Foxboro Evo™ Process Automation System

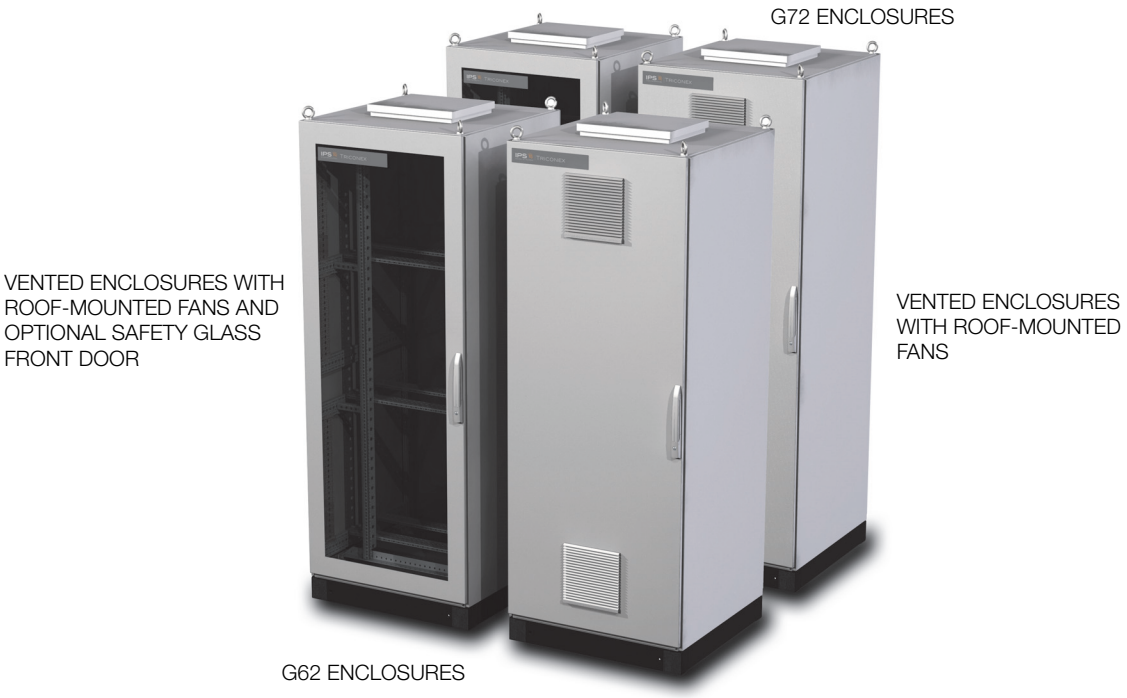
Product Specifications

Foxboro®

by Schneider Electric

PSS 31H-2G62

G62 and G72 Tricon System and Termination Enclosures



The G62 and G72 Tricon System and Termination Enclosures provide environmental protection and housing, with termination and marshalling options for Triconex™ Tricon system chassis and modules and DIN rail mounted Triconex termination devices, such as External Termination Panels (ETPs), Field Terminations and External Termination Assemblies (ETAs).

OVERVIEW

The G62 and G72 enclosures are specifically designed for housing Tricon system chassis and modules, DIN rail mounted Triconex termination devices and customer-supplied terminal blocks for marshalling. These enclosures are available as vented enclosures. They can be configured with:

- Up to two Tricon system chassis
- Two vertical DIN rails for mounting of Triconex termination devices. One rail may be used to mount terminal blocks for marshalling.

The G62 and G72 enclosures are free-standing, floor mounted units with an IP 43 rating for location in mild (ordinary) environmental areas. Versions are available with optional EMC compliance.

NOTE

In regions that require EMC compliance, you must order the EMC compliance option if Tricon modules SMM or SRXM will be installed in a chassis in this enclosure. Without these modules, these enclosures already fulfill the requirements for EMC compliance.

The rear of the G62 or G72 enclosures can be set up in one of two basic configurations:

- Termination only - both DIN rails are allocated for the mounting of Triconex termination devices only, where the customer terminates field signals directly to the Triconex termination devices.
- Termination and Marshalling - one DIN rail is allocated for the mounting of Triconex termination devices only. The second rail may accommodate terminal blocks to provide additional functionality (such as fusing, disconnects, and lock-out validation) or where customers wish to terminate field cable bundles to dedicated terminal blocks and marshall signals to the appropriate Triconex termination devices.

