Foxboro Evo™ Process Automation System

Product Specifications

Foxboro® by Schneider Electric

PSS 31H-2K60

K60 Tricon System Enclosure

VENTED ENCLOSURE WITH ROOF-MOUNTED FANS AND OPTIONAL SAFETY GLASS FRONT DOOR

VENTED ENCLOSURE WITH ROOF-MOUNTED FANS

The K60 Tricon System Enclosure provides environmental protection and housing for Triconex™ Tricon system chassis and modules.

OVERVIEW

The K60 enclosure is specifically designed for housing Tricon system chassis and modules. It is designed for use with the K61 or K66 Tricon Termination Enclosures, and is available as a vented enclosure only.

The K60 enclosure can be configured with up to three Tricon chassis. Main power entry can include optional EMC/RFI line filters. It is a free-standing, floor mounted unit with an IP 43 rating for location in mild (ordinary) environmental areas.

The K60 enclosure, IP 43 rated, can be installed bayed or adjoined to others to optimize the use of floor space. The enclosures can be bayed together using baying kits as discussed in the *K-Series Enclosures Site Planning and Installation User's Guide* (B0700GN).

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

NOTE

It is possible to configure the K60 enclosure with front access only and the safety glass front door. However, since no ventilation is located on a rear wall, the end-user is responsible for locating adequate inlet ventilation to maintain proper operation of the enclosure's equipment, through ventilation on a side wall or from an adjoined cabinet.

Vented enclosures have a limited thermal load (see "Operating Temperatures (Ambient)" on page 8).

FEATURES

The K60 Tricon system enclosure offers the following features:

- Accommodates up to three Tricon system chassis
- 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).
- Vented enclosure for use in ordinary (IP 43) rated environments
- Compact design to minimize use of floor space with both front and rear access that allows maximum density of enclosures in a control room environment
- Options for front and rear access or front access only, both with optional safety glass front door
- Optional door intrusion monitoring
- Alarm contact terminal block assembly for main chassis alarming, door intrusion monitoring switches, enclosure temperature switch and field power supply status.
- Bottom cable entry for power wiring and cables for Triconex termination devices, such as External Termination Panels (ETPs), Field Terminations and External Termination Assemblies (ETAs)
- Conveniently placed eyebolts for transporting and lifting the enclosures
- A 100 mm (4 in) plinth - total enclosure height of 2156 mm (85.0 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 enclosure. Each switch is prewired to a set of alarm status terminal blocks.

TRICONEX TERMINATION DEVICE/INPUT POWER CABLING

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.

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

Each enclosure is 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.

