# 149744 Trendmaster\* Dynamic Scanning Module

## Bently Nevada\* Asset Condition Monitoring



# Description

The 149744 Trendmaster\* Dynamic Scanning Module (DSM) is a compact rack-based data acquisition system that is fully integrated with System 1\* software. The DSM rack has a total of 5 card slots. The first slot is dedicated for communications and will accept either the copper or fiber Ethernet card. The other 4 slots are general-purpose card slots that can accept any combination of the available DSM input cards.

The DSM supports both Direct Input cards and a TIM Input card. Direct Input cards connect directly to sensors and are available for a variety of sensors as well as 4-20 mA transmitters. Direct Input cards support up to 8 channels and provide very rapid scanning. The TIM input card connects to Bently Nevada\* TIM, flexiTIM, and proTIM\* modules. Each TIM input card provides 2 TIM lines, and each TIM line supports up to 255 TIMs and transducers. All input card types offer high-resolution sampling with onboard real-time processing. Onboard processing is the key to the powerful and efficient features available with the DSM platform. Because each input card can process data locally, the DSM can return post-processed variables to the host computer and reduce the required network bandwidth. If the host computer requires raw data, the DSM can also return waveforms and spectrums.

#### **Modbus Communications Capability**

The introduction of a Modbus digital interface now permits DSMs to communicate directly with process control and automation systems without the need for additional hardware. This capability provides a low-cost entry-level alternative to System 1 that uses the basic trending and alarming functionality that is integral to existing process control systems. All DSMs now include Modbus over TCP/IP capability and require only the DSM Modbus Exporter software to configure all the DSM inputs and define the Modbus interface. The DSM requires the Modbus Serial to Ethernet Bridge for RS232/485 Modbus communication. See the accessory section of this datasheet for the Modbus Exporter software and Serial to Ethernet Bridge part numbers.

#### DSM Features

- Fully integrated with System 1 and Decision Support\*
- Ethernet Modbus server with or without System 1
- Up to 150 DSMs per single data acquisition computer
- Small package, 21cm x 13 cm x 11cm (8.3 in x 5.1 in x 4.3 in)
- Choice of copper or fiber Ethernet
- Synchronous and asynchronous processing
- Automatic self-checking for DSM and Input cards, and transducers
- Up to 24 kHz high bandwidth inputs

Specifications and Ordering Information Part Number 149831-01 Rev. V (07/15)



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- Up to 16-bit high resolution sampling
- Up to 16x auto gain
- Direct inputs for:
  - 2- and 3-wire acceleration sensors
  - 2- and 3-wire velocity sensors
  - Proximity, speed, and Keyphasor\* signals
  - 4-20 mA transmitters buffered outputs
- TIM (Transducer Interface Module) support for:
  - Acceleration, velocity, and proximity sensors
  - 4-20 mA, 1-5 V, and 0-10 V transmitters
  - J and K thermocouples and platinum RTD
  - Up to 510 channels per card
- Onboard processing for:
  - True RMS and peak-peak
  - 1X, 2X, and not 1X variable
  - User configurable high-pass and band-pass filters
  - Integrated variables and waveforms
  - Configurable spectrums up to 3200 lines
  - Spectrum windowing, averaging, and overlap
  - Standard and enhanced high-frequency enveloping

Crecifications		100 FX Fiber Ethernet Card (149776-02)	
Specifications		Status LED	
DSM Rack (149744) Input Voltage			Tri-color LED indicates status of DSM and input modules with
	Power connector located on communications card.		combinations of colors and flash rates
	20 to 30 Vdc	Link/ACT LED	
Input Power	10		Tri-color LED indicates network link status
	18 watts maximum	Connector type	
Fuse Rating			MT-RJ
	1 amp slow-blow	Communication	S
10/100 TX Copp Status LED	er Ethernet Card (149776-01)	DSM to System 1	
	Tri-color LED indicates status of		TCP/IP
	DSM and input modules with combinations of colors and flash		UDP for initialization
	rates	Modbus	
Link/Activity LE			Operates with or without System
	Tri-color LED indicates network link status		
Connector Type			MODBUS OVER TCP/IP
	R 145		
Communication	c		0.5 sec response ume
DSM to System	5	Operation Proto	
1			ICP/IP, BN protocol
	TCP/IP	_	UDP for initialization only
	UDP for initialization	Baud Rate	
Modbus			100 base FX only
	Operates with or without System	Cable Length	
	1		400 meters (1312 feet) multimode
	Modbus over TCP/IP		2000 motors (6E62 feet)
	Up to 6 clients		multimode fiber optic cable (full
	0.5 sec response time		duplex)
Baud Rate		<b>TIM Input Card</b>	(149787-01)
	10 Base T or 100 Base TX, auto-	Input Lines	
Cable Length	negotiating		Both lines sampled simultaneously
Cubic Length	100 meters (328 feet)		2 per card
	Category 5 twicted pair		255 TIMs per line
	Category J, twisted pull		

Supported TIMs		Waveform Size	
	All proTIM, flexiTIM, and TIM		8192 samples maximum
	modules	Filter	
	1900/15		No anti-alias filter on
	1900/25		synchronous path
	1900/55	Asynchronous W	/aveforms (Software
TIM Cable Length		Frequency Spans	
	1200 meters (4000 feet)		20 Hz
A/D Resolution			50 Hz
	14 bits		100 Hz
Accuracy			200 Hz
	±2% of full-scale range		500 Hz
Short Circuit Curr	ent		1000 Hz
Limit			
	48 mA maximum	Caucalo Datos	2000H2
Hardware Freque Response (3 dB co	ncy prners)	Sample kates	
	1/3 Hz and 20 kHz		51.2 HZ
	Refer to TIM and transducer		128 HZ
	specifications for more		256 Hz
	information		512Hz
Direct Filter			1280 Hz
	2-pole high-pass, 1 Hz to 12.8 kHz		2560 Hz
Prime Spike Filter			5120 Hz
	4-pole high-pass, 1 Hz to 12.8 kHz		12800 Hz
	2-pole low-pass, 10 Hz to 12.8		25600 Hz
	KHZ	Spectral Lines	
Rotor Region Filte			100
	2-pole high-pass, 1 Hz to 12.8 kHz		200
	2-pole low-pass, 10 Hz to 12.8 kHz		400
High Frequency F	ilter		800
	4-pole high-pass, 1 Hz to 12.8 kHz		1600
Synchronous Wo	veforms (Software		3200
configurable)		Spectrum averag	es
Frequency Span			Up to 8
	32, 64, and 128 samples per revolution	Windowing	None flat-top or banning
	20 to 36,000 CPM		none, nat-top, or nanning

