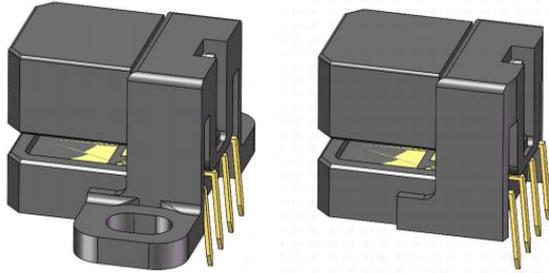


INCREMENTAL OPTICAL ENCODER MODULES

➤ RS972x Series



The RS972 Series is a high-performance optical encoder module designed for precise motion control applications.

Applications

Typical applications include: Printers, Plotters, Servo motors, Factory automation equipment.

Safety Notice: Not recommended for use in safety-critical applications (e.g., ABS braking systems).

Features

- Photo-detector Array
- -40°C to +85°C Operating Temperature
- Multiple CPR / LPI options
- C-Shape Structure, Easy to Mount
- TTL Compatible
- 3.3V to 5V Supply

Description

The RS972 series is a high-performance optical 2-channel incremental encoder module that integrates a precision encoder phase matrix receiver chip and infrared light source. The module works in conjunction with a code disk to sense rotational position and speed information.

RS972 series has linear (LPI) options: 20, 45, 90, 150, 180, 300, 360.

Absolute Maximum Ratings

Parameter	Symbol	Range
Storage Temperature	T _s	-40°C to +85°C
Operating Temperature	T _A	-40°C to +85°C
Supply Voltage	V _{CC}	-0.5V to 7V
Soldering Temperature	-	≤260°C (t ≤ 5s)
Response Frequency	f	60 KHz
Reverse Voltage	V _r	5V

Recommended Use Environment

Parameter	Symbol	Range
Operating Temperature	T	-40°C to +85°C
Power Supply	V _{CC}	Ripple voltage <100mV 2.7V to 5.5V

Electrical Characteristics

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

Parameter	Symbol	Min.	Typ.	Max.	Units	Condition
Light Source Forward Voltage	V _f	1.4	-	1.9	V	I _f =20mA
Light Source Wavelength	λ _p	840	-	860	nm	-
Receiver Chip Operating Current	I _{CC}	-	2	3	mA	-
Low Level Output Voltage	V _{OL}	-	0.2	0.4	V	-
High Level Output Voltage	V _{OH}	V _{CC} *0.8	V _{CC}	-	V	-
A/B Rising Edge Time	t _r	-	300	-	ns	-
A/B Falling Edge Time	t _f	-	20	-	ns	-
A/B Duty Cycle	D _t	40	50	60	%	-
A/B Phase Difference	θ	60	90	120	°e	-

