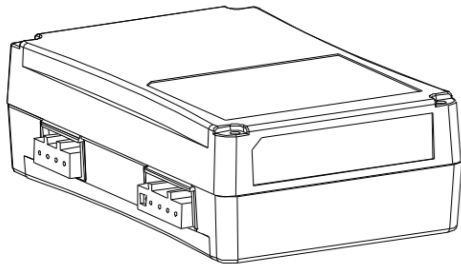


162459 Trendmaster Galvanic Isolator (TMGI)

Datasheet

Bently Nevada Machinery Condition Monitoring

162513 Rev. J



Description

The Trendmaster Galvanic Isolator enables the Trendmaster system to connect to intrinsically safe transducer installations without the need for safety barriers or the need to specify, install and maintain a high integrity IS earth. The Trendmaster Galvanic Isolator provides an interface between Trendmaster scanning hardware, and all associated Programmable Transducer Interface Modules (ProTIMS) located in a hazardous area.

- The Trendmaster Galvanic Isolator is powered from an external power supply which enables several Galvanic Isolators to be connected in parallel to one TIM line from DSM or SPA.
- Each Galvanic Isolator can interface and power up to 32 ProTIMs, with a maximum cable length of 3,500 ft (or shorter, as limited by the hazardous area).



Specifications

All values are specified over the full operating temperature range unless stated otherwise. All voltages are specified with respect to COM. References to ProTIMs relate to ProTIM-R and ProTIM-C. References to ProTIM relate to the Trendmaster 2000 Programmable Transducer Interface Modules.

External Power Input

Nominal Input Voltage	+ 24 V \pm 5%
Maximum Current Draw	100 mA

Power Dissipation

Including power supply to 32 ProTIMs and associated transducers	2.5 Watts @ +24 V, Typical
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Environmental Specification

Operating Temperature Range	-20 to +65 °C
Storage Temperature Range	-40 to +85 °C
Relative Humidity	100 % condensing, non-submerged, power on when installed in a weatherproof housing.

Physical

Weight	0.25 Kg (0.55 lb)
Dimensions	94 mm x 150 mm x 45 mm (3.7" x 5.9" x 1.77")
Mounting	DIN Rail weatherproof housing.

AC Performance

Accuracy	\pm 1 %
Noise Floor	\pm 0.5% Trendmaster full-scale
Bandwidth	1% dc to 10 kHz
ac Phase	+ 3.0° @ 600 Hz absolute \pm 1.5° @ 600 Hz unit-to-unit skew *
	* For phase-critical measurements all measured signals should be connected through isolators to preserve phase.

DC Performance

Accuracy	\pm 1 % or 15 mV whichever is the greater
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Inputs

Safe area connection to the following Trendmaster Host scanning hardware.

Dynamic Scanning Module (DSM)	149744 Maximum of Four Galvanic Isolators connected to each TIM line from DSM or SPA.
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Outputs

Hazardous area connection to the following Intrinsically Safe Transducer Interface Module types:

200250	ProTIM-C
200200	ProTIM-R

Number of TIMs

A maximum number of 32 ProTIMs are allowed to connect to one Galvanic isolator.

Compliance and Certifications

FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

EMC

EN 61000-6-2 :2005

EN 61000-6-4:2007 +A1:2011

EMC Directive 2014/30/EU

RoHS

RoHS Directive 2011/65/EU

Hazardous Area Approvals



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

cNRTLus

Class I, Zone 2, AEx/Ex nA [ia] IIC T4 Gc
Class I, Zone 2, AEx/Ex ec [ia] IIC T4 Gc
Class I, Division 2 Groups A, B, C, D

Un = 24V

T4 @ Ta= -20°C to +65°C (-4°F to +149°F)

Install per Control Drawing 166857.