Process Variable	Direct Input Card (149799-01)	A/D Resolution	
Inputs			14 bits
	Both blocks sampled	Full-Scale Range	
	simultaneously		4-20 mA, 22.5 mA maximum
	2 blocks per cara	Short Circuit Cur	rent
T	4 inputs per block	Limit	
Transmitter Type	( 20		37 mA maximum
	4-20 mA, passive	24 Volt Transdu (149811-01)	cer Direct Input Card
	transmitter power.	Inputs	
Configurable Prod Types	Cess		Both blocks sampled simultaneously. Any input can be used for speedl or KPH
	Current		2 blocks per card
	Flow		/ inputs per block
	Force		(X V and KHP on a single card)
	Frequency		1 Direct Input Card does not
	Load		support multi-event wheels
	Mass	Transducer Type	
	VAR		3-wire voltage mode sensors
	Position	Compatible Bent	ly
	Power	Nevada Transduo	cers
	Power factor		3300
	Pressure		3300XL
	Process speed		3300 REBAM
	Temperature		7200
	Torque		330400
	Valve position		330425
	Voltage	Transducer Powe	er
	Weight	Supply Voltage	
Transmitter Supp	ly		-24 ± 5% Vdc
voltage		Maximum Transducer Current	
	19.5 V to 50 V		15 mA (per channel)
(0.5 volts max < DSM input supply) Input Impedance		Maximum Transducer	
		Cable Length	
Acouracy	211 22 ± 2 32		305 m (1000 ft)
Accuracy	+ 204 of ESP	Amplitude Accure	асу
	±270 UI FSK		1%
			Specifications and Ordering Information

Phase Accuracy		Filter	
	±1°		No anti-alias filter on synchronous path
A/D Resolution			synemonous putri
	14 bits	Asynchronous Wo	aveforms (Software Configurable)
Input Impedance		Frequency Spar	าร
	10 kΩ		20 Hz
Keyphasor Input	Signals		50 Hz
	Keyphasor speed 6 to 36,000 cpm		100 Hz
	Duty cycle greater than 1% or 50 us		200 Hz 500 Hz
	Full scale gap range -24 volts		1000 Hz
	Amplitude minimum 2.0 volts peak to peak		2000 Hz
Hardware Freau			5000 Hz
Response			10000 Hz
	1/3 Hz and 24 kHz		20000 Hz
	(3 dB corners)	Sample Rates	
Direct Filter			51.2 Hz
	2-pole high-pass, 1 Hz to 12.8 kHz		128 Hz
Prime Spike Filter:			256 Hz
	4-pole high-pass, 1 Hz to 12.8 kHz		512 Hz
	2-pole low-pass, 10 Hz to 12.8 kHz		1280 Hz
Rotor Region Filt	or .		2560 Hz
Notor Region Int	2 polo high pass 1 Hz to 12.8 kHz		5120 Hz
	2 pole low pass 10 Hz to 12.8		12800 Hz
	kHz		25600 Hz
High Frequency I	Filter		51200 Hz
	4-pole high-pass, 1 Hz to 12.8 kHz	Spectral Lines	100
Synchronous Wave	forms (Software Configurable)		200
Frequency Span	-		400
	32, 64, and 128 samples per revolution		800
	20 to 36 000 CPM		1600
Wayeform Size	2010 30,000 CITI		3200
	8192 samples mavimum	Spectrum Avero	ages
	oraz sumples muximum		Up to 8

Windowing			2-pole low-pass, 10 Hz to 12.8
	None, flat-top, or hanning		KHZ
Constant Current Direct Input Card (149811-02)		Rotor Region Filt	
Inputs			2-pole high-pass, 1 Hz to 12.8 kHz
	Both blocks sampled simultaneously		2-pole low-pass, 10 Hz to 12.8 kHz
	2 blocks per card	High Frequency F	Filter
	4 inputs per block		4-pole high-pass, 1 Hz to 12.8 kHz
Transducer Type		Synchronous Wave	forms (Software Configurable)
	2-wire current mode sensors	Frequency Span	
Compatible Bentl Nevada Transduc	y ers		32, 64, and 128 samples per revolution
	200350		20 to 36,000 CPM
	330500	Waveform Size	
	330525		8192 samples maximum
	190501	Filter	
Transducer Powe Supply Voltage	r		No anti-alias filter on synchronous path
	-24 ± 5% Vdc	Asynchronous Way	eforms (Software Configurable)
Bias Current Supp	bly:	Frequency Spans	
	3.3 mA		20 Hz
Accuracy			50 Hz
	1%		100 Hz
A/D Resolution			200 Hz
	14 bits		500 Hz
Transducer Cable			1000 Hz
Length	705 m (1000 ft) mayimum for		2000 Hz
	compatible Bently Nevada		5000 Hz
	transducers		10000 Hz
Hardware Freque	ncy		20000 Hz
Kesponse (5 dB cc	$\frac{1}{3}$ Hz and $\frac{2}{4}$ kHz	Sample Rates	
	1/3 1/2 0110 24 KHZ		51.2 Hz
Direct Filter			128 Hz
	2-pole high-pass, 1 Hz to 12.8 kHz		256 Hz
Prime Spike Filter			512 Hz
	4-pole high-pass, 1 Hz to 12.8 kHz		1280 Hz
			2560 Hz

