

HOLLOW SHAFT ENCODER ERA50T Series

Product selection guide



EXCELLA[®]
ELECTRONICS

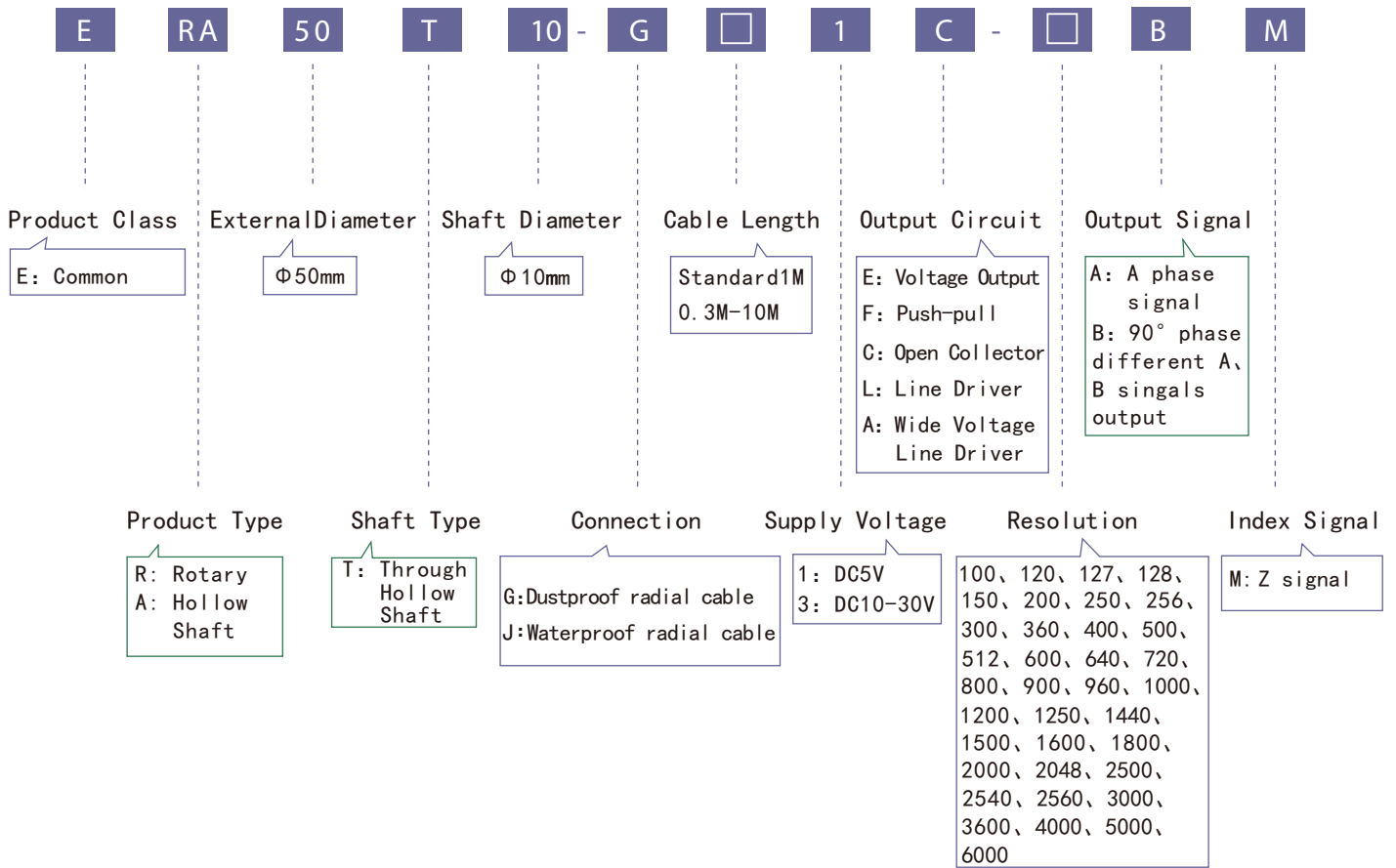
Mfg. of Motion Control & Elevator Automation Productst

Applications & Features



ERA50T is widely used in automatic control, automatic measurement, remote control, computer technology. Resolution up to 6000ppr, others on request. Optoelectronic devices with high reliability, long life, strong anti-interference ability, wide range of operating temperature.

Part Number

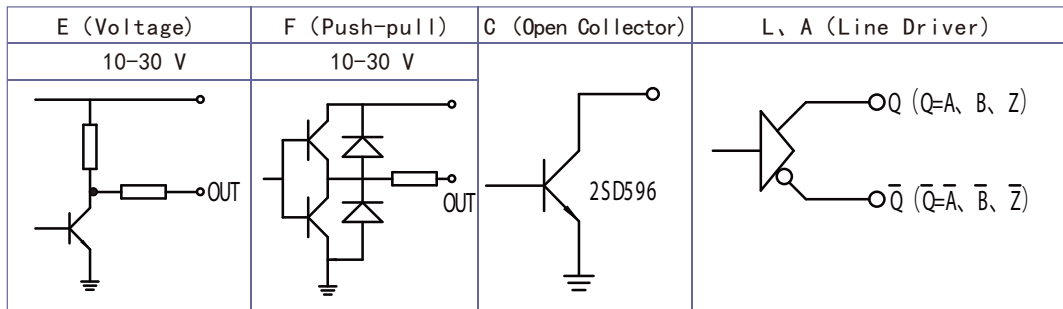


Electrical Specifications

Output Circuit	Supply Voltage DC (V)	Current Requirement (mA)	(Output Voltage V)		Rise Time (ns)	Fall Time (ns)	Frequency Response (kHz)
			V _H	V _L			
E (Voltage)	10-30	≤120	>VCC-2.5	≤0.7	≤500	≤100	0-300
F (Push-pull)	10-30	≤120	>VCC-2.5	≤0.7	≤500	≤100	0-300

