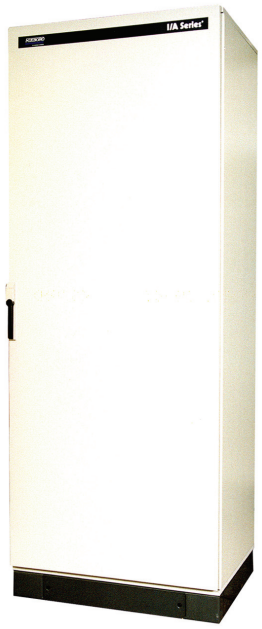
I/A Series® Hardware

PSS 21H-2X3 B4

B03 Enclosure



The B03 I/A Series® system metal industrial enclosure provides harsh environmental protection for DIN rail mounted modules, power modules, terminals and connectors for external field wiring.

FEATURES

The B03 enclosure features include:

- Rugged environmental protection (with sealed doors) for location in harsh environments
- NEMA 4® rated, Class GX environments
- Accommodation for up to 32 Fieldbus Modules (FBMs)/Fieldbus Communication Modules (FCMs)
- Option for two-position Modular Baseplate to support Fieldbus Communication Modules (FCMs)/Field Control Processors (FCP270s)
- DIN rails, wireways, and optional earthing bars for field terminations
- 2000 mm H x 800 mm W x 800 mm D or 2000 mm H x 800 mm W x 600 mm D sizes
- 800 mm W x 800 mm D provides two additional DIN rails for mounting Termination Assemblies
- Options for single, redundant, or no power supplies
- Both front and rear access, which provides separate access for maintenance (via the front door) and field I/O wiring (via the rear door)

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- Front and rear sealed doors that have comfortable handles with push-buttons and key locks
- Bottom cable entry for field and power wiring, but can be modified for top cable entry
- Standard lifting eye bolts and a 100 mm (4 in) plinth - total enclosure height of 2155 mm (88.7 in).

INTRODUCTION

The B03 enclosure is specially designed for DIN rail mounted equipment. Each enclosure can be configured with vertically mounted baseplates, for mounting up to 32 Fieldbus Modules (FBMs)/ Fieldbus Communication Modules (FCMs). An optional 2-position Modular Baseplate accommodates Fieldbus Communication Modules (FCMs) or Field Control Processors (FCPs). DIN rails also provide ample space for the associated termination assemblies (TAs).

The enclosure is a sealed, free-standing, floor mounted unit with a NEMA 4 rating for location in harsh (class GX) environments.

Multiple B03 enclosures can be installed adjacent to one another to maximize the use of floor space. (However, the enclosures cannot be mechanically adjoined.)

ENVIRONMENTAL PROTECTION

The enclosure is non-vented, having a sealed roof and doors, and uses natural convection to remove module heat. Heat is dissipated into the ambient environment by the enclosure's exterior surfaces.

END-USER ENCLOSURE CONFIGURATIONS

The enclosure can be reconfigured on-site to meet the needs of specific applications. For example, an enclosure can be reconfigured to contain only baseplates or only termination assemblies. Also, the enclosure can be ordered empty (without baseplates or power equipment), allowing it to be used to house other Invensys® or third-party DIN rail mounted equipment.

MODULAR BASEPLATE MOUNTING

The enclosure can contain various types of Modular Baseplates, which accommodate different quantities and types of modules: just FCMs or FBMs, a combination of FCMs and FBMs, or a combination of FCPS and FBMs. The Modular Baseplate is DIN rail mounted (see Figure 1). The Modular Baseplate includes signal connectors for the FBMs, redundant independent dc power connections, I/O cable connections, Module Fieldbus connections and time synchronization connections.

The B03 enclosure has two vertical DIN rails for mounting 2- or 8-position vertical Modular Baseplates. The standard configuration has four 8-position FBM/FCM Modular Baseplates and one optional 2-position FCM or FCP Modular Baseplate. The standard configuration for Modular Baseplates is listed in Table 1 and the positions are shown in Figure 1 on page 4.

