

榮獲經濟部標準檢驗局ISO 9001、ISO 14001及OHSAS 18000認證之配電盤廠
The switchgear plant with ISO 9001、ISO 14001 & OHSAS 18000 certified by
Bureau of Standards, Metrology & Inspection (BSM) Ministry of Economic Affairs, Taiwan

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600V馬達控制中心(M.C.C)盤

600V Motor Control Center Panel



南亞塑膠工業股份有限公司
NAN YA PLASTICS CORPORATION

工務部 · 配電盤組
Switchgear Unit, Engineering Div.

南亞配電盤部研發一

600V 馬達控制中心(M.C.C)盤

The 600V low voltage motor control center panel is researched and developed by NAN YA switchgear division.



■ 依據法規：

符合 CNS3989，IEC 439-1

■ 盤體特點：

- 堅固性：盤體構造採用閉鎖防塵型，粉體塗裝，美觀耐用。
- 安全性：MCCB 操作把手與盤門以機械方式連鎖，防止錯誤操作。另在單元室與銅排單元間裝有遮蔽板，於單元抽出時，即連動遮蔽隔離，保護操作人員安全。
- 相容性：可依客戶需要採用不同型式 MCCB，MCP (如：MERLIN GERIN、SQUARE D、CUTLER-HAMMER、FUJI 等)。
- 擴充性：單元規格標準化，擴充性大、互換性高。
- 便捷性：過載跳脫時，可直接由盤門復歸；半抽出式單元設計，安裝容易。
- 經濟性：適用於石化、鋼鐵、化纖、發電廠、大樓、醫院等大型工廠／機構的低壓馬達負載之集中開關控制，經濟效益高。

■ Governing standards:

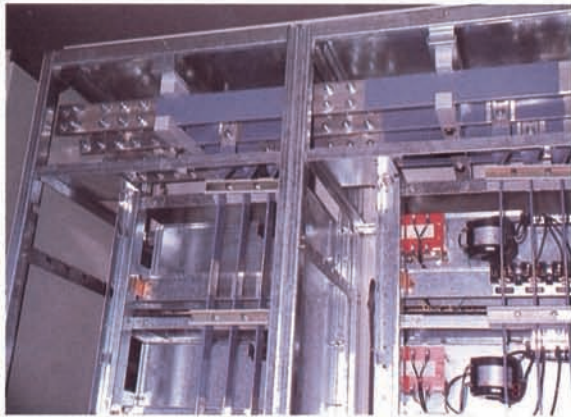
Meet CNS3989, IEC 439-1

■ Panel features:

- Durable: Beauty and durable construction with powder coating treatment, dust-proof and steel enclosure structure.
- Safety: The operation handle of MCCB has a mechanical interlock with door to prevent operation errors. In addition, there is a shutter between unit and bus bar to shut away the live part for protecting the operators when unit was drew out.
- Compatibility: According to client's requirements, it can incorporate with the different type of MCCB, MCP such as MERLIN GERIN, SQUARE D, CUTLER-HAMMER, FUJI.
- Extensibility: High extensibility and interchangeability with standardized specification of starting unit.
- Convenience: Reset the over load relay from outside; Easy installation with semi-draw out unit design.
- Economy: The M.C.C. is suitable for the grouping electric motor controllers used by petrochemical, steel works, fiber and paper industries, generator station, general buildings, hospital as well as the large factories and institutions due to its high economic benefit.

■ 盤體結構

- 盤體單元室高度總計 1800mm，可依負載不同，自 300mm 以上以 150mm 為單位，設計規劃。
- 盤體安裝祇需固定鎖緊底座前後二根基礎螺絲即可完成。
- 每一盤體均安裝垂直接地銅排，當單元室插入時，即可完成接地功能。
- 水平匯流排：電流容量：600A ~ 3000A.
- 垂直匯流排：電流容量：420A.
遮斷容量：42KA ~ 100KA.



