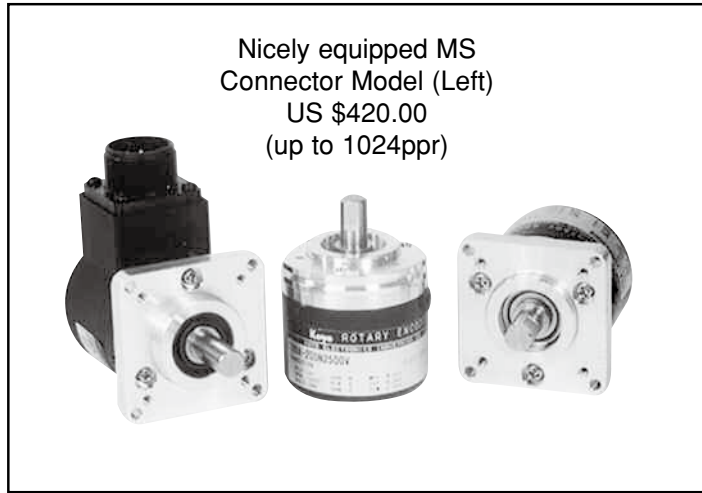


SIZE 20 SERIES TRDA-20N

INCREMENTAL SHAFT ENCODER

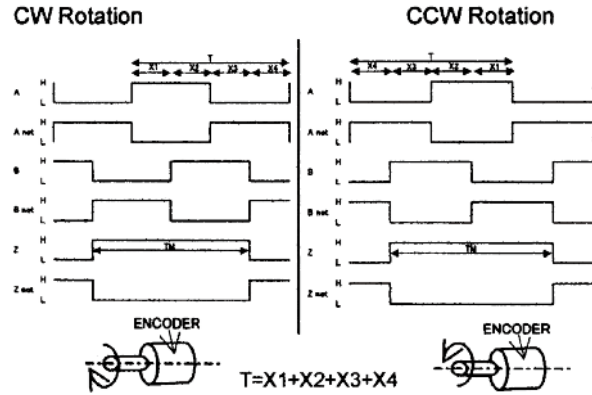


Nicely equipped MS Connector Model (Left)
US \$420.00
(up to 1024ppr)

FEATURES:

- 2.0" O.D., heavy duty designed
- 3/8" shaft, shaft seal option (Detachable and Repairable)
- 250 KHz frequency response
- Detachable Square and Servo flanges configuration
- Super Linedriver OL7272 Compatible 5-30 Vdc available

LINE DRIVER WAVE FORM



CW or CCW ROTATION AS VIEWED FROM ENCODER SHAFT

DIVISION ACCURACY

Symmetry (A, B)	$X1+X2=0.5T \pm 0.25T$ $X2+X3=0.5T \pm 0.25T$
Phase shift	$Xn=0.25T \pm 0.125T$ (n=1, 2, 3, 4)
Signal width of Z ch.	$TM=1T \pm 0.5T$

$T=360^\circ/N$ N : Pulse per revolution

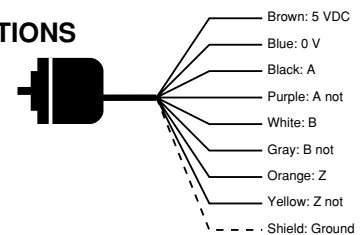
DIVISION ACCURACY OF SIGNAL

Pitch Error	$\pm 0.01T$
Adjacent Pitch Error	$\pm 0.02T$

WIRING DIAGRAMS

LINE DRIVER CONNECTIONS

(Shield = Body)



ELECTRICAL CONNECTIONS/ORDER SEPARATELY

#DMS3102E18-1P (10 Pin)/MATING# DMS3106E18-1S

Pin Code	Line Driver
A	Channel A
B	Channel B
C	Index Z
D	Vcc
E	-
F	0V, Common
G	Case Ground
H	Channel A not
I	Channel B not
J	Index Z not

SPECIFICATIONS

Electrical

Pulse per Revolution	Up to 2500 ppr
Supply Voltage	5Vdc line driver, 5V~30Vdc TTL & Super line driver
Output Format	Dual Square Wave in Quadrature with Index
Output Option	TTL Output Line Driver
Current Requirements	TTL: 40mA Max. No Load Line Driver: 60mA Max. No Load
Frequency Response	250 KHz
Duty Ratio	50±25%
Phase Shift	25±12.5%
Index Signal Width	100±50%
Output Level	(H) ≥2.5V (L) ≤0.5V
Rise and Fall Time	≤1μs (When cable length is 1m)
Insulation Resistance	≥50MΩ

