



TECORP TECHNOLOGY

TECORP GROUP

Changes for Better Life

AC MOTOR DRIVE

High Functionality

**B Series Sensorless Vector
Control AC Motor Drive**



Tecorp Technology



Introduction/company

Tecorp Electronics Co., Ltd. is located in Taipei where is the center of Finance, Trading and Economical in Taiwan; where congregate most high-tech companies. Tecorp makes efforts in developing the AC Motor Drive design, production and sales. Now Tecorp have two own brands: "HC1" and "HC2".

Since launched AC Motor Drive product, TECOP keeps making efforts in developing creative and good quality products, and upgrading the product performance and function. To extend various product applications, providing suitable product, service and comprehensive solutions for customer is our first priority.

The HC1-B series product integrates with advanced technology to meet requirements of Automation Industry. It is extensively used in various applications, such as CNC lathe, Printing and Packing, Medical, Textile, Food, Plastic, Oil, Mining, Wind force and Hydraulic pump,. Etc. The product is not only selling well in domestic market, but also has considerable number of sales in South East Asia, Russia, Middle East regions.

Tecorp Electronics Co., Ltd. firmly believes in "Integrity" is the most important principle to make business. Being honest to service customers, keep developing and improving to provide the perfect, suitable solutions for customers. To be the leader in Automation Industry is our goal.



HC1-B SERIES AC MOTOR DRIVE WITH SENSERLESS VECTOR

Exquisite Quality, Perfect Performance



Product Specification

Model		HC1-B
Input	Rated Voltage & Frequency	Singel phase / Three-phase AC220V / 47~63Hz; Three-phase AC380V / 47~63Hz
	Votage Allowable Range	220 / 380 ±15%
Output	Output Voltage Range	1 ~ rated input voltage
	Output Frequency Range	0 ~ 600Hz
	Control mode	Sensorless Vector control, V/F control
Technic	Overload Capacity	150% rated current in 60s; 180% rated current in 10s
	Start Torque	0.5Hz / 150% with vector senserless control
	Adjustment Ratio	1: 100 with vector senserless control
	Speed Control Accuracy	Maximum speed ±0.5% with vector senserless control
	Carrier Frequeny	0.5 ~ 15KHz
Terminal	Programmable Digital Input	4 terminals
	Programmable Analog Input	FIV: 0~10V, FIC: 0~10V or 0~20mA
	Coupling Output	1 set
	Relay Output	1 set
	Analog Output	1 set - option of 4~20mA / 0~10V
Function	Frequency Setting	Digital, Analog, Series communication, Multi-speed, PID, etc.
	PID Function	Built in
	Multi-speed Function	8 speeds
	Adjustable Frequency	Stable frequency
	Off Power	Keep running in power off instantly
	Jog Key Function	Multi-function setting by Users
	Voltage Adjustment	Auto maintain output voltage stable in changing of power
	Failure Protection	25 types of failure protection: over current, over voltage, low voltage, over heat, short phase, over load, etc.

HC1-B SERIES - LEAD & DRIVE TO THE FUTURE

HC1-B series has vector control as core skill, to meet high start torque, speed accuracy, torque control, PID adjustment, abundant application, simple operational interface, flexible I/O expansion, supportive communication, widen power range, overall protection, long life designation, good marketing competitiveness, low failure rate, self-diagnosis.

Performance

1. 32 bit CPU, vector control
2. Control frequency up to 600Hz
3. Speed control accuracy: Maximum speed $\pm 0.5\%$ with senserless vector
4. Dual designation (P – pump / fan use, G – heavy loading)

Diversification

1. Built in PID function
2. Built in simple PLC function
3. Built in brake unit (Less than 15KW)
4. 3 types of PWM mode

Accommodation

1. 50 degree of temperature
2. Widen input voltage: 220V/380V $\pm 15\%$
3. Protective coating circuit board
4. Anti-disturbance

