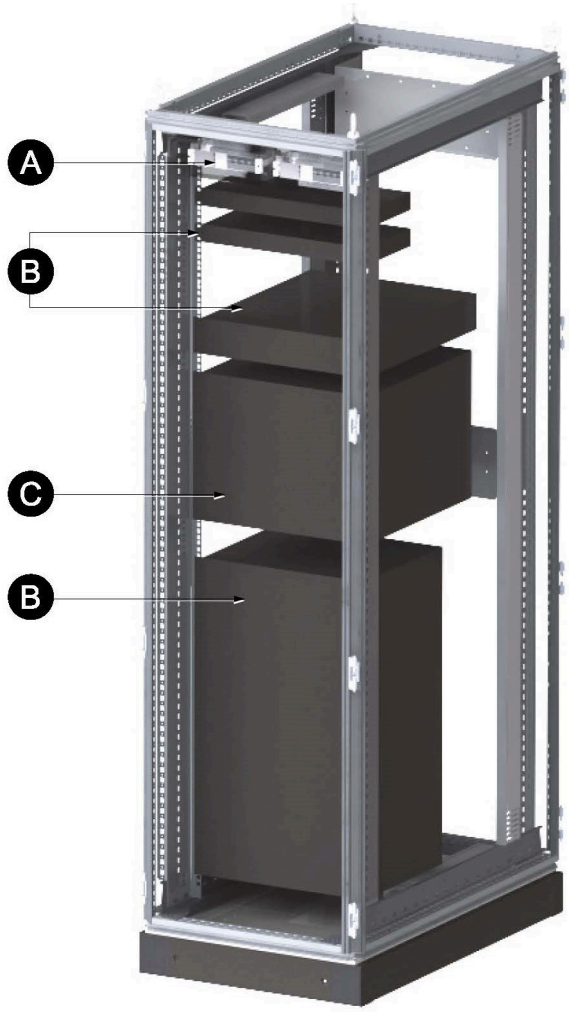
A	Redundant AC Power Strip Outlets (IEC)
B	Primary and Secondary Power Circuit Breaker Assemblies

Figure 9 - G50 Server Enclosure With Server, Top Entry, Front View



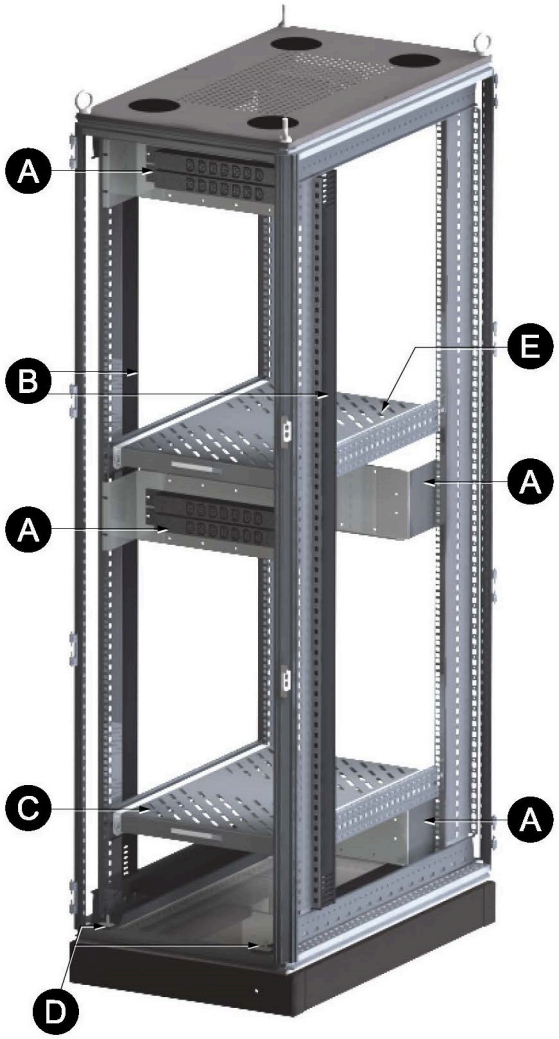
A	Primary and Secondary Power Circuit Breaker Assemblies
B	Redundant AC Power Strip Outlets (IEC)
C	25 mm x 75 mm (1 in x 3 in) Wire Duct for AC Power Distribution
D	Protective Ground Studs
E	(Representative) Foxboro-Provided Switch Form Factor (Not Supplied)
F	(Representative) Tower PC Server/Workstation Form Factor Secured to Rails (Not Supplied)

