

JHS-30A Optical Kit Encoder

A, B Channel Quadrature TTL Outputs



Features

- Two channel quadrature TTL compatible outputs
- 96 ~ 512 cycles per resolution (CPR)
- Widely operating environment temperature from -40 °C ~85°C
- Intelligent mounting design
- Compact size appearance
- Cost effectively
- Single 5V DC supply
- RoJHS compatible

Description

THE SENSOR - JHS series of Kit Encoder JHS-30A JHS30B JHS56 all composed of the high intelligent device solution to the base and cover mounting, disc design, push-on-hub and the optional output including with single-ended and differential, comprising three channel A / B / Index complimentary in accordance with any standard to customized appliance respectively.

THE SENSOR endeavored to invent and develop the disc supplying the mostly trend toward market needs through possessing superior disc technology. Regarding to the base and cover offered are both manufactured from our own mold, injection facility constructing of the polyethylene capable to execute the protection operation against the outside impact.

The peculiar design of the slider which was included the aligning pins at side of the base enabled the aligning holes of sensor to fit directly without the extra alignment for the sensor position adjustment.

The intelligent patent mounting ensure JHS series to reach at the more capability technology no matter to assemble or to disassemble the module for the disc replacement. The attached module on the side of the base plate advances the high flexible adjustment during the disc placement in the highlight security condition method. Users would be able to install the disc at the spacious environment as well as the attached module which has been prior to fix by the aligning pins simultaneously.

The optional output signal method would be available for the customized selection in either single-ended or differential. THE SENSOR also attentive to affix the output connection cable to meet your functional needs in advanced.

THE SENSOR emphasize on the constantly development of the prominent disc performances as well as the patent invention, featured the high temperature resistant disc and easy push-on-hub functional accordingly. We utilized the diversity resolution from 50 to 1024 CPR in addition to our technical manufacturing chip disc center offering the reliable quality to be with you.

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Electrical Electrical

Characteristics

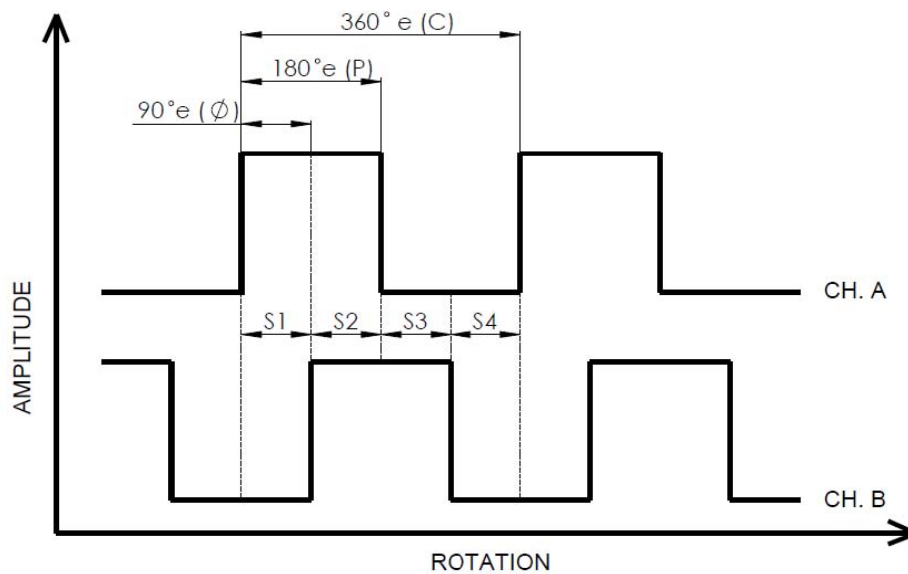
Parameter	Min.	Typ.	Max.	Units
Storage Temperature	- 40		85	°C
Operating Temperature	- 40		85	°C
Supply Voltage	4.5	5.0	5.5	V
Supply Current		17	40	mA
Output Voltage	- 0.5		7	V
Output Current Per Channel	- 1.0		5.0	mA
High Level Output Voltage	2.4			V
High Level Output Current	-0.04			mA
Low Level Output Voltage			0.4	V
Low Level Output Current			3.2	mA
Count Frequency			20	kHz
* Typ. value measured subject to Vcc = 0.5V and Temperature 25 °C.			100	pF
Cycle Error	ΔC		3 5.5	°e

Encoding Characteristics

Parameter	Sym.	Min.	Typ.	Max.	Units
Storage Temperature		- 40		85	°C
Operating Temperature		- 40		85	°C
Supply Voltage		4.5	5.0	5.5	V
Supply Current			17	40	mA
Output Voltage		- 0.5		7	V

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Output Waveform



Count (N): The total amount of the count (bar and window) as a pair among per rotation.

