



NORTHSTAR REPLACEMENT WHEEL SELECTION GUIDE

NorthStar has several wheel choices. The wheel choices range from "Good" basic wheel designs comparable to competitive choices, to "Better" and "Best" wheel choices that eliminate shaft damage and aid in wheel installation.

NORTHSTAR PULSE WHEEL STYLES				
				
Product	J Wheel	K Wheel	E Wheel	T Wheel
Description	Commonly known as a "Spoke Wheel" configuration. .675" - 1.25" ID	Commonly known as a "Clamp Wheel" configuration. This wheel consists of three components and the assembly is different for RIM style and SLIM style. Refer to next page for more detailed description. 1.375" - 3.25" ID	Commonly known as "End of Shaft" wheel configuration used on GE design motors. 1.125", 2.125", 2.375", 2.875" ID	Commonly known as a "Set Screw Wheel" configuration. Other than for some larger size motor shafts, the T wheel has been replaced by either J and or K Wheel. 3.256" - 4.50" ID

Photographs are representative of each wheel style

HOW TO SELECT

- Step 1**
Confirm the pulse count being used in your application. Refer to the PPR listed on your RIM Tach housing or SLIM tach products
- Step 2**
Find your encoder resolution in the part number decode table in either columns B, C, D or E
- Step 3**
Then choose your base resolution in column A and order the appropriate size and family of pulse wheel
- Examples**
- If using 1024PPR, order 1024PPR pulse wheel
 - If using 600PPR, order 600PPR pulse wheel
 - If using 240PPR, order 480PPR pulse wheel

PART NUMBER DECODE

NS0600ZJ04

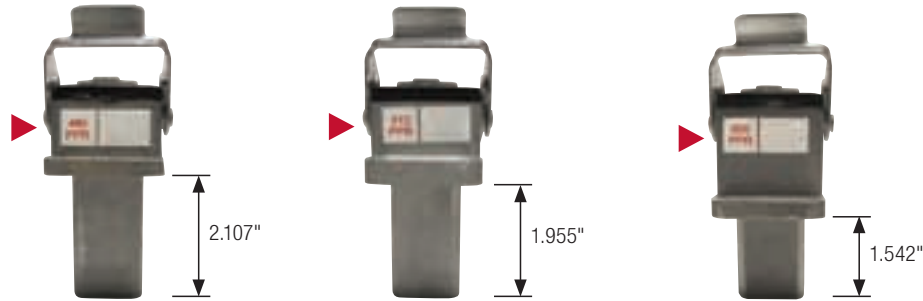
Code 1	Code 2	Code 3	Code 4	Code 5
Family	Resolution	Index	Wheel Type & Bore Size	For K Wheel Only
NS NorthStar	A B C D E	Z Differential Index	J04 5/8" bore J05 7/8" bore J06 1.00" bore J07 1-1/8" bore K09 1-3/8" bore K10 1-1/2" bore K11 1-5/8" bore K12 1-3/4" bore K13 1-7/8" bore K14 2.00" bore K15 2-1/8" bore K16 2-1/4" bore K17 2-3/8" bore K18 2-1/2" bore K19 2-7/8" bore E01 1-1/8" EOS E06 2-1/8" EOS E08 2-3/8" EOS E10 2-7/8" EOS	R RIM Tach (Pressure plate on outside) S SLIM Tach (Pressure plate on inside)
	0480 → 0060 0512 → 0064 0120 0600 → 0075 0128 0240 1024 → 1024 0150 0256 0480 2048 0300 0512 0960 0600 1024 1200			

Note: For 2048 consult application engineering



SENSOR MODULE REPLACEMENT SELECTION GUIDE

Dynapar offers three different sensor modules for both "Z" and "non Z". The difference between the three sensors lies in the length of each sensor nose. They follow in length from largest to smallest, 480, 512, 600.



NORTHSTAR - SENSOR MODULE SERIES

RIM TACH SENSORS (NON Z)			RIM TACH SENSORS (Z)		
480 PPR Family	512 PPR Family	600 PPR Family	480 PPR Family	512 PPR Family	600 PPR Family
NSRS0060LC	NSRS0064LC	NSRS0075LC	NSRS0060ZLC	NSRS0064ZLC	NSRS0075ZLC
NSRS0120LLC	NSRS0128LLC	NSRS0150LLC	NSRS0120ZLC	NSRS0128ZLC	NSRS0150ZLC
NSRS0240LLC	NSRS0256LLC	NSRS0300LLC	NSRS0240ZLC	NSRS0256ZLC	NSRS0300ZLC
NSRS0480LLC	NSRS0512LLC	NSRS0600LLC	NSRS0480ZLC	NSRS0512ZLC	NSRS0600ZLC
NSRS0960LLC ▲	NSRS1024LLC ▲	NSRS1200LLC ▲	NSRS0960ZLC ▲	NSRS1024ZLC ▲	NSRS1200ZLC ▲

Sensors fit all RIM8500, RIM6200, HS85, and RIM1250 models except large bore

To identify and order replacement sensor modules follow the steps below:

1. Identify the pulse count (which can be found on the label attached to the sensor see ▲ above)
2. Locate whether or not you want Z or Non Z
3. Locate the corresponding PPR in the chart below
4. Order using the complete part number

PART NUMBER DECODE

N S R 1 0 4 8 0 Z L C

Code 1	Code 2	Code 3	Code 4	Code 5	Code 6
Family	Model	Resolution	Index	Electrical	Termination
NS NorthStar	RS	0480 → 0060	L No Index	L 5-15VDC in, 5-15V Line driver (4428) out	C Latching Industrial Connector
	Covers all previous R1 RIM Tach 1250 R6 RIM Tach 6200 R8 RIM Tach 8500 H8 RIM Tach HS85 Except Large Bore RIM 1250	0512 → 0064 0120	Z Differential Index	R 15-26VDC in, 15V Line driver (4428) out	M 10 Pin MS Connector
		0600 → 0075 0128 0240	G Gated Index	5 5-15VDC in, 5V Line driver (4428) out	P 18" pigtail
		0150 0256 0480		H Same as "L" with extended temperature to 120°C	Q 18" pigtail with latching industrial connector
		0300 0512 0960			
		0600 1024			
		1200			

Note: For 2048 PPR contact application engineering

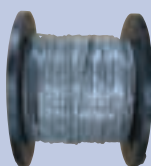


MATING CONNECTORS



	Pins	Model #	Encoder Series
Industrial	2	MCN-N1	52BH
	3	MCN-N2	53Z, 53ZK, 71Z
	6	MCN-N4	H20, 21/22, 60 Single ended
	7	MCN-N5	H20, H25, H26, 525, 625, H42, 21/22 Full differential
	10 (MS)	MCN-N6	H20, H25, H26, 525, 526, 60, 60P, 625 Full differential, HS35, HD20, HD25, HSD25, HSD37, HSD38, DWD38, HSD44, H56
	10 (Bayonet)	MCN-B1	Typically a Baldor spec on HS20, HS35, HSD37, HSD38
	12	MCN-C1	H58 (CW)
	12	MCN-C2	H58 (CCW)
	17	MCN-N8	AI25
NEMA 4	19	MCN-N9	AI25
	7	MCN-N5N4	H20, H25, H26, 525, 625, (H42, 21/22 Full differential
	10 (MS)	MCN-N6N4	H20, H25, H26, 525, 526, 60, 60P, 625 Full differential, HS35, HD20, HD25, HSD25, HSD37, HSD38, DWD38, HSD44, H56
	10 (Bayonet)	MCN-B1N4	Typically a Baldor spec on HS20, HS35, HSD37, HSD38

