

高性能電子剎車器系列

High performance BRAKING UNIT SERIES



LSBR 系列 SERIES

200V級Class 400V級Class

產品介紹

本公司系專業製造生產馬達變頻器及電子式剎車單元之專業廠，十幾年來，不斷研發創新，力求提高最佳品質，以滿足客戶需求為責任。

當變頻器帶動馬達於高速運轉中，欲急速減速達停止狀態時，因GD²關係，有回生電流流入變頻器DC BUS端而造成過電壓，為了避免跳機，於是剎車單元及剎車電阻扮演重要角色，由剎車單元偵測電壓值，將多餘的能量經由剎車電阻而將能量釋放，以保持電壓正常準位，避免變頻器跳機。

LSBR系列有兩種適用電壓

200V~230V : LSBR-2015B LSBR-2022B
380V~460V : LSBR-4015B LSBR-4030B

特色

- 外形美觀堅固耐用。
- 散熱率佳壽命長久。
- IGBT模組化設計，先進、創新。
- 單台、多台連動配線容易。
- 具有同步觸發，適用變頻器範圍無限容量。
- 可搭配任何廠牌變頻器，相容性佳。

剎車單元特性表 SPECIFICATION OF BRAKING UNIT

剎車單元規格 LSBR Brake model LSBR		200V ~ 230V 2015B 2022B		380V ~ 460V 4015B 4030B	
輸出特性 Output Characteristics	適用馬達輸出容量HP(KW) Applicable Motor Output HP (KW)	20HP 15kw	30HP 22kw	20HP 15kw	40HP 30kw
	額定放電電流(A) Rated Discharge current	15	20	10	15
	最大放電峰值電流(A) Max. Discharge Current(A) (peak value)	40	60	27	40
	放電啟動準位點 Starting Discharge Voltage	AC200V 208V 220V 230V ↓ DC327V 345V 365V 380V ± 3V		380V 400V 415V 440V 460V ↓ 620V 655V 680V 720V 760V ± 6V	
剎車動作電壓振幅 Max. Hysteresis Error	最大8V Approx. 8V		最大16V Approx. 16V		
電源範圍 Power supply	變頻器輸入側交流電壓 Input voltage of inverter	50HZ 60HZ	AC200V~230V	50HZ 60HZ	AC380V~460V
	變頻器直流側BUS電壓 DC Bus voltage	243V~400V 峰值 Peak		460V~800V 峰值 Peak	
保護功能 Protective Functions	散熱片過熱 Fin overheat	溫度開關偵測3、4接點輸出，呈常開接點狀態 temperature sensor 3 - 4 connect point output			
	直流電壓LED指示 Power charge Indication	當DC電壓在BUS端趨近50V時，LED燈即亮 Main & return DC lines voltage above 50V, charging lamp is on light			
安裝環境 Environmental Conditions	場所 Location	室內，無腐蝕性氣體及粉塵 In door, no corrosive gas or liquid and free from dust			
	周圍溫度 Ambient Temperature	-10~+40°C (不結冰)		-10+40°C (not frozen)	
	濕度 Humidity	90%RH不結露		90%RH (Non-condensing)	
	振動 Vibration	20Hz以下為1G, 20Hz以上至50Hz為0.2G		1G at 20Hz less than, up to 0.2G at 20 to 50Hz	
安裝結構 Protective Configuration	掛式，裝在堅固水泥牆上或控制箱體		wall-mounted enclosed type		

連續放電時，應低於額定電流10%以下，最長時間為10分鐘 Loading time rate can be used below 10%ED(max, 10min)

Production introduction:

We are a specialized manufacturing factory of motor inverter and electric type brake. We have been continuous developing new creation and innovation more than 10 years to enhance best quality and satisfy customer's demand.

When inverter driving motor in high speed rotation and attempting to decelerate motor to motionless situation, as the relation of GD², there is re-generation voltage flow into DC BUS terminal of inverter and make over voltage. In order to avoid breaking down of machine, the braking unit and braking resistor are playing important roles. The brake components are detecting voltage value and release more balance energy through braking resistor to keep normal voltage and avoid inverter breaking down.

