

泵浦馬達緩衝器SP系列



SOFT STARTER SP SERIES OF PUMP MOTOR (COMPACT SERIES)



>>> 功能特性 Characteristics

- 可調整啟動時間與扭力，使馬達平順啟動。
- 同一機台可選擇4種啟動模式：全壓啟動、斜率啟動、定電流啟動、轉矩啟動。
- 採用矽控整流體(SCR)控制：無接點、無弧光、無光端磨損，相當於半永久性的使用壽命。
- 配線簡便：三進三出的裝置，節省人工繁瑣配線的花費。
- 本控制器具有三相三線6只SCR開流體作電力轉換控制。
- 本緩衝器為微處理機型CPU，並具有自動輕重負載校對功能與轉矩控制。
- 冷卻風扇動作具有溫度控制，當散熱片溫度55°C時，45°C時停止，可提高風扇壽命2~3倍。
- 本控制器內含CT電子式檢知保護器：具過載、欠相、馬達卡死、開流體過溫、馬達低載(缺水)的保護。
- 馬達過載、馬達卡死、馬達低載皆可由控制器內部指撥開關設定，並提供復歸鍵，可作手動復歸。
- 本控制器提供3組輸出接點：啟動時輸出接點、運轉完成後輸出接點(BY PASS)、系統異常輸出接點。
- 本控制器提供泵浦馬達專用緩慢停止功能，以達到最佳消除水錘功能。
- The EMC Directive 2014/30/EU。
- Low Voltage Directive : 2014/35/EU。
- 本緩衝啟動器具CE, EN/IEC 60947-1, EN/IEC 60947-4, EN/IEC 61000-6-4, EN/IEC 61000-4-2, EN/IEC 61000-4-4, EN/IEC 61000-4-6, EN/IEC 61000-6-2 認證。
- Start time and torsion can be adjusted for starting motor smoothly.
- The soft start can choose 4 starting models : total pressure starting, gradient starting, constant current starting, torque starting.
- It's controlled by SCR without access point, arc, and abrasion of light end, as semi-permanent use-life.
- Easy wiring : the equipment of 3 in and 3 out, it can save the cost of labor wiring tedious.
- This controller is 3 phases, 3 wires, 6 SCR thyristors for controlling by power.
- This starter is micro-treater with auto revising of light/heavy loading and the control of torque.
- Cooling fans has temperature control, the cooling sheet working at 55°C, and stop at 45°C, this design can extend use-life of fans 2-3 times.
- This controller has CT electronic inspection protector : the SP series have the protection of overload, loss phase, motor block, over heating, motor running idling (Low load).
- Motor overload, motor stuck, and motor low load can be setting by controller's internal DIP switch, and also can be hand reset by reset button.
- This controller offers 3 sets output connection : output connection of starting, output connection after running (BY PASS), output connection of system exception.
- This controller offers slow-stop function of pump motor to reach the best function of removing water hammer.
- The EMC Directive 2014/30/EU.
- Low Voltage Directive : 2014/35/EU.
- This starter meets the standard of CE Certificate, EN/IEC 60947-1, EN/IEC 60947-4, EN/IEC 61000-6-4, EN/IEC 61000-4-2, EN/IEC 61000-4-4, EN/IEC 61000-4-6, EN/IEC 61000-6-2 approved.

>>> 保護功能 Protection Function

- 馬達過載
- 欠相
- 馬達卡死
- 開流體過溫
- 馬達低載 (缺水檢知)
- Motor overload
- Less phase
- Motor block
- Overheat of thyristors
- Motor low load (detector of water shortening)

>>> 啟動模式 Starting Mode

- 斜率啟動
- 定電流啟動
- 全壓啟動
- 轉矩啟動
- Gradient starting
- Constant current starting
- Total pressure starting
- Torque starting

