



RM61 Series

Optical Encoder

Datasheet

Description

RM61 series is three channel/two channel optical incremental encoder modules with high performance but low cost. The module consists of a highly colimated light source and a detector IC enclosed in a small C-shaped plastic package. When operated in conjunction with either a codewheel or codestrip, this module detect rotaty or linear position.

RM 61 series is designed for use with an 11 mm optical radius codewheel or linear codestrip, there are lots of standard CPR options:

100,200, 256, 360, 400, 500, 512, 600,1000
1024, 2000,2048,2500.

RS97 Series also has linear (LPI) options :
20,90, 150, 180,300,360.



Features

- Photodetector Array
- -40 °C to +85 °C Operating Temperature
- Multiple CPR and LPI selections
- Be used for encoders with outer diameter of 38mm
- C-Shape Structure , Easy to Mount
- TTL Compatible
- Single 5V Supply

Applications

Typical applications include printers, plotters, copiers, office automation and industrial automation equipment.

Note: Not recommended for use in safety critical application. Eg. ABS braking system.



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Absolute Maximum Ratings

Parameter	Symbol	Range
Storage Temperature	T _s	-40 ° C --- +85 ° C
Operating Temperature	T _A	-40 ° C — +85 ° C
Supply Voltage	V _{cc}	-0.5V — 7V
Soldering Temperature		≤260° C (t≤
Response Frequency	f	500KHz
Output Current per Channel	I _o	-1.0mA — 5 mA

Recommended Operating Conditions

Operating Temperature	T _A	-40°C — 85
Supply Voltage	V _{cc}	4.5 V — 5.5 V

Electrical Characteristics

Electrical Characteristics over Recommended Operating Range, Typical at 25 ° C

Parameter	Symbol	Min.	Typ.	Max.	Units	Condition
Three-channels Supply Current	I _{cc3}	40	50	60	A	m
Two-channels Supply Current	I _{cc2}	19	25	35	A	m
Low Level Output Voltage	V _{OL}		0.4	0.5	V	2kΩPull-up inside
High Level Output Voltage	V _{OH}	3	4.5		V	2kΩPull-up inside
A/B Rise Time	t _r		160		ns	2kΩPull-up inside, CL=8PF
A/B Fall Time	t _f		20		ns	2kΩPull-up inside, CL=8PF
A/B Duty Ratio	Dt	40	50	60	%	
A/B Phase Difference	θ	60	90	120	° e	
Response Frequency	f			500	KHz	



Output Waveform

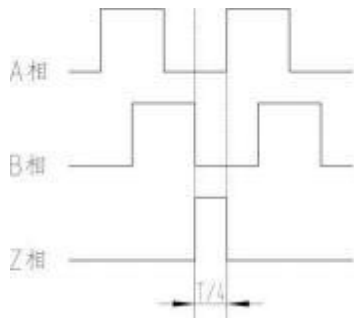


Fig. 1 Turn A/B/Z ($1/4t$) output waveform clockwise

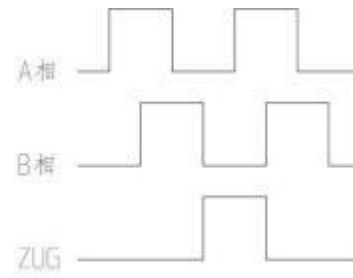


Fig.2 Turn A/B/ZUG to output waveform clockwise



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Tabless Packages Dimensions (Unit: mm)

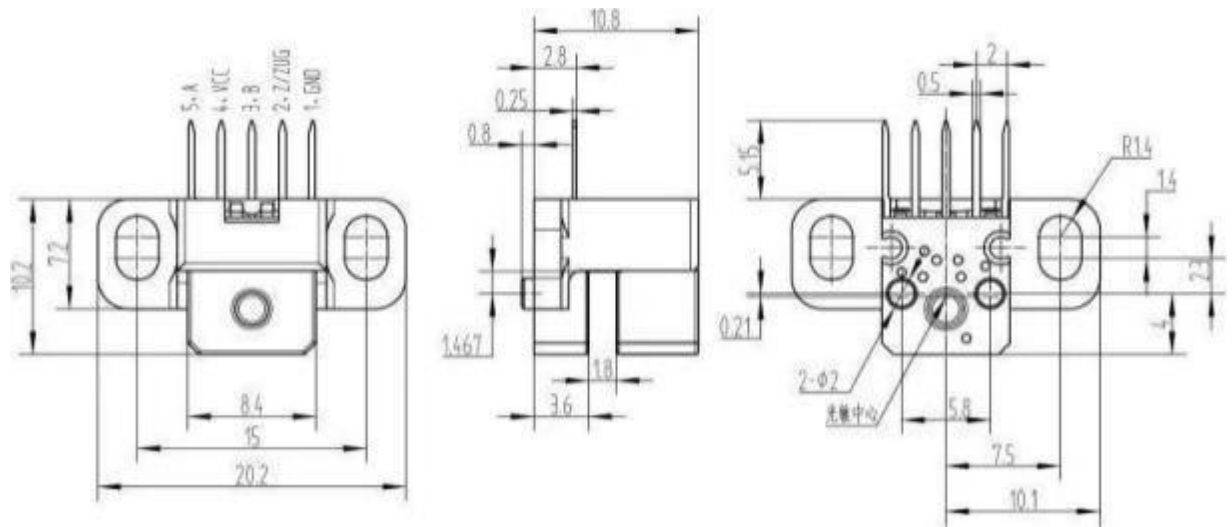


Fig.3 Mechanical dimensions with mounting hole

Standard packages Dimensions (Unit: mm)

