EcoStruxure™

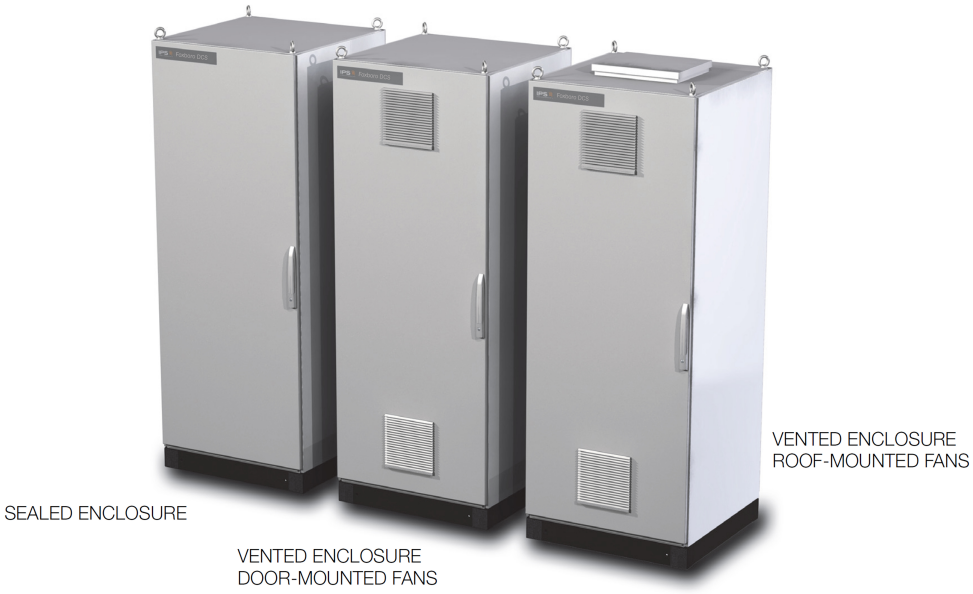
Foxboro™ DCS

G61 Tricon Termination Enclosure

PSS 41H-2G61

Product Specification

January 2020



Schneider Electric™

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Legal Information

Overview

The G61 EcoStruxure™ Triconex™ Tricon termination enclosure is specifically designed for housing Triconex termination devices and additional customer-supplied terminal blocks for marshalling. This enclosure may accommodate the termination of Tricon modules which are housed in a G60 Tricon System Enclosure or G62/G72 Tricon System and Termination Enclosure.

The G61 enclosure is available as a vented or sealed enclosure. It can be configured with:

- Up to seven vertical DIN rails for mounting of Triconex termination devices and additional customer-supplied terminal blocks for marshalling
- Redundant power supplies (480 W or 960 W 24 V DC power supplies) for field power

The G61 vented enclosure is a free-standing, floor mounted unit with an IP43/55 rating for location in mild (ordinary) environmental areas.

The G61 sealed enclosure is a free-standing, floor mounted unit, with options for either an IP55 or IP66 rating for location in harsh environments.

Sealed enclosures with an IP66 rating provide a higher level of protection from airborne contamination.

> **NOTE:** In regions that require EMC compliance, you must order the EMC compliance option if the Triconex termination devices for Tricon modules SMM or SRXM will be installed in this enclosure. Without these termination devices, the enclosure already fulfills the requirements for EMC compliance.

An optional door intrusion monitoring switch is available for each door on this enclosure. Each switch is prewired to a set of alarm status terminal blocks.

The G61 enclosure can be installed bayed or adjoined to other Triconex enclosures to maximize the use of floor space and ease of cabling. The enclosures can be bayed together using third-party kits.

This enclosure and its configurations have been tested and qualified by Foxboro for use with the Tricon equipment.

Features

- Up to seven 1,800 mm (70.8 in) vertical DIN rails for mounting of termination assemblies (TAs) and terminal blocks for marshalling, to provide a total of 12.6 m (41.3 ft) of linear rail space
- Vented or sealed enclosure selection for use in ordinary (IP 43/55) or harsh (IP 55/66) rated environments
- EMC compliant version available — vented (IP43/55) with roof-mounted fans
- Option for redundant 480 W (P0923VD) or 960 W 24 V DC field power supplies
- Main power entry includes disconnect terminal blocks, or 10A, Type D, double pole circuit breakers
- Optional EMC/RFI line filters for redundant main power (Triconex recommended)
- Alarm contact terminal block assembly for door intrusion monitoring switches, enclosure temperature switch, and field power supply status
- Optional door intrusion monitoring
- Bottom cable entry for standard power wiring and cables for Triconex termination devices, such as External Termination Panels (ETPs), Field Terminations, and External Termination Assemblies (ETAs)

