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WE series Wheel Type Length Encoder

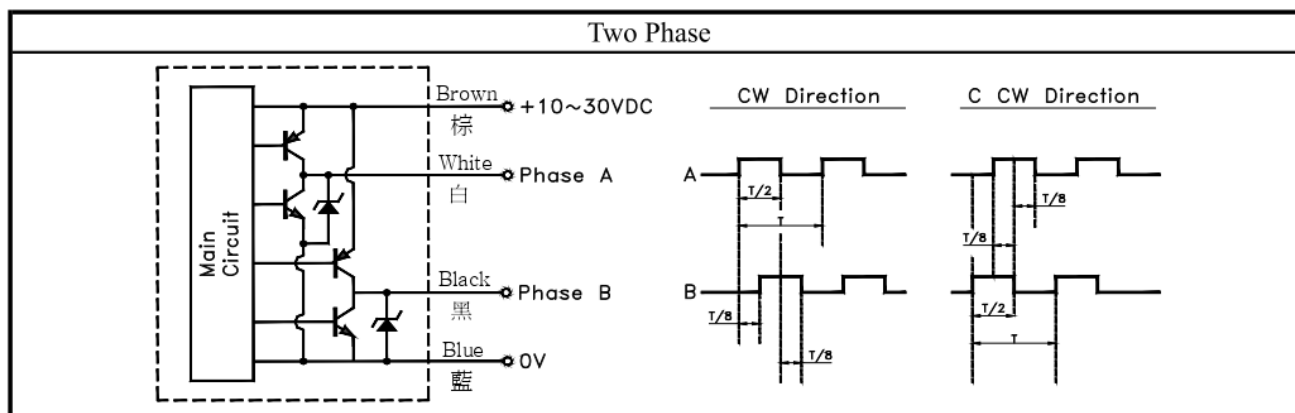
- * High Response Frequency : 10K HZ
- * High Speed of Revolution : 6K RPM
- * Voltage & Current Output With
NPN + PNP Output
- * High Reliability With Anti-Noise Circuit
- * Multi-Measuring Unit / Pulse
1.0mm , 0.01m , 0.1m , 1m ,
0.001yd , 0.01yd , 0.1yd & 1yd
- * Model of Two Phase Output :
WE-M2T , WE-M3T , WE-M4T
WE-Y2T , WE-Y3T , WE-Y4T



