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## RCC50Y8 Series Incremental Optical Encoders



### PRODUCT SELECTION GUIDE

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We draw your attention to the fact that there can be some changes in this instruction due to the product consistent technical improvement.

# 01

## Applications & Features

50 mm External Diameter.

Wide used in textile and dyeing industry, lather, printing, papermaking, etc.

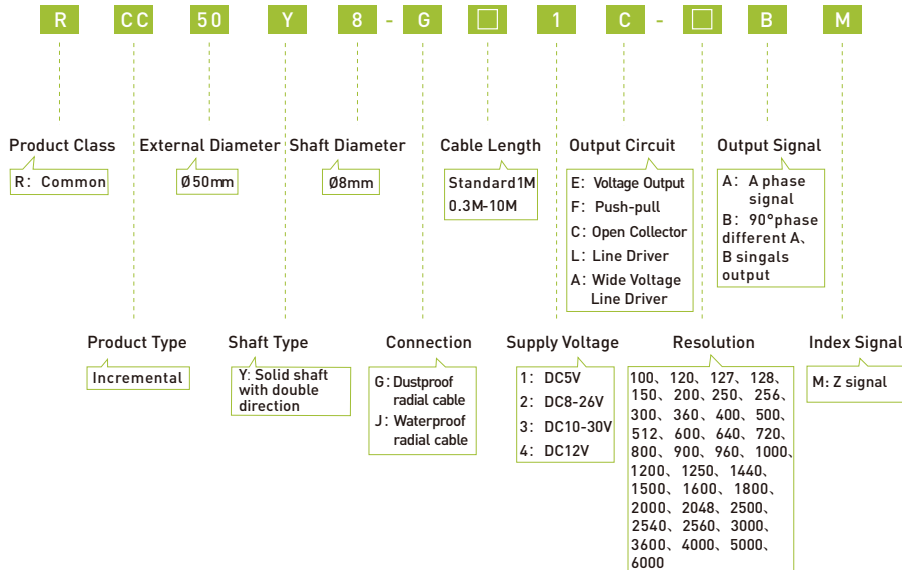
Max resolution up to 6000 ppr.

Low cost and firm design.

Optoelectronic devices with high reliability, long life, strong anti-interference ability, wide range of operating temperature.

# 02

## Part Number



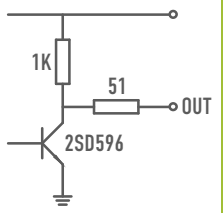
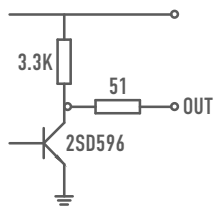
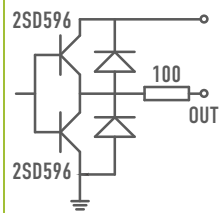
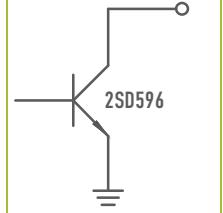
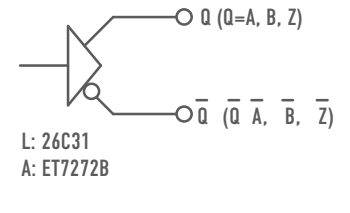
## 03

## Electrical Specifications

Output Circuit	Supply Voltage DC (V)	Current Requirement (mA)	Output Voltage $V_H$	Output Voltage $V_L$	Rise Time (ns)	Fall Time (ns)	Frequency Response (kHz)
E (Voltage)	5±0.25	≤80	>3.5	≤0.7	≤500	≤100	0 – 300
	8 – 26	≤120	>VCC-2.5				
	10 – 30	≤120	>VCC-2.5				
	12	≤120	>VCC-2.5				
F (Push-pull)	5±0.25	≤80	>3.5	≤0.7	≤500	≤100	0 – 300
	8 – 26	≤120	>VCC-2.5				
	10 – 30	≤120	>VCC-2.5				
	12	≤120	>VCC-2.5				
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						

# 04

## Output Circuit

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

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

# 05

## Output Waveform

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

1.  $T_m=1T \pm 0.5T$

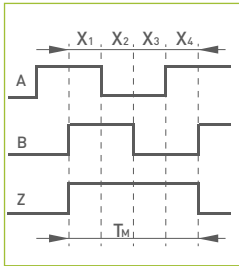
$T_m=nT \pm 0.1T$  ( $n \geq 2$ )

The phase relationship of Z signal and A,B signal is not stipulated.