  NOTE: Due to the placement of field power supplies, top entry is not recommended for this enclosure.
- Available PVC or non-PVC wireways for field I/O cabling, with optional signal segregation barrier plate
- Generous 76 mm x 102 mm (3 in x 4 in) wire ducts with adequate capacity for most wire management
- Compact design to minimize use of floor space with both front and rear access that allow maximum packaging density of control environment
- Conveniently placed eyebolts for transporting and lifting the enclosures
- A 100 mm (4 in) plinth increases total enclosure height of 2,160 mm (85.0 in)
- Comfort handles with push button/keylocks
- Two ground points; two protective ground studs, and one isolated protective ground rail

Ingress Protection

The metal enclosures provide the outer layer of protection for the control electronics. Other layers are provided by the module covers and built into the modules. This approach to protection means that a minimum of contaminants in the plant environment reaches the control components, thus greatly extending the life of the equipment.

For sealed, non-adjoined G61 enclosures, heat is transferred from the interior surfaces of the enclosure and then dissipated by the enclosure's exterior surfaces into the plant environment. Air is not exchanged between the enclosure's interior and the outside environment. Therefore, contaminants are minimized inside the enclosure.

The enclosures support convenient top or bottom cable entry for TA cabling and power wiring. Vented enclosures with roof-mounted fans are not recommended with top cable entry, due to the location of the power supplies.

Dual Thermostat

An optional door intrusion monitoring switch is available for each door on the enclosure. Each switch is prewired to a set of alarm status terminal blocks.

Door Intrusion Monitoring

An optional door intrusion monitoring switch is available for each door on the enclosure. Each switch is prewired to a set of alarm status terminal blocks.

Vented Enclosure Design Options

The G61 vented enclosure is available with either roof-mounted or door-mounted fans.

Roof-mounted fans provide the best performance for cooling, and provide a lower noise-level than the door-mounted fans. However, roof-mounted fans can restrict top-entry cable access to the enclosure and reduce the overall ingress protection rating.

For customers who plan to modify the swing direction of their enclosure doors, fans mounted on the roof allow the process to proceed more smoothly.

Door-mounted fans are desirable for top entry cable access configurations, and provide the highest level of ingress protection for vented enclosures.

Triconex Termination Device Mounting

The G61 termination enclosure has up to seven vertical DIN rails for mounting the appropriate Triconex termination devices, and one dedicated vertical DIN rail for power distribution. Four of the DIN rails are accessible from the rear of the enclosure and four of the DIN rails are accessible from the front of the enclosure. For each set of four DIN rails, two are mounted in the center of the enclosure, and two are mounted on the sides.

Optional bus bars for field wiring shields and DIN rail isolation are available. These are used when customer field shields are terminated on dedicated terminal blocks that ground to the DIN rail. Isolation allows rails to be isolated from the enclosure ground.

One or two pairs of optional redundant 24 V DC field power supplies are available for field power. They are mounted horizontally in the enclosure (see *Figure 2, page 8* through *Figure 5, page 11*).

Both vented and sealed enclosures have a limited thermal load (see *Environmental Specifications, page 14*).

Triconex Termination Device/Input Power Cabling

The G61 enclosure can be ordered for bottom cable entry or modified by the customer for simultaneous top and bottom cable entry.

For the top cable entry version, the termination device cables and/or customer power feeds enter through customer-configured cable glands. Any customizations made must follow the manufacturer’s guidelines to preserve the enclosure's ingress protection rating. Vented enclosures with roof- and door-mounted fans are not recommended for top cable entry.

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

For the sealed bottom entry version, the termination device cables and power cable enter through a solid bottom panel located at the bottom (inside) of the enclosure. The panel can be drilled or punched for cable routing. Users must provide their own cable glands (for top or bottom cable entry), in keeping with maintenance of the enclosure's ingress protection. It is the user's responsibility to ensure that the enclosure's environmental ratings are retained.

An optional signal segregation barrier plate provides isolation between any two interior adjacent wireways.

Cabling is restricted to preconfigured wireways, available in PVC or non-PVC versions.

Cable straps are provided in the enclosure to dress and support the Triconex termination cables.

Power and Grounding

The G61 enclosure supports an optional redundant power system for field power to protect against power failures.

Field power wiring to the enclosure is routed through the bottom of the enclosure. Customer-supplied dual power input feeds terminate at dedicated redundant power distribution terminal block or circuit breaker assembly.

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.

An isolated protective ground rail is available for additional ground points and may be used for cable shields.