	5120 Hz	Bias Current Sup	ply
	12800 Hz		3.3 mA
	25600 Hz	Accuracy	
	51200 Hz		1%
Spectral Lines		A/D Resolution	
	100		16 bits
	200	Input Gain Stage	
	400	(Manual or Auto)	
	800		1X, 4X, 8X, 16X
	1600	Hardware Freque Response (3 dB c	ency orners)
	3200		1/3 Hz and 24 KHz
Spectrum Averag	es	Direct Filter	
	Up to 8		2-pole high-pass. 1 Hz to 12.8 kHz
Windowing		Prime Spike Filter	,
	None, flat-top, or hanning		4-pole high-pass, 1 Hz to 12.8 kHz
Seismic Direct Ir Inputs	nput Card (164746-01)		2-pole low-pass, 10 Hz to 12.8 kHz
	1 block of 8	Rotor Region Filt	er
Transducer Type	1 block of 8	Rotor Region Filto	<b>er</b> 2-pole high-pass, 1 Hz to 12.8 kHz
Transducer Type	1 block of 8 2-wire current mode sensors	Rotor Region Filt	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8
Transducer Type Compatible Bentl	1 block of 8 2-wire current mode sensors y	Rotor Region Filt	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8 kHz
Transducer Type Compatible Bentl Nevada Transduc	1 block of 8 2-wire current mode sensors y cers	Rotor Region Filte	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8 kHz Filter
Transducer Type Compatible Bentl Nevada Transduc	1 block of 8 2-wire current mode sensors y zers 200350 330500	Rotor Region Filte	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8 kHz Filter 4-pole high-pass, 1 Hz to 12.8 kHz
Transducer Type Compatible Bentl Nevada Transduc	1 block of 8 2-wire current mode sensors y zers 200350 330500 330525	Rotor Region Filte High Frequency F Enveloping Filter	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8 kHz Filter 4-pole high-pass, 1 Hz to 12.8 kHz (4 pole high-pass, 2 pole
Transducer Type Compatible Bentl Nevada Transduc	1 block of 8 2-wire current mode sensors y zers 200350 330525 190501	Rotor Region Filte High Frequency F Enveloping Filter	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8 kHz Filter 4-pole high-pass, 1 Hz to 12.8 kHz 4-pole high-pass, 2-pole low-pass
Transducer Type Compatible Bentl Nevada Transduc	1 block of 8 2-wire current mode sensors y cers 200350 330500 330525 190501	Rotor Region Filte High Frequency F Enveloping Filter	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8 kHz Filter 4-pole high-pass, 1 Hz to 12.8 kHz 4-pole high-pass, 2-pole low-pass 25 – 125 Hz
Transducer Type Compatible Bentl Nevada Transduce Transducer Powe Supply Voltage	1 block of 8 2-wire current mode sensors y cers 200350 330500 330525 190501 r	Rotor Region Filter	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8 kHz Filter 4-pole high-pass, 1 Hz to 12.8 kHz 4-pole high-pass, 2-pole low-pass 25 – 125 Hz 50 – 250 Hz
Transducer Type Compatible Bentl Nevada Transduc Transducer Powe Supply Voltage	1 block of 8 2-wire current mode sensors y zers 200350 330500 330525 190501 r +24 ± 5% Vdc	Rotor Region Filter	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8 kHz Filter 4-pole high-pass, 1 Hz to 12.8 kHz 4-pole high-pass, 2-pole low-pass 25 - 125 Hz 50 - 250 Hz 100 - 500 Hz
Transducer Type Compatible Bentl Nevada Transduc Transducer Powe Supply Voltage	1 block of 8 2-wire current mode sensors y zers 200350 330500 330525 190501 r +24 ± 5% Vdc mum	Rotor Region Filte	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8 kHz Filter 4-pole high-pass, 1 Hz to 12.8 kHz 4-pole high-pass, 2-pole low-pass 25 - 125 Hz 50 - 250 Hz 100 - 500 Hz 200 - 1000 Hz
Transducer Type Compatible Bentl Nevada Transduce Transducer Powe Supply Voltage Transducer Maxin Cable Length	1 block of 8 2-wire current mode sensors y zers 200350 330500 330525 190501 r +24 ± 5% Vdc mum	Rotor Region Filte	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8 kHz ilter 4-pole high-pass, 1 Hz to 12.8 kHz 4-pole high-pass, 2-pole low-pass 25 - 125 Hz 50 - 250 Hz 100 - 500 Hz 200 - 1000 Hz 400 - 2000 Hz
Transducer Type Compatible Bentl Nevada Transduce Transducer Powe Supply Voltage Transducer Maxin Cable Length	1 block of 8 2-wire current mode sensors y zers 200350 330500 330525 190501 r +24 ± 5% Vdc num See specific transducer datasheet.	Rotor Region Filter	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8 kHz ilter 4-pole high-pass, 1 Hz to 12.8 kHz 4-pole high-pass, 2-pole low-pass 25 - 125 Hz 50 - 250 Hz 100 - 500 Hz 200 - 1000 Hz 400 - 2000 Hz 800 - 4000 Hz
Transducer Type Compatible Bentl Nevada Transduc Transducer Powe Supply Voltage Transducer Maxin Cable Length	1 block of 8 2-wire current mode sensors y zers 200350 330500 330525 190501 r +24 ± 5% Vdc mum See specific transducer datasheet.	Rotor Region Filter	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8 kHz Filter 4-pole high-pass, 1 Hz to 12.8 kHz 4-pole high-pass, 2-pole low-pass 25 - 125 Hz 50 - 250 Hz 100 - 500 Hz 200 - 1000 Hz 400 - 2000 Hz 800 - 4000 Hz 1600 - 8000 Hz
Transducer Type Compatible Bentl Nevada Transduce Transducer Powe Supply Voltage Transducer Maxin Cable Length	1 block of 8 2-wire current mode sensors y zers 200350 330500 330525 190501 r +24 ± 5% Vdc mum See specific transducer datasheet.	Rotor Region Filte	er 2-pole high-pass, 1 Hz to 12.8 kHz 2-pole low-pass, 10 Hz to 12.8 kHz Filter 4-pole high-pass, 1 Hz to 12.8 kHz 4-pole high-pass, 2-pole low-pass 25 - 125 Hz 50 - 250 Hz 100 - 500 Hz 200 - 1000 Hz 400 - 2000 Hz 800 - 4000 Hz 1600 - 8000 Hz 3200 - 16000 Hz

Synchronous Waveforms (Software configurable)		Spectral Lines		
Frequency span			100	
32, 64, 128, 256, 512, or 1024			200	
	Samples per revolution		400	
	samples/second		800	
	8192 samples maximum		1600	
	waveform size		3200	
Filter		Spectrum Averag	es	
	Tracking anti-alias filter		Up to 255	
Waveform Averag	ges	Windowing		
	Up to 255		None, flat-top, or hanning	
Asynchronous Wave	eforms (Software configurable)	General		
Frequency Spans		Dimensions (Leng	jth x	
	20 Hz	Width x Height)		
	50 Hz		21.6 cm x 13.3 cm x 11.4 cm (8.51	
	100 Hz	Waight	11 × 3.24 11 × 4.3 11)	
	200 Hz			
	500Hz	input cards		
	1000 Hz		0.76 kg (1.7 lbm)	
	2000 Hz	Input card		
	5000 Hz		0.2 kg (0.44 lbm)	
	10000 Hz	Power supply		
	20000 Hz		0.5 kg (1.1 lb)	
Sample Rates		Mounting		
	51.2 Hz	DIN rail option		
	128 Hz		35mm DIN rail. Requires 26.7 cm	
	256 Hz		(10.5 in) rail length.	
	512 Hz	Weatherproof		
	1280 Hz	nousing	ZEmm DIN rail Dequires 26.7 cm	
	2560 Hz		(10.5in.) rail length.	
	5120 Hz	Bulkhead option		
	12800 Hz		Requires 4 #8 screws required.	
	25600 Hz			
	51200 Hz			

## **Environmental Limits**

#### **Operating Temperature**

-20 °C to +70 °C (-4 °F to +158° F)

#### Storage Temperature

-40 °C to +85 °C (-40 °F to +185 °F)

#### **Operating or Storage Humidity**

95%, non-condensing

100% condensing when installed in weatherproof housing with power applied.

#### Vibration

2 g's (10 to 55 Hz)

10 g's (55 to 500 Hz)

#### Shock

6-inch drop to plywood surface (installed in terminal base)

### **CE** Approvals

#### **EMC Directives**

DSM has the CE mark and is approved for installation within the European Union and EEA regions. DSM has been designed and tested to meet the listed directives.

#### **EMC Standards**

This product is tested to meet Council Directive 89/336/EEC Electromagnetic Compatibility (EMC) and the listed standards, in whole or in part, documented in a technical construction file.

#### EN55011

1998 Generic emission standard, Part 2, Industrial environment.

#### EN61000-6-2

EMC Generic immunity standard, Part 2, Industrial environment.

#### Low Voltage Directive

DSM meets Council Directive 73/23/EEC Low Voltage when the 24 Vdc power source is approved to the Low Voltage Directive. Power Supply part number 02200794 meets this requirement.

## Hazardous Area Approvals

For a detailed listing of country and product specific approvals, refer to the *Approvals Quick Reference Guide* (document 108M1756) located at the following website: www.GEmeasurement.com.