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

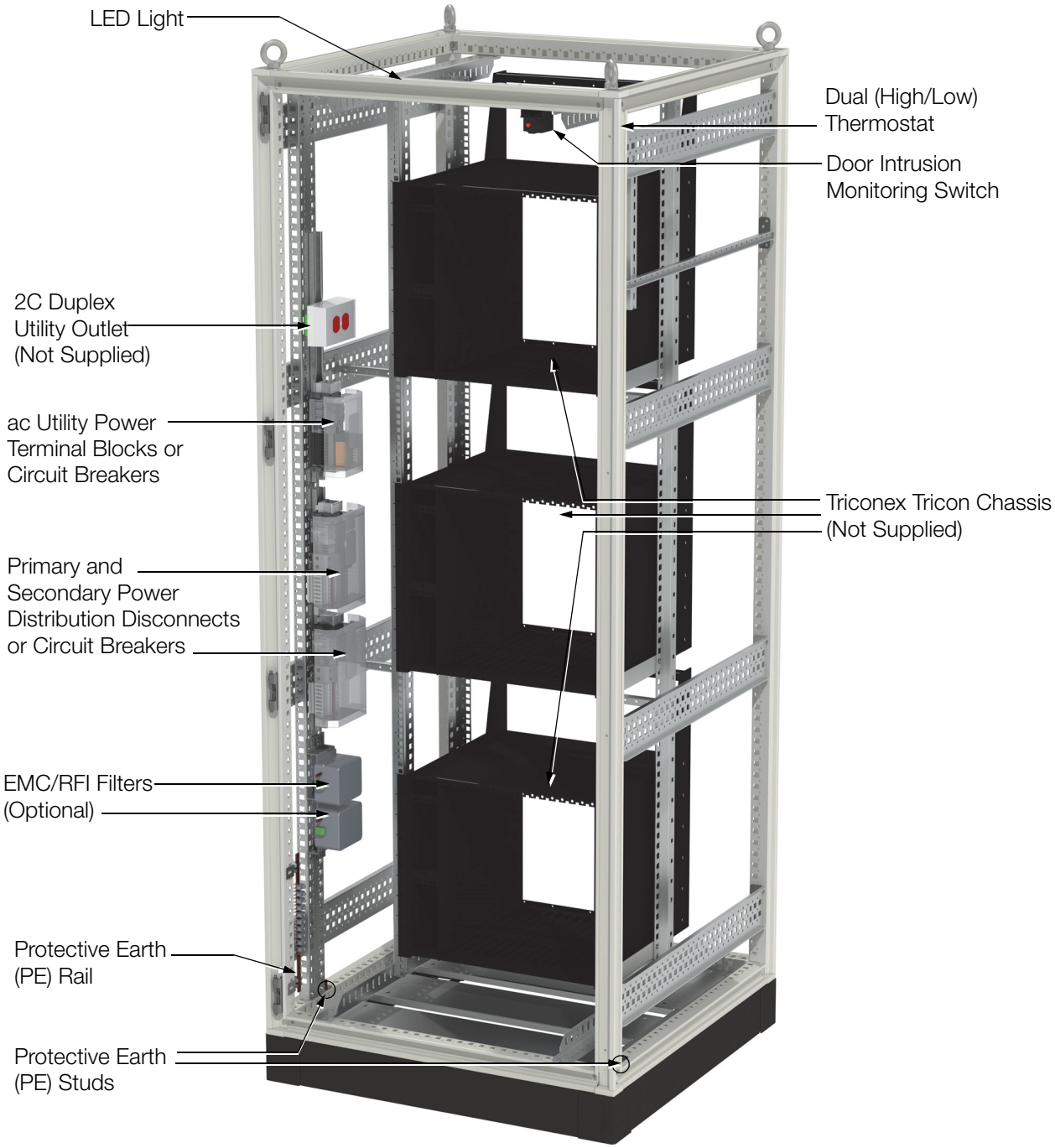


Figure 1. K60 Tricon System Enclosure, Front Access Only Option, Front RIght View