BULK CABLE



	Model #	Description
Industrial	16002160022	3 wire, 22 gage cable for Model 53Z pickup
	16002160024	6 wire, 22 gage cable for series: X25, HA25, HR25, HA26, HR26, HC25, HC526, 21/22, 60 and H56
	107312 (Special)	10 wire special cable for series: X25, H20, HA25, HR25, HR26, HC25, HC526, H58 with Full differential options
	16002160029	4 pair 24 gage for 60/H56 DIF, H42
Heavy Duty*	RIM Cable DB1X	RIM 5 foot interface cable

* The final digit is length in 5ft increments

PATCH CORD ASSEMBLIES

	Model #	Description
Heavy Duty	114414-0001	10 PIN MS to RIM / Electrical Connection Patch Cords
	114413-0001	10 PIN MS to SLIM / Electrical Connection Patch Cords

CABLE ASSEMBLIES



NEMA 4 Cable Assemblies			
Use with Encoder Series	Cable Part #	Encoder Pins	Output Type
7 Pin MS	Consult Factory	7	Differential
10 Pin Bayonet	Consult Factory	10	Differential
10 Pin Bayonete	Consult Factory	10	Differential
Standard Cable Assemblies			
Use with Encoder Series	Cable Part #	Encoder Pins	Output Type
52 Pick Up	14002030010 14002030020	2	Variable reluctance
53Z Pick Up, 71Z	14003340010	3	Current Sink Open Collector
60, 60P, H56, Armoured Cable	14002090010 14002090025	6	Single Ended
60, 60P, H56, Full Differential	14004190010 14004190025	10	Differential
21/22 without marker	14006070010	6	Single Ended, Current Sink, Open Collector
21/22, 525, 526, 625, HA25, HR25, HC526, H42, HC25, HA26, HR26, without marker	14004310010	7	7 Pin Line Driver Differential
21/22	14006640010	6	6 Pin Line Driver Differential
22 with marker	108241-0010	6	Single Ended, Current Sink, Open Collector
525, 526, 625, HA25, HR25, H26, HC25, HA26, HA725, HR26, HC526, HS35	14006350010	10	Differential
H20, HS35	108594-0010	6	Single Ended, Current Sink, Open Collector
H20, H58, HS35, HA725	108595-0010	7	Open Collector, Push Pull, Single Ended
H20, HA25, HC25, HR25, HS35, 525, 625	108596-0010	7	Differential 7 Pin Line Driver w/out idx
H58, HS35 (CCW)	108615-0010	12	Any Output with 12 Pin CCW Connector
H58 (CW)	108616-0010	12	Any Output with 12 Pin CW Connector
AI25	110158-0010	19	Parallel Push-Pull
AI25	107865-0010 107865-0020	17	Parallel Push-Pull
HS20, HS35	112123-0010	6	Differential 6 Pin Differential line Driver w/ out index
21/22, H20, H58, HA25, HR25, HC25, HA26, HR26, HC26, HS20, HS35, HSD37, HSD38	112859-0015 112859-0030	5 Pin M12	Single Ended
21/22, H20, H58, HA25, HR25, HC25, HA26, HR26, HC26, HS20, HS35, HSD37, HSD38	112860-0015 112860-0030	8 Pin M12	Single Ended or Differential

CPL COUPLINGS

Dynapar™ brand

Flexible Shaft Couplings

Key Features

- **Maximum Mechanical, Thermal, and Electrical Protection for Encoder Shaft Connections**
- **Three-Beam Helical Design Restricts Torque "Windup"**
- **Clamp Attachment. No Setscrews to Score or Pit Shafts**
- **Full Range of Models Designed To Match Specific Encoders are Supplied with Shaft Size Adaptors**



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Predicted life: Tested in accordance with MIL-HDBK-5A for infinite life.

Material: 2024-T3.5 QQA225/6 aluminum with MIL A8625 Type II black anodize.

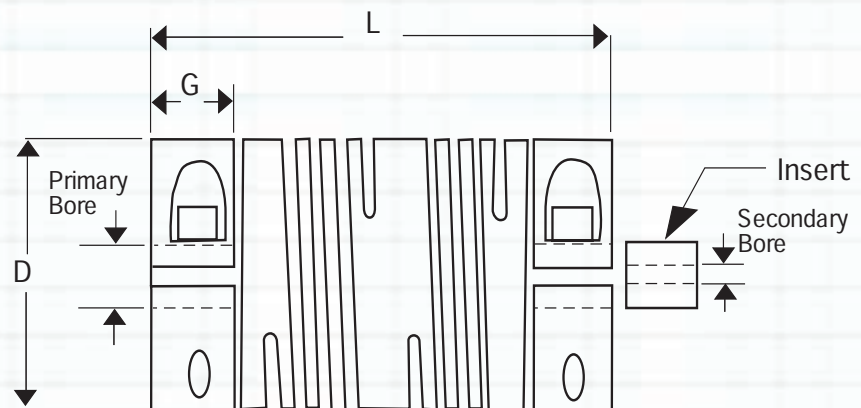
Insert/insulator: G10 glass filled phenolic. Sizes provided per *Models table, Secondary Bore*.

Clamps: Integral at each end, with black oxide finish hex socket cap screws. Grip is secure to peak torque rating of the coupling per *Models table, Peak Torque*.

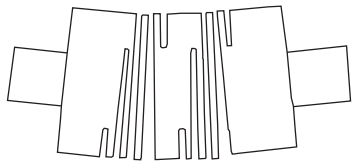
Peak Torque: Per *Models table, Peak Torque*. Safety factor should be determined considering acceleration and deceleration loads, etc.

APPROXIMATE DIMENSIONS

Refer to Models Table for dimensions of specific models.



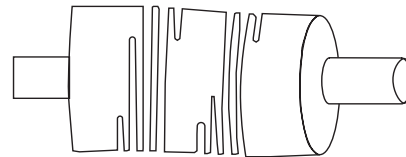
Shafts may extend beyond the clamp-grip-area to within the flexure area, but must not butt.



Angular Misalignment

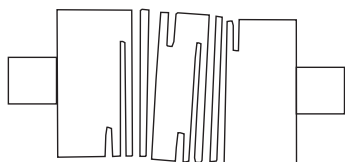
When the center lines of the shafts extend and form an obtuse angle. The intersection of this obtuse angle should be at the center of the flexible beam area.

Proper shaft coupling protects precision encoders from all of these common hazards. Use of a well engineered coupling can save many times its cost by eliminating failures due to excessive shaft loading, electrical leakage, and thermal stress.



