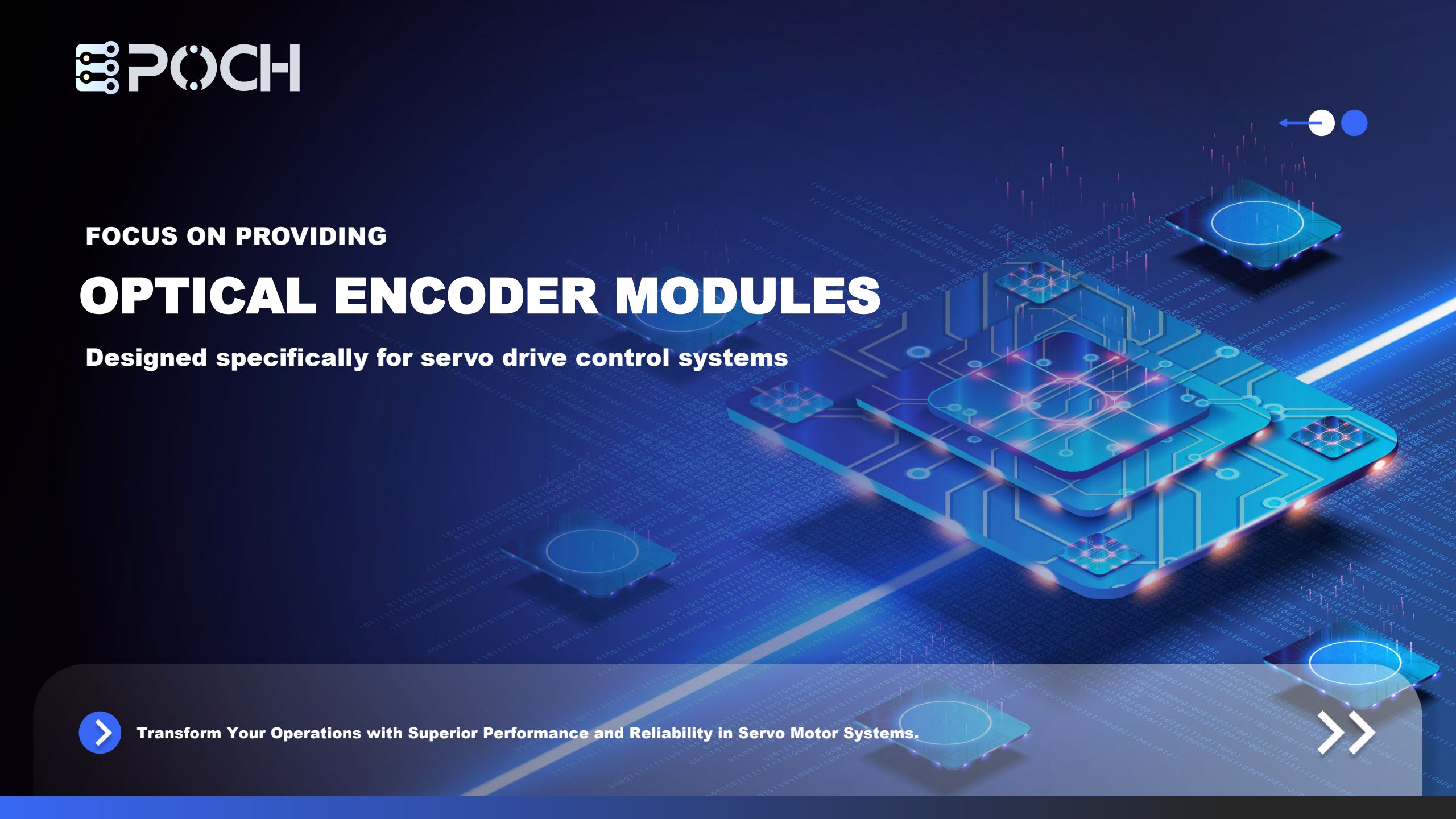
POCH

FOCUS ON PROVIDING

OPTICAL ENCODER MODULES

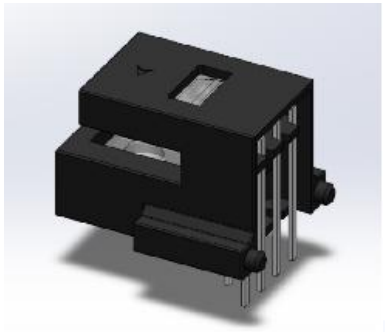
Designed specifically for servo drive control systems



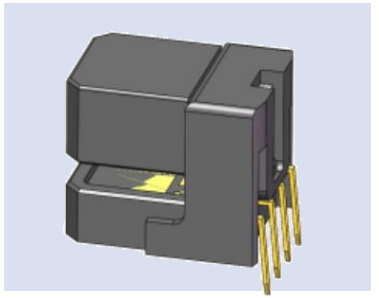
Transform Your Operations with Superior Performance and Reliability in Servo Motor Systems.

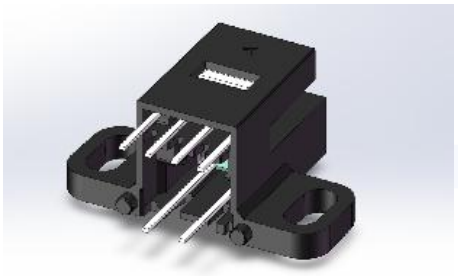
INCREMENTAL OPTICAL ENCODER MODULES

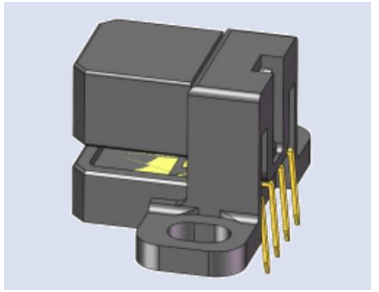
- Printers and plotters
- Servo motors
- DC motors
- Stepper motors
- Office automation systems

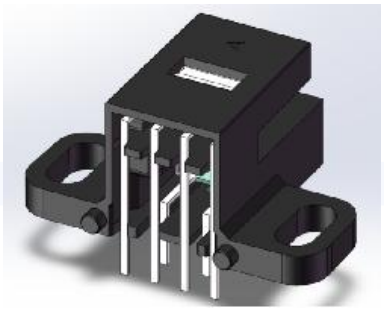


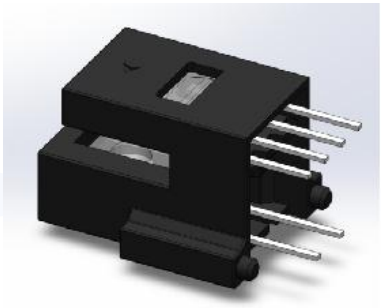
Our comprehensive line of optical encoders
delivers precision motion control across diverse applications.

