

## 制动单元 DBU DC Braking Module

### 产品概述 (Product Introduction)

采用在变频器直流侧设置制动单元组件，将再生电能消耗在功率电阻上来实现制动。通过专门的能耗制动控制电路将再生能量消耗在电阻上，转化为热能。

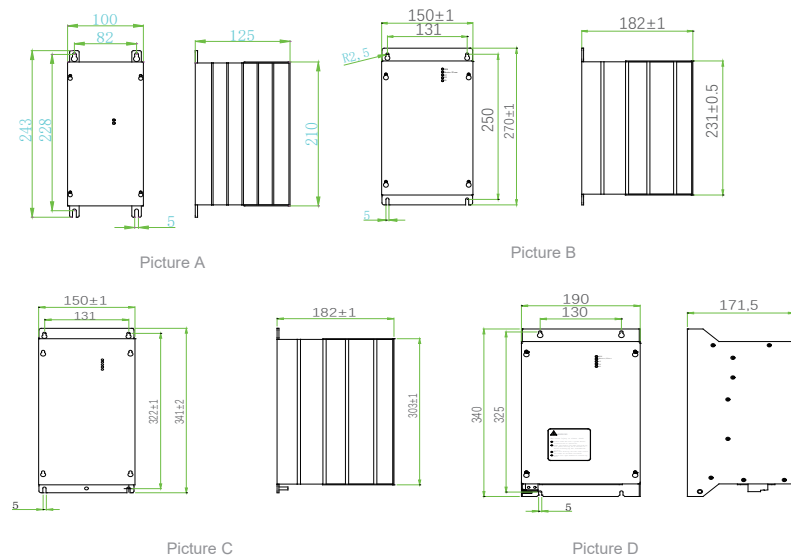
The function of the braking unit is to divert into a brake resistor the regenerative energy produced in the process of decelerating the motor, converting that energy into heat. Regenerative energy flows from the motor into the inverter DC bus, manifested as increased bus voltage.

### 产品应用 (Product Application)

主要用在变频器拖动系统需要急剧减速，刹车，定位等场合。变频器在减速时，由于拖动系统的惯性较大，此时电动机处于发电状态，机械能快速回馈到直流母线上，使直流母线电压迅速上升，从而危及变频器的安全，因此必须将该回馈能量迅速消耗掉，保持直流母线电压在某一安全范围以下，否则变频器将会过压保护或故障。一般惯性较大，或需急剧减速，刹车的场合可使用本制动单元。例如：离心机，电梯，起重机，拉丝机，港口机械等均可使用。

The equipments make EMI or equipments sensitive to EMI. The equipments impulse circuit or micro processor .SCR Silicon Controlled Rectifier equipments. Variable equipments, Variable speed, variable frequency equipments, motor equipments

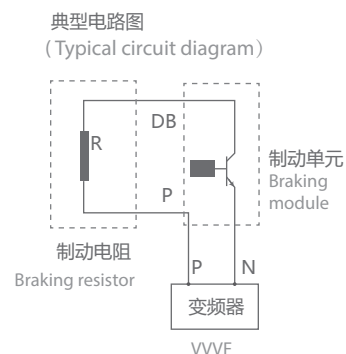
### 产品尺寸图 (Product Size)



电压等级 Voltage	规格型号 TYPE	图号 Product Picture	峰值电流(A) Peak current	额定电流(A) Rated Current	最小阻值 Ω Minimum resistance
AC200V~AC300V	DBU-2015D	Picture A	50	15	10
	DBU-2030D		90	30	6.5
	DBU-4030D		50	15	20
	DBU-4045D		75	25	13.6
AC380V~AC460V	DBU-4055	Picture A	90	30	12
	DBU-4075		110	35	10
	DBU-4090	Picture B	130	45	7.5
	DBU-4110		150	50	6.5
	DBU-4160	Picture C	200	70	4.5
	DBU-4220		300	85	3
AC690	DBU-4300	Picture D	500	120	2.5
	DBU-6110		150	50	8.5
	DBU-6220		180	75	7.5
	DBU-6300		200	85	6.5

### 成品识别码 (Product Identification Code)

DBU	—	4030
制动单元 DC Braking Module		4: Rated Voltage 2:220V 4:380V 6:690V 11:1140V 030: Power 030=30KW



