



Driving Follow Heart, Winning The Future



## **BD600 Series**

High Performance Vector AC Drive

## **Brochure**



## ■ Introduction

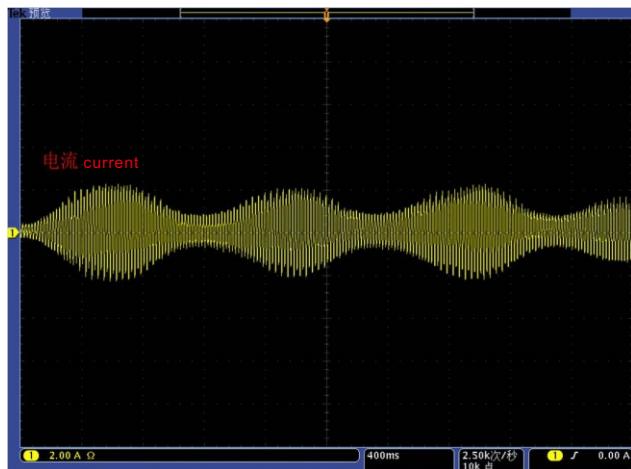
BD600 series is latest version for high performance vector inverter based on BD330. Multiple control modes ,New vector control algorithm can achieve stability at slow speed, stronger load capacity at low frequency. Support SVC,VC and V/F control, and achieved using multiple PG cards. Stronger functions, functional of motor control has clearly raised.



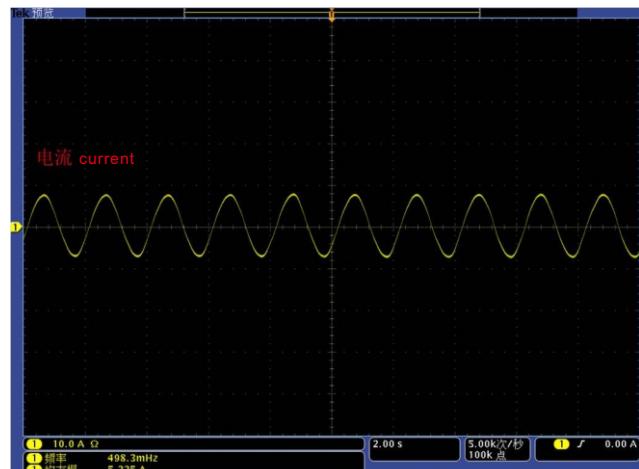
## ■ Features

### ➤ Outstanding performance

- 1) Large torque output when low frequency ;
- 2) Fast dynamic response ;
- 3) Super strong overload capacity



0.5Hz full-load output



50Hz sudden load

### ➤ Accurate motor parameter self learning

BD600 series inverter can accurately provide dynamic or static self-learning of motor parameters, simple debugging , easy operating, higher control accuracy and response speed.

#### Dynamic self-learning

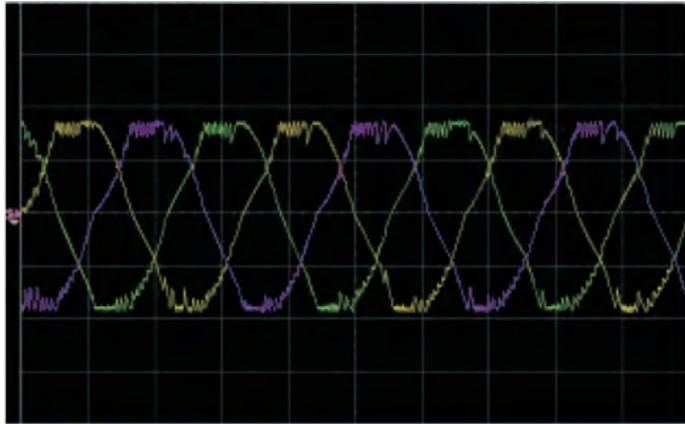
It need release the load, suitable for situation that requiring high control precision

