

HOLLOW SHAFT ENCODER **ERA-38-T Series**

Product selection guide

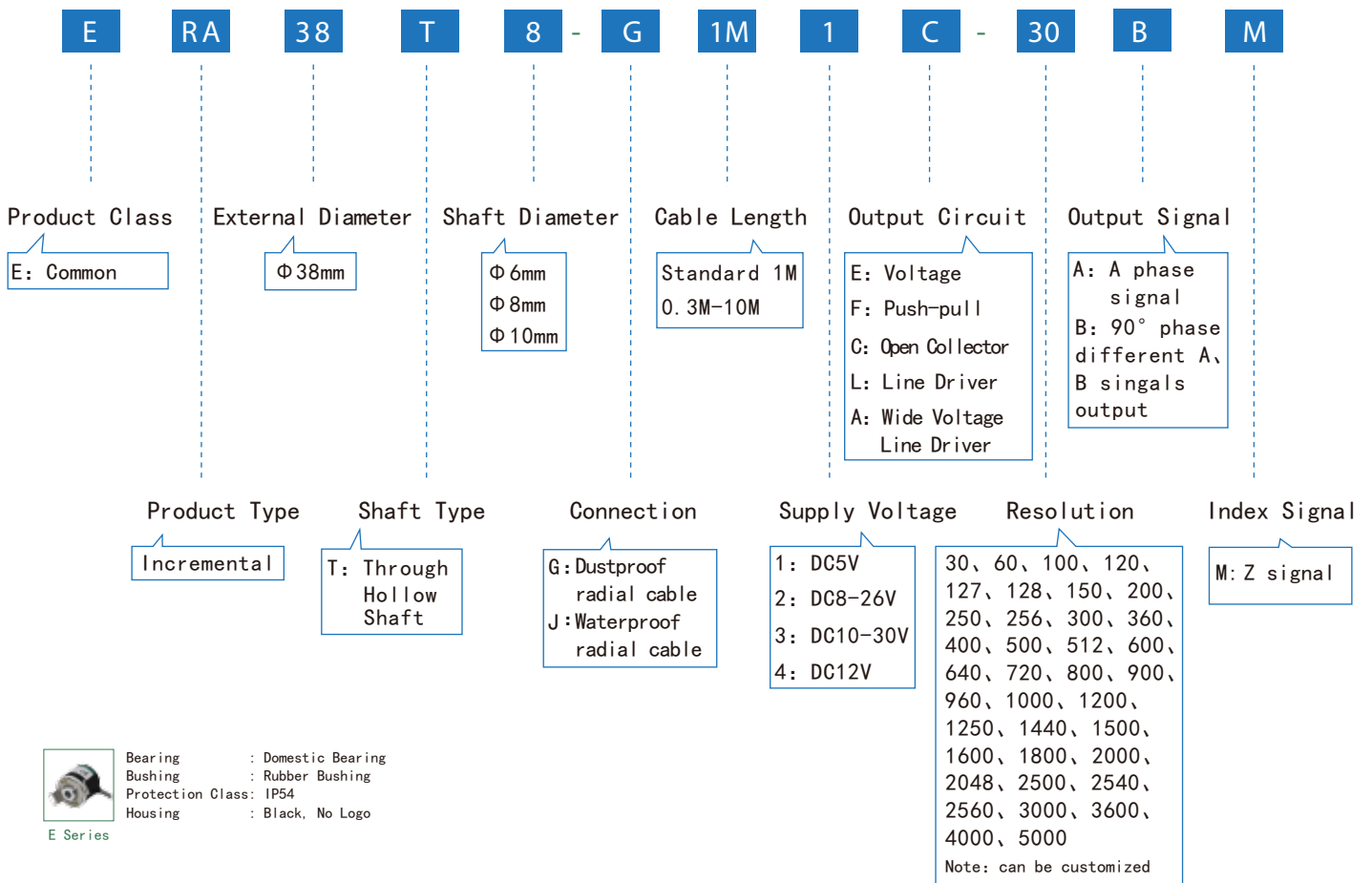


Applications & Features



ERA38T for precision work environment. Products using through-hole design, diameter between 6mm-10mm. Resolution up to 5000 pulses, special requirements can be customized. Optoelectronic devices with high reliability, long life, anti-jamming capability, using a wide temperature range.