These enclosures and their configurations have been tested and qualified by Foxboro® for use with the Tricon chassis and the DIN rail mounted Triconex termination devices specified in the *Technical Product Guide for Tricon Systems*.

NOTE

The end-user is responsible for locating adequate inlet ventilation to maintain proper operation of the enclosure's equipment, through ventilation on the rear door or a side wall, or from an adjoined cabinet.

FEATURES

The G62 and G72 Tricon system and termination enclosures offer the following features:

- Available sizes:
  - G62 enclosure - 800x800x2000mm
  - G72 enclosure - 800x800x2200mm
- (Enclosure front) Vented enclosure accommodates up to two Triconex™ Tricon system chassis
- (Enclosure rear) Two 1800 mm (or 2000 mm) vertical DIN rails for mounting of Triconex termination devices to provide a total of 3.6 m (or 4.0 m) of linear rail space. Optionally, one rail may be used to mount terminal blocks for marshalling
- Main power entry includes disconnect terminal blocks for 120/240 V ac or 125 V dc systems, or 10 A, Type D, double pole circuit breakers for 120/240 V ac systems
- Optional EMC/RFI line filters for redundant main power (Triconex recommended).
- Optional redundant 24 V dc field power - 480W (two field I/O power supplies) or 960W (four field I/O power supplies) with dedicated terminal block assemblies providing independent disconnections for every Triconex termination device
- Vented enclosure for use in ordinary (IP 43) rated environments
- Option for EMC compliance
- Enclosure front and rear access, with optional safety glass front door
- Optional door intrusion monitoring switches
- Alarm contact terminal block assembly for main chassis alarming, door intrusion monitoring switches, enclosure temperature switch and field power supply status
- Compact design to minimize use of floor space with both front and rear access that allow maximum density of enclosures in a control environment
- Available PVC or non-PVC wireways for field I/O cabling
- Generous 76 mm x 102 mm (3 in x 4 in) wire ducts with adequate capacity for most wire management
- Bottom cable entry for field wiring

- Conveniently placed eyebolts for transporting and lifting the enclosures
- A 100 mm (4 in) plinth - total enclosure height of 2160 mm (85.0 in)
- Comfort handles with push-button/keylocks
- Three earth (ground) points; two protective earth (ground) studs, one isolated protective earth (ground) rail and one isolated instrument earth (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.

DUAL THERMOSTAT

An optional dual (high/low) thermostat is available to monitor enclosure temperature extremes.

DOOR INTRUSION MONITORING

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

TRICONEX TERMINATION DEVICE MOUNTING

These enclosures have two vertical DIN rails in the rear for mounting Triconex termination devices only, or with customer-supplied terminal blocks for marshalling.

Optional redundant 24 V dc field power is available with either 480W (two field I/O power supplies) or 960W (four field I/O power supplies). The supplies are DIN rail-mounted (see Figure 1 and Figure 3). Vented enclosures have a limited thermal load (see “Operating Temperatures (Ambient)” on page 11).

TRICONEX TERMINATION DEVICE/INPUT POWER CABLING AND WIREWAYS

The enclosures support bottom cable entry only. Any other entry points are the responsibility of the customer who must ensure that the enclosure’s environmental ratings are retained.

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

Field I/O signals must be connected to the termination devices mounted in the same enclosure.

Optional bus bars for field wiring shields are available.

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

POWER AND EARTHING (GROUNDING)

Power wiring to the enclosure is routed through the bottom of the enclosure through removable gland plates, located at the bottom (inside) of the enclosure. Dual power input feeds terminate at dedicated primary and secondary power distribution terminal blocks or circuit breaker assemblies, or directly to optional EMC/RFI filters.

Earthing (Grounding)

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

An isolated protective earth (ground) rail and an isolated instrument earth (ground) rail are available for additional earth (ground) points and may be used for cable shields.

Power Distribution

These enclosures are available with a dedicated assembly for customer main power. Two types of power distribution are available with:

- Disconnect terminal blocks for 120/240 V ac or 125 V dc systems. This method of power entry also has fused, knife disconnect terminal blocks for isolating the main power, as well as independent knife disconnect terminal blocks for each device, for ease of service.
- 10 A, Type D, double pole circuit breakers for 120/240 V ac systems.