#### Static self-learning

Applicable to the motor and load cannot release

## ■ Features

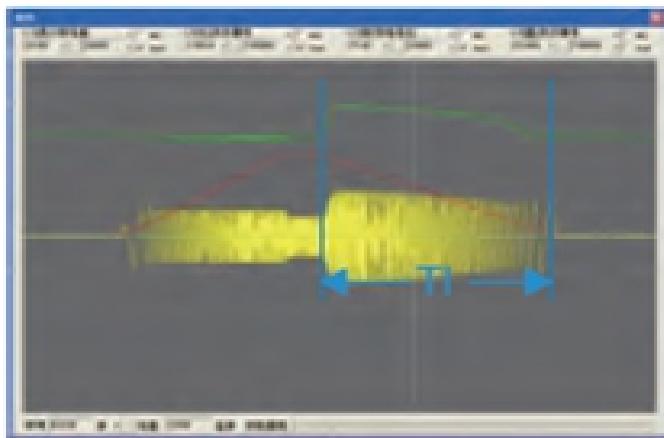
### ► Rapid current limit



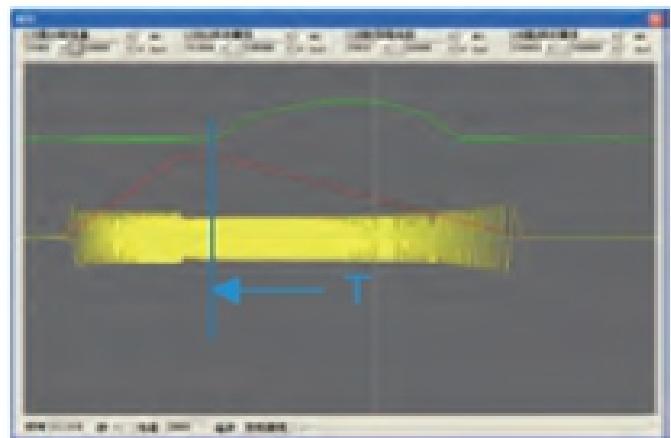
Rapid current limiting function can limit current rapidly within the current protection value, to ensure the safety of the equipment, and avoid over-current alarm caused by sudden loading or interference.

### ► Over-excitation gain and oscillation suppression gain

Over-excitation brake function valid



Over-excitation brake function invalid



### ► Rapid RUN/STOP

Excellent current and voltage control technology can realize rapid RUN/STOP, restrain overvoltage and overcurrent.

### ► Overvoltage stall protection & Overcurrent stall protection

### ► Support both asynchronous motor and synchronous motor

- 1) asynchronous motor
- 2) synchronous motor (by using extension card)

## ■ Features

### ➤ Support multiple control mode

Speed sensorless vector control (SVC), sensor vector control(VC), V/F control



Differential Encoder

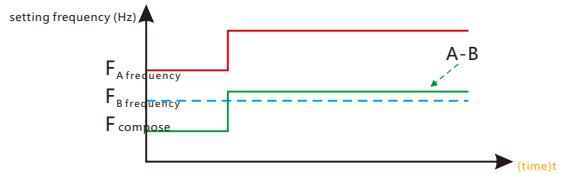


Resolver

### ➤ Frequency source binding & compose

Run command source are free to bind any frequency source. 10 kinds of main-auxiliary frequency source, flexible to adjust and compose.

For example: A+B、A-B、AB switch,etc



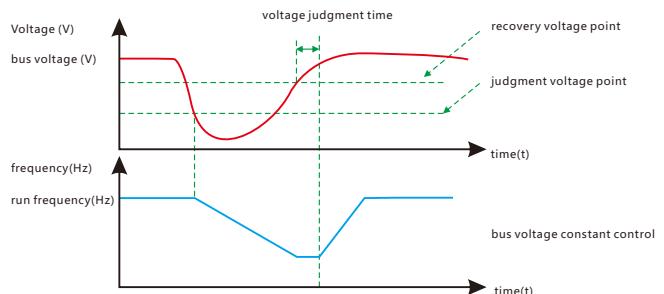
### ➤ Flexible and practical analog input/output

Each analog input (AI1 ~ AI3) can set 4 point curves.

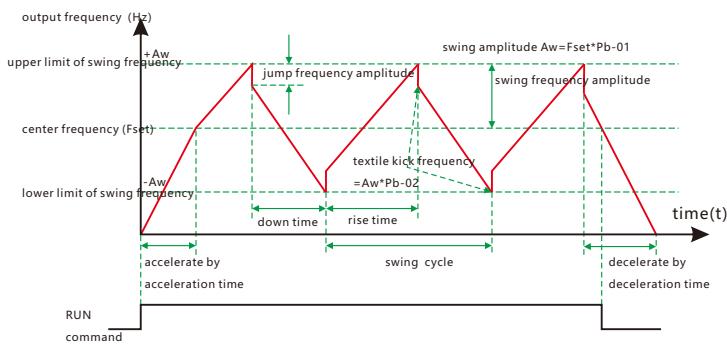
### ➤ High-speed pulse input and output functions

High speed pulse signal specification: voltage range 9V~26V, frequency range 0 ~ 100 KHZ. Can setting 2 point curves, high control precision. HDI/HDO high speed pulse input/output terminal can be used for DI/DO.

### ➤ None-stop when instantaneous power off



### ➤ Swing frequency control function



### ➤ Simple PLC

### ➤ Multiple motor switch

Two groups of motor parameters, and control two motors by one inverter.



