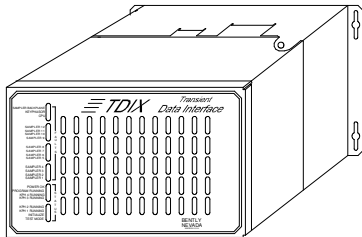


# Transient Data Interface External (TDIX)

Bently Nevada™ Asset Condition Monitoring



## Description

The TDIX Communications Processor provides the interface between our compatible (see notes) machinery protection systems and our on-line machinery management software. It continuously collects both steadystate and startup/shutdown data from all connected channels in parallel, and offers significant improvements in both data collection features and data transmission over previous communications processors such as TDM, and DDM.

## Major Features of the TDIX:

- Flexible Startup/Coastdown Data Collection - TDIX provides you with two startup/coastdown buffers for increased flexibility when collecting startup/coastdown data.
- View High Resolution Delta Time Data during Startup - High resolution delta time vector and waveform data is taken independent of the startup/coastdown status.
- Advanced Waveform Sampling
- Quick Connection into 3300, 3500, or 2201 Monitoring Systems
- Built in Distributed Control System (DCS) Connection Support
- High Resolution Orbit Data - Data used for the Orbit and Waveform plots is sampled at 1024 samples per waveform.
- High Resolution Spectrum Data - The TDIX provides a 400-line Spectrum with a maximum frequency span of 20 kHz.
- Easy-to-Use Jumperless Setup
- Immediate Recovery from Power Loss

## Notes:

1. TDIX is directly compatible with 3500, 2201, and newer 3300 systems. Through the use of TDXconnX, other monitoring systems can also be used with TDIX. Consult Specifications and Ordering Information (p/n 141552-01) for TDXconnX, or your local sales professional for more information.
2. 2TDXnet provides improvements over TDIX and is recommended for virtually all applications where TDIX is being considered. Consult Specifications and Ordering Information (p/n 141553-01) for TDXnet, or your local sales professional for more information.



Specifications and Ordering Information  
Part Number 141551-01  
Rev. C (04/07)

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## Specifications

### Keyphasor® Inputs

4 per unit. 60 to 60,000 rpm range.

Software configurable backup to real or simulated source.

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### Startup/Coastdown Data

Startup/coastdown parameters changeable during program operation.

Two independent startup/coastdown buffers (each with 320 vector and 32 waveform samples).

Independent Delta Time buffer (ability to view fast trend data during transient event).

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### Data

Includes both Delta Time and Delta RPM (for SUSD) sampling buffers.

Each buffer contains 320 vector and 32 waveform records.

Vector Data includes Direct, GAP, 1X and 2X, Amp and Phase, Not 1X for each dynamic monitor channel.

Waveform records include both Synchronous and Asynchronous data

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### Waveform Sampling

Waveforms are dc coupled to prevent low frequency roll off.

Voltage inputs of  $\pm 25$  Volts with up to 25 Volts peak-to-peak ac signal.

Simultaneous Synchronous and Asynchronous data sampled during both startup/coastdown and steady-state.

Both Synchronous and Asynchronous data includes 1024 samples.

User-configurable Synchronous data:

128 samples/rev for 8 revolutions

64 samples/rev for 16 revolutions

32 samples/rev for 32 revolutions.

Asynchronous data sampled to support a 400-line Spectrum at 20 kHz frequency span.

Asynchronous data is anti-alias filtered. Waveform data is pre-triggered.

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### SDI Data

Supports both Allen-Bradley and MODBUS™ protocol.

RS232/RS422 communications link.

SDI support includes 1X, 2X, High Resolution Gap and Not 1X static data.

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### System

Operates on 90 to 240 Vac, 50 to 60 Hz without any changes.

Power Consumption: 89 Watts Maximum. Current draw: 0.75 Amps typical @ 110 Vac and 0.38 Amps typical at 220 Vac.

Auto-configured after power up. Modem allowed between first communications processor and host computer.

Support for 2201, 3500, and 3300 monitors.

Support for TDIXconnX to accommodate Legacy Monitoring Systems.

Support for Rackmate IX for multiple 3300 monitor racks to single Communication Processor.

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## CE Mark Directives

### EMC Directives:

Certificate of Conformity: 158809

#### EN50081-2

Radiated Emissions  
EN55011, Class A

Conducted Emissions  
EN55011, Class A

#### EN50082-2

Radiated Susceptibility  
ENV50140

Radio Telephone  
ENV50204

Conducted Susceptibility  
ENV50141

Electrostatic Discharge  
EN61000-4-2

Electrical Fast Transient  
EN61000-4-4

Magnetic Field  
EN61000-4-8

Power Supply Dip  
EN61000-4-11

### Low Voltage Directives:

Certificate of Conformity: 158809

#### EN61010-1

Safety Requirements

EN61000-3-  
2:1995

Harmonic Current

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## Hazardous Area Approvals

CSA/NRTL/C:

**Approval Option  
(01)**

Class 1, Division 2  
Groups A, B, C, D  
T4 @ Ta = 65°C

*Certification  
Number*

CSA 150368 (LR 26744)

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## Mechanical

(Same footprint as Dynamic Data Manager® (DDM); same mounting bolt pattern as DDM or Dynamic Data Interface External (DDIX)). Printed wiring assemblies shielded for protection while handling.

