

# 3500 Systems Cabinet

## Datasheet

Bently Nevada Machinery Condition Monitoring

104M3188 Rev. C



### Description

The 3500 Systems Cabinet is a pre-engineered Bently Nevada Asset Protection and Monitoring Cabinet (BNAPMC) that includes up to three 3500 Monitoring Systems in a free-standing enclosure for indoor locations. The 3500 Systems Cabinet is compliant with safety and EMC global requirements for non-hazardous areas.

The cabinet includes front and rear lockable, solid doors. The cabinet may include a display if ordered as part of the 3500 systems. The cabinet is delivered to site with the 3500 System (s) configured, integrated, documented, pre-wired, labeled and tested. The customer's qualified personnel connect the field wiring and incoming power to the enclosure's labeled terminals per the wiring diagrams in the provided drawing package.

CE

## Specifications

### Type

3500 Systems, free-standing, front and rear doors, indoor, general locations

| Environment        |   |
|--------------------|---|
| Weight             | 360 kg, max (excluding shipping crate and packing) which includes 3 racks at approximately 40 kg each |
| Temperature        |   |
| Storage            | -30°C to +70°C  |
| Operating          | 0°C to +40°C  |
| Humidity           | Up to 85%, noncondensing  |
| Elevation          | 2000 m, maximum   |
| Ingress Protection | UL/CSA Type 12, IP54; If 3500/93 included in cabinet door: Type 1, IP40                               |

### Inputs

|                              |   |
|------------------------------|---|
| Power                        | 85 to 132 Vac, 1f, 50/60 Hz and/or 175 to 250 Vac, 1f, 50/60 Hz, and/or 88 to 140 Vdc |
| Short Circuit Current Rating | 6 kA on each power input  |
| Over Voltage Category        | II, mains up to 300 V   |
| Pollution Degree             | 2   |
| Transducer Signals           | Up to 100 channels of three-wire transducers, when 20% spares desired                 |

### Outputs

|                    |  |
|--------------------|--|
| 3500 TDI           | Via customer supplied Ethernet cable                           |
| Comm Gateway       | When part of 3500 System, via customer supplied Ethernet cable |
| Display            | Door mounted when ordered as part of 3500 System               |
| Recorders(4-20 mA) | Unwired, but available at 3500 system on select module I/Os    |

| Fault Signals   |                                   |
|-----------------|-----------------------------------|
| Rack OK Relay   |                                   |
| Thermostat      | Relay changes state 35°C, default |
| DC Power Supply | For supply external to 3500 rack  |

## Enclosure

### Rittal TS8

| Dimensions |   |
|------------|---|
| Height     | 2100 mm, including plinth   |
| Depth      | 800 mm  |
| Width      | 800 mm  |
| Materials  |   |
| Frame      | roll-formed sheet steel   |
| Doors      | Solid, front and rear   |
| Latch      | 4-point latch; key lock handle  |
| Finish     | RAL 7035 (light gray); doors, roof, and sidewalls have rough texture inside and out; frame has smooth texture |


### Wiring Ducts

|                     |                                |
|---------------------|--------------------------------|
| Material            | Rigid Polyvinyl Chloride (PVC) |
| Flammability Rating | UL94 (V0)                      |

### Terminal Blocks

|                     |                  |
|---------------------|------------------|
| Type                | Screw connection |
| Insulation          | Polyamide        |
| Flammability Rating | UL94 (V0)        |