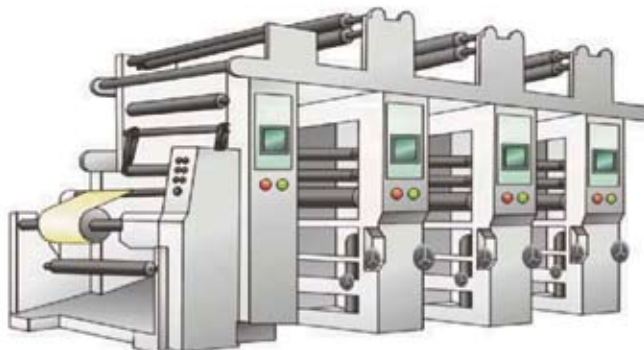
Modularization

1. Hot pluggable
2. Movable control board
3. Attachable fan (less than 15KW)

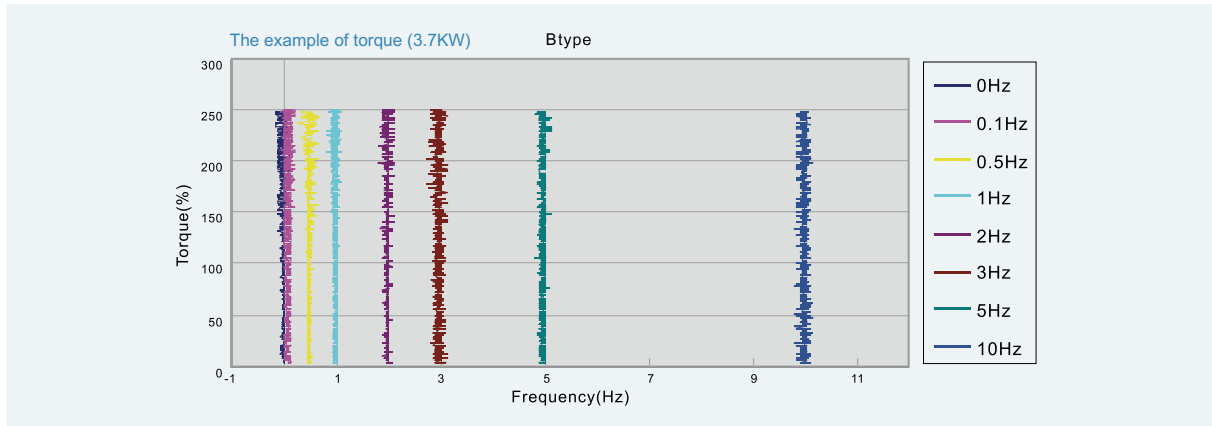


High Performace Vector Control

- The best choice in the purpose of high performace included position and speed control like printing system.

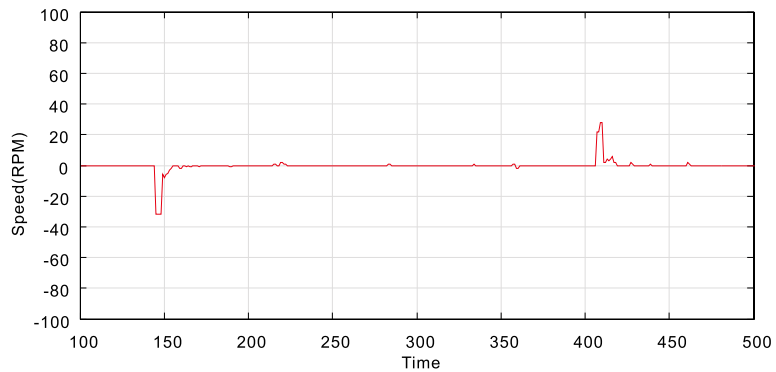


- The highest starting torque is up to 150% in Vector control mode under lowest RPM, to perform perfect stability in speed control.