There are two suitable voltages for LSBR series:

200V-230V : LSBR-2015B LSBR-2022B
380V-460V : LSBR-4015B LSBR-4030B

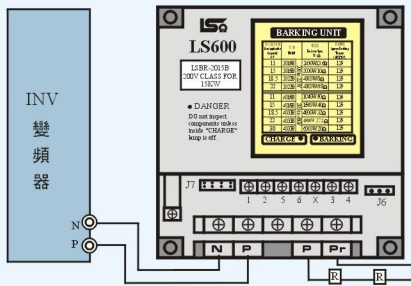
Features:

- * Appearance beautiful, strong and durable.
- * With good cooling efficiency and long span life.
- * IGBT module design, advanced and innovated.
- * Individual machine, multi machine continuous driving with easy wiring assembly.
- * With simultaneous gate, suitable range of inverter is limitless capacity.
- * Available to comply with any brand of inverter with good compatible.

單台、多台同時動作接線方法

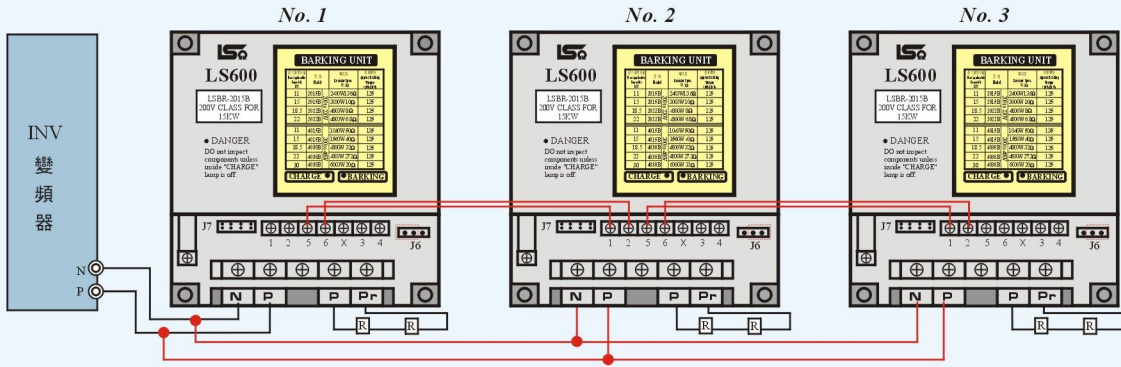
The movement connection method of individual and multi machine

(1) 單台剎車單元接線 Connection of Individual braking unit



- ◎ 變頻器N、P接到剎車單元N、P。N對N, P對P接妥。
- ◎ J6之MASTER-COM以短路片連接。
- ◎ 確定變頻器正確輸入電壓再由剎車單元J7選擇相同電壓後以短路片連接。
- ◎ "N" and "P" of inverter are connecting to "N" and "P" of braking unit."N" to "N" and "P" to "P" connection.
- ◎ J6 of MASTER-COM is connected by short circuit.
- ◎ Make sure the corrective input voltage and select same voltage by braking unit J7, then connect by short circuit.

(2) 多台剎車單元接線 Connection of multi braking unit



並列接線例：

- BRAKING UNIT 1 為主機，J6選用MASTER - COM。
- BRAKING UNIT 2 為從主機，J6選用SLAVE - COM。
- BRAKING UNIT 3 為從主機，J6選用SLAVE - COM。
- 可並接多組BRAKING 為從主機：制動放電一致。所有從主機，制動放電準位皆以主機為主。(BRAKING UNIT 1 端子 5, 6 接至BRAKING UNIT 2 之端子 1,2 BRAKING UNIT 2 之端子 5, 6 接至接至BRAKING UNIT 3 之端子 1,2)

Example:

Parallel connection:braking unit 1 is main machine, J6 select MASTER-COM.

Braking unit 2 is auxiliary machine, J6 select SLAVE-COM.

Braking unit 3 is auxiliary machine, J6 select SLAVE-COM.

It is available to parallel connect more sets of braking unit as subsidiary machine to brake and discharge together, The criterion of all subsidiary machines is basic on main machine. (the terminal 5,6 of braking unit(1)is connecting to terminal 1,2 of braking Unit(2).

J7之設定以變頻器輸入電源AC之電壓為標準，對應JUMP選用。
The standard of J7 setting is basic on AC coltage of inverter input electric power to select JUMP.