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 ten Triconex termination devices. Each point includes a serviceable knife disconnect.

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

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

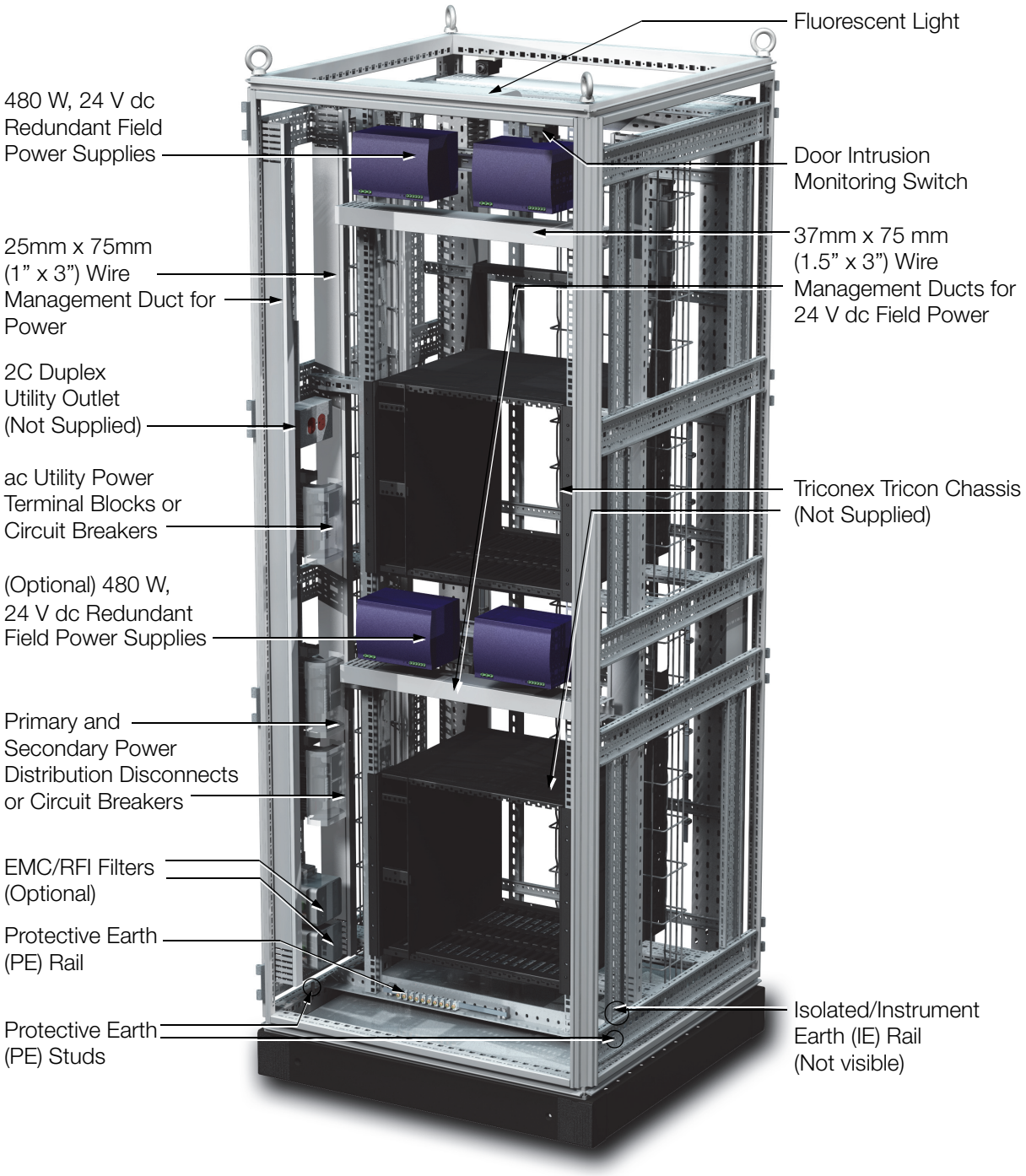


Figure 1. G62 Tricon System and Termination Enclosure, Front View

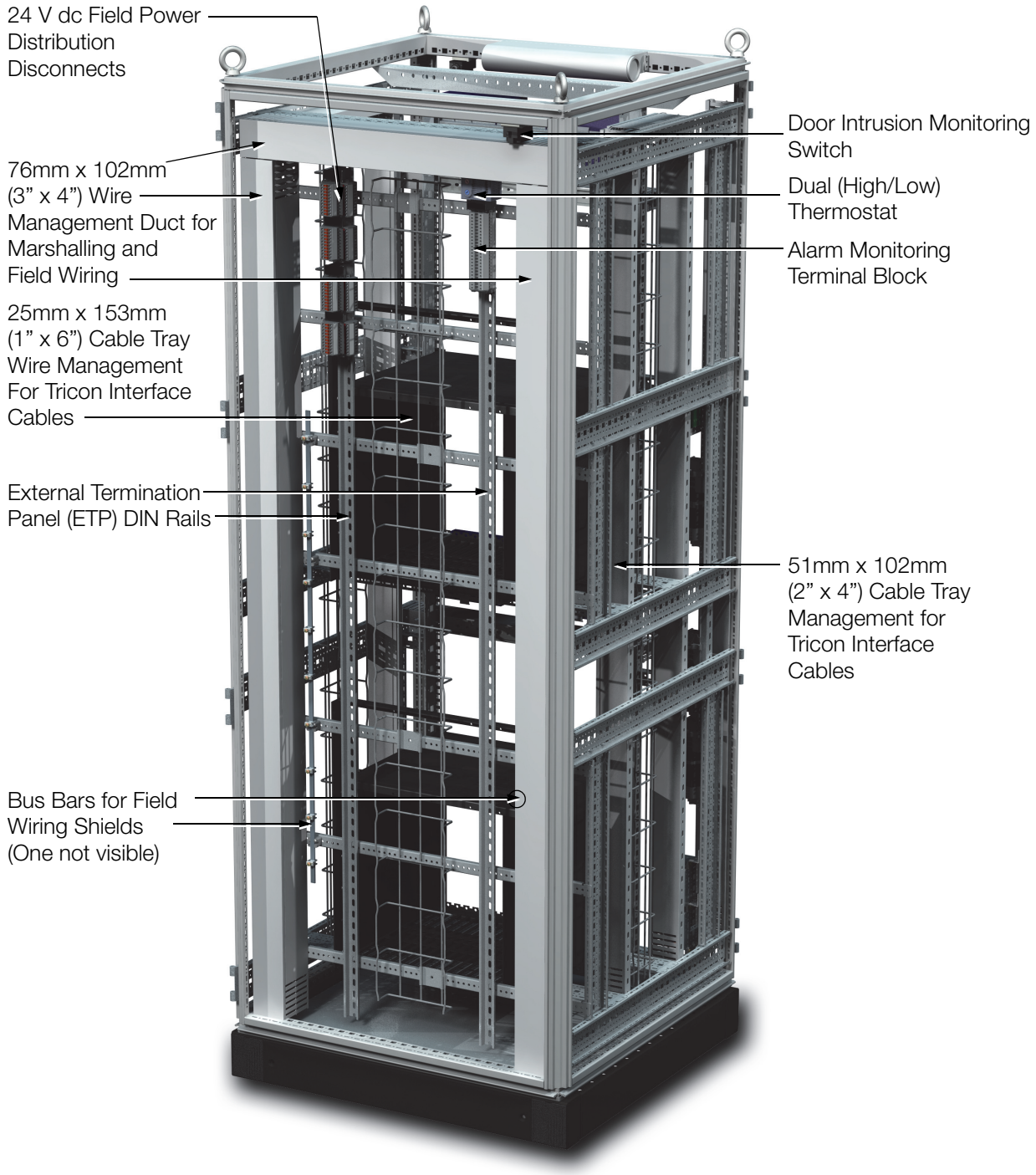