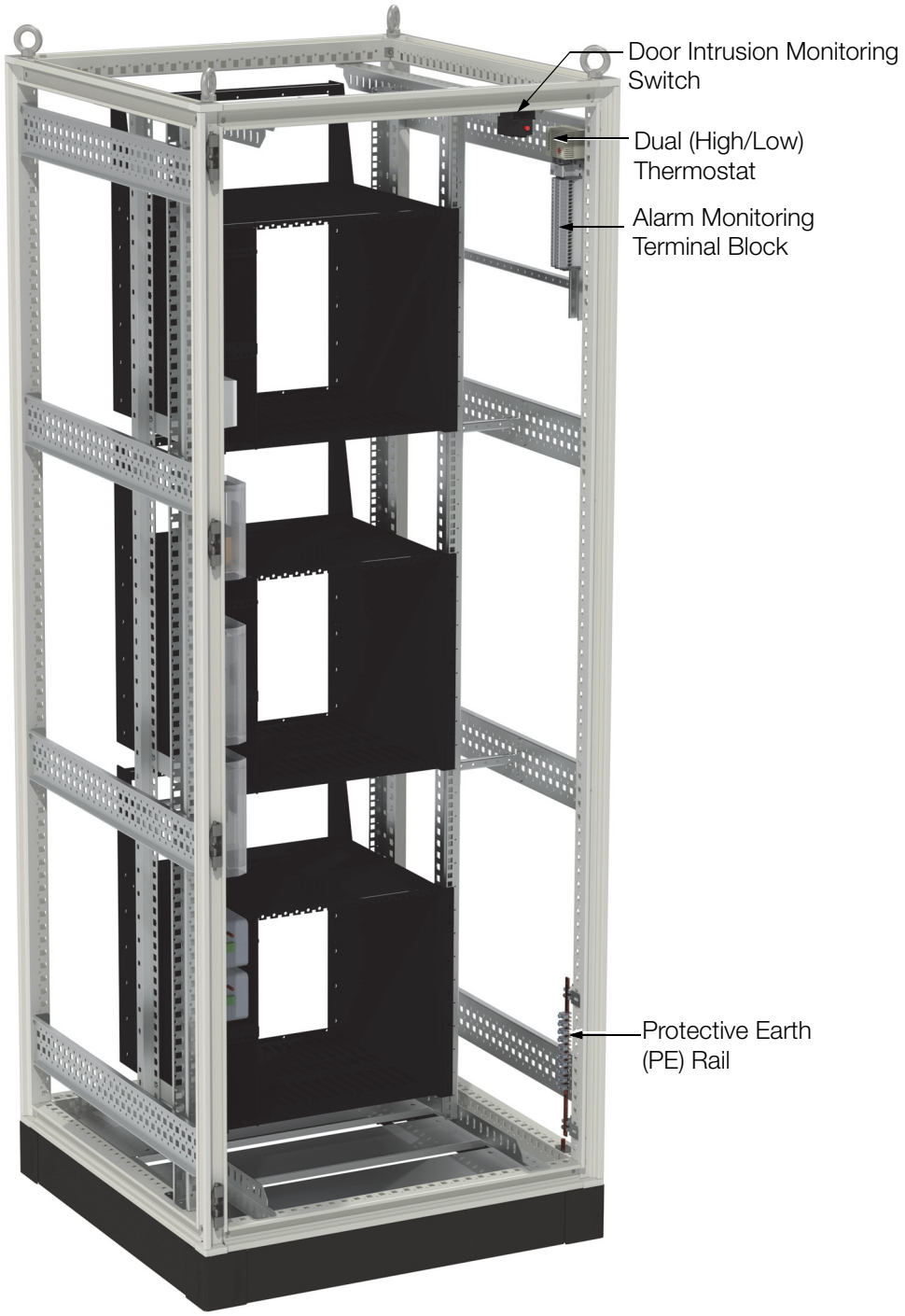


Figure 2. K60 Tricon System Enclosure, Front Access Only Option, Front Left View

ENCLOSURE FEATURES AND OPTIONS

The K60 enclosure is provided with the following features, some of which are optional.

Table 1. K60 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 -OR- Front access only
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)
Equipment Supported	Up to three Tricon system chassis NOTE: For three chassis arrangement, use Tricon interface cables which have a 0° exit option.
Enclosure Lighting	Single and/or 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. K60 Enclosure Features and Options (Continued)

Feature	Availability
Alarm Contact	Alarm contact terminal block assembly for main chassis alarming, door intrusion monitoring switches, and enclosure temperature switch.
Utility Power	120 V ac or 240 V ac utility power

FUNCTIONAL SPECIFICATIONS

Enclosure

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

ENVIRONMENTAL SPECIFICATIONS

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

Operating Temperatures (Ambient)
Thermal performance of the K60 enclosure meets the convection cooling requirements described in the *Planning and Installation Guide for Tricon Systems*(1).

VENTED (THERMAL LOADING)

To accommodate three 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 250W.

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 Temperature Thermostat

HIGH ALARM SETTING

Opens 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.
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 Foxboro Global Client Support.
(2) Under normal operating conditions, with roof-mounted 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 an Foxboro representative if precise weight figures are required.