#### North American:



AEx nA IIC T4; Class 1 Zone 2 Class 1 Division 2 Groups A,B,C,D T4 Vn = 20 to 30Vdc@Imax=750maT4@ -20 °C  $\leq$  Ta  $\leq$  +70 °C

When installed per DWG 163796



Ex nA [nL] IIC T4 T4@ -20 °C  $\leq$  Ta  $\leq$  +70 °C When installed per DWG 163796

#### European



II 3G Ex nA [ic] IIC T4 Gc II 3(3)G Ex nA op is [op is T4 Gc] IIC T4 Gc

II 3(3)G [Ex op is T4 Gc] IIC

SIRA13ATEX4317X

T4@ -20 °C  $\leq$  Ta  $\leq$  +70 °C

When installed per DWG 163796

#### Brazil



Ex nA [ic Gc] IIC T4 Gc DNV 12.0029X

T4@ -20 °C ≤ Ta ≤ +70 °C

When installed per DWG 163796

# **Ordering Information**

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For a detailed listing of country and product specific approvals, refer to the Approvals Quick Reference Guide (document 108M1756) located at the following website: www.GEmeasurement.com.

#### 149744 - AXX - BXX - CXX - DXX - EXX - FXX - GXX - HXX

01     11/202 V30-60 Hz     DSM Modbus Exporter Software.       02     +24 Vdc     DSM Modbus Exporter Software.       01     10/100baseT Ethernet     Spare 10/100 Base T Ethernet       02     Fiber Optic Ethernet     Spare 10/100 Base T Ethernet       02     Fiber Optic Ethernet     Spare Fiber Optic Ethernet       02     FV direct input card     Spare Fiber Optic Ethernet       03     24V transducer direct input card     Spare Fiber Optic Ethernet       04     Constant current direct input card     149776-01       05     Seismic direct input card     149787-01       05     Seismic direct input card     149811-01       05     Seismic direct input card     149811-02       06     None     Spare Process Variable Input Card.       07     TIM input card     149789-01       08     Seismic direct input card     149789-01       09     None     Spare Constant Current Transducer Input Card.       01     TIM input card     149789-01       02     PV direct input card     149789-01       03     24V transducer direct input card     149789-01       04     Constant current direct input card     149789-01       05     Seismic direct input card     164746-01       04     Constant current direct input card <td< th=""><th>A:</th><th>Power Input</th><th></th><th></th><th>3060/56</th><th></th></td<>	A:	Power Input			3060/56	
02     +24 Vdc     DSM Modbus Exporter Software.       8:     Communication     10/100baseT Ethernet     Spare 10/100 Base T Ethernet       01     10/100baseT Ethernet     Communication Card.       01     10/100baseT Ethernet     Spare 10/100 Base T Ethernet       02     Fiber Optic Ethernet     Communication Card.       01     111 injut card     149776-01       02     PV direct input card     Spare Fiber Optic Ethernet       03     24V transducer direct input     Card       04     Constant current direct input card     149787-01       05     Seismic direct input card     149811-01       06     None     Spare Fiber Optic Ethernet       01     TIM input card     149787-01       02     PV direct input card     149811-01       03     24V transducer direct input card     149811-01       04     Constant current direct input card     Spare Constant Current       05     Seismic direct input card     149789-01       05     Seismic direct input card     149787-01       05     Seismic direct input card     164746-01       06     None     Spare Process Variable Input Card.       07     Nine     149789-01       08     Seismic direct input card     164746-01       07			01	110/220 V 50-60 Hz		
B:     Communication     10/100base T Ethernet     Spare 10/100 Base T Ethernet       02     Fiber Optic Ethernet     149776-01       02     PV direct input card     149776-01       03     24V transducer direct input card     149776-01       04     Constant current direct input card     149776-01       05     Seismic direct input card     149776-01       04     Constant current direct input card     149787-01       05     Seismic direct input card     149787-01       06     None     149787-01       07     Spare Fiber Optic Ethernet Communication Card.     Spare TIM Line Input Card.       08     Seismic direct input card     149787-01       09     None     Spare -24V Transducer Input Card.       01     TIM input card     149811-02       02     PV direct input card     149799-01       03     24V transducer direct input card     149799-01       14     Constant current direct input card     164746-01       03     Seismic direct input card     164746-01       04     Constant current direct input card     149833-01       14     TIM input card     164746-01       05     Seismic direct input card     124V Power Supply to DSM Wiring Harress.       14     TIM input card     162003			02	+24 Vdc		DSM Modbus Exporter Software.
1     10/100base Tethernet 02     10/100base Tethernet 02     Spare 10/100 Base Tethernet Communication Card.       1     10/100base Tethernet 01     Spare 10/100 Base Tethernet Communication Card.     Spare Fiber Optic Ethernet Communication Card.       0     None 01     11     149776-01     Spare Fiber Optic Ethernet Communication Card.       0     None 01     149776-01     Spare Fiber Optic Ethernet Communication Card.       0     None 01     149776-01     Spare Fiber Optic Ethernet Communication Card.       0     None 02     PV direct input card     149787-01       0     None 03     Spare Fiber Optic Ethernet Card     Spare TIM Line Input Card.       0     None 01     TIM input card     Spare - 24V Transducer Input Card.       0     None 01     TIM input card     149811-01       0     None 01     TIM input card     Spare Constant Current Transducer Input Card.       0     None 01     Spare Constant Current Transducer Input Card.     Spare Process Variable Input Card.       0     None 01     None 01     Spare Seismic Input Card.     Spare Seismic Input Card.       0     None 01     TIM input card     164746-01     Spare Seismic Input Card.       0     None 01     TIM input card     164746-01     Blank Slot Cover.       0     Seismic direct input card     02200794 <td>B:</td> <td>Communicatio</td> <td>n</td> <td></td> <td>1/10776_01</td> <td></td>	B:	Communicatio	n		1/10776_01	
C:     Input Boord 1     None     149776-01     Spare Fiber Optic Ethernet Communication Card.       0     None     149776-01     Spare Fiber Optic Ethernet Communication Card.       02     PV direct input card     149776-01       03     24V transducer direct input card     149787-01       04     Constant current direct input card     149787-01       05     Seismic direct input card     149811-01       06     None     Spare -24V Transducer Input Card.       07     None     Spare -24V Transducer Input Card.       08     None     Spare Constant Current       09     Constant current direct input card     149811-02       01     TIM input card     149779-01       02     PV direct input card     149811-02       03     24V transducer direct input card     149799-01       04     Constant current direct input card     149799-01       05     Seismic direct input card     164746-01       05     Seismic direct input card     164746-01       05     Seismic direct input card     164746-01       04     Constant current direct input card     1640746-01       05     Seismic direct input card     162003       07     Varinsducer direct input card     162003       08     Seismic direct input ca			01	10/100baseT Ethernet	145770-01	
C:       Input Board 1       Instrumentation Cond.       Communication Card.         0       None       149776-01       Spare Fiber Optic Ethernet       Communication Card.         01       TIM input card       149787-01       Spare TIM Line Input Card.       Spare TIM Line Input Card.         02       PV direct input card       149787-01       Spare TIM Line Input Card.       Spare TIM Line Input Card.         05       Seismic direct input card       149811-01       Spare -24V Transducer Input Card.       Card.         01       TIM input card       149811-01       Spare Constant Current Card.       Card.       Card.         02       PV direct input card       149811-02       Spare Constant Current Card.       Card.       Card.         03       24V transducer direct input card       149799-01       Spare Process Variable Input Card.       Card.         04       Constant current direct input card       164746-01       Spare Seismic Input Card.       Card.         05       Seismic direct input card       164746-01       Spare Seismic Input Card.       Card.         05       Seismic direct input card       164746-01       Spare Seismic Input Card.       Card.         04       Constant current direct input card       164746-01       Spare Seismic Input Card.       Card. </td <td></td> <td></td> <td>02</td> <td>Fiber Optic Ethernet</td> <td></td> <td>Spare 10/100 Base T Ethernet</td>			02	Fiber Optic Ethernet		Spare 10/100 Base T Ethernet
Production of a spore board of a spore Fiber Optic Ethernet Communication Card.     Spore Fiber Optic Ethernet Communication Card.       01     TIM input card     149776-01       02     PV direct input card     149787-01       04     Constant current direct input card     149787-01       05     Seismic direct input card     149811-01       06     None     Spore TIM Line Input Card.       07     None     Spore -24V Transducer Input Card.       08     None     Spore -24V Transducer Input Card.       09     V direct input card     149811-01       00     None     Spore Constant Current Transducer Input Card.       01     TIM input card     149811-02       02     PV direct input card     149811-02       03     24V transducer direct input card     149811-02       04     Constant current direct input card     149799-01       05     Seismic direct input card     149799-01       06     None     Spore Process Variable Input Card.       07     TIM input card     164746-01       08     Spore Seismic Input Card.     Spore Seismic Input Card.       09     V direct input card     02       01     TIM input card     164746-01       02     PV direct input card     02       04     Constant	۲·	Input Board 1	02			Communication Card.