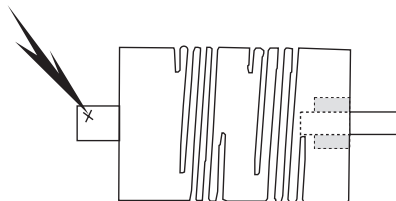
Skewed Misalignment

The shafts are not in the same plane. Center line extension is not parallel or intersecting. There can be two obtuse angles of varying degrees. These angles should be centered within the coupling.



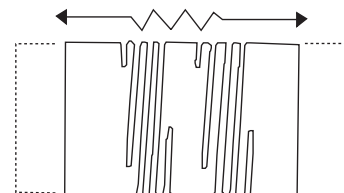
Parallel Misalignment

The shaft's center lines are parallel but offset. When the coupling is installed there should be two equal obtuse angles within the coupling.



Electrical and Thermal Stress

The supplied insulator insert blocks transfer of static charges, leakage currents, and heat to the encoder. These stresses have been proven to be contributory to bearing damage as well as electrical failures.



Axial Motion

Motion in the direction of the center lines of the shafts, such as motor shaft "thrust". Usually created by loose bearings or other elements that do not restrain the motion.

ORDERING INFORMATION

Coupling Model Numbers should be selected first by Encoder Application duty, then by specific encoder shaft size and drive shaft size. Most applications will use the Primary Bore as the encoder end, but it is permissible to reverse the coupling to accommodate specific shaft combinations. Each coupling is supplied with Secondary Bore insulator inserts as listed.

Model Number	Primary Bore	Secondary Bore	Dimensions			Maximum Misalignment			Peak Torque (lb. - in.)	Encoder Application (Series)
			D = Dia.	L = Len.	G = Grip	Angular	Parallel	Axial		
CPL00750125	1/8	1/8, 3/16	0.750	0.875	0.230	3°	0.020	0.035	35	Very Light Duty E11, E15
CPL00750187	3/16	3/16, 1/4								
CPL00750250	1/4	1/8, 1/4								
CPL01000187	3/16	3/16, 1/4	1.000	1.250	0.290	5°	0.025	0.060	45	Light Duty E20, EC80, 523, 42, 525, 21/22, 31/32
CPL01000250	1/4	1/4, 3/8								
CPL01000375	3/8	3/16, 3/8								
CPL01250250	1/4	1/4, 3/8	1.250	1.250	0.348	7°	0.038	0.060	75	Medium Duty 42, 525, 625, 21/22, 60
CPL01250375	3/8	3/8, 1/2								
CPL01250500	1/2	1/4, 1/2								
CPL01500375	3/8	3/8, 1/2	1.500	1.500	0.400	10°	0.035	0.060	100	Heavy Duty 625, EX625, 60, 60P
CPL01500500	1/2	1/2, 5/8								
CPL01500625	5/8	3/8, 5/8								
CPL02000875	7/8	3/8, 5/8	2.000	2.000	0.450	10°	0.040	0.060	300	Extra Heavy Duty 625, 60P
CPL02001000	1	3/8, 5/8								
CPL02001125	1 1/8	3/8, 5/8								
CPLM1000250	1/4	4, 5, 6 mm	1.000	1.250	0.290	5°	0.025	0.060	45	Light Duty E20, EC80, 523, 525, 21/22
CPLM1250375	3/8	6, 8, 10 mm	1.250	1.250	0.348	7°	0.038	0.060	75	Medium Duty 42, 525, 625, 21/22
CPLM1500500	1/2	6, 8, 10 mm	1.500	1.500	0.400	10°	0.035	0.060	100	Heavy Duty 60, 60P

- Note:**
1. For extremely high acceleration rates, consider using the next larger coupling size.
 2. When coupling an encoder to a shaft which is stepped down from a larger size, always use a heavy-duty or extra-heavy-duty coupling.
 3. For maximum life, encoders must be installed and aligned such that the encoder shaft to driving shaft alignment is within the 0.003" TIR NEMA standard despite the maximum misalignment specified.

SERIES FV2

Dynapar™ brand

Brushless Digital Feedback

Key Features

- Bidirectional Frequency/Voltage or Frequency/Current Converter
- An FV2 and an Encoder Replace a DC Tachometer when Precision Feedback is Required.



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Electrical

Input Power Requirements: 115/230 VAC $\pm 10\%$, 50/60 Hz; 120 mA @ 115 VAC, 60 mA @ 230 VAC
Available Power for the Transducer: 12 VDC $\pm 5\%$, 200 mA max.

Input Signal: (Field-Selectable) 4 to 15V differential; or 8 to 15V single-ended; or magnetic 1.5 to 15V peak-to-peak

Input Frequency Range: (Field-Selectable)
 Bidirectional: 0-500 Hz to 0-100 kHz;
 Unidirectional: 0-1 kHz to 0-100 kHz;

Analog Output: $\pm 10V$ bidirectional; 0-10V unidirectional @ 25 mA

Output Linearity: $\pm 0.1\%$ of span

Temperature Stability: $\pm 0.02\%$ per $^{\circ}C$

Current Range: 4-20 mA

Current Linearity: $\pm 0.2\%$ max.

Compliance: +16V min.

Response Time: <10 msec. switch selectable to <20, <36, or <46 msec.

Output Ripple: Volts RMS is generally less than brush generators and is predictable depending on input frequency from an encoder. For 240 PPR, open loop ripple is 0.080V at 25 RPM, 0.03V at 250 RPM and 0.015V at 2500 RPM

Output Overrange: 10% min. (volt. or current)

Output Offset: Adjustable

Environmental

Operating Temperature: 0 to 60 $^{\circ}C$

Storage Temperature: -18 $^{\circ}$ to +85 $^{\circ}C$

Relative Humidity: to 90% non-condensing

OPTIONAL FEATURES

The following features are available with the FV2 option board, which can be factory- or field-installed:

Auxiliary Isolated Digital Outputs

When supplied separately with 12 ± 3 VDC, an isolated digital differential line driver output is supplied corresponding to the A and B input phases. By connecting the analog power supply cable to the option board, the analog outputs can also be powered by the separate supply and optically isolated from the digital inputs.

Transducer Phase Reversal Detector

This feature monitors the A and B phases and detects reverse rotation. When reversal is detected, there is a user-selectable delay (2048 pulses max.) before the output relay drops out. The relay will not re-energize until: 1) the reset button is pressed, 2) an external reset signal is applied, or 3) power is removed and restored. An inhibit input is provided to override the reversal detection circuit.

Transducer Phase Failure Detector

This feature monitors the A and B phase inputs and detects a failure (i.e. one phase failed high or low). Its output is a normally-open relay contact which opens upon failure detection. This relay contact is shared with a Phase Loss Detection circuit.

Transducer Phase Loss Detector

This feature monitors current supplied to the encoder and reacts to a decrease in current required. Failure is indicated by opening the relay contact shared with the Phase Failure Detector. Current trip level is field-adjustable. Transducer supply must be provided by FV2.

Zero Speed Detector

This feature monitors transducer speed, and can be set by the user to trip at a specific level corresponding to desired speed. A relay with a single-pole-double-throw contact is used for the output.