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)	5±0.25	≤80	>3.5	≤0.7	≤500	≤100	0-300
	8-26	≤120	>VCC-2.5	≤0.7	≤500	≤100	0-300
	10-30						
	12						
F (Push-pull)	5±0.25	≤80	>3.5	≤0.7	≤500	≤100	0-300
	8-26	≤120	>VCC-2.5	≤0.7	≤500	≤100	0-300
	10-30						
	12						

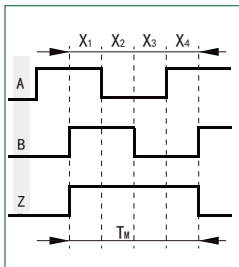
C (Open Collector)	5±0.25	≤60	>VCC-2.5	≤0.7	≤500	≤100	0-300
	8-26						
	10-30						
	12						
L (Line Driver)	5±0.25	≤100	>3.5	≤0.7	≤200	≤200	0-300
A (Wide Voltage Line Driver)	8-26	≤60	>VCC-2.5	≤0.7	≤500	≤100	0-300
	10-30						
	12						

Output Circuit

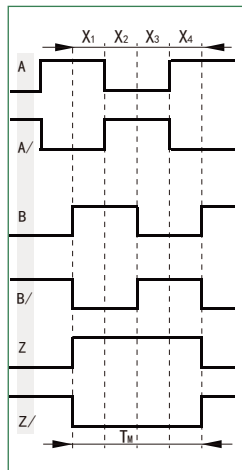
E (Voltage)		F (Push-pull)		C (Open Collector)	L, A (Line Driver)
5V	8-26V	5V	8-26V		
					L : 26C31 A : ET7272B

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

Output Waveform



Waveform for C, E, F output



Waveform for L, A output

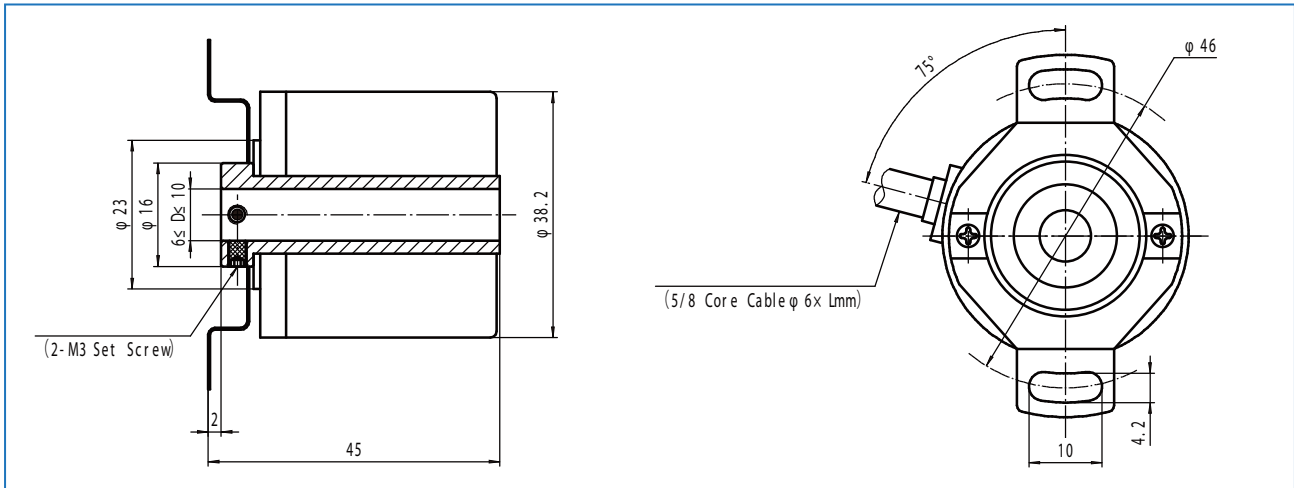
- Wave Ratio** : $X_1+X_2=0.5T \pm 0.1T$
 $X_2+X_3=0.5T \pm 0.1T$
- Phase Different** : $X_n \geq 0.125T$ ($n=1, 2, 3, 4$)
- Absolute Angle Error** : $\leq 0.2T$
- Cycle Error** : $\leq 0.05T$
- $T=360^\circ / N$ (N =lines count per revolution)
- Width of Z signal
- 1、 $T_m=1T \pm 0.5T$
 $T_m=nT \pm 0.1T$ ($n \geq 2$)
- 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	1×10^{-3}	30	20	4×10^{-6}	≈0.135

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	Reinforced IP65

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	/	B	/	Z	/	G
G (Open Collector)	Vcc	0V	A	/	B	/	Z	/	G
L, A (Line Driver)	Vcc	0V	A	A/	B	B/	Z	Z/	G