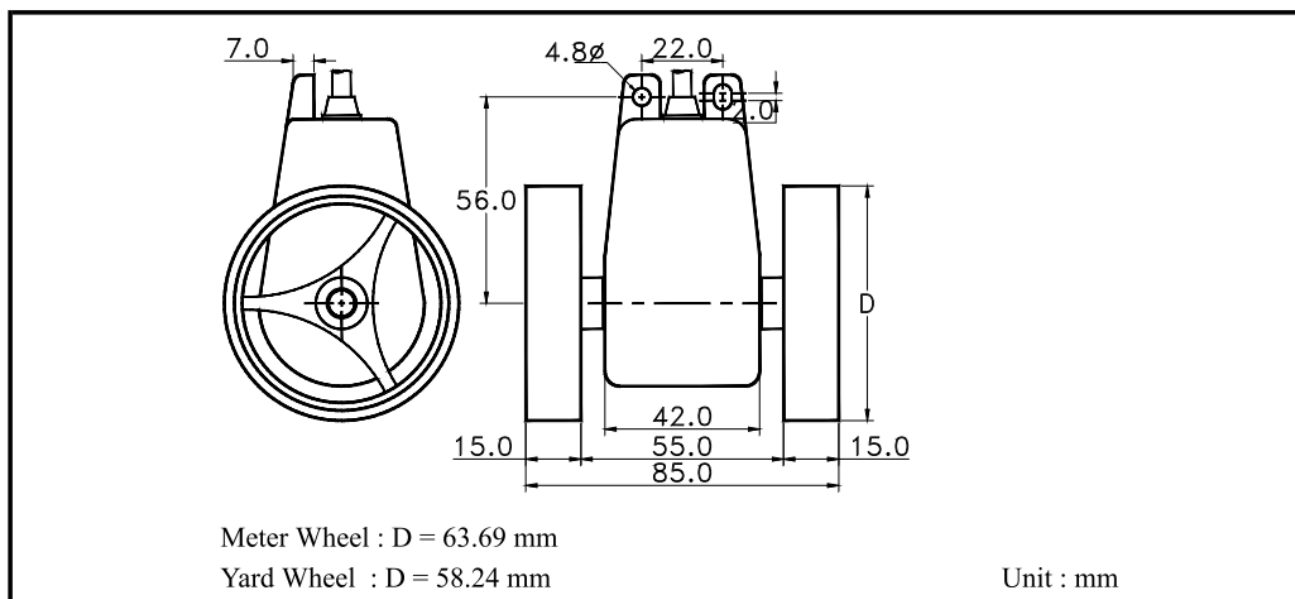
■ Specification

Type	Meter Wheel				Yard Wheel		
Model	WE-M1	WE-M2	WE-M3	WE-M4T	WE-Y1	WE-Y2	WE-Y3
Unit / Pulse	1m	0.1m	0.01m	1.0mm	1yd	0.1yd	0.01yd
PPR	0.2 PPR	2 PPR	20 PPR	200 PPR	0.2 PPR	2 PPR	20 PPR
Output Phase	Single or Two phase are Available						
Operating Voltage	10~30 VDC						
Current Consumption	30 mA max.						
Output Method	NPN + PNP						
Output Current	150mA max.						
Residual Voltage	0.1V max.						
Leakage Current	0.1 mA max.						
Rprotection Method	Polarity Reversed & Over Load Protection						
Connection Method	2m Cable						
Response Frequency	2K HZ			10K HZ	2K HZ		
RPM max.	6K RPM			3K RPM	6K RPM		
Insulation Resistance	Over 50M Ω /500VDC						
Dielectric Strength	Over 2.5KV						
Circumstance	-20° C ~ +60° C ; 35° C ~ 85° C						
Protection Class	IP-65						
Weight	Appr.525g				Appr.510g		

Output Circuit & Connection Diagram



Dimension



Magnetic Incremental Rotary Encoder

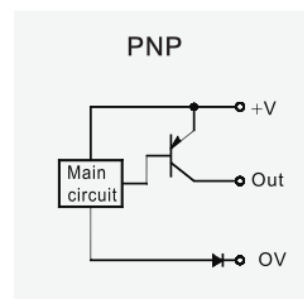
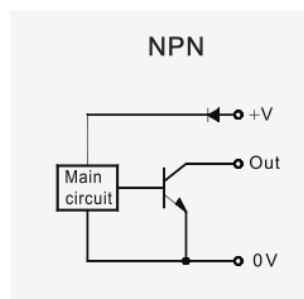
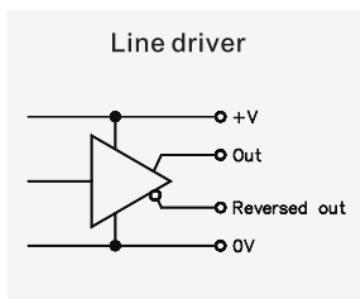
- * High Reliability
- * High Noise Resistance
- * Wide operating voltage
- * Low current consumption
- * Harsh circumstances suitable
- * 高可靠度
- * 高抗干擾力
- * 廣泛工作電壓範圍
- * 低耗電高效能
- * 適用於惡劣環境不怕粉塵



Guiding of model Incremental type 型號索引

Ex MES - 2500 D - E - 8Φ - M12						
	1	2	3	4	5	6
1	Product (產品代號) : 「MES」 = 40 Φ Magnetic Incremental Encoder 「MET」 = 50 Φ Magnetic Incremental Encoder 「MEN」 = 30 Φ Magnetic Incremental Encoder 「MEP」 = Plate type Magnetic Incremental Encoder				4	Structure strength MET type only 「E」 : Heavy duty type 「Non」 : Standard type
					5	Shaft diameter (轉軸外徑) : 「Non」 = 6.0 mm 「8Φ」 = 8.0 mm 「H8」 = Hole shaft 8.0 mm 「H10」 = Hole shaft 10.0 mm
2	Resolution (解析度) : 4PPR ~ 4096 PPR 「05」 = 5 PPR 「500」 = 500 PPR 「2500」 = 2500 PPR				6	Option (附加功能) : 「Non」 = Cable lead wire 「PG」 = M12 Lead wire 「M12」 = M12 connection MET type only 「Z L」 = Z Phase low level output 「MW」 = Meter wheel type
3	Output method (輸出方式) : 「D 」 = Line driver 「N 」 = NPN 「P 」 = PNP					
Note	1> Pulse per Revolution (PPR) 5,10,20,30,40,50,60,100,120,150,180,200,250,300,360,400,500,512,600,720,800,1000,1024,1200,1500,1800,2000,2048,2500 2> It is accepted to manufacture for special resolution. 可接受訂製非規格的解析度。					