Power Distribution

Each enclosure is available with a dedicated assembly for customer field power. Two types of power distribution are available with:

- Disconnect terminal blocks: This method of power entry also has fused, knife disconnect terminal blocks for isolating the field power, as well as independent knife disconnect terminal blocks for each device, for ease of service
- 10A, Type D, double pole circuit breakers

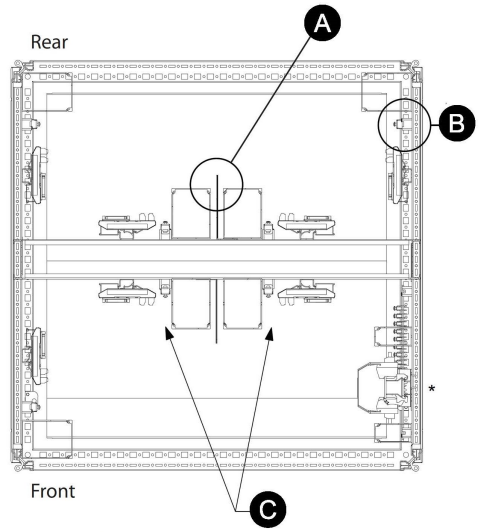
The 24 V DC field power supply option also includes a distribution terminal block assembly for distribution of 24 V DC power to up to 10 Triconex termination devices. Each point includes a serviceable knife disconnect.

Utility power is supported through a dedicated terminal block or circuit breaker assembly that provides independent disconnects for light and fan circuits, as well as additional blocks for the customer to install utility outlets.

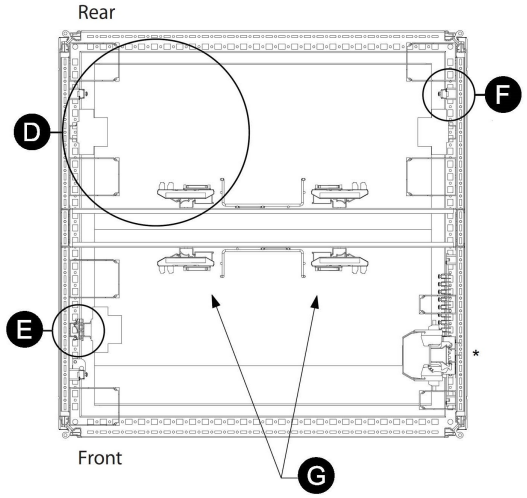
The enclosure may be ordered without these power distribution terminal blocks when the customer has requirements for power distribution specific to regional electrical codes.

Figure 1 - G61 Tricon Termination Enclosure Termination and Marshalling Layouts and DIN Rail Identification