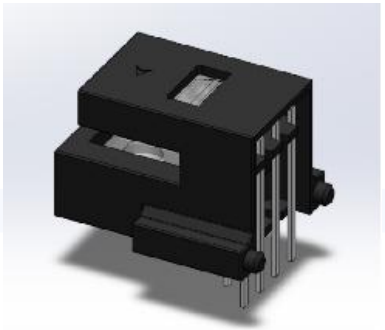












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INCREMENTAL OPTICAL ENCODER MODULES

RK Series

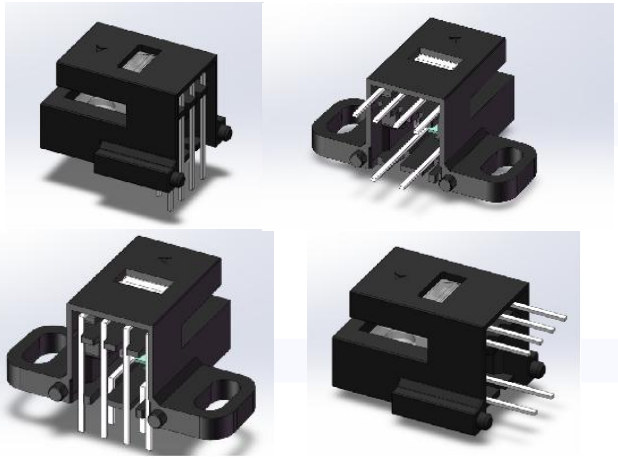
Cost-effective performance solution

Wide voltage operation: 3.3V to 5V

Extensive LPI options (20-450)

Compact C-shaped design

Versatile applications in office automation



RS70 Series

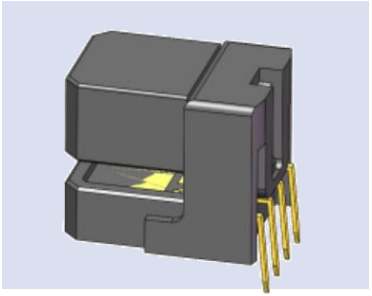
High-performance 2-channel incremental encoder

5V power supply

Response frequency up to 200 KHz

Operating temperature: -40°C to +85°C

Perfect for industrial automation



RS72 Series

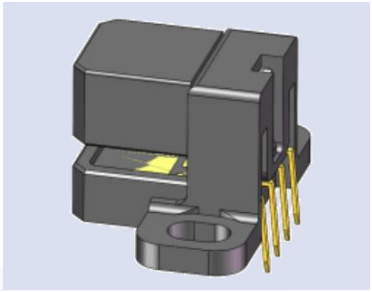
Advanced 2-channel incremental design

Wide voltage range: 2.7V to 5.5V

Integrated precision matrix receiver

Multiple mounting options

Ideal for servo motor applications



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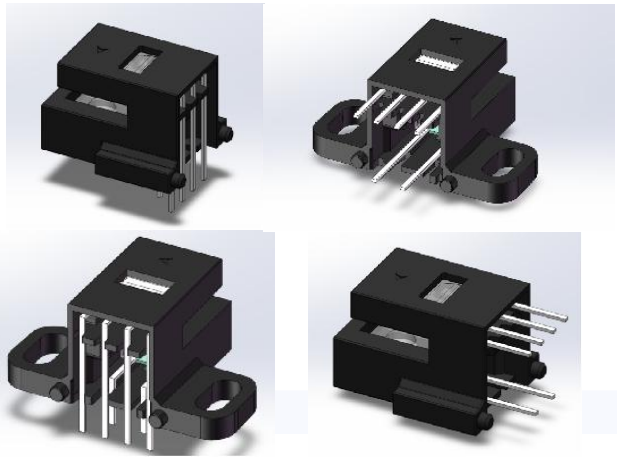
RK Series



Absolute Maximum Ratings

Parameter	Symbol	Range
Storage Temperature	T_s	-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
Forward Current (850nm Light Source)	I_f	60mA

Electrical Characteristics

Electrical Characteristics Under Recommended Operating Range, Typical at 25 ºC

Parameter	Symbol	Min.	Typ.	Max.	Units	Condition
Operating Temperature	T	-20	-	+85	ºC	-
Operating Voltage	V_{cc}	2.7	5	5.5	V	Ripple voltage<100mV
Light Source (850 nm) Forward Voltage	V_f	1.4	-	1.9	V	If=20mA
Light Source(850 nm) Wavelength	λ_p	840	-	860	nm	-
Low Level Output Voltage	V_{OL}	-	0.2	0.4	V	-
High Level Output Voltage	V_{OH}	Vcc*0.8	Vcc-0.5	-	V	-
AB Duty Ration	D_t	40	50	60	%	-
A/B Phase Difference	θ	60	90	120	°e	-
Response Frequency	f	-	-	60	KHz	-