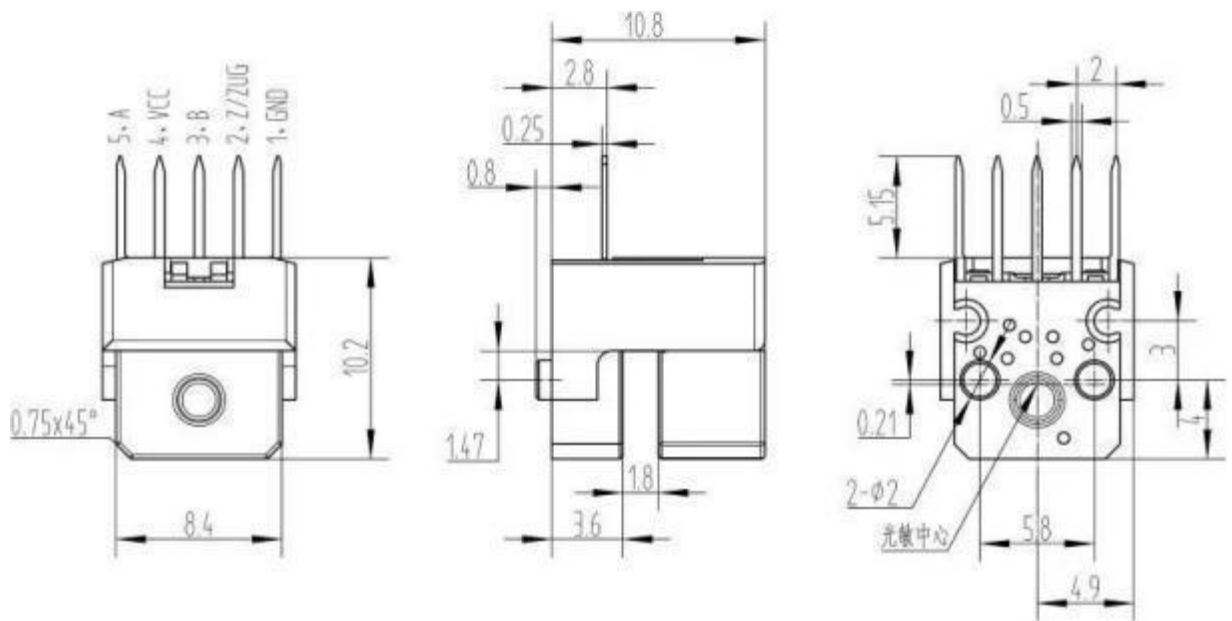


Fig.4 Mechanical dimensions of no mounting hole



Bent Lead Dimensions (Unit:mm)

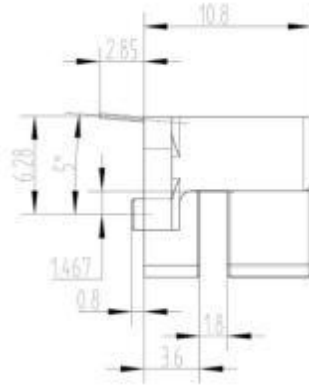


Fig.5 Angle mechanical dimensionss

Pin Definitions

Pin Name	Function	Symbol
1	Power Ground	Gnd
2	Z-signal / ZUG output	Z/ZUG
3	A Channel output, 2k Ω Pull-up inside	B
4	Supply Voltage	Vcc
5	B Channel output, 2k Ω Pull-up inside	A

Note:

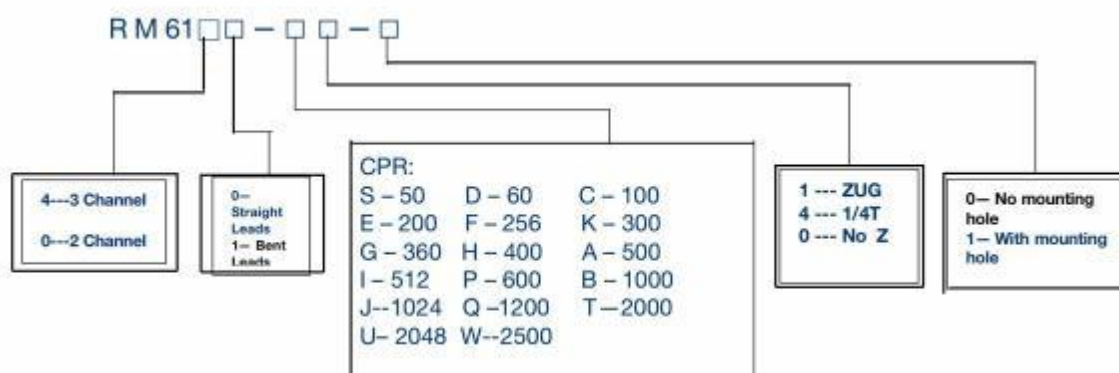
- 1. Z channel output has two options, one is 1 / 4T output, the other zero original signal - -ZUG output, ZUG output is about 1T, ZUG and A, B have no specified position relationship, but each device position is determined.
- 2. The zero output has the last model to choose 1 / 4T or ZUG, the bottom 1 means Z output is ZUG, and the last 4 means Z output is 1 / 4T



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Ordering Information

RM61 series has different options , below options are designed for ROP=11mm, the specific CPR is selected as follows



RM61 series also has linear options.