### Cables & Wires

 All conductors are stranded copper with PVC insulation

|                        |                               |
|------------------------|-------------------------------|
| Signal cable           | 3-wire and 2-wire with shield |
| Ratings                | UL, CSA, and CE               |
| Nominal Cable Diameter | 4.19 mm (0.165 in)            |
| Conductor Area         | 0.75 mm <sup>2</sup> / 18 AWG |
| Temp Rating            | 75° C                         |
| Voltage Rating         | 300 Volts                     |


| Relay Wire     |                              |
|----------------|------------------------------|
| Ratings        | UL and CSA                   |
| Conductor Area | 1.5 mm <sup>2</sup> / 16 AWG |

|                   |  |
|-------------------|--|
| Color Scheme      | White: NO contact<br>Black: ARM contact<br>White: NC contact |
| Temp Rating       | 105°C  |
| Voltage Rating    | 600 Volts  |
| <b>Power Wire</b> |  |
| Ratings           | UL 1015/CSA TEW; Flame test: VW-1, FT-1                      |
| Conductor Area    | Per local of code of cabinet final destination               |
| Temp Rating       | 105°C  |
| Voltage Rating    | 600 Volts  |
| Recorder Outputs  | Not wired to terminal blocks                                 |

### Circuit Breakers


|                |                                  |
|----------------|----------------------------------|
| Type           | Thermo-magnetic, double-pole     |
| Endurance      | 6000 on/off cycles at rated load |
| Temp Rating    | -25°C to 55°C                    |
| Voltage Rating | 400 Vac                          |
| Approvals      | 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.

|          |        |
|----------|--------|
| Material | Copper |
|----------|--------|

### Cooling Fan

 The fan(s) and grill(s) make up the enclosure air cooling system. The grill with filter serves as the air inlet. The fan(s) is/are the air outlet. Both the fan(s) and grill(s) are on the back of the cabinet.

|          |                                  |
|----------|----------------------------------|
| Air Flow | 212 CFM (360 m <sup>3</sup> /hr) |
|----------|----------------------------------|

### Light

|  |
|--|
| Internal, motion activated, 18W, fluorescent, cool white |
|--|

### Receptacle

|                   |  |
|-------------------|--|
| Style and Voltage | Based on installation location of cabinet  |
| Current Limit     | 6A (5A for British/India model)  |
| Testing           | Wire pull<br>Point-to-point<br>Power up<br>Dielectric withstands on power and relay wiring |

### Documentation

|                 |  |
|-----------------|--|
| Drawing Package | Dimensional outline<br>Mechanical layout<br>Rack front/rear view<br>Internal wiring diagram<br>Internal power schematic<br>Nameplate schedule<br>Notes sheet |
| Manuals         | Cabinet manual, document 103M5088<br>3500 manuals on CD  |

## Ordering Information



For the detailed listing of country and product specific approvals, refer to the *Approvals Quick Reference Guide* (108M1756) available from [Bently.com](http://Bently.com).

BNAPMCs are individually manufactured. Contact a member of the Bently Nevada sales team to order. The following will guide you regarding the options that are available.

### Number of 3500 Systems

Three maximum

### Percentage of Spare Terminal Blocks

The maximum number of terminal blocks that can be installed for wiring signals is 360.