Cycle (C): it indicates the fully one cycle of the electrical degrees measured as $360^\circ e$ degree.

Cycle Error (ΔC): The deviation in the electrical degree among the pulse width against its ideal value. It's the symbol of the uniform cycle.

Pulse Width (P): Normally it refers to the "HIGH" number of electrical of the output during the one cycle.

Pulse Width Error (ΔP): The deviation in the electrical degree among the pulse width against its ideal value about $180^\circ e$ degree.

State Width (S): The number of electrical degree between Channel A and Channel B as a result of the transition in the output state. There are 4 states per cycle from the output of Channel A and Channel B. For each states nominated at $90^\circ e$ (S1-S4).

State Width Error (ΔS): The deviation in electrical degree among each of states width upon the ideal $90^\circ e$.

Phase (ϕ): The number of electrical degrees between the centre of the high state on channel A and the centre of the high state on channel B. This value is nominally $90^\circ e$ (the signals A and B can be used for quadrature)

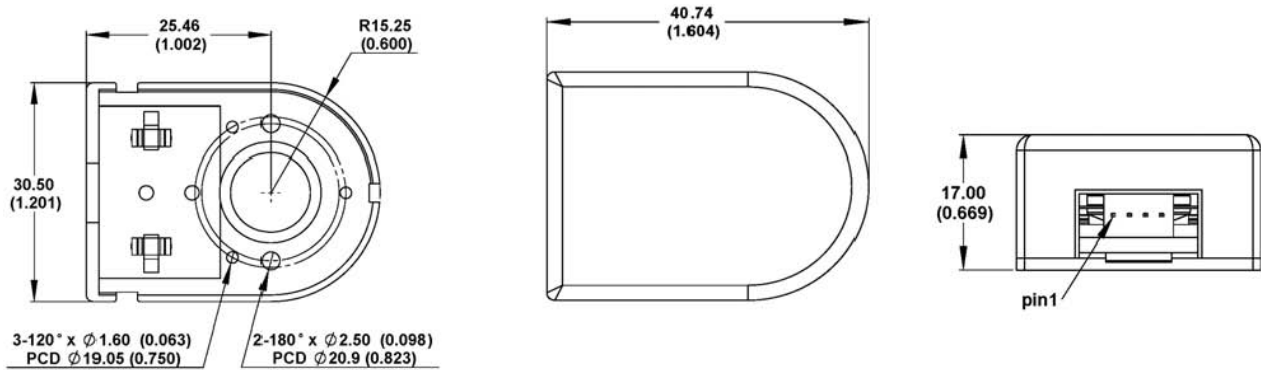
Phase Error ($\Delta \phi$): The deviation in electrical degrees of the phase from its ideal value of $90^\circ e$.

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Mechanical Specification

Package Dimensions



Top View (base plate only) Top View Side View

Note: Dimensions in millimeters (inches)

Pin-out Description

Voltage (4 pin)

Pin	Color	Description
1	black	Ground

Storage Temperature -

Operating Temperature -

Supply Voltage -

Supply Current -

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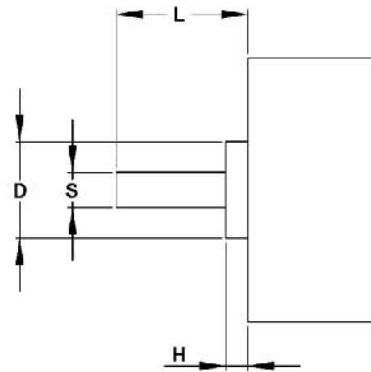
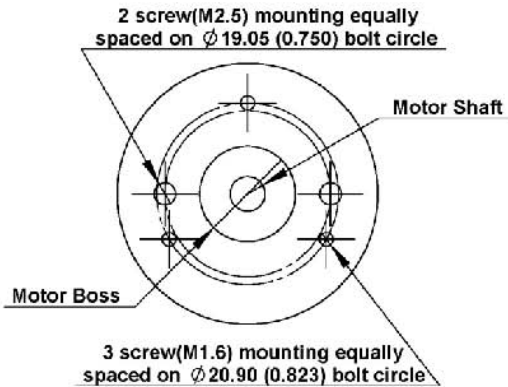
Mechanical Characteristics

