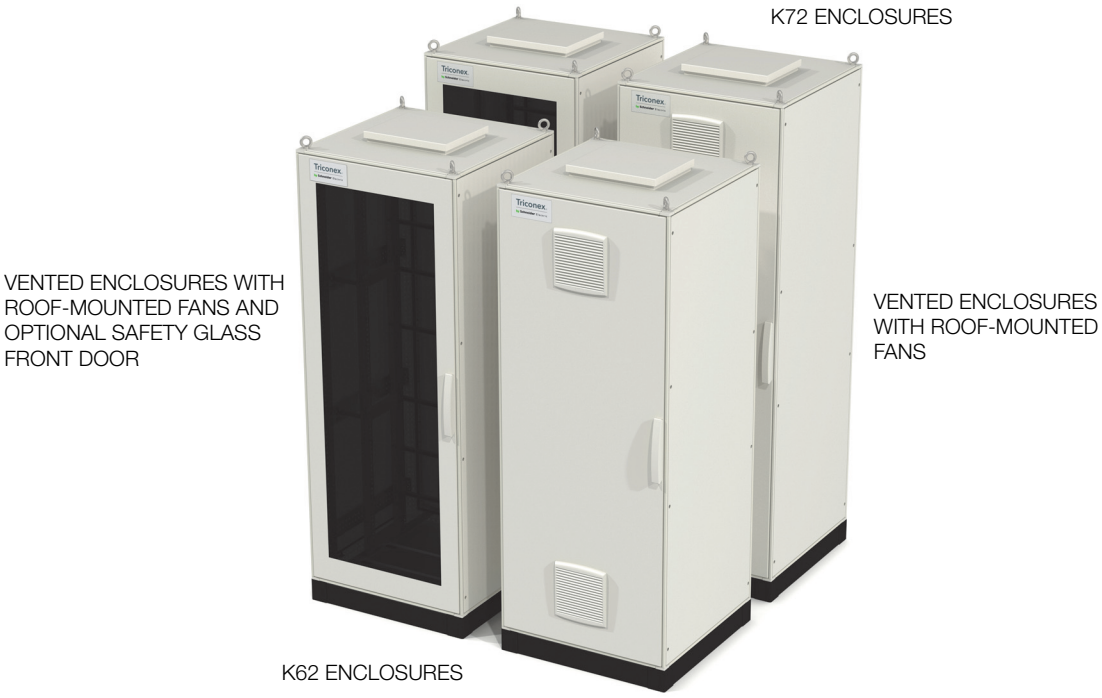
Foxboro Evo™ Process Automation System

Product Specifications

Foxboro by Schneider Electric

PSS 31H-2K62

K62 and K72 Tricon System and Termination Enclosures



The K62 and K72 Tricon System and Termination Enclosures provide environmental protection and housing, with termination 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 K62 and K72 enclosures are specifically designed for housing Tricon system chassis, modules, and DIN rail mounted Triconex termination devices. These enclosures are available as vented enclosures. They can be configured with:

- Up to two Tricon system chassis
- Three vertical DIN rails for mounting of Triconex termination devices.

The K62 and K72 enclosures are free-standing, floor mounted units with an IP 43 rating for location in mild (ordinary) environmental areas.

The rear of the K62 or K72 enclosures is set up for a termination-only configuration. Both of the rear's DIN rails are allocated for the mounting of Triconex termination devices only, where the customer terminates field signals directly to the Triconex termination devices.

These enclosures and their configurations have been tested and qualified by Schneider-Electric® 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 K62 and K72 Tricon system and termination enclosures offer the following features:

- Available sizes:
  - K62 enclosure - 800x800x2000mm
  - K72 enclosure - 800x800x2200mm
- (Enclosure front) Vented enclosure accommodates up to two Triconex™ Tricon system chassis
- (Enclosure rear) Three 1300 mm (K62)/1500 mm (K72) vertical DIN rails for mounting of Triconex termination devices to provide a total of 3.9 m (K62)/4.5 m (K72) of linear rail space.
- 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
- 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 cable trays for field I/O cabling
- Bottom cable entry for field wiring
- Conveniently placed eyebolts for transporting and lifting the enclosures
- A 100 mm (4 in) plinth - total K62 enclosure height of 2156 mm (85.0 in), or K72 enclosure height of 2360 mm (90.9 in)
- Handles with push-button or 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 TEMPERATURE 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 three vertical DIN rails in the rear for mounting Triconex termination devices only.