SPECIFICATIONS FOR FV2 OPTIONS

Auxiliary Digital Outputs

Power Requirements: 12 ± 3 VDC

Current Requirements: 25 mA w/ digital outputs only; 250 mA w/ analog outputs only

Outputs	Voltage Range	Sink (mA)	Source (mA)	Standard IC
Differential Line Driver	12 ± 3 VDC	22	40	88C30

Transducer Reversal Detector

Forward Input Phasing: A leads B

Reversal Delay: 16, 32, 64, 128, 256, 512, 1024, or 2048 pulses, selectable.

Output: Relay contacts*, latched upon failure.

Latch Reset & Inhibit Input Requirements: TTL/CMOS, activates on high, 10K pull-down, 17V max.

Transducer Phase Failure Detector

Failure Type: A or B phase

Delay: 4 transitions

Output: N.O. contact* shared with Phase Loss Detector

Transducer Phase Loss Detector

Current Level: 30 to 200 mA, adjustable

Output: N.O. contact* shared with Phase Failure Detector

Zero Speed Detector

Adjustable Range: 10 Hz to 300 Hz

Response Time: Less than 0.1 sec.

Output: SPDT relay contact*

*Relay contacts are rated at (1) 1.0 amps, 24 VDC, or (2) 0.3 amps, 115 VDC resistive, or (3) 0.3 amps, 24 VDC, or (4) 0.2 amps, 115 VAC inductive.

ORDERING INFORMATION

Model No.	Description
FV2-0-S	Frequency-to-Voltage Converter
FV2-1-S	Same as FV2-0-S with Factory-Installed Option Board
FV2-N1	Option Board Only (Kit for Field Installation with FV2-0-S)
845-24*	Technical Manual

*A technical manual is automatically included with each FV2 unit shipped. Use this publication number for ordering extra copies.

SERIES FV3

Dynapar™ brand

Frequency to Voltage Converter

Key Features

- Delivers 0 to +10VDC or 4-20mA Outputs Proportional to Input Pulse Rate (frequency).
- Accepts Variable Pulse Rate Inputs from a Variety of Sensors.
- Linearity ±0.2% Maximum.
- An FV3 and an Encoder Replace a DC Tachometer when Precision Feedback is Required.



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Electrical

Input Power Requirements: 115/230 VAC ±10%, 50/60 Hz; 120 mA @ 115 VAC, 60 mA @ 230 VAC; Externally fuse with Slo-Blo type 1/8 A for 115 VAC or 1/16 A for 230 VAC
Available Power for the Transducer: 12 VDC ±5%, 75 mA max.

Input Signal: (Field-Selectable) 2.5 to 15V single-ended; or magnetic 1.5 to 15V peak-to-peak

Input Frequency Range: (Adjustable)
 Unidirectional: 0.03 to 0.1 kHz; 0.1 to 0.3 kHz; 0.3 to 1 kHz; 1-3 kHz; 3-10 kHz; 10-30 kHz; 20-60 kHz

Analog Output: 0 to +10V unidirectional @ 25 mA

Voltage Output Linearity: ±0.1% of full scale
Current Range: 4-20 mA into load resistance range of 0-800 ohms

Current Linearity: ±0.2% max.

Output Overrange: 10% min. (volt. or current)

Output Offset: Adjustable

Speed Detector/Alarm Output (Optional)

This feature monitors transducer speed and can be adjusted—5% to 100%—from a front panel potentiometer to trip at a specific speed. The output is a relay contact, field selectable via an internal jumper as N.O. or N.C. Contact rating is 1.25 Amp AC/DC, 125 Volts.

Environmental

Operating Temperature: 0 to 60°C

Storage Temperature: -18° to +85°C

Relative Humidity: to 90% non-condensing

APPLICATION CONSIDERATIONS

Transducer Selection: The FV3 operates on the frequency content of a sinusoidal, triangular, or square waveform. Typical transducers include:

- 1) A magnetic pick-up detecting a passing keyway, gear teeth, etc.
- 2) A photo eye which scans alternating opaque and transparent slots.
- 3) A digital tachometer or encoder.

For fast response of FV3 outputs, it is important that the transducer be located toward the high speed end of the drive train. For slow shaft speeds, the transducer must be capable of delivering a high number of cycles or pulses per revolution. The transducer should also be capable of delivering a usable output for the entire speed range through maximum speed.

The following formula is convenient for relating machine speeds and sensor frequency output:

$$FRQ \text{ (CPS or Hz)} = \frac{RPM \times PPR}{60}$$

Where:

RPM is the speed of the shaft where the sensor is located in revolutions per minute.

PPR is the number of pulses (or cycles) produced by the sensor for one shaft revolution.

FV3 Performance: The FV3 range adjustment allows the unit to deliver full-scale output for any input frequency within the limits of each range rating. It will provide a better combination of fast response and low ripple when input frequencies for full scale output are at least 3 kHz and above. The FV3 is provided with the capability for field-installed capacitance to optimize response time vs. ripple if required (see the technical manual).

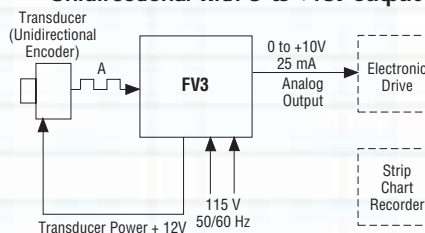
Full-Scale Range Adjustment ¹		Response Time ²
Mn.	Max.	
30 Hz	100 Hz	5.1 sec.
100 Hz	300 Hz	1.7 sec.
300 Hz	1 kHz	0.52 sec.
1 kHz	3 kHz	13 msec.
3 kHz	10 kHz	10 msec.
10 kHz	30 kHz	6 msec.
20 kHz	60 kHz	6 msec.

¹Field-selectable range adjustment via jumpers (refer to technical manual).

²Response time is time required for the output to reach 99% of final value when the input frequency instantly changes from 0 to full scale.

Typical Application

Unidirectional with 0 to +10V output



Ordering Information

Mdel No.	Description
FV3-0-S-00	Frequency-to-Voltage Converter
FV3-1-S-00	Frequency-to-Voltage Converter with Speed Detection Option
845-26*	Technical Manual

*A technical manual is automatically shipped with each FV3. Use this publication number to order extra copies.

MOUNTING BRACKET

Dynapar™ brand

“L” Mounting Bracket

Key Features

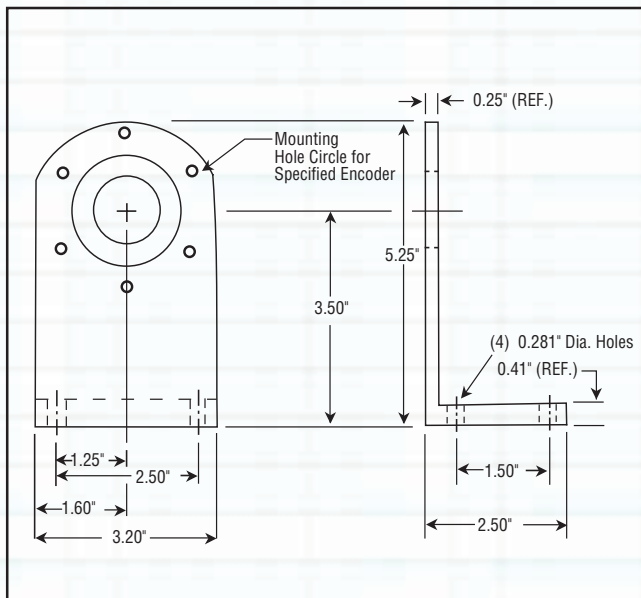
- Precision Machined Aluminum (6061-T6)
- Drilled and Tapped Where Required
- Mounting Hardware Included
- Encoder can be Mounted from Either Side
- Allows Servo-Ring Mount for Phasing Adjust



Encoder and coupling not included

SPECIFICATIONS

DIMENSIONS



COMPATIBLE ENCODERS

The mounting bracket may be used with the listed series encoders having the specified mounting configurations.

