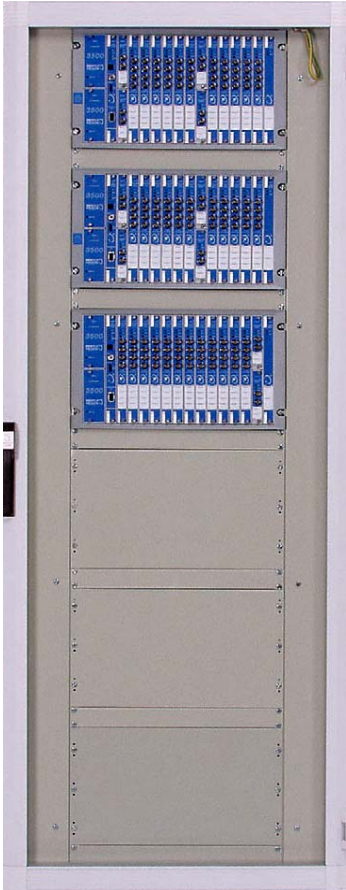


Packaged Systems

Bently Nevada* Asset Condition Monitoring



Description

Packaged Systems provide a fully pre-mounted, pre-wired, site-ready, and factory-tested industrial enclosure solution for GE's Bently Nevada* machinery protection and condition monitoring instrumentation. A packaged system is designed to simplify site installation, provide suitable protection for the installed instrumentation from the surrounding environment, and facilitate ongoing ease of use and maintenance.

Packaged Systems are often delivered as part of larger control and automation projects where customers procure cabinets and instrumentation from multiple suppliers. In other instances, a Packaged System is used as part of a retrofit in an existing facility and must match existing cabinets and a particular field wiring layout. In either situation, customers have the option of specifying the specific dimensions, styles, terminal layouts, and colors¹ of the cabinets supplied by GE to ensure they match site requirements.

Supported Instrument Types	Supported Applications/Environments
<ul style="list-style-type: none"> • 3500 Series Monitoring Systems • 3300 Series Monitoring Systems • Any external data acquisition hardware (e.g., communications processors) required by the monitoring systems • System 1 software servers and networking equipment • Other devices such as wireless networking components, Trendmaster* components, and third-party instruments 	<ul style="list-style-type: none"> • NEMA 12 enclosures (IP54 rating) suitable for indoor control room environments • NEMA 4/4X enclosures (IP66 rating) suitable for outdoor environments² • Wallmount enclosures • Custom size enclosures • Hazardous areas³ • Junction boxes • Cable marshalling enclosures⁴

Notes:

1. Exact custom color matching may affect lead times.
2. Enclosures to meet specific environments (such as highly corrosive) can be provided upon request.
3. Hazardous area classifications can be addressed via intrinsically safe methods (zener barriers or galvanic isolators), or via purged enclosures when required.
4. To address complex site wiring conditions, intermediate cable marshalling enclosures are used by some customers to reduce wiring errors at site and to expedite system installation. When such marshalling enclosures are required, designs can be provided to match both the site field cabling arrangements and the wiring terminations in the primary instrument enclosures.

Specifications

Enclosures

Construction

<i>Frame</i>	9-fold roll-formed sheet steel.
<i>Door</i>	14ga / 1.6 mm (12 ga. / 2.0 mm for NEMA 4/4X); supported by three heavy-duty lift-off hinges.
<i>Latch</i>	3-point latch w/ oil-tight, keylock handle; latch rods use rollers for easier door closure; 14ga/1.6 mm

Physical

<i>Height</i>	2110 mm (83.1 in) (includes 100 mm base)
<i>Depth</i>	802 mm (31.6 in)
<i>Width</i>	TS8808 = 799 mm (31.5 in) TS8608 = 599 mm (23.6 in)

Standard Finishes

<i>NEMA 12</i>	<p>Type: Polyester Urethane Powder</p> <p>Color: RAL 7035 (light gray); solid door, roof, and sidewalls have rough texture inside and out; frame and viewing door have smooth texture</p> <p>Thickness: 0.8 – 1.2 mils (base coat); 3 – 5 mils (top coat); 3.8 – 6.2 mils (total)</p>
<i>NEMA 4</i>	<p>Type: Polyester Urethane Powder</p> <p>Color: ANSI 61 (gray); interior mounting panels painted white.</p>
<i>NEMA 4X</i>	<p>Stainless Steel type 304 (316 available upon request) Interior Mounting Panels painted white.</p>

Compliance

- NEMA / EEMAC 12
- UL 508 Type 12
- IEC 529 rated IP54
- UL file # E 76083
- CSA file # LR 59132
- IP 55 per EN 60 529/10.91 (IP54 rating when fan/filters installed).