VENTED ENCLOSURE (MAX. CONFIGURATION)
800 mm x 800 mm - 253 kg (558 lb)

SIDE PANEL
2000 mm x 800 mm - 19 kg (42 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
Epoxy-polyester resin paint, textured RAL 7035 gray
Roof, Side Panels, Doors
Epoxy-polyester resin paint, textured RAL 7035 gray
Base/Plinth
Epoxy-polyester resin paint, textured RAL 7035 gray
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 6 mm^2 (10 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

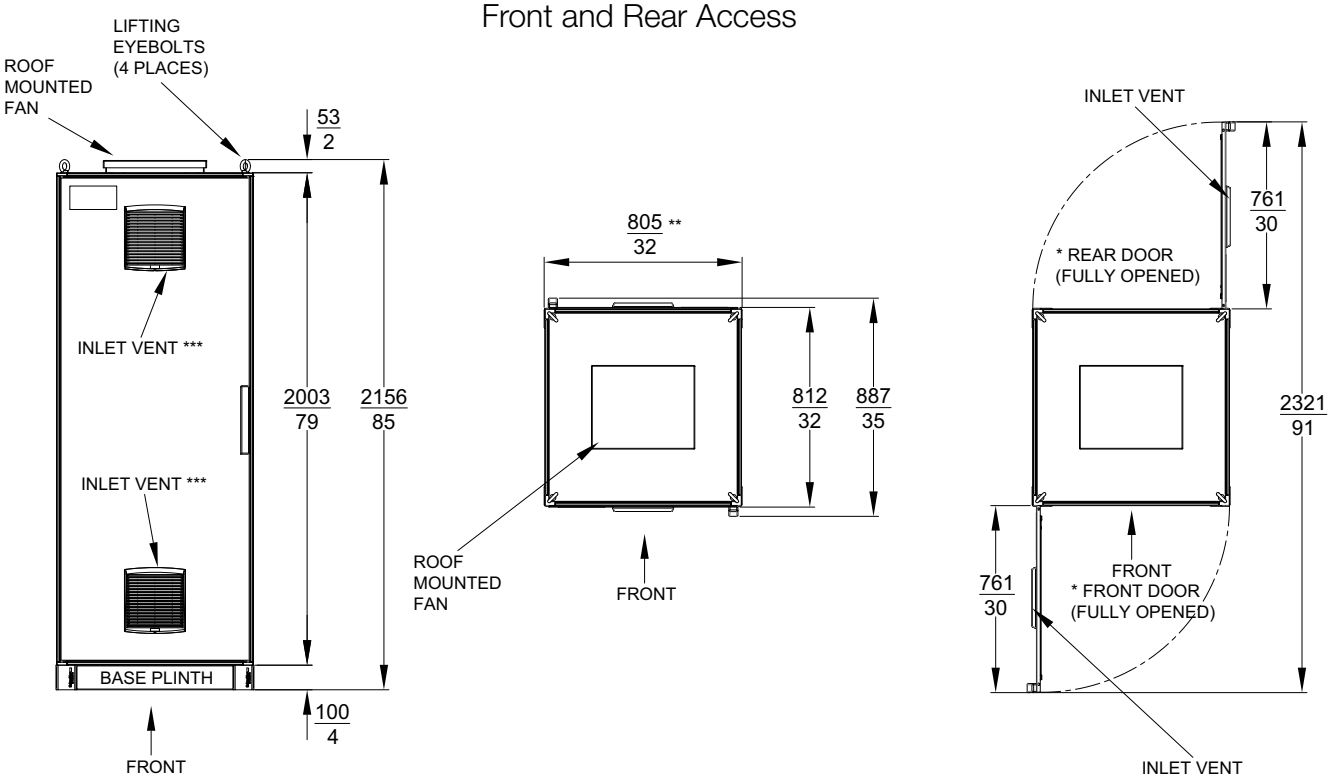
For additional information describing this enclosure, refer to the following documentation:

Document Number	Document Title
PSS 31H-2K61	K61 Tricon Termination Enclosure
PSS 31H-2K62	K62 and K72 Tricon System and Termination Enclosures
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. Documents describe the Tricon interface cables with a 0° exit option.