P:     Invite     149776-01       01     TMM input card     Spare Fiber Optic Ethernet       02     PV direct input     Communication Card.       03     224V transducer direct input     149787-01       04     Constant current direct input     149811-01       05     Seismic direct input card     149811-01       06     None     Spare Constant Current       07     24V transducer direct input     149811-02       08     24V transducer direct input     149811-02       09     None     Spare Constant Current       01     TIM input card     149811-02       02     PV direct input card     149811-02       03     24V transducer direct input     149811-02       04     Constant current direct input     Card.       05     Seismic direct input card     149799-01       06     Soster Process Variable Input     Card.       07     None     Spare Process Variable Input       08     Seismic direct input card     164746-01       09     None     Spare Seismic Input Card.       01     TIM input card     164746-01       02     PV direct input card     1649746-01       03     24V transducer direct input     Card.       04     Constant current direct	Ο.	input bound 1	0.0	None	4/0776 04	
Privince input card     Spare Fiber Optic Ethernet Communication Card.       02     PV direct input card     Communication Card.       03     24V transducer direct input card     149787-01       04     Constant current direct input card     149787-01       05     Seismic direct input card     149811-01       06     None     Spare -24V Transducer Input Card.       01     TM input card     149811-02       02     PV direct input card     149811-02       03     24V transducer direct input card     149811-02       04     Constant current direct input card     149811-02       05     Seismic direct input card     149811-02       05     Seismic direct input card     149799-01       15     Seismic direct input card     149799-01       16     None     Spare Process Variable Input Card.       04     Constant current direct input card     164746-01       05     Seismic direct input card     164746-01       05     Seismic direct input card     164746-01       05     Seismic d			01	TIM input card	149776-01	
03     24V transducer direct input cord     149787-01       04     Constant current direct input cord     149787-01       05     Seismic direct input cord     149811-01       06     None     Spare TIM Line Input Cord.       01     TIM input cord     149811-01       02     None     Spare -24V Transducer Input Cord.       03     24V transducer direct input cord     149811-02       04     Constant current direct input cord     149811-02       05     Seismic direct input cord     149811-02       06     None     Spare Constant Current Transducer Input Cord.       07     Seismic direct input cord     149799-01       08     Seismic direct input cord     149799-01       09     None     Spare Process Variable Input Cord.       01     TIM input cord     164746-01       02     PV direct input cord     164746-01       03     24V transducer direct input cord     149833-01       04     Constant current direct input cord     149833-01       05     Seismic direct input cord     02200794       04     Constant current direct input cord     162003       05     Seismic direct input cord     162003       06     None     +24V Power Supply to DSM Wiring Harness.       07     Seismic d			02	PV direct input card		Spare Fiber Optic Ethernet
b:       Lev Unsducer direct input card       149787-01         04       Constant current direct input card       149787-01         05       Seismic direct input card       149811-01         05       Seismic direct input card       149811-01         01       TM input card       Card         02       PV direct input card       149811-02         03       24V transducer direct input card       149811-02         04       Constant current direct input card       149811-02         05       Seismic direct input card       149811-02         04       Constant current direct input card       149811-02         05       Seismic direct input card       149799-01         06       Seismic direct input card       149799-01         07       None       Spare Process Variable Input Card.         08       None       Spare Seismic Input Card.         09       None       Spare Seismic Input Card.         01       TIM input card       164746-01         02       PV direct input card       164746-01         03       24V transducer direct input card       02200794         04       Constant current direct input card       162003         05       Seismic direct input card			02	2/W transducer direct input		Communication Card
D:     Input Board 2     05     Seismic direct input card     149787-01       0:     Input Board 2     05     Seismic direct input card     149811-01       0:     None     Spare -24V Transducer Input Card.     200       0:     None     Spare -24V Transducer Input Card.     200       0:     None     Spare -24V Transducer Input Card.     200       0:     V direct input card     149811-02     Spare Constant Current       0:     74 direct input card     149799-01     Spare Constant Current       0:     None     Spare Process Variable Input Card.     Spare Process Variable Input Card.       0:     None     Spare Seismic Input Card.     24V transducer direct input card       0:     None     Spare Process Variable Input Card.     Spare Seismic Input Card.       0:     None     Spare Seismic Input Card.     Spare Seismic Input Card.       0:     None     Spare Seismic Input Card.     Spare Seismic Input Card.       0:     None     Seismic direct input card     164746-01       0:     None     Spare Seismic Input Card.     Spare Seismic Input Card.       0:     None     Seismic direct input card     164746-01       0:     None     Seismic direct input card     162003       0:     None     Power Suppl			05	card		
0:       Input Board 2       05       Seismic direct input card       149811-01         0:       Input Board 2       05       Seismic direct input card       149811-01         0:       None       Spare -24V Transducer Input Card.       Card.         0:       V direct input card       149811-02       Spare -24V Transducer Input Card.         0:       V direct input card       149811-02       Spare Constant Current         0:       V direct input card       149811-02       Spare Constant Current         0:       None       Spare Constant Current       Transducer Input Card.         0:       None       Spare Process Variable Input Card.       Card.         0:       None       Spare Process Variable Input Card.       Card.         0:       None       Spare Seismic Input Card.       Card.         0:       None       Spare Seismic Input Card.       Spare Constant Current Card.         0:       V direct input card       164746-01       Spare Seismic Input Card.         0:       Seismic direct input card       149833-01       Blank Slot Cover.         0:       Seismic direct input card       162003       Power Supply.         0:       None       +24V Power Supply.       Power Supply to DSM Wiring Harness. </td <td></td> <td></td> <td>0.4</td> <td>Constant surront direct input</td> <td>149787-01</td> <td></td>			0.4	Constant surront direct input	149787-01	
D:       Input Board 2       05       Seismic direct input card       149811-01         00       None       Card       Card       Card         01       TIM input card       149811-02       Spare -24V Transducer Input Card       Card         02       PV direct input card       149811-02       Spare Constant Current       Transducer Input Card         03       24V transducer direct input card       149799-01       Spare Process Variable Input Card       Spare Process Variable Input Card         05       Seismic direct input card       164746-01       Spare Seismic Input Card       Card.         01       TIM input card       164746-01       Spare Seismic Input Card.       Card.         03       24V transducer direct input card       164746-01       Spare Seismic Input Card.       Spare Seismic Input Card.         04       Constant current direct input card       164746-01       Blank Slot Cover.       Spare Seismic Input Card.         04       Constant current direct input card       164983-01       Blank Slot Cover.       Spare Seismic Input Card.         05       Seismic direct input card       162003       Power Supply.       Spare Seismic Input Card.         05       Seismic direct input card       162003       Power Supply to DSM Wiring Harness.         04 </td <td></td> <td></td> <td>04</td> <td>constant current direct input</td> <td></td> <td>Spare TIM Line Input Card</td>			04	constant current direct input		Spare TIM Line Input Card
0: or sessific direct input cord     149811-01       0: or sessific direct input cord     Spare -24V Transducer Input Cord.       0: or sessific direct input cord     149811-02       0: or sessific direct input cord     1498799-01       0: or sessific direct input cord     164746-01       0: or sessific direct input cord     164746-01       0: or direct input cord     164746-01       0: or direct input cord     02200794       0: or direct input cord     02200794       0: or direct input cord     162003       0: or direct input cord     162003       0: or direct input cord     162003       0: or direct input cord     16222-01       0: or direct input cord     16222-01       0: or direct input cord     162222-01 <t< td=""><td></td><td></td><td><u>م -</u></td><td>Culu Coissois disect is put cond</td><td></td><td>Spare film Line input Cara.</td></t<>			<u>م -</u>	Culu Coissois disect is put cond		Spare film Line input Cara.
<ul> <li>Input Bord 2</li> <li>None</li> <li>TIM input card</li> <li>PV direct input card</li> <li>24V transducer direct input card</li> <li>05 Seismic direct input card</li> <li>06 None</li> <li>Spare Process Variable Input Card.</li> <li>Spare Process Variable Input Card.</li> <li>24V transducer direct input card</li> <li>149799-01</li> <li>Spare Process Variable Input Card.</li> <li>00 None</li> <li>11 TIM input card</li> <li>164746-01</li> <li>24V transducer direct input card</li> <li>164746-01</li> <li>24V transducer direct input card</li> <li>24V transducer direct input card<td>~</td><td>In much Dis and D</td><td>05</td><td>Seismic airect input cara</td><td>149811-01</td><td></td></li></ul>	~	In much Dis and D	05	Seismic airect input cara	149811-01	