Figure 2. G62 Tricon System and Termination Enclosure, Rear View

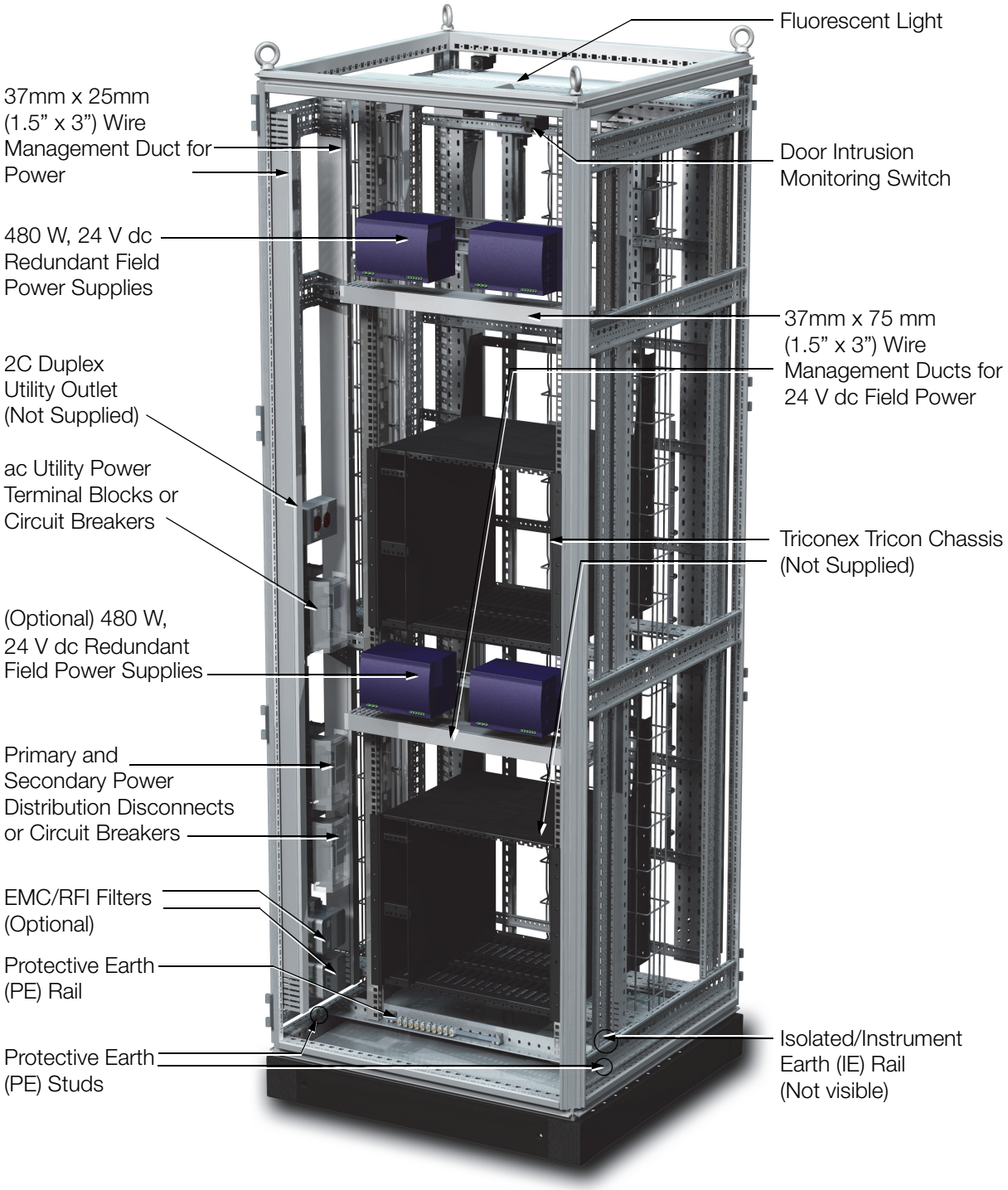


Figure 3. G72 Tricon System and Termination Enclosure, Front View

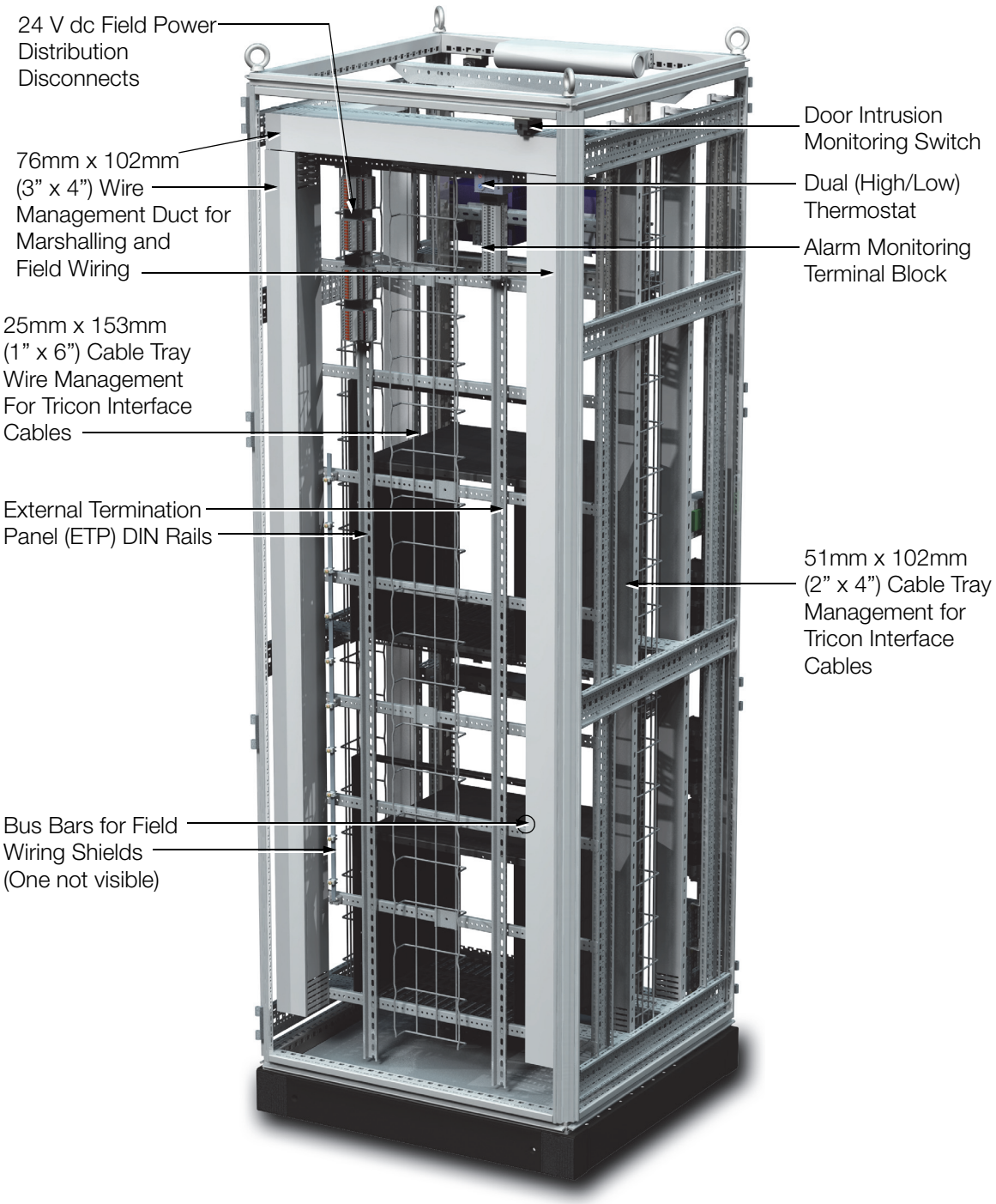


Figure 4. G72 Tricon System and Termination Enclosure, Rear View

ENCLOSURE FEATURES AND OPTIONS

The G62 and G72 enclosures are provided with the following features, some of which are optional.