Output circuit / 輸出回路



Note

「Z phase」 standard output level is 「High level」 if require 「Low level」 output, Please order 「ZL」 type.
 標準「Z phase」輸出準位是「高準位」，如果要「低準位」輸出請訂「ZL」形式。

Electrical Specification / 電氣規格

Output model	輸出型式	NPN	PNP	Line Driver
Operating voltage	工作電壓	5~30VDC	5~30VDC	5VDC $\pm$ 10%
Output method	輸出方式	NPN	PNP	Line driver IC
Response frequency	響應頻率	30K ~120K Hz		
Current consumption	耗電流	40 mA max.		
Ripple of power	電源漣波	10 peak to peak		
Output current	輸出電流	100mA max.		20mA max.
Protection circuit	保護回路	Short circuit & polarity reversed		Polarity reversed
Voltage drop	輸出壓降	0.6V max.		
Residual voltage	殘餘電壓	0.1V max.		
Leakage current	洩漏電流	0.1mA max.		
Noise resistance	抗干擾	2kv / 1 μ s		
Dielectric strength	電介強度	2.5kv / 1 minute min.		
Insulation strength	絕緣強度	100 M Ω / 500vdc		
Approval	安規	CE / RoHS		

Mechanical Data & Environment Data / 環境規格 & 機械規格

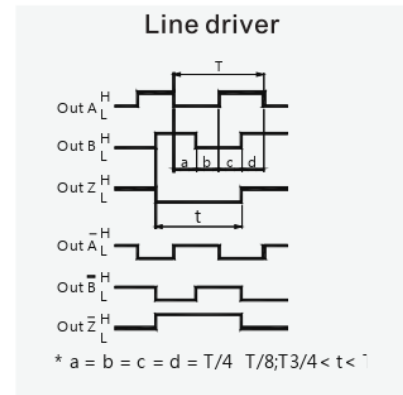
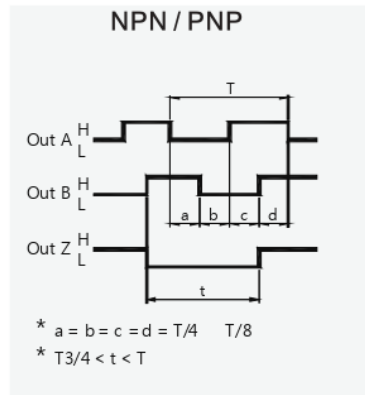
Type	Standard type			Heavy duty
Outline	30 Φ	40 Φ	50 Φ	50 Φ
Model	MEN	MES	MET	MET-□□□-E
Starting torque	起動力矩	20 gf-cm max.	30 gf-cm max	30 gf-cm max
Shaft moment of inertial	慣性力矩	6 g- cm ² max	8 g- cm ² max.	8 g- cm ² max
Shaft loading(Radial)	轉軸負載	1kg max.	2 kg max.	2 kg max.
Shaft loading(Axial)	轉軸負載	0.5 kg max.	1 kg max.	1 kg max.
Rotational speed max.	最大轉速	6000 RPM		
Housing material	外殼材質	Intensive PPS		
Shaft material	轉軸材質	SUS-316		
Vibration resistance	抗振動	10 ~ 55 Hz / 1.5 mm ; 2Hr/ X.Y.Z direction each		
Shock resistance	抗沖擊	490m/s ² with 11ms in X.Y.Z direction 3times each		
Operating circumstance	工作環境	-25°C ~ +70°C ; 85%RH max.		
Protection class	保護等級	IP-64		

Connections / 接線圖

NPN/PNP			
Connector No.	Color	Description	
# 1	Brown	+ V 1	
# 3	Blue	0 V 3	
# 4	Black	Phase A 4	
# 2	White	Phase B 2	
# 5	Yellow	Phase Z 5	

Line driver (差動式)			
Color	Description	Color	Description
Brown	+ V (1)	Blue	0 V(3)
Black	Phase A (4)	Blue/Red	Phase A(9)
White	Phase B (2)	White/Red	Phase B(10)
Yellow	Phase Z (5)		Phase Z(11)

Output timing chart / 輸出時序圖



Magnetic Absolute Rotary Encoder

- * High Reliability
- * High Noise Resistance
- * Wide operating voltage
- * Electronic zero point settable
- * Harsh circumstances suitable
- * Several output code optional

