



# HS40A

Encoder modules



## ● Application 應用

- Stepping motor 步進馬達
- Automated equipment 自動化設備

## ● Feature 特點

- Reliable sturdy design 可靠的堅固設計
- Small size 體積小
- Easy mounting 易安裝

## ● Resolution 解析度

600, 625, 720, 800, 1000, 1024, 1200, 1250, 1440, 1600, 2000, 2048, 2400, 2500, 2880, 3200, 4000, 4096, 16000, 16384 P/R

## ● Electrical Spec 電氣規格

Resolution		600 ~ 4096			4800 ~ 16384
Output circuit		Z□VH、Z□VT Z□OH、Z□OT	Z□PH、Z□PT	Z□LH、Z□LT	Z□LH、Z□LT
Supply voltage		8 ~ 28V、4.5 ~ 5.5V			8 ~ 28V、4.5 ~ 5.5V
Supply current (Max.)		80mA		100mA	110mA
Signal		A, B, Z		A+,A-,B+,B-,Z+,Z-	A+,A-,B+,B-,Z+,Z-
Rise/Fall time (Max.)		250ns*	50ns		10ns
Frequency		300kHz	500kHz		1.5MHz
Outout voltage	“H”	VCC – 2V			2.4V min.
	“L”	0.5V Max.			0.5V Max.
Max. output current		20mA	100mA	20mA、100mA	20mA

\*Pull up Resistance = 2kΩ

## ● Mechanical Spec 機械規格

Hollow diameter 孔徑	Φ 5, 6, 6.35, 8mm
Housing material 殼材質	PC
Max. R.P.M. 最大轉速	7500 rpm *
Net weight 淨重	60g

\*R.P.M = Frequency \* 60 / Resolution

## ● Environmental Spec 環境條件

Operating temp. 操作溫度	-20 ~ +85°C
Storage temp. 保存溫度	-20 ~ +85°C
Operating humidity 操作濕度	RH 85% Max. non-collecting
Shock 衝擊	490 m/s <sup>2</sup> , 3Dx2 times
Vibration 震動	1.2mm, 10~55KHz, 3Dx30min.
Protection 防護等級	IP 40



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## ● Connection 接線方式

Signal : A, B, Z (UL2464、AWG 26、5pin + Shield)

JST-S6B-ZR-SM4A-TF (相容連接器)

紅	黑	白	綠	黃	藍
Vcc	Gnd	A	B	Z	Shield

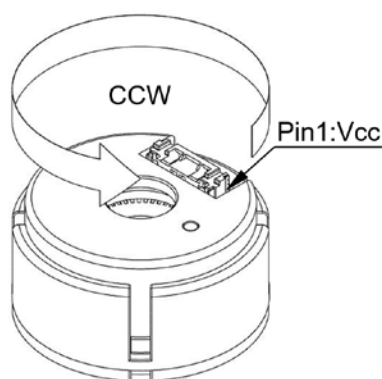
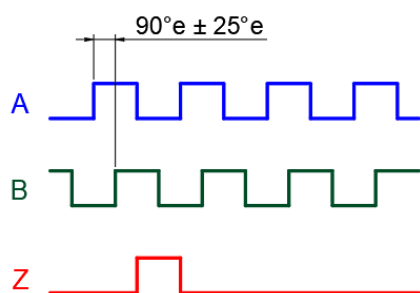
Signal : A+, A-, B+, B-, Z+, Z- (UL2517、AWG 26 or AWG 28、8pin + Shield)

Molex-5023860970 (相容連接器)

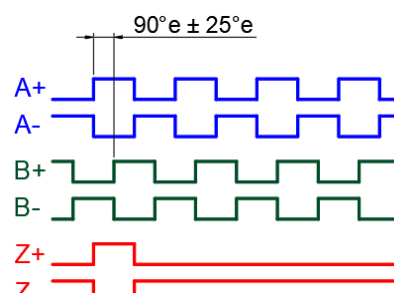
紅	黑	白	白/黑	綠	綠/黑	黃	黃/黑	藍
Vcc	Gnd	A+	A-	B+	B-	Z+	Z-	Shield