Encoder Series	Mounting Configuration
14005730000	
60A	All
60C	All
H42	2.5" Flange
H25	2.5" Flange
H25	2.5" Servo
AI25	2.5" Flange
HA725	2.5" Flange
108680-0001	
H20	Servo with 1.25" Male Pilot Flange
H20	
H20	
21/22	2" BC Face Except metric
108680-0002	
AI25	Face 36 mm Pilot
H58	

ORDERING INFORMATION

Mdel No.	Description
14005730000	Mounting Bracket for 60 Rotopulser, 2.5" Encoders
108680-0001	Mounting Bracket for QUBE Encoders
108680-0002	Mounting Bracket for 58mm Face Mount Encoders

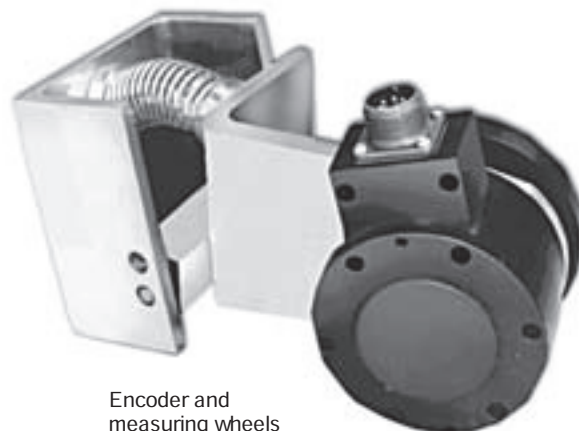
PIVOT MOUNT

Dynapar™ brand

Pivot Mounting Bracket

Key Features

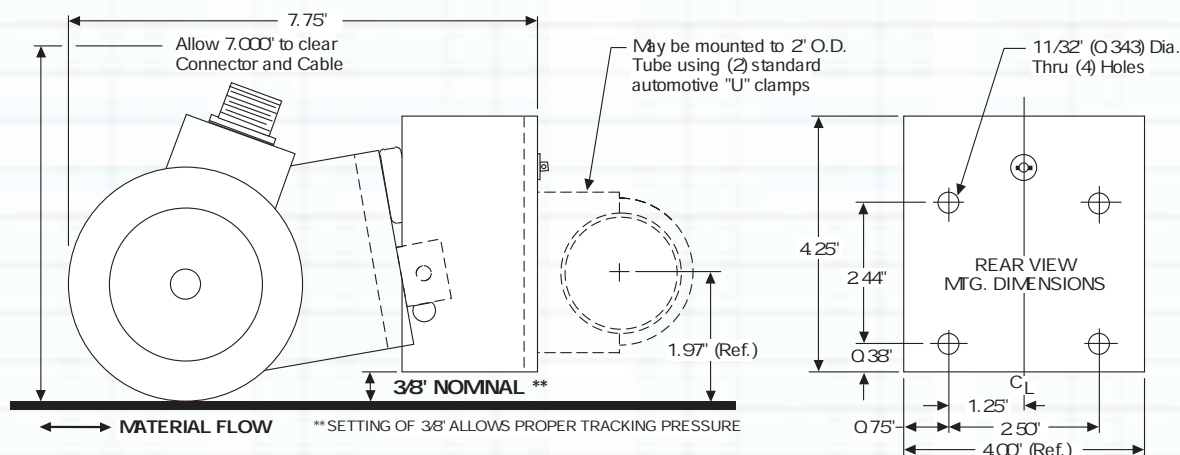
- Complete Pre-assembled Mounting System with Hardware Included
- Single or Dual Wheel uses Same Mount
- Easy Machine Attachment
- Built-in Spring Tension for Accurate Tracking



Encoder and measuring wheels not included

SPECIFICATIONS

DIMENSIONS



COMPATIBLE ENCODERS

The mounting bracket may be used with the listed series encoders having the specified mounting configurations.

Encoder Series	Mounting Configuration
60A	All
60C	All
H42	2.5" Flange
H25	2.5" Flange
H25	2.5" Servo
HA 725	2.5" Flange

ORDERING INFORMATION

Model No.	Description
1400574000	Pivot Mounting Base

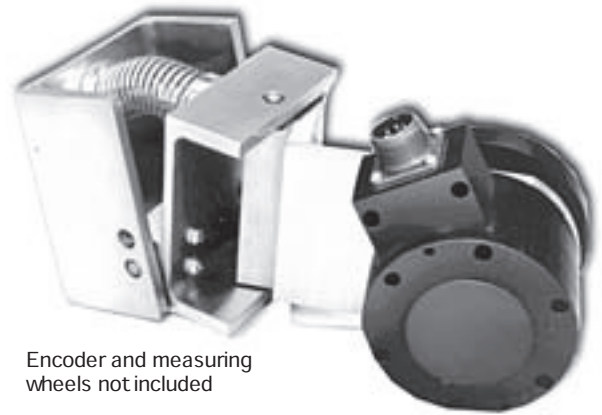
UNIVERSAL MOUNT

Dynapar™ brand

Universal Mounting Bracket

Key Features

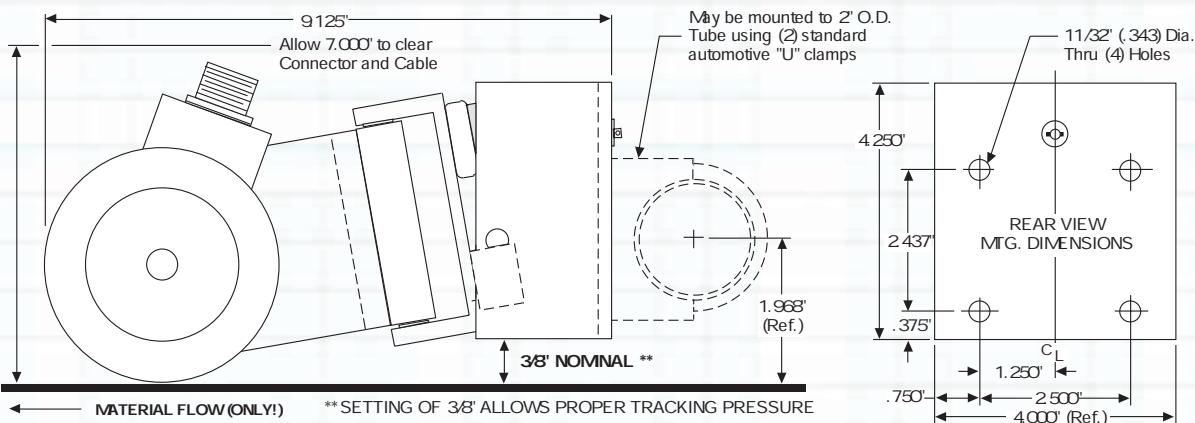
- Complete, Pre-assembled Mounting System with Hardware Included
- Single or Dual Wheel uses Same Mount
- Easy Machine Attachment
- Built-in Spring Tension with Two Degrees of Freedom for Accurate Tracking



Encoder and measuring wheels not included

SPECIFICATIONS

DIMENSIONS



COMPATIBLE ENCODERS

The mount may be used with the listed series encoders having the specified mounting configurations.