## ■ Technical Features

IQR Features	IqsxwYr adj h Udqj h	4DF 553Y648 / 3AC220V15 / 3AC380V15 / 3AC660V10 / 3AC1140V15
	IqsxwI iht xhqe   Udqj h	7: 096K
	RxvexwYr adj h Udqj h	3Qudng Iqsxwyr adj h
	RxvexwI iht xhqe   Udqj h	3C933K
IQR Terminals	IqsxwWhp lqdo	<p>β9 surj wdp p deøi glj Iwdlqsw/wf dq eh h{Wqghg w 7 glj Iwdlqsw/r qh ri z klf k vxssr uw high speed pulse input;</p> <ul style="list-style-type: none"> <li>• 1 analog volatge input, -10~10VDC;</li> <li>• 2 volatge input 0~10VDC or current input 0~20mA</li> </ul>
	RxvexwWhp lqdo	<p>β4 r shq f r qd wur xvexwlf dq eh h{Wqghg w 4 klj k vshhg sxoh r xvexw&gt; • 2 relay outputs;</p> <ul style="list-style-type: none"> <li>• 2 analog output: volatge output 0~10VDC or current output 0~20mA</li> </ul>
UXQ	Pxolsñ hqfr ghuwshv	D yduhyl r i hqfr ghuwshv r svr qdovxssr ugliihuhqwdohqf r ghu DE] hqfr ghuXYZ hqfr ghu ur wdy transformer
	F r qwoPr gh	Vshhg vhqvr ubvv yhf wuf r qwo+YF, / vhqvr uyhf wuf r qwo+YF, / Y2 f r qwo
	I iht xhqe   Uhiuhqf h Vr xuf h	Glj Iwdlqdoj /sxoh iht xhqe   /vhldof r p p xqlf dflr q/p xol0/vls vshhg/vlp sñ SCF dqq SLG/ The combination of multi-modes and the different modes can be switched.
	Ryhwdg F dsdf M	βJ ψsh=93v ir u483( r i vkh udng f xuhqw6v ir u4; 3( r i vkh udng f xuhqw • P type: 60s for 120% of the rated current, 3s for 150% of the rated current
	VwdlWt xh	βJ ψsh=38 K} 2483( +YF,>3 K} 24; 3( +YF, • P type: 0.5 Hz/100%
	Vshhg Dgnvklqj Udqj h	4=433 +YF,
	Vshhg Dff xulf	é318( SVC) é318( VC
	F dwuhul iht xhqe	3B w 49BnK>dxwp dlf doq dgnvlf dluhuiht xhqe   df f r ulqj w vkh o dg f kdulf vluvlf v
	Uhvraovlqj r i iht xhqe   vhwqj	Glj Iwdlqj vhwqj >3B4K) Dqr ej vhwqj =p d{lp xp iht xhqe   { 3B58(
	Uxqqlqj f r p p dqq vr xuf h	βNhj er dug • Control terminals • Serial communication port
I xqf vlr qv	Wu xh Err vw	Dxwp dlf wu xh er r vvp dqxdowt xh er r vw8#Q63(
	Y2 f xuh	<p>βVwdl j kvqjh Y2 f xuh</p> <ul style="list-style-type: none"> <li>• Multi-point V/F curve</li> <li>• Square V/F curve</li> <li>• V/F complete separation</li> <li>• V/F half separation</li> <li>• N-power V/F curve (1.2-power, 1.4-power, 1.6-power, 1.8-power)</li> </ul>
	Dff 2Ghf Pr gh	Vwdl j kvqjh r uVf xuh Four kinds of acceleration/deceleration time with the range of 0.0–6500.0s
	GF Ednlqj	<p>Vxssr uw vvdulqj dqq vwsllqj GF ednlqj</p> <ul style="list-style-type: none"> <li>• DC braking frequency: 0.00 Hz to maximum frequency</li> <li>• Braking time: 0.0–100.0s</li> <li>• Braking action current value: 0.0%–100.0%</li> </ul>
	Mj j lqj f r qwo	Mj iht xhqe   udqj h=3BK} w 83K} >Mj Dff 2Ghf w h=3C9833BK
	Vlp sñ SCF dqq Pxol0vshhg r shudlwq	Exloq SCF r ufr qwo lqdd49 vls vshhg f dq eh vhw Hold time and acceleration/deceleration of each step speed can be adjusted
	Exloq SLG	Hdv  w vhdq h f o vhg0rs f r qwo ov  vlp ir vkh surf hvv f r qwo
	Dxwp dlf yr adj h uhj xol0r q+DYU,	Dxwp dlf doq p dlqvlq dfr qvdlqr xsvxw adj h z khq vkh yr adj h r i hbdif wlf M j lg f kdaj hv
	Vws p r gh vhdif vlr q	βGhf hduvln w vws • Coast to stop
	Wu xh dp lwdqg f r qwo	dhf dydwlf kdulf vlu dxwp dlf dp lwdl xh z khq uxqqlqj f dq suhyhqr yhlf xuhqwlis fr qloxdop> Vector mode can realize torque control
Pxol0p r wuvz Mkr yhu	Ht xlz Mkr j uxsv r i p r wusdudp hluwf dq lhdq h vz Mkr lqj f r qwo r i vlr p r wu	
	Vz Mkr yhuixqf vlr q	Wvdo43 p dlq dqq dx{lddij iht xhqe   vr xuf hWkh  f dq eh vz Mkrh dqq f r p elqhg id{leø