Mechanical

Shaft Diameter	.3747"/.3744"
Shaft Loading	Axial: 40 lbs. Max. Radial: 35 lbs. Max.
Shaft Seal	Std. (Detachable, Repairable)
Starting Torque	2.8 oz.-in at 77°F (25°C)
Shaft Angular Acceleration	1000 rad/sec ²
Moment of Inertia	2.0x10 ⁻³ Kg • m ²
Mech. Perm. Speed	6000 RPM Max.
Weight	1 lb.

Environmental

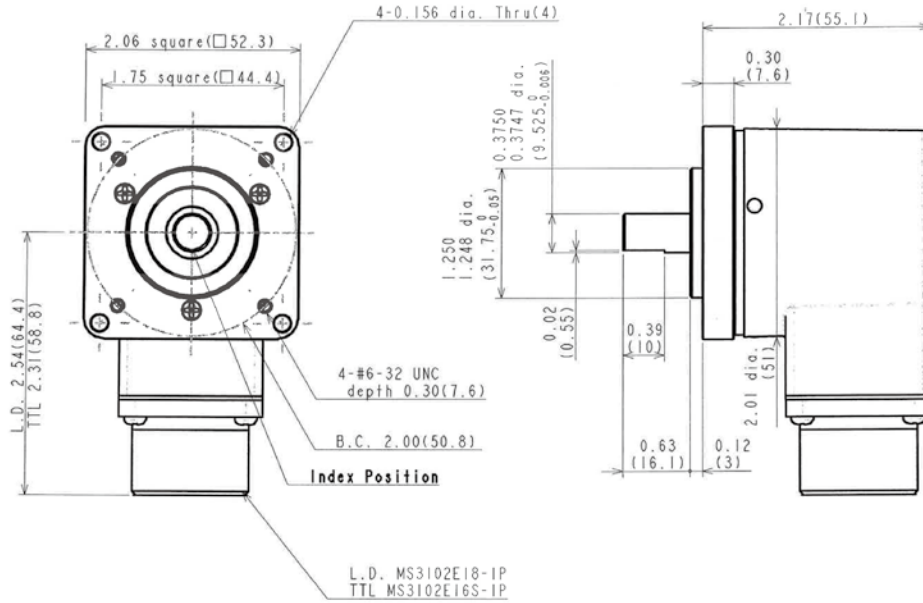
Temperature	Operating: -10 ~ +70°C Storage: -25 ~ +85°C
Operating Humidity	35 ~ 85% without condensation
Vibration	Durable for one hour along 3 axes at 10 to 55 Hz 0.75mm amplitude
Shock	Metal Slit: 981 m/s ² (11ms 3-times, each X, Y, Z) Glass Slit: 490 m/s ² (11ms 3-times, each X, Y, Z)
Withstand Voltage	500VAC
Construction	NEMA12/IP-50 (Cable), NEMA4/IP-65 (MS connector)

SIZE 20 SERIES TRDA-20N

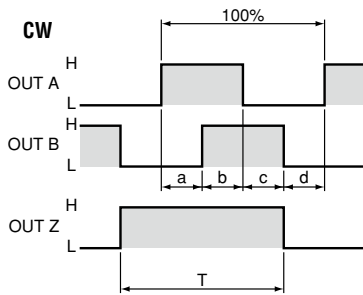
INCREMENTAL SHAFT ENCODER

OUTSIDE DIMENSIONS

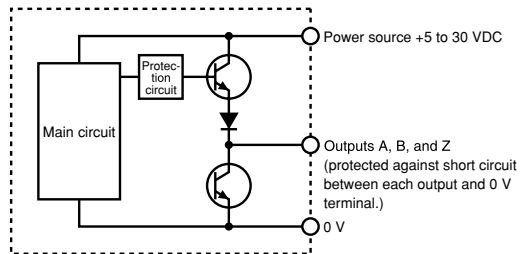
TRDA-20SNXXXX □ W-MS



TTL (Totem Pole) Wave Form (viewed from shaft side)