匯流排連接 (Bus bar connection)

■ Panel construction

- The totally height of the unit is 1800 mm. It can be designed to fit different load based on each 150mm expansion beyond 300mm.
- Panel can be fastened by using only two basic bolts.
- Each panel has a earth bus bar. The units are grounded when it is plugged in the panel.
- Horizontal bus bar : Rated current : 600A ~ 3000A.
- Vertical bus bar : Rated current : 420A.
Interrupting capacity : 42KA ~ 100KA.



單元室隔間 (Unit compartments)

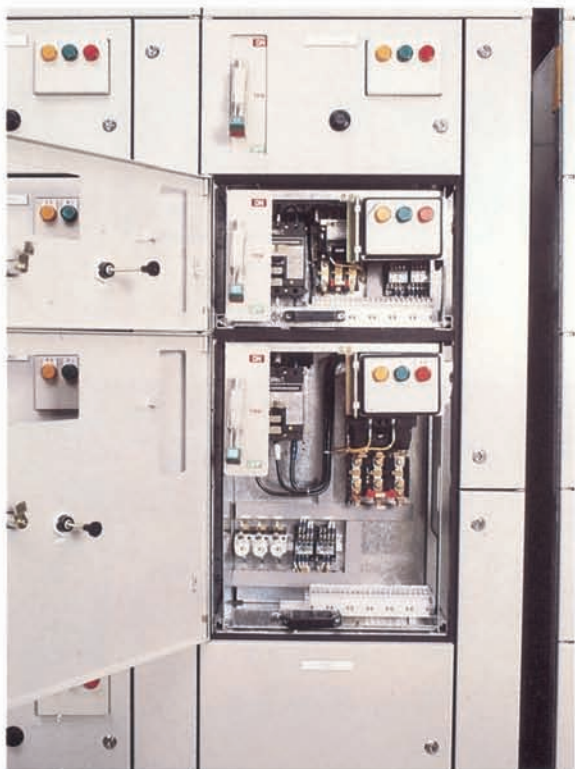
- 獨創單元室增設遮蔽機構 (Shutter)，當單元室抽出 / 插入時，遮蔽機構 (Shutter) 可自動關閉 / 開啟，避免操作人員接觸帶電體，提高用電之安全，符合 IEC 國際標準。
- Especially design the shutter, when MCC unit draw-out / plug-in, shutter will close / open automatically to prevent touching the live parts, it meet IEC 439-1 standard and promote the safty.



單元遮蔽機構 (Shutter)

■ 單元結構

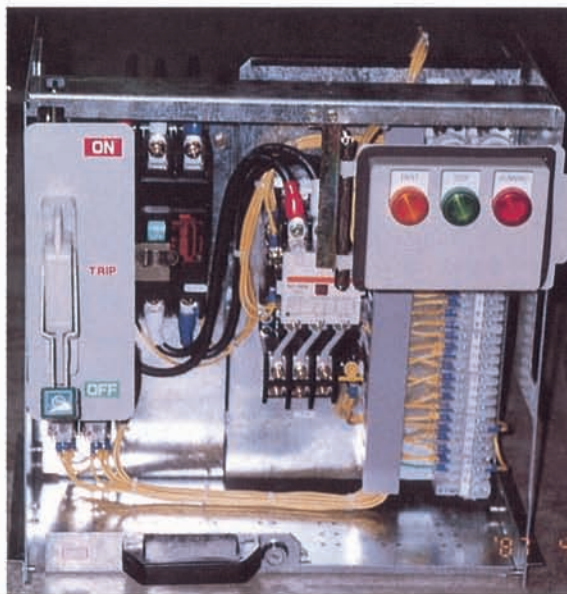
- 彈性的單元設計可滿足不同設備需求。
- 可選用高遮斷容量斷路器。
- 適用全壓及降壓啟動設計，其負載容量範圍：1/2 ~ 700HP。
- 標準控制面板最多可安裝6個控制器具 (22mm ϕ)。
- MCC 單元室內可彈性配合安裝可程式控制器 (PLC)、變頻器及分電盤，符合工業需求，擴充彈性大。
- 抽出式控制線端子盤用每組 4P 之端子盤，其額定電壓為 600V 接點容量可達 20A；可選用歐式組合式端子，安裝較多端子盤。
- 各單元室之動力端子盤，亦可規劃安裝於底部走線室，供客戶統一作外線連接。