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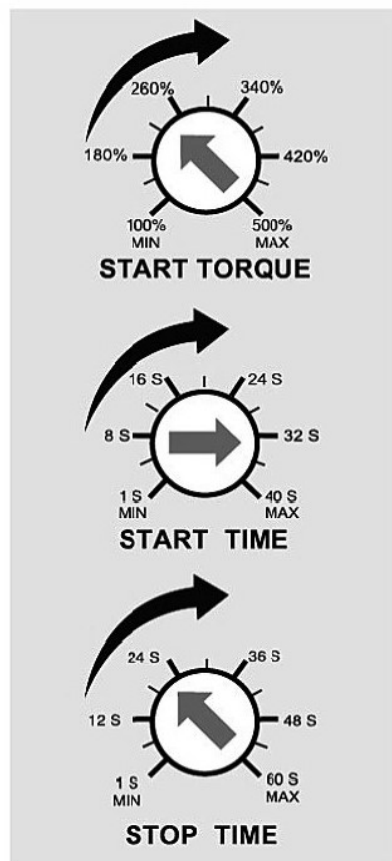
>>> 一般特性

General Characteristic

主電源電壓 main power voltage	3Ø 208~220 / 380~480 VAC ± 10%
輔助電壓 assistance voltage	220V±10% (可訂製 110V±10%) (can be ordered 110V±10%)
啟動方式 start way	乾接點 dry contact point
工作頻率 work frequency	50~60Hz ±5%
啟動時間 start time (speed time)	1~40 sec.
啟動扭力 start torque	100%~500%
停止時間 (減速時間) stop time (retard time)	1~60 sec. (有轉矩45秒, 無轉矩60秒)
停止模式	慣性停止 / 轉矩停止 / 斜率停止
儲存溫度	-20°C~70°C
周圍工作溫度 ambient operating temperature rang	-10°C~45°C
最高峰值耐壓 maximum peak voltage	600VAC或1200VAC~1600VAC
最大相對溼度 relative humidity	93% RH無凝結成水滴 93% RH without dew
高度 height	標高2000公尺以下 below is under 2000 metres
振動	0.5G以下
絕緣阻抗 insulation resistance	20MΩ以上 (電源與外殼間) Over 20MΩ (power & external cover) 20MΩ以上 (輸入信號與外殼間) Over 20MΩ (input signal & external cover)
耐壓強度 strength of press-resisted	電源與外殼間 2500VAC/1分鐘 2500VAC/1min between power & external cover 電源與輸入信號 1000VAC/1分鐘 1000VAC/1min between input signal & external cover

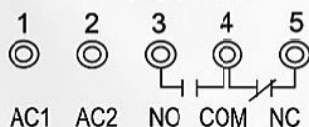
>>> 扭力、時間參考下圖解

Reference drawing of torque and time



>>> 控制方式

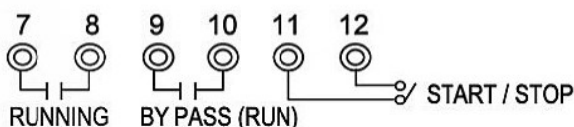
The Control



AC1 AC2 NO COM NC

AC1, AC2 : 輔助電壓 220V±10%
(可訂製 110V±10%)

NO, COM, NC : 異常訊號輸出接點 240V / 5A
提供3A1B之輔助接點



RUNNING BY PASS (RUN)

RUNNING : 運轉中輸出接點 240V / 5A

BY PASS (RUN) : 運轉完成後輸出接點

START/STOP : 啟動/停止控制接點

泵浦型馬達緩衝器SP系列 Soft Starter SP Series of Pump Motor (Compact Series)

產品規格選擇 Choice of Specification & Models

額定電流 Rated current	額定電壓 Rated voltage					長 L mm	寬 W mm	高 H mm	圖
	208-220VAC	HP	380-440VAC	460-480VAC	HP				
4A			SMC930020-SP	SMC940020-SP	2	145	83	120	(圖一)
7A	SMC920020-SP	2	SMC930030-SP	SMC940030-SP	3				(一)
10A	SMC920030-SP	3	SMC930050-SP	SMC940050-SP	5				(一)
15A	SMC920050-SP	5	SMC930075-SP	SMC940075-SP	7.5				(一)
22A	SMC920075-SP	7.5	SMC930100-SP	SMC940100-SP	10				(二)
28A	SMC920100-SP	10	SMC930150-SP	SMC940150-SP	15				(二)

上述資料若有變更, 恕不另行通知, 敬請見諒! All specifications can be modified.



(圖一)



(圖二)