NEMA/UL Type 12 and IP54

Intended for indoor use, primarily to provide a degree of protection against dust, falling dirt, and dripping non-corrosive liquids.

NEMA/UL Type 4/4X and IP66

Intended for indoor/outdoor use to provide protection against all elements. NEMA 4X enclosures add a level of protection against corrosion.

NEMA/UL Type 4/4X and IP66

Intended for indoor/outdoor use to provide protection against all elements. NEMA 4X enclosures add a level of protection against corrosion.

Crating

"Insect-free"; pallet and 5/8" solid plywood box w/ carriage bolts, drive screws, and steel strapping; T-lam ethafoam corner protectors; stretch wrap; 2" x 2" TREX® rails; poly bag and desiccate 25. Suitable for international shipping.

Wiring Duct

<i>Material</i>	Rigid Polyvinyl Chloride (PVC) thermoplastic
<i>Temp Rating</i>	For continuous use up to 50° C (NORYL® / Nylon available upon request for special applications)
<i>Flammability Rating</i>	UL94 (V0)

Terminal Blocks

<i>Type</i>	Weidmüller W-series (single feedthrough) Power wiring: Weidmüller WDU 6 (or equal) Transducer, relay, and recorder wiring: Weidmüller WDU 2.5 (or equal) Thermocouple (TC) wiring: Weidmüller WDU 2.5 (or equal) with special modifications available to accommodate different TC materials
<i>Conductor Components</i>	Electrical-grade copper
<i>Screws and clamping yokes</i>	Zinc-plated, heat-treated steel
<i>Insulation</i>	Wemid® (A modified thermoplastic similar to Polyamide 66)
<i>Flammability Rating</i>	UL94 (V0)
<i>Max Temp Rating</i>	150° C (302° F)
<i>Voltage Rating</i>	600 Volts
<i>Current Rating</i>	60 A (WDU 6) 25 A (WDU 2.5)
<i>Temperature Approvals</i>	UL, CSA, CE, and VDE

Note: For CE enclosures, lockable isolators with RFI line filters are provided.

Cables

All conductors are stranded copper with PVC insulation

3- and 2-wire signal cable with shield

<i>Ratings</i>	UL, CSA, and CE
<i>Nominal Cable Diameter</i>	4.19 mm (0.165 in.)
<i>Conductor Area</i>	0.35 sq. mm (18 AWG)
<i>Color Scheme</i>	Red (3-wire only): transducer power (typically -24 Vdc) Black: common White: transducer signal Green: (shield)
<i>Temp Rating</i>	75° C (167° F)
<i>Voltage Rating</i>	300 Volts

Relay Wire

<i>Ratings</i>	UL and CSA
<i>Conductor Area</i>	1.2 sq. mm (16 AWG)
<i>Color Scheme</i>	Black: typically NO contact White: typically ARM contact Green: (shield)
<i>Temp Rating</i>	105° C (221° F)
<i>Voltage Rating</i>	600 Volts

Power Wire

<i>Ratings</i>	UL and CSA
<i>Conductor Area</i>	3.1 sq. mm (12 AWG)
<i>Temp Rating</i>	105° C (221° F)
<i>Voltage Rating</i>	600 Volts

Circuit Breakers

<i>Type</i>	Thermo-magnetic, double-pole
<i>Endurance</i>	6000 on/off cycles at rated load
<i>Temp Rating</i>	-25° C to 25° C
<i>Voltage Rating</i>	400 VAC
<i>Temperature Approvals</i>	UL, CSA, CE, and VDE

Bus Bars

Individual bus bars are provided for Earth Ground and Instrument Common, and can be connected when an isolated common is not required. Intrinsically safe applications have an additional bus bar for I.S. ground

Material Copper

Cooling Fan

The fan is designed to be the air inlet of the enclosure cooling system. The outlet is an exhaust grill with filter.