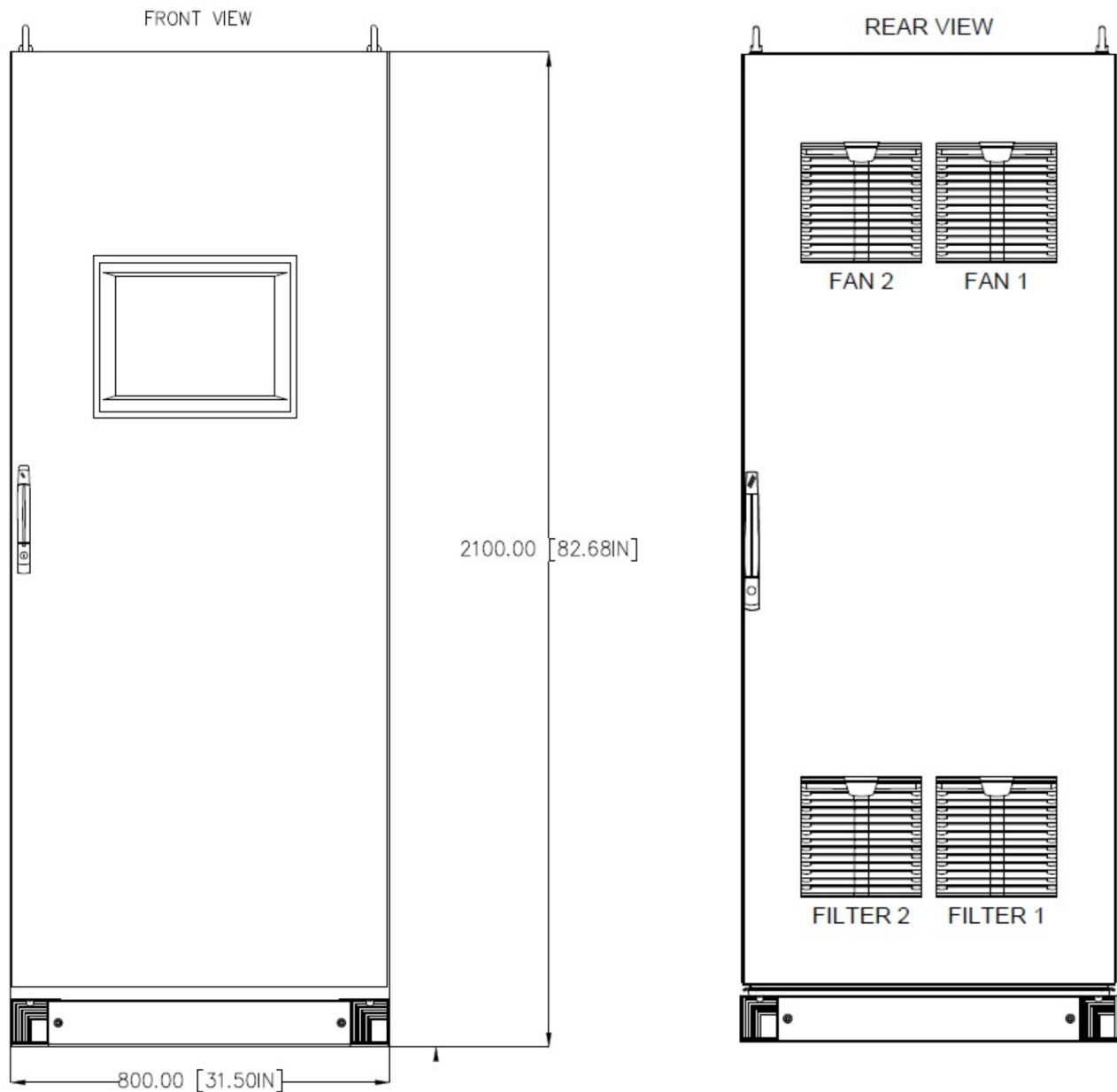
With 100 three-conductor transducer channels wired, 20% spare terminals can be included.

$$\text{e.g. } [ (100 \times 3) + 0.2 * (100 * 3) ] \leq 360$$

Transducer channel counts above 100 or the presence of four wire transducer types will reduce or eliminate the possibility of spare terminals.

| Power Input (nominal)        |  |
|------------------------------|--|
| V1                           | 120 V ac, 1 $\phi$ , 50/60 Hz<br>230 V ac, 1 $\phi$ , 50/60 Hz<br>125 V dc   |
| V2                           | 120 V ac, 1 $\phi$ , 50/60 Hz<br>230 V ac, 1 $\phi$ , 50/60 Hz<br>125 V dc   |
| V3 (optional)                | None<br>120 V ac, 1 $\phi$ , 50/60 Hz<br>230 V ac, 1 $\phi$ , 50/60 Hz<br>125 V dc   |
| Ethernet Switch Type         |  |
| TDI Switch                   | 5 Ethernet ports<br>4 Ethernet ports plus 1 multi-mode fiber port<br>6 Ethernet ports plus 2 multi-mode fiber ports              |
| Communication Gateway Switch | No switch<br>5 Ethernet ports<br>4 Ethernet ports plus 1 multi-mode fiber port<br>6 Ethernet ports plus 2 multi-mode fiber ports |