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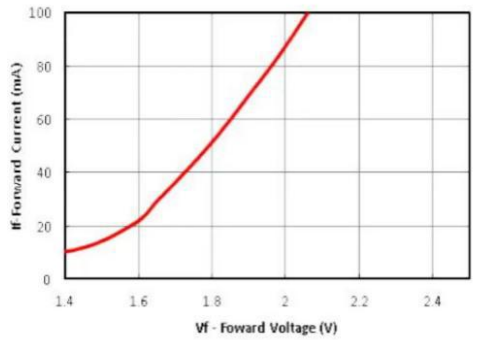
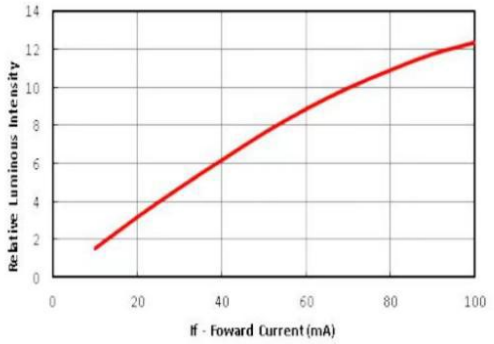
Main Size Selection (mm)

Light Source Characteristic Curve



I-V Graph

Fig.1 850nm Forward Voltage And Forward Current



L-I Graph

Fig.2 850nm Forward Current And Relative Luminous Intensity

A/B Output Waveform Diagram

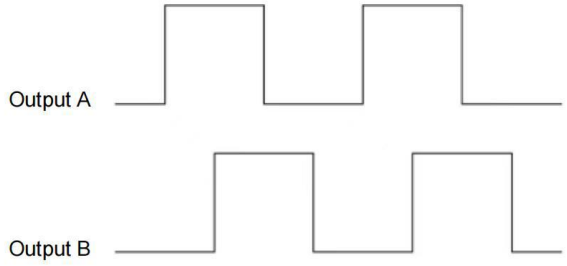


Fig.3 A/B Output Wave Form---Arrow direction

Straight Lead Dimensions

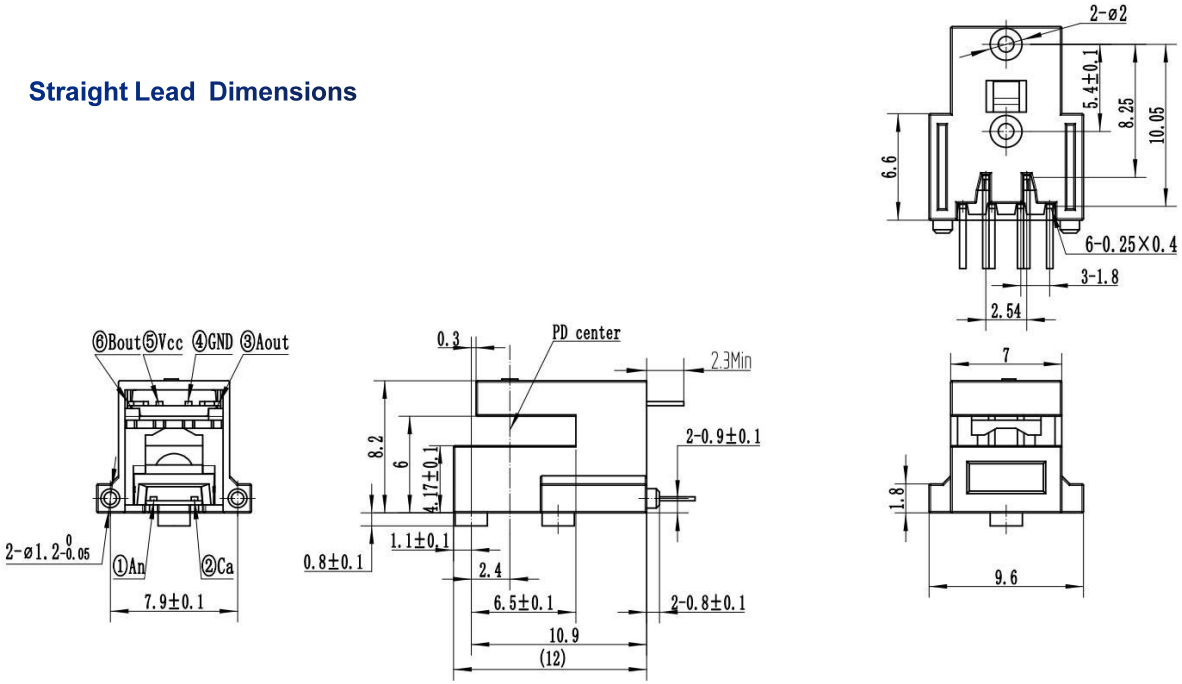


Fig.4 Straight Lead Dimensions Without Mounting Holes

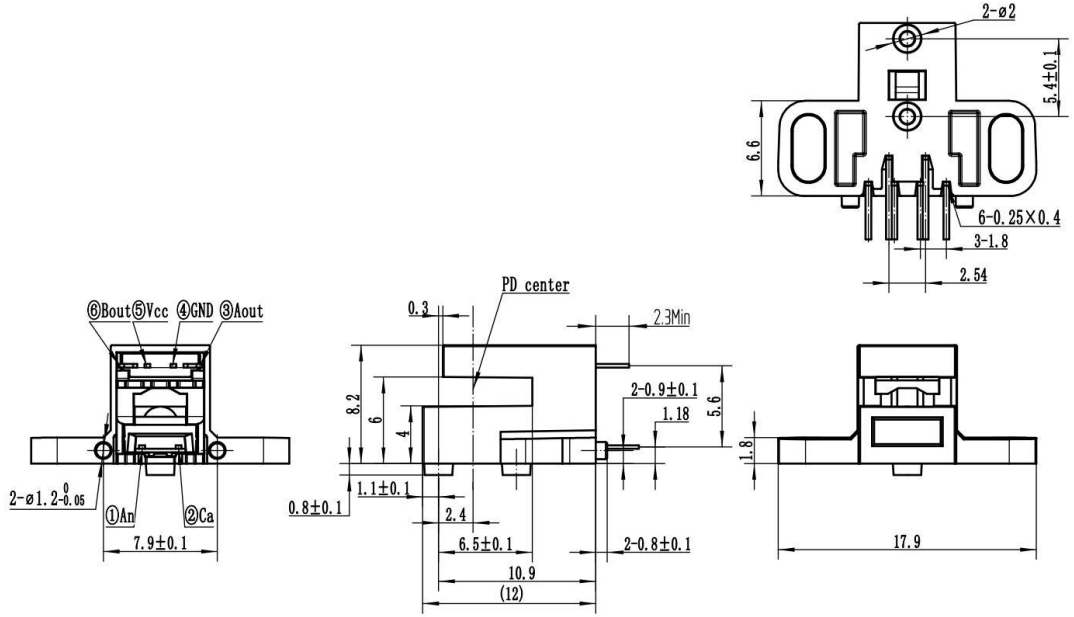


Fig.5 Straight Lead Dimensions With Mounting Holes

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Main Size Selection (mm)