Table 1. Typical B03 Modular Baseplate Configurations

Optional - 2 FCP270 or 2 FCM	
Position 1	**Position 2**
None or	None or
8 FBM/FCM	8 FBM/FCM
Position 3	**Position 4**
None or	None or
8 FBM/FCM	8 FBM/FCM

For more information on the various types of baseplates in an I/A Series system, refer to *DIN Rail Mounted Modular Baseplates* (PSS 21H-2W6 B4).

FIELD TERMINATION ASSEMBLIES

Field I/O wires enter through the bottom of the enclosure. Alternatively, the enclosure can be modified on-site for top cable entry. (Cable entry ports must be made in keeping with maintaining the enclosure's protection classification.) Two wireways (see Figure 1) provide routing for the field I/O wires, which terminate at termination assemblies (TAs).

The TAs mount on two DIN rails located in the rear section of the 800 mm and 600 mm deep enclosure. The 800 mm deep enclosure has one additional DIN rail mounted on each side (total of two) of the enclosure.

The DIN rails have the capacity (length) to mount a reasonable mix of TAs to meet the requirements of the 32 DIN rail mounted modules (maximum) that the enclosure can accommodate.

Two bus bars (optional) located in the rear section of the enclosure provide for the termination of field cable shields.

POWER DISTRIBUTION ARCHITECTURE

The B03 enclosure supports an optional redundant power system, in which a dual power distribution network (two power supplies fed by independent entry sources) provide redundancy protection against power failures (see Figure 1).

Power wiring to the enclosure is routed through the bottom of the enclosure. The enclosure can be modified on-site for top power cable entry. Ac power connects to the primary and secondary entry terminal block for main and backup ac power.

The B03 enclosure uses a DIN rail mounted power supply that provides 24 V dc to DIN rail mounted baseplates. The Model FPS400-24 is a 400 W power supply that is agency certified for use in Class 1, Division II and Zone 2 applications. For more information, refer to *DIN Rail Mounted Power Supply* (PSS 21H-2W3 B4).

ENCLOSURE OPTIONS

The B03 enclosure can be configured for shipment with the following options:

- Baseplates, mounted vertically, to accommodate up to 32 FBM/FCM DIN rail modules
- Option for two-position Modular Baseplate to support Fieldbus Communication Module (FCM) or Field Control Processor (FCP270)
- A print pocket inside front door
- Two field cable shield bus bars
- A duplex utility outlet (120 V, 60 Hz, general purpose areas only)
- Single (400W) or redundant power supplies with power distribution, or no power supplies.
- A general purpose or hazardous area (Class I, Division II, Zone 2) area certification
- 800 mm or 600 mm deep enclosure
- Left or right hinged door.