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## Weight

- TDXnet w/o samplers: 6.19 kg (13.6 lbs.)
- Sampler cards: 0.24 kg (8.5 oz).

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## Environmental

### Operating

**Temperature:**

0°C to +65°C (+32°F to +149°F)

### Storage

**Temperature:**

-40°C to +85°C (-40°F to +185°F)

**Humidity:**

0% to 95% non-condensing

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## Ordering Information

2150/00 -AXX-BXX-CXX-DXX-EXX-FXX-GXX-HXX-IXX-JXX

### Notes:

1. When ordering one or more TDIX Communications Processors, one copy of 2150/01-01 is required.
2. Option A -00 is for spares only. The unit is not operable in this configuration.

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Specifications and Ordering Information  
Part Number 141551-01  
Rev. C (04/07)

- A: Number of Sampler Cards**
- 00 No Sampler Cards (no dynamic channels)
  - 01 One Sampler Card (2 dynamic channels)
  - 02 Two Sampler Cards (4 channels)
  - 03 Three Sampler Cards (6 channels)
  - 04 Four Sampler Cards (8 channels)
  - 05 Five Sampler Cards (10 channels)
  - 06 Six Sampler Cards (12 channels)
  - 07 Seven Sampler Cards (14 channels)
  - 08 Eight Sampler Cards (16 channels)
  - 09 Nine Sampler Cards (18 channels)
  - 10 Ten Sampler Cards (20 channels)
  - 11 Eleven Sampler Cards (22 channels)
  - 12 Twelve Sampler Cards (24 channels)
- B: Cable Options**
- 01 3300 Cables
  - 02 2201 Cables
  - 03 3500 Cables
  - 04 TDIXconnX Cables
- C: Approvals**
- 00 No Approvals
  - 01 CSA/NRTL/C
  - 02 Not available
  - 03 Not available
  - 04 CE Agency Approvals
  - 05 Multiple Approvals
- D: Power Supply**
- 01 +110/+220 AC
- E: Sampler Card Position**  
(Place 1 or 0; first = space 1, second = space 2)
- 0 No Sampler card installed
  - 1 Install sampler card
- F: Sampler Card Position**  
(Place 1 or 0; first = space 3, second = space 4)
- 0 No Sampler card installed
  - 1 Install sampler card
- G: Sampler Card Position**  
(Place 1 or 0; first = space 5, second = space 6)
- 0 No Sampler card installed

- 1 Install sampler card
- H: Sampler Card Position**  
(Place 1 or 0; first = space 7, second = space 8)
- 0 No Sampler card installed
  - 1 Install sampler card
- I: Sampler Card Position**  
(Place 1 or 0; first = space 9, second = space 10)
- 0 No Sampler card installed
  - 1 Install sampler card
- J: Sampler Card Position**  
(Place 1 or 0; first = space 11, second = space 12)
- 0 No Sampler card installed
  - 1 Install sampler card

**2150/01-01**

TDIX Installation Manual and  
TDIX Initialization Software

**Notes:**

1. When ordering one or more TDIX Communications Processors, one copy of 2150/01-01 is required.
2. The Windows version of the Initialization Software is included with the DM2000 Software.

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**Accessories**

**Interface Module:**

**130914-01**

TDIXConnX™

**Communications**

**Cables:**

Cable required for connection from Communications Processor to Communications Processor. Contact us for information regarding Lightning Protection.

**131179 -AXXXX-BXX-CXX**

**Note:**

Maximum continuous length is 150 metres (500 feet). For lengths longer than 500 feet, use one 131179 with as many 131210, 500 foot extensions as necessary, up to 4000 feet.

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**RS422 Host Computer to CP**

**131209-AXXXX-BXX-CXX**

**Note:**

Maximum continuous length is 150 metres (500 feet). For longer lengths, use one 131209 cable with as many 131210, 500 foot cables as necessary, up to 1220 metres (4000 feet).