Air Flow 230 CFM (390 m³/hr)

Line Voltage 120/240 VAC 50/60 Hz

Current Draw 0.58 A @ 120 VAC
0.29 A @ 230 VAC

Motor RPM 3000

Noise 61 dB

Ordering Information

Packaged Systems are individually manufactured to order. The options below are for standard requirements / configurations. For custom requirements / configurations, contact a GE sales professional specializing in Bently Nevada Asset Condition Monitoring products and services.

Bently Nevada Packaged System

CUSTOM_CABINET-AXX through TXX

Default options are in **BOLD** and represent fastest lead times.

A: 3500 System Installation (see note)

- 00** No 3500 Systems installed
- 01** One 3500 System
- 02** Two 3500 Systems
- 03** Three 3500 Systems
- 04** Four 3500 Systems (only available when marshalling cabinets are used)

Note: A 3500/95 Display with integral PC counts as a 3500 rack. A 3500/94 display with the rack-mount option also counts as a 3500 rack.

B: Marshalling Cabinets

- 00** **No Marshalling Cabinets Used**
- 01** Marshalling Cabinets Used

C: Cabinet Type

- 00** **NEMA 12 (indoor)**
- 01** NEMA 4 (outdoor)
- 02** NEMA 4X (outdoor – stainless steel)

Note: NEMA-rated enclosures must have door-mounted fans. Roof-mounted fans are not compatible with NEMA requirements.

D: Installation Type

- 00** **Freestanding (front and rear entry doors provided)**
- 01** Wallmount
- 02** Freestanding front entry only (for bulkhead-mount racks)
- 03** Freestanding front entry only (swing frame)
- XX** Other (specify at time of quoting)

E: Installation Environment

- 00** **Indoor (temperature controlled room)**
- 01** Outdoor (shaded)
- 02** Outdoor (direct sunlight)
- 03** Outdoor (hazardous area)
- XX** Other (specify at time of quoting)

F: Communication Hub Type

- 00** No Ethernet switch installed
- 01** **8-port Ethernet switch**
- 02** 7-port Ethernet switch with one fiber optic connection
- 03** 6-port Ethernet switch with two fiber optic connections
- 04** 24-port Ethernet switch
- 05** 24-port Ethernet switch with one fiber optic connection
- XX** Other (specify at time of quoting)

G: Enclosure Size

- 01** **2000H x 800W x 800D (mm)**
- 02** 2000H x 800W x 600D (mm)

H: Cabinet Door Style

- 01** Solid Front / Solid Rear
- 02** Viewing Front / Solid Rear
- XX** Other (specify at time of quoting)

Note: When ordering displays, select the panel-mount option and a solid front door. The display(s) will then be mounted in the front door.

I: Cabinet Base

- 00** No Base / Plinth Installed
- 01** **100 mm / 4-inch base installed**
- XX** Other (specify at time of quoting)

J: Input Power

- 00** No power terminals or wiring
- 01** 120 VAC / 60 Hz
- 02** 230 VAC / 50 Hz
- XX** Other (specify at time of quoting)

K: Signal Termination Style

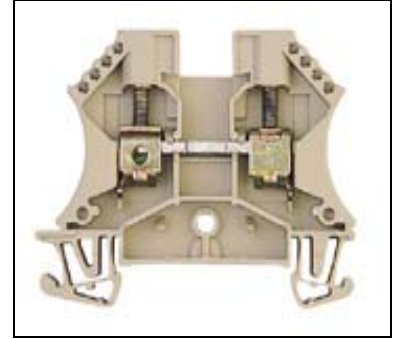
- 00** No Signal terminals or wiring
- 01** External Termination Modules (see photo and notes below)



Notes:
External Termination Modules are recommended for Marshalling Cabinets.