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.

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.

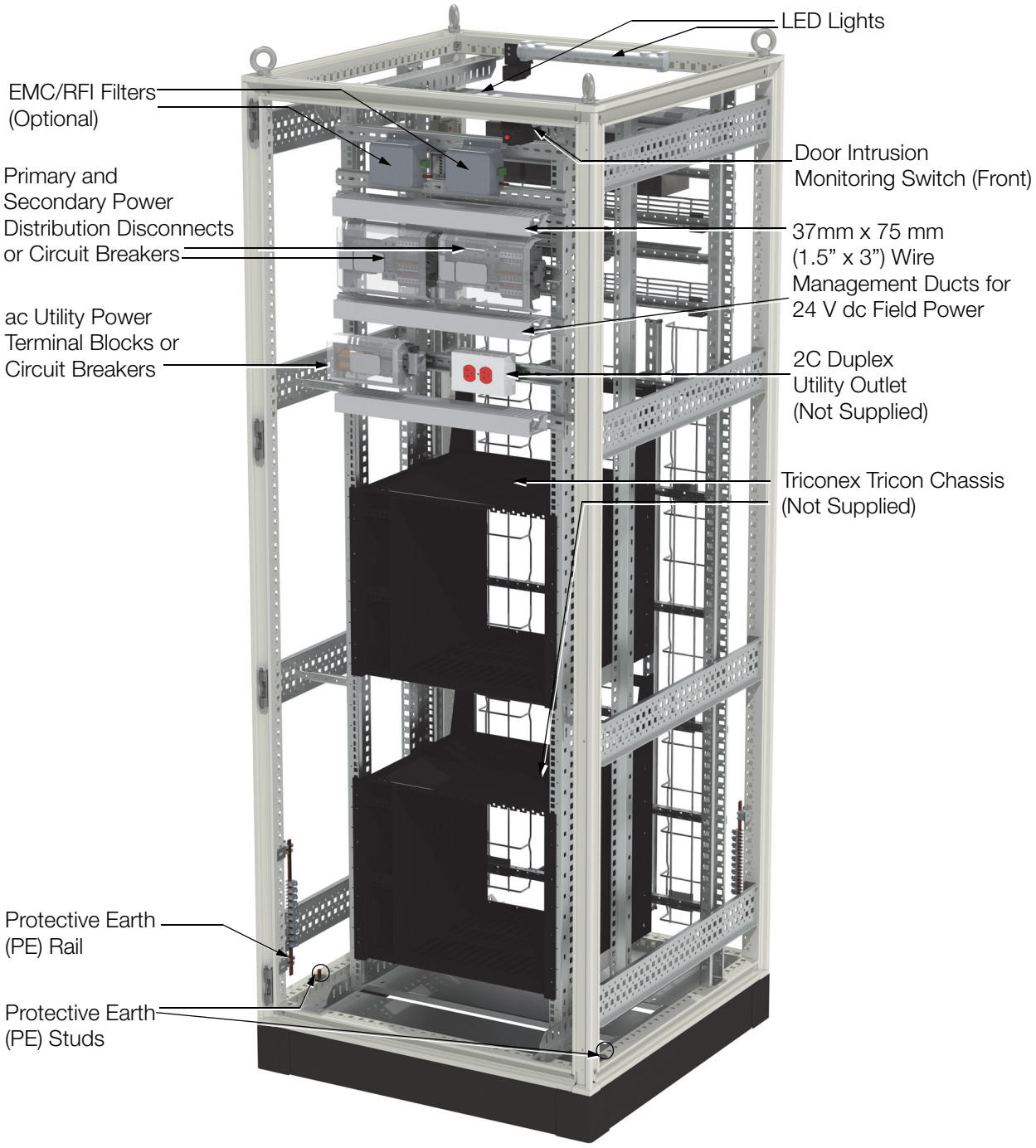


Figure 1. K62 Tricon System and Termination Enclosure, Front View

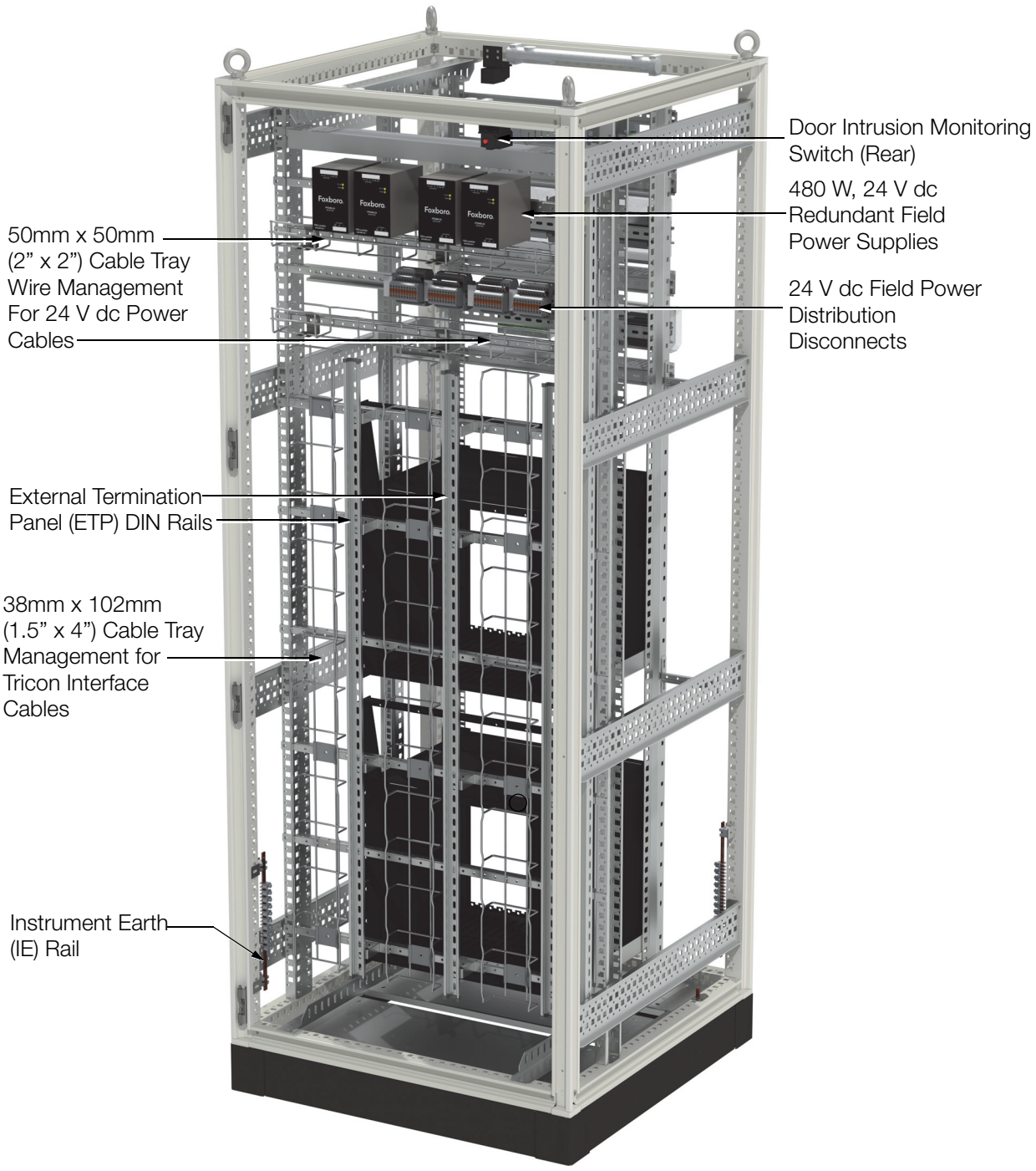


Figure 2. K62 Tricon System and Termination Enclosure, Rear View

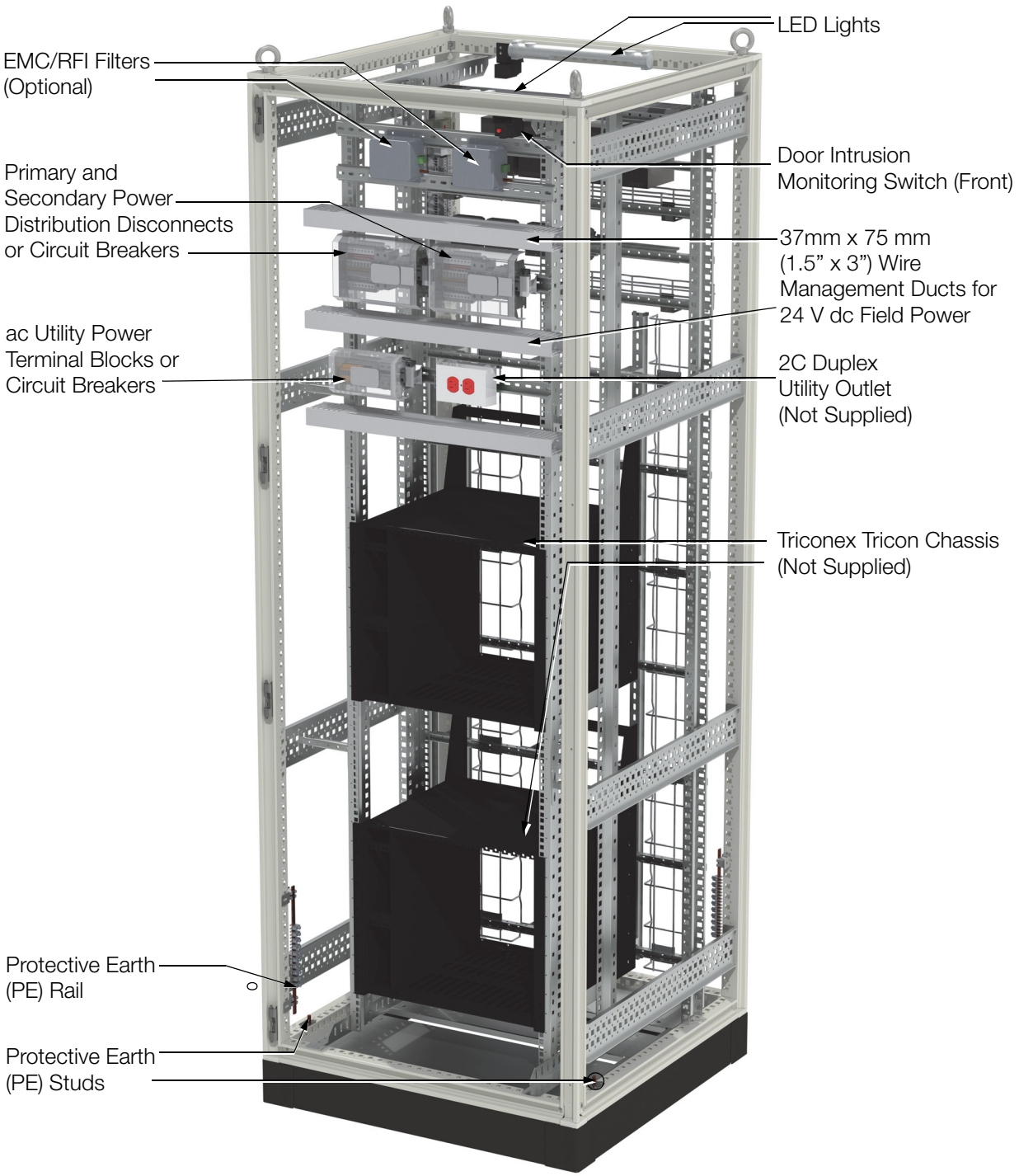


Figure 3. K72 Tricon System and Termination Enclosure, Front View

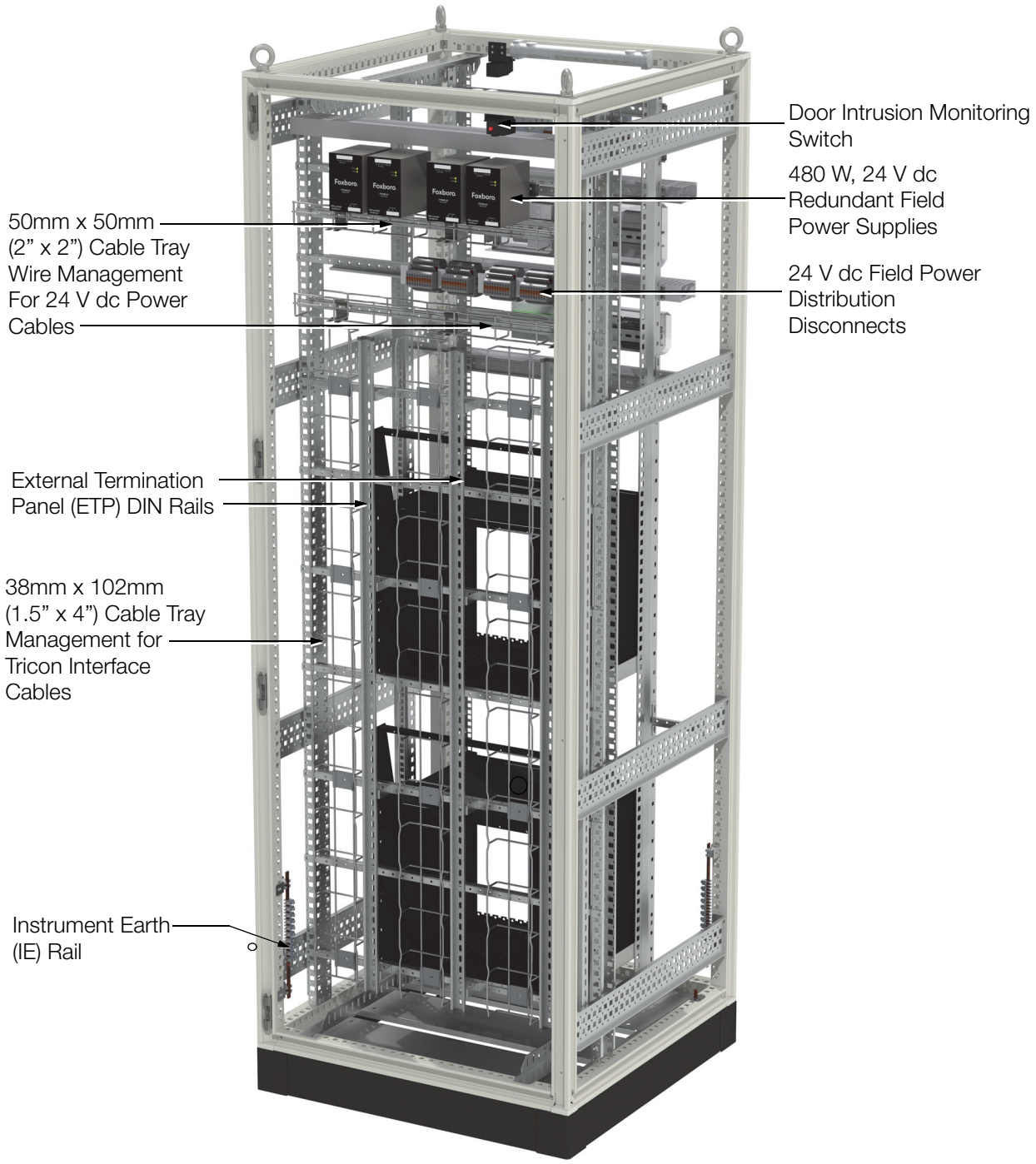


Figure 4. K72 Tricon System and Termination Enclosure, Rear View

ENCLOSURE FEATURES AND OPTIONS

The K62 and K72 enclosures are provided with the following features, some of which are optional.

Table 1. K62 and K72 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)
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	Handle with push-button or keylock
Door Mounting	Universal mounting for left and right-hand door swing (left-hand is default)
Field Wiring	Cable trays for field I/O signal cabling
Equipment Supported	Up to two Tricon system chassis Three DIN rails per enclosure available for mounting Triconex termination devices only.
Enclosure Lighting	Dual enclosure LED lights 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
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)

Table 1. K62 and K72 Enclosure Features and Options (Continued)

Feature	Availability
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	120 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
- 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 K62 and K72 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 RoHS, UL, and UL-C approved. Enclosure meets all applicable European Union directives and is CE and RoHS 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.

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 roof 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)

K62 Enclosure
253 kg (558 lb)
K72 Enclosure
271 kg (596 lb)

SIDE PANEL

K62 Enclosure
19 kg (42 lb)
K72 Enclosure
21 kg (47 lb)

Mounting

Floor

CAUTION

To prevent injury, this enclosure must be bolted down. Refer to the installation guide (B0700GN).