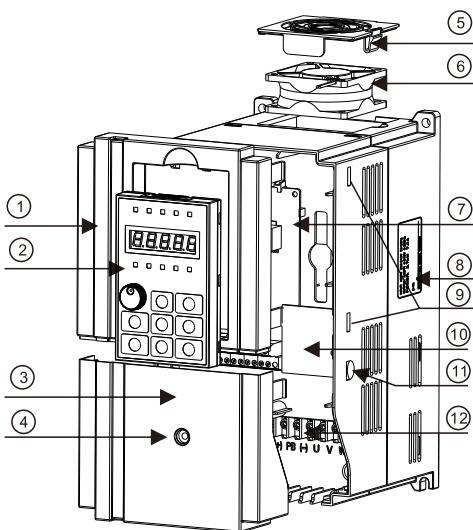
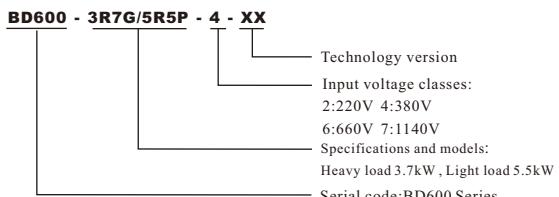
## ■ Technical Features

Vz lqj iuhxqf   fr qwr oixqf vlrq	Pxolsdñ wldcj xodusxrh iuhxqf   fr qwr o	
Frp p r q GF exv ixqf vlrq	Pxolsdñ lgyhuluv fdq xvhdfrprq GF exv	
Vshhg wdf nlaj ixqf vlrq=	Pxolsdñ vshhg wdf h prgh/vkh vshhg ri wdf h fdq eh dgxwvlg	
Wp lqj fr qwr o	Wp lqj vhwlaj udqj h 3Q9833p lq	
I k(hg dlcj vkr	vhwlcj dlcj vkr fr qwr o	
Mkp s iuhxqf   ixqf vlrq	Suhhyqwp hf kdqif dohvr qdqf h dqq p dhv vkh v  vlp p r th vwdedn dqg thdedn	
Sur vnf vlrq ixqf vlrq	Ryhuyr alyh sur vnf vlrq/ xqghuyr alyh sur vnf vlrq/ r yhuf xuhqwsur vnf lra/ r yhuf dg sur vnf vlrq/ r yhukhdw protection, overcurrent stall protection, overvoltage stall protection, phase-loss protection, over-speed detection, motor overheat protection, short-circuit protection.	
Rvhuixf vlrq	<ul style="list-style-type: none"> <li>• Sdudp hwhwvrlh</li> <li>• Parameter self-learning</li> <li>• PID parameters switchover</li> <li>• PID feedback loss detection</li> <li>• Over-torque and under-torque detection</li> <li>• None-stop when instantaneous power off</li> <li>• Sleep and wake function,etc.</li> <li>• Rapid current limit</li> <li>• Current detection compensation</li> <li>• Fault self-recovery</li> <li>• Backup data for power fail of simple PLC</li> </ul>	
Frp pxqif dmrq	UV7; 8	
H(vnqvrlq f dng	I2R h(vnqvrlq f dng/ SJ f dng/ Uhol h(vnqvrlq f dng dqq Y2R h(vnqvrlq f dng f dng eh f xxwp l) hg dv   rxuht xhvvt	
SFE fr dmlj	Ip sr ulng fr qir up dosur vnf vlyh fr dmlj	
Glvslj	CHG Glvslj	
	Fdq glvslj =vhwlaj iuhxqf   /rxexxwihxqf   /rxexxwyr alyh/r xexxwf xuhqwhv 1	
Hqylr qp hqvd Constraint	Sur vnf vlrq dnyho	LS53
	Wp svlp shudvuh	043 ~+40 it will be derated if ambient temperature exceeds 40
	Kxp lglv	Ehaz <3( UK tqr fr qghqvdmr q,
	Yleudlrvq	±20Hz 9.8m/s(1G), M20Hz 5.88m/s(0.6G)
	Dnlxgh	Ehaz 4333p/lgr r usdlf h z lkr xwf r ur vlyh j dv/ dt xlg,
	Vwudj h wlp shudvuh	053 ~+60