A/B Output Waveform Diagram

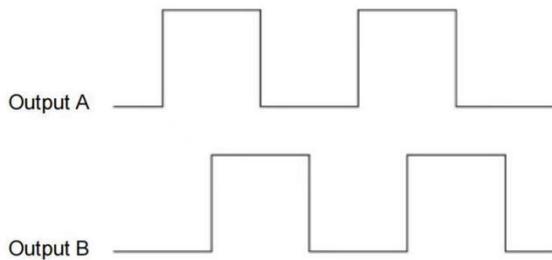


Fig.1 (Top View Module) Counterclockwise Rotation A/B Output Waveforms

Straight Lead Without Mounting Holes Dimensions

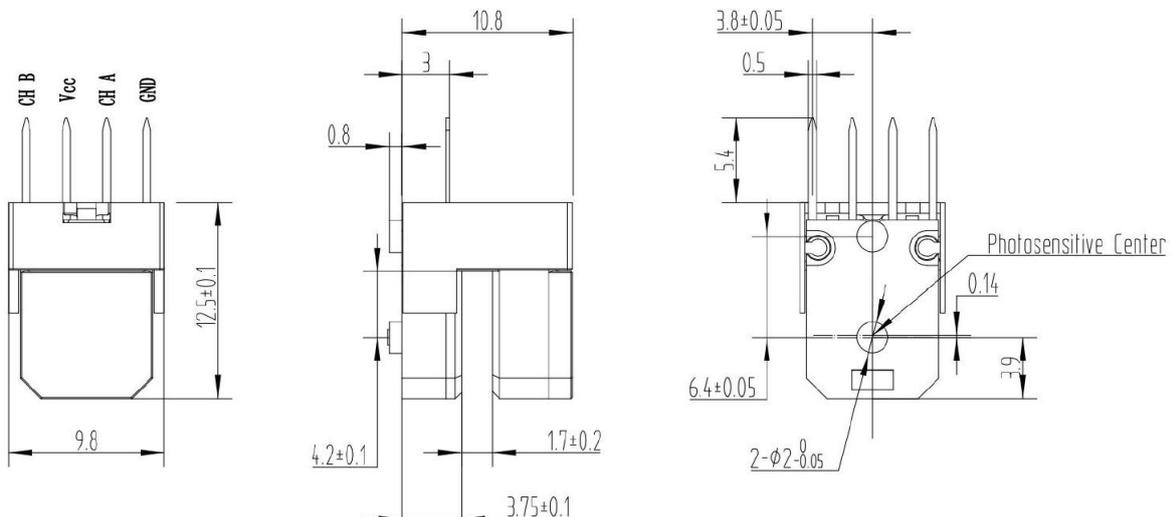


Fig.2 Straight Lead Without Mounting Holes Dimensions

Straight Lead With Mounting Holes Dimensions

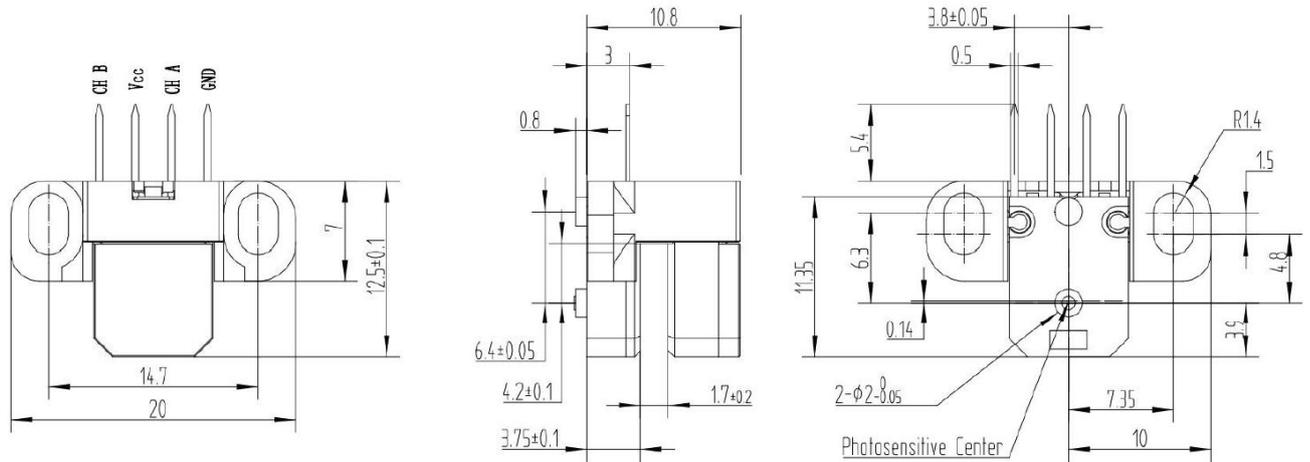


Fig.3 Straight Lead With Mounting Holes Dimensions

Bent Lead Dimensions

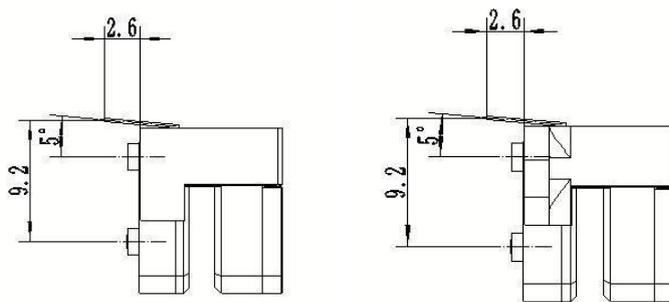


