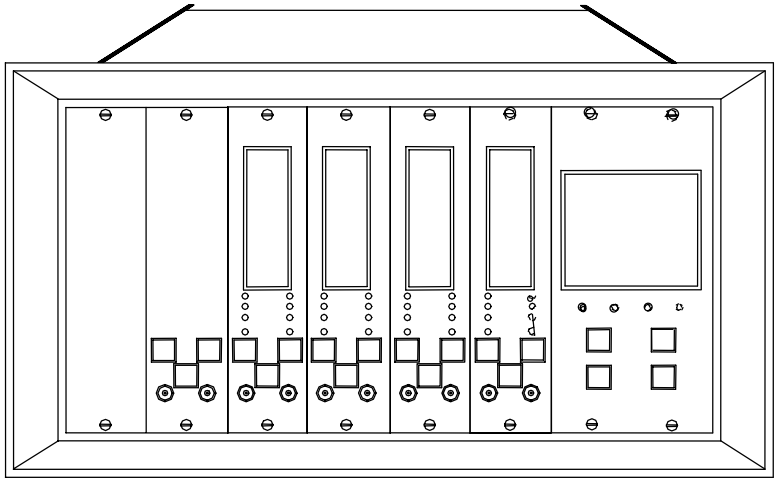
Operation Manual

Bently Nevada™ Asset Condition Monitoring



3300 System Compatibility Guide

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Part Number 104003-01
Rev. G (08/07)

Table 1
3300 System Part Numbers and Definitions

Part Number/ Abbreviation	Description	Function
3300/01-01	Original Version of Basic System Monitor.	Basic service to the rack including setpoint adjust, reset, OK relay, and system Keyphasor® signals.
3300/01-02	Serial Interface System Monitor.	All of the functions of the 3300/01-01 plus serial communications interface using Allen-Bradley® or Modicon Modbus® communication protocol.
3300/02	Transient Data enabled (TDe) System Monitor	All of the functions of the 3300/01-01 system monitor plus the functions of a TDXnet™ CP.
3300/03-01	Enhanced Version of the Basic System Monitor.	All of the functions of the 3300/01-01 system monitor. Can be upgraded to a Serial Data Interface or Dynamic Data Interface System Monitor.
3300/03-02	Serial Data Interface (SDI) System Monitor.	All of the functions of the 3300/01-02 plus enhanced serial communications capability. Can be upgraded to a Dynamic Data Interface System Monitor
3300/03-03	Dynamic Data Interface (DDI) System Monitor.	All of the 3300/03-02 functions plus the functions of a Dynamic Data Manager® Communications Processor with added features.
PIM	Power Input Module	Located behind the Power Supply and System Monitor on a 3300 rack. This module contains the Input/Output connections for computer/communication interfaces, system functions and rack power.
DDM CP	Dynamic Data Manager® Communications Processor.	Acquires steady state dynamic and static data from a monitor rack and provides temporary data storage and communications to a Bently Nevada host computer.
TDM CP	Transient Data Manager® Communications Processor.	Provides all of the functions of a DDM CP plus acquires transient (start-up/coast-down) dynamic and static data from a monitor rack and provides temporary data storage and communications to a Bently Nevada host computer.
PDM CP	Process Data Manager® Communications Processor.	Acquires process variable data, provides temporary storage and communicates to a Bently Nevada host computer.
SDIX/DDIX CP	External Serial Data Interface/Dynamic Data Interface Communications Processor.	An externally housed communications module designed for use with a 3300/03-01 System Monitor in an original 3300 system. Provides the same communications interface functions as a 3300/03-02 or 3300/03-03 System Monitor.
TDIX CP	Transient Data Interface/Serial Data Interface Communications Processor.	External communications module that provides all of the functions of the TDM and SDI/DDI, plus additional features.
TDXnet™ CP	External Transient Data Interface/Serial Data Interface Communications Processor.	External communications module that provides all of the functions of the TDIX plus ethernet communication capabilities.
System 64 Software	A computer-based online monitoring and diagnostic system.	Communicates with up to 64 monitor racks using DDM CP interfaces to the racks.

