



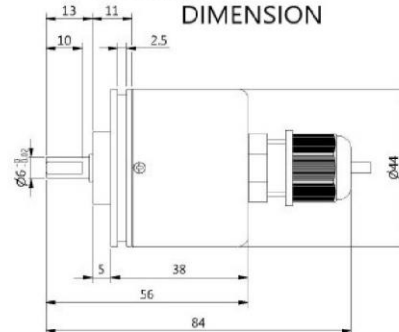
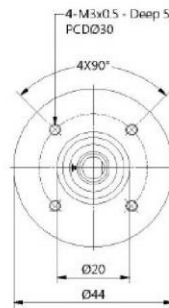
# 得豐實業有限公司

## Dfwisdom Industrial CO., LTD

### MRD-4A-G 絕對磁編碼器

Output Code 碼值 : Gray Code 格雷碼  
Binary Code 二進制  
High Resolution 高解析值 : 12bit

Application 適合 : Angle 角度  
Position 位置, Tension 張力  
Speed 速度



### ELECTRICAL SPEC 電器規格

Detection System 檢測系統	Absolute 絕對值
Output Code 輸出碼值	Gray Code 格雷碼, Binary Code 二進制碼
Std. Pulse Per Revolution 解析	[standard] 12 bit (0 ~ 4096) in creasing ; [option] 12 bit (4096 ~ 0) decreasing
Electronics 電路特性	NPN Voltage 電壓型, NPN Open Collector 電流型
Power Supply 供應電源	DC 5, DC 8 ~ 26V for NPN Voltage ; DC 5 ~ 26V for NPN Open Collector
Logic 邏輯	Negative Logic (H = 0, L = 1) 負理論輸出
Current Consumption 消耗電流	≤ 80 mA (no load)
Output Capacity 輸出容量	20 mA for NPN Voltage, max. 30 mA for NPN Open Collector, Residual Voltage 1V or less
Max. Response 最大響應頻率	50K Hz
Duty	50 ± 10 %
Insulation Strength 耐壓強度(Vrms)	1KV / min
Insulation Resistance 絕緣阻抗(MΩ min)	100 MΩ / 500Vdc
Wave Form Rise / Fall 波形上下時間	2 μ s or less
Polarity 極性保護	Against Reverse Protection

### MECHANICAL SPEC 機械規格

Shaft Diameter 軸徑	6 mm
Shaft Loading 軸荷重	Axial 軸向 : 1 kg, Radial 徑向 : 2 kg
Starting Torque(at 25°C) 起動轉矩	30 gf-cm or less
Mechanical Angle 機械迴轉角度	360° continuous 連續
Mechanical Life 機械迴轉壽命	1x10 <sup>9</sup> cycles
Max. Speed 最大容許旋轉速度	600 rpm
Vibration 震動	10 ~ 55Hz / 1.5 mm Vpp, 10G (max.)
Shock 衝擊	50 g per 11 ms
Cable 電線	ø 7, 1000 mm long
Weight 重量	≤ 200g

### ENVIRONMENTAL SPEC 環境規格

Operating Temp. / Humidity	-10°C ~ 70°C, RH 35 % ~ 90 % (No Condensation)
Storage Temp. 儲存溫度	-20°C ~ 80°C
Protection 保護等級	IP 50:dust proof

### Specifications Model 規格 型號

MRD - 4A -	<input type="text"/>	-	4096	-	<input type="text"/>	-	<input type="text"/>
	Code 碼值		Signal Output 輸出信號		Electronics 電路特性		Signal Sequence 信號輸出序列
	G : Gray		4096		V5 : NPN Voltage 5V		*W : Reversed
	B : Binary		(Std. Sequence)		V8 : NPN Voltage 8 ~ 26V		
					C : NPN Open Collector 5 ~ 26V		*OPTOON



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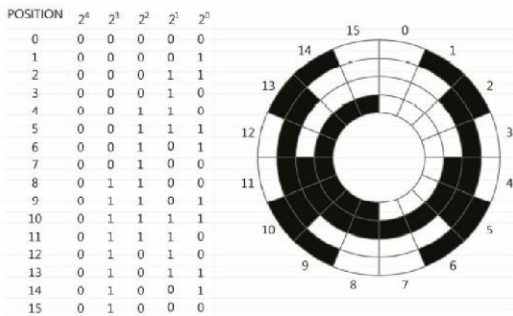
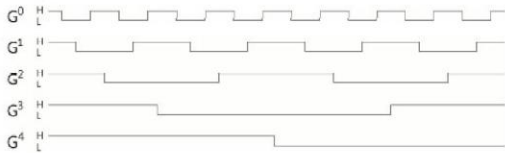
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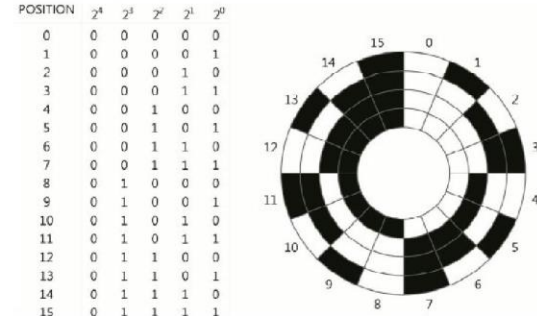
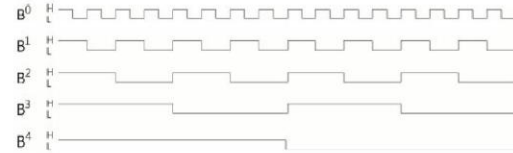
Application 適合 : Angle 角度  
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#### Gray Code