## ● Output Waveform 輸出波形

Shaft rotation CCW  
A leads B

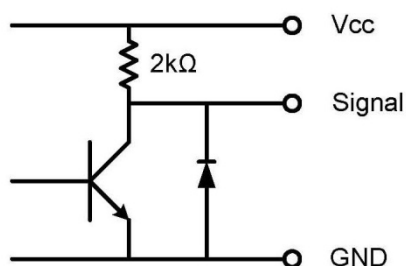


Shaft rotation CCW  
A leads B

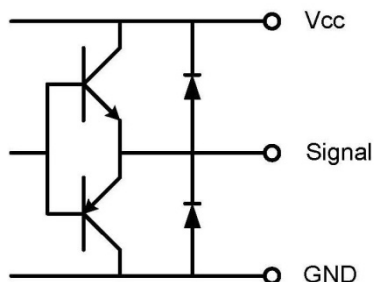


## ● Output Circuit 輸出電路

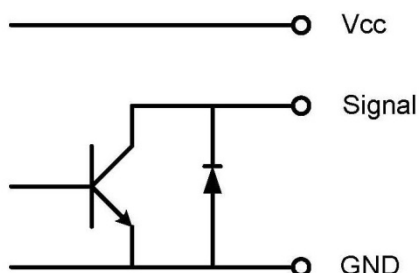
Voltage output



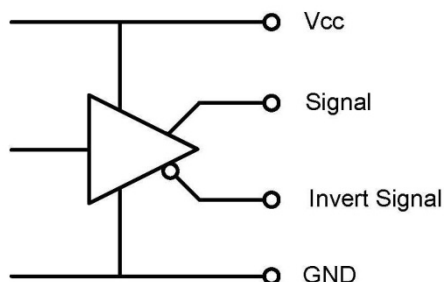
Push pull



Open collector



Line driver 5V =>(26C31)、28V(7272)





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## ● Ordering Information 訂購資訊

HS40A - XXXX - X X X X - X X - NXXX

解析度(Resolution)
600 ~ 16000

輸出相位(Phase)
Z      A, B, Z

軸孔(Hollow)
5      5mm
6      6mm
6.35      6.35mm
8      8mm

樣式編號(Type No.)
001, 002, 003 ...

