

# MRA-1A/1B

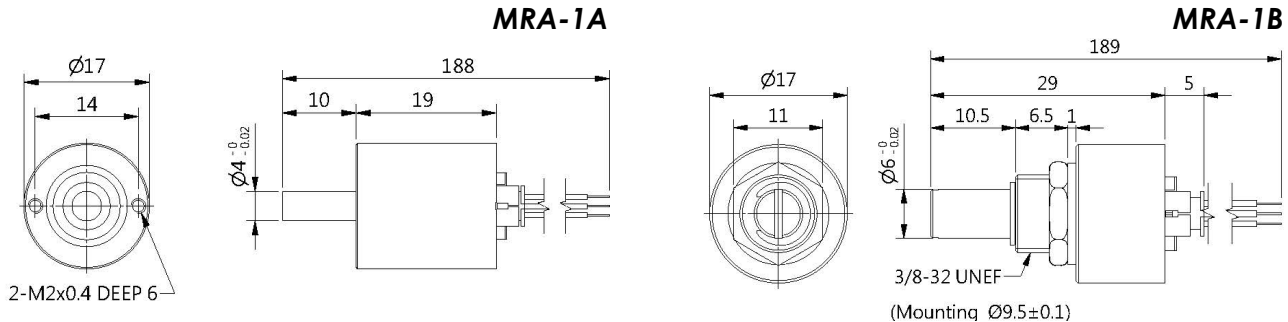
## MAGNETIC SENSOR

Analog Output  
角度感測器



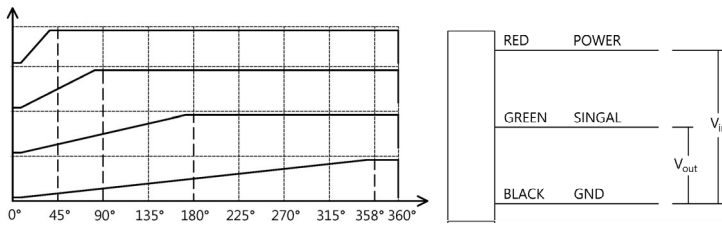
- Application 適合: 張力 Tension
- Output Type 輸出種類: 0.2 ~ 4.8V

## DIMENSION



## Output Curve

|                           |           |           |           |           |
|---------------------------|-----------|-----------|-----------|-----------|
| E.S.E.有效電子角度              | 45°       | 90°       | 180°      | 355°      |
| E.S.U.使用電子角度              | 1° ~ 44°  | 1° ~ 89°  | 1° ~ 179° | 1° ~ 354° |
| Angular Error 角度誤差        | ± 0.15°FS | ± 0.30°FS | ± 0.50°FS | ± 1.00°FS |
| Repeatability Error 重複性誤差 | ± 0.06°   | ± 0.05°   | ± 0.10°   | ± 0.20°   |



## ORDERING INFORMATION

|               |                                                                    |                                |
|---------------|--------------------------------------------------------------------|--------------------------------|
| <b>MRA-1A</b> |                                                                    |                                |
| <b>1B</b>     | <b>Measuring Range</b><br>量測範圍                                     | <b>Signal Sequence</b><br>輸出方向 |
|               | <b>045:</b> angle 45°                                              | <b>*W:</b> Reversed            |
|               | <b>090:</b> angle 90°                                              |                                |
|               | <b>180:</b> angle 180°                                             | <b>* OPTION</b>                |
|               | <b>355:</b> angle 355°                                             |                                |
|               | <i>* Other angle degree by request.<br/>(angle range 45°~355°)</i> |                                |

## ELECTRICAL SPEC.

|                                     |                                        |
|-------------------------------------|----------------------------------------|
| Detection System                    | Absolute                               |
| Power Supply 供應電源                   | DC 5V ± 10%                            |
| Output 輸出                           | 0.2 ~ 4.8V ± 0.5% (4 ~ 96% Vin ± 0.5%) |
| Current Consumption 消耗電流            | ≤ 15 mA                                |
| Output Capacity 輸出容量                | Current ≤ 1.2 mA                       |
| Output Load 輸出負載                    | > 5KΩ                                  |
| Response Time 輸出反應時間                | Vout 0 ~ 90% ≤ 10 ms                   |
| Insulation Resistance 絕緣阻抗(MΩ min.) | 100 MΩ / 500 Vdc                       |
| Insulation Strength 耐壓強度(Vrms)      | 1KV / min.                             |

## MECHANICAL SPEC.

|                                | <b>MRA-1A</b>                   | <b>MRA-1B</b>                   |
|--------------------------------|---------------------------------|---------------------------------|
| Shaft Diameter 軸徑              | 4 mm                            | 6 mm                            |
| Shaft Loading 軸荷重              | Axial 軸向: 1 Kg, Radial 徑向: 2 Kg | < 0.5 Kg                        |
| Mechanical Life 機械迴轉壽命         | 1x10 <sup>9</sup> cycles        | 1x10 <sup>7</sup> cycles        |
| Max. Speed 最大機械容許速度(rpm)       | 600 rpm                         | 100 rpm                         |
| Starting Torque (at 25°C) 起動轉矩 | ≤ 10 gf-cm or less              | ≤ 60 gf-cm or less              |
| Vibration 震動                   | 10-55 Hz/1.5 mm Vpp, 10G (max.) | 10-55 Hz/1.5 mm Vpp, 10G (max.) |
| Shock 衝擊                       | 50 g per 11 ms X/Y/Z            | 50 g per 11 ms X/Y/Z            |
| Cable                          | 150 cm long                     | 150 cm long                     |
| Weight 重量                      | < 20 g                          | < 20 g                          |

## ENVIRONMENTAL SPEC.

|                           |                                              |
|---------------------------|----------------------------------------------|
| Operating Temp. 操作溫度 / 濕度 | -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 (only for sensor housing)  |