#### Binary Code

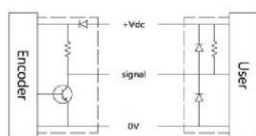


#### Electrical Connection

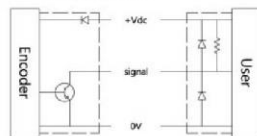
WIRE FUNCTION	4096	2048	1024	512	256	128	64	32	16	8	4	2
RED 紅	+V	+V	+V	+V	+V	+V	+V	+V	+V	+V	+V	+V
BLK 黑	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V	0V
BLU 藍	Bit 1 (2 <sup>0</sup> )											
BLU/WHT 藍/白	Bit 2 (2 <sup>1</sup> )	Bit 1 (2 <sup>0</sup> )										
GRE 綠	Bit 3 (2 <sup>2</sup> )	Bit 2 (2 <sup>1</sup> )	Bit 1 (2 <sup>0</sup> )									
GRE/WHT 綠/白	Bit 4 (2 <sup>3</sup> )	Bit 3 (2 <sup>2</sup> )	Bit 2 (2 <sup>1</sup> )	Bit 1 (2 <sup>0</sup> )								
YEL 黃	Bit 5 (2 <sup>4</sup> )	Bit 4 (2 <sup>3</sup> )	Bit 3 (2 <sup>2</sup> )	Bit 2 (2 <sup>1</sup> )	Bit 1 (2 <sup>0</sup> )							
YEL/BLK 黃/黑	Bit 6 (2 <sup>5</sup> )	Bit 5 (2 <sup>4</sup> )	Bit 4 (2 <sup>3</sup> )	Bit 3 (2 <sup>2</sup> )	Bit 2 (2 <sup>1</sup> )	Bit 1 (2 <sup>0</sup> )						
PPL 紫	Bit 7 (2 <sup>6</sup> )	Bit 6 (2 <sup>5</sup> )	Bit 5 (2 <sup>4</sup> )	Bit 4 (2 <sup>3</sup> )	Bit 3 (2 <sup>2</sup> )	Bit 2 (2 <sup>1</sup> )	Bit 1 (2 <sup>0</sup> )					
PPL/WHT 紫/白	Bit 8 (2 <sup>7</sup> )	Bit 7 (2 <sup>6</sup> )	Bit 6 (2 <sup>5</sup> )	Bit 5 (2 <sup>4</sup> )	Bit 4 (2 <sup>3</sup> )	Bit 3 (2 <sup>2</sup> )	Bit 2 (2 <sup>1</sup> )	Bit 1 (2 <sup>0</sup> )				
ORN 橙	Bit 9 (2 <sup>8</sup> )	Bit 8 (2 <sup>7</sup> )	Bit 7 (2 <sup>6</sup> )	Bit 6 (2 <sup>5</sup> )	Bit 5 (2 <sup>4</sup> )	Bit 4 (2 <sup>3</sup> )	Bit 3 (2 <sup>2</sup> )	Bit 2 (2 <sup>1</sup> )	Bit 1 (2 <sup>0</sup> )			
ORN/WHT 橙/白	Bit 10 (2 <sup>9</sup> )	Bit 9 (2 <sup>8</sup> )	Bit 8 (2 <sup>7</sup> )	Bit 7 (2 <sup>6</sup> )	Bit 6 (2 <sup>5</sup> )	Bit 5 (2 <sup>4</sup> )	Bit 4 (2 <sup>3</sup> )	Bit 3 (2 <sup>2</sup> )	Bit 2 (2 <sup>1</sup> )	Bit 1 (2 <sup>0</sup> )		
BRN 棕	Bit 11 (2 <sup>10</sup> )	Bit 10 (2 <sup>9</sup> )	Bit 9 (2 <sup>8</sup> )	Bit 8 (2 <sup>7</sup> )	Bit 7 (2 <sup>6</sup> )	Bit 6 (2 <sup>5</sup> )	Bit 5 (2 <sup>4</sup> )	Bit 4 (2 <sup>3</sup> )	Bit 3 (2 <sup>2</sup> )	Bit 2 (2 <sup>1</sup> )	Bit 1 (2 <sup>0</sup> )	
BRN/WHT 棕/白	Bit 12 (2 <sup>11</sup> )	Bit 11 (2 <sup>10</sup> )	Bit 10 (2 <sup>9</sup> )	Bit 9 (2 <sup>8</sup> )	Bit 8 (2 <sup>7</sup> )	Bit 7 (2 <sup>6</sup> )	Bit 6 (2 <sup>5</sup> )	Bit 5 (2 <sup>4</sup> )	Bit 4 (2 <sup>3</sup> )	Bit 3 (2 <sup>2</sup> )	Bit 2 (2 <sup>1</sup> )	Bit 1 (2 <sup>0</sup> )

#### Output Signal

##### NPN Voltage



##### NPN Open Collector



#### Output Curve