ATEX/IECEx



II (1) GD

II 3 (1) GD

[Ex ia Ga] IIC

[Ex ia Da] IIIC

Ex nA [ia Ga] IIC T4 Gc

Ex ec [ia Ga] IIC T4 Gc

Ex tc [ia Da] IIIC T140°C Dc IP5X

Un = 24V

T4 @ Ta= -20°C to +65°C (-4°F to +149°F)

Install per Control Drawing 166857.

0.33 meg ohm static dissipation resistor fitted within the Galvanic Isolator per EN60079-14

Certification Parameters

	POWER			SIG+/SIG-			COMBINED		
U _o (V)	±14.34			±9.56			±23.9		
I _o (mA)	142			9.5			161		
P _o (mW)	510			22.5			555		
	IIA	IIB	IIC	IIA	IIB	IIC	IIA	IIB	IIC
C _o (μF)	15.8	4.18	0.67	210	26	3.6	3.38	0.94	0.126
L _o /R _o (μH/Ω)	560	280	70	12688	6344	1586	168	84	21

Ordering Information



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

Trendmaster Galvanic Isolator

162459

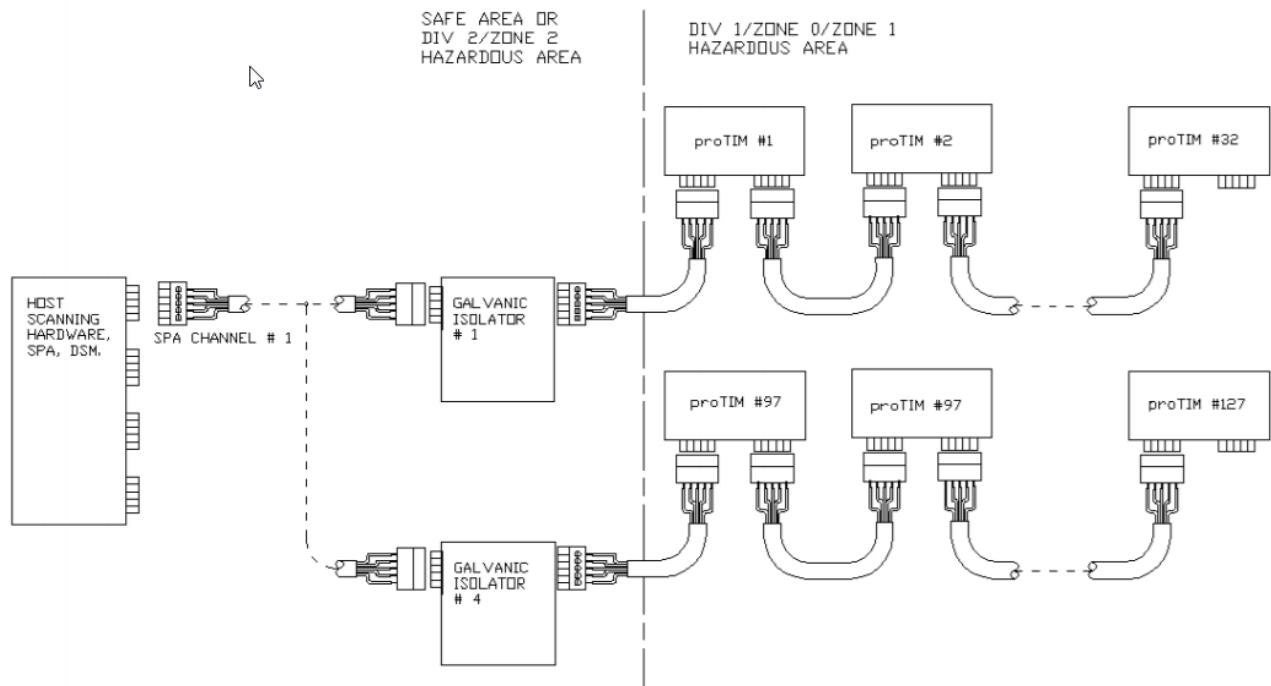
05	Multi-Approvals (ATEX, CSA, IECEx)
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Including connectors required for installation.