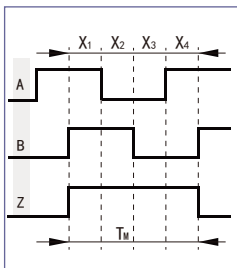
C (Open Collector)	5±0.25	≤60	>VCC-2.5	≤0.7	≤500	≤100	0-300
	10-30						
L (Line Driver)	5±0.25	≤100	>3.5	≤0.7	≤200	≤200	0-300
A (Wide Voltage Line Driver)	10-30	≤60	>VCC-2.5	≤0.7	≤500	≤100	0-300

Output Circuit

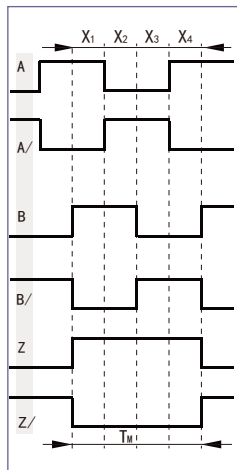


Note: C, F output is shorted to ground protection diode.

Output Waveform



Waveform for C, E, F output



Waveform for L, A, F output

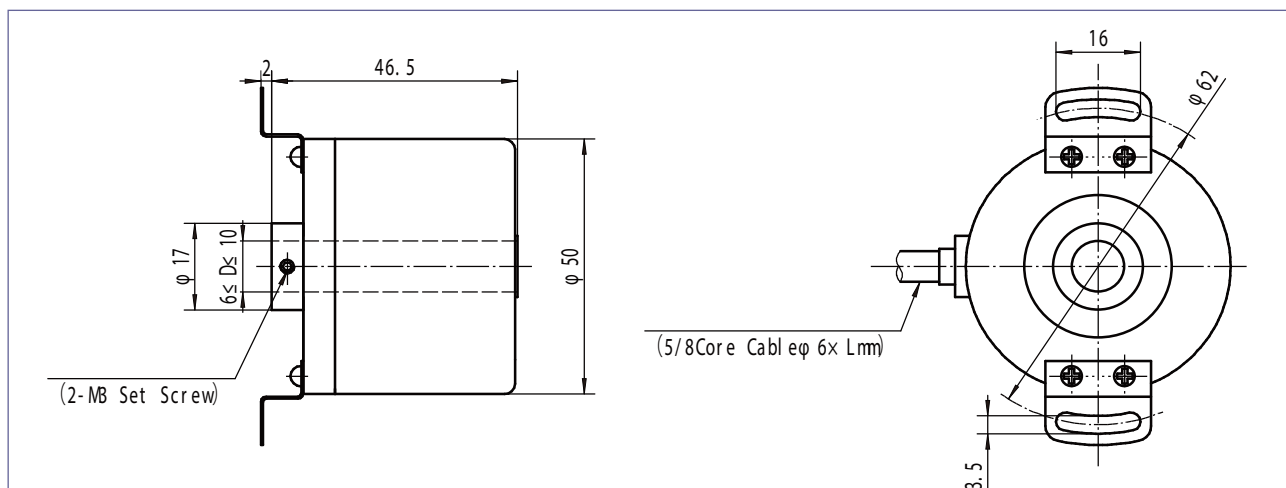
- Wave Ratio : $X_1+X_2=0.5T \pm 0.1T$
 $X_2+X_3=0.5T \pm 0.1T$
- Phase Different : $X_n \geq 0.125T$ ($n=1, 2, 3, 4$)
- Absolute Angle Error: $\leq 0.2T$
- Cycle Error : $\leq 0.05T$
- $T=360^\circ / N$ (N =lines count per revolution)
- Width of Z signal
- 1、 $T_m=1T \pm 0.5T$
 $T_m=nT \pm 0.1T$ ($n \geq 2$)
- The phase relationship of Z signal and A, B signal is not stipulated.
- 2、 $T_m=0.5T \pm 0.25T$
 $T_m=0.25T \pm 0.125T$
 $T_m=0.25T \pm 0.125T$

The picture shows the clockwise (CW) waveform from the shaft side.

Mechanical Specifications

Max Speed (r/min)	Starting Torque (N. M)	Max Load (N)		Rotary Inertia (kgm ²)	Weight (kg)
		Radial	Axial		
6000	1.5×10^{-2}	50	30	4×10^{-7}	≈0.28

Dimension



Environmental Specifications

Operating Temperature (°C)	-20~+85
Storage Temperature (°C)	-30~+95
Relative Humidity	35~85%RH no condensation
Impact Resistance (m/s ²)	50 (Three times each on x, y, z directions, each time lasts 6ms)
Vibration Resistance (m/s ²)	20 (10~200Hz, 2h on x, y, z directions)
Protection Class	Common IP54

Connections

Cable Color	Red	Black	Green	Brown	White	Gray	Yellow	Orange	Shield
E (Voltage)	Vcc	0V	A	/	B	/	Z	/	G
F (Push Pull)	Vcc	0V	A	A/	B	B/	Z	Z/	G
C (Open Collector)	Vcc	0V	A	/	B	/	Z	/	G
L, A (Line Driver)	Vcc	0V	A	A/	B	B/	Z	Z/	G

