

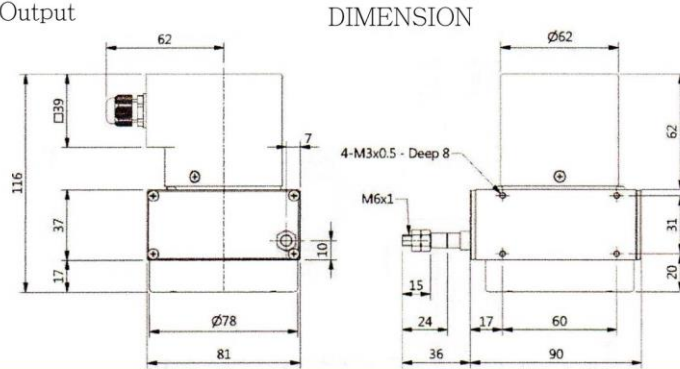


# 得豐實業有限公司

## Dfwisdom Industrial CO., LTD

### HPS-M1-D 線形電位器 (Linear Wire Potentiometer)

量測行程 1200 / 5000 mm  
 界面: RS 485 MODBUS RTU Output



### ELECTRICAL SPEC 電器規格

|                                  |  |        |    |    |     |      |        |     |        |
|----------------------------------|--|--------|----|----|-----|------|--------|-----|--------|
| Full Stroke (mm) 量測行程            | 1200,1250,1500,1750,2000,2500,3000,3500,4000,5000  |        |    |    |     |      |        |     |        |
| Sensor                           | Wire-wound and hybrid potentiometer  |        |    |    |     |      |        |     |        |
| Output Signal Mode 輸出信號模式        | RS485 MODBUS RTU   |        |    |    |     |      |        |     |        |
|                                  | <table border="1"> <tr> <td>RL</td> <td>VH</td> <td>VL</td> </tr> <tr> <td>50Ω</td> <td>&gt; 2V</td> <td>&lt; 0.2V</td> </tr> <tr> <td>27Ω</td> <td>&gt; 1.5V</td> <td>&lt; 0.2V</td> </tr> </table> | RL     | VH | VL | 50Ω | > 2V | < 0.2V | 27Ω | > 1.5V |
| RL                               | VH   | VL     |    |    |     |      |        |     |        |
| 50Ω                              | > 2V   | < 0.2V |    |    |     |      |        |     |        |
| 27Ω                              | > 1.5V   | < 0.2V |    |    |     |      |        |     |        |
| Resolution 解析                    | < 0.025 % (mcu AD 解析) / 12 bit (4096)  |        |    |    |     |      |        |     |        |
| Linearity 線性度                    | [ standard class ] ±0.15 % FS ; [ precision class ] ±1 % FS  |        |    |    |     |      |        |     |        |
| Repeatability 重覆性                | ±0.10 % FS   |        |    |    |     |      |        |     |        |
| Input Power 供應電壓                 | DC 12 - 24Vdc ±20%   |        |    |    |     |      |        |     |        |
| Input Current 供應電流               | 20 mA max.   |        |    |    |     |      |        |     |        |
| Output Short Protection 輸出短路保護   | Output short protection < 50 mA  |        |    |    |     |      |        |     |        |
| Polarity Reverse Protection 極性保護 | Input voltage polarity reverse protection 8 - 26 Vdc   |        |    |    |     |      |        |     |        |

### MECHANICAL SPEC 機械規格

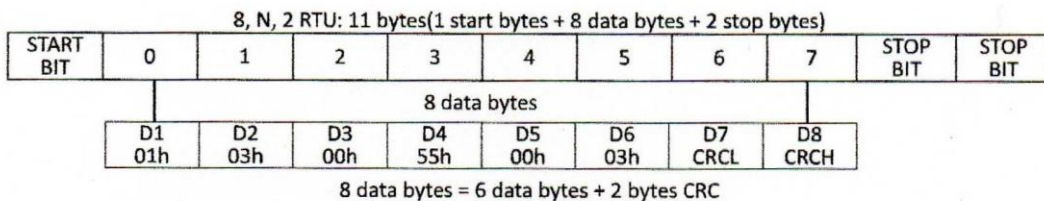
|                              |  |
|------------------------------|--|
| Wire Specification 線徑規格      | Material : SUS304 with nylon coating ; Diameter : 0.7 mm |
| Starting Torque on Spring 拉力 | [ Stroke ≤ 1000 mm ] 600 g ; [ Stroke ≥ 1500 mm ] 1000 g |
| Max.Travel Speed 最大往復速度      | 1,000 mm / sec.  |
| Vibration 震動                 | 10 - 55 Hz / 1.5mm Vpp / 10 G (Max. )                    |
| Cable 電線                     | ø 5.4 , 100 cm long                                      |
| Weight 重量                    | < 1,000 g  |