	200V級 (Series)				400V級 (Series)				
變頻器輸入電源(AC) Inverter Power Input (AC)	200	208	220	230	380	400	415	440	460
制動開始電壓(DC) Braking Start Voltage	327	345	365	380	620	655	680	720	760

剎車電阻和剎車單元之選定

- (1) 變頻器容量200V~240V級0.4KW~7.5Kw及380V~460V級0.75KW~7.5KW剎車電路已內藏，選擇正確電阻值安裝即可，如下圖表格之說明。
- (2) 11Kw以上變頻器無內藏剎車電路可選擇本公司生產剎車單元安裝，請參考下列表格。
- (3) 剎車電阻連續放電之後，周圍將產生高溫，危及周圍物品，務必遠離易燃物品，並保持距離 2公尺以上，安裝場所必須通風或加裝風扇幫助散熱。

The section of braking resistor and braking unit

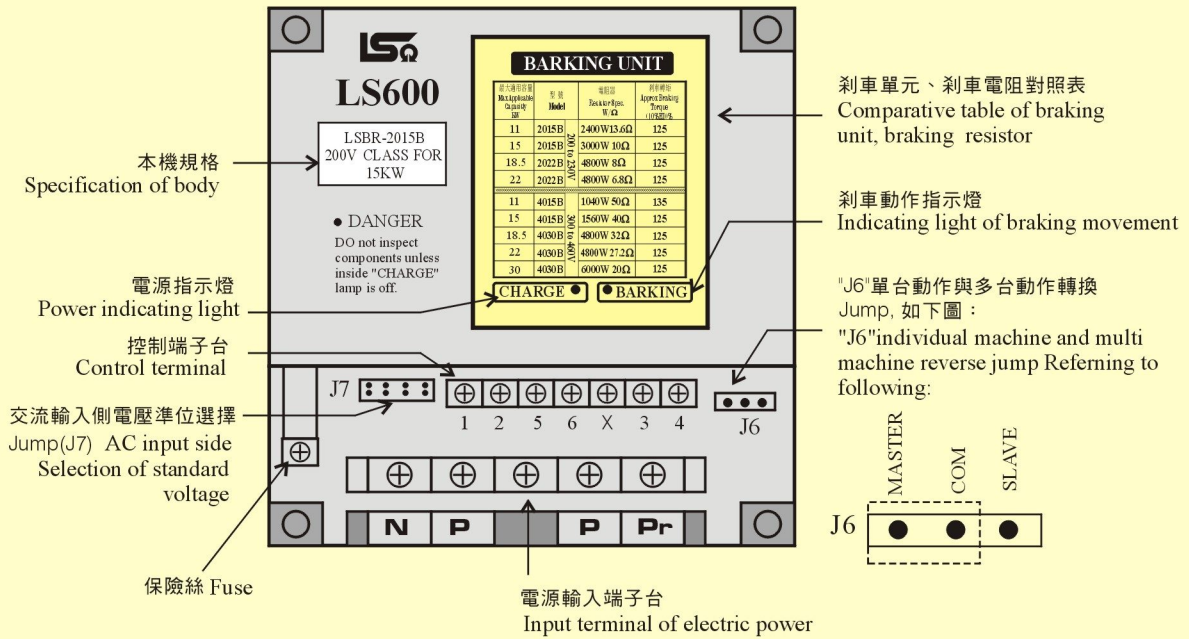
- (1) The braking circuit is inside hidden 200V-240V, 0.4KW-7.5KW and 380V-460V, 0.75KW-7.5KW of inverter's capacity. Select corrective resistor value to install. Please refer to following illustration.
- (2) More than 11KW inverter does not inside hide braking circuit, it can select our braking unit to install, Please refer to following illustration.
- (3) After continuous discharge of braking resistor, it is occurring high temperature all around and make danger for all sides articles. It is necessary to take away the flammable and keep distance more than 2 meters, The location of installation must ventilate or install electric fan for cooling.