**A: Cable Length**

- 0010 10 ft (3.5 m)
- 0025 25 ft (7.5 m)

	<b>0 0 5 0</b>	50 ft (15 m)
	<b>0 1 0 0</b>	100 ft (30.5 m)
	<b>0 2 5 0</b>	250 ft (75 m)
	<b>0 5 0 0</b>	500 ft (150 m)
<b>B:</b>	<b>Kit/Assembly</b>	
	<b>0 1</b>	Supplied as kit (for applications where the cable will be routed through conduit.)
	<b>0 2</b>	Supplied as a complete assembly.
<b>C:</b>	<b>Cable type</b>	
	<b>0 1</b>	PVC Insulated
	<b>0 2</b>	Teflon® Insulated

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### 9-pin RS232 cable from Host Computer to Communications Processor.

131207 -AXXXX -BXX-CXX

<b>A:</b>	<b>Cable length</b>	
	<b>0 0 1 0</b>	10 ft (3.5 m)
	<b>0 0 2 5</b>	25 ft (7.5 m)
	<b>0 0 5 0</b>	50 ft (15 m)
	<b>0 1 0 0</b>	100 ft (30.5 m)
<b>B:</b>	<b>Kit/Assembly</b>	
	<b>0 1</b>	Supplied as kit (for applications where the cable will be routed through conduit.)
	<b>0 2</b>	Supplied as a complete assembly.
<b>C:</b>	<b>Cable type</b>	
	<b>0 1</b>	PVC Insulated
	<b>0 2</b>	Teflon® Insulated

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### 2150/11-02 Rackmate IX

Includes Rackmate with:  
 2 each 5 ft (1.5 m) 15-pin cables,  
 2 each 5 ft (1.5 m) 25-pin cables, and 1  
 manual.

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### Uninterruptible Power Supplies

**143453-01**

Uninterruptible Power Supply (UPS).  
 120 VAC Input / 120 VAC Output.

**143453-02**

Uninterruptible Power Supply (UPS).  
 240 VAC Input / 240 VAC Output.

**143453-03**

Extended External Battery Pack for the above Uninterruptible Power Supply units.

(Requires either a 143435-01 or a 143435-02, not a stand-alone unit).

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### Spare Power Supplies

**162992-01**

Power Supply Field Upgrade Kit

**Note:**

This Field Upgrade Kit is for replacing the old style power supply with the new style power supply. Once this kit is in place, the new power supplies (02200625) can be ordered as spares.

**02200625**

Power Supply

**Note:**

This is a new style power supply. It is only for use with new TDXnet/TDIX units and TDXnet/TDIX units with the 162992-01 upgrade already installed. Contact your local sales representative for more information.

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### Spare Sampler Cards

**123447-01**

TDIX Sampler circuit board

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### Spare Cables

**02290163**

TDIX Communications Processor (CP) to 3300 Rack Static Data Cable

**108186-01**

TDIX CP to 2201 Rack Static Data Cable

**129386-01**

TDIX CP to 3500 Rack Static Data Cable.