G61 Termination Layout and DIN Rail Identification

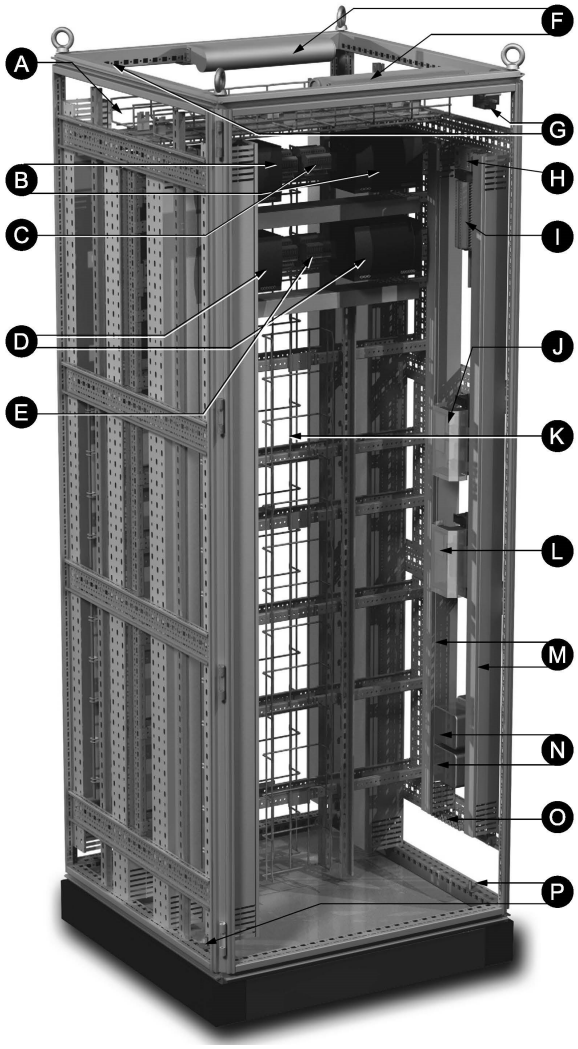


G61 Marshalling Layout and DIN Rail Identification



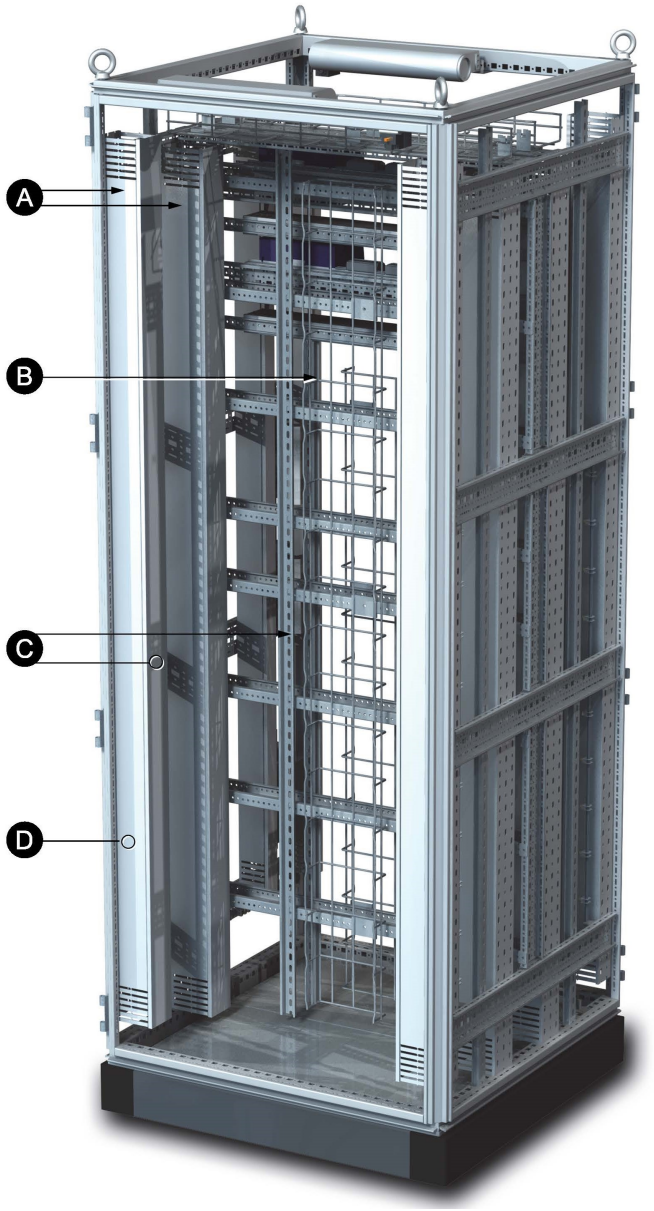
Legend			
A	Segregation Barrier for Varying Field Signals (per configuration)	**E**	DIN Rail Isolation (per configuration)
B	Bus Bar for Field Wiring Shields (per configuration)	**F**	Bus Bar for Field Wiring Shields (per configuration)
C	These front rails are reduced in height to accommodate 24 V DC field power supplies	**G**	These front rails are reduced in height to accommodate 24 V DC field power supplies
D	ETP and Associated Termination Blocks (per configuration)		
* For both setups, this front side rail is reserved for field and utility power entry terminal blocks/circuit breakers, alarm status terminal blocks, and EMI line filters per configuration.			

Figure 2 - G61 Tricon Termination Enclosure with Marshalling Option, Front View, Bottom Entry