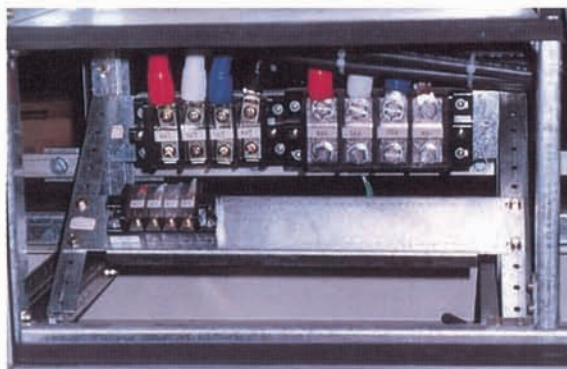
單元安裝 (Unit installation)

■ Unit construction

- Flexible design can meet different equipment requirements.
- Available for using high interrupting breakers.
- Apply to full-voltage and reduced-voltage starting design, the load capacity range is from 1/2 HP to 700 HP.
- Up to six control devices (22mm ϕ) can be mounted on a standard control unit.
- The unit of MCC can install programmable logic controller (P.L.C.), inverter and distributive panel. It meets the industrial requirements and has high extensibility.
- Using a 4P terminal blocks as draw-out control wiring terminal board. The rated voltage is 600V and the contactor's capacity is up to 20A.
- The power terminal board for each unit can be designed to set in the bottom of panel for clients to connect with external wirings.



半抽出式單元結構 (Semi-draw out unit structure)



動力端子盤 (Power terminal blocks)

■ 外形尺寸 / Dimensions :

單位：公厘 / Unit:mm

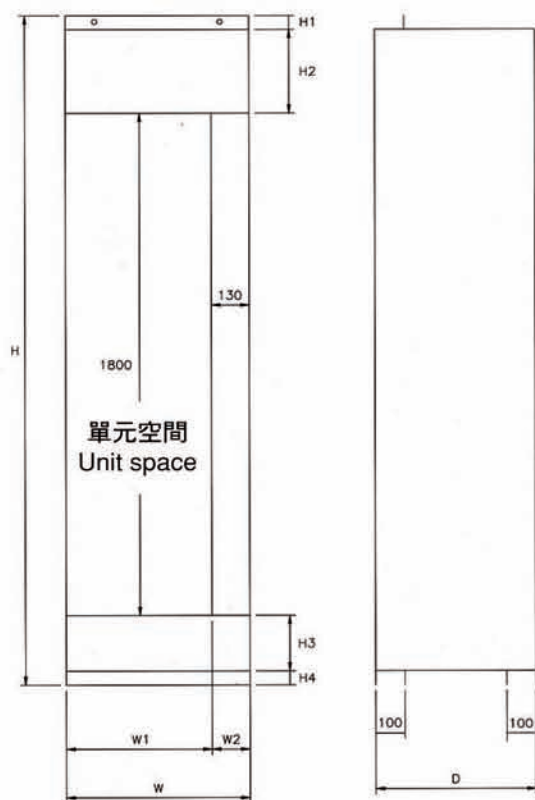
尺寸 Dimensions 盤面 Panel	W 盤寬 Width of panel	W1 單元室 Unit	W2 垂直走線室 Vertical Wiring Room	H 盤高 Height of panel	H1 吊耳 Hoist	H2 水平走線室 Horizontal Wiring Room	H3 底部走線室 Bottom Wiring Room	H4 底座 Base	D 盤深 Depth of panel	重量(Kg) Weight(Kg)
單面 Single side	630/700	500	130/200	2400/ 2500(*1)	50	300	200/ 300(*1)	50	550/ 700(*2)	272/341
雙面 Double side	630/700	500	130/200	2400/ 2500(*1)	50	300	200/ 300(*1)	50	800	544/682