Encoder Series	Mounting Configuration
60A	All
60C	All
H42	2.5" Flange
H25	2.5" Flange
H25	2.5" Servo
HA725	2.5" Flange

ORDERING INFORMATION

Model No.	Description
14006750000	Universal Tracking Mounting Base

QUBE PIVOT MOUNT *Dynapar™ brand*

Qube Pivot Mounting Bracket

Key Features

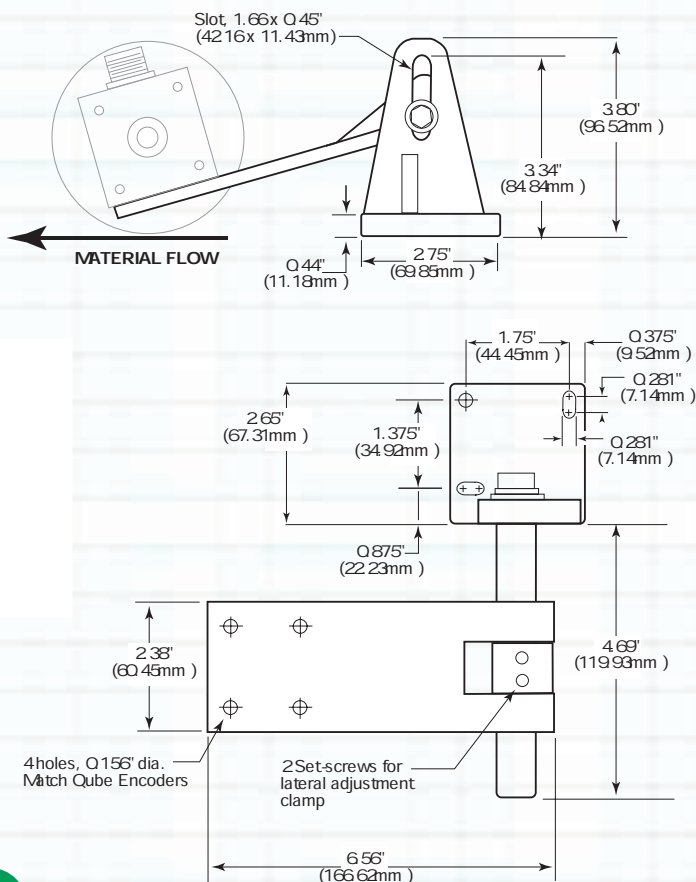
- Complete Mounting System with Hardware Included
- Single or Dual Wheel uses Same Mount
- Easy Machine Attachment
- Accepts Series 22Qube Encoders



Encoder, cable and measuring wheels not included

SPECIFICATIONS

DIMENSIONS



ORDERING INFORMATION

Model No.	Description
111328-0001	Qube Pivot Mounting Base

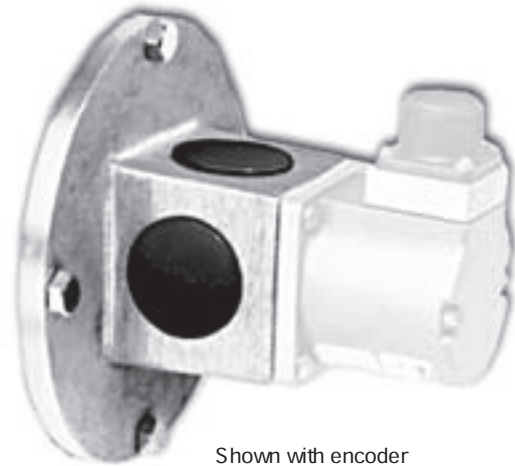
C-FACE ADAPTER

Dynapar™ brand

NEMA C-Face Adapter

Key Features

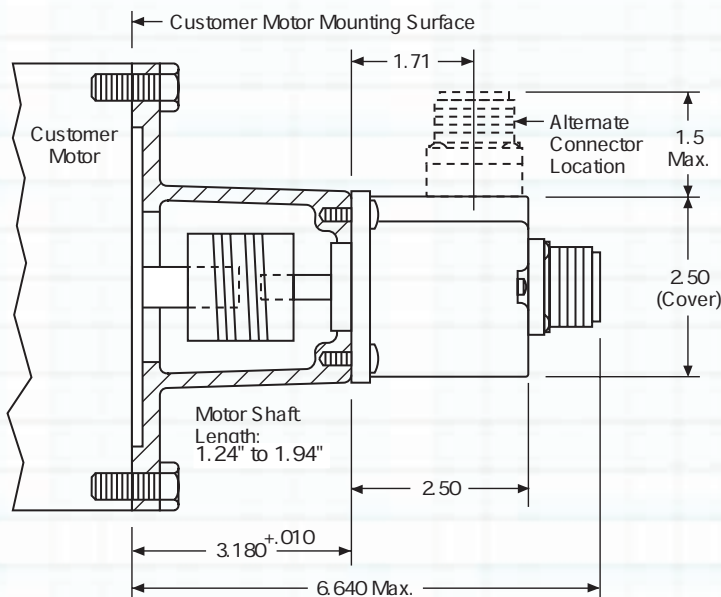
- "Flower Pot" Style Adapter Kit
- Provides Spacer, Coupling and all Necessary Hardware
- 5/8" I.D. Coupling for 56C Motor Shafts with Extensions from 1.1" to 1.8" Long



Shown with encoder mounted (not included)

SPECIFICATIONS

DIMENSIONS



COMPATIBLE ENCODERS

The adapter may be used with the listed series encoders having the specified mounting configurations.

Encoder Series	Mounting Configuration
H42	2.5" Flange
H25	2.5" Flange
HA725	2.5" Flange

ORDERING INFORMATION

Model No.	Description
FPA1	NEMA C Face Adapter, 5/8" Motor Shaft
FPA2	NEMA C Face Adapter, 7/8" Motor Shaft
FPA3	NEMA C Face Adapter, 1" Motor Shaft

5PY ADAPTER

Dynapar™ brand

5PY Adapter for 2-1/2" Encoders

Key Features

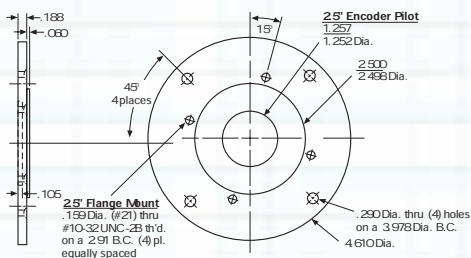
- Kits Include Mounting Plate and Hardware
- Makes Servo Mount 25' or 60A Encoders Interchangeable with 5PY DC Tach Generators.