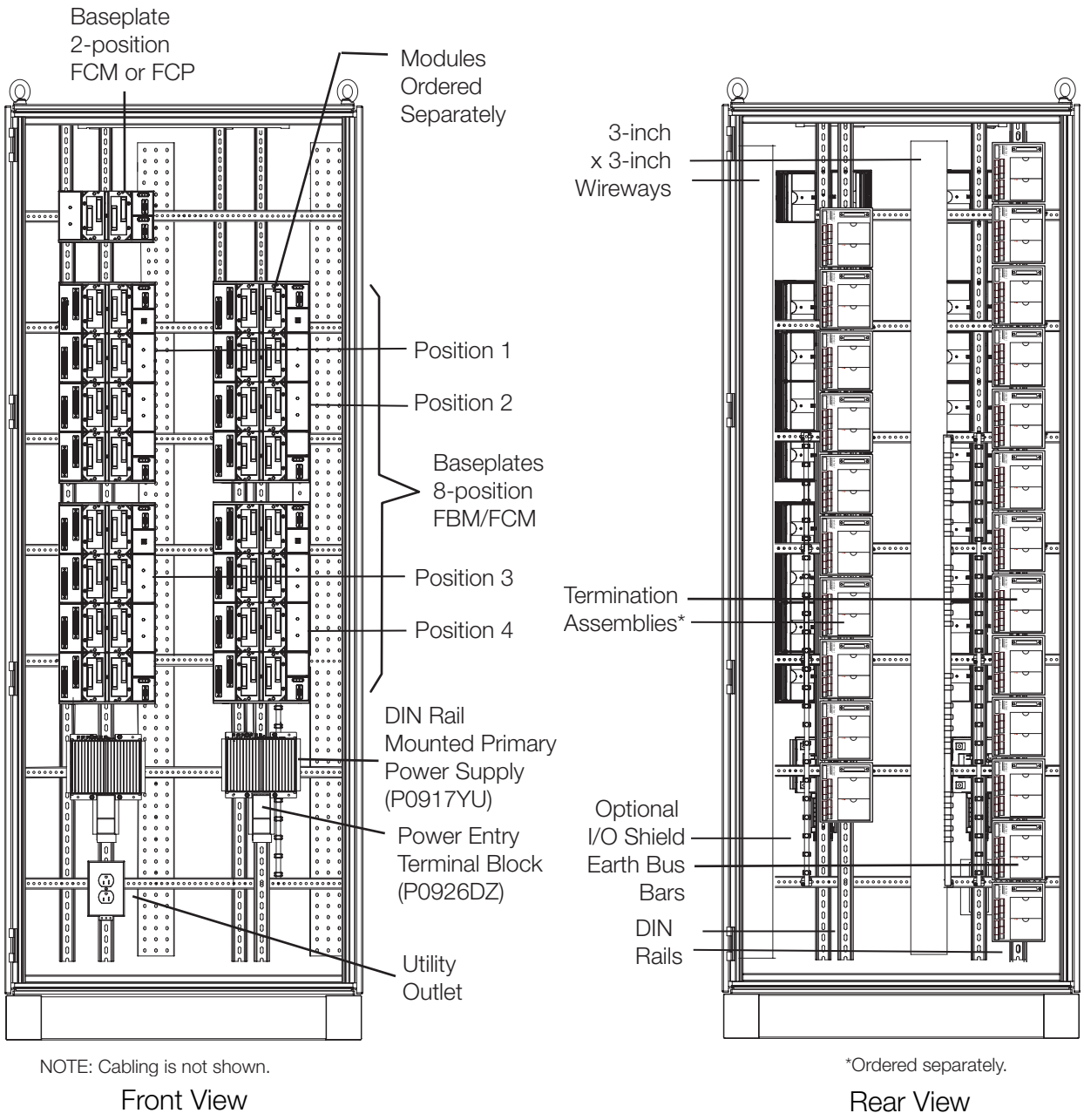


Figure 1. B03 Enclosure (Typical Installation)

FUNCTIONAL SPECIFICATIONS

Enclosure
Floor-mounted, metal enclosure, mounting up to 32 DIN rail mounted FBMs/FCMs and associated termination assemblies. Optional 2-position baseplate accommodates FCMs or FCPs.

Power Supplies (Optionally Redundant)
Refer to PSS 21H-2W3 B4.

ENVIRONMENTAL SPECIFICATIONS

Ingress Protection
NEMA 1, 4, 12, 13
IP56 (Per EN 60 529/IEC 529)

Operating Temperature (external ambient) and Thermal Loading
See Table 2.

Table 2. Temperature and Thermal Loading

Enclosure Size	Temperature	Thermal Loading (Watts)
800 mm x 600 mm	-20 to +60°C (-4 to +140°F)	Fully Loaded, Maximum 293 Watts
	-20 to +50°C (-4 to +122°F)	Fully Loaded, Maximum 523 Watts
800 mm x 800 mm	-20 to +60°C (-4 to +140°F)	Fully Loaded, Maximum 391 Watts
	-20 to +50°C (-4 to +122°F)	Fully Loaded, Maximum 697 Watts

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

Altitude

OPERATING
-300 to +3,000 m (-1,000 to +10,000 ft)

STORAGE
-300 to +12,000 m (-1,000 to +40,000 ft)

Contamination Class
Class GX (Severe) as defined in ISA® Standard S71.04

Relative Humidity
5 to 95% (noncondensing)

Agency Certification
UL®/UL-C listed and CENELEC certified
Enclosure meets all applicable European Union directives and bears the CE mark.