Accessories

02200627	Power Supply
162222-01	Weatherproof Housing
164046	TIM Line Connector from SPA
164045	TIM Line Connector to TIMs
164314	Power Supply Connector
Bently_ Manuals	Customer DVD containing all Bently Manuals, FWD, App Notes, and Install Guides in all available languages

Graphs and Figures



Reference drawing 162521 for the maximum number of 32 ProTIMs allowed to connect to one Galvanic Isolator

Figure 1: System Installation

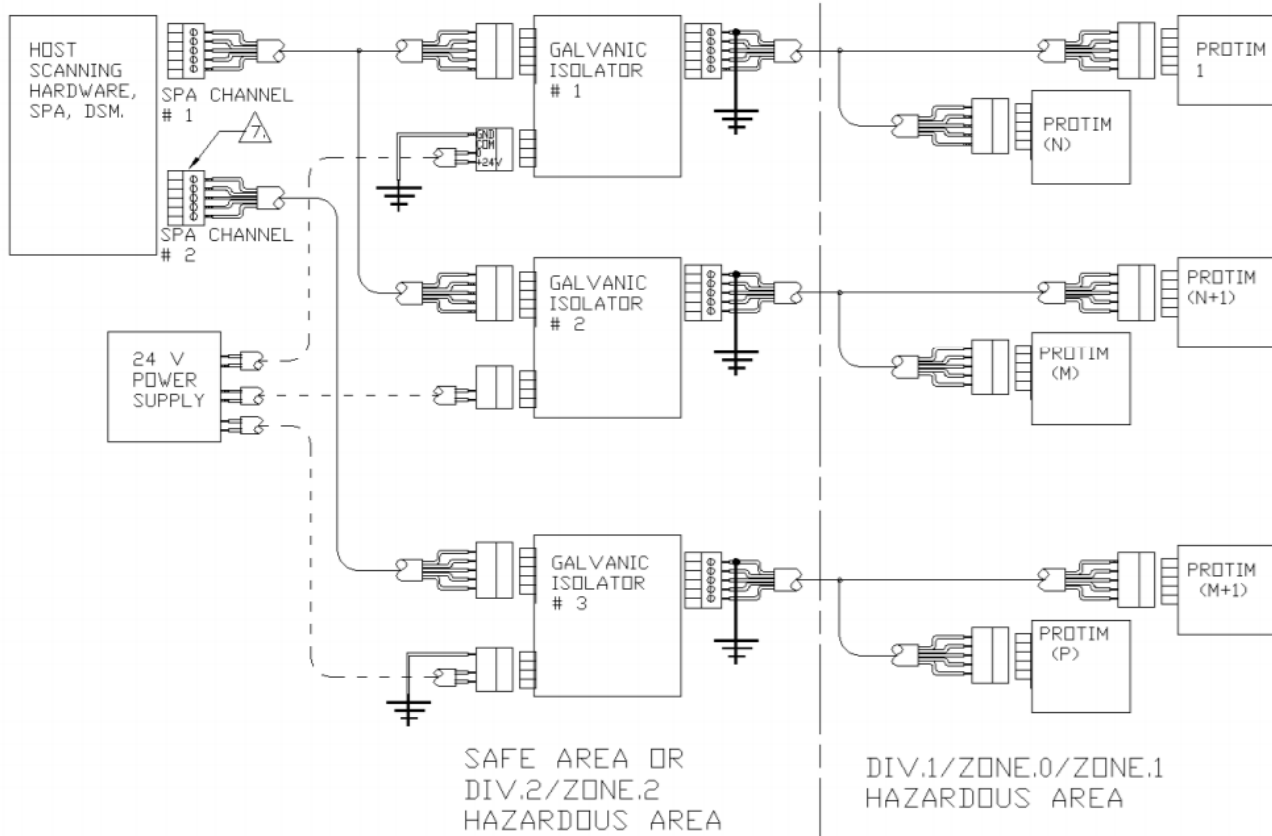
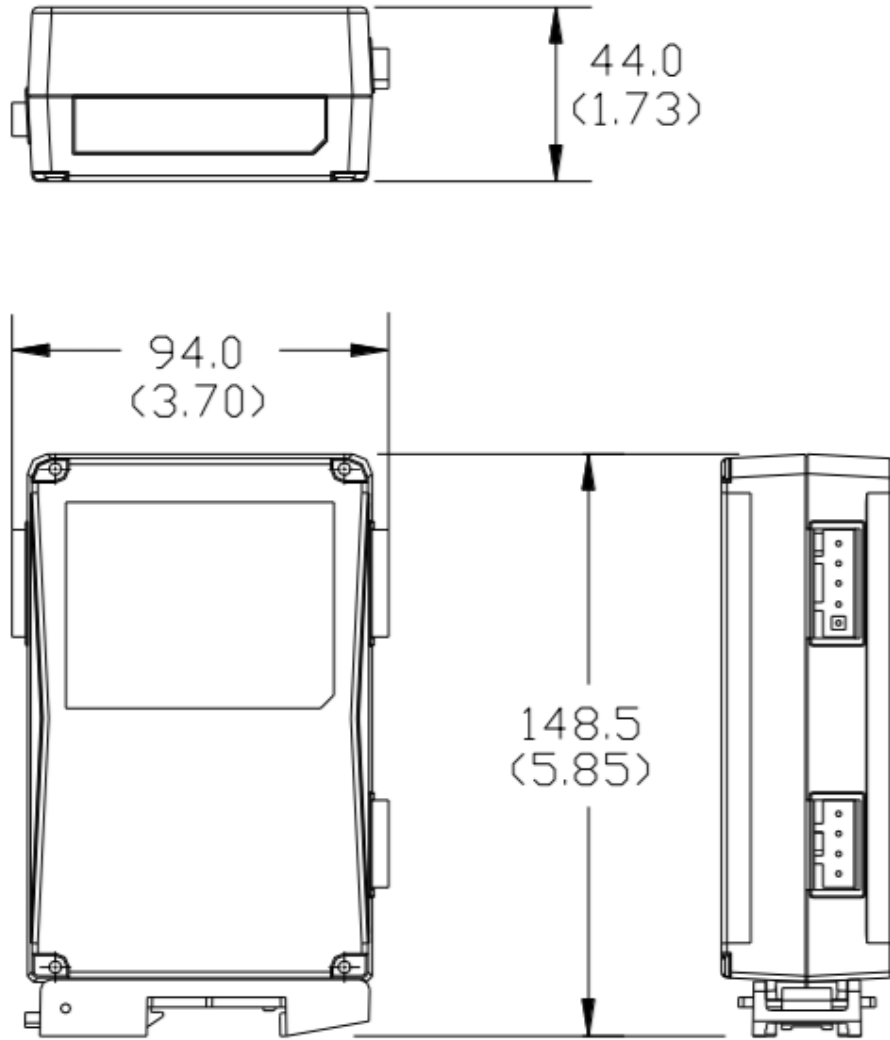


Figure 2: Grounding

- * Each SPA channel must connect to instrument ground at one Galvanic Isolator.
- * Each Galvanic Isolator's IS shield must connect to IS ground.
- * Refer to BN Documents 162521 and 166857 for more information.

Table 1: Connector Pin Assignments

Pin #	Power Supply (SAFE)	TIM Line Connected to DSM or SPA (SAFE)	TIM Line Connected to proTIMs (HAZ)
1	+24V	SHIELD	TIM SIG+ (GRN)
2	0V	SPA PWR (RED)	TIM SIG- (WHT)
3	GND	SPA COM (BLK)	TIM COM (BLK)
4	GND	SPA SIG- (WHT)	TIM PWR (RED)
5	N/A	SPA SIG+ (GRN)	SHIELD



Dimensions are in millimeters (inches)

Figure 3: Trendmaster Galvanic Isolator

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