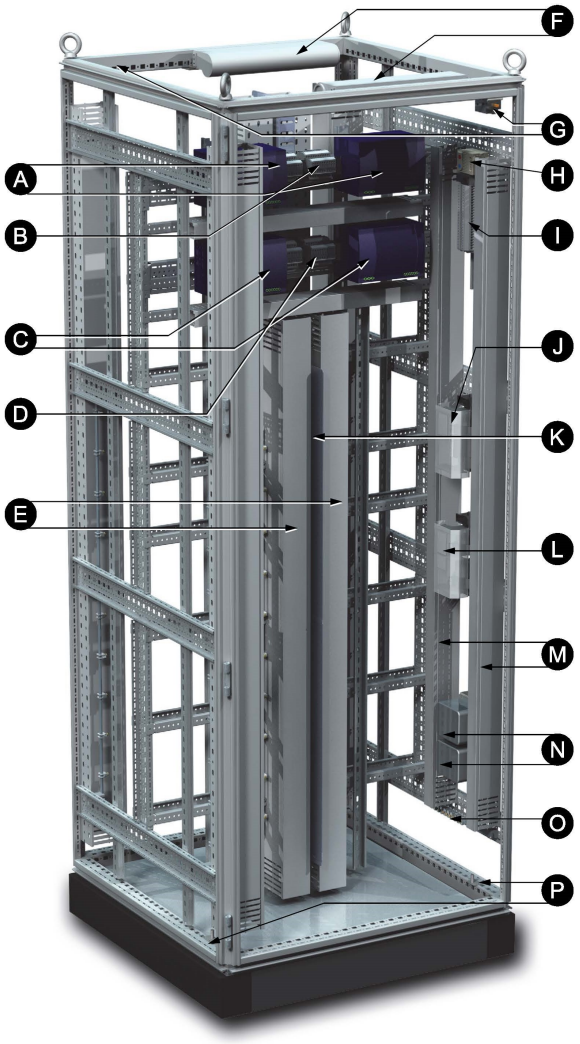
Legend			
A	51 mm x 102 mm (2 in x 4 in) Cable Tray Wire Management For Marshalling Between DIN Rails	**I**	Alarm Monitoring Terminal Block
B	Redundant 480 W, 24 V DC Power Supplies	**J**	ac Utility Power Terminal Blocks or Circuit Breakers
C	Associated 24 V DC Power Distribution	**K**	25 mm x 153 mm (1 in x 6 in) Cable Tray Wire Management for Tricon Interface Cables*
D	Additional Redundant 480 W, 24 V DC Power Supplies	**L**	Primary and Secondary Power Distribution Disconnects or Circuit Breakers
E	Associated 24 V DC Power Distribution	**M**	37 mm x 75 mm (1.5 in x 3 in) Wire Management Duct for Power and Alarms*
F	LED Light (Front and Rear of Enclosure)	**N**	EMC/RFI Filters (Optional)
G	Door Intrusion Monitoring Switches	**O**	Protective Ground Rail
H	Dual (High/Low) Thermostat	**P**	Protective Ground Studs
* Some cable trays and wire management ducts may not be supplied with the standard configuration.			

Figure 3 - G61 Tricon Termination Enclosure with Marshalling Option, Rear View, Bottom Entry



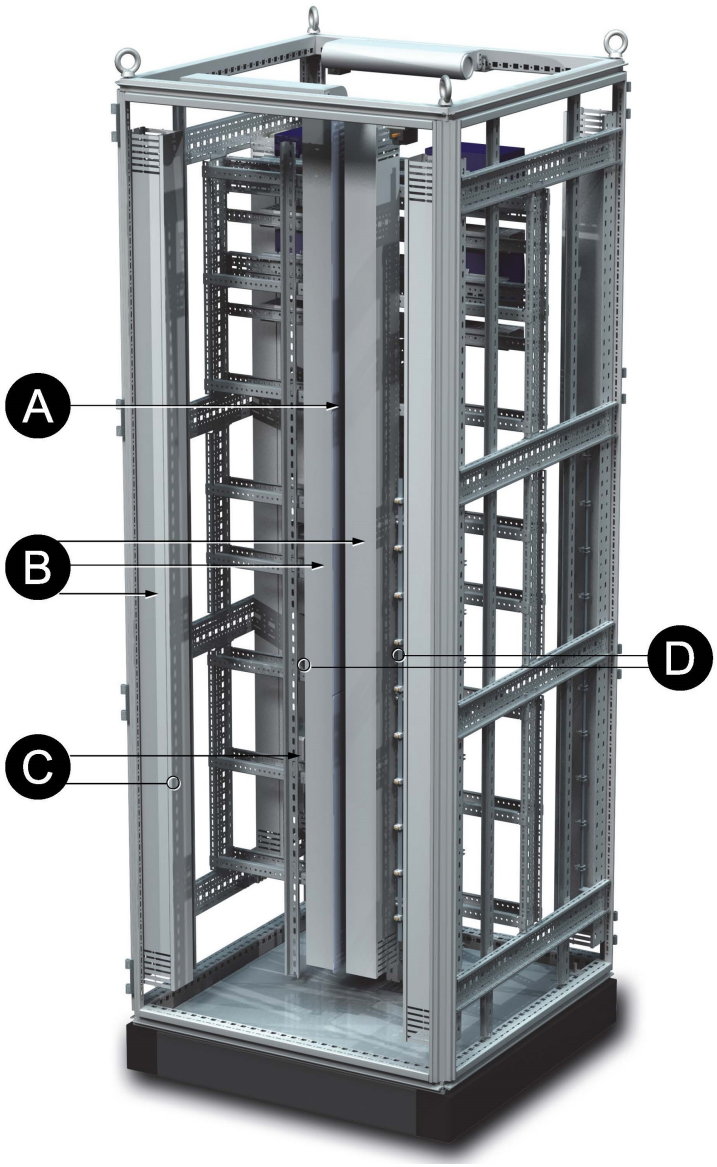
Legend	
A	76 mm x 102 mm (3 in x 4 in) Wire Management Duct for Marshalling and Field Wiring
B	25 mm x 153 mm (1 in x 6 in) Cable Tray Wire Management for Tricon Interface Cables*
C	DIN Rails for Tricon ETPs and Field Marshalling Terminal Blocks
D	Bus Bar for Field Wiring Shields (Not Visible)
* Some cable trays and wire management ducts may not be supplied with the standard configuration.	