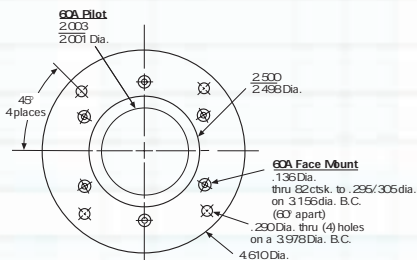
Encoder not included

SPECIFICATIONS

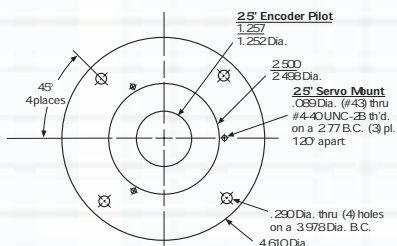
DIMENSIONS



FPY1



FPY2



FPY3

COMPATIBLE ENCODERS

The adapter may be used with the listed series encoders having the specified mounting configurations.

Encoder Series	Mounting Configuration
5PY1	
H42	2.5" Flange
H25	2.5" Flange
AI25	2.5" Flange
HA725	2.5" Flange
5PY2	
60C	All
5PY3	
H25	2.5" Servo

ORDERING INFORMATION

Model No.	Description
5PY1	5PY Adapter Kit for 2.5" flange encoders
5PY2	5PY Adapter Kit for 60A Rotopulers
5PY3	5PY Adapter Kit for 2.5" servo encoders

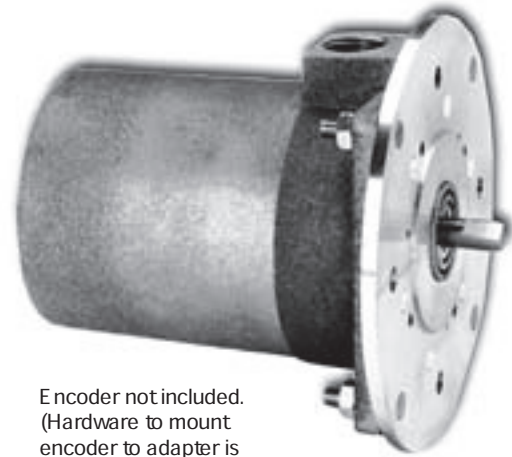
5PY ADAPTER

Dynapar™ brand

5PY Adapter for X25 Encoders

Key Features

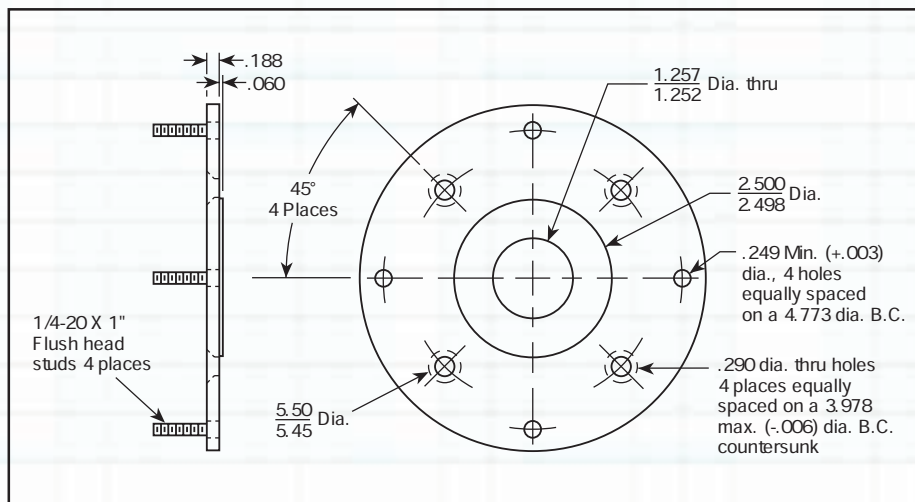
- Kits include Mounting Plate and Hardware
- Makes Servo X25 Encoders Interchangeable with 5PY DC Tach Generators.



Encoder not included.
(Hardware to mount encoder to adapter is included.)

SPECIFICATIONS

DIMENSIONS



ORDERING INFORMATION

Model No.	Description
MPAEX5PY	5PY Adapter Kit for X25 encoder

RIM M100

NorthStar™ brand

RIM M100 Encoder Tester

Key Features

- Performs up to 18 Tests of Signal Output Quality; Simple One Keystroke Access to Tests
- Interfaces with Most Major Brands of Digital Tachometers and Encoders
- Fast Encoder Checkout with Numeric Value Display



SPECIFICATIONS

ELECTRICAL SPECIFICATIONS

Controller: 68HC11 microcomputer

Frequency Response: 10Hz - 10kHz

Signal Input: 5-15 VDC digital line driver signal

Power: 110 VDC power pack or 9 VDC battery

Keyboard power on/off

MECHANICAL SPECIFICATIONS

Size: 7.50" (191mm) x 4.00" (102mm) x 3.00" (77mm)

Weight: 0.94 lbs. (0.43 kg)

Display: 4 line x 16 character LCD

Keyboard: 24 key membrane sealed, contamination resistant

*Specifications subject to change without notice.

ORDERING INFORMATION

Part Number:	Description
RIMM100RC	M100 system with RIM Tach® connector
RIMM100SC	M100 system with SLIM Tach® connector
RIMM100MS18D	M100 system with standard 10 PIN Differential
RIM M100 RSC	M100 system with RIM & SLIM
RIM TEST KIT	M100 system with 4 Connectors: RIM; SLIM; MS-10 PIN; Avtron 10 PIN
Options	
RIMETEUROCON	Spare Eurostyle connector with strain relief
RIMETCABLE-RIM	Cable harness, RIM Tach® connector
RIMETCABLE-SL	Cable harness, SLIM Tach® connector
RIMETCERT	Recalibration and certification service

TESTS PERFORMED

	Test	Function
Function	Signal Pulse State	Continuous display of high/low signal state (A,B,Z)
	Complementary	Display high/low state of complementary signals
	Pulses Per Second	Count number of pulses detected each second (100 kHz maximum)
	Pulse Counter	Display a continuous bidirectional count of detected pulses (10 digits)
Phase	Quadrature Phase	Display actual phase angle (±1% accuracy, derated at higher speeds)
	Min & Max Phase	Detects and holds the extreme quadrature phase angles
	Pulse Duty Cycle	Continuous update display (±1% accuracy, derated at higher speeds)
	Min & Max Duty	Detects and holds the extreme duty cycles
RPM	RPM	Calculates RPM (100 kHz maximum)
	Min & Max RPM	Detects and holds the extreme RPM (100 kHz maximum)
	Direction of Rotation	Displays + or - to indicate direction of signal input
Marker	Number of Pulses	Display number of pulses detected between markers (10,000 PPR max)
	Marker Pulse Presence	Display signal when marker is received
	Count Error	Detects and displays the number of pulse counts different from input count
	Revolution Counter	Display a continuous bidirectional count of revolution (10,000 revolutions)