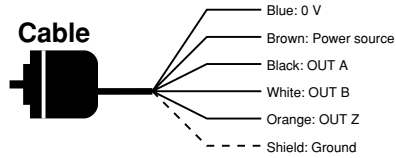
TTL Output circuit



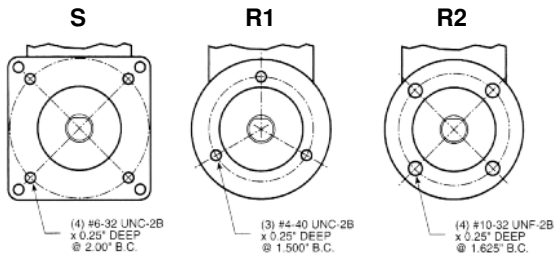
WIRING DIAGRAMS (TTL)

AWG 20-22

Cable



Detachable Flanges (You may choose and change)



TTL Connections (7 pin)/
Order Separately
#DMS3102E16-P
Mating# DMS3106E16-1S
(Shield = Body)

Pin Code	Function
A	Channel A
B	Channel B
C	Index Z
D	Vcc
E	-
F	0V, Common
G	Case, GRD

Series TRDA-20N / Size 20 Shaft Encoder

Model	Flange	N	Resolution	Output	Housing	Termination
TRDA-20	<input type="checkbox"/>	N	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ORDERING INFORMATION

TRDA-20 Size 20 Shaft Encoder	S: Square Flange	N	Metal Disks	RZ: 5 - 30V TTL (single ended)	Blank: NEMA 12/IP50 ABS Plastic Cap	Blank: Cable (3.3 ft.)
	R1: Round Flange (3) #4-40 @1.5" BC		3 4 5 10 30 40 50 60 100 120 200 240 250 300 360 400 480 500 600			
R2: Round Flange (4) #4.40 @1.625" BC	Glass Disks	S: 5 - 30V Super Line Driver (0L7272 Compatible)	W: NEMA 4/IP65 Aluminum Diecast Cap w/ MS Connector	ME: End Mount MS Connector		
	750 1000 1024 1200 2000 2048 2500					

PRICING INFORMATION

	FLANGE:	RESOLUTION	ELECTRICAL	MECHANICAL	TERMINATION		
TRDA-20 Base Price \$312.00	Detachable Flanges	3 Thru 500	TTL 5-30V (Single Ended) - Quadrature A & B with Index Z Add \$20.00	Shaft Seal -MS Connector Model Standard N/C	MS Conn.–Diecast Body NEMA4 IP-65 - Side Mount Add \$55.00		
	Square Flange #TRDA-20SN Add \$8.00					1000 Thru 2048	Linedriver 5V Quadrature A & B with Index Z Add \$20.00
	Round Flange 1 #TRDA-20R1N Add \$8.00				2500		
	Round Flange 2 #TRDA-20R2N Add \$8.00	Add \$25.00	Add \$40.00				

PART NUMBER	LIST PRICE	Flanges	
TRDA-20SN500VW-MS	\$395.00	TRDA-20SN	\$8.00
TRDA-20SN1000VW-MS	\$420.00	TRDA-20R1	\$8.00
TRDA-20SN2000SW-MS	\$430.00	TRDA-20R2	\$8.00
		Mating Connector	
TRDA-20SN2000VW-MS	\$420.00	DMS3106E18-1S (10pin Linedriver)	\$45.00
TRDA-20SN2048VW-MS	\$420.00	DMS3106E16-1S (7pin TTL)	\$35.00
		Mating Connector w/10ft cable assemblies	
TRDA-20R1N2500RZW-MS	\$435.00	C10-9-10 LD (Linedriver)	\$85.00
		MS10 pin mating w/10ft cable (9 wires)	
TRDA-20SN2500SW-MS	\$445.00	C7-5-10 RC (TTL)	\$75.00
		MS7 pin mating w/10ft cable (5 wires)	
TRDA-20SN2500VW-MS	\$435.00	Cables	
		CBL-2025N-XXX FT	\$3.00 per Ft.
		Bell Flanges	
		F-20	\$60.00
		F-21	\$60.00
		3.5" Center Height Foot Mounting Bracket	
		LM-001	\$90.00

NOTE: Above stock items show Square Flange.
Round Flange Models 1 & 2 are also stock items.