Figure 10 - G50 Server Enclosure With Server, Top Entry, Rear View



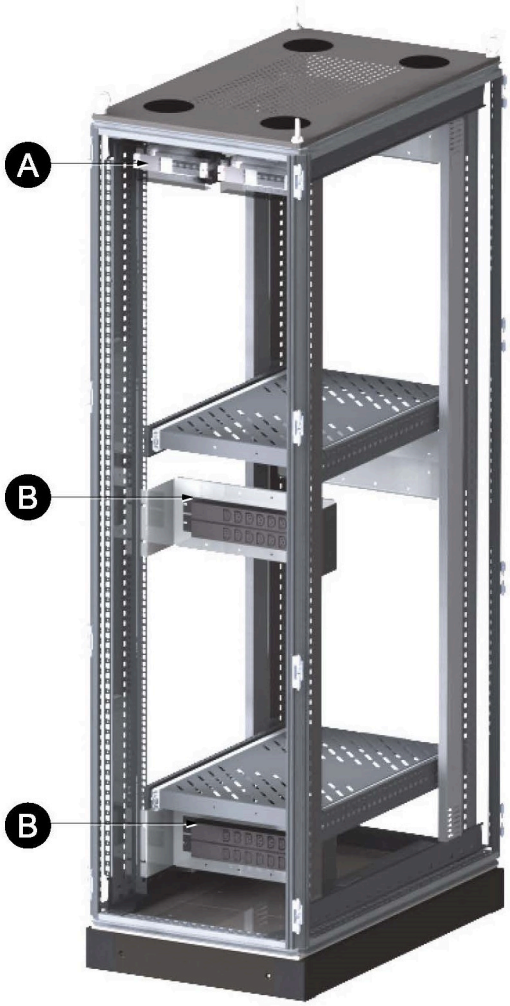
A	Primary and Secondary Power Circuit Breaker Assemblies
B	(Representative) Foxboro-Provided Switch Form Factor (Not Supplied)
C	(Representative) Tower PC Server/Workstation Form Factor Secured to Rails (Not Supplied)

Figure 11 - G50 Server Enclosure, Empty, Top Entry, Front View



A	(Representative) Tower PC Server/Workstation Form Factor Secured to Rails (Not Supplied)
B	(Representative) Tower PC Server/Workstation Form Factor Secured to Rails (Not Supplied)
C	(Representative) Tower PC Server/Workstation Form Factor Secured to Rails (Not Supplied)
D	(Representative) Tower PC Server/Workstation Form Factor Secured to Rails (Not Supplied)
E	(Representative) Tower PC Server/Workstation Form Factor Secured to Rails (Not Supplied)

Figure 12 - G50 Server Enclosure, Empty, Top Entry, Rear View



A	Primary and Secondary Power Circuit Breaker Assemblies
B	Redundant AC Power Strip Outlets (IEC)

Site Planning for Switches

When planning a G50 enclosure with switches installed, you must verify that the site requirements for the switches are maintained within the enclosures. These site requirements are in the documentation provided by Foxboro.

See *EcoStruxure™ Foxboro™ DCS Control Network Ethernet Equipment* (PSS 41H-7NWEQUIP) for the most up-to-date list of switches offered and their associated Foxboro documentation.

Enclosure Options

Feature	Availability
Base Enclosure	Vented NEMA 1 rated (not IP rated) enclosure (no fans)
Enclosure Access	Front and rear access
Front Door	Solid front door with inlet vents
Front Door Mounting	Universal mounting for left and right-hand door swing (left-hand is default)
Rear Door Mounting	Half-width door with inlet vents
Cable Entry	Bottom cable entry or top cable entry
Sidewalls	Options configurable based on baying requirements
Equipment Supported (In Upper or Lower Half of Enclosure)	Rack-mounted equipment fixed directly to the rails (no support provided)
Power Cord Sets (In Upper or Lower Half of Enclosure)	Two, four, six, or eight IEC-320 male/female cord sets
Enclosure Lighting	None
Grounding	Two protective ground studs
Main Power	• 100-250 VAC, 50-60 Hz input redundant power with 16 A, Type D, double pole circuit breakers, located in either the top or bottom of the enclosure • Customer configured power entry (no provision for powering devices)

Functional Specifications

Enclosure	The enclosures are free-standing, floor mounted, steel industrial enclosures containing DIN rail mounted compatible servers, the control network switches and related equipment, as discussed in this document.