## Regenerative Unit

### 产品概述 (Product Introduction)

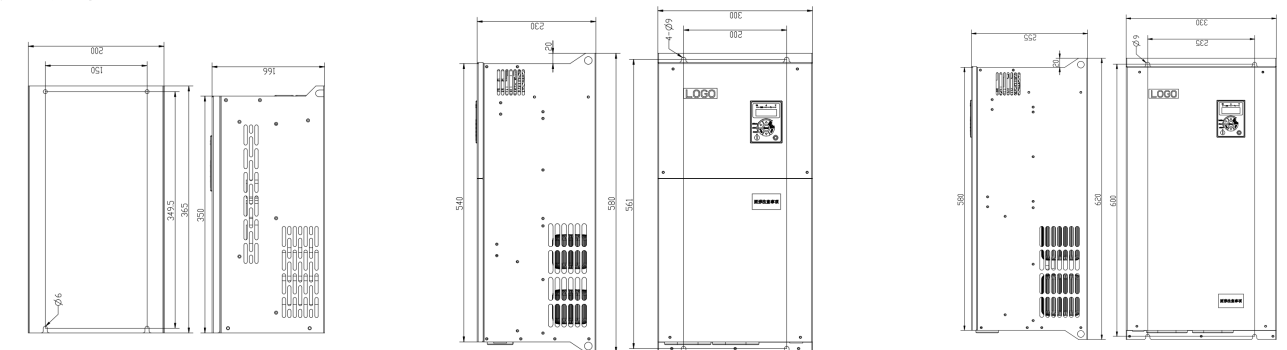
The AFE regenerative unit is a compact, total all-in-one solution for low harmonics and/or full regeneration, and is the ultimate choice for power quality and energy savings. It has easy to setup and install, safe to use, parallel usage of multiple units, realize complete current sharing. It is mainly applied in cases where rapid DEC, positioning and brake is needed eg mine hoist, elevator, textile machine, paper-making machinery, centrifugal machine, drawbench, proportional action and crown block.



### 技术规格 (Technical Specifications)

功率范围 Power Range:	5.5-45KW
输入电压 Input Voltage	380V ± 15%, 3 PH
输出电压 Output Voltage	580-780Vdc
Carrier frequency	10 kHz
Controllable rectifier power factor	> ±0.98 (under rated load, the mains voltage harmonics <3%)
Controllable rectifier power current	<5% (under rated load, the grid voltage harmonics <3%)
Work efficiency	> 97 %
Overload capacity	120% rated current overload for 30 minutes 150% rated current overload for 1 minute
Feedback power view	The feedback power (active power) is represented by a negative number and the accuracy error < 5% at rated power.
Rectification/Feedback Distinction	Distinguish between rectifier current and feedback current: the rectification direction is positive, and the feedback direction is negative.
Measurement of feedback power	For example, it can be set to record and check the amount of energy returned within a certain hour, with an accuracy within ± 10%
Digital input	Route 1 (x1-COM)
Digital output	1 way relay (RA-RC)

### 产品尺寸图 (Product Size)



### Control panel



Button Name	Name	Function Description
PRG	Programming key	Enter or exit via the first-level menu
ENTER	Confirm button	Enter the menu screen step by step, set the parameters and confirm.
▲	UP increment key	Increment of data or function code
▼	DOWN decrement key	Decreasing of data or function code
▶	shift key	In the shutdown and operation display interfaces, the displayed parameters can be cycled through; when modifying parameters, the modification digits can be selected.
🟢	Run key	In keyboard operation mode, it is used to perform operations.
🟡	Stop/Reset button	When in operation, pressing this key can be used to stop operation, subject to function code P7.02; when in fault alarm state, this key can be used to reset the fault, not subject to function code P7.02.
JOG	Shortcut multi-function key	The function of this key is determined by function code P7.01.
M	Spare key	

