

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

泵浦馬達緩衝器SP系列

SOFT STARTER SP SERIES OF PUMP MOTOR (COMPACT SERIES)



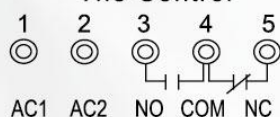
>>> 一般特性

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

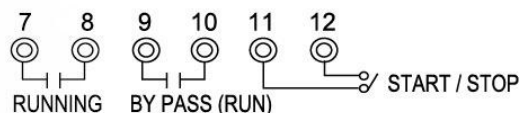
>>> 控制方式

The Control



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



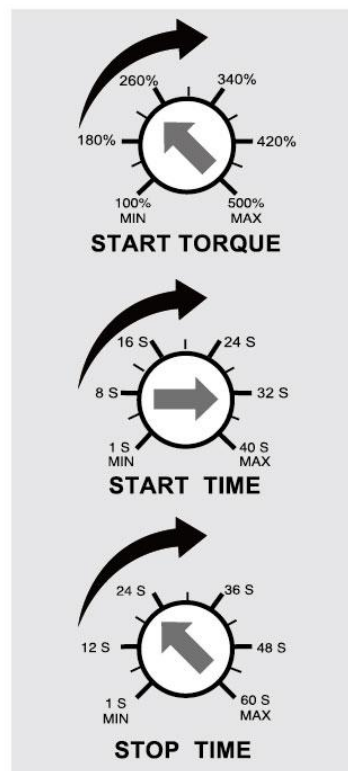
RUNNING : 運轉中輸出接點 240V / 5A

BY PASS (RUN) : 運轉完成後輸出接點

START/STOP : 啟動/停止控制接點

>>> 扭力、時間參考下圖解

Reference drawing of torque and time



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	(一)
7A	SMC920020-SP	2	SMC930030-SP	SMC940030-SP	3				
10A	SMC920030-SP	3	SMC930050-SP	SMC940050-SP	5				
15A	SMC920050-SP	5	SMC930075-SP	SMC940075-SP	7.5				(二)
22A	SMC920075-SP	7.5	SMC930100-SP	SMC940100-SP	10				
28A	SMC920100-SP	10	SMC930150-SP	SMC940150-SP	15				

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)

泵浦馬達專用緩衝器



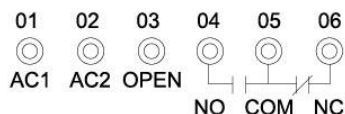
SOFT START PUMP MOTOR CONTROLLER



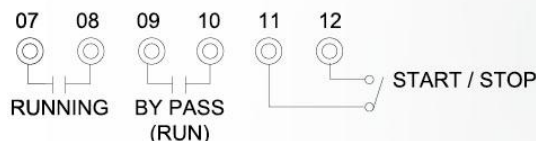
>>> 功能簡介 Function Introduction

- 啟動時可依不同負載來調整啟動扭力與時間，使啟動平順圓滑。
- 同一機台可選擇5種啟動模式：直接啟動、斜率啟動、限電流啟動、踢動啟動《KICK START》加限電流、踢動加斜率啟動。
- 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矽控整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時工作，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、閘流體過溫、馬達低載(缺水)的保護，超靈敏度，無積熱效應，不受週溫影響。
- 本控制器提供3組輸出接點：具啟動時輸出接點、運轉完成後輸出接點(BY PASS)、系統異常輸出接點，可供遠端監控使用。
- 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。
- 本緩衝啟動器具CE,EN60947-4-2,IEC60947-4-1,EN61000-4,EN50082-2,EN50081之認證。
- Starting torque and time can be adjusted according to the different load when starting, and make starting smoothly and stably.
- The soft start can choose 5 starting models: direct start, slope start, current limit start, kick start and current limit, kick start and slope start.
- Use SCR control: without connecting points, arc light, smooth face wearing, or use-life forever similarly.
- Wiring easy: installation of 3 in 3 out, save the coast of hand wiring.
- This controller has phases and 3 wires' SCR to transform control of power.
- This controller is micro-controller with the function of automatic light/heavy loading revision and turning moment control.
- 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 standard series have the protection of overload, loss phase, motor block, over heating, motor running idling(Low load), high sensitivity, without heating effect, not influenced by the temperature around.
- The machine has 3 sets' output connection points: the standard series have the output point when starting, by pass, and output point for system abnormal, for distant end supervising and controlling.
- This machine has slow stop function for pump motor to create best water hammer removing function.
- The starter starting tool has passed CE,EN60947-4-2,IEC60947-4-1,EN61000-4,EN50082-2,EN50081 accreditation.

