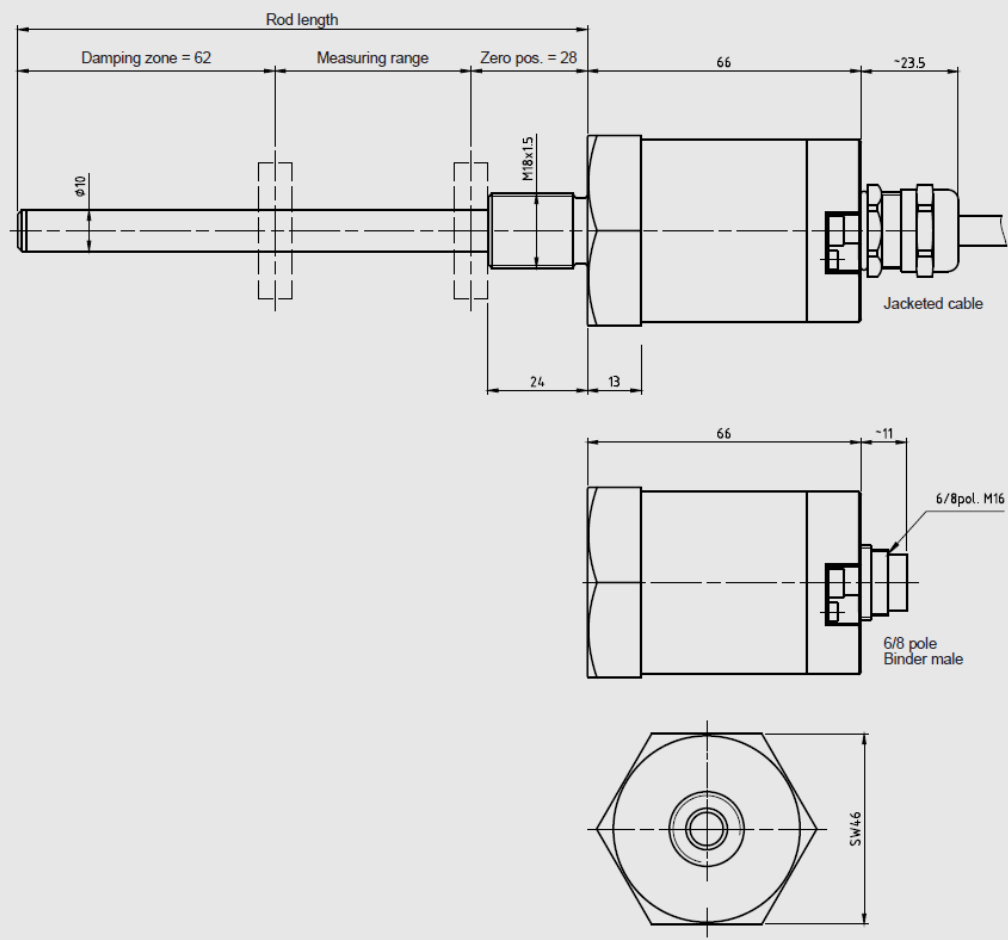


關於磁性尺 HLT 2100-R1 系列的「起始點與結束點」設定說明...from 德國同事 JD。



Dimensions:

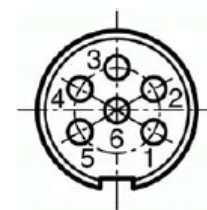


With HLT 2100 series there is feature or objective is to alter start point and end point, respectively, of measuring range. We'll do this on your particular transmitter model HLT 2100-R1-M06-B01-0500-000. (電壓類比輸出 0-10 V, 行程 500mm, resolution 16 bit)

5.3 HLT 2100-R1-M06-... / HLT 2500-L2-M06-... / HLT 2500-F1-M06-...

Signal output analogue, Connector M16, 6 pole

Pin	Description	Level	
		Current	Voltage
1	Analogue output	4 .. 20 mA	0 .. 10 V
2	Analogue output	0 V	0 V
3	Startpoint *		
4	Endpoint *		
5	Supply voltage	24 V \pm 10 %	24 V \pm 10 %
6	Ground	0 V	0 V



* doesn't apply for HLT 2500-F1-M06-...

1. First step is to connect to supply voltage (第一步驟：連接電源接點)
 - 第 6 腳 pin 6: 0 V (Ex: DC 0V)
 - 第 5 腳 pin 5: +Vb (Ex: DC 24V)
2. For programming of new or application specific zero point (第二步驟：設定起始 0 點)
 - extrude cylinder rod to position wanted i.e. required start position of measuring range
 - connect >8 V to pin 3 "start point" for more than 3 sec. (第 3 腳-起始 0 點接觸 24V 3 秒鐘)
3. For programming of new or application specific end point (第 3 步驟：設定油缸終點)
 - further extrude cylinder rod to position wanted i.e. required end position of measuring range
 - connect >8 V to pin 4 "end point" for more than 3 sec. (第 4 腳-結束點接觸 24V 3 秒鐘)

In user manual this is described on page 14 using the example HLT 2100-R1-K01...
However, procedure is similar with analogue signal models HLT 2100-R1-X0X... as now described above.

舉例說明 Example:

if stroke = 500 mm (0-500 mm = 0-10 V) 類比電壓訊號輸出 0-10 V, 原出廠設定行程 500mm。

如何設定新的 370mm 行程？一樣訊號輸出為 0-10 V.

1. extrude cylinder rod to position 30 mm (with default settings real output signal is 0.6 V)
擠出油缸位置至 30mm，出廠設定的輸出訊號為 0.6 V.

connect >8 V to pin 3 "start point" for more than 3 sec. => this will alter/change real output signal to 0.0 V. 第 3 腳起始點接觸 24 V 後，輸出訊號會變為 0 V.

2. extrude cylinder rod to position 400 mm (with default settings real output signal is 8.0 V) 擠出油缸位置至 400mm，出廠設定的輸出訊號為 8 V.

connect >8 V to pin 4 "end point" for more than 3 sec. => this will alter/change real output signal to 10.0 V. 第 4 腳起始點接觸 24 V 後，輸出訊號會變為 10 V.

now measuring range is 370 mm starting with 58 mm magnet middle position to housing face (新的量測原點會設定在距端面 58mm 的地方開始)

in other words, output signal 0-10 V refer to magnet position 58-428 mm (reference housing face) (新的量測結束點會設定在距端面 428mm 的地方結束)

結論：

換句話說，就舉例量測位置行程改為 370mm，也就是磁石（磁石厚度為 8 mm）的中間線位置點從量側面過來 58mm（28+30=58）起始點位置 0 V 至 428mm（58+370=428）結束點位置 10 V，其輸出訊號依然維持為 0-10 V。

也就是實際量測行程，其精度是不產生誤差偏移量，符合實際期望值。

對於精度而言，不用刻意在 PLC 特別去寫程式強制控制為 0 V 及 10 V 輸出，直接由硬體設定即可完成。

精度說明如下：

例如以此 HLT 2100-R1-M06-B01-0500-000 磁性尺為例（電壓類比輸出 0-10 V, 行程 500mm, resolution 16 bit）。

精度為 16 bit，500 mm 的解析度為 $500/2^{16}=7.6 \times 10^{-3}=7.6 \mu$

精度為 16 bit，370 mm 的解析度為 $370/2^{16}=5.6 \times 10^{-3}=5.6 \mu$

所以誤差偏移量為 $7.6 \mu - 5.6 \mu = 2 \mu$