*1:動力端子板置於底部走線室之尺寸

*2:頂部進線者

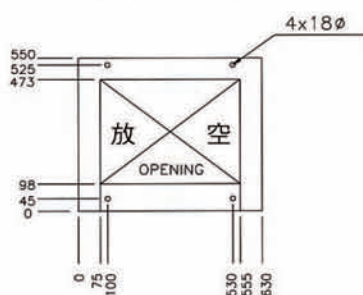
630W X 550D 外形尺寸：

630W X 550D Dimension:



前視圖
Front view

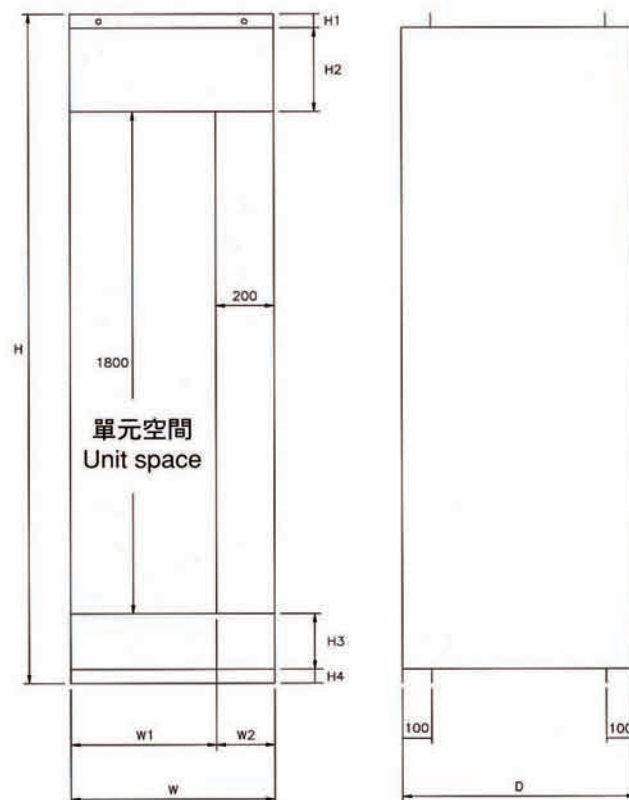
側視圖
Side view



底視圖
Bottom view

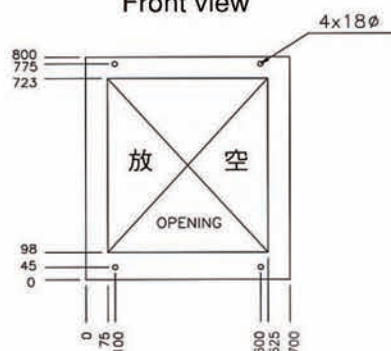
700W X 800D 外形尺寸：

700W X 800D Dimension:



前視圖
Front view

側視圖
Side view



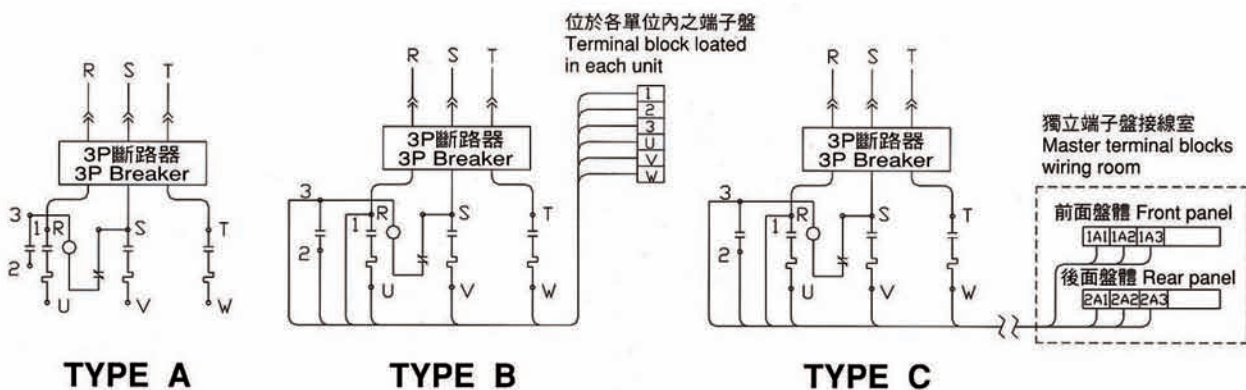
底視圖
Bottom view

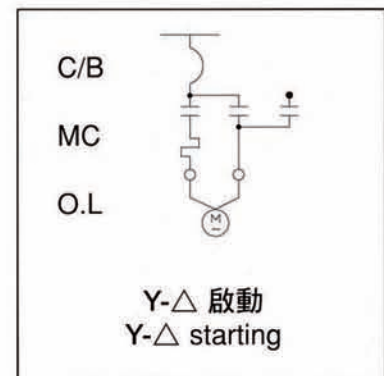
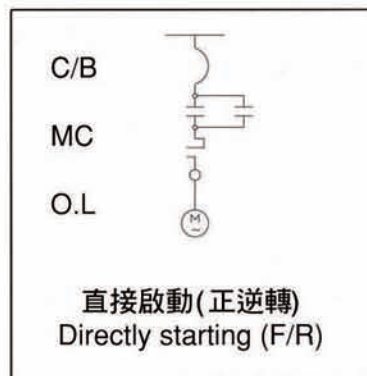
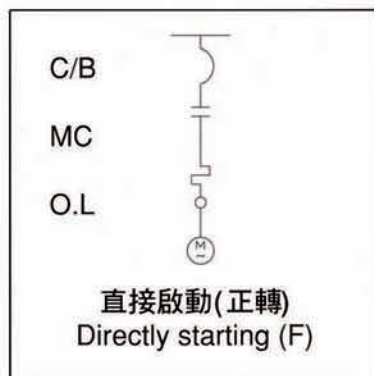
■ 規範 Specifications :

項 目 Items			規 格 Specifications		
額 定 Rated	主線路額定電壓 Main circuit rated voltage		AC 600V		
	控制線路額定電壓 Control circuit rated voltage		AC 110V/220V		
	額定頻率 Rated Frequency		60/50HZ		
	匯流排 額定電流 Rated current for bus bar	水平匯流排 Horizontal bus bar	3000A ↓		
		垂直匯流排 Vertical bus bar	420A		
	匯流排遮斷容量 Interrupting capacity for bus bar		42KA/SYM (STD.) , 100KA/SYM (MAX.)		
	適用負載容量 Suitable for load capacity		700HP/440V (MAX.)		
電 源 Source	主線路電源 Main Circuit		3 φ 3W, 3 φ 4W		
	外線進線方式 External wire infeed		頂部，底部 top/bottom		
盤 體 Panel	保護構造 Protection structure		閉鎖一般型 (IEC IP 30) general enclosed type (IEC IP 30)		
	監控盤面 Control board		單面型，雙面型 single side, double side		
	單元格數 Unit number		6 × 300mm MAX./FVNR (單面型) , 12 × 300mm MAX./FVNR (雙面型) 6 × 300mm MAX./FVNR (single side) ,12 × 300mm MAX./FVNR (double side)		
	門 板 Door	前 門 Front door	各單元獨立 (單元門板為左開，垂直走線室為右開) Independent of each unit (vertical wiring room: open right, other:open left)		
		背 板 Rear plate	整片式 Whole sheet		
	顏色 Color		MUNSELL 5Y 7/1		
單 元 Unit	單元安裝及 線路接續方式 Unit construction and wiring connection type	單元種類 Unit type	抽出式 drawout type (MCCB ≤ 250AT)	固定式 fixed type (MCCB > 250AT)	
		電源側 Source	自動連接 automatic connection (plug)	螺絲固定 fixed with bolts (power terminal)	
		負載側 Load	螺絲固定／手動連結 fixed with bolts (power terminal)/manual group connection (plug)		
		控制線路 Control	手動分組連接 manual group connection (plug)		
	標準動力配線方式 Standard power wiring style		NEMA CLASS I TYPE B		
環 境 Environ- ment	設備使用環境 Environment of equipment application		屋內盤 環境溫度：0~40℃ Indoor panel environment temperature：0~40℃ 相對溼度：45~85% relative humidity：45~85% 標 高：1000M 以下 elevation: below1000M		