Figure 4 - G61 Tricon Termination Enclosure with Termination Option, Front View, Bottom Entry



Legend			
A	Redundant 480 W, 24 V DC Power Supplies	**I**	Alarm Monitoring Terminal Block
B	Associated 24 V DC Power Distribution	**J**	ac Utility Power Terminal Blocks or Circuit Breakers
C	Additional Redundant 480 W, 24 V DC Power Supplies	**K**	Signal Segregation Barrier Plates
D	Associated 24 V DC Power Distribution	**L**	Primary and Secondary Power Distribution Disconnects or Circuit Breakers
E	76 mm x 102 mm (3 in x 4 in) Wire Management Duct for Field Wiring*	**M**	37 mm x 75 mm (1.5 in x 3 in) Wire Management Duct for Power and Alarms*
F	LED Light (Front and Rear of Enclosure)	**N**	EMC/RFI Filters (Optional)
G	Door Intrusion Monitoring Switches	**O**	Protective Ground Rail
H	Dual (High/Low) Thermostat	**P**	Protective Ground Studs
* Some cable trays and wire management ducts may not be supplied with the standard configuration.			

Figure 5 - G61 Tricon Termination Enclosure with Termination Option, Rear View, Bottom Entry



Legend	
A	Signal Segregation Barrier Plates
B	76 mm x 102 mm (3 in x 4 in) Wire Management Duct for Field Wiring*
C	DIN Rails for Tricon ETPs
D	Bus Bars for Field Wiring Shields
* Some cable trays and wire management ducts may not be supplied with the standard configuration.	

Enclosure Options

Features	Availability
Base Enclosure	• Vented IP43 rated enclosure with front- and rear-door-mounted fans (120 V AC or 240 V AC - dual fans) or roof-mounted fans (120 V AC or 240 V AC - dual fans), or • EMC compliant vented IP43 rated enclosure with roof-mounted fans (120 V AC or 240 V AC - dual fans), or • Sealed IP55/66 rated enclosure (no fans)
Enclosure Access	Front and rear access
Front Door	Solid front door - vented enclosure has inlet vents
Cable Entry	Bottom cable entry (due to the placement of field power supplies, top entry is not recommended for this enclosure)
Sidewalls	Options configurable based on baying requirements
Door Handle	Comfort handle with push button/keylock
Door Mounting	Universal mounting for left and right-hand door swing (left-hand is default)
Equipment Supported	• Seven DIN rails per enclosure available for mounting Triconex termination devices only, or with customer-supplied terminal blocks for marshalling • One DIN rail dedicated for power distribution equipment
Field Wiring	• PVC or non-PVC wireways for field I/O signal cabling • Optional bus bars for field wiring shields and/or DIN rail isolation
Enclosure Lighting	Universal enclosure lights (front and rear) with motion activation
Thermostat	Dual temperature thermostat
Security	Optional door intrusion monitoring switch - one per door
Fans	Door-mounted or roof-mounted fans - designed for secondary cooling only
Grounding	• Two protective ground studs • One isolated protective ground rail
Field Power	• Optional redundant 24 V DC field power - 480 W or 960 W (two or four field I/O power supplies) with dedicated distribution terminal block or circuit breaker assemblies • Redundant power distribution terminal block assemblies for customer configured power entry • Optional EMC compliant line filters available for above options • Customer-configured field power entry is supported (no terminal blocks supplied)
Alarm Contact	Alarm contact terminal block assembly for main chassis alarming, door intrusion monitoring switches, enclosure temperature switch, and field power supply status
Utility Power	120 V AC or 240 V AC utility power with disconnect terminal blocks or 10A, Type D, double pole circuit breakers

Functional Specifications

Enclosure	The enclosures are free-standing, floor mounted, steel industrial enclosures containing: • Vertically mounted DIN rail mounted termination equipment (Triconex Tricon, and/or customer-supplied terminal blocks for marshalling) • 24 V DC field power supplies (single or redundant power)