Area Designation
Per customer order, designed for general purpose or hazardous area (Class I, Division II, Zone 2).

PHYSICAL SPECIFICATIONS

Construction
Sheet steel with textured, powder-coated finish

Color

PANELS AND DOORS
RAL 7035 - light gray

PLINTH
RAL 7022 - dark gray

Panel Thickness

DOORS
14 Gauge (2 mm)

SIDE PANELS, TOP
16 Gauge (1.5 mm)

Cable Entry
Bottom (through cable plates); can be modified on-site for top cable entry [see *DIN Rail Mounted FBM Subsystem User's Guide* (B0400FA)].

Mounting
Floor

CAUTION

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

Field-Wire Termination

DIN RAILS
Two DIN rails in 800 mm x 600 mm enclosure, four DIN rails in 800 mm x 800 mm for mounting Termination Assemblies (TAs). Each DIN rail is 1708 mm (67.2 in) long.

WIREWAYS
Two wireways for segregation of cables. Each wireway is 75 x 75 mm (3 x 3 in).

EARTH BUS BARS
Two optional bus bars for earthing (grounding) of field device shield wiring

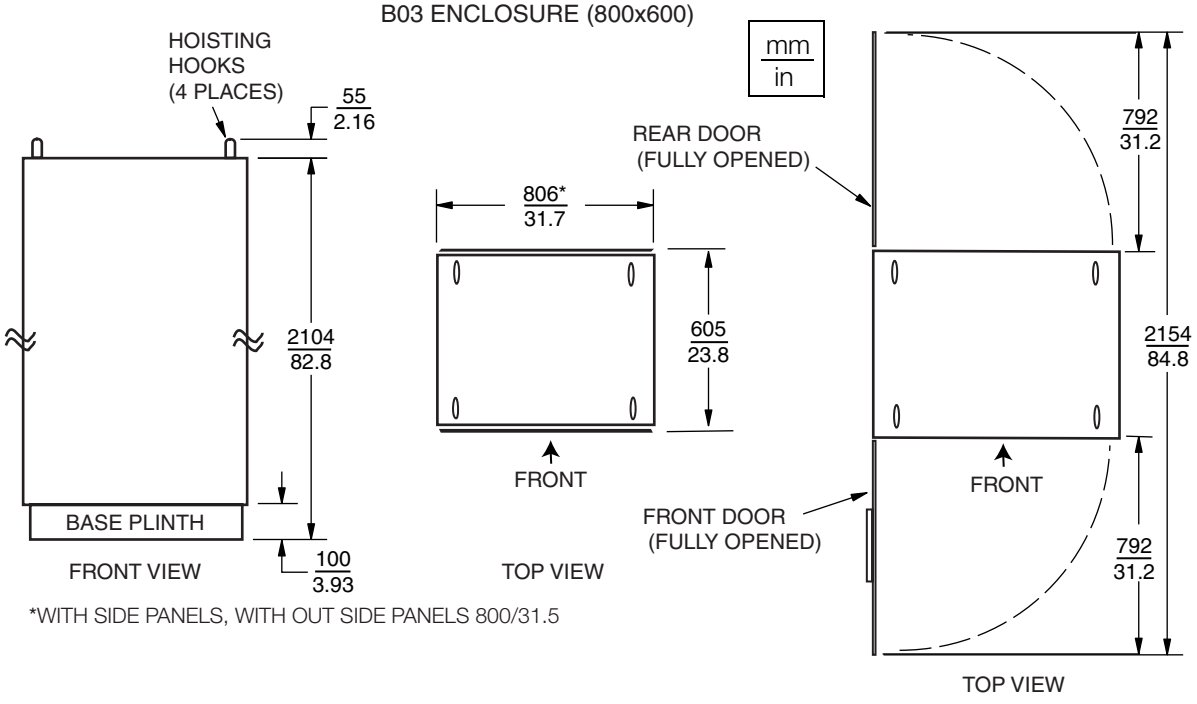
Mass
The mass of the enclosure is dependent upon the particular configuration. Consult with an Invensys representative if precise mass figures are required.