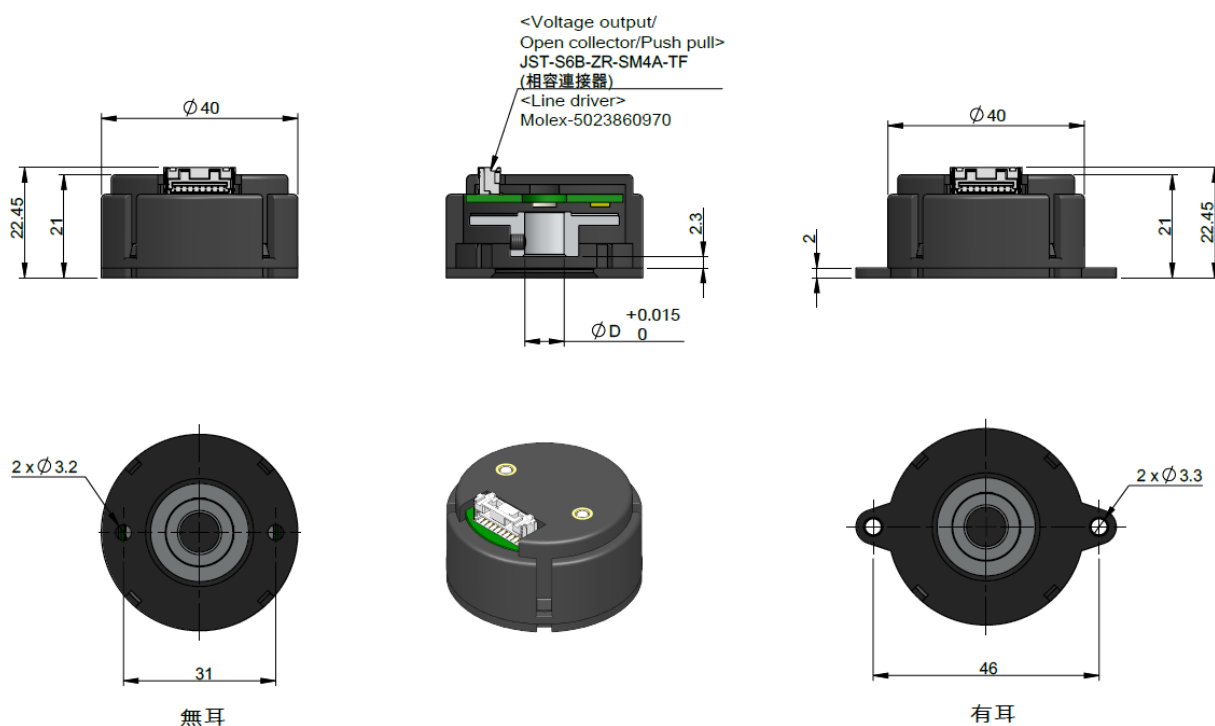
底座樣式(Base)
D      無耳(Default)
E      有耳(Ears)

上蓋樣式(Cover)
H      有孔(Hole on cover)
C      無孔(Closed cover)

工作電壓(Supply voltage)
H      8~28V
T      TTL (5V)

輸出電路(Output circuit)
V      Voltage output(NPN)
O      Open collector(NPN)
P      Push pull
K      Push pull(with inverted signal)
L      Line driver

## ● Mechanical Drawing 外型尺寸





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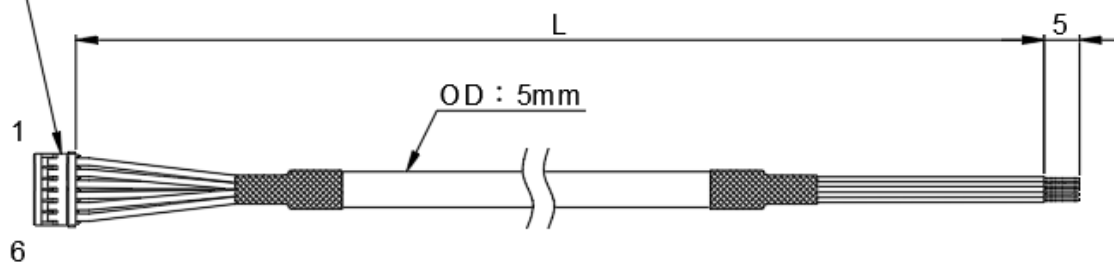
## ● Cable Introduction 線材說明