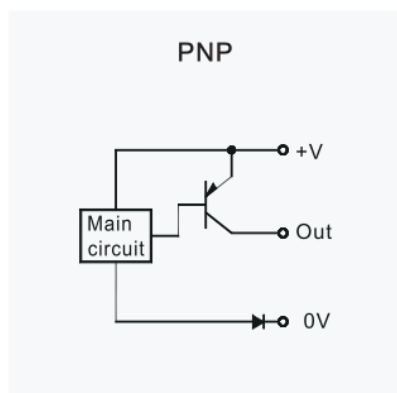
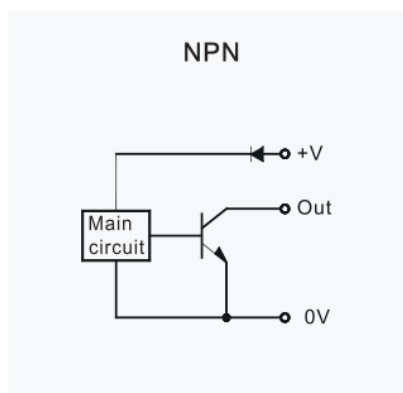
- * 高可靠度
- * 高抗干擾力
- * 廣泛工作電壓範圍
- * 電氣零點可設定
- * 適用於惡劣環境不怕粉塵
- * 多種輸出碼可選擇



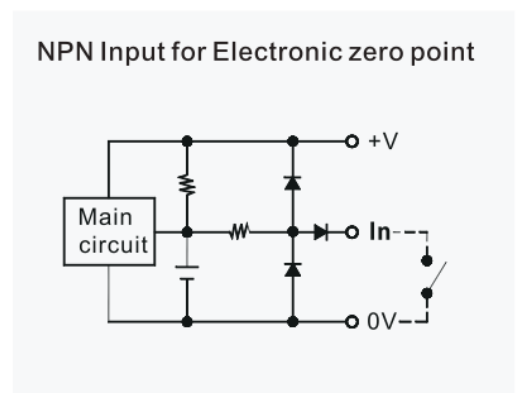
Guiding of model Absolute type 型號索引

Ex <u>MAT - 1024</u> <u>P - BCD</u> <u>-E-8Φ</u> <u>-M12</u>							
	1	2	3	4	5	6	7
1	Product (產品代號) : 「MAT」 = 5 Φ Magnetic Absolute Encoder 「MAP」 = Plate type Magnetic Absolute Encoder				5	Structure strength MET type only 「E」 : Heavy duty type 「Non」 : Standard type	
2	Resolution (解析度) : 4PPR ~ 1024PPR 「256」 = 256 PPR (8 bit) 「360」 = 360 PPR (9 bit) 「1024」 = 1024 PPR (10 bit)				6	Shaft diameter (轉軸外徑) : 「Non」 = 6.0 mm 「8Φ」 = 8.0 mm	
3	Output method (輸出方式) : 「N」 = NPN 「P」 = PNP				7	Connection method (出線方式) : 「Non」 = Lead wire 「PG」 = M12 Lead wire 「M12」 = M12 connection	
4	Output code (輸出碼) : 「GC」 = Gray code 「Non」 = Binary code 「BCD」 = BCD code				Note	Pulse per Revolution (PPR) : 4 / 6 / 8 / 12 / 16 / 24 / 32 / 64 / 128 / 256 360 / 512 / 720 / 1024	
Note	It is accepted to manufacture for special resolution. 可接受訂製非規格的解析度。						

Output circuit / 輸出回路



Input circuit / 輸入回路



■ Electrical Specification / 電氣規格

Output method	輸出方式	NPN	PNP
Operating voltage	工作電壓	5 ~ 30VDC	
Output code	輸出碼	Gray code, Binary code or BCD code	
Response frequency	響應頻率	20 KHz min.	
Current consumption	耗電流	60 mA max.	
Ripple of power	電源漣波	10 peak to peak	
Output current	輸出電流	100mA max.	
Protection circuit	保護回路	Short circuit & polarity reversed	
Voltage drop	輸出壓降	0.6V max.	
Residual voltage	殘餘電壓	0.1V max.	
Leakage current	洩漏電流	0.1mA max.	
Noise resistance	抗干擾	2kv / 1 μ s	
Dielectric strength	電介強度	2.5kv / 1 minute min.	
Insulation strength	絕緣強度	100 M Ω / 500vdc	
Approval	安規	CE / RoHS	

