

*HOLLOW SHAFT ENCODER* **ERA100B45** Series

Product selection guide

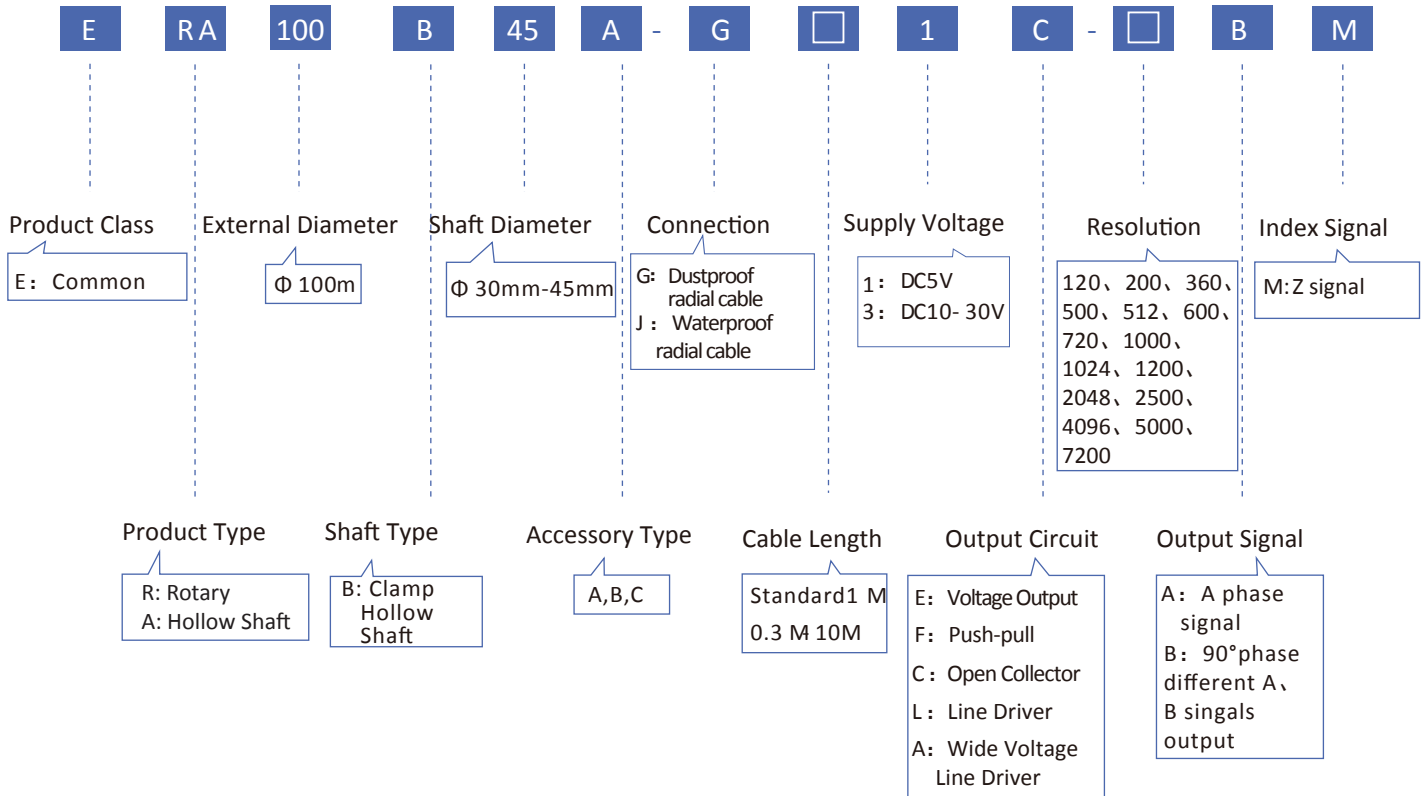


# Applications & Features



ERA100B45 is ultra-thin design to save space. Multiple mounting brackets are available for easy installation. The product IS widely used for automatic control, automatic measurement, remote control, computer technology as well as for measuring the angle and the vertical axis on CNC machine tools, especially for the use of the elevator industry. Imorted optoelectronic devices with high reliability, long life, strong anti-interference ability, wide range of operating temperature.