00     None     Spare -24V Transducer Input       01     TIM input card     Card.       02     PV direct input card     149811-02       03     24V transducer direct input     Spare Constant Current       04     Constant current direct input     Transducer Input Card.       05     Seismic direct input card     149799-01       06     None     Spare Process Variable Input       07     TIM input card     164746-01       08     PV direct input card     164746-01       09     PV direct input card     If approved the card.       01     TIM input card     Spare Seismic Input Card.       02     PV direct input card     164746-01       03     24V transducer direct input     149833-01       03     24V transducer direct input     149833-01       04     Constant current direct input     149833-01       05     Seismic direct input card     02200794       04     Constant current direct input     162003       05     Seismic direct input card     162003       04     Constant current direct input     162003       05     Seismic direct input card     162023       04     Constant current direct input     162003       05     Seismic direct input card     162222-01 </td <td>D:</td> <td>Input Boara 2</td> <td>• •</td> <td></td> <td></td> <td> · · ·</td>	D:	Input Boara 2	• •			· · ·
61     IM input cord     Card.       02     PV direct input cord     149811-02       03     24V transducer direct input     Transducer Input Card.       04     Constant current direct input     Transducer Input Card.       05     Seismic direct input card     149799-01       E:     Input Board 3     Spare Process Variable Input Card.       00     None     Spare Process Variable Input Card.       01     TIM input card     164746-01       02     PV direct input card     164746-01       03     24V transducer direct input card     Blank Slot Cover.       04     Constant current direct input card     02200794       F:     Input Board 4     O     None       04     Constant current direct input card     162003       05     Seismic direct input card     162003       04     Constant current direct input card     162003       05     Seismic direct input card     162003       06     None     Power Supply to DSM Wiring Harness.       07     Seismic direct input card     162222-01       08     Seismic direct input card     162222-01       07     Seismic direct input card     162222-01       08     Seismic direct input card     162222-01       07     Seismic direct i			00	None		Spare –24V Transducer Input
62       PV direct input card       149811-02         03       24V transducer direct input       Transducer Input Card.         04       Constant current direct input       Transducer Input Card.         05       Seismic direct input card       149799-01         00       None       Spare Process Variable Input Card.         01       TIM input card       164746-01         02       PV direct input card       164746-01         03       24V transducer direct input       149833-01         card       04       Constant current direct input card       Spare Seismic Input Card.         04       Constant current direct input card       02200794       Blank Slot Cover.         05       Seismic direct input card       162003       PV direct input card       162003         05       Seismic direct input card       162003       Power Supply to DSM Wiring Harness.         04       Constant current direct input card       162222-01       Power Supply to DSM Wiring Harness.         05       Seismic direct input card       162222-01       Weatherproof Housing.         05       Seismic direct input card       162222-01       Weatherproof Housing.         05       Seismic direct input card       162222-01       Weatherproof Housing.			01	IIM input card		Card.
03       24V transducer direct input card       140011 0L         04       Constant current direct input card       Spare Constant Current Transducer Input Card.         05       Seismic direct input card       149799-01         00       None       Spare Process Variable Input Card.         01       TIM input card       164746-01         02       PV direct input card       164746-01         03       24V transducer direct input card       164746-01         03       24V transducer direct input card       164746-01         03       24V transducer direct input card       164746-01         04       Constant current direct input card       164746-01         05       Seismic direct input card       1249833-01         04       Constant current direct input card       02200794         05       Seismic direct input card       162003         07       TIM input card       162003         03       24V transducer direct input card       162222-01         05       Seismic direct input card       162222-01         04       Constant current direct input card       162222-01         05       Seismic direct input card       162222-01         05       Seismic direct input card       162222-01			02	PV direct input card	149811-02	
E:       Input Board 3       04       Constant current direct input card       149799-01         E:       Input Board 3       05       Seismic direct input card       149799-01         00       None       Spare Process Variable Input Card.       Card.         01       TIM input card       164746-01       Spare Seismic Input Card.         02       PV direct input card       164746-01       Spare Seismic Input Card.         03       24V transducer direct input card       149833-01       Spare Seismic Input Card.         04       Constant current direct input card       02200794       Blank Slot Cover.         05       Seismic direct input card       162003       Power Supply.         05       Seismic direct input card       162003       Power Supply to DSM Wiring Harness.         04       Constant current direct input card       16222-01       Weatherproof Housing.         05       Seismic direct input card       16222-01       Weatherproof Housing.         05       Seismic direct input card       161692       IM Line Surge Protector Plug. Also requires Part 161693.			03	24V transducer direct input	149011-02	
E:       Input Board 3       04       Constant current direct input card       149799-01         E:       Input Board 3       00       None       Spare Process Variable Input Card.         00       None       Card.       Card.         01       TIM input card       164746-01       Spare Seismic Input Card.         03       24V transducer direct input card       164746-01       Spare Seismic Input Card.         04       Constant current direct input card       164746-01       Spare Seismic Input Card.         04       Constant current direct input card       164746-01       Spare Seismic Input Card.         05       Seismic direct input card       164746-01       Spare Seismic Input Card.         04       Constant current direct input card       02200794       Blank Slot Cover.         05       Seismic direct input card       162003       Power Supply.         05       Seismic direct input card       162003       Power Supply to DSM Wiring Harness.         05       Seismic direct input card       16222-01       Weatherproof Housing.         05       Seismic direct input card       16222-01       Weatherproof Housing.         05       Seismic direct input card       161692       IM Line Surge Protector Plug. Also requires Part 161693. <td></td> <td></td> <td></td> <td>card</td> <td></td> <td>Spare Constant Current</td>				card		Spare Constant Current
E:       Input Board 3       05       Seismic direct input card       149799-01         00       None       Spare Process Variable Input Card.       Card.         01       TIM input card       164746-01       Spare Seismic Input Card.         02       PV direct input card       164746-01       Spare Seismic Input Card.         03       24V transducer direct input card       149833-01       Blank Slot Cover.         04       Constant current direct input card       02200794       Blank Slot Cover.         05       Seismic direct input card       02200794       +24V Power Supply.         01       TIM input card       162003       Power Supply to DSM Wiring Harness.         03       24V transducer direct input card       16222-01       Power Supply to DSM Wiring.         04       Constant current direct input card       16222-01       Weatherproof Housing.         05       Seismic direct input card       16222-01       Weatherproof Housing.         05       Seismic direct input card       161692       TIM Line Surge Protector Plug. Also requires Part 161693.			04	Constant current direct input		Transducer Input Card.
<ul> <li>F: Input Board 3</li> <li>G: Mounting</li> <li>G:</li></ul>				card	4/0700.04	·
E:       Input Board 3       Vone       Spare Process Variable Input Card.         01       TIM input card       164746-01       Card.         02       PV direct input card       164746-01       Spare Seismic Input Card.         03       24V transducer direct input card       164746-01       Spare Seismic Input Card.         04       Constant current direct input card       149833-01       Blank Slot Cover.         05       Seismic direct input card       02200794       +24V Power Supply.         05       Seismic direct input card       162003       Power Supply.         06       None       162003       Power Supply to DSM Wiring Harness.         07       24V transducer direct input card       16222-01       Power Supply to DSM Wiring Harness.         07       Seismic direct input card       16222-01       Weatherproof Housing.         08       Mounting       01       Bulkhead mount       161692         01       Bulkhead mount       161692       TIM Line Surge Protector Plug. Also requires Part 161693.			05	Seismic direct input card	149799-01	
00     None     Card.       01     TIM input card     164746-01       02     PV direct input card     164746-01       03     24V transducer direct input     Spare Seismic Input Card.       04     Constant current direct input     149833-01       card     04     Constant current direct input       05     Seismic direct input card     02200794       00     None     +24V Power Supply.       01     TIM input card     162003       02     PV direct input card     162003       03     24V transducer direct input     162003       04     Constant current direct input     card       05     Seismic direct input     162003       04     Constant current direct input     card       03     24V transducer direct input     162003       04     Constant current direct input     card       04     Constant current direct input     card       04     Constant current direct input     card       04     Constant current direct input     market       05     Seismic direct input card     162222-01       05     Seismic direct input card     Weatherproof Housing.       05     Seismic direct input card     161692       05     Seismic direct input card </td <td>E:</td> <td>Input Board 3</td> <td></td> <td></td> <td></td> <td>Spare Process Variable Input</td>	E:	Input Board 3				Spare Process Variable Input