Environmental Specifications

	Operating	Storage
Temperature	Thermal performance of the G61 enclosure meets the convection cooling requirements described in *Planning and Installation Guide for Tricon Systems*[a]. • Vented (Thermal Loading)[b]: -20 to +60°C (-4 to +140°F): Up to 750 Watts (Average) -20 to +55°C (-4 to +131°F): 750 to 1,000 Watts (Max.) • Sealed (Thermal Loading)[b]: -20 to +50°C (-4 to +122°F): Up to 400 Watts (Average) -20 to +45°C (-4 to +113°F): 400 to 500 Watts (Max.)	-40 to 70°C (-40 to 158°F)
Relative Humidity	5 to 95% (noncondensing)	
Ingress Protection Ratings	• Vented: ◦ Door-Mounted Fans: IP 55 to EN 60 529/NEMA 12 ◦ Roof-Mounted Fans: IP 43 to EN 60 529/10.9191/NEMA 12 • Sealed: IP 55 to EN 60 529/NEMA 12 IP 66 to EN 60 529/NEMA 4	
Acoustic Noise Level[c]	• Roof-Mounted Fans: 61 dB (A) at 1 m/58 dB (A) at 3 m • Door-Mounted Fans: 64 dB (A) at 1 m/62 dB (A) at 3 m • Sealed Enclosure (No Fans): Ambient/Ambient	
Dual Thermostat	• High Alarm Setting: NC contact, Range - 0 to 60°C (32 to 140°F) • Low Alarm Setting: NO contact, Range - 0 to 60°C (32 to 140°F)	
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 the enclosure vendor.	
Area Designation	General purpose areas	

[a] To obtain the latest version of the *Planning and Installation Guide for Tricon Systems* document, contact IPS Global Client Support.

[b] Some termination assemblies have operating temperatures lower than the rated enclosure specification.

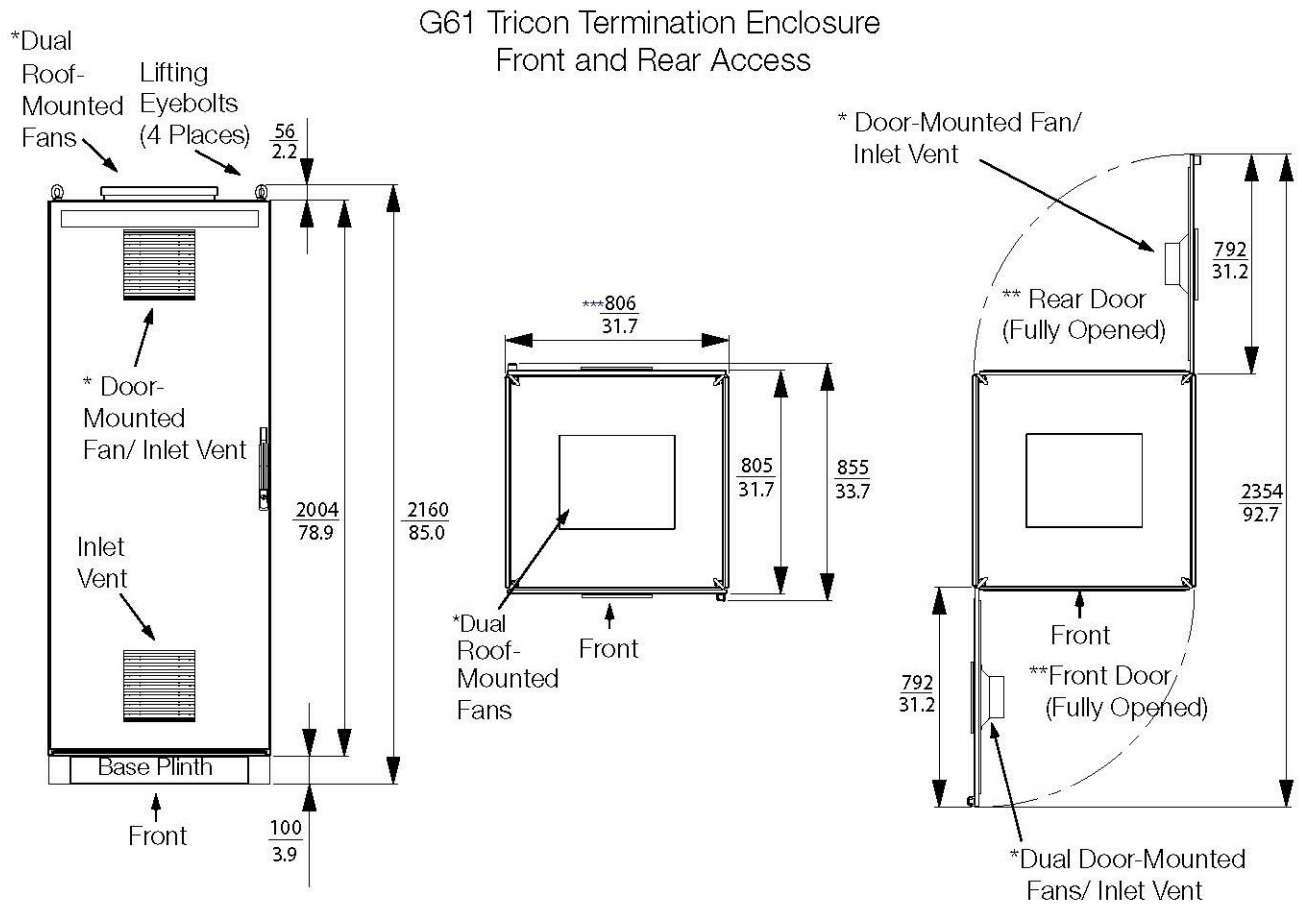
[c] Under normal operating conditions, with both fans running, at enclosure's mid-height at 46 dB (A) ambient noise level.