■ NEMA 配線等級 / NEMA Wiring Class :

NEMA	TYPE	規 範 說 明 Specification illustration
CLASS I	A	外部控制線皆直接進線接至各單元之電氣器具 User field control wiring shall connect directly to device terminals internal to the unit
	B	單元控制線全部接至各單元內之端子盤 User field control wiring shall connect directly to unit terminals blocks located in each combination motor control unit
	C	單元控制線全部接至獨立端子盤接線室 User field control wiring shall connect directly to master terminals blocks mounted at vertical sections that contain combination motor control units or control assemblies.
CLASS II	B	具有 CLASS I TYPE B 功能外，單元間連鎖配線由製造廠商裝配完成 The class II type B shall be the same as Class I type B with the addition of manufacturer furnished electrical interlocking and wiring between units as specially described in overall control system diagrams supplied by the purchaser.
	C	具有 CLASS I TYPE C 功能外，單元間連鎖配線由製造廠商裝配完成 The class II type C shall be the same as Class I type C with the addition of manufacturer furnished electrical interlocking and wiring between units as specially described in overall control system diagrams supplied by the purchaser.





IEC (220V)

● 表 1/ Table 1 :

單元高度 / Height of unit	單元馬達容量 Capacity of unit motor	HP	10	15	20	25	30	40	50	60	75	100	125	150	175
主要器具 / Main device		KW	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132
直接啟動基本器具 / Basic device of directly starting															
NFB+MC+TH+PT			300	300	450	450	600	600	750	900	900	900	1200	1500	1800
+CTx1+AMx1+A/Tx1			450	450	450	600	600	600	750	900	900	1200	1500	1500	1800
+CTx2+AMx1+A/Tx1			600	600	600	600	600	750	900	900	1200	1200	1500	1500	1800
+CTx3+AMx1+A/Tx1			600	600	750	750	750	900	900	1200	1200	1500	1500	1800	1800
正逆轉啟動基本器具 / Basic device of F/R starting															
NFB+2MC+TH+PT			450	450	600	600	600	600	750	900	900	1200	1500	1500	1800
+CTx1+AMx1+A/Tx1			600	600	600	600	750	750	750	900	900	1200	1500	1500	1800
+CTx2+AMx1+A/Tx1			600	600	600	600	750	750	900	1200	1200	1200	1500	1500	1800
+CTx3+AMx1+A/Tx1			600	600	750	750	750	900	900	1200	1500	1500	1800	1800	1800
Y-Δ 啟動基本器具 / Basic device of Y-Δ starting															
NFB+3MC+TH+PT						600	600	600	750	900	900	1200	1500	1500	1800
+CTx1+AMx1+A/Tx1						600	750	750	750	900	900	1200	1500	1500	1800
+CTx2+AMx1+A/Tx1						600	750	750	900	1200	1200	1200	1500	1500	1800
+CTx3+AMx1+A/Tx1						750	750	900	900	1200	1500	1500	1800	1800	1800

單一 MCCB 無控制 Single MCCB without control	單元室高度 Height of unit
100AF	300
160AF	300
250AF	450
400AF, 600AF	600
800AF ↑	900

