

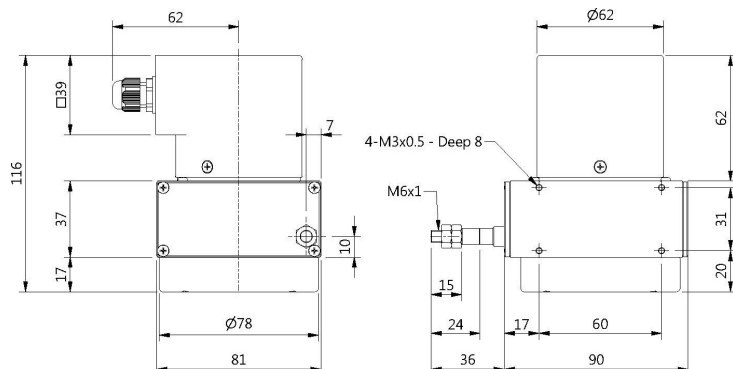
HPS-M1-D

DISPLACEMENT SENSOR
LINEAR WIRE POTENTIOMETER
RS 485



- Stroke 行程: 1200 ~ 5000 mm
- Interface: RS485 MODBUS RTU Output

DIMENSION



ORDERING INFORMATION

HPS-M1-				
Measuring Range 量測行程	Signal Mode 信號模式	Pot. Life & Linearity 壽命	Signal Sequence 信號輸出序列	
12: 1200 mm	D. RS-485	*F: 5 X 10 ⁶ cycles,	*W: Reversed	
125: 1250 mm		(Std.) 1 X 10 ⁶ cycles	(Std.) 0~4096	
15: 1500 mm		*OPTION	*OPTION	
175: 1750 mm				
20: 2000 mm				
25: 2500 mm				
30: 3000 mm				
35: 3500 mm				
40: 4000 mm				
50: 5000 mm				

ELECTRICAL SPEC.

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	RL	VH	VL
		50Ω	> 2V	< 0.2V
		27Ω	> 1.5V	< 0.2V
Resolution 解析	< 0.025%(mcu AD 解析) / 12 bit (4096)			
Potentiometer Life 電位計壽命	1X10 ⁶ cycles			
Linearity 線性度	±0.3% FS (± 1 count)			
Repeatability 重覆性	±0.10% FS			
Input Power 供應電壓	DC12-24 Vdc ± 20%			
Input Current 供應電流	20 mA max.			
Output Short Protection 輸出短路保護	Output short protection < 50mA			
Polarity Reverse Protection 極性保護	Input voltage polarity reverse protection 8~26 Vdc			

MECHANICAL SPEC.

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 / 1.5 mm Vpp / 10 G (max.)
Cable 電線	Ø5.4, 100 cm long
Weight 重量	< 1,000 g

ENVIRONMENTAL SPEC.

Operating Temp. / Humidity 操作溫度/濕度	-0°C ~ 70°C, RH35% ~ 90%(No Condensation)
Storage Temp. 儲存溫度	-20°C ~ 80°C
Protection 保護等級	IP64: Dust & Dripping Proof (only for potentiometer housing)
Wire Life 壽命	Typical > 1 X 10 ⁶ cycles

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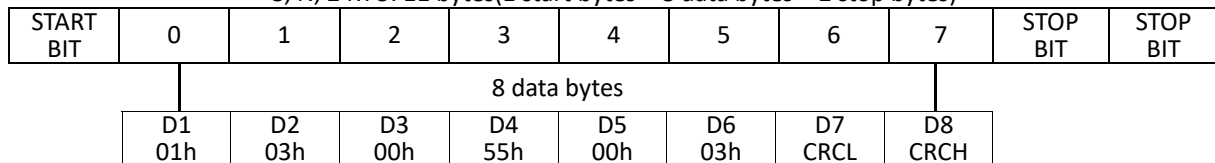


- Stroke 行程: 1200 ~ 5000 mm
- Interface: RS485 MODBUS RTU Output

RS485 MODBUS RTU Communication Protocol

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)

8, N, 2 RTU: 11 bytes(1 start bytes + 8 data bytes + 2 stop bytes)



8 data bytes = 6 data bytes + 2 bytes CRC

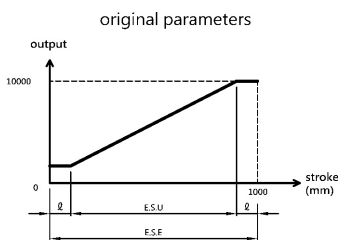
6 data bits (Readout Data): **01** **03** **0000** **0000**

D1	D2	D3 / D4	D5 / D6
01	03	0000	0001
Device Address	Readout Code	Readout Data Address	Readout Data Value(16h)
		0000	0~4095

6 data bits (Write Data): **01** **06** **0000** **0000**

D1	D2	D3 / D4	D5 / D6
01	06	0000	0000
Device Address	Write Code	Write Data Address	Write Data Value(16h)
		0000	0001~00FF(256)
		0001	0001~0005(5)
			0001: 9600
			0002: 19200
			0003: 38400
			0004: 57600

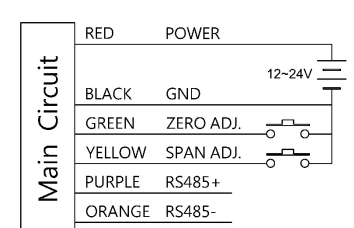
Factory Fault



E.S.E.有效電子行程 (mm)	1200	1250	1500	1750	2000
E.S.U.使用電子行程 (mm)	10~1190	10~1240	10~1490	10~1740	10~1990
Nonlinear Error 非線性誤差	±0.30%FS				
Repeatability Error 重覆性誤差	±0.10%FS				

E.S.E.有效電子行程 (mm)	2500	3000	3500	4000	5000
E.S.U.使用電子行程 (mm)	10~2490	10~2990	10~3490	10~3990	10~4950
Nonlinear Error 非線性誤差	±0.30%FS				
Repeatability Error 重覆性誤差	±0.10%FS				

Electrical Connection



Programming of the start and end

- 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。