## Part Number



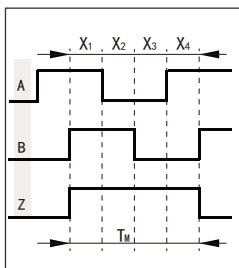
## Electrical Specifications

Output Circuit	Supply Voltage DC (V)	Current (mA)	( Output Voltage V )		Rise Time (ns)	Fall Time (ns)	Frequency Response (kHz)
			V <sub>H</sub>	V <sub>L</sub>			
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

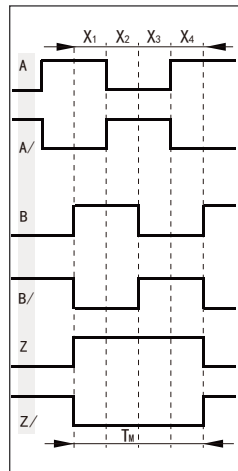
# Output Circuit

E (Voltage)	F (Push-pull)	C (Open Collector)	L, A (Line Driver)
10-30 V	10-30 V		

# Output Waveform



Waveform for C, E, F output



Waveform for L, A, F output

- Wave Ratio :  $X1+X2=0.5T \pm 0.1T$   
 $X2+X3=0.5T \pm 0.1T$
- Phase Different :  $Xn \geq 0.125T$  ( $n=1, 2, 3, 4$ )
- Absolute Angle Error:  $\leq 0.2T$
- Cycle Error :  $\leq 0.05T$
- $T=360^\circ / N$  ( $N$ =lines count per revolution)
- Width of Z signal
- $T_m=1T \pm 0.5T$   
 $T_m=nT \pm 0.1T$  ( $n \geq 2$ )
- The phase relationship of Z signal and A, B signal is not stipulated.
- $T_m=0.5T \pm 0.25T$   
 $T_m=0.25T \pm 0.125T$   
 $T_m=0.25T \pm 0.125T$

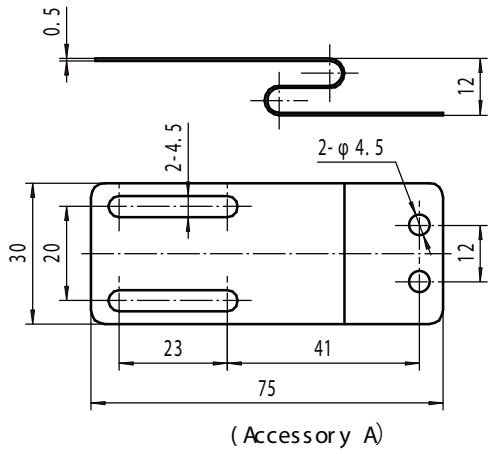
The picture shows the clockwise (CW) waveform from the shaft side

# Mechanical Specifications

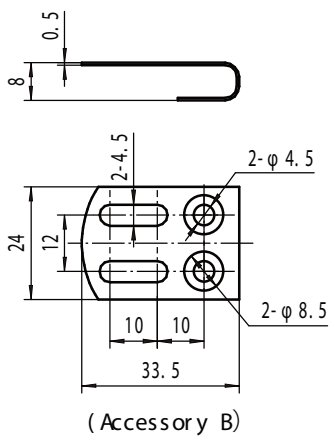
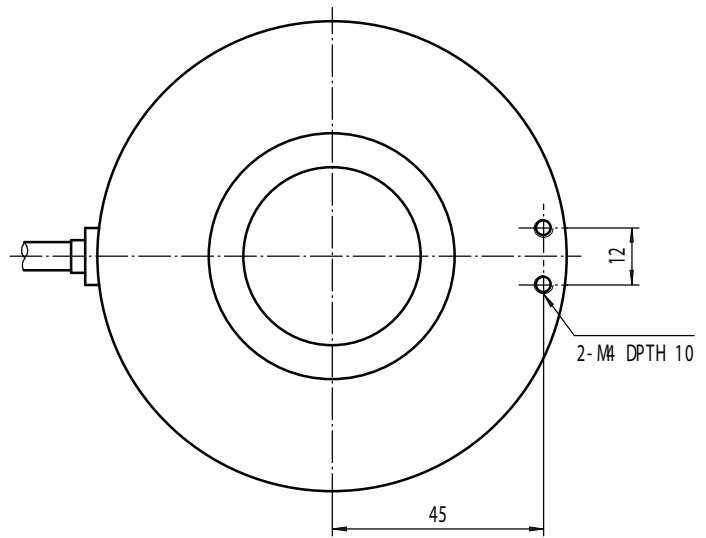
Max Speed (r/min)	Starting Torque (N. M)	Max Load (N)		Rotary Inertia (kgm <sup>2</sup> )	Weight (kg)
		Radial	Axial		
4000	$5 \times 10^{-2}$	40	20	$1 \times 10^{-5}$	$\approx 0.65$