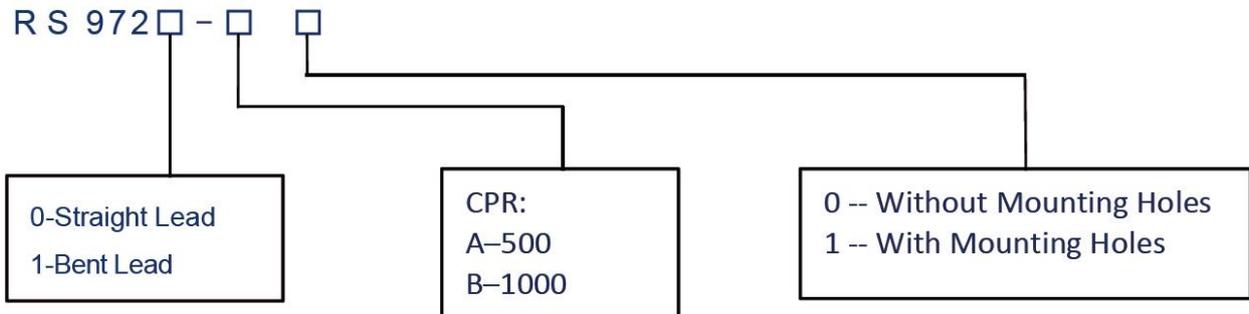
Fig.4 Bent Lead Dimension

Pin Definition

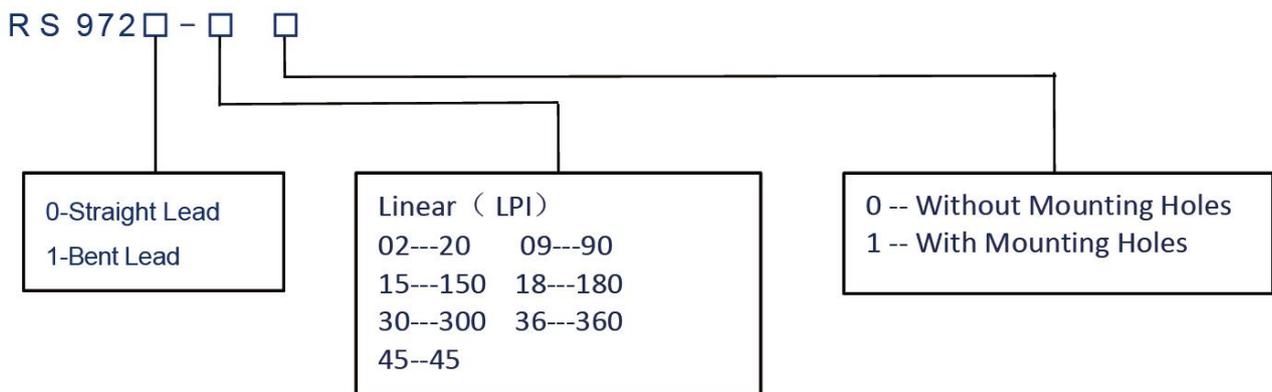
Pin Name	Function	Input/Output
Vcc	Power Supply +5V	Power Supply
CH A	A Channel output	Output
CH B	B Channel output	Output
Gnd	Ground	Ground

ORDERING INFORMATION / PART NUMBER

RS972 series is available in a variety of options, and the specific CPR selection is as follows, based on the optical radius (ROP) = 11mm.



RS972 series linear type by LPI options are as follows.



Module Printing