2. System Identification

This section should be used to help define and identify each of the four configurations of the 3300 Monitoring System Bently Nevada LLC supports. The configurations are defined by the rack (backplane version), Power Supply, System Monitor, and firmware installed in individual monitors. The four possible 3300 configurations are explained below.

Use **Table 2** on the next page to clarify exactly which 3300 configuration you may have.

2.1 Configuration Definitions

2.1.1 Original System

This is the first generation 3300 System. This system **may** have serial communication capability, but it predates and is **not** compatible with the internal data interfaces (TDe or SDI/DDI) and most recent external communication processors (SDIX/DDIX, TDIX and TDXnet™ CPs). The Original System can, however, communicate with a Digital Control System (DCS) or with DM2000 Software through a DDM, PDM, or TDM CP.

These systems can be upgraded to the Mixed System, TDe or SDI/DDI System configuration, depending on your interface requirements.

2.1.2 Mixed System

This is the Original System with a 3300/03-01 System Monitor that does **not** have internal SDI/DDI capabilities but can interface to a DDM, TDM, PDM CP. In order to interface to an SDIX/DDIX, TDIX or TDXnet™ CP, the firmware in each monitor **must** be SDI/DDI compatible.

NOTE: The System Monitor must be configured correctly with jumpers depending upon the external Communication Processor that is being used. The DDM, TDM, and PDM use a different static interface than the SDIX/DDIX, TDIX, and TDXnet™ CPs. Refer to the System Monitor Manual (BN Document 89604, table 1) for specific jumper configurations.

Table 3 in Section 2.4 lists the SDI/DDI compatible monitor firmware part numbers.

The Mixed System can be upgraded to an SDI/DDI System, by changing the backplane, power supply, and the firmware in each of the monitors.

2.1.3 SDI/DDI System

This generation of the 3300 System uses 3300/03 System Monitor. The System Monitor, Power Supply, and Backplane are all SDI/DDI-compatible, with the System Monitor configured with or without internal SDI/DDI communications and the firmware in each of the monitors is SDI/DDI compatible.

NOTE: The System Monitor must be configured correctly with jumpers depending upon the external Communication Processor that is being used. The DDM, TDM, and PDM use a different static interface than the SDIX/DDIX, TDIX, and TDXnet™ communication processors. Refer to the System Monitor Manual (BN Document 89604, table 1) for specific jumper configurations.

The SDI/DDI System is compatible with the following Bently Nevada Communications Processors and monitoring software packages: DDM CP, TDM CP, SDIX/DDIX CP, TDIX CP, TDXnet™ CP, DDM/TDM Software, DDM2/TDM2 Software, System 64 Software, and DM2000 Software.

2.1.4 TDe System

This generation of the 3300 System uses 3300/02 System Monitor. The Power Supply, Backplane and firmware in each of the monitors must be SDI/DDI compatible.

The TDe System is not compatible with any external Communications Processors as they are not required for TDe to directly interface to System 1® Software.

Table 2
Possible 3300 System Configurations

Configuration	System Monitor	Rack (Backplane)[2]	Power Supply[2]	Monitor Firmware[1]
Original (old) System	3300/01-01 or 3300/01-02	3300/05 Option AA = 01 thru 17	3300/10 or /11 or /14[3]	Original firmware or SDI/DDI firmware
Mixed System	3300/03-01	3300/05 Option AA = 01 thru 17	3300/10 or /11 or /14[3]	Original firmware or SDI/DDI firmware
SDI/DDI system	3300/03-01, or 3300/03-02, or 3300/03-03	3300/05 Option AA = 21 thru 37	3300/12 or /14	SDI/DDI firmware
TDe system	3300/02	3300/05 Option AA = 21 thru 37	3300/12 or /14	SDI/DDI firmware

NOTES:

1. See **Table 3** in Section 2.4 for a list of SDI/DDI compatible firmware for each monitor. Some monitors were originally shipped with SDI/DDI compatible firmware.
2. It is not possible to use the old backplane with the new power supplies or to use the new backplane with the old power supplies.
3. If the 3300/14 DC Power Supply is to be used with the Original backplane, the original PIM MUST be used. 3300/14 is not compatible with 3300/01-02 System Monitors.