01       TIM input card       164746-01         02       PV direct input card       164746-01         03       24V transducer direct input card       Spare Seismic Input Card.         04       Constant current direct input card       149833-01         05       Seismic direct input card       02200794         05       Seismic direct input card       02200794         01       TIM input card       162003         03       24V transducer direct input card       162003         04       Constant current direct input card       162003         05       Seismic direct input card       162003         03       24V transducer direct input card       162003         04       Constant current direct input card       162003         05       Seismic direct input card       162003         04       Constant current direct input card       162222-01         05       Seismic direct input card       162222-01         05       Seismic direct input card       16292         05       Seismic direct input card       161692         05       Seismic direct input card       161692         06       Bulkhead mount       161692         07       DIN Rail mount       11M Line Su			00	None		Card
None       164746-01         03       24V transducer direct input card       149833-01         04       Constant current direct input card       149833-01         05       Seismic direct input card       02200794         00       None       +24V Power Supply.         01       TIM input card       162003         02       PV direct input card       162003         03       24V transducer direct input card       162003         04       Constant current direct input card       162022-01         05       Seismic direct input card       162222-01         05       Seismic direct input card       161692         01       Bulkhead mount       161692         02       DIN Rail mount       161692         03       Weatherproof			01	TIM input card		
Bink Slot Cover.         F:       Input Board 4         00       None         01       TIM input card         02       PV direct input card         03       24V transducer direct input         04       Constant current direct input         05       Seismic direct input card         06       None         07       PV direct input card         08       24V transducer direct input         09       None         11       TIM input card         12       PV direct input card         13       24V transducer direct input         149833-01       Power Supply.         15       Seismic direct input         162003       Power Supply to DSM Wiring         16222-01       Power Supply to DSM Wiring         16       Constant current direct input         16       Seismic direct input card         16       Weatherproof Housing.         11       Bulkhead mount         12       DIN Rail mount         13       Weatherproof enclosure         16       TIM Line Surge Protector Plug.         Also requires Part 161693.			02	PV direct input card	164746-01	
F:       Input Board 4       04       Constant current direct input card       149833-01         05       Seismic direct input card       02200794       Blank Slot Cover.         00       None       +24V Power Supply.         01       TIM input card       162003         02       PV direct input card       162003         03       24V transducer direct input card       16222-01         04       Constant current direct input card       162222-01         05       Seismic direct input card       161692         01       Bulkhead mount       161692         02       DIN Rail mount       161692         03       Weatherproof enclosure       TIM Line Surge Protector Plug. Also requires Part 161693.			03	24V transducer direct input		Spara Saismis Input Card
F:       Input Board 4       04       Constant current direct input card       Blank Slot Cover.         05       Seismic direct input card       02200794       +24V Power Supply.         01       TIM input card       162003       Power Supply to DSM Wiring Harness.         03       24V transducer direct input card       162222-01       Power Supply to DSM Wiring Harness.         04       Constant current direct input card       162222-01       Weatherproof Housing.         01       Bulkhead mount       161692       TIM Line Surge Protector Plug. Also requires Part 161693.				card		spare seismic input cara.
F:       Input Board 4       05       Seismic direct input card       02200794         00       None       +24V Power Supply.         01       TIM input card       162003         02       PV direct input card       162003         03       24V transducer direct input card       162003         04       Constant current direct input card       162222-01         05       Seismic direct input card       161692         01       Bulkhead mount       161692         02       DIN Rail mount       161692         03       Weatherproof enclosure       TIM Line Surge Protector Plug. Also requires Part 161693.			04	Constant current direct input	149833-01	
F: Input Board 4 05 Seismic direct input card 00 None 01 TIM input card 02200794 00 None 01 TIM input card 02 PV direct input card 03 24V transducer direct input card 04 Constant current direct input card 04 Constant current direct input card 05 Seismic direct input card 06 USA 07 USA 08 USA 09			• •	card		
F:       Input Board 4       02200794         00       None       +24V Power Supply.         01       TIM input card       162003         02       PV direct input card       162003         03       24V transducer direct input card       Power Supply to DSM Wiring Harness.         04       Constant current direct input card       162222-01         05       Seismic direct input card       Weatherproof Housing.         01       Bulkhead mount       161692         02       DIN Rail mount       TIM Line Surge Protector Plug. Also requires Part 161693.			05	Seismic direct input card		Blank Slot Cover.
00     None     +24V Power Supply.       01     TIM input card     162003       02     PV direct input card     162003       03     24V transducer direct input card     Power Supply to DSM Wiring Harness.       04     Constant current direct input card     162222-01       05     Seismic direct input card     Weatherproof Housing.       01     Bulkhead mount     161692       02     DIN Rail mount     161692       03     Weatherproof enclosure     TIM Line Surge Protector Plug. Also requires Part 161693.	F.	Input Board 4	0.5	Seisine an eet input eard	02200794	
<ul> <li>Finite and the second se</li></ul>	•.	input bound 4	0.0	None	02200134	
01       In Hilper Cord       162003         02       PV direct input card       162003         03       24V transducer direct input card       Power Supply to DSM Wiring Harness.         04       Constant current direct input card       162222-01         05       Seismic direct input card       Weatherproof Housing.         01       Bulkhead mount       161692         02       DIN Rail mount       161692         03       Weatherproof enclosure       TIM Line Surge Protector Plug. Also requires Part 161693.			01	TIM input card		+24V Power Supply.
02       PV direct input curd       162003         03       24V transducer direct input card       Power Supply to DSM Wiring Harness.         04       Constant current direct input card       162222-01         05       Seismic direct input card       Weatherproof Housing.         01       Bulkhead mount       161692         02       DIN Rail mount       161692         03       Weatherproof enclosure       TIM Line Surge Protector Plug. Also requires Part 161693.			01	PV direct input card	162007	
G:       Mounting       01       Bulkhead mount       161692         03       Weatherproof enclosure       TIM Line Surge Protector Plug. Also requires Part 161693.			02	24V transducer direct input	102003	
04       Constant current direct input card       162222-01         05       Seismic direct input card       Weatherproof Housing.         01       Bulkhead mount       161692         02       DIN Rail mount       161692         03       Weatherproof enclosure       TIM Line Surge Protector Plug. Also requires Part 161693.			03	24V transaucer anect input		Power Supply to DSM Wiring
G: Mounting 04 Constant current direct input 05 Seismic direct input card 05 Seismic direct input card 01 Bulkhead mount 02 DIN Rail mount 03 Weatherproof enclosure 161692 TIM Line Surge Protector Plug. Also requires Part 161693.			0.4	Culu Constant surront direct input		Harness.
G: Mounting          05       Seismic direct input card       Weatherproof Housing.         01       Bulkhead mount       161692         02       DIN Rail mount       161692         03       Weatherproof enclosure       TIM Line Surge Protector Plug.         Also requires Part 161693.			04	constant current airect input		
05       Seismic direct input card       Weatherproof Housing.         G:       Mounting       161692         01       Bulkhead mount       161692         02       DIN Rail mount       161692         03       Weatherproof enclosure       TIM Line Surge Protector Plug. Also requires Part 161693.			0 F		162222-01	
G: Mounting       01       Bulkhead mount       161692         02       DIN Rail mount       161692         03       Weatherproof enclosure       TIM Line Surge Protector Plug.         Also requires Part 161693.			05	Seismic direct input card		Weatherproof Housing
01Bulkhead mount16169202DIN Rail mountTIM Line Surge Protector Plug.03Weatherproof enclosureAlso requires Part 161693.	G:	Mounting				weatherproor housing.
0 2DIN Rail mountTIM Line Surge Protector Plug.0 3Weatherproof enclosureAlso requires Part 161693.			01	Bulkhead mount	161692	
03Weatherproof enclosureI M Line Surge Protector Plug.Also requires Part 161693.			02	DIN Rail mount		TIM Line County Dustantes D
Also requires Part 161693.			03	Weatherproof enclosure		LIM LINE SURGE PROTECTOR Plug.
						AISO requires Part 161693.