Table 1. G62 and G72 Enclosure Features and Options

Feature	Availability
Base Enclosure	Vented IP 43 rated enclosure with roof-mounted fans (120 V ac or 240 V ac - dual fans) -OR- EMC compliant vented IP 43 rated enclosure with roof-mounted fans (120 V ac or 240 V ac - dual fans)
Enclosure Access	Front and rear access
Front Door	Solid front door with inlet vents -OR- Safety glass front door
Cable Entry	Bottom only
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)
Field Wiring	PVC -OR- non-PVC wireways for field I/O signal cabling Optional bus bars for field wiring shields
Equipment Supported	Up to two Tricon system chassis Two DIN rails per enclosure available for mounting Triconex termination devices only, or with customer-supplied terminal blocks for marshalling.
Enclosure Lighting	Universal enclosure light with motion activation
Thermostat	Dual temperature thermostat
Security	Optional door intrusion monitoring switch - one per door
Fans	Roof-mounted fans - designed for secondary cooling only.
Earthing (Grounding)	Two protective earth (ground) studs One isolated protective earth (ground) rail One isolated instrument earth (ground) rail

Table 1. G62 and G72 Enclosure Features and Options (Continued)

Feature	Availability
Main Power	100-250 V ac, 50-60Hz, 125 V dc input redundant power with disconnect terminal blocks - OR- 100-250 V ac, 50-60Hz input redundant power with 10 A, Type D, double pole circuit breakers Optional EMC compliant line filters available for above options. Additionally, customer configured power entry (no terminal blocks supplied)
Field Power	Optional redundant 24 V dc field power - 480W (two field I/O power supplies) - OR- 960W (four field I/O power supplies) with dedicated terminal block or circuit breaker assemblies Redundant power distribution terminal block assemblies for customer configured power entry Additionally, 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	1120 V ac or 240 V ac utility power with disconnect terminal blocks or 10 A, Type D, double pole circuit breakers

FUNCTIONAL SPECIFICATIONS

Enclosure

The enclosures are free-standing, floor mounted, steel industrial enclosures with optional safety glass front doors. containing:

- Up to two Triconex™ Tricon system chassis
- Vertically mounted DIN rail mounted Triconex termination devices and DIN rail space for optional customer-supplied terminal blocks for marshalling
- 24 V dc field power supplies (single or redundant power).

ENVIRONMENTAL SPECIFICATIONS

Ingress Protection Ratings
IP 43 to EN 60 529/10.9191 / NEMA 12

Operating Temperatures (Ambient)
Thermal performance of the G62 and G72 enclosures meets the convection cooling requirements described in the *Planning and Installation Guide for Tricon Systems*(1).

VENTED (THERMAL LOADING)

To accommodate two chassis:
-20 to +40°C (-4 to +104°F)

NOTE

Total equipment power dissipation must not exceed 700W.

Power dissipation in any individual chassis must not exceed 350W.

Storage Temperature
-40 to 70°C (40 to 158°F)

Relative Humidity
5 to 95% (noncondensing)

Acoustic Noise Level(2)
ROOF-MOUNTED FANS

61 dB (A) at 1 m / 58 dB (A) at 3 m

Dual Thermostat
HIGH ALARM SETTING

Open on alarm, Range - 0 to 60°C (32 to 140°F)

LOW ALARM SETTING

Opens on alarm, 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 enclosure vendor.

Area Designation
General purpose areas.

(1) To obtain the latest version of the *Planning and Installation Guide for Tricon Systems* document, contact IPS Global Client Support.
(2) Under normal operating conditions, with both fans running, at enclosure's mid-height at 46 dB (A) ambient noise level.

PHYSICAL SPECIFICATIONS

Weight
The weight of the enclosure is dependent upon the particular configuration and Triconex equipment selected. Consult with a Foxboro representative if precise weight figures are required.

VENTED ENCLOSURE (MAX. CONFIGURATION)

G62 Enclosure
261 kg (575 lb)
G72 Enclosure
271 kg (596 lb)

SIDE PANEL

G62 Enclosure
8 kg (18 lb)
G72 Enclosure
10.5 kg (23 lb)

Mounting
Floor

CAUTION

To prevent injury, this enclosure must be bolted down. Refer to the installation guide.

Construction

MATERIAL

Doors (Metal)
Sheet steel, 2.0 mm (14 ga)
Doors (Glass Center)
Extruded Aluminum and zinc frame with single-pane safety glass, 3 mm (0.1 in) thick
Frame, Roof, Side Panels, 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

FINISH (CONTINUED)

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)

Earthing (Grounding)

ROOF, SIDEWALLS, 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 earth (ground) M8 studs (one for each enclosure side)
An isolated protective earth (ground) rail and an isolated instrument earth (ground) rail are provided for additional earth (ground) points.