Environmental Specifications

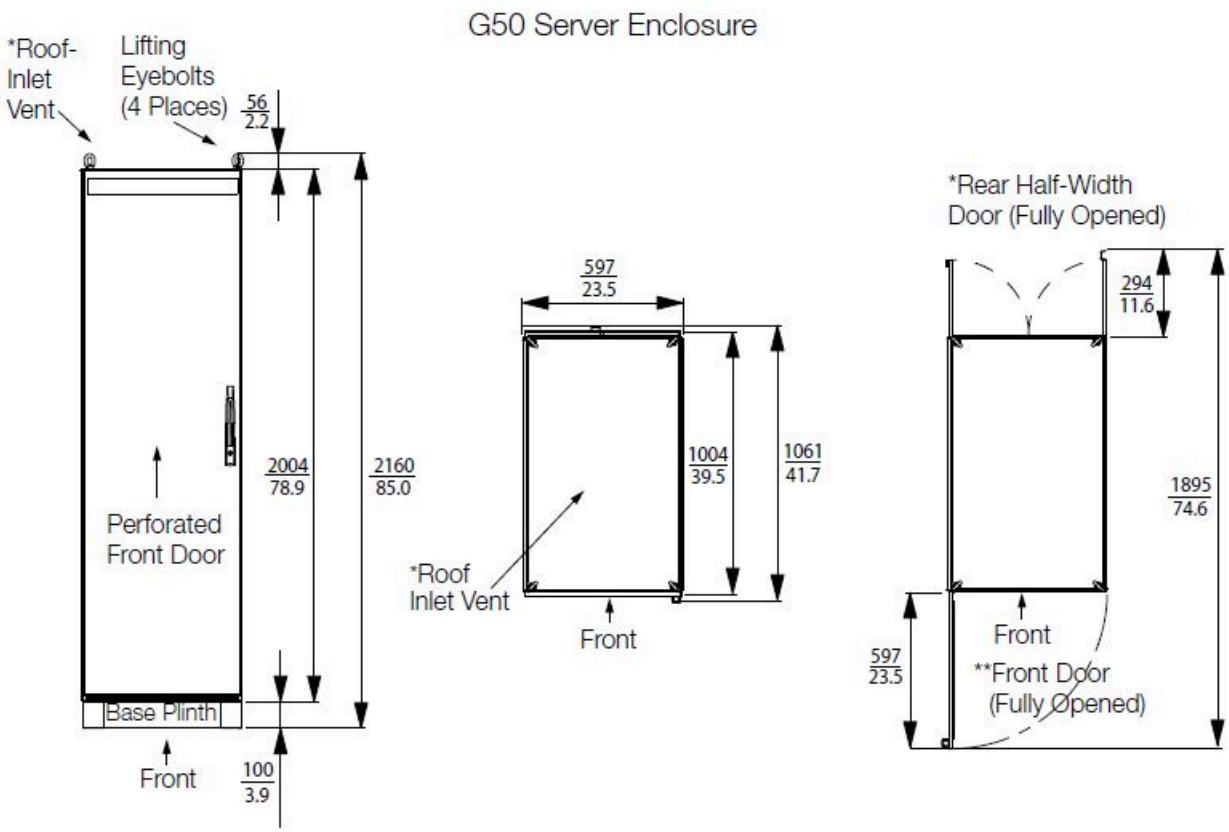
	Operating	Storage
Temperature	Dependent on equipment loaded in the enclosure. See the specifications listed in the equipment's Product Specification Sheet or other documentation. • Thermal Wattage Limits (for Non-Adjoined Enclosures)(a, page 19): Dissipation of 1,000 W generates a +5°C (9°F) heat rise	-40 to 70°C (-40 to 158°F)
Relative Humidity	5 to 95% (noncondensing)	
National Electrical Manufacturers Association Ratings	Not IP rated/NEMA 1	
Acoustic Noise Level	Ambient/Ambient	
Agency Certification	Empty enclosure is UL and UL-C approved. Enclosure meets all applicable European Union directives and is CE compliant. Final installed enclosures populated with your equipment should be inspected by your local UL/CSA committee, or other local safety governing organization if required. A complete listing of certifications is available from enclosure vendor. For installed Foxboro DCS equipment, see *EcoStruxure™ Foxboro™ DCS Standard and Compact 200 Series I/O - Agency Certifications* (PSS 41H-2CERTS).	
Area Designation	Vented for general purpose areas	
(a) The effective heat rise should be added to the planned ambient temperature, and the result should be lower than the rated maximum ambient temperature of the equipment to be installed.		