### ● Inverter nameplate:

MODEL: BD600-3R7G/5R5P-4	Specification and model
INPUT: 3PH 380V 50/60Hz	Input
OUTPUT: 3PH 0~380V 0~600Hz	Output
POWER: 3.7/5.5kW 8.5/13A	Power
S/N: 01B3413A115251001	Bar code
ZHEJIANG NEW FOLINN ELECTRIC CO.,LTD	Serial number

### ● Specifications and models:



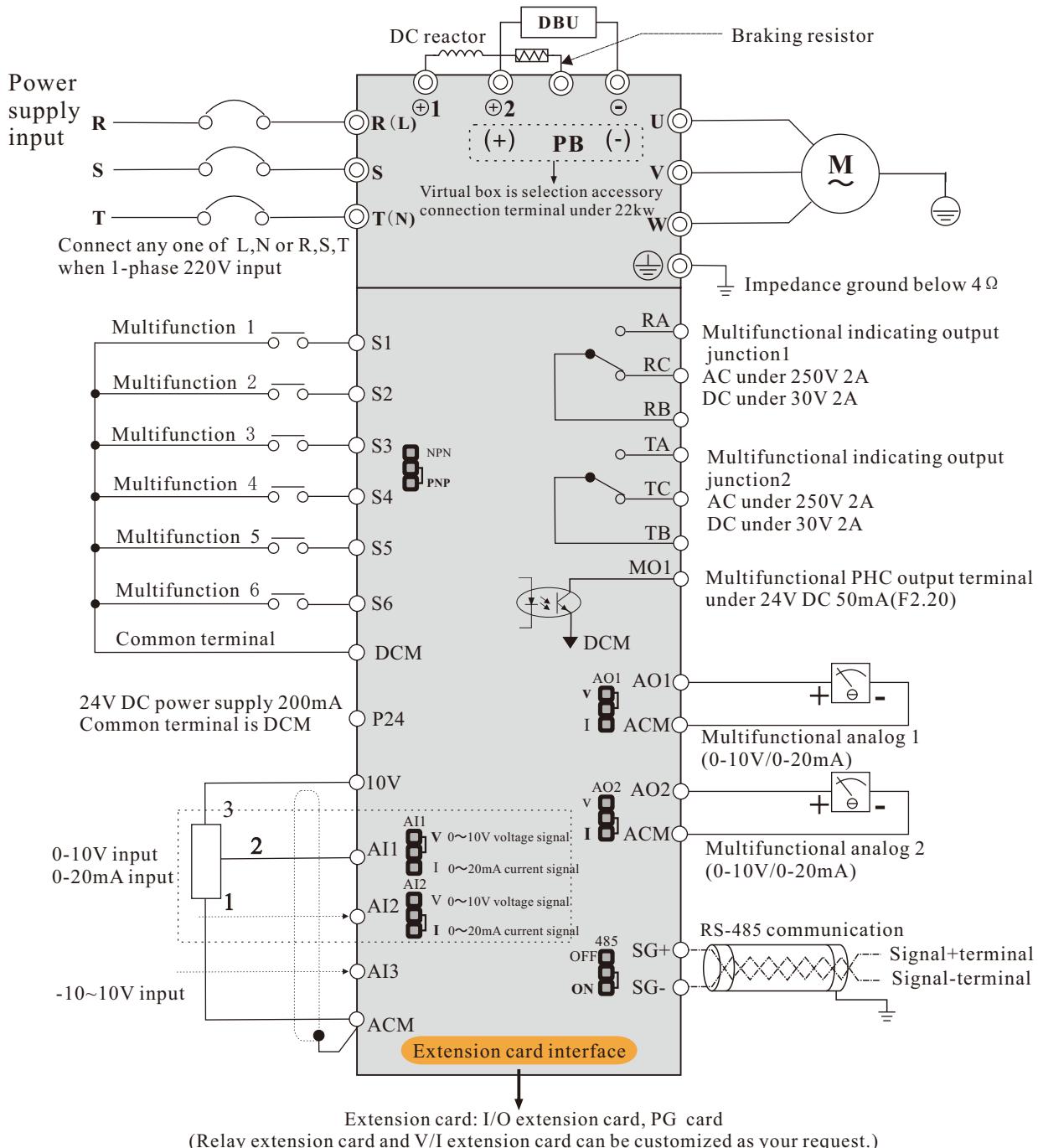
No.	Name	Description
①	Pre-cover	Used for install display keyboard and protect components
②	Keyboard	Used for amend and check inverter parameters, operation and other functions
③	Tail-hood	
④	Retaining screw of tail-hood	Used to fix tail-hood, and loosen this screw first while disassembly
⑤	Snap joint of fan	Used to fix fan, convenient to disassembly
⑥	Cooling fan	Internal heat dissipation of inverter
⑦	Control board	CPU board of inverter
⑧	Nameplate	
⑨	Snap joint of pre-cover	Used to fix pre-cover, total four on both left and right
⑩	Expansion board	Built-in multifunctional expansion board
⑪	Snap joint of tail-hood	Used to fix tail-hood, one on both left and right
⑫	Main loop terminal	