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 securing, routing and strain relieving of Triconex termination cables. Each strap supports up to a 75 mm (3 in) diameter cable bundle.

FOR MORE INFORMATION

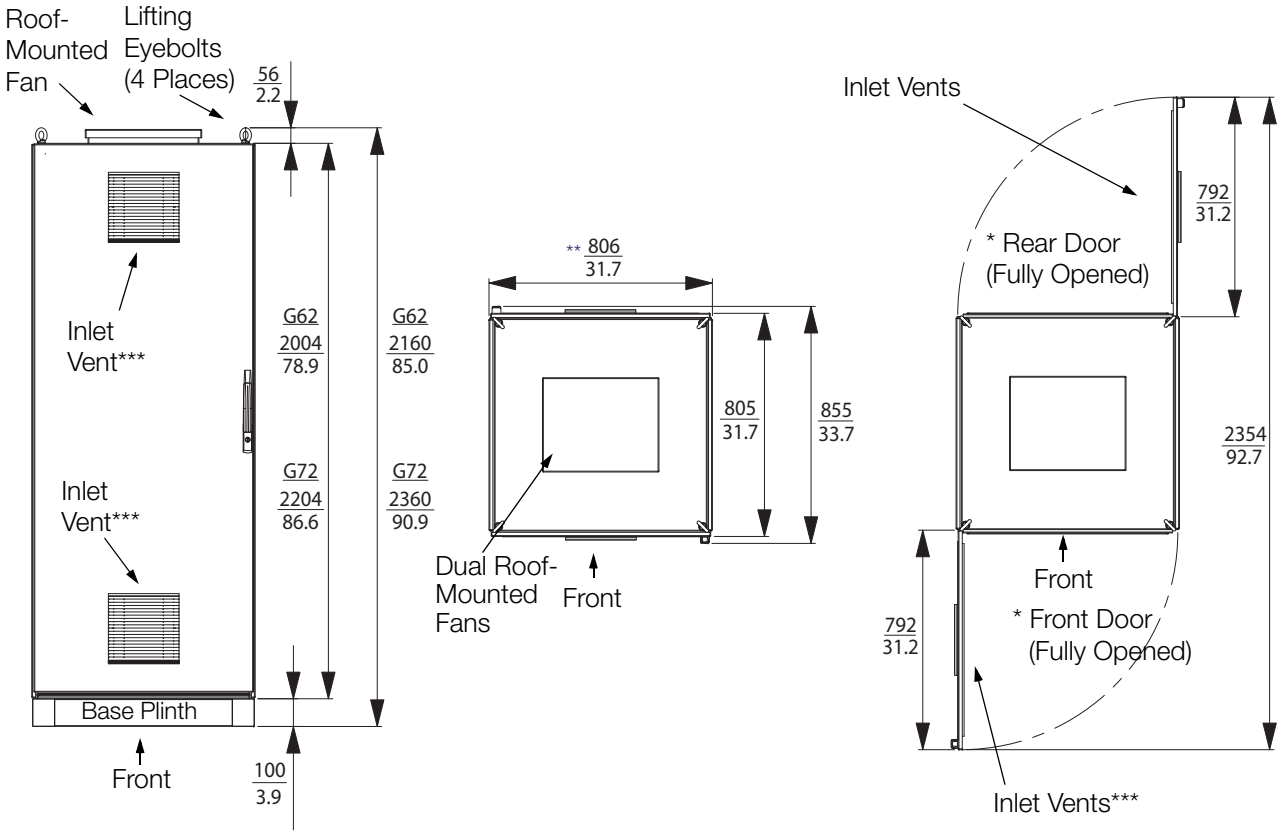
For additional information describing these enclosures, refer to the following documentation.

Document Number	Description
PSS 31H-2G60	G60 Tricon System Enclosure
PSS 31H-2G61	G61 Tricon Termination Enclosure
PSS 31H-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.

DIMENSIONS - NOMINAL

G62 or G72 Tricon System and Termination Enclosure



* 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
*** FRONT INLET VENTS ARE NOT PRESENT WHEN THE ENCLOSURE HAS THE SAFETY GLASS FRONT DOOR OPTION.

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by Schneider Electric

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