DIMENSIONS - NOMINAL

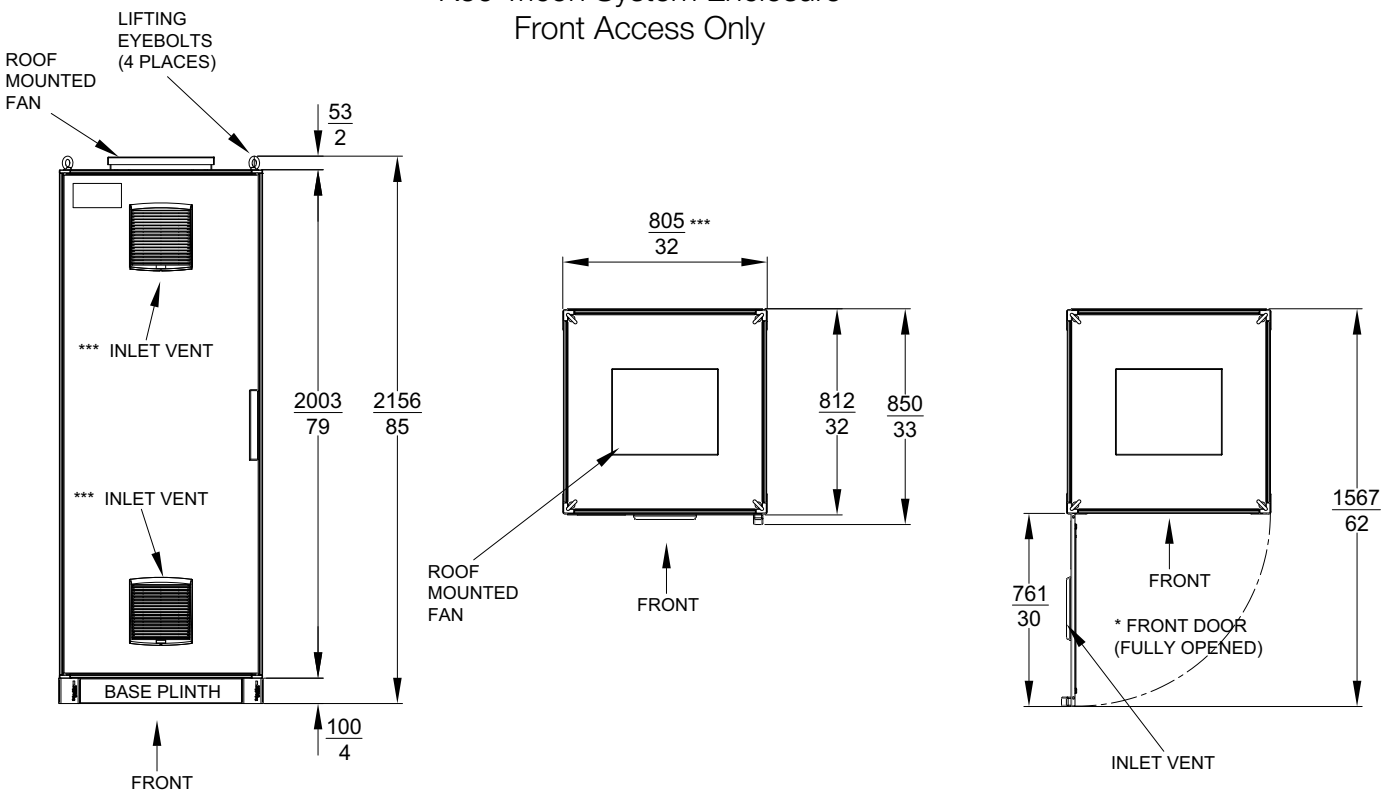
K60 Tricon System Enclosure
Front and Rear Access



* 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.

DIMENSIONS - NOMINAL

K60 Tricon System Enclosure
Front Access Only



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Foxboro®
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