## ■ Basic wiring diagram

### Basic wiring diagram

◎ Main circuit terminal

○ Control circuit terminal



**Notes:** The general type inverters of 22KW and below have built-in brake unit, brake resistance (+) and PB terminal; (+) and (-) terminals are the plus or minus terminals of inverter's DC bus. Reserved direct current reactor connection terminals above 22KW,  $\oplus 1 \oplus 2$ ,  $\oplus 2$  and  $\ominus$  terminals are used to connect energy feedback unit or brake unit.

When brake unit is used in high-power inverters, you shall connect positive pole of brake unit to output terminal  $\oplus 2$  of direct current reactor. If it is connected to  $\oplus 1$  terminal, it will damage brake unit.

## ■ Model Selection

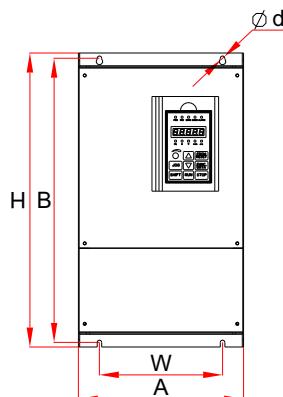
Models	Rated power (kW)	Rated input current (A)	Rated output current (A)	Adaptive motor (KW)
Input 1PH 220V±15% 47Hz~63Hz				
BD600-0R4G-2	0.55	5.4	4.0	0.55
BD600-0R7G-2	0.75	8.2	5.0	0.75
BD600-1R5G-2	1.5	14.0	7.0	1.5
BD600-2R2G-2	2.2	23	10.0	2.2

Models	Rated power (kW)	Rated input current (A)	Rated output current (A)	Adaptive motor (KW)
Input 3PH 220V±15% 47Hz~63Hz				
BD600-0R5G-2	0.55	3.8	3.2	0.55
BD600-0R7G-2	0.75	4.9	4.1	0.75
BD600-1R5G-2	1.5	8.4	7.0	1.5
BD600-2R2G-2	2.2	11.5	10.0	2.2
BD600-3R7G-2	3.7	18	15	3.7
BD600-5R5G-2	5.5	24	23	5.5
BD600-7R5G-2	7.5	37	31	7.5
BD600-011G-2	11	52	45	11
BD600-015G-2	15	68	58	15
BD600-018G-2	18.5	84	71	18.5
BD600-022G-2	22	94	85	22
BD600-030G-2	30	120	115	30
BD600-037G-2	37	160	145	37
BD600-045G-2	45	198	180	45
BD600-055G-2	55	237	215	55
BD600-075G-2	75	317	283	75

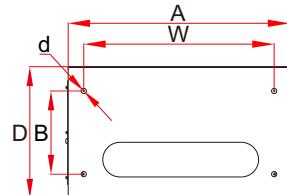
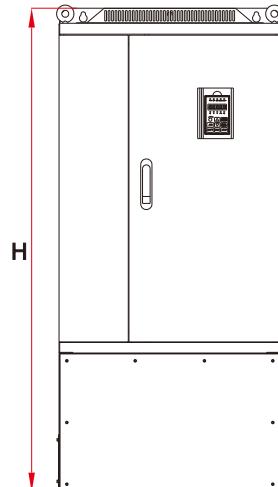
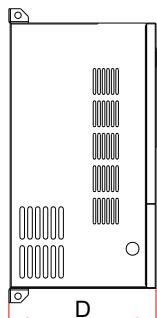
## ■ Model Selection