### <Voltage output / Open collector / Push pull>

JST  
ZHR-6  
SZH-002T-P0.5

顏色順序：

1. 紅
2. 黑
3. 白
4. 綠
5. 黃
6. Shield



<線材規格>

AWG26、UL2464、雙隔離編織

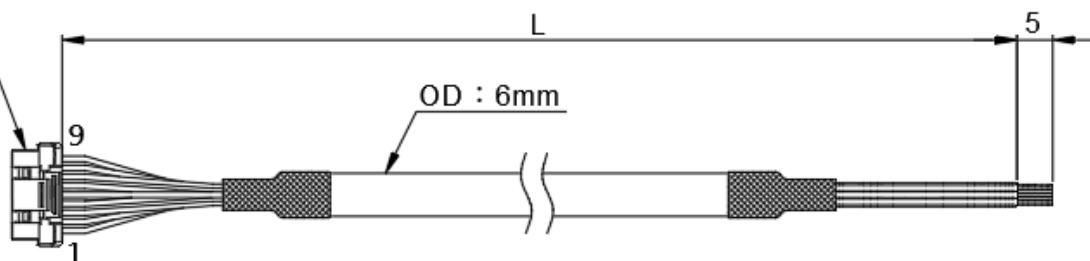
Cable length 線長：500、1000、2000mm

### <Line driver>

Molex  
5023800900  
5023810000

顏色順序：

1. 紅
2. 黑
3. 白
4. 白/黑
5. 綠
6. 綠/黑
7. 黃
8. 黃/黑
9. Shield



<線材規格>

AWG28、UL2517、雙隔離編織

Cable length 線長：500、1000、2000mm

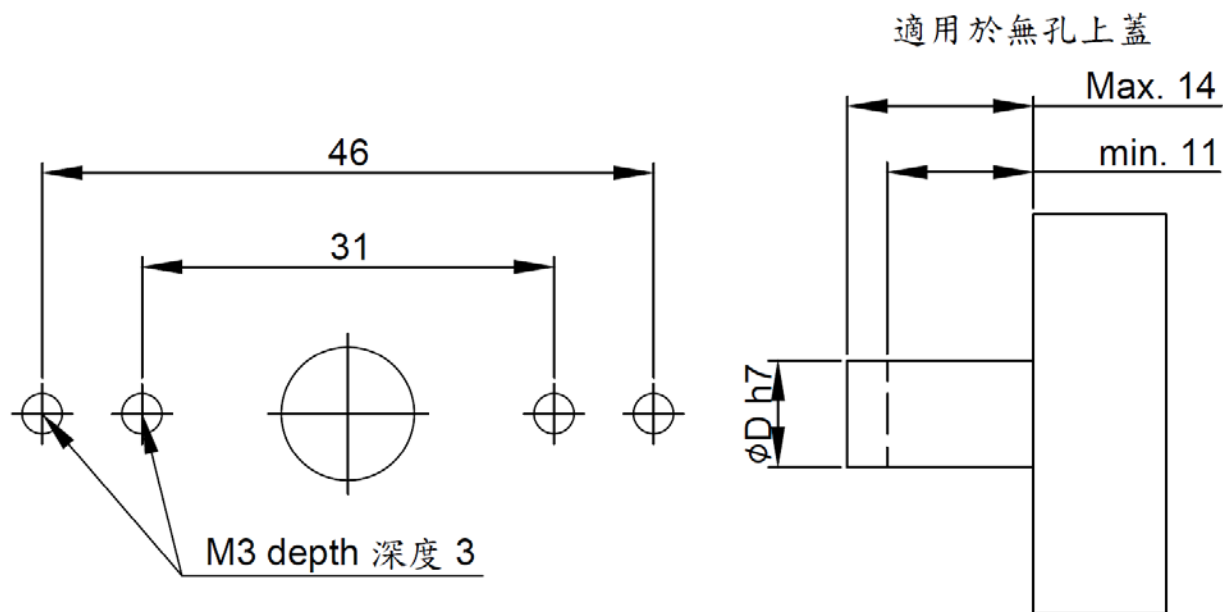


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## ● Setting Dimension 安裝尺寸

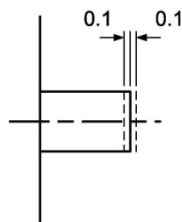
Mounting Screw Size 安裝螺絲尺寸：M3 x 5mm



Unit:mm

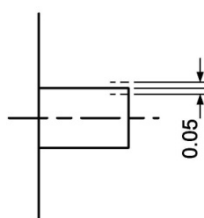
### Axial assembly tolerance

軸向結合公差



### Radial assembly tolerance

徑向結合公差



### Concentric angle tolerance

同心角度公差

