Catalogue No.T12-1228N50

Motortronics®

ROTARY ENCODERS

FA-CODER®

OIH35

SmartAbs®

Tamagawa TAMAGAWA SEIKI CO.,LTD.

INCREMENTAL

APPLICATION

Brushless DC Servo motor control

FEATURES

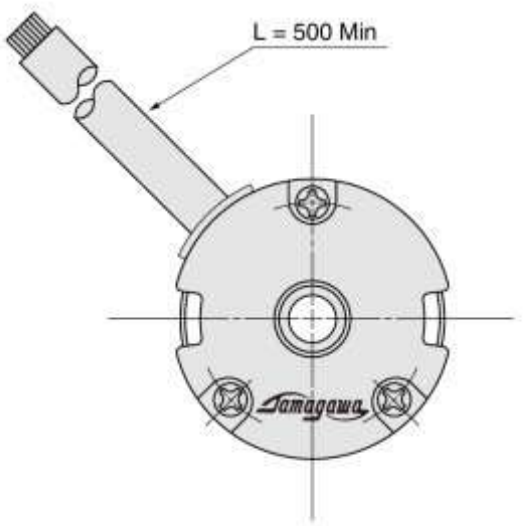
Easy to attach

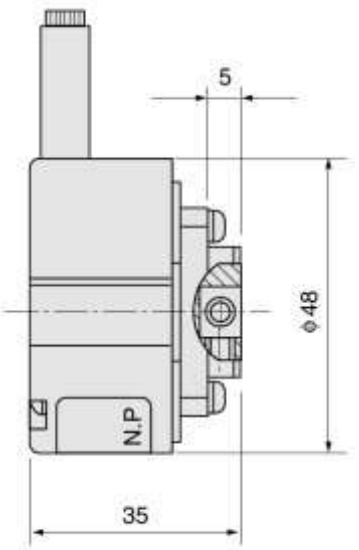
Hollow shaft Available up to 9.35

TS5200N500

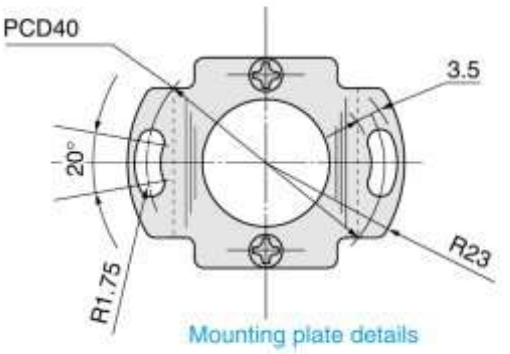
OIH48 Series

Dimension mm mm

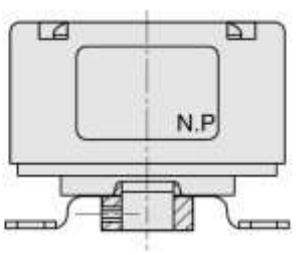


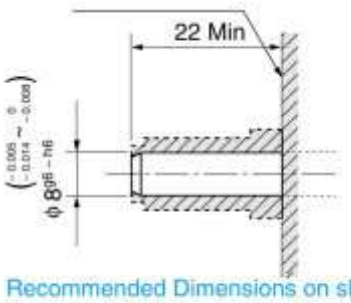


Encoder mounting surface

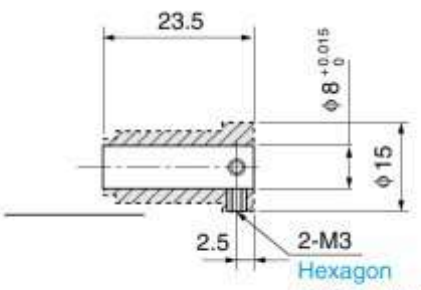


Mounting plate details





Recommended Dimensions on shaft



Shaft Details

Hexagon socket set screw (Attached)

Unless otherwise specified tolerance is ± 0.5mm ± 0.5mm

DESIGNATE THE NAME OF FUNCTION WHEN ORDERING

OIH 48 – [ ] P [ ] – L 6 – 5 V

- **OIH**: Optical Incremental Hollow Shaft Encoder
- **48**: Size 48mm
- **[ ]** (Resolution C/T) / Model No. TS N:

Resolution C/T	Model No.	4	6	8
1,000	TS5207	N500	N510	N530
1,024	TS5208			
2,000	TS5212			
2,048	TS5213			
2,500	TS5214			
3,000	TS5231			
4,096	TS5216			
5,000	TS5217			
6,000	TS5233			
8,192 (4,096X2)	TS5246			
10,000 (5,000X2)	TS5236			
12,000 (6,000X2)	TS5232			

X4 is possible, too.