## 负载箱 (TRA) Load Bank

### 产品概述 (Product Introduction)

干式负载箱是我公司自主研发的电能负荷测试装置, 操作容易, 体积小, 运输方便. 可视负荷容量大小. 并联电阻堆的电路增减负荷容量. 调节负荷容量有手动型和电脑控制型. 与传统水负荷和电阻片负载箱相比, 无漏电, 不产生有害气体和废水, 负荷测试精度高, 调节更容易, 无需测试准备时间, 可连续长期使用等诸多优越性. 本公司定型生产的三相交流干式负载箱有高压10KV, 6.6KV, 3.3KV和低压690V, 400V, 200V及DC12V, 36V, 48V等电压等级. 功率因数从0-1.0可调, 低压三相交流400V负载箱可测三相400V和三相200V. 单相220V和110V四个电压等级. 高压负载箱为高压直接测试无需降压测试 (不需变压器) 所以体积更小, 测量更为方便. 更准确.

The dry-type load bank is the electrical energy load testing equipment which our company self research and develop: operate easily, small volume, convenient transportation, visible loading capacity, regulating the capacity according to the shunt resistance pile electric circuit. The adjustment of the loading capacity has manual control and computer control. Compared with the traditional water load and resistance load bank, it doesn't have the leakage, don't product the noxious gas and the waste water. The load test precision is high, the adjustment is easier, don't need to test the setup time, can continuously the long-time use and so on many superiorities. Our company lot product the three-phase AC dry-type load bank which has voltage classes: high voltage 10KV, 6.6KV, 3.3KV and low voltage 690V, 400V, 200V and DC12V, 36V, 48V and so on. Power factor can regulate from 0-1.0, low voltage three-phase AC 400V load bank can test three-phase 400V and three-phase 200V, single-phase 220V and 110V voltage classes. The high-voltage load bank doesn't need test for the high-voltage directly test (not to need transformer), therefore the volume is smaller, the survey is more convenient and more accurate.

### 高性能, 高品质 High performance, High quality

采用我公司自主研发定型的温度系数低, 低阻抗的电阻管. 电阻管采用了不锈钢管和不锈钢散热片, 管内充满 (MGO) 材料. 密封了钢管两头. 防止湿气进入腐蚀电热元件品质. 因而可以长期保持高品质的质量. 采用了强制空气对流方法来冷却电阻管. 使电阻管可连续工作.

We select our company self research and develop low temperature coefficient, low impedance resistance tube. The resistance tube has used the stainless steel pipe and the stainless steel radiator fin, in the tube are full of the material (Mgo), has sealed the steel pipe two ends, preventing the moisture to enter to corrupt heating unit quality. Therefore the high quality may maintain for a long time. Using the forced air convection method to cool the resistance tube which can make the resistance tube continuously working.

### 小型、轻巧、占地少 Small-type, light and handy, space saving

干式负荷装置采用了自主研发定型的电阻管, 使得负荷装置小型化, 全身机架用型材焊接而成. 使它的重量更轻, 容易搬动. 而且占有空间小. 可以在较小的空间内做测试工作.

The dry-type load installment has used our self-developed fixed-type resistance tube, which can make the load installment miniaturization. The whole body is insisted of welded materials, for which it is lighter, easier moving and space saving. We can the test work in a small space.

### 优越的操作性 Superior operation

操作者可以通过本公司开发的软件进行轻松地操作本装置, 可调整从0到最大的负荷容量, 另外在条件许可的情况下可以在操作面板上预制所需测试容量. 通过一个开关直接投入所需负荷容量, 大大提高了工作效率. 在种种条件下都能发挥出优秀的可操作性. 另外还可以选配远方操作控制箱, 在远处就能操纵负荷装置. 控制方式有: 按钮、控制接触器、PC控制接触器、PLC控制接触器. 在PC、PLC控制时可在电脑上显示被测的全部参数, 包括电压、电流、频率、有功功率、功率因数等. 电脑能够记录和保存测试的数据, 可随时调出查看和打印.

The operator can easily operate the installment by our self research and develop software, can regulate the load capacity from 0 to max-value. Further more you can setup the expected capacity on the operation panel directly input the need capacity by switch, which greatly increase the efficiency. Its superior is obviously in this situation. You can select far-way control box, you can control the load installment far away. The control mode includes: key control contact device, PC control contact device, PLC control contact device. When PC, PLC control may demonstrate the complete parameters on the computer including voltage, current, frequency, active power, power factor and so on. The computer can record and preserve the test data, may momentarily assign out the examination and printing.