Models	Rated power (kW)	Rated input current (A)	Rated output current (A)	Adaptive motor (KW)
Input 3PH 380V±15% 47Hz~63Hz				
BD600-0R7G/1R5P-4	0.75/1.5	3.4/5.0	2.5/3.7	0.75/1.5
BD600-1R5G/2R2P-4	1.5/2.2	5.0/5.8	3.7/5.0	1.5/2.2
BD600-2R2G/3R7P-4	2.2/3.7	5.8/10.5	5.0/8.5	2.2/3.7
BD600-3R7G/5R5P-4	3.7/5.5	10.5/14.6	8.5/13	3.7/5.5
BD600-5R5G/7R5P-4	5.5/7.5	14.6/20.5	13/18	5.5/7.5
BD600-7R5G/011P-4	7.5/11	20.5/26	18/24	7.5/11
BD600-011G/015P-4	11/15	26/35	24/30	11/15
BD600-015G/018P-4	15/18.5	35/38.5	30/37	15/18.5
BD600-018G/022P-4	18.5/22	38.5/46.5	37/46	18.5/22
BD600-022G/030P-4	22/30	46.5/62	46/58	22/30
BD600-030G/037P-4	30/37	62/76	58/75	30/37
BD600-037G/045P-4	37/45	76/92	75/90	37/45
BD600-045G/055P-4	45/55	92/113	90/110	45/55
BD600-055G/075P-4	55/75	113/157	110/150	55/75
BD600-075G/093P-4	75/93	157/180	150/170	75/90
BD600-093G/110P-4	93/110	180/214	170/210	90/110
BD600-110G/132P-4	110/132	214/256	210/250	110/132
BD600-132G/160P-4	132/160	256/307	250/300	132/160
BD600-160G/200P-4	160/200	307/385	300/380	160/200
BD600-200G/220P-4	200/220	385/430	380/430	200/220
BD600-220G/250P-4	220/250	430/468	430/465	220/250
BD600-250G/280P-4	250/280	468/525	465/520	250/280
BD600-280G/315P-4	280/315	525/590	520/585	280/315
BD600-315G/350P-4	315/350	590/665	585/650	315/350
BD600-350G/400P-4	355/400	665/785	650/754	350/400
BD600-400G/500P-4	400/500	785/965	754/930	400/500
BD600-500G/630P-4	500/630	965/1210	930/1180	500/630
BD600-630G/710P-4	630/710	1210/1465	1180/1430	630/710

## ■ External Dimension



Wall-mounted housing



Wall-mounted/ Floor combination housing

Base NO.	Model	Power(kW)	Dimensions(mm)						Housing
			A(width)	H(height)	D(depth)	W	B	d	
B10	BD600-0R5G-2	0.55kW	116	175	153	103	165	5	wall mounted plastic housing
	BD600-0R7G-2	0.75kW							
	BD600-1R5G-2	1.5kW							
B01	BD600-2R2G-2	2.2kW	134	251	173	121	238	5	wall mounted plastic housing
	BD600-3R7G-2	3.7kW							
B02	BD600-5R5G-2	5.5kW	161	274	198	148	261	6	
	BD600-7R5G-2	7.5kW							

Base NO.	Model	Power(kW)	Dimensions(mm)						Housing
			A(width)	H(height)	D(depth)	W	B	d	
B10	BD600-0R7G/1R5G-4	0.75kW	116	175	153	103	165	5	wall mounted plastic housing
	BD600-1R5G/2R2G-4	1.5kW							
	BD600-2R2G/3R7G-4	2.2kW							
B01	BD600-3R7G/5R5G-4	3.7kW	134	251	173	121	238	5	

Note: B10 housing can not support PG card and extension card.

If need to add, please use B01 housing.

## ■ External Dimension

Base NO.	Model	Power(kW)	Dimensions(mm)						Housing
			A(width)	H(height)	D(depth)	W	B	d	
B02	BD600-5R5G/7R5P-4	5.5kW	161	274	198	148	261	6	wall mounted plastic housing
	BD600-7R5G/011P-4	7.5kW							
B03	BD600-011G/015P-4	11kW	210	343	215	195	327	6	
	BD600-015G/018P-4	15kW							
B11	BD600-018G/022P-4	18.5kW	220	393	222	160	377	6	
	BD600-022G/030P-4	22kW							
B04	BD600-030G/037P-4	30kW	255	453	237	190	440	7	
	BD600-037G/045P-4	37kW							
B05	BD600-045G/055P-4	45kW	280	582	295	200	563	9	
	BD600-055G/075P-4	55kW							
B06	BD600-075G/093P-4	75kW	300	685	323	200	667	11	wall mounted steel casing housing
	BD600-093G/110P-4	93kW							
B07	BD600-110G/132P-4	110kW	420	840	334	150*150	815	11	
	BD600-132G/160P-4	132kW							
	BD600-160G/200P-4	160kW							
B09	BD600-200G/220P-4	200kW	640	1035	390	250*250	1003	11	
	BD600-220G/250P-4	220kW							
	BD600-250G/280P-4	250kW							
	BD600-280G/315P-4	280kW							
	BD600-315G/350P-4	315kW							
B07-G	BD600-110G/132P-4	110kW	420	1108	334	320	230	12	Floor type steel casing housing
	BD600-132G/160P-4	132kW							
	BD600-160G/200P-4	160kW							
B09-G	BD600-200G/220P-4	200kW	640	1400	390	550	240	15	
	BD600-220G/250P-4	220kW							
	BD600-250G/280P-4	250kW							
	BD600-280G/315P-4	280kW							
	BD600-315G/350P-4	315kW							