>>> 控制方式 The Control



AC1,AC2：控制電壓 220VAC±10%
OPEN：空腳備用
NO,COM,NC：異常訊號輸出接點 240V/5A
提供3A1B之輔助接點



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
輸入/輸出接點均為乾接點信號

泵浦馬達專用緩衝器 SOFT START PUMP MOTOR CONTROLLER



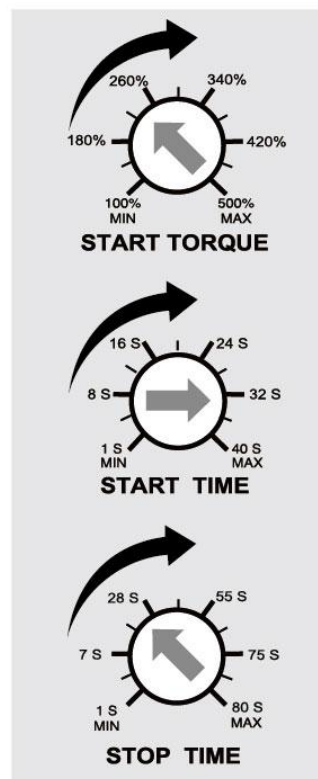
>>> 一般特性

General Characteristic

主電源電壓 main power voltage	208~220V/380~440V/460~480V±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%
最高峰值耐壓 maximum peak voltage	600VAC或1200VAC~1600VAC
啟動時間(加速時間) start time (speed time)	1~40sec.
啟動扭力 start torque	100%~500%
停止時間(減速時間) stop time (retard time)	1~80 sec. (有轉矩80秒, 無轉矩60秒)
周圍工作溫度 ambient operating temperature rang	-10°C~45°C
最大相對溼度 relative humidity	93%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
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