Physical Specifications

Weight	The weight of the enclosure is dependent upon the particular configuration and equipment selected. Consult with a Foxboro representative if precise weight figures are required. • Enclosure (Max. Configuration): 600 mm wide x 1,000 mm deep (23.6 in wide x 39.4 in deep) - 234 kg (516 lb) • Side Panel: 2,000 mm high x 1,000 mm deep (78.7 in high x 39.4 in deep) - 6 kg (14 lb)
Mounting	Floor **⚠CAUTION** **RISK OF INJURY OR EQUIPMENT DAMAGE** To help prevent injury, this enclosure must be bolted down. See *Foxboro Evo™ Process Automation System and Triconex® Enclosures and Mounting Structures Site Planning and Installation User's Guide* (B0700AS). **Failure to follow these instructions can result in injury or equipment damage.**
Construction	Material: • Doors: Sheet steel, 2.0 mm (14 ga) • Frame, Roof, Side Panels, Gland Plates: Sheet steel, 1.5 mm (16 ga) • Base/Plinth: Sheet steel and plastic Finish: • Frame: Dipcoat-primed, RAL 7044 smooth • Roof, Side Panels, Doors: Dipcoat-primed, powder-coated, RAL 7035 (light gray) textured • Base/Plinth: Dipcoat-primed, RAL 7022 (umbra gray) smooth, plastic cover caps RAL 9005 (jet black) • Gland Plates and Internal Hardware: Zinc-plated, passivated
Cable Entry	• Bottom through gland plate(s) • Top through customer cutouts in enclosure top

Grounding	• Roof, Sidewalls, Gland Plates: Automatic potential equalization built in • Front and Rear Doors: Dedicated 4 mm² (11 ga) ground strap to enclosure frame • Enclosure: Two protective ground M8 studs (one for each enclosure side)
Power Input Terminals	Circuit Breakers: • Type: Compression • Wire Size: ◦ Solid: Up to 6 mm² (3 AWG) ◦ Stranded: Up to 4 mm² (8 AWG)
Enclosure Equipment Cabling	Universal mounting straps are supplied for attaching, routing, and strain relieving of enclosure equipment cables. Each strap supports up to a 75 mm (3 in) diameter cable bundle.

Dimensions - Nominal



Typical dimensions shown.

* Vented enclosures only — doors and roofs are perforated to allow air flow.

** Front doors are factory-configured for left-hand swing, but can be reconfigured at site for right-hand swing.

Related Documents

Topic	Document
Control Network	*EcoStruxure™ Foxboro™ DCS Control Network Ethernet Equipment* (PSS 41H-7NWEQUIP)
Enclosures	*EcoStruxure™ Foxboro™ DCS G-Series Enclosures Overview* (PSS 41H-2GOV)
	Foxboro Evo™ Process Automation System and Triconex® Enclosures and Mounting Structures Site Planning and Installation User's Guide (B0700AS)
Environment	*Environmental Conditions for Process Measurement and Control Systems: Airborne Contaminants*, ISA-S71.04-1985 (not Foxboro-supplied)
Servers and Workstations	*EcoStruxure™ Foxboro™ DCS Model D96 (Dell P5860) Workstation for Windows Operating Systems* (PSS 41H-4D96)
	EcoStruxure™ Foxboro™ DCS Model H90 Server for Windows Operating Systems (PSS 41H-4H90)
	EcoStruxure™ Foxboro™ DCS Model H92 (HP Z4 G4) Workstation for Windows Operating Systems (PSS 41H-4H92)
	EcoStruxure™ Foxboro™ DCS Model H94 Server for Windows Operating Systems (PSS 41H-4H94)
	EcoStruxure™ Foxboro™ DCS V91 Virtualization Server for Windows Operating Systems (PSS 41H-4V91)
	EcoStruxure™ Foxboro™ DCS Model V95 Virtualization Server for Windows Operating Systems (PSS 41H-4V95)
Switches	*Foxboro Evo™ A-Series (P0973BH/P0973BJ/P0973BK) Switches, Hardware and Software Configuration Instructions* (B0700CH)
	EcoStruxure™ Foxboro™ DCS C-Series Switches and B-Series Switches for the Control Network Installation and Configuration Guide (B0700CJ)
	Foxboro Evo™ The MESH Control Network Hardware Instructions for N-Series Switches (P0973AR/P0973AS/ P0972YE) (B0700CK)

⚠ **WARNING**: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov/.

Schneider Electric Systems USA, Inc.
70 Mechanic Street
Foxboro, Massachusetts 02035–2040
United States of America

Global Customer Support: https://pasupport.se.com

As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

PSS 41H-2G50, Rev C