進線箱：依水平銅排而定（無主 MCCB） Incoming unit : depending on horizontal bus bar (without main MCCB)				
水平銅排 10t Vertical bus bar (10t)	40W ↓	60W ↓	80W ↑	120W X 2
額定電流 Rated current	700A	1000A	1300A	3000A
單元室高度 Height of unit	450	600	300 寬之走線箱 300mm of width	300 寬之走線箱 300mm of width

IEC (380/440V)

● 表 2： (Table 2)

單元高度 Height of unit	單元馬達容量 Capacity of unit motor	HP	10	15	20	25	30	40	50	60	75	100	125	150	175	220
主要器具 Main device		KW	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160
直接起動基本器具 Basic device of directly starting																
NFB+MC+TH+PT			300	300	300	450	450	450	600	600	600	750	900	900	1200	1500
+CTx1+AMx1+A/Tx1			450	450	450	450	450	600	600	600	600	750	900	1200	1500	1500
+CTx2+AMx1+A/Tx1			600	600	600	600	600	600	600	750	750	900	1200	1200	1500	1500
+CTx3+AMx1+A/Tx1			600	600	600	600	750	750	750	900	900	900	1500	1500	1800	1800
正逆轉起動基本器具 Basic device of F/R starting																
NFB+2MC+TH+PT			450	450	450	600	600	600	600	600	750	750	900	1200	1200	1500
+CTx1+AMx1+A/Tx1			600	600	600	600	600	600	750	750	750	750	1200	1200	1200	1500
+CTx2+AMx1+A/Tx1			600	600	600	600	600	600	750	750	750	900	1200	1200	1500	1500
+CTx3+AMx1+A/Tx1			600	600	600	750	750	750	750	900	900	900	1500	1500	1500	1800
Y-△起動基本器具 Basic device of Y-△ starting																
NFB+3MC+TH+PT								900	900	1050	1050	1050	1050	1500	1500	1800
+CTx1+AMx1+A/Tx1								900	900	1050	1050	1050	1200	1500	1500	1800
+CTx2+AMx1+A/Tx1								1050	1050	1200	1200	1200	1200	1500	1500	1800
+CTx3+AMx1+A/Tx1								1050	1050	1200	1200	1200	1500	1500	1800	1800

單一 MCCB 無控制 Single MCCB without control	單元室高度 Height of unit
100AF	300
160AF	300
250AF	450
400AF, 600AF	600
800AF ↑	900

進線箱：依水平銅排而定（無主 MCCB） Incoming unit : depending on horizontal bus bar (without main MCCB)				
水平銅排 10t Vertical bus bar (10t)	40W ↓	60W ↓	80W ↑	120Wx2
額定電流 Rated current	700A	1000A	1300A	3000A
單元室高度 Height of unit	450	600	300 寬之走線箱 300mm of width	300 寬之走線箱 300mm of width

NEMA (220V)

● 表 3： (Table 3)

單元高度 Height of unit	單元馬達容量 Capacity of unit motor	HP	10	15	20	25	30	40	50	60	75	100	125	150	175
主要器具 Main device		KW	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132
直接起動基本器具 Basic device of directly starting															
NFB+MC+TH+PT			300	450	450	450	600	600	600	1800	1800	1800	1800	1800	1800
+CTx1+AMx1+A/Tx1			450	450	450	450	600	750	750	1800	1800	1800	1800	1800	1800
+CTx2+AMx1+A/Tx1			600	600	600	600	750	750	750	1800	1800	1800	1800	1800	1800
+CTx3+AMx1+A/Tx1			600	600	600	600	750	900	900	1800	1800	1800	1800	1800	1800
正逆轉起動基本器具 Basic device of F/R starting															
NFB+2MC+TH+PT			600	600	600	600	750	900	900	1800	1800	1800	1800	1800	1800
+CTx1+AMx1+A/Tx1			750	750	750	750	900	1200	1200	1800	1800	1800	1800	1800	1800
+CTx2+AMx1+A/Tx1			750	750	750	750	900	1200	1200	1800	1800	1800	1800	1800	1800
+CTx3+AMx1+A/Tx1			750	750	750	750	900	1200	1200	1800	1800	1800	1800	1800	1800
Y-△起動基本器具 Basic device of Y-△ starting															
NFB+3MC+TH+PT						750	900	900	900	1800	1800	1800	1800	1800	1800
+CTx1+AMx1+A/Tx1						750	900	1200	1200	1800	1800	1800	1800	1800	1800
+CTx2+AMx1+A/Tx1						900	1200	1200	1200	1800	1800	1800	1800	1800	1800
+CTx3+AMx1+A/Tx1						900	1200	1200	1200	1800	1800	1800	1800	1800	1800