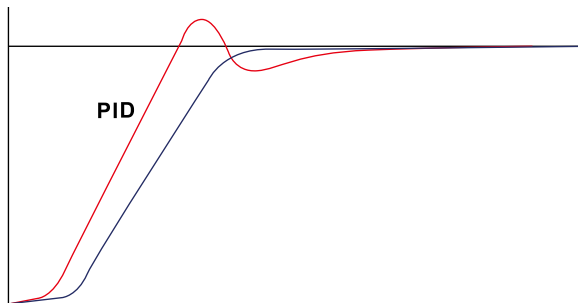
Improve Loading Attack

- When vibration occurs in loading, the controller will response the best torque. It will restrain motor speed from vibrating by the way of vector control.



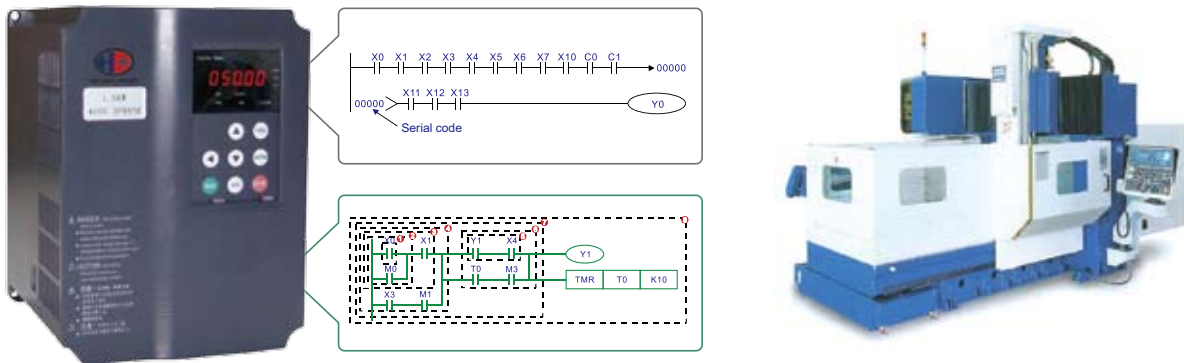
Innovative PID Control Technology

- Enhance stability and response of PID.



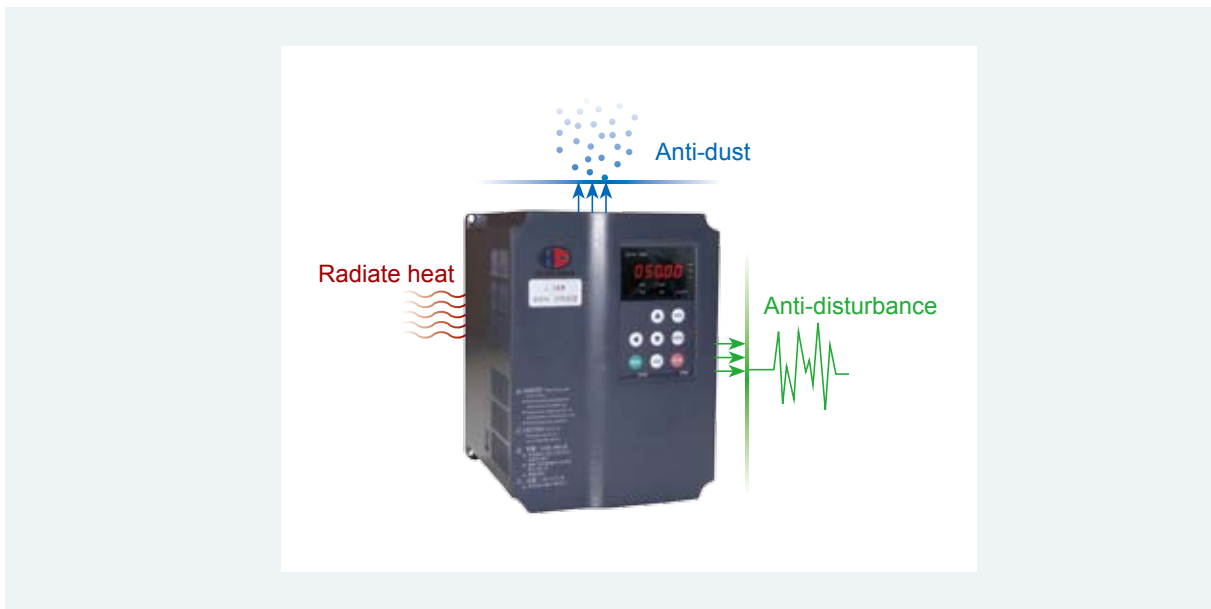
Logical Programming Control Function

- Build-in PLC can reach independent operation in control function.