MASS (FULLY LOADED)
800 mm x 600 mm - 191 kg (425 lb), or
800 mm x 800 mm - 235 kg (517 lb), without modules, TA cables, TAs and field wiring (with sidewalls)

MASS (EMPTY)
800 mm x 600 mm - 191 kg (425 lb)
800 mm x 800 mm - 218 kg (480 lb)

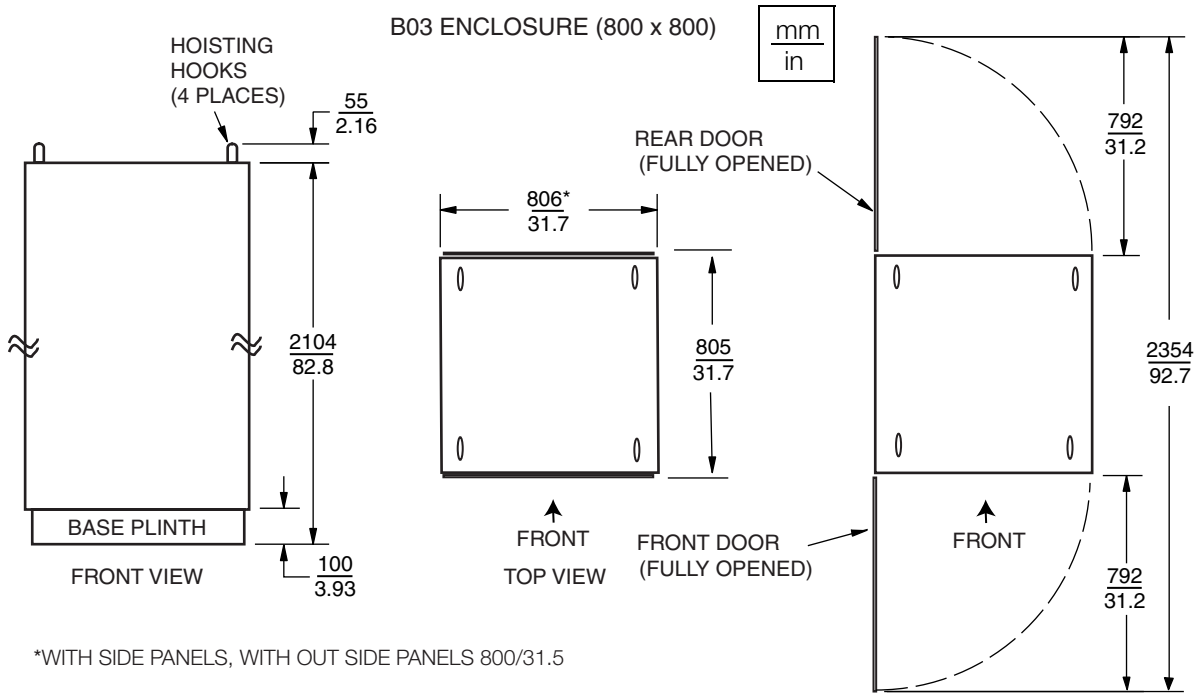
DIMENSIONS - NOMINAL

B03 ENCLOSURE (800x600)



*WITH SIDE PANELS, WITH OUT SIDE PANELS 800/31.5

B03 ENCLOSURE (800 x 800)



*WITH SIDE PANELS, WITH OUT SIDE PANELS 800/31.5

RELATED PRODUCT SPECIFICATION SHEETS (PSS)

PSS Number	Description
PSS 21H-2W1 B3	DIN Rail Mounted Subsystem Overview
PSS 21H-2W6 B4	DIN Rail Mounted Modular Baseplates
PSS 21H-2W2 B3	DIN Rail Mounted Equipment, Agency Certifications
PSS 21H-2W3 B4	DIN Rail Mounted Power Supply

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