H: Approvals

Accessories

Trendmaster DSM system.

00

05

Use the part numbers listed in this section to order

spare parts or additional components for your

No approvals

Multiple approvals

161693		162559	
03830240	<b>TIM Line Surge Protector Base.</b> Also requires Part 161692.		PV/Direct 16-position DIN Rail Terminal Block. Mates with 162262.
03839240	<b>TIM Line Cable Seal.</b> 5.1 mm to 6.7 mm (0.20 in to 0.27 in).	43501	Low Pressure Cable Seal.
02245020		163723	
022//5021	Signal Path Barrier MTL 764 (AC).		EMI Ferrite Suppressor. For round cable.
02243021	Signal Path Barrier MTL 765 (AC)	164466-01	
162261	Signal i dai barnel i ne 705 (Ac).		Ethernet Component Specification.
	Trendmaster DSM SPA Cable. Mates with 162560.	172555	
162560			Modbus Serial to Ethernet Bridge.
	SPA 5-position DIN Rail Terminal Block. Mates with 162261.	162459-01	5
162262			Trendmaster Galvanic Isolator.
	Trendmaster DSM PV/Direct Cable. Mates with 162559.		

## **Graphs and Figures**

Note: All dimensions shown in millimetres (inches) except as noted.



- H = 274 mm (10.00 in)W = 319 mm (12.55 in)G = 379 mm (14.94 in)J = 165 mm (6.5 in)K = 46 mm (1.61 in)Q = 260 mm (10.25 in)
- Figure 1: Weatherproof Housing Dimensions

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