### 负载箱用途 (Application for load bank)

#### 发电机制造业 Motor manufacturing

负载箱是测试发电机的功率、频率、电压、电流、功率因数、发电机的稳定性等参数的理想检测设备. 发电机使用的燃料多为柴油, 柴油在低于50%负载或长时间空载情况下会造成燃油不充分、积碳、整机效率降低, 最终导致启动困难、动力不足、油耗增加、过早开缸维修导致报废, 而负载箱是发电机的理想假负载.

The load bank is an ideal test equipment for generator power, the frequency, the voltage, the current, power factor and other generator parameters. Most of the generator use the diesel oil, which can cause the fuel oil unfilled, carbon deposition, complete machine efficiency reduced when the diesel oil load is lower than 50% or in idling situation for a long time and even cause starting difficulty, power insufficiency, oil consumption increased, finally, opening the cylinder for maintenance too early and the abandonment, so the load bank will be generator's ideal false load.

#### 变压器制造业 Transformer manufacturing

测试变压器的额定容量、电流、电压、频率、温升、吵声等参数. 铁路、电力、通讯基站电源站负载检测.

Measuring the transformer's parameters include rated capacity, current, voltage, frequency, temperature-rise and noise and so on. As a kind of load testing equipment for power station of the railway, power equipment and transportation.

### 执行标准 (Normative Standards)

- @ 国际标准: ISO 8528-5:1993 《往复式内燃交流发电机 第5部分: 发电机组》
- @ 国家标准: GB/T 2820.5-1997 《往复式内燃交流发电机 第5部分: 发电机组》
- @ 国家标准: GB/T 13032-1991 《船用柴油发电机组通用技术条件》
- @ 国家标准: GB/T 14048.1-2000 《低压开关设备和控制设备》
- @ 行业标准: JB/T 10303-2001 《工频柴油发电机组技术条件》
- @ 行业标准: JB/T 9696.1-1999 《低压成套开关和控制设备用接线端子排》

- @ International standard: ISO 8528-5: 1993 «Reciprocating internal combustion alternator. Part 5: Generating set.»
- @ National standard: GB/T 2820.5-1997 «Reciprocating internal combustion alternator. Part 5 Generating set.»
- @ National standard: GB/T 13032-1991 «General technical condition for Marine Diesel Generator Set.»
- @ National standard: GB/T 14048.1-2000 «Low-voltage Switchgear and Controlgear.»
- @ Industry standard: JB/T 10303-2001 «Technical condition for Diesel Generating set.»
- @ Industry standard: JB/T 9696.1-1999 «Connecting terminals for Low-voltage Switchgear and Controlgear.»

### 产品参数 (Product Parameters)

项目 Item	功率 Power		
总功率 Total power	100KW	200KW	400KW
测试电压 Test voltage	三相AC400V Three-phase AC400V	三相AC400V Three-phase AC400V	三相AC400V Three-phase AC400V
功率分段 Power step	5KW X 2段 (step) 10KW X 6段 (step) 20KW X 2段 (step)	2.5KW * 1段 (step) 5KW * 2段 (step) 10KW * 2段 (step) 20KW * 5段 (step) 40KW * 2段 (step)	1kw x1 2kw x1 4kw x1 8kw x1 12kw x2 24kw x4 48kw x6
频率 Frequency	50-60HZ	50-60HZ	50-60HZ
功率因素 Power factor	1.0	1.0	1.0
助电源 Auxiliary power	单相AC220V Single-phase AC220V	二相AC380V Single-phase AC380V	单相AC220V Single-phase AC220V
操作方式 Operation mode	手动 Manual	手动 Manual	手动 Manual
冷却方式 Cooling mode	强制风冷 Forced air cooling	强制风冷 Forced air cooling	强制风冷 Forced air cooling
外形尺寸 Overall dimension	L800 x W820 x H900	L800 x W820 x H1300	L800 x W1250 x H1600
重量 Weight (KG)	150	220	420
选配 Selected fitting	远方控制箱 / 电脑控制 Far-away control box / Computer control	远方控制箱 / 电脑控制 Far-away control box / Computer control	远方控制箱 / 电脑控制 Far-away control box / Computer control