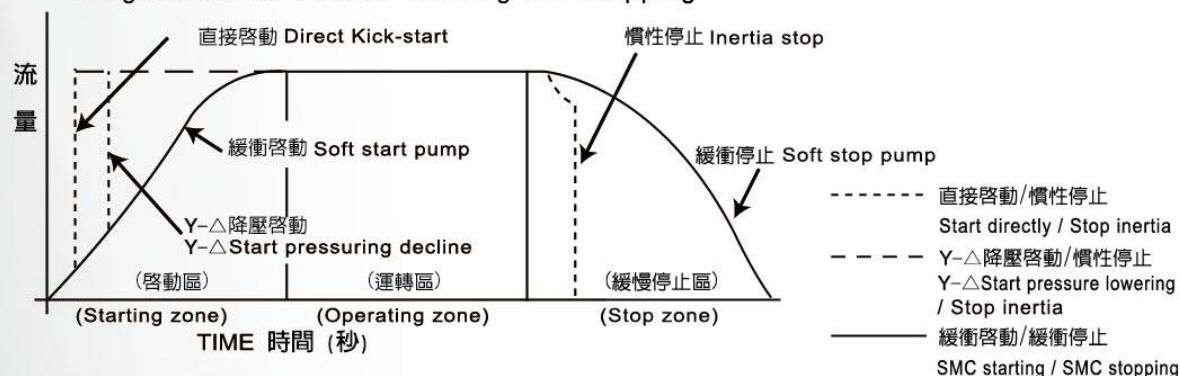
>>> 扭力、時間參考下圖解

Reference drawing of torque and time



>>> SOFT PUMP 與各式啟動、停止流量比較圖

Diagram of SOFT PUMP Starting and Stopping



泵浦馬達專用緩衝器

SOFT START PUMP MOTOR CONTROLLER

Quality, Service, Speed



SMC-P標準型系列 SMC-P STANDARD SERIES

>>> 型號規格選擇 Choice of Specification & Models

額定電流 rated current	額定電壓 rated voltage				額定電流 rated current	額定電壓 rated voltage		長 L (mm)	寬 W (mm)	高 H (mm)	圖 P
	208-220VAC	HP	380-440VAC	HP		460-480VAC	HP				
7A			SMC930030-P	3HP	7A	SMC940050-P	5HP	210	142	154	1
10A	SMC920030-P	3HP	SMC930050-P	5HP	10A	SMC940075-P	7.5HP	210	142	154	1
15A	SMC920050-P	5HP	SMC930075-P	7.5HP	15A	SMC940100-P	10HP	210	142	154	1
22A	SMC920075-P	7.5HP	SMC930100-P	10HP	22A	SMC940150-P	15HP	210	142	154	1
28A	SMC920100-P	10HP	SMC930150-P	15HP				210	142	154	1
35A			SMC930200-P	20HP	28A	SMC940200-P	20HP	233	142	154	2
42A	SMC920150-P	15HP	SMC930250-P	25HP	35A	SMC940250-P	25HP	233	142	154	2
55A	SMC920200-P	20HP	SMC930300-P	30HP	42A	SMC940300-P	30HP	233	142	154	2
70A	SMC920250-P	25HP	SMC930400-P	40HP	55A	SMC940400-P	40HP	285	142	154	3
82A	SMC920300-P	30HP	SMC930500-P	50HP	70A	SMC940500-P	50HP	285	142	154	3
105A	SMC920400-P	40HP	SMC930600-P	60HP	82A	SMC940600-P	60HP	285	142	154	3
135A	SMC920500-P	50HP	SMC930750-P	75HP	105A	SMC940750-P	75HP	320	142	200	4
155A	SMC920600-P	60HP	SMC931000-P	100HP	135A	SMC941000-P	100HP	320	142	200	4
185A	SMC920750-P	75HP	SMC931250-P	125HP	155A	SMC941250-P	125HP	400	263	210	5
250A	SMC921000-P	100HP	SMC931500-P	150HP	185A	SMC941500-P	150HP	400	263	210	5
280A			SMC931750-P	175HP	250A	SMC941750-P	175HP	400	263	210	5
300A	SMC921250-P	125HP	SMC932000-P	200HP	280A	SMC942000-P	200HP	530	306	247	6
360A	SMC921500-P	150HP	SMC932500-P	250HP	300A	SMC942500-P	250HP	530	306	247	6
420A	SMC921750-P	175HP	SMC933000-P	300HP	360A	SMC943000-P	300HP	530	306	247	6
500A	SMC920500A-P		SMC930500A-P		500A	SMC940500A-P		655	365	285	7
560A	SMC920560A-P		SMC930560A-P		560A	SMC940560A-P		662	575	308	8
620A	SMC920620A-P		SMC930620A-P		620A	SMC940620A-P		662	575	308	8
750A	SMC920750A-P		SMC930750A-P		750A	SMC940750A-P		662	575	308	8
930A	SMC920930A-P		SMC930930A-P		930A	SMC940930A-P		675	573	308	8
1100A	SMC921100A-P		SMC931100A-P		1100A	SMC941100A-P		675	573	308	8

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

※ 本公司緩衝器之額定電流值以東元馬達之4極馬達之電流值做為依據，若超載使用，屬非保固範圍。

The rated current value of our soft starter is as the basis of the current value of TECO Motor's 4-pole motor.

And we are so sorry that it is non-warranty coverage for the overload use.



(圖一)



(圖二)



(圖三)



(圖四)



(圖五)



(圖六)



(圖七)



(圖八)

單相馬達緩衝器



SINGLE PHASE SOFT START CONTROLLER

>>> 產品特性

Product Characteristic

- 本產品具CE國際安全之認證。
- 啟動時可依不同負載來調整啟動扭力與時間，使啟動平順圓滑。
- 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。
- 耐粉塵、耐潮，可適用於ON-OFF頻繁及怕火花產生的場所，工安有保障。
- 應用於單相泵浦馬達及單相感應式馬達，可以有效消除水錘問題。
- This controller is passed CE international quality accreditation.
- Starting torque and time can be adjusted according to the different load when starting, and make starting smoothly and stably.
- Use SCR control: without connecting points, arc light smooth face wearing, or sue-life forever similarly.
- Powder-dust proof, moisture proof, suitable to ON-OFF frequently and the place can't have spark, thg factory security can be ensured.
- Single phase pump motor and single phase motor can best water hammer removing function.

>>> 適用負載

Loading Suitable

- 應用於單相泵浦馬達可以有效消除水錘問題。
- Applied to single phase to resolve the problem effectively of water hammer.
- 適用於單相感應式馬達須啟動平順之場所，如電動鐵門.....
- Suitable to the place need to start smoothly with single phase induction motor, eg. : electric iron gate.....

>>> 一般特性

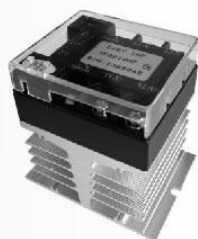
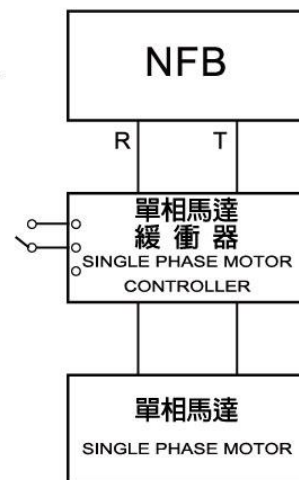
General Characteristic

主電源 main voltage	AC110V, 220V
工作頻率 work frequency	47-63 Hz
輸入控制訊號 input control signal	乾接點輸入 dry contact point
使用環境 environment	周溫-10~50°C 溼度90RH %以下 Around temperature -10°C~50°C, humidity under 90% RH.
高度 height	標高2000公尺以下 below is under 2000 metres

>>> 型號規格選擇 Choice of Specification & Models

額定電壓 Rated voltage			長 L (mm)	寬 W (mm)	高 H (mm)	圖 P
110V	220V	HP				
JK1110HP	JK2210HP	1HP	75	102	103	1
JK1120HP	JK2220HP	2HP	75	102	103	1
JK1130HP	JK2230HP	3HP	75	102	103	1
	JK2250HP	5HP	115	100	137	2
	JK2275HP	7.5HP	115	100	137	2

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)