# Environmental Specifications

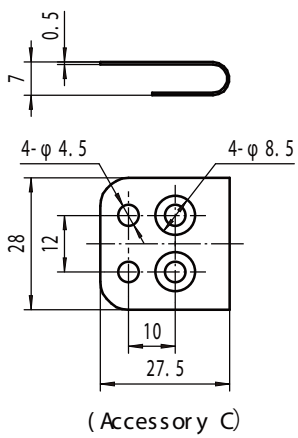
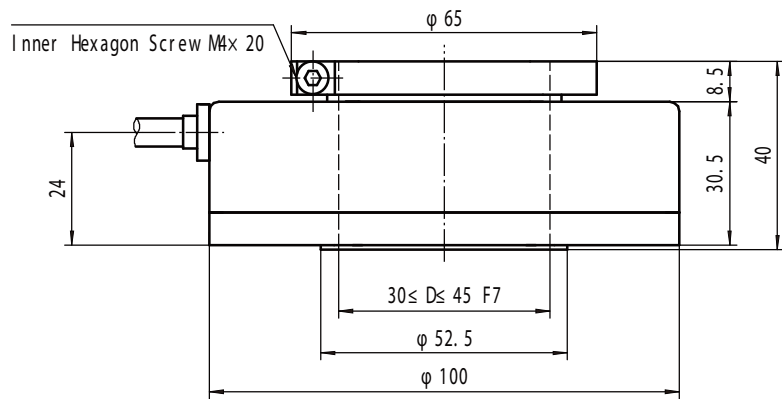
Operating Temperature (°C)	-20~+85
Storage Temperature (°C)	-30~+95
Relative Humidity	35~85%RH no condensation
Impact Resistance (m/s <sup>2</sup> )	40(Three times each on x, y, z directions, each time lasts 6ms)
Vibration Resistance (m/s <sup>2</sup> )	20 (10 ~200Hz, 2h on x, y, z directions)
Protection Class	Common IP 54



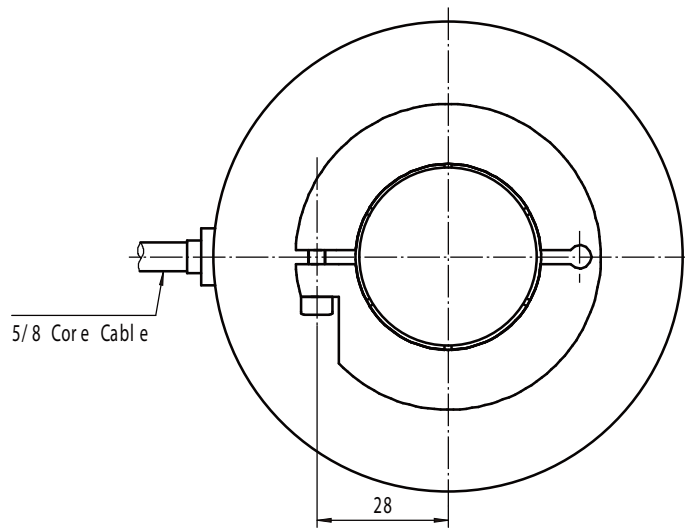
(Accessory A)



(Accessory B)



(Accessory C)



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