單一 MCCB 無控制 Single MCCB without control	單元室高度 Height of unit
100AF	300
250AF	450
400AF	750
600AF	750
800AF ↑	900

進線箱：依水平銅排而定（無主 MCCB） Incoming unit : depending on horizontal bus bar (without main MCCB)				
水平銅排 10t Vertical bus bar (10t)	40W ↓	60W ↓	80W ↑	120Wx2
額定電流 Rated current	700A	1000A	1300A	3000A
單元室高度 Height of unit	450	600	300 寬之走線箱 300mm of width	300 寬之走線箱 300mm of width

NEMA (380/440V)

● 表 4 : (Table 4)

單元高度 Height of unit	單元馬達容量 Capacity of unit motor	HP	10	15	20	25	30	40	50	60	75	100	125	150	175	220
主要器具 Main device		KW	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160
直接起動基本器具 Basic device of directly starting																
NFB+MC+TH+PT			300	450	450	450	600	600	600	600	600	1800	1800	1800	1800	1800
+CTx1+AMx1+A/Tx1			450	450	450	450	600	600	600	750	750	1800	1800	1800	1800	1800
+CTx2+AMx1+A/Tx1			600	600	600	600	600	600	750	750	750	1800	1800	1800	1800	1800
+CTx3+AMx1+A/Tx1			600	600	600	600	750	750	750	900	900	1800	1800	1800	1800	1800
正逆轉起動基本器具 Basic device of F/R starting																
NFB+2MC+TH+PT			450	600	600	600	750	750	750	1200	1200	1800	1800	1800	1800	
+CTx1+AMx1+A/Tx1			450	750	750	750	750	750	900	1200	1200	1800	1800	1800	1800	
+CTx2+AMx1+A/Tx1			600	750	750	750	750	750	900	1200	1200	1800	1800	1800	1800	
+CTx3+AMx1+A/Tx1			600	750	750	750	750	750	900	1200	1200	1800	1800	1800	1800	
Y-△起動基本器具 Basic device of Y-△ starting																
NFB+3MC+TH+PT								1200	1200	1800	1800	1800	1800	1800	1800	
+CTx1+AMx1+A/Tx1								1500	1500	1800	1800	1800	1800	1800	1800	
+CTx2+AMx1+A/Tx1								1500	1500	1800	1800	1800	1800	1800	1800	
+CTx3+AMx1+A/Tx1								1500	1500	1800	1800	1800	1800	1800	1800	

單一 MCCB 無控制 Single MCCB without control	單元室高度 Height of unit
100AF	300
250AF	450
400AF	750
600AF	750
800AF ↑	900

進線箱：依水平銅排而定（無主 MCCB） Incoming unit : depending on horizontal bus bar (without main MCCB)				
水平銅排 10t Vertical bus bar (10t)	40W ↓	60W ↓	80W ↑	120Wx2
額定電流 Rated current	700A	1000A	1300A	3000A
單元室高度 Height of unit	450	600	300 寬之走線箱 300mm of width	300 寬之走線箱 300mm of width

◆註 / Notes :

1. 除上述規格外，另可依客戶需要設計。
2. 型錄之資料如有變更，不另外通知。

1. In addition to all of the above , the M.C.C. can be designed to suit customer's requirement.
2. This data give in this catalog are subject to change without notice.



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