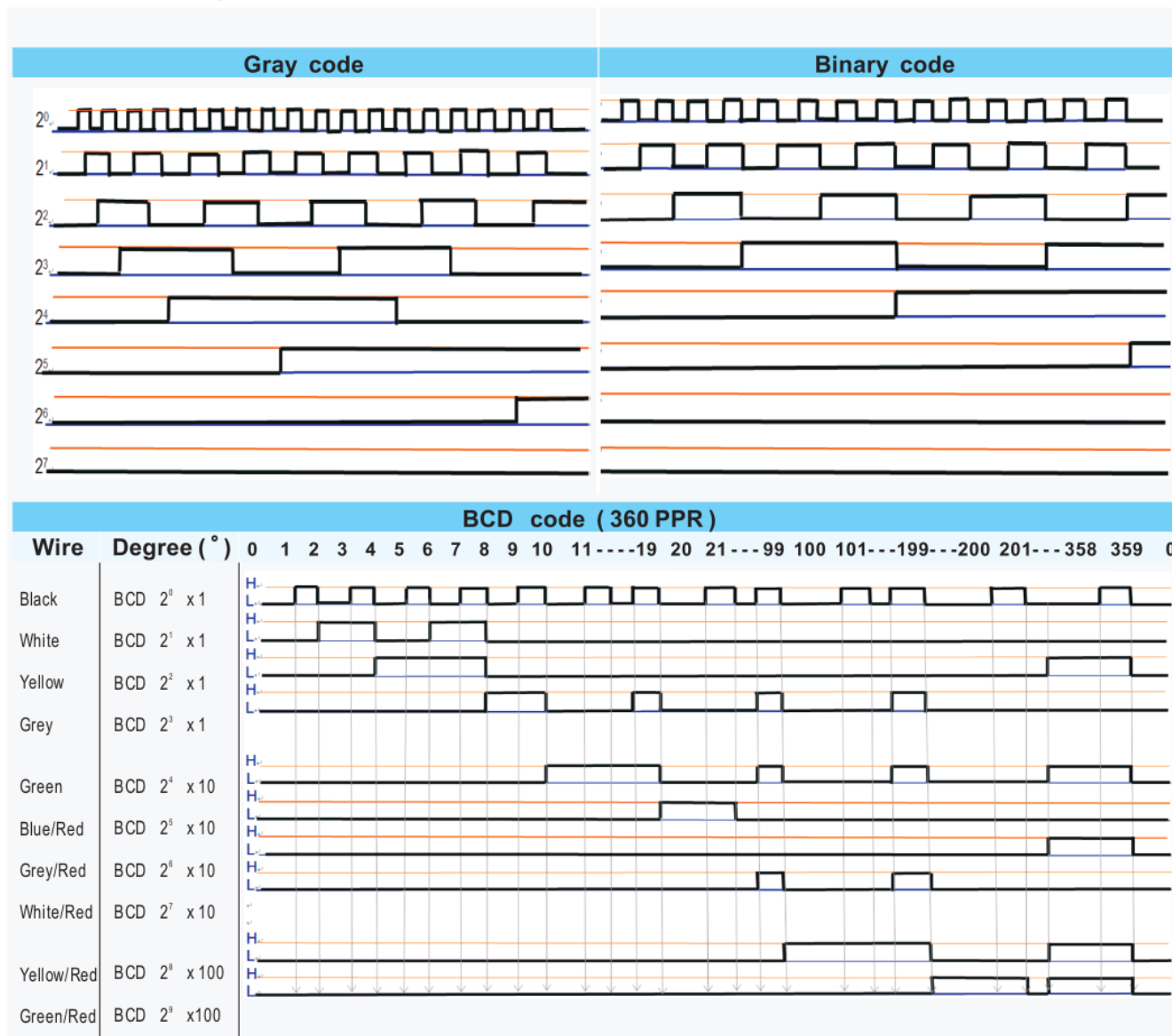
■ Mechanical Data / 機械規格

Type	Standard type	Heavy duty
Outline	50 Φ	50 Φ
Model	MAT-□□□	MAT-□□□-E
Starting torque 起動力矩	30 gf-cm max	260 gf-cm max
Shaft moment of inertial 慣性力矩	8 g- cm ² max	68 g- cm ² max
Shaft loading(Radial) 轉軸負載	2 kg max.	10 kg max.
Shaft loading(Axial) 轉軸負載	1 kg max.	5 kg max.
Rotational speed max. 最大轉速	6000 RPM	
Housing material 外殼材質	Intensive PPS	
Shaft material 轉軸材質	SUS-316	
Operating circumstance 工作環境	-25°C ~ +70°C ; 85%RH max.	
Vibration resistance 抗振動	10 ~ 55 Hz / 1.5 mm ; 2Hr/ X.Y.Z direction each	
Shock resistance 抗沖擊	490m/s ² with 11ms in X.Y.Z direction 3times each	
Protection class 保護等級	IP-64	