2.2.2 Mixed System

- Consists of an original system with a 3300/03-01 System Monitor, a 3300/10 or /11 or /14 Power Supply, an original backplane, and one of the original Power Input Modules shown in **Figure 2**.

- In this configuration the 3300/03-01 is a replacement for the 3300/01-01 System Monitor. Note that only two Keyphasor® transducers, Key ∅® 1 and Key ∅® 2 are available.

- Se **Appendix A** for the list of hardware upgrade kit part numbers and/or contact your Bently Nevada representative to upgrade a system.

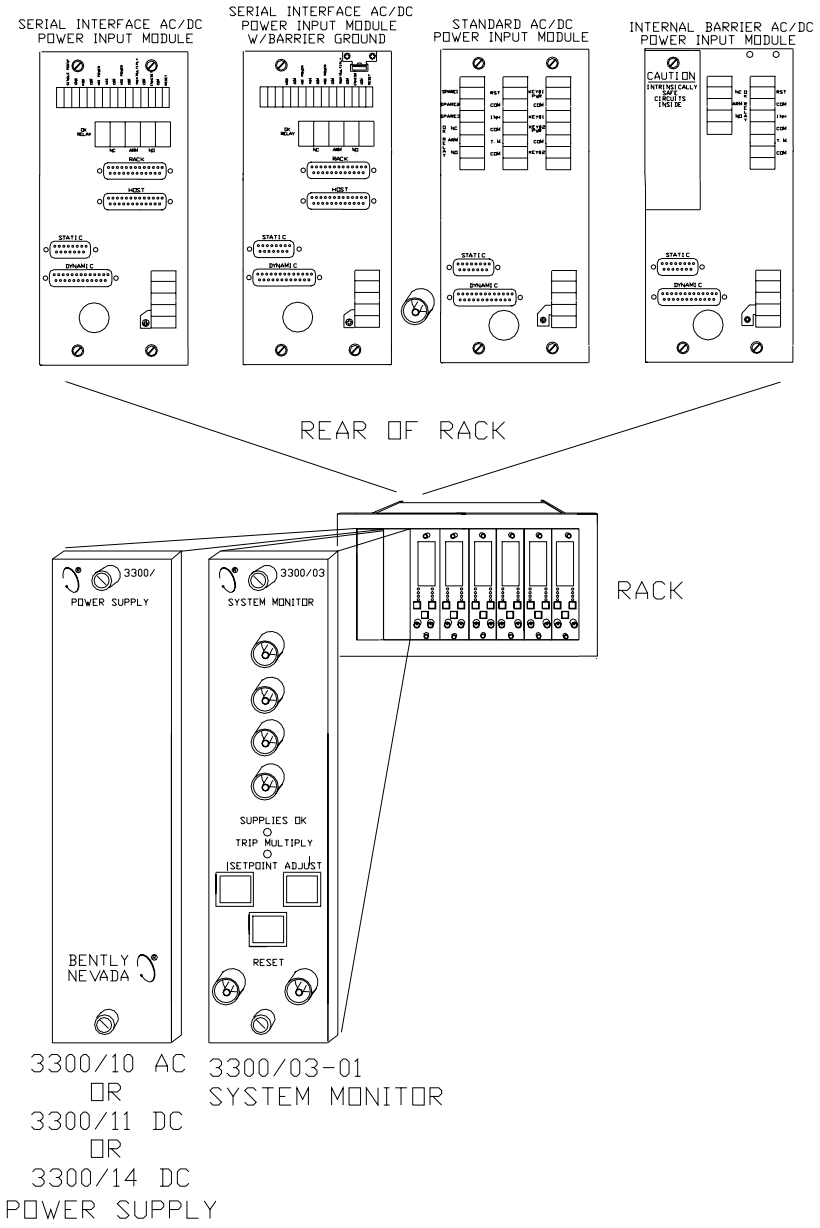

Figure 2

Mixed System

- See **Table 4** in Section 3.3 for information on compatibility with communications processors and software for this system configuration.