## ■ Optional extension cards

RS485 communication card	A green printed circuit board with various electronic components, connectors, and a DB-9 port.	Differential encoder PG card	A green printed circuit board with a central microcontroller and various sensors.	Resolver PG card	A green printed circuit board with a central microcontroller and various sensors, shown with a metal mounting bracket.
(BD-RS485)		(BD-PG03)		(BD-PG04)	

## ■ Optional brake unit and brake resistance

Voltage	AC Drive power	brake unit		brake resistance			brake torque (10%UD)
		model	pcs	power(W)/resistance	Q	pcs	
220V	0.55kW	built-in	–	80	120	1	100%
	0.75kW		–	80	120	1	
	1.5kW		–	150	100	1	
	2.2kW		–	300	68	1	
	3.7kW		–	300	68	1	
	5.5kW		–	400	30	1	
	7.5kW		–	400	30	1	
	0.75kW		–	150	300	1	
	1.5kW		–	200	300	1	
	2.2kW		–	200	200	1	
380V	3.7kW	DBU-4030	–	400	150	1	100%
	5.5kW		–	400	100	1	
	7.5kW		–	750	75	1	
	11kW		–	1000	60	1	
	15kW		–	1500	40	1	
	18.5kW		–	2500	30	1	
	22kW		–	3000	30	1	
	30kW	DBU-4030	1	5000	25	1	
	37kW	DBU-4045	1	7500	20	1	
	45kW		1	10000	13.6	1	
	55kW	DBU-4030	2	5000*2	25	1	
	75kW	DBU-4045	2	7500*2	15	1	
	93kW		2	10000*2	13.6	1	
	110kW	DBU-4160	1	20000	8	1	
	132kW		1	25000	6	1	
	160kW		1	30000	6	1	
	200kW		1	35000	4.5	1	
	220kW	DBU-4280	1	40000	4.5	1	
	250kW		1	45000	4	1	
	280kW		1	50000	3.5	1	
	315kW		1	55000	3	1	
	350kW		1	60000	2.5	1	
	400kW		1	60000	2.5	1	
	450kW		1	80000	2	1	

## ■ Other Products

### ➤ Low Voltage Inverters

- BD600 Series High Performance General Purpose Inverters
- BD330 Series High performance general purpose Inverters
- DZB200M Series Mini Economy Inverters
- DZB300 Series general purpose Inverters
- BD550 Series High Performance Vector Control Inverters
- BD570 Series High Performance Tri-level Inverters
- BD1000 Series High Performance Vector Control Inverters
- BD331 Series Special Inverters For pump Water Supply
- BD332 Series Special Inverters For Injection Machine
- BD333 Series Special Inverters For Textile Machine
- BD335 Series Special Inverters For dual-motor centrifugal machine
- BD336 Series open structure type inverters
- BD337 Series High-performance Inverters (IP53)
- BD338 Series Special Inverters For rotary cutter
- BD339 Series Special Inverters For air-compressor
- BD340 Series Special Inverters For variable-frequency power
- BD341 Series Special Inverters For Pile Machine
- DZB312 Series Special Inverters For Carving Machine (CNC Router)
- BD380 Series special for Injection Molding Machine
- BD381 Series special for Pumping Unit
- BD382 Series special for Frame Saw Machine
- BD383 Series special for Power source
- BD385 Series special for Molecular Pump Power Source

### ➤ Servo Drive System

- FS100 Series General-Purpose AC Servo
- FS110 Series General-Purpose AC Servo
- FS600 Series General-Purpose AC Servo
- FS200 Series PMSM Hydraulic System
- FS300 Series AC Asynchronous System
- FS510 Series PMSM Special For Air-Compressor

### ➤ Medium Voltage Inverters

- DZB10HV Series Medium Voltage Inverters
- DZB20HV Series Medium Voltage Inverters

### ➤ Others

- PFU100 Series High Performance General Energy Feedback Unit
- PFU110 Series High Performance Energy Feedback Unit
- DBU100 Series Braking Unit
- EH100 Series Small Power Electromagnetic Heating Controller



China Top 10 Brand of Low-voltage Inverter

CEEIA Council Member of Inverter Industry

First Medium-voltage Inverter Manufacturer in Zhejiang

National Torch Program Item

Zhejiang High-tech Enterprise

Zhejiang Famous Brand



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