■ Connections / 接線圖

Connector No.	Wire color	Description	Connector No.	Wire color	Description
# 1	Brown	+ V	# 8	Black/Red	2 ⁵
# 3	Blue	0 V	# 9	Grey/Red	2 ⁶ (CLK1)
# 4	Black	2 ⁰	# 10	White/Red	2 ⁷ (CLK2)
# 2	White	2 ¹	# 11	Yellow/Red	2 ⁸ (Parity)
# 5	Yellow	2 ²	# 12	Green/Red	2 ⁹ or Zero in
# 6	Grey	2 ³	Non	Orange	Zero in
# 7	Green	2 ⁴			

■ Electrical Specification / 電氣規格



■ How to set the Zero point of Absolute Encoder

Please open the wire of Zero in with the 0V after connecting while in power on status. Note that Zero in must be opened in operating status.

「送電中」請將「Zero in」和「0V」接觸後即可將絕對值式譯碼器歸零。
請注意運轉操作中「Zero in」不可和「0V」接在一起！

■ How to set the Direction of Absolute Encoder CW/CCW setting

Please connect the wire of Zero in with the 0V before turning power on. then open the wire of Zero in with the 0V after power on over 10 seconds. direction of CW/CCW will be changed.

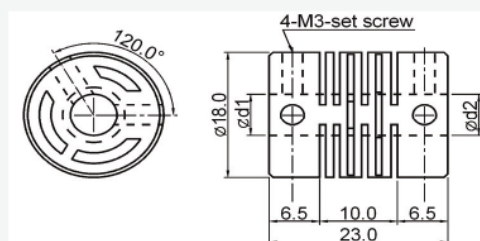
Note that Zero in must be opened in operating status.

可切換「CW/CCW」方向。請注意運轉操作中「Zero in」不可和「0V」接在一起！

「送電前」請將「Zero in」和「0V」接在一起，送電10秒以上再拆開「Zero in」和「0V」。

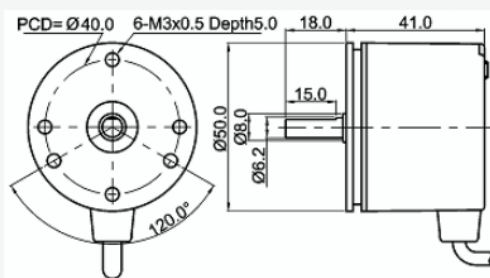
Coupling Specification / 聯軸器規格

Model	型號	G2J-66	G2J-68	G2J-88
Diameter d1	軸徑	6.0mm	6.0mm	8.0mm
Diameter d2	軸徑	6.0mm	8.0mm	8.0mm
Outline diameter	外徑	18.0mm		
Outline length	長度	23.0mm		
Set screw	固定螺絲	M3 x 4		
Material	材質	Intensive Polyimide		