Bent Lead Dimensions (Unit: mm)

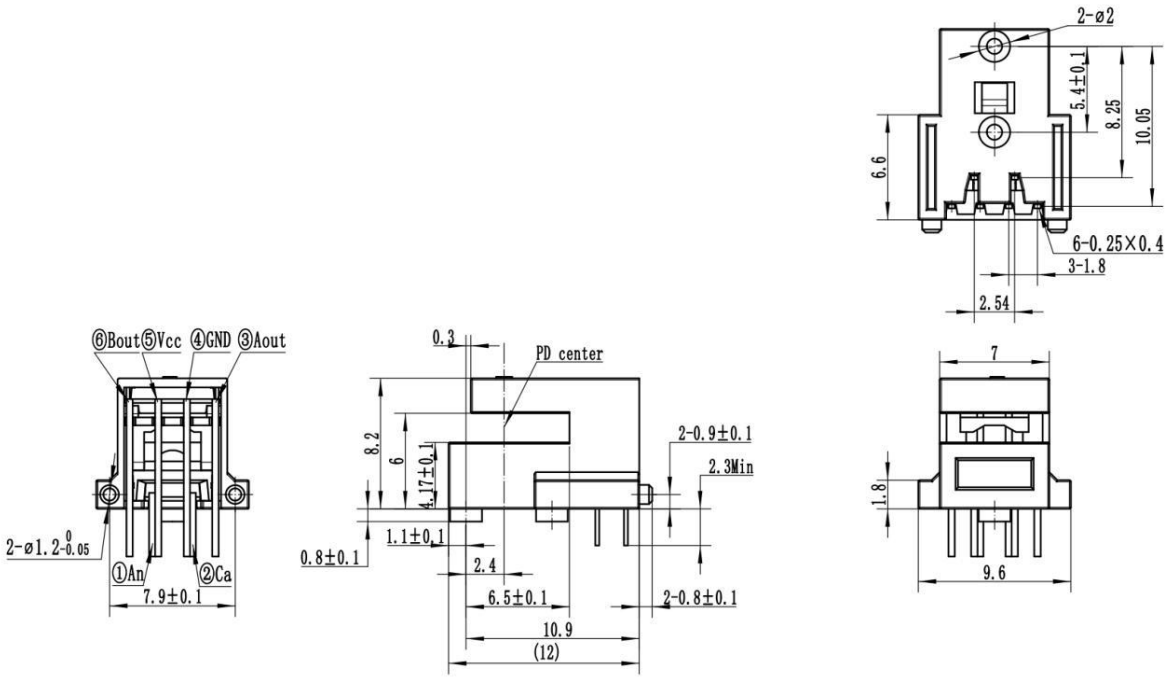


Fig.6 Bent Lead Dimension Without Mounting Holes

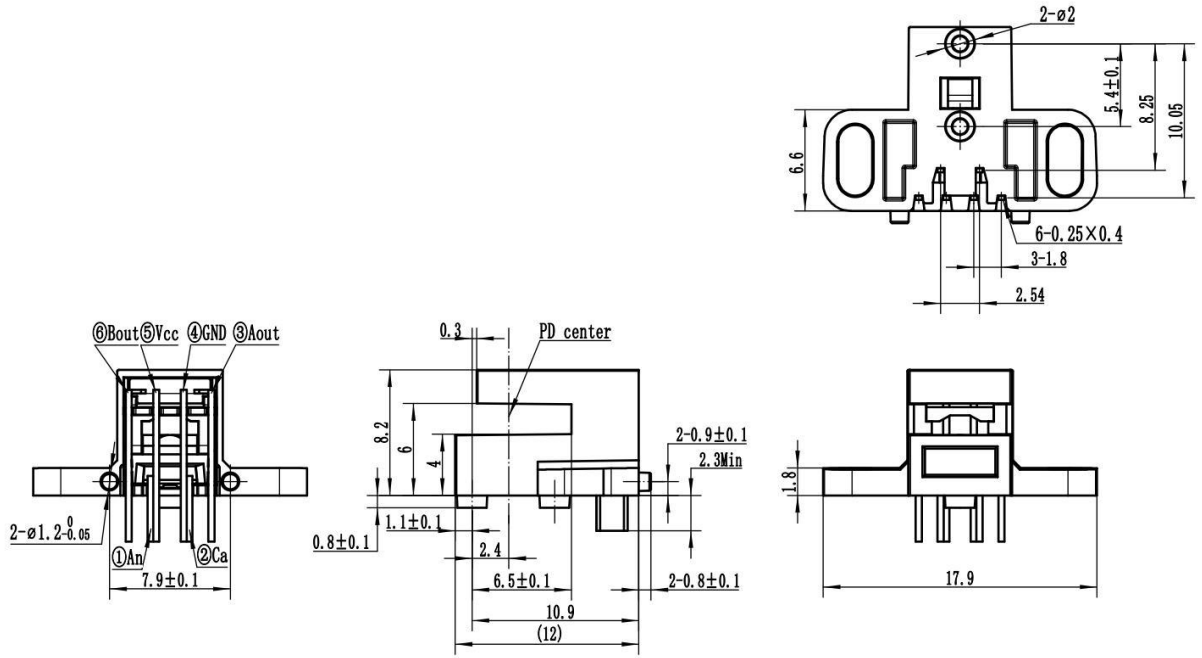


Fig.7 Bent Lead Dimension With Mounting Holes

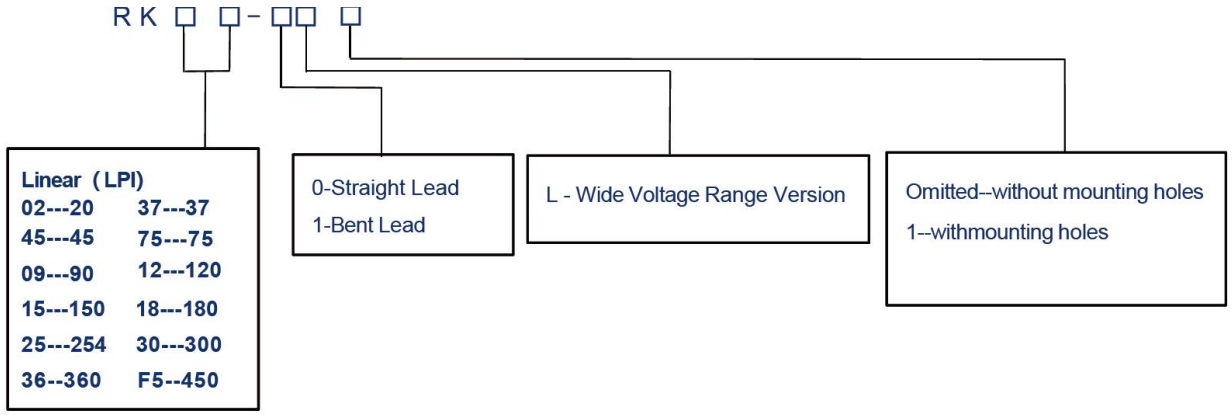
ORDERING INFORMATION / PART NUMBER

Pin Definition

Pin Name	Function	Input / Output
An	Positive pole of light source (recommended If = 1 0 mA)	-
Ca	Negative pole of light source	-
Vcc	Power Supply +	Power Supply
Aout	A Channel output	Output
Bout	B Channel output	Output
Gnd	Ground	Ground

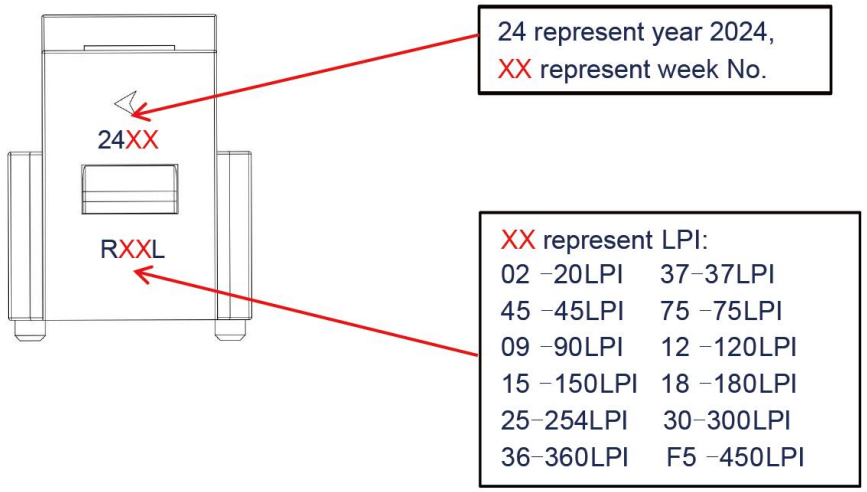
ORDERING INFORMATION / PART NUMBER

RK_L series is available in a variety of options, as shown in the table below.



*When the 450LPI module is used, the code-wheel needs to be placed within the 1/3 area of the C port close to the receive chip.

Module Printing



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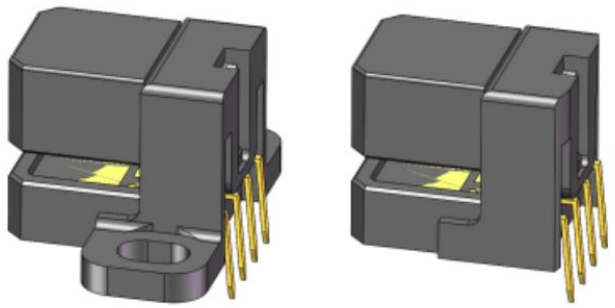
RS970x Series



Absolute Maximum Ratings

Parameter	Symbol	Range
Storage Temperature	Ts	-40°C to +85°C
Operating Temperature	TA	-40°C to +85°C
Supply Voltage	Vcc	-0.5V to 7V
Soldering Temperature	-	≤260°C (t ≤ 5s)
Response Frequency	f	200 KHz
Reverse Voltage	Vr	5V

Electrical Characteristics

Electrical Characteristics Under Recommended Operating Range, Typical at 25 ºC

Parameter	Symbol	Min.	Typ.	Max.	Units	Condition
Light Source Forward Voltage	Vf	1.9	2	2.3	V	If=20mA
Light Source Wavelength	λp	650	-	660	nm	-
Receiver Chip Operating Current	I_{CC}	-	10	20	mA	-
Low Level Output Voltage	V_{OL}	-	0.2	0.4	V	-
High Level Output Voltage	V_{OH}	2.4	4.5	-	V	-
A/B Rising Edge Time	t_r	-	120	-	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	-

Recommended Use Environment

Parameter	Symbol		Range
Operating Temperature	T		-40°C to +85°C
Power Supply	Vcc	Ripple voltage <100mV	4.5V to 5.5V

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Main Size Selection (mm)