The number of External Termination Modules that will fit inside an enclosure is limited to approximately 35, depending on enclosure details.

02 Weidmüller WDU 2.5 beige (or equivalent) (see photo)



- 03** Weidmüller WDU 2.5 blue (or equivalent) with MTL 5000 series galvanic isolators
- 04** Weidmüller WDU 2.5 blue (or equivalent) with external MTL 7700 series zener barriers
- 05** Weidmüller WDU 2.5 beige (or equivalent) with external MTL surge protection
- XX** Other (specify at time of quoting)

L: Recorder Output Termination Style

- 00** No Recorder terminals or wiring
- 01** External Termination Modules (see photo for option K and notes below)

Notes:
External Termination Modules are recommended for Marshalling Cabinets.

The number of External Termination Modules that will fit inside an enclosure is limited to approximately 35, depending on enclosure details.

- 02** **Weidmüller WDU 2.5 beige (or equivalent)**
- XX** Other (specify at time of quoting)

M: Relay Termination Style

- 00** No Relay terminals or wiring
- 01** Not used
- 02** **Weidmüller WDU 2.5 beige (or equivalent)**
- XX** Other (specify at time of quoting)

N: Spare Terminals

- 00 0%
- 05 5%
- 10 10%
- 15 15%
- 20 **20%**
- 25 25%
- XX Other (specify at time of quoting)

O: Cabinet Color

- 00 **Light Gray (RAL 7035), rough texture, glossy, inside and outside**
- XX Custom color per customer description (see note). Enclosure color is same inside and outside.

Note: At least ONE of the following is required:
 - Federal paint # per FED-STD-595A
 - RAL number
 - Munsel number
 - Point chip
 - Paint manufacturer name and color number

P: Factory Acceptance Test (FAT)

- 00 No FAT
- 01 Standard 3500 Configuration FAT
- 02 System 1* FAT
- 03 System 1 / Bently PERFORMANCE* / RulePak* FAT
- XX Other (specify at time of quoting)

Q: Computer

- 00 **No computer provided**
- 01 System 1 computer(s) installed on EIA rails (qty must be specified)
- 02 Multiple System 1 computers installed through common display and keyboard/mouse (qty must be specified)
- 03 3500/95 display computer installed
- XX Other (specify at time of quoting)

R: Display

- 00 No display provided
- 01 3500/94 display provided
- 02 3500/94 display shared between multiple 3500 racks
- 03 3500/93 display provided (see note)
- XX Other (specify at time of quoting)

Note: If more than two 3500/93 displays are required, it is more cost-effective to use a 3500/94 display w/ router box.

S: Display Mounting

- 00 No display provided
- 01 Panel mount (see note)
- 02 EIA mount
- XX Other (specify at time of quoting)

Note: When ordering displays, select the panel-mount option and a solid front door. The display(s) will then be mounted in the front door.

T: Enclosure Approvals

- 00 **No enclosure approvals required**
- 01 CSA approval
- 02 CE approval
- XX Other (specify at time of quoting)

Dimensional Diagram

Typical freestanding cabinet (800 mm wide shown) with Bently Nevada 3500 series monitoring racks installed.