Physical Specifications

<table>
<tr><td>Weight</td><td>The weight of the enclosure is dependent upon the particular configuration. Consult with a Foxboro representative if precise weight figures are required.
Vented Enclosure (Maximum Configuration):
800 mm (31.5 in) x 800 mm (31.5 in) - 261 kg (575 lb)
Side Panel:
800 mm (31.5 in) x 800 mm (31.5 in) - 8 kg (18 lb)</td></tr>
<tr><td>Mounting</td><td>Floor
⚠ CAUTION
RISK OF EQUIPMENT DAMAGE OR INJURY
To prevent injury, this enclosure must be bolted down. See Enclosures and Mounting Structures — Site Planning and Installation User's Guide (B0700AS).
Failure to follow these instructions can result in injury or equipment damage.</td></tr>
<tr><td>Construction</td><td>Material:
Doors (Metal):
Sheet steel, 2.0 mm (14 ga)
Frame, Roof, Side Panels, Rear Wall, Gland Plates:
Sheet steel, 1.5 mm (16 ga)
Base/Plinth:
Sheet steel and plastic
Finish:
Frame:
Non-EMC Compliant Version:
Dipcoat-primed, RAL 7044 smooth
EMC Compliant Version:
Aluminum zinc coating
Roof, Side Panels, Doors:
Non-EMC Compliant Version:
Dipcoat-primed, powder-coated, RAL 7035 (light gray) textured
EMC Compliant Version:
Exterior - Dipcoat-primed, powder-coated, RAL 7035 (light gray) textured
Interior - Aluminum zinc coating
Base/Plinth:
Dipcoat-primed, RAL 7022 (umbra gray) smooth, plastic cover caps RAL 9005 (jet black)
Gland Plates and Internal Hardware:
Zinc-plated, passivated</td></tr>
</table>

Cable Entry	• Vented Enclosure: Bottom through gland plate(s) Top through customer cutouts in enclosure top (for enclosure with roof-mounted fans, suggested entry is bottom) • Sealed Enclosure: Bottom through steel panel and customer cutouts in panel Top through customer cutouts in enclosure top
Grounding	• Roof, Side Walls, Gland Plates: Automatic potential equalization built in • Front and Rear Doors: Dedicated 4 mm^2 (11 ga) ground strap to enclosure frame • Enclosure: Two protective ground M8 studs (one for each enclosure side) An isolated protective ground rail is provided for an additional ground point
Power Input Terminals	Disconnect Terminal Blocks: • Type: Ring Lug • Wire Size: Up to 6 mm^2 (10 AWG) • Ring lug Size: M4 Maximum (DIN 46 234/46 237), 9.6 mm maximum O.D. Circuit Breakers: • Type: Compression • Wire Size: ◦ Solid: Up to 6 mm^2 (3 AWG) ◦ Stranded: Up to 4 mm^2 (8 AWG)
Termination Assembly Cabling	Universal mounting straps are supplied for attaching, routing, and strain relieving of Triconex termination cables. Each strap supports up to a 75 mm (3 in) diameter cable bundle.

Dimensions – Nominal



* Vented enclosures only — either roof- or door-mounted configurations can be ordered.

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

*** With side panels, without side panels 800/31.5.

Related Product Documents

Document Number	Description
PSS 41H-2G60	G60 Tricon System Enclosure
PSS 41H-2G62	G62 and G72 Tricon System and Termination Enclosures
PSS 41H-2G66	G66 Tricon Termination Enclosure
ISA-S71.04-1985 (not Foxboro-supplied)	Environmental Conditions for Process Measurement and Control Systems: Airborne Contaminants
9791007-XXX [a]	Technical Product Guide for Tricon Systems
9720052-XXX [a]	Field Termination Guide for Tricon Systems
[a] Request latest revision from Triconex.	

⚠ **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/.

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Global Customer Support: https://pasupport.schneider-electric.com

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

PSS 41H-2G61, Rev A