A/B Output Waveform Diagram

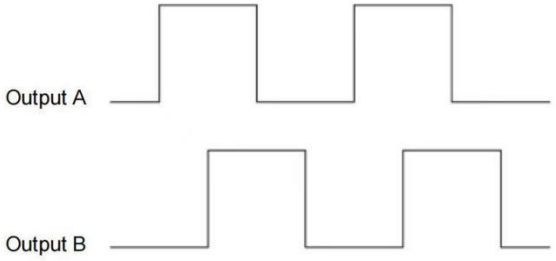

Fig.1 (Top View Module) Counterclockwise Rotation A/B Output Waveforms

Straight Lead Without Mounting Holes Dimensions

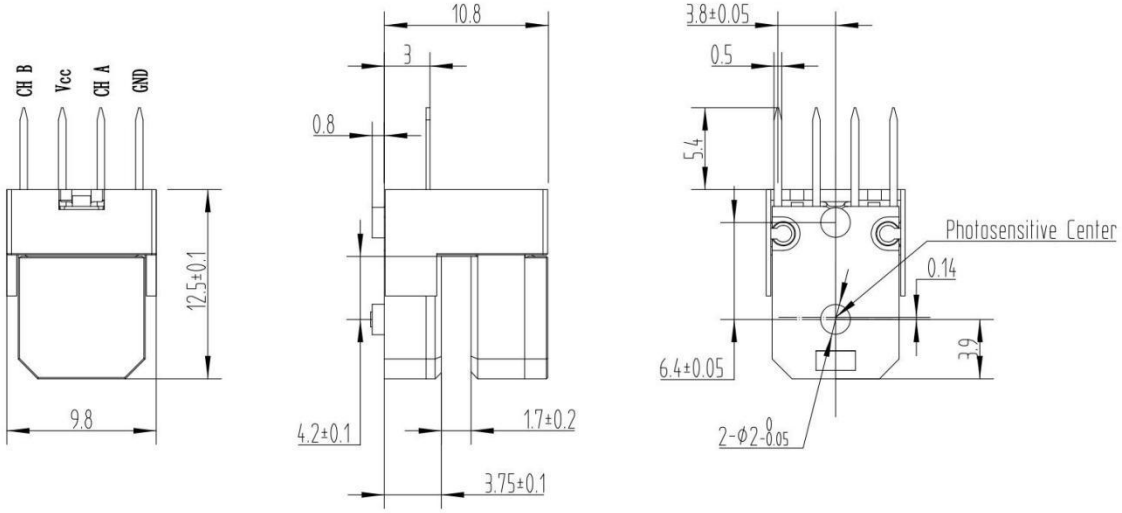

Fig.2 Straight Lead Without Mounting Holes Dimensions

Straight Lead With Mounting Holes Dimensions

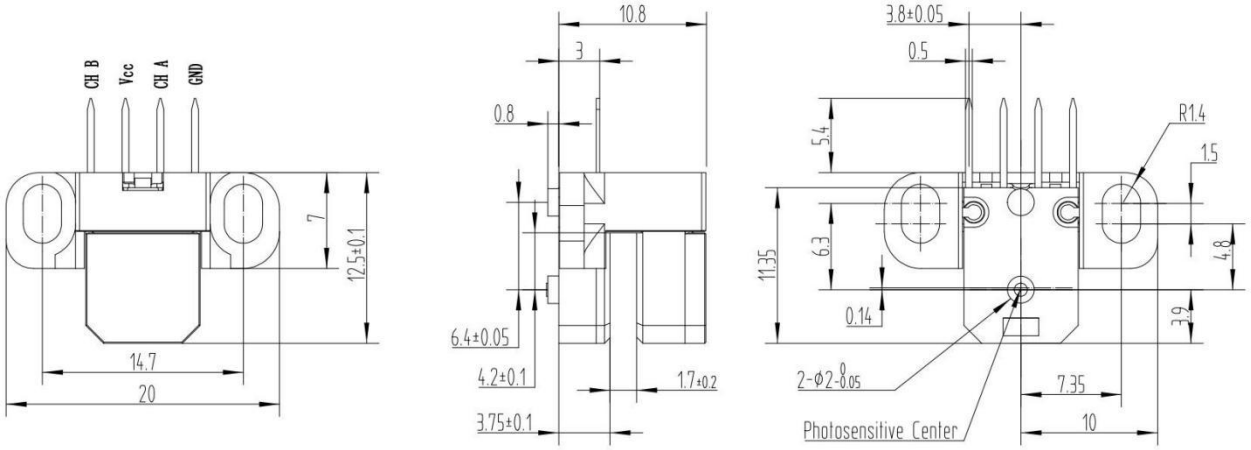

Fig.3 Straight Lead With Mounting Holes Dimensions

Bent Lead Dimensions

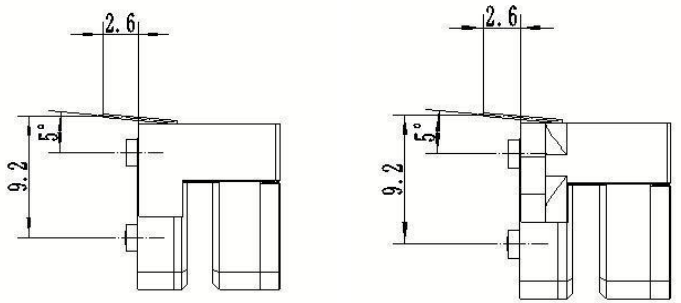

Fig.4 Bent Lead Dimension

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ORDERING INFORMATION / PART NUMBER

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

RS970 series linear type by LPI options are as follows.

RS 970□ - □ □

- 0-Straight Lead
  1-Bent Lead
- Linear（LPI）
  02---20 09---90
  15---150 18---180
  30---300 36---360
  45--450
- 0 -- Without Mounting Holes
  1 -- With Mounting Holes

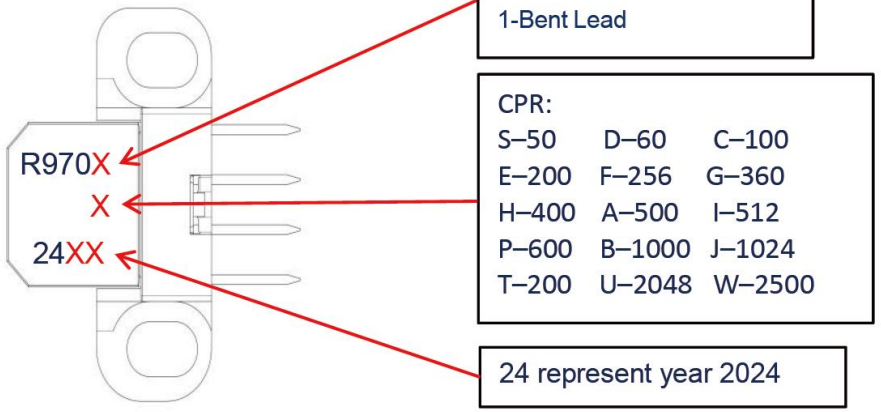
ORDERING INFORMATION / PART NUMBER

RS970 series is available in a variety of options, and the specific CPR selection is as follows, based on the optical radius (ROP) = 11mm.