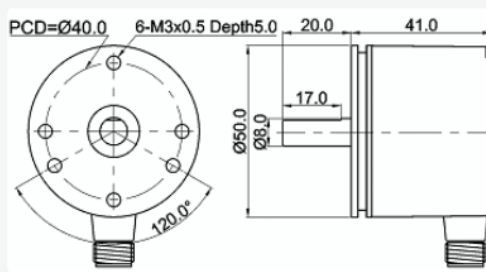


Outline dimension / 外形圖

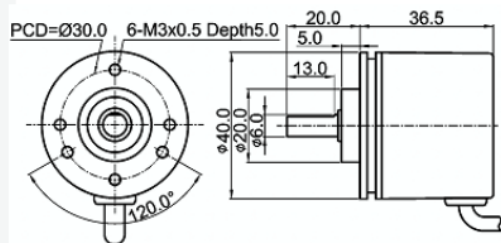
MET-□□□ MAT-□□□



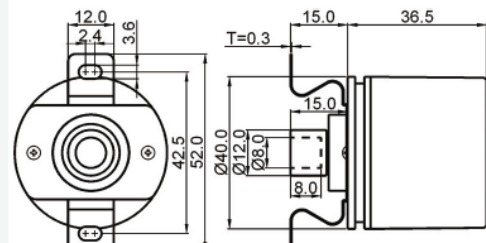
MET-□□□ M12 / MAT-□□□-M12



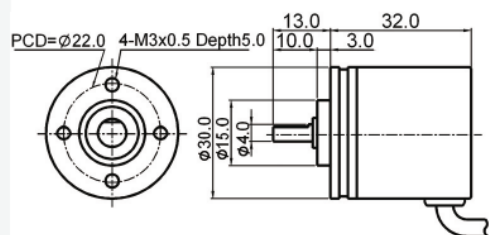
MES-□□□



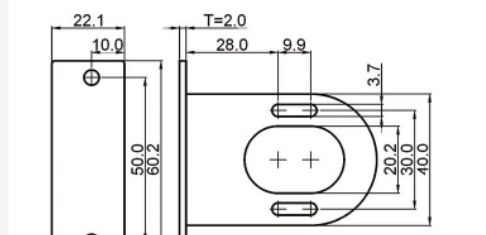
MES- HS□□□-



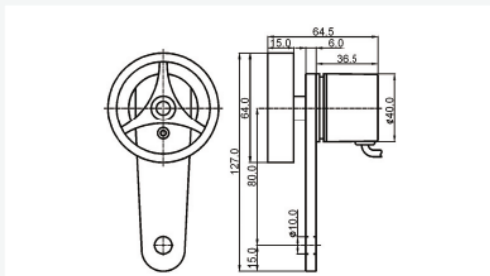
MEN-□□□



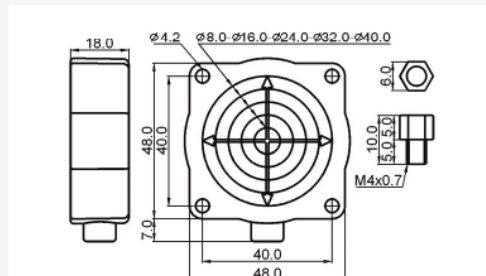
MES-BR-1 Bracket



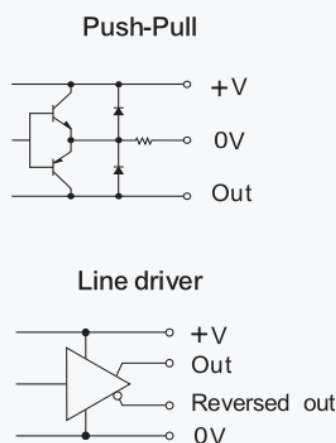
MES- MW□□□-



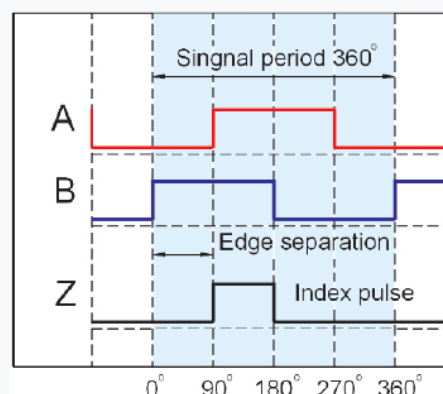
MEP- MAP-□□□ □□□



Output circuit / 輸出回路



Output timing chart / 輸出時序圖



Connections / 接線圖

Push-Pull (推拉式)

Connector No.	Color	Description
# 1	Brown	+ V (1)
# 3	Blue	0 V (3)
# 4	Black	Phase A (4)
# 2	White	Phase B (2)
# 5	Yellow	Phase Z (5)

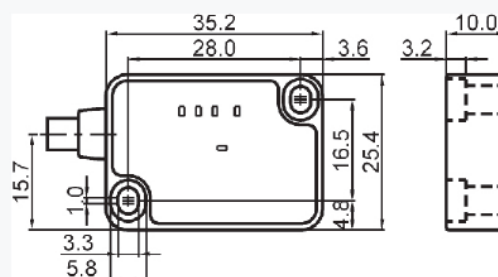
Line driver (差動式)

Color	Description	Color	Description
Brown	+V	Blue	0 V
Black	Phase A	Yellow	Phase $\bar{A}$
White	Phase B	Grey	Phase $\bar{B}$

Outline dimension / 外形圖

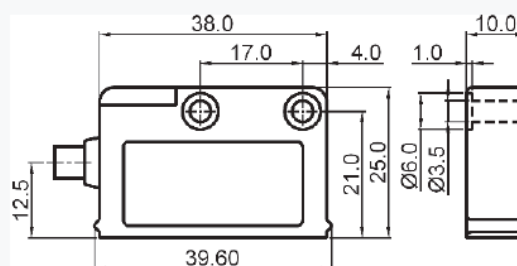
Die-cast (Zn)

EMS-□□

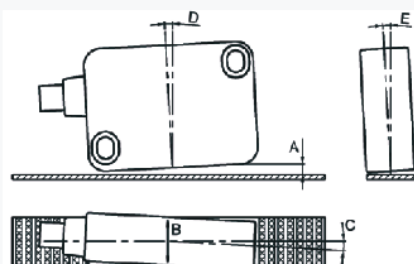


Plastic (ABS)

EMK-□□



Mounting instruction / 安裝注意事項



Please ensure the correct alignment of the sensor and magnetic band (see diagram).