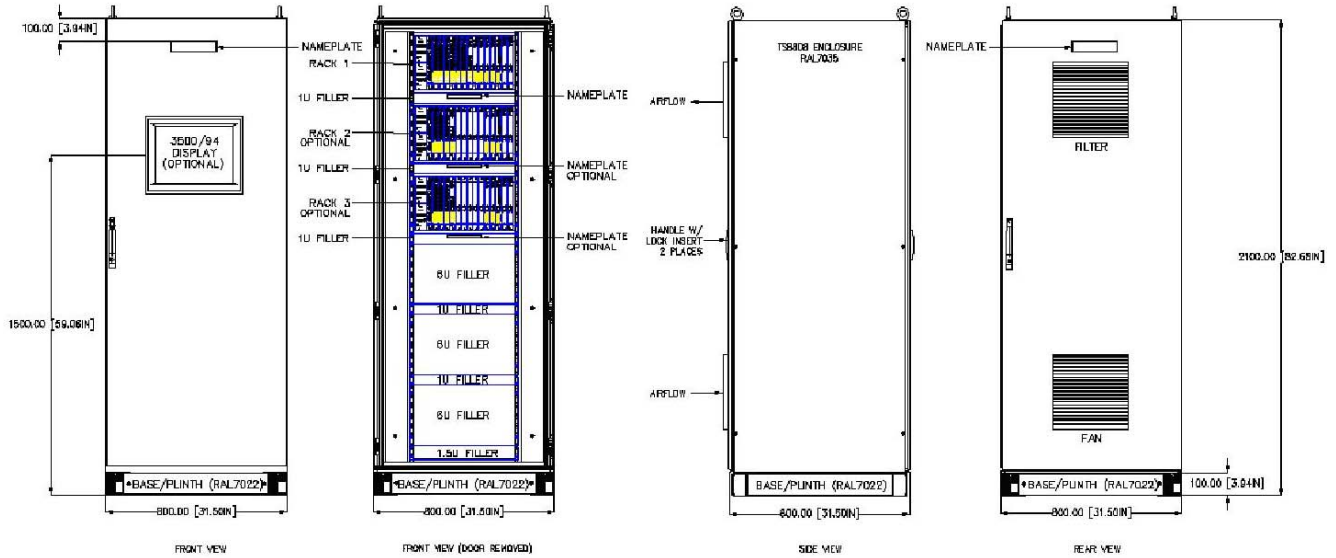


Figure 1: NEMA 12 Cabinet

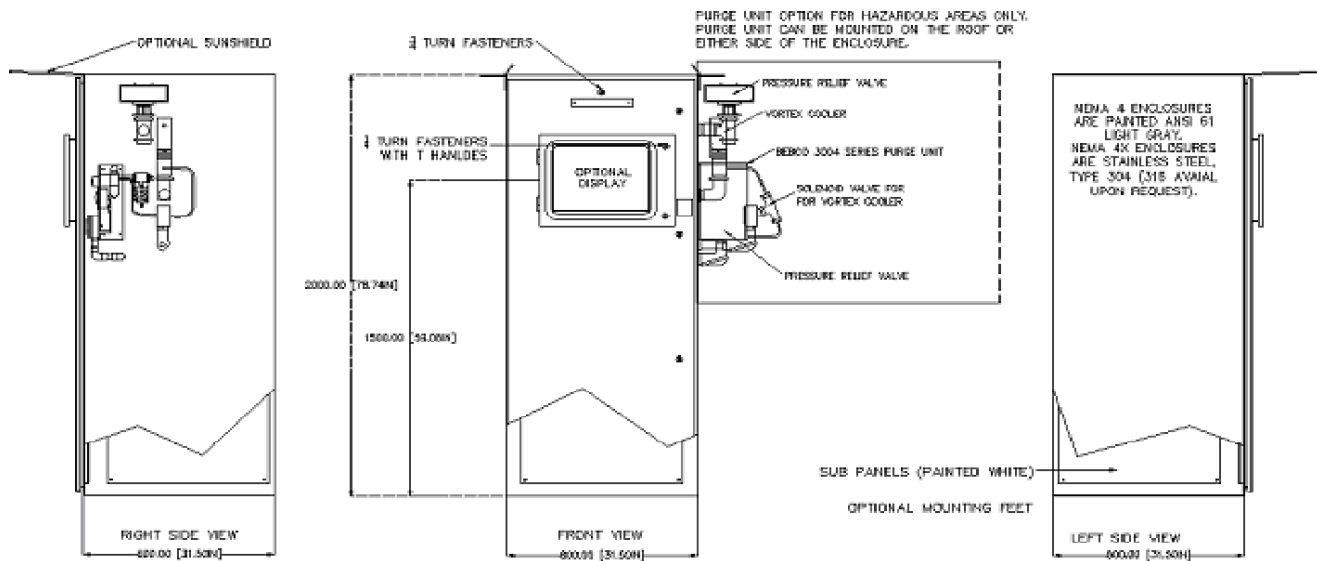


Figure 2: NEMA 4/4X Cabinet

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