RS 970□ - □ □

- 0-Straight Lead
  1-Bent Lead
- CPR:
  S–50 D–60 C–100
  E–200 F–256 G–360
  H–400 A–500 I–512
  P–600 B–1000 J–1024
  T–200 U–2048 W–2500
- 0 -- Without Mounting Holes
  1 -- With Mounting Holes

Module Printing



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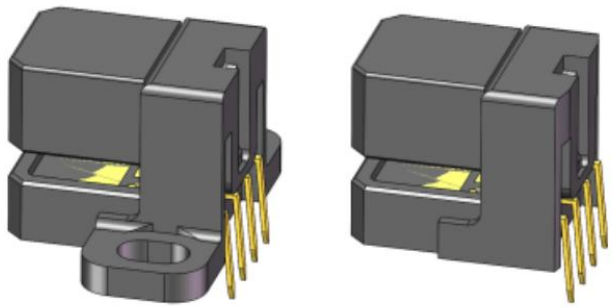
RS972x Series



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

Electrical Characteristics

Electrical Characteristics Under Recommended Operating Range, Typical at 25 ºC

Parameter	Symbol	Min.	Typ.	Max.	Units	Condition
Light Source Forward Voltage	Vf	1.4	-	1.9	V	If=20mA
Light Source Wavelength	λp	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}	Vcc*0.8	Vcc	-	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	-

Recommended Use Environment

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

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Main Size Selection (mm)