- **[ ]** Pole: 4 4 / 6 6 / 8 8
- **L** Output form: L Line Driver
- **6** Output phase: 6 A, B, Z, U, V, W
- **5 V** Voltage: 5 +5V

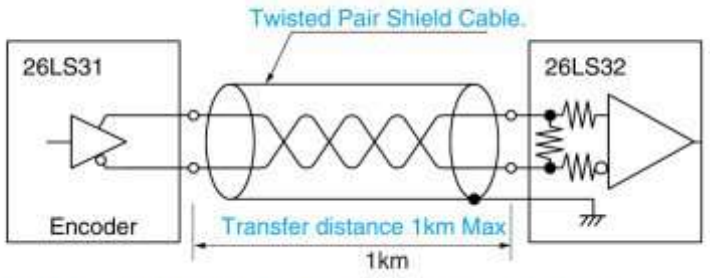
SPECIFICATIONS

Electrical Spec.		
Resolution		1,000 12,000 C/T
Supply Voltage		DC + 5V ± 5%
Consumption Current		200mA Max
Output Form	Line Driver	26LS31 Source Current 20mA Max Sink Current 20mA Max
Maximum Response Frequency		200kHz Max
Rise time, Fall time		100nsec Max

Mechanical Spec.		
Starting Torque		9.8×10^{-3} N · m 100gf · cm Max
Moment of Inertia		6.5×10^{-6} kg · m² 65g · cm² Max
Maximum Rotating Speed		6,000min⁻¹ 6,000rpm
Mounting Tolerance	Radial Play	0.05mm TIR Max
	Axial End Play	0.2mm Max
	Shaft Inclination	0.1° Max
Operating Temp. Range		−20 +85°C
Storage Temp. Range		−25 +85°C
Protective Construction		IP = 40
Vibration		49m/s² 5G 2G
Shock		980m/s² 100G
Mass		0.3kg Max

CIRCUIT AT OUTPUT STAGE (EXAMPLE)

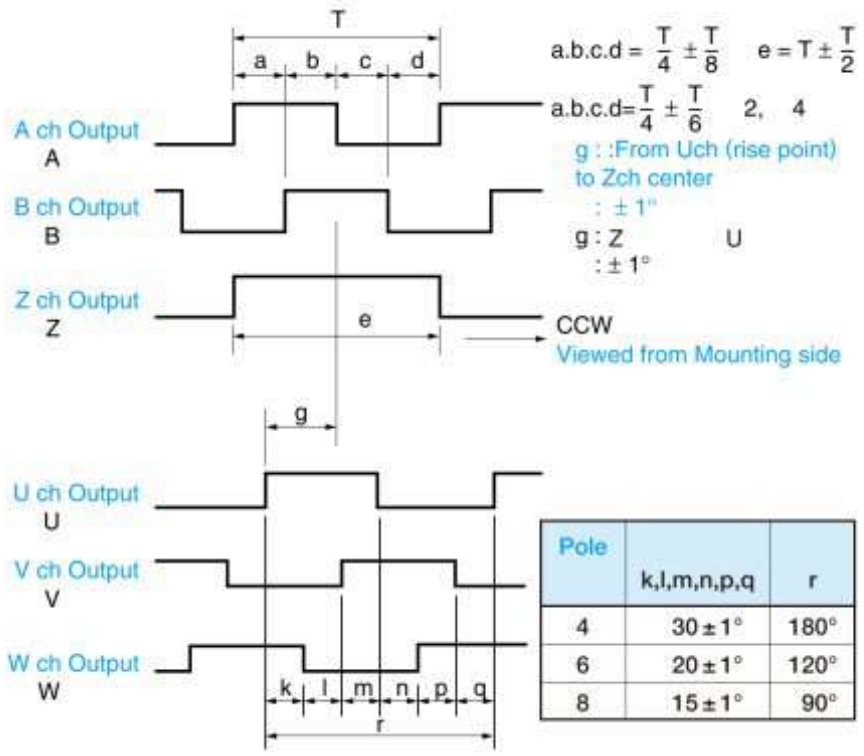
Line Driver Output



Note that transfer distance depends much on ambient condition.

Use transmission cable after verifying effects of impedance characteristics, etc.