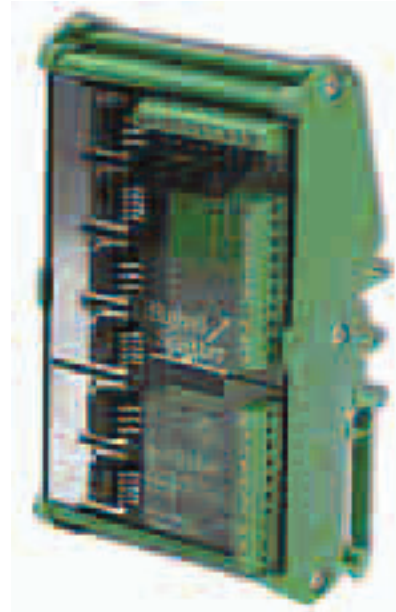
RIM SS2

NorthStar™ brand

RIM SS2 Signal Splitter

Key Features

- Eliminates the Expense and Maintenance of Two Separate Encoders
- Optically Isolated Outputs can be Sent to a Motor Drive and a Display at the Same Time
- Compatible with Virtually Every Incremental Digital Encoder
- Combats Long Distance and Electrical Interference Problems



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Input Signal: 2 or 3 channel quadrature signal, sine or square wave, open collector, differential, or single ended line driver

ELECTRICAL

Input Signal Voltage: 4 - 26 VDC
Input Signal Current: 2.2 mA minimum, 3.5 mA typical
Input Impedance: Optically isolated, 1 kOhm at 4V, 6.8 kOhms at 24V typical. Current limited.
Frequency Range: 0 - 120 kHz
Output Signal: Two independent, isolated line driver output sets (A/A, B/B)
Supply Voltage: 5 - 26 VDC
Output Current: 150 mA (maximum per channel)
Wire Gauge Accepted: 26 -16 AWG
Output Protection: ESD to MIL-STD-883 and short circuit protected

MECHANICAL

Enclosure Material: PVC
Mounting Options: DIN 32 or 35

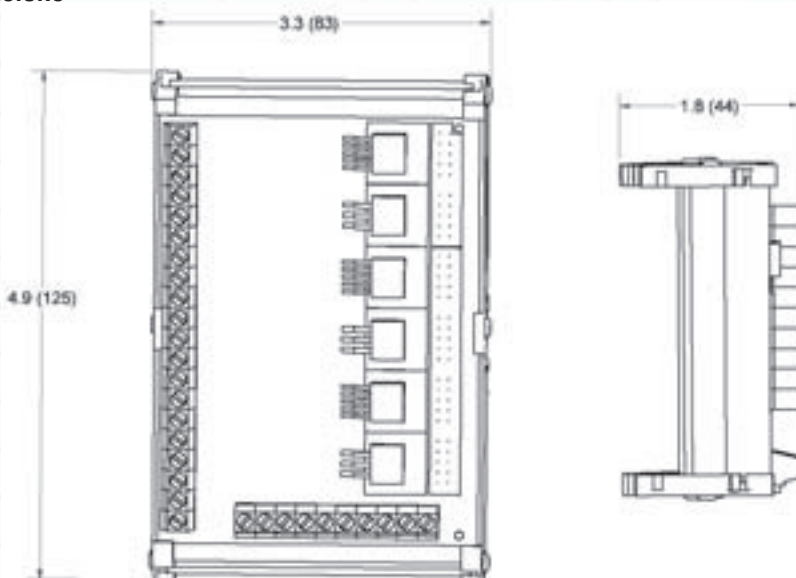
ENVIRONMENTAL

Operating Temperature: 0°C to 50°C
Storage Temperature: -20°C to 70°C
Operational Humidity: 98% non-condensing

ORDERING INFORMATION

Part Number: RIM SS2

DIMENSIONS



RIM SSW

NorthStar™ brand

RIM SSW Signal Switcher

Key Features

- Eliminates Need for Two PLCs or Input Devices
- Accepts A, B, and Z Inputs from Two Separate Encoders
- May Switch Two Encoders of Different Resolutions for Coarse and Fine Position Control
- Can Select Spare Encoder that Acts as Backup of First
- Input Voltage Range from 4 to 26VDC



SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Input Signal: 2 or 3 channel quadrature signal, sine or square wave, open collector, differential, or single ended line driver

ELECTRICAL

Input Signal Voltage: 4 - 26 VDC

Input Signal Current: 2.2 mA minimum, 3.5 mA typical

Input Signal Impedance: Optically isolated, 1 k Ohm at 4V, 6.8 k Ohms at 24V typical. Current limited.

Operating Frequency Range: 0 - 100 kHz

Output Signal: Differential driven square wave, signal level approximately equivalent to input supply voltage.

Error Output Signal: Sinking normally open, closes on error. 5V, 20 mA maximum load

Supply Voltage: 5 - 26 VDC

Current Consumption: Less than 150 mA at 100 kHz and 26 VDC typical with no output driver load

Output Current: 150 mA (maximum)

Power Up Time: Less than 10 ms

Encoder Switching Time: Less than 8 μs

Connector Wire Gauge: 26 -16 AWG

Electrical Protection: Reverse polarity protected

Output Protection: Under voltage, short circuit, and thermally protected

Fail Safe Feature: Fail safe mode connects device's ENCODER 1 INPUT directly to device's OUTPUT terminals

MECHANICAL

Enclosure Material: PVC

Side Element Material: Polyamide PA non-reinforced

Mounting Options: DIN 35 or 32

ENVIRONMENTAL

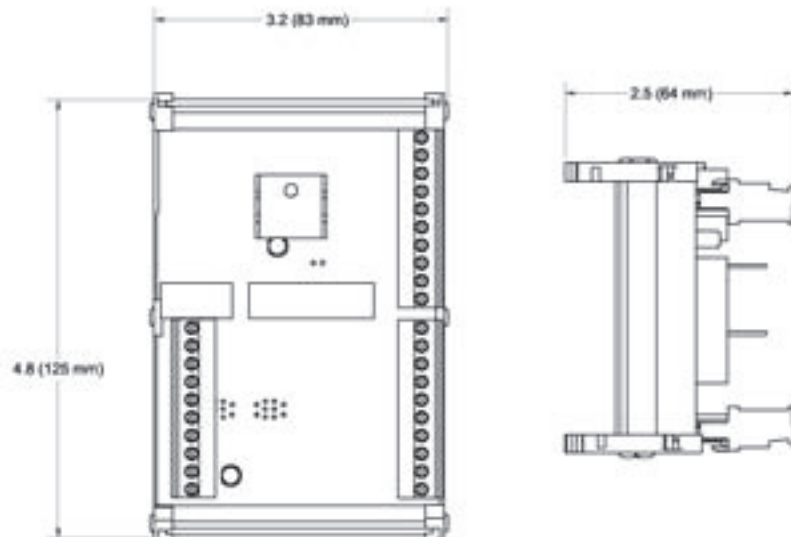
Operating Temperature: 0°C to 50°C

Storage Temperature: -20°C to 70°C

Operational Humidity: 98% non-condensing

*Specifications subject to change without notice

DIMENSIONS inches [mm]



ORDERING INFORMATION

Part Number: RIMSSW