Parameter	Sym.	Value	Tolerance	Units	
Storage Temperature		- 40	85	°C	
Operating Temperature		- 40	85	°C	
Supply Voltage		4.5	5.0	5.5	V
Supply Current			17	40	mA
Output Voltage		- 0.5		7	V
Output Current Per Channel		- 1.0		5.0	mA
High Level Output Voltage		2.4			V
High Level Output Current		-0.04			mA
Low Level Output Voltage				0.4	V
Low Level Output Current				3.2	mA
Count Frequency				20	kHz
Cycle Error	ΔC		3	100 5.5	pF °e
Pulse Width Error	ΔP		7	30	°e
State Width Error	ΔS		5	30	°e
Phase Error	$\Delta \phi$		2	15	°e
2 white Channel A					

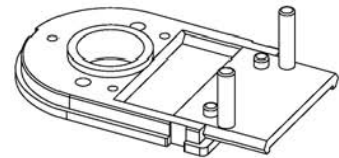
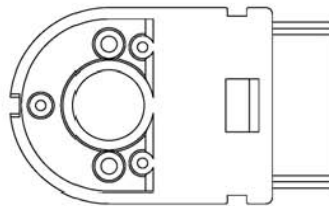
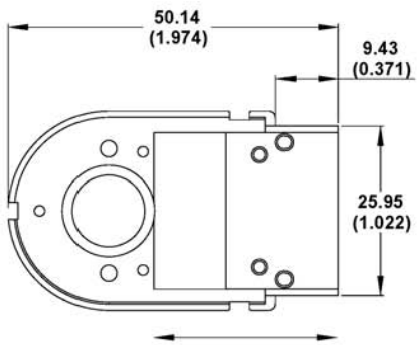
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Assembly Instruction

Mounting Considerations



Mounting Holes Side View (Motor)



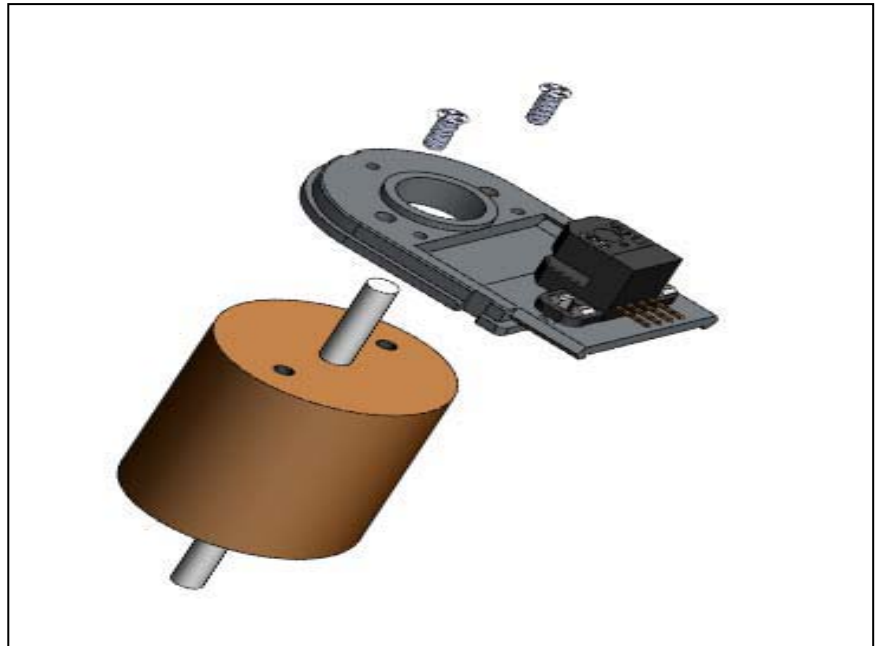
Base Plate with Slider (to draw out the slider precede to install encoder disc)

Note: Dimensions in millimeters (inches)

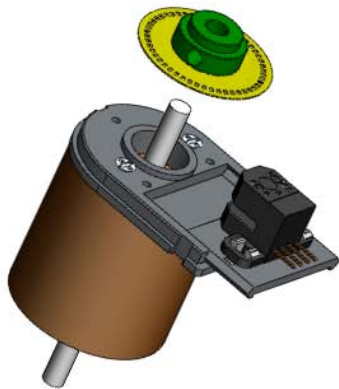
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Step 1. Base Mounting:

To draw out the slider precede to install encoder disc firstly. Then, to fix the base by tightening with two screws properly.



Step 2.1



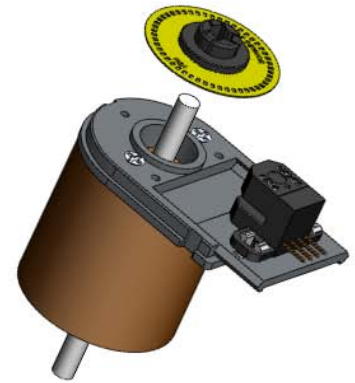
Aluminum hub

Option A:

Slip the aluminum hubdisc on the shaft of motor.