A/B Output Waveform Diagram

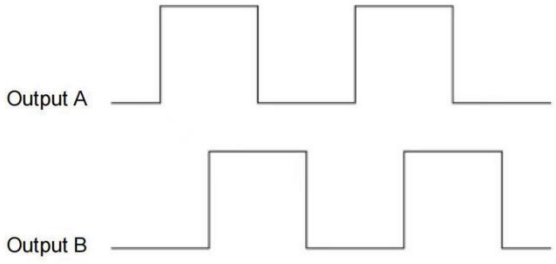

Fig.1 (Top View Module) Counterclockwise Rotation A/B Output Waveforms

Straight Lead Without Mounting Holes Dimensions

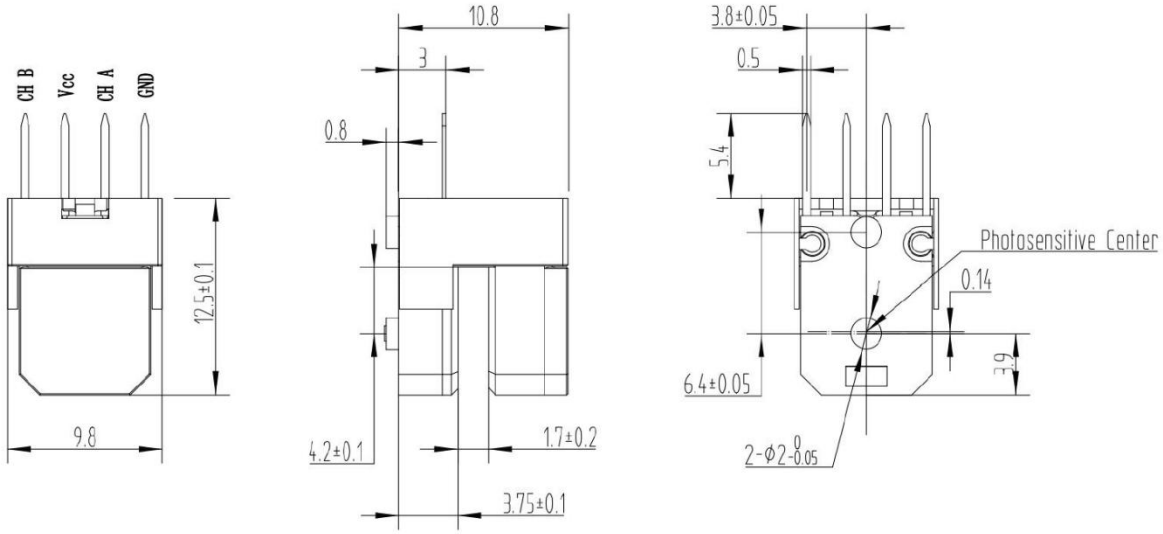

Fig.2 Straight Lead Without Mounting Holes Dimensions

Straight Lead With Mounting Holes Dimensions

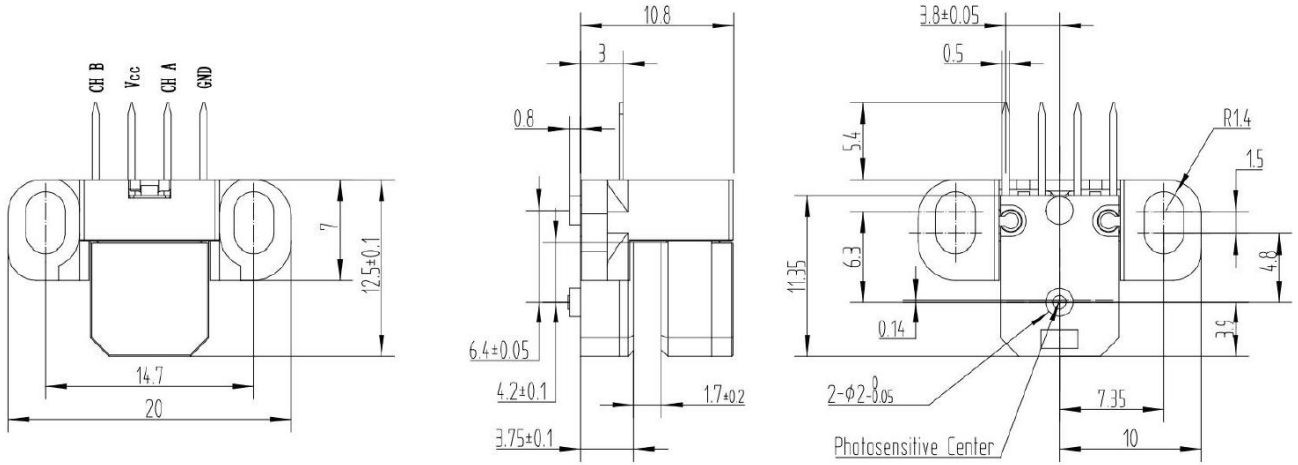

Fig.3 Straight Lead With Mounting Holes Dimensions

Bent Lead Dimensions

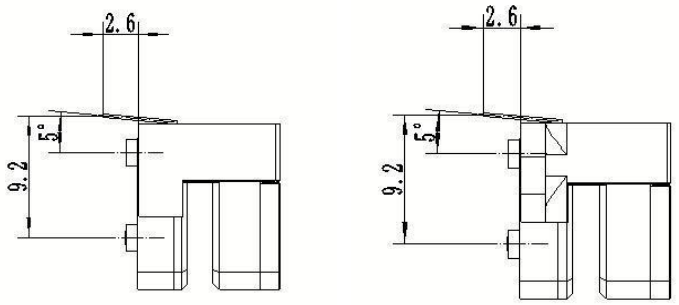

Fig.4 Bent Lead Dimension

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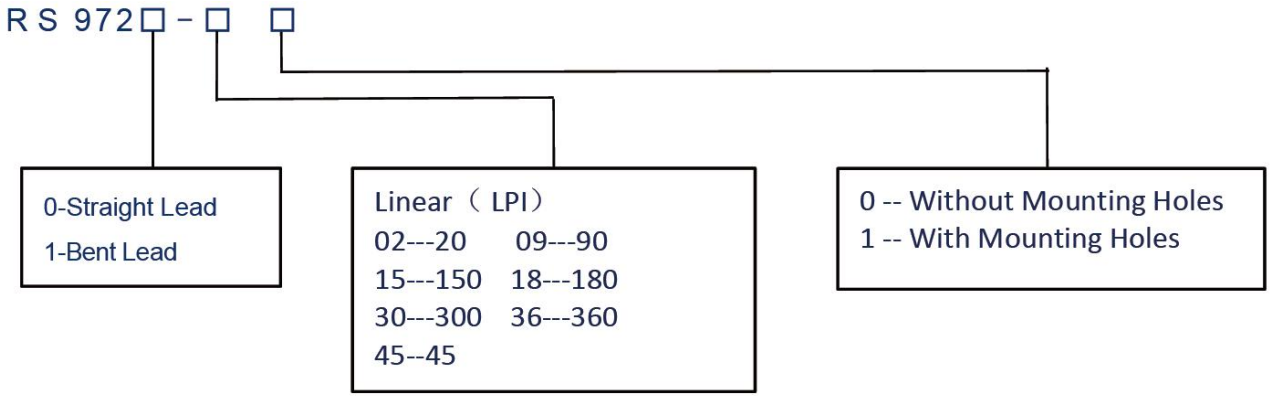
ORDERING INFORMATION / PART NUMBER

Pin Definition

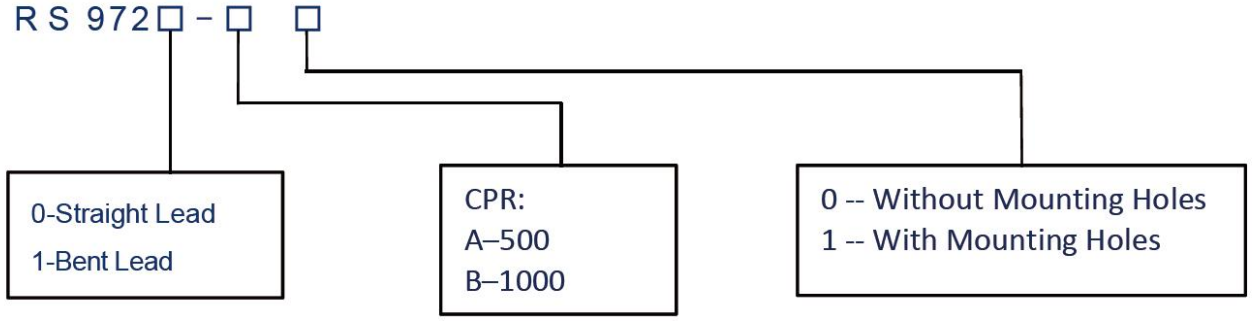
Pin Name	Function	Input/Output
Vcc	Power Supply +5V	Power Supply
CH A	A Channel output	Output
CH B	B Channel output	Output
Gnd	Ground	Ground

RS972 series linear type by LPI options are as follows.

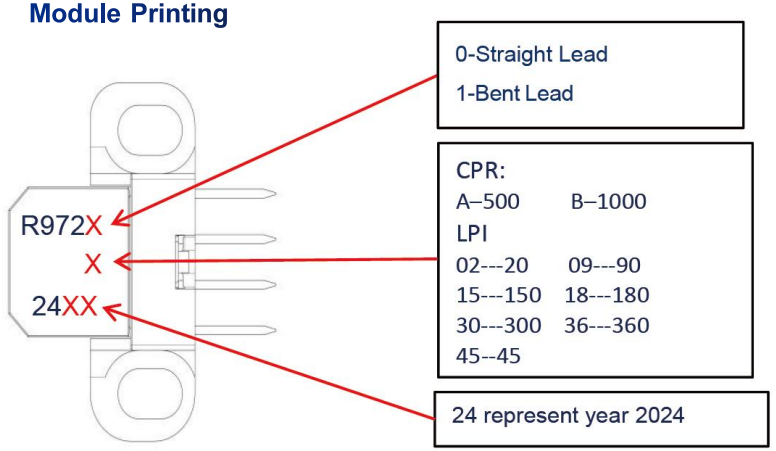


ORDERING INFORMATION / PART NUMBER

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



Module Printing



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