Design Being Suitable for Environment

- Effectively restrain harmonic and prevent from disturbing.
- Strengthening coating of control board ensures working reliably and safely under poor environment.
- Radiator system and electronic elements adopt complete isolation. There are two kinds of the heat sink system. One is through-wall type, which can move out heat from the controller. The other is forced fan type, which can get cold wind to aluminum radiator.

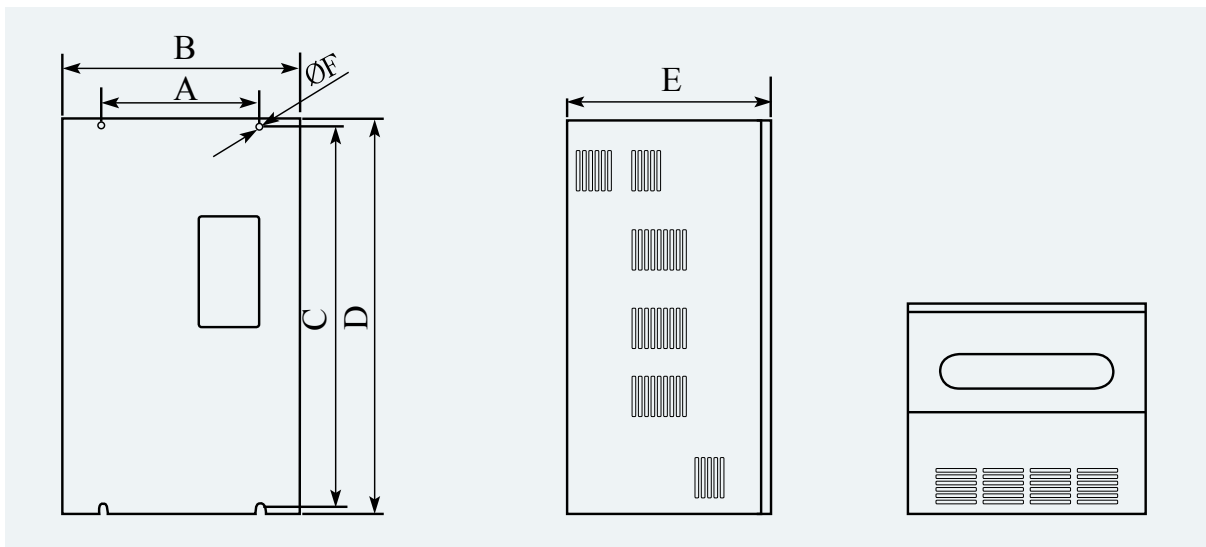


Specification

Model Code	Input Voltage	Rated Output Power (KW)	Rated Input current (A)	Rated Output Current (A)	Applicable Motor (KW)
HCB20P4G / HCB20P7P	Single-phase Three-phases 220V ±15%	0.4 / 0.75	5.4 / 8.2	2.3 / 4.5	0.4 / 0.75
HCB20P7G / HCB21P5P		0.75 / 1.5	8.2 / 14.2	4.5 / 7.0	0.75 / 1.5
HCB21P5G / HCB22P2P		1.5 / 2.2	14.2 / 23.0	7.0 / 10	1.5 / 2.2
HCB22P2G / HCB23P7P		2.2 / 3.7	23.0 / 35.0	10 / 16	2.2 / 3.7
HCB23P7G / HCB25P5P		3.7 / 5.5	35.0 / 45.0	16 / 25	3.7 / 5.5
HCB25P5G/HCB27P5P		5.5 / 7.5	26 / 35	24 / 33	5.5 / 7.5
HCB27P5G/HCB2011P		7.5 / 11	35 / 46	33 / 47	7.5 / 11
HCB2011G/HCB2015P		11.0 / 15.0	46 / 62	47 / 65	11.0 / 15.0
HCB2015G/HCB2018P		15.0 / 18.5	62 / 76	65 / 80	15.0 / 18.5
HCB2018G/HCB2022P		18.5 / 22.0	76 / 90	80 / 90	18.5 / 22.0
HCB2022G/HCB2030P		22.0 / 30.0	90 / 105	90 / 136	22.0 / 30.0
HCB2030G/HCB2037P		30.0 / 37.0	105 / 140	136 / 152	30.0 / 37.0
HCB2037G/HCB2045P		37.0 / 45.0	140 / 160	152 / 176	37.0 / 45.0
HCB2045G/HCB2055P		45.0 / 55.0	160 / 210	176 / 210	45.0 / 55.0
HCB2055G/HCB2075P		55.0 / 75.0	210 / 290	210 / 305	55.0 / 75.0
HCB2075G/HCB2090P		75.0 / 90.0	290 / 330	305 / 340	75.0 / 90.0