※ Allowance of tolerances

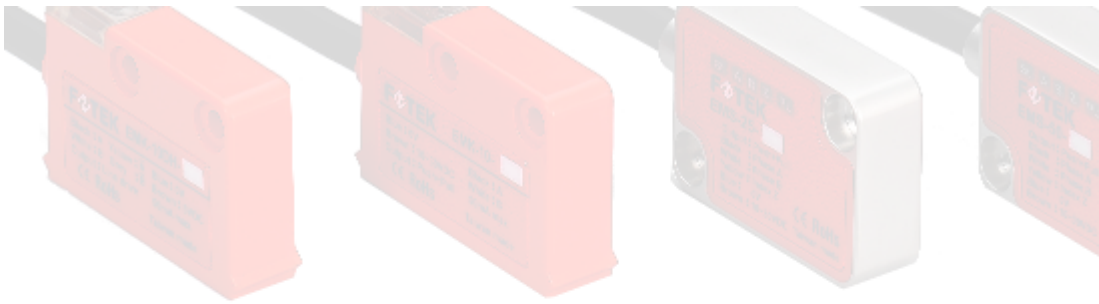
A : Setting distance : 4.0mm max.

B : Lateral offset : ± 2.0 mm max.

C : Misalignment (Yaw) : $< \pm 3^\circ$ max.

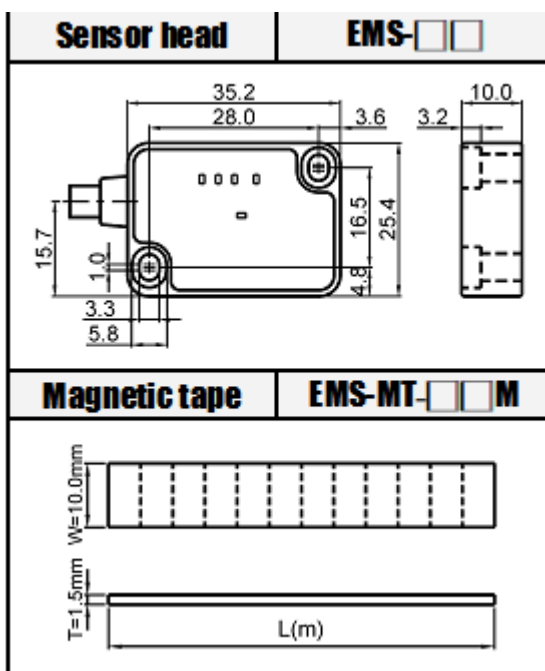
D : Longitudinal tilt (Pitch) : $< \pm 3^\circ$ max.

E : Lateral tilt (Roll) : $< \pm 3^\circ$ max.



磁距：5.0mm ※可依實際需求訂製長度

- product name:
EMS&EMK Series Incremental Magnetic Scale Sensor
- model: EMS-MT-□□M
- Type: Magnetic Scale





- product name:
Coupling
- model: G2J-66, G2J-68, G2J-88
- Type: Coupling

Model	型號	G2J-66	G2J-68	G2J-88
Diameter d1	軸徑	6.0mm	6.0mm	8.0mm
Diameter d2	軸徑	6.0mm	8.0mm	8.0mm
Outline diameter	外徑	18.0mm		
Outline length	長度	23.0mm		
Set screw	固定螺絲	M3 x 4		
Material	材質	Intensive Polyimide		

По вопросам продаж и поддержки обращайтесь:

Алматы (7273)495-231	Калининград (4012)72-03-81	Омск (3812)21-46-40	Сыктывкар (8212)25-95-17
Ангарск (3955)60-70-56	Калуга (4842)92-23-67	Орел (4862)44-53-42	Тамбов (4752)50-40-97
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Астрахань (8512)99-46-04	Киров (8332)68-02-04	Пенза (8412)22-31-16	Тольятти (8482)63-91-07
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Екатеринбург (343)384-55-89	Набережные Челны (8552)20-53-41	Симферополь (3652)67-13-56	Чита (3022)38-34-83
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Казань (843)206-01-48	Новосибирск (383)227-86-73	Сургут (3462)77-98-35	
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