2.2.3 SDI/DDI or TDe System

- Consists of a 3300/03-01, -02, or –03 System Monitor, a 3300/12 or /14 Power Supply, a new backplane and one of the PIMs shown in **Figure 3**.

- See **Table 4** in Section 3.3 for information on compatibility with communication processors and software for these system configurations.

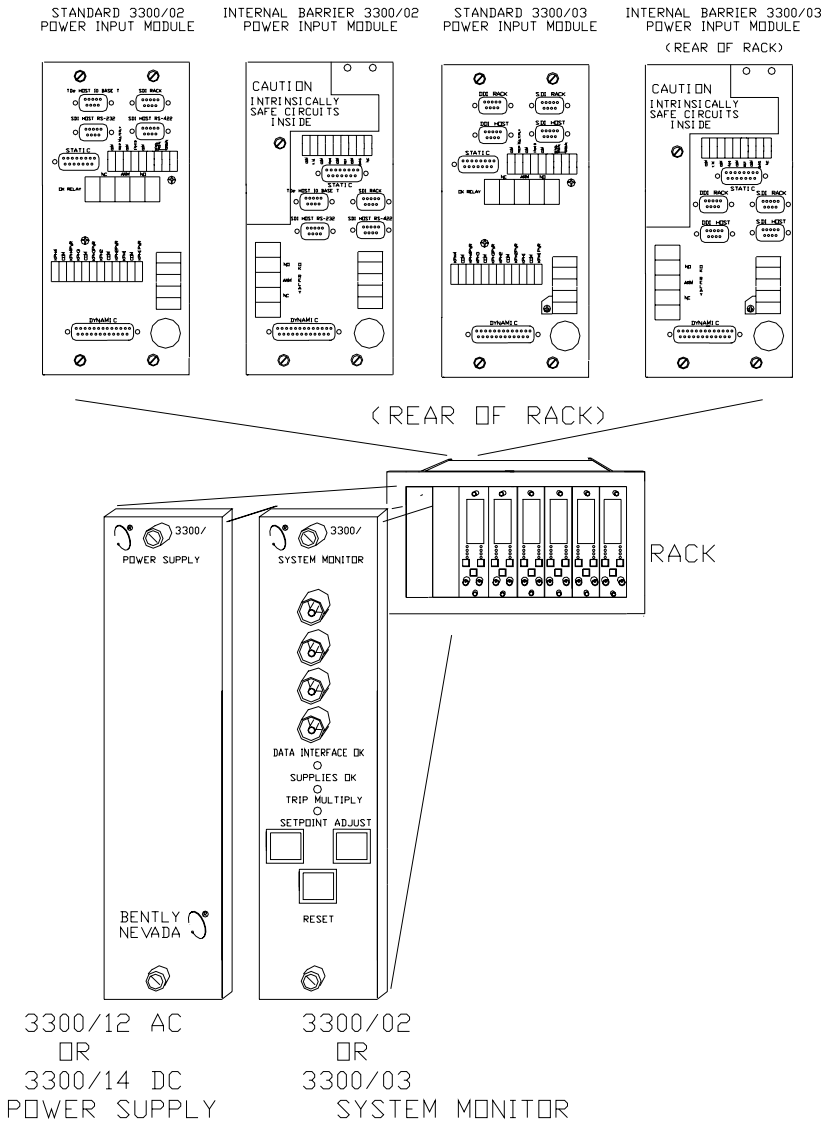

Figure 3
SDI/DDI or TDe System

3. System Compatibility

Use this section to determine which components will or will not work in your system. Refer to Section 2 and/or **Table 2** to determine which system configuration you have.