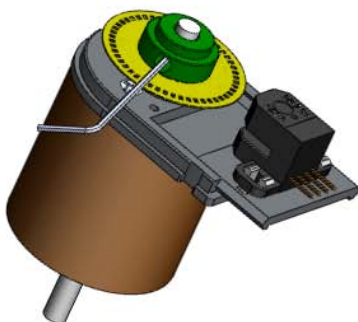
Option P:

Slip the push-on-hubdisc on the shaft of motor.



Push-on-hub

Step 2.2



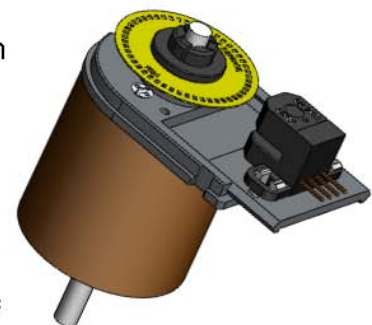
Aluminum hub

Option A:

Tighten screw with the hex wrench after pressing down the hub. In the mean time to adjust the proper gap of hub position.

Option P:

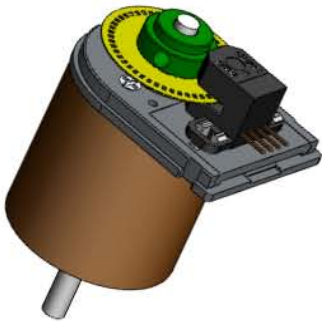
To ensure the proper gap of hub position by the manual adjustment.



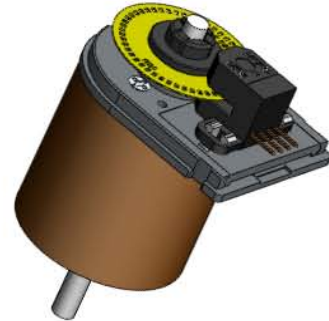
Push-on-hub

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Step 3. Module Installation: Slip the slider into the optical module until the bottom reached.

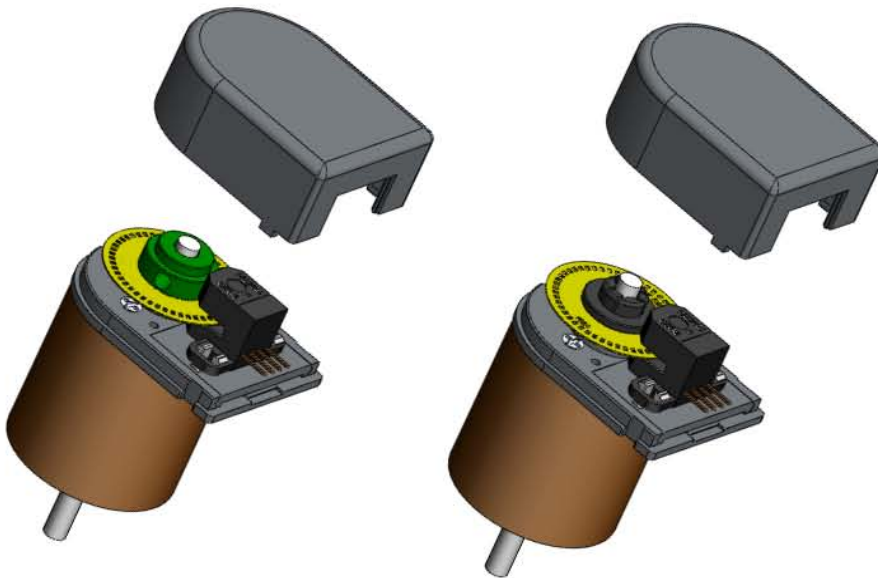


Aluminum hub



Push-on-hub

Step 4. Cover Mounting: Place and press the cover down the module with a snap.



Aluminum hub

Push-on-hub

Step5. Completion: The encoder is available for use.



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Ordering Information

JHS-3
0A

C-

Resolution Shaft Diameter Hub

96: 96 CPR 4: 4mm A:aluminum

100: 100 CPR 5: 5mm P:plastic (push-on-hub)

192: 192 CPR 6: 6mm

200: 200 CPR 6.35: 6.35mm(1/4")

256: 256 CPR 8: 8mm

360: 360 CPR

400: 400 CPR

500: 500 CPR

512: 512 CPR