### ENVIRONMENTAL SPEC 環境規格

|                                   |   |
|-----------------------------------|---|
| Operating Temp./ Humidity 操作溫度/濕度 | 0°C ~ 70°C , RH 35 % ~ 90 % ( No Condensation )             |
| Storage Temp. 儲存溫度                | -20°C ~ 80°C  |
| Protection 保護等級                   | IP 64:Dust & Dripping Proof(only for potentiometer housing) |
| Wire Life 壽命                      | Typicl > 1x10 <sup>6</sup> cycles                           |

### R-S485 MODBUS RUT Communication 通訊協議

|                     |                         |
|---------------------|-------------------------|
| Baud Rate 傳輸速度      | 19200 (Programming 可修改) |
| Data Bit 資料位元       | 8 (Fix 固定)              |
| Parity Check 極性檢查   | N (Fix 固定)              |
| Stop Bit 停止位元       | 2 (Fix 固定)              |
| Device Address 產品位址 | 00 (Programming 可修改)    |





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6 data bits ( Readout Data ) 6位數讀出數據

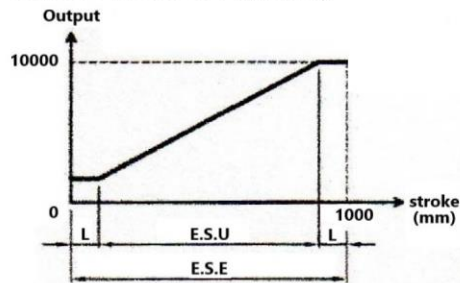
|                             |    |                      |              |                          |    |         |         |
|-----------------------------|----|----------------------|--------------|--------------------------|----|---------|---------|
| 01                          | 03 | 0000                 | 0000         | D1                       | D2 | D3 / D4 | D5 / D6 |
| 01                          | 03 | 0005                 |              | 0001                     |    |         |         |
| Device Readout Address Code |    | Readout Data Address | Readout Data | Readout Data Value (16h) |    |         |         |
|                             |    | 0005                 | 0-10000      |                          |    |         |         |

6 data bits ( Write Data ) 6位數寫入數據

|                           |    |                    |                  |   |                        |         |         |
|---------------------------|----|--------------------|------------------|---|------------------------|---------|---------|
| 01                        | 06 | 0000               | 0000             | D1  | D2                     | D3 / D4 | D5 / D6 |
| 01                        | 06 | 0000               |                  | 0000  |                        | 0000    |         |
| Device Write Address Code |    | Write Data Address | Set Data Address | Data Value  | Write Data Value (16h) |         |         |
|                           |    | 0000               | Write Address    | 0000-00FF(256)  |                        |         |         |
|                           |    | 0001               | Write Baud Rate  | 0001-0005(5)<br>0001: 9600<br>0002: 19200<br>0003: 38400<br>0004: 57600 |                        |         |         |

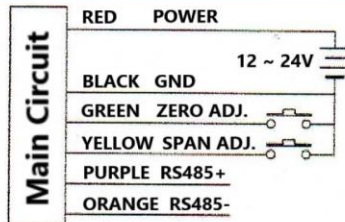
### Factory Fault 出廠設定

original parameters 原始參數



|                           |            |         |
|---------------------------|------------|---------|
| E.S.E 有效電子行程 (mm)         | 500        | 1000    |
| E.S.U 使用電子行程 (mm)         | 5 ~ 495    | 5 ~ 995 |
| Accuracy 精度               | ± 0.15% FS |         |
| Repeatability Error 重覆性誤差 | ± 0.08% FS |         |

### Electrical Connection 電氣連接



### Programming of the start and end 開始和結束的編程

Pulling stainless wire according to the demand at the start position, connect signal ZERO (Green Wire) to GND (Black Wire) for a short circuit.

Pulling stainless wire according to demand at the end position, connect signal SPAN (Yellow Wire) to GND (Black Wire) for a short circuit.

將鋼索拉至預計開始的行程，連接 ZERO (綠線) 和 GND (黑線) 短路至少1秒。

將鋼索拉至預計結束的行程，連接 SPAN (黃線) 和 GND (黑線) 短路至少1秒。

### Specifications Model 規格 型號

|            |                             |   |                     |   |  |   |                           |
|------------|-----------------------------|---|---------------------|---|--|---|---------------------------|
| HPS - M1 - | [ ]                         | - | [ ]                 | - | [ ]  | - | [ ]                       |
|            | Measuring Range<br>量測行程     |   | Signal Mode<br>信號模式 |   | Pot Life & Linearity<br>壽命                             |   | Signal Sequence<br>信號輸出序列 |
|            | 12: 1200 mm    25: 2500 mm  |   | D: RS-485           |   | * F: 5 x 10 <sup>6</sup> cycles,<br>linearity 0.1 % FS |   | * W: Reversed             |
|            | 125: 1250 mm    30: 3000 mm |   |                     |   | *OPTION  |   | *OPTION                   |
|            | 15: 1500 mm    35: 3500 mm  |   |                     |   |  |   |                           |
|            | 175: 1750 mm    40: 4000 mm |   |                     |   |  |   |                           |
|            | 20: 2000 mm    50: 5000 mm  |   |                     |   |  |   |                           |