See **Table 4** for compatibility between each System Monitor and the different Communications Processors and Software.

See **Appendix A** for the list of hardware upgrade kit part numbers.

See **Appendix B** for a list of firmware upgrade kit part numbers for the different monitors.

3.1 Mixed System Compatibility Issues

- If a Mixed System is being used with a DDM, TDM or PDM CP, the firmware in the individual monitors does **not** need to be SDI/DDI compatible.

- In order for the Mixed System to be compatible with the external communication processors (SDIX/DDIX, TDIX or TDXnet™ CP) and DM2000 software, the firmware in all of the monitors must be SDI/DDI compatible. See **Table 3** for SDI/DDI compatible firmware.

3.2 Additional Compatibility Issues

3.2.1 Monitors

- The original firmware in the 3300/17, 3300/36, 3300/39, 3300/40, 3300/52, 3300/53, 3300/54, 3300/75, 3300/80, 3300/81, 3300/85, and 3300/95 monitors is SDI/DDI compatible.

- The 3300/75, /80 and /81 monitors support SDI(X)/DDI(X), TDIX, and TDXnet™ CPs only.

- The 3300/75, /80 and /81 monitors are compatible with only the 3300/01-01, 3300/02 and 3300/03-XX System Monitors.

- The 3300/90 Diagnostic Instrument and the 3300/60 Vector Monitor are not supported by SDI/DDI.

3.2.2 Communications Processors

If a TDM communications processor is on the same communications chain with a TDIX or TDXnet™ communication processor, and the TDM firmware is Rev C or earlier, the TDM firmware will need to be upgraded. Contact your Bently Nevada representative to order a firmware upgrade kit for your TDM communications processor.

3.3 Communication Processor and Software Compatibility

Table 4
Communication Processor and Monitoring Software Compatibility

Communications Processor or Software	System Monitor					
	3300/01 -01	3300/01 -02[5]	3300/02 (TDe)	3300/03 -01	3300/03-02[7] (Internal SDI)	3300/03-03[7] (Internal DDI)
DDM CP	C	C	NC	C	NC	NC
TDM CP	C	C	NC	C	NC	NC
PDM CP	C	C	NC	C	NC	NC
SDIX/DDIX CP	NC	NC	NC	C	NC	NC
TDIX CP	NC	NC	NC	C[8]	NC[8]	NC[8]
TDXnet™ CP	NC	NC	NC	C[8]	NC[8]	NC[8]
DDM/TDM Software	C[1]	C[1]	NC	C[1]	NC	NC
DDM2/TDM2 Software[4]	C[1]	C[1]	NC	C[3]	C[3]	C
DM2000 Software	C[1]	C[1]	NC	C[6]	C[8]	C[4, 8]
System 1® Software	NC	NC	C	NC	NC	NC
Host System using Allen-Bradley® or Modicon Modbus® Comm Protocol	C[1]	C	NC	C[2]	C	C

NOTES

C = compatible NC = not compatible

1. A DDM or TDM CP must be installed.
2. Use with a TDIX, TDXnet™ CP or upgrade to a 3300/03-02 SDI.
3. Use with a TDM, TDIX CP or upgrade to a 3300/03-03 DDI.
4. DDI can be daisy-chained with DDI, DDM, TDM, PDM and TDIX CPs. Refer to the Serial Data Interface/Dynamic Data Interface Manual, Bently Nevada part number 89541-01, for details on daisy chaining 3300 racks and cabling requirements.
5. Host software developed for the 3300/01-02 Serial Interface System Monitor will work with the SDI but the additional features of the SDI will not be available to the host unless the software is updated.
6. Use with a DDM, TDM, TDIX, TDXnet™ CP or upgrade to 3300/03-03 DDI.
7. The internal SDI/DDI communication protocols MUST be disabled (configured as a 3300/03-01) in order to connect to an external CP.
8. In order to communicate with a TDIX CP, TDXnet™ CP or TDe, the firmware in EACH monitor MUST be SDI/DDI compatible.