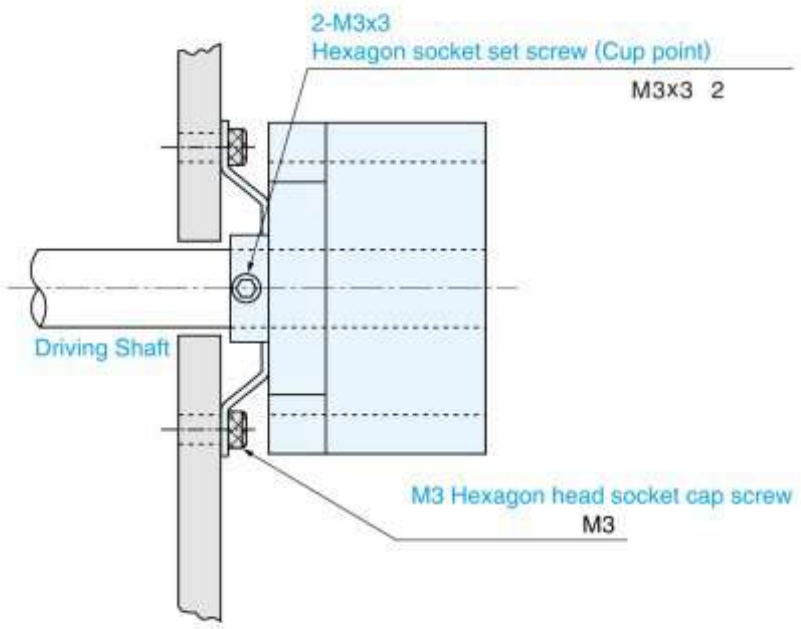
OUTPUT PHASE SHIFT



Pole	k,l,m,n,p,q	r
4	30 ± 1°	180°
6	20 ± 1°	120°
8	15 ± 1°	90°

ATTACHING WAY (EXAMPLE)

Dimension mm mm



CONNECTION TABLE

Lead color	Line driver Output
RED	DC+5V
BLACK	GND
BLUE	A ch Output
BLUE BLACK	A ch Output
GREEN	B ch Output
GREEN BLACK	B ch Output
YELLOW	Z ch Output
YELLOW BLACK	Z ch Output
BROWN	U ch Output
BROWN BLACK	U ch Output
GRAY	V ch Output
GRAY BLACK	V ch Output
WHITE	W ch Output
WHITE BLACK	W ch Output

SPECIAL REQUIREMENTS

For special cases, please consult us.

Open collector output (5V,12V)
High resoolution 24,000Max.
Less wiring type
Number of motors pole
X4 resolution

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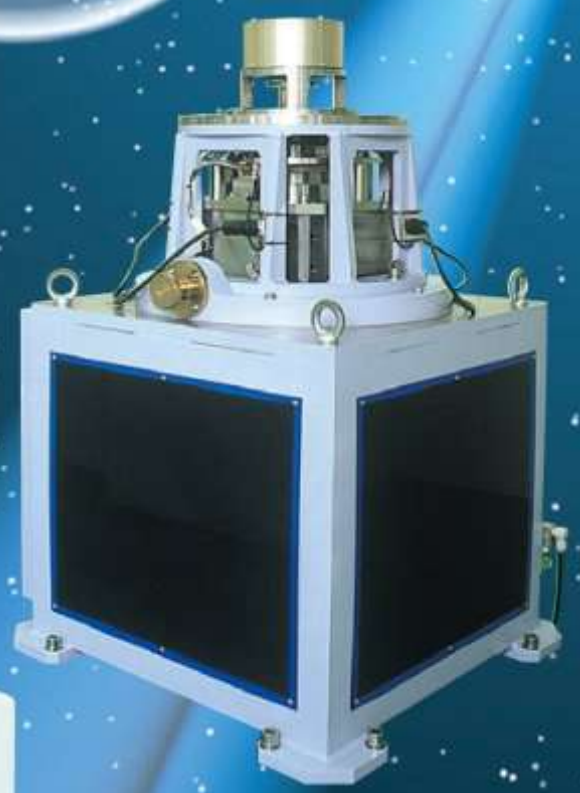
Digital techniques in business industry have been greatly advanced. Among these, necessity for converting analog like rotating value, shaft angle position, etc. to digital has been increased as measurement for physical value and automation for control system are advanced. Encoders, at present, have been widely used for factory automations, measurements, office automation devices, medical equipment, aviations and universal fields.

Various kinds of encoders (FA-CODER® as trade mark) from small to high resolution are available to meet all of the requirements. High performance encoders supported by these high disk producing techniques are available.



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