2.  $T_m=0.5T \pm 0.25T$

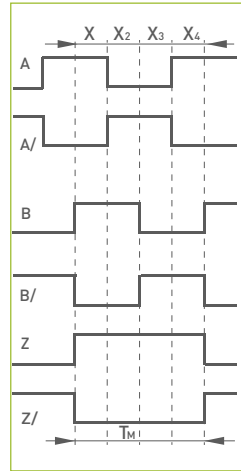
$T_m=0.25T \pm 0.125T$

$T_m=0.25T \pm 0.125T$



Waveform for C, E, F output

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



Waveform for L, A output

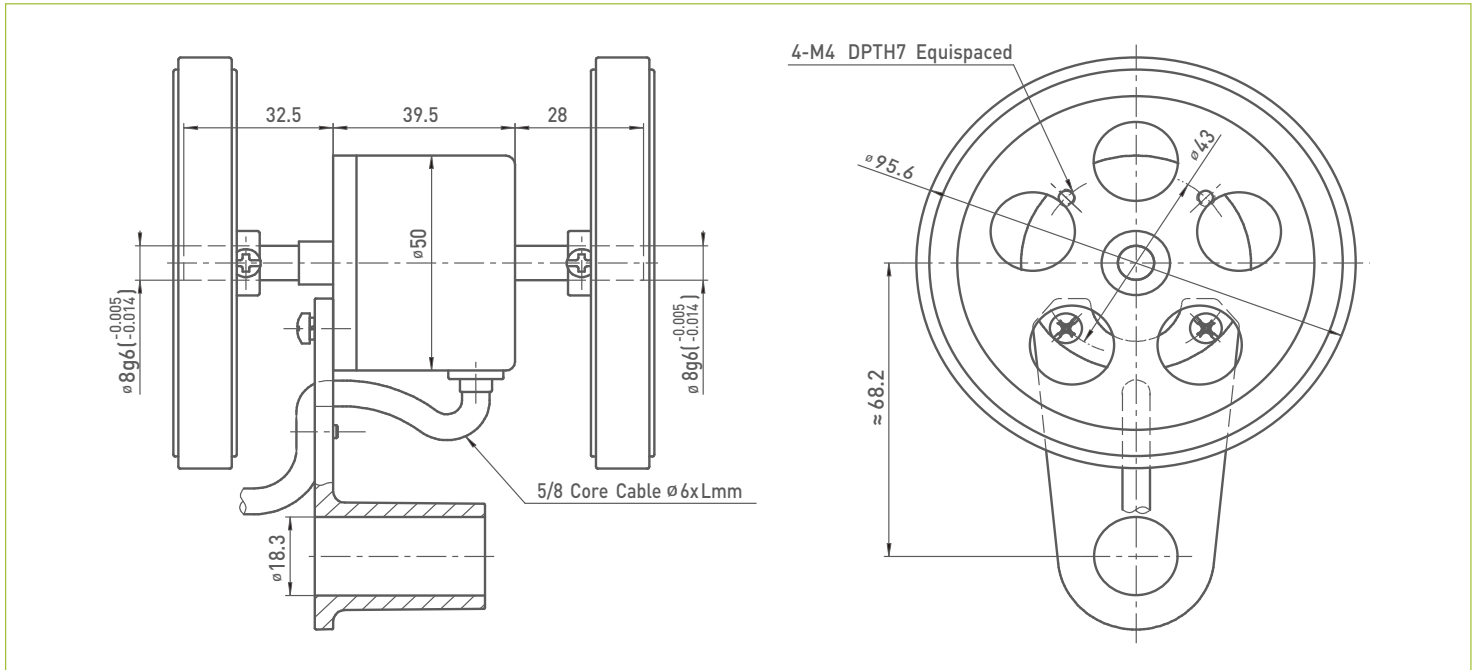
## 06

## Mechanical Specifications

Max Speed (r/min)	Starting Torque (N. M)	Max Load (N) Radial	Max Load (N) Axial	Rotary Inertia (kgm <sup>2</sup> )	Weight (kg)
6000	1x10 <sup>-3</sup>	30	20	4x10 <sup>-6</sup>	≈0.375

07

Dimensions



## 08 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> )	50 (Three times each on x, y, z directions, each time lasts 6 ms)
Vibration Resistance (m/s <sup>2</sup> )	>3.5
Protection Class	Common IP54

## 09 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
C (Open Collector)	Vcc	0V	A	—	B	—	Z	—	G
L, A (Line Driver)	Vcc	0V	A	A/	B	B/	Z	Z/	G