## Graphs and Figures



**Figure 1: Front and Rear View**

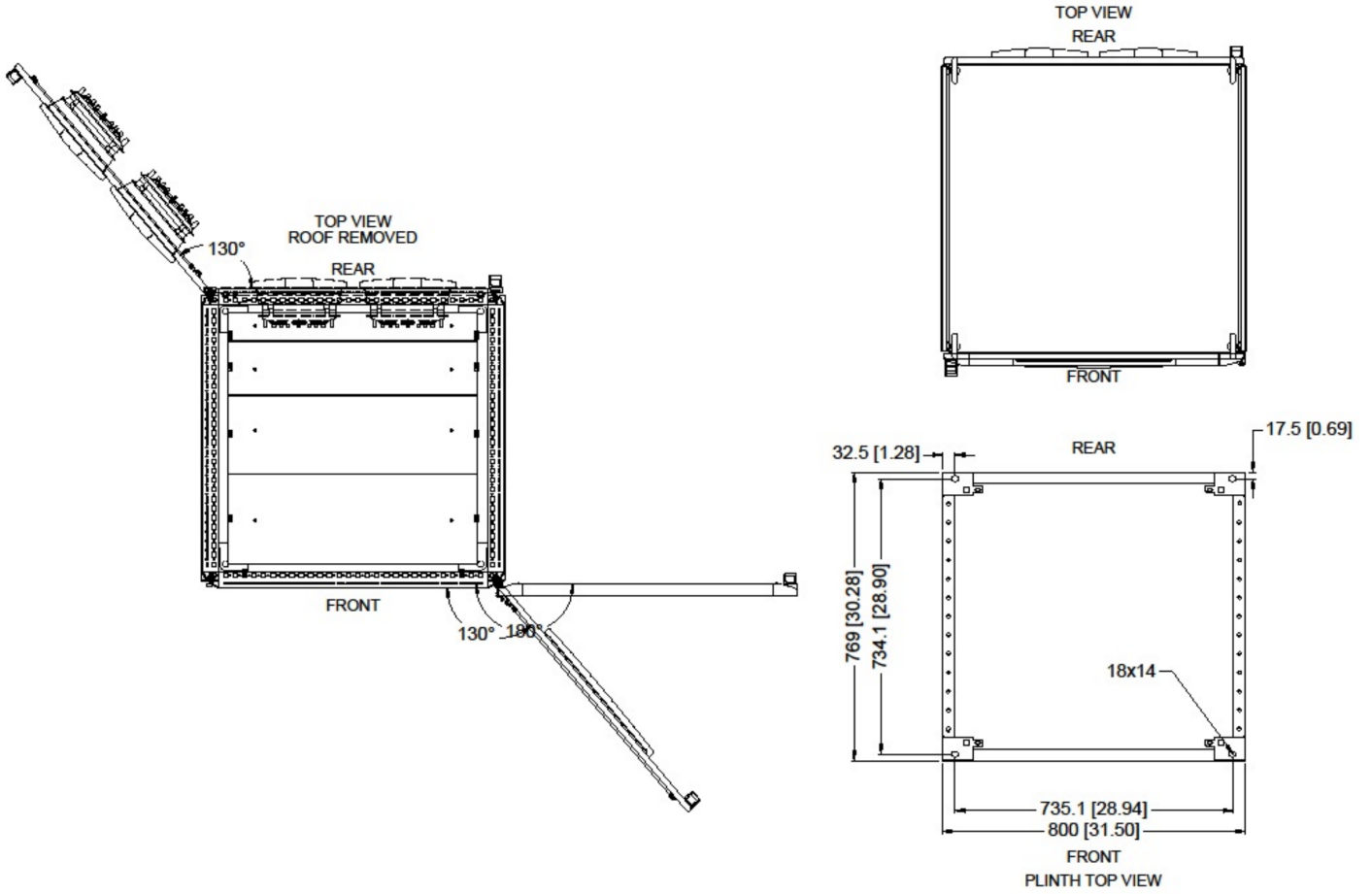


Figure 2: Top View

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