電壓 Voltage 200V		INVERTER					規格	
型號規格 Model	容量 Capacity	最小歐姆數 Min. Ohm value	最小瓦特數 Min. Watt	剎車單元數量(台) Braking unit quantity	剎車轉矩 Braking Torque	電路 Install circuit 內藏 inside 外加 outside	外裝剎車 單元規格 Braking Model	
LS600-20-5	0.4	150	120	1	225	○		
LS600-2001	0.75	150	120	1	130	○		
LS600-2002	1.50	100	200	1	130	○		
LS600-2003	2.20	60	250	1	120	○		
LS600-2005	3.70	40	300	1	120	○		
LS600-2007	5.50	25	1000	1	150	○		
LS600-2010	7.50	20	2000	1	150	○		
LS600-2015	11.00	13.6	2400	1	125	○	LSBR-2015B	
LS600-2020	15.00	10.0	3000	1	125	○	LSBR-2015B	
LS600-2025	18.50	8.0	4800	1	125	○	LSBR-2022B	
LS600-2030	22.00	6.8	4800	1	125	○	LSBR-2022B	
LS600-2040	30.00	10	3000	2	125	○	LSBR-2015B	
LS600-2050	37.00	10	3000	2	100	○	LSBR-2015B	
LS600-2060	45.00	6.8	4800	2	120	○	LSBR-2022B	
LS600-2075	55.00	6.8	4800	2	100	○	LSBR-2022B	

電壓 Voltage 400V		INVERTER					規格	
型號規格 Model	容量 Capacity	最小歐姆數 Min. Ohm value	最小瓦特數 Min. Watt	剎車單元數量(台) Braking unit quantity	剎車轉矩 Braking Torque	電路 Install circuit 內藏 inside 外加 outside	外裝剎車 單元規格 Braking Model	
LS600-4001	0.75	300	200	1	200	○		
LS600-4002	1.50	300	200	1	200	○		
LS600-4003	2.20	150	300	1	130	○		
LS600-4005	3.70	100	500	1	130	○		
LS600-4007	5.50	80	800	1	150	○		
LS600-4010	7.50	60	1000	1	150	○		
LS600-4015	11.00	50	1040	1	135	○	LSBR-4015B	
LS600-4020	15.00	40	1560	1	125	○	LSBR-4015B	
LS600-4025	18.50	32	4800	1	125	○	LSBR-4030B	
LS600-4030	22.00	27.2	4800	1	125	○	LSBR-4030B	
LS600-4040	30.00	20	6000	1	125	○	LSBR-4030B	
LS600-4050	37.00	32	4800	2	125	○	LSBR-4030B	
LS600-4060	45.00	20	6000	2	135	○	LSBR-4030B	
LS600-4075	55.00	20	6000	2	135	○	LSBR-4030B	

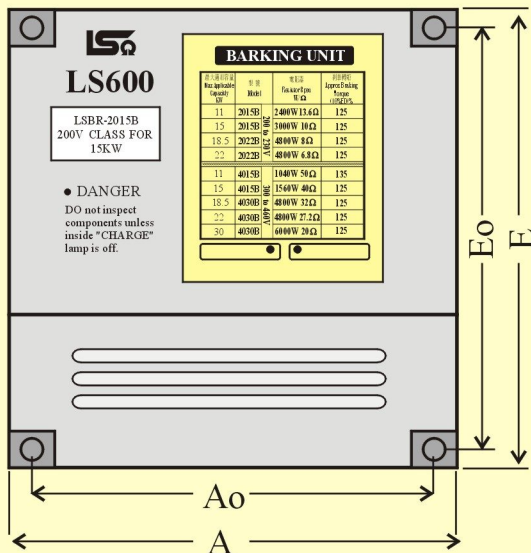
電源端子、控制端子位置圖

The location illustration of power terminal and control terminal:



剎車單元尺寸圖(mm)

Dimension illustration of braking unit(mm)



尺寸 Dimension

Size Area	A	Ao	E	Eo	D
Model					
LSBR-2015B	146	128	150	138	153
LSBR-2022B					
LSBR-4015B					
LSBR-4030B	146	128	200	188	153

重量材積 Weight and Measurement

型號 Model	淨重 Net weight	毛重 Gross weight	材積 Measurement	固定螺絲 Fixed screw
LSBR-2015B	1.8	2.0	0.3	M5
LSBR-2022B				
LSBR-4015B	2.6	3.0	0.4	M5
LSBR-4030B				