Construction

MATERIAL

Doors (Metal)
Sheet steel, 1.8 mm (15 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
Epoxy-polyester resin paint, textured RAL 7035 gray
Roof, Side Panels, Doors
Epoxy-polyester resin paint, textured RAL 7035 gray

FINISH (CONT.)

Base/Plinth
Epoxy-polyester resin paint, textured RAL 7022 gray
Gland Plates and Internal Hardware
Zinc-plated, passivated

Cable Entry

Bottom through gland plate(s)

Earthing (Grounding)

ROOF, SIDEWALLS, GLAND PLATES

Ground cables on all panels

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)

PHYSICAL SPECIFICATIONS (CONTINUED)

ETP 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

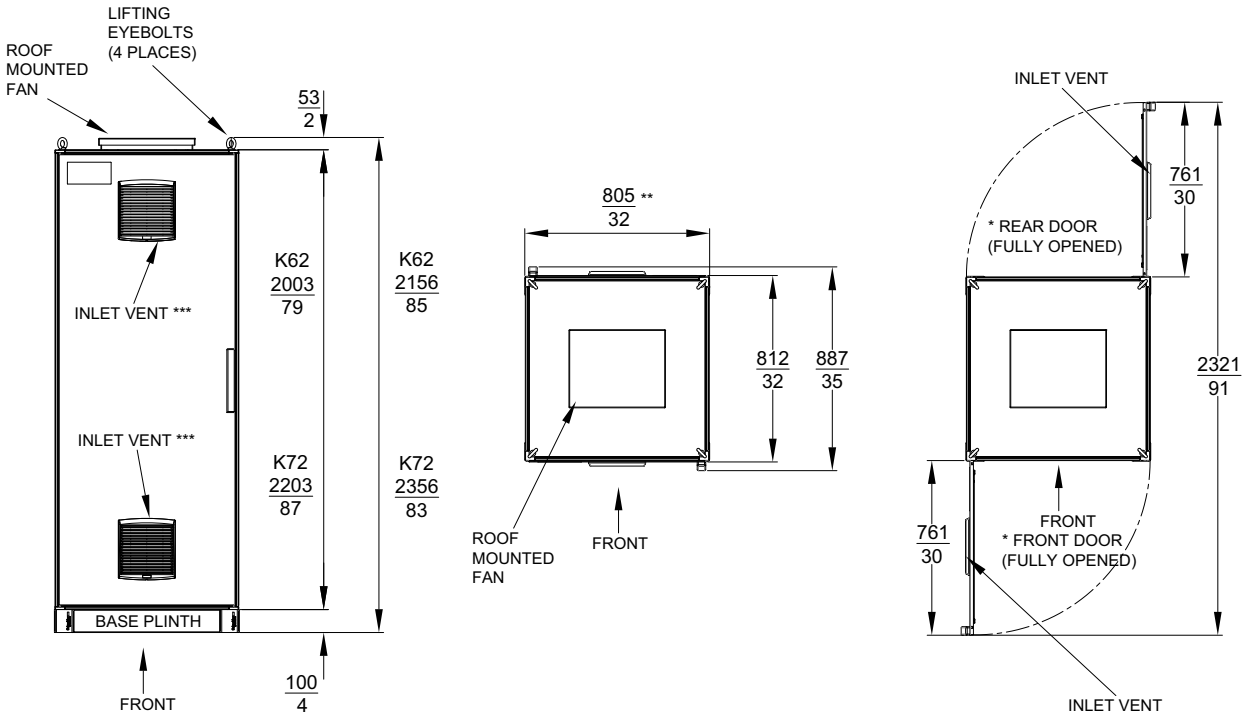
For additional information describing these enclosures, refer to the following documentation.

Document Number	Description
PSS 31H-2K60	K60 Tricon System Enclosure
PSS 31H-2K61	K61 Tricon Termination Enclosure
PSS 31H-2K66	K66 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

K62 or K72 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
*** FRONT INLET VENTS ARE NOT PRESENT WHEN THE ENCLOSURE HAS THE SAFETY GLASS FRONT DOOR OPTION.

Foxboro®

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