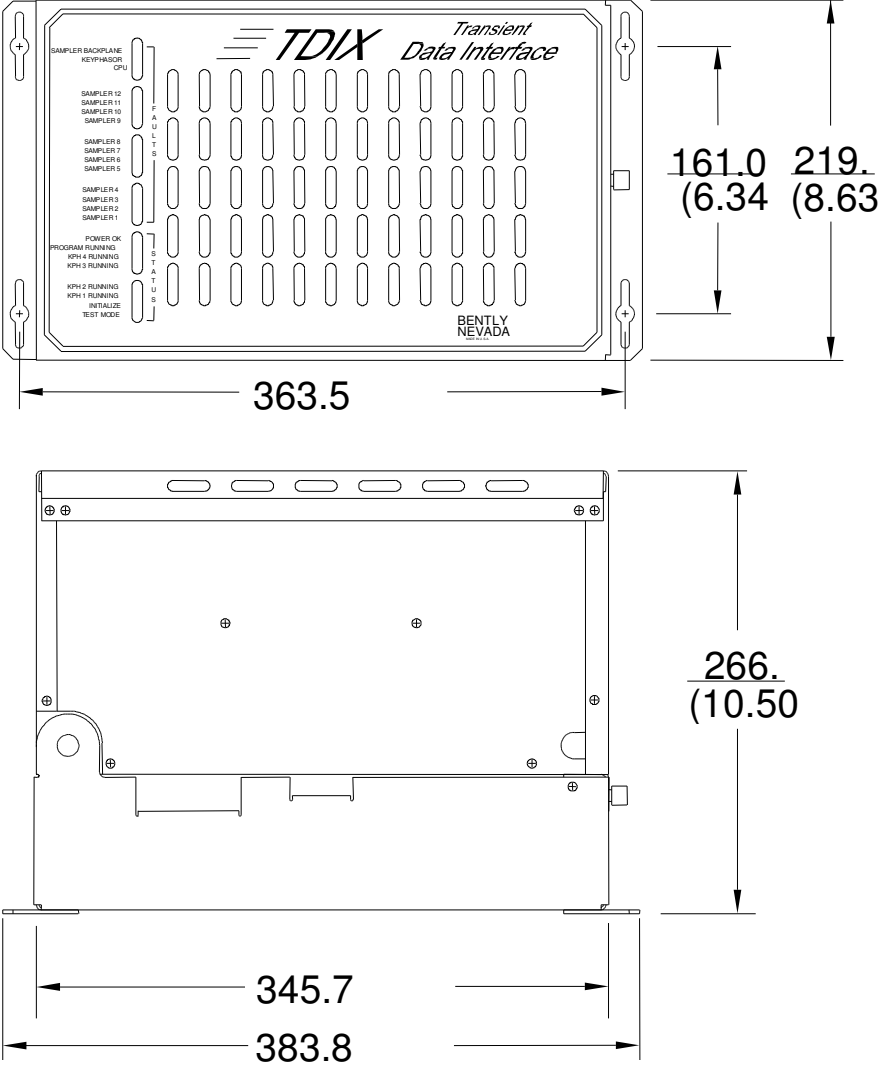
**02290160**

TDIX CP to 3500, 3300, or 2201 Rack Dynamic Data Cable

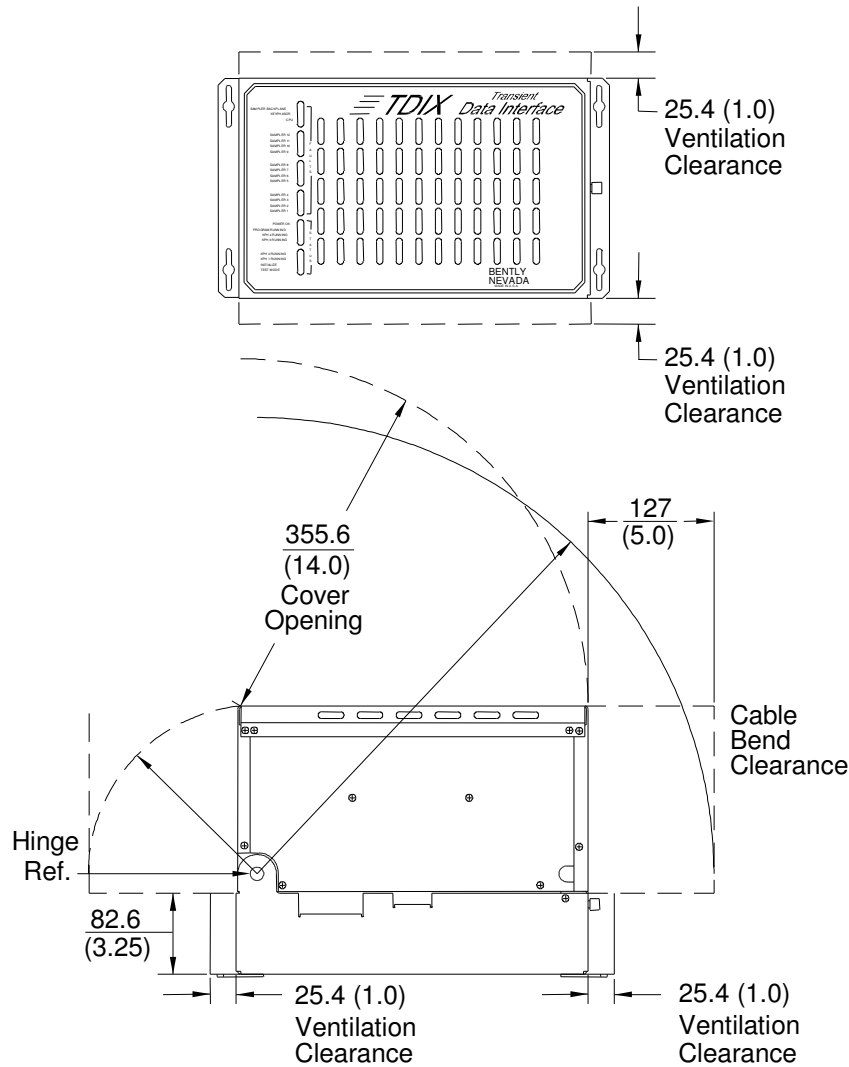
**Note:**

These are 3.05 metres (10 feet) molded cables that connect the TDIX to the 3300 or the 2201 monitoring system. One set is included with TDIX when ordered. The required cables can be defined using the "B" option of the TDIX ordering options.

Graphs and Figures



**Figure 1: Transient Data Interface External (TDIX) dimensions**  
 Dimensions are in millimetres (inches)



**Figure 2: Transient Data Interface External (TDIX) clearances**  
 Dimensions are in millimetres (inches)

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