HCB40P7G / HCB41P5P		Three-phases 380V ±15%	0.75 / 1.5	3.4 / 5.0	2.5 / 3.7
HCB41P5G / HCB42P2P	1.5 / 2.2		5.0 / 5.8	3.7 / 5	1.5 / 2.2
HCB42P2G / HCB43P7P	2.2 / 3.7		5.8 / 10	5 / 8.6	2.2 / 3.7
HCB43P7G / HCB45P5P	3.7 / 5.5		10 / 15	8.6 / 12.5	3.7 / 5.5
HCB45P5G / HCB47P5P	5.5 / 7.5		15 / 20	12.5 / 17.5	5.5 / 7.5
HCB47P5G / HCB4011P	7.5 / 11.0		20 / 26	17.5 / 24	7.5 / 11.0
HCB4011G / HCB4015P	11.0 / 15.0		26 / 35	24 / 33	11.0 / 15.0
HCB4015G / HCB4018P	15.0 / 18.5		35 / 38	33 / 40	15.0 / 18.5
HCB4018G / HCB4022P	Three-phases 380V ±15%	18.5 / 22.0	38 / 46	40 / 47	18.5 / 22.0
HCB4022G / HCB4030P		22.0 / 30.0	46 / 62	47 / 65	22.0 / 30.0
HCB4030G / HCB4037P		30.0 / 37.0	62 / 76	65 / 80	30.0 / 37.0
HCB4037G / HCB4045P		37.0 / 45.0	76 / 90	80 / 90	37.0 / 45.0
HCB4045G / HCB4055P		45.0 / 55.0	90 / 105	90 / 110	45.0 / 55.0
HCB4055G / HCB4075P		55.0 / 75.0	105 / 140	110 / 152	55.0 / 75.0
HCB4075G / HCB4090P		75.0 / 90.0	140 / 160	152 / 176	75.0 / 90.0
HCB4090G / HCB4110P		90.0 / 110.0	160 / 210	176 / 210	90.0 / 110.0
HCB4110G / HCB4132P		110.0 / 132.0	210 / 240	210 / 255	110.0 / 132.0
HCB4132G / HCB4160P		132.0 / 160.0	240 / 290	255 / 305	132.0 / 160.0
HCB4160G / HCB4185P		160.0 / 185	290 / 330	305 / 340	160.0 / 185.0

Dimension

Unit: mm



Model Code	A	B	C	D	E	ØF	Rough Weight (KG)	Installation	Remark
HCB20P4G / HCB20P7P	117	125	162	170	140	5	1.8	Wall Hang	Plastic Case
HCB20P7G / HCB21P5P									
HCB21P5G / HCB22P2P									
HCB22P2G / HCB23P7P									
HCB23P7G / HCB25P5P	105	120	208	225	149	5	2.5		Iron Case
HCB25P5G/HCB27P5P	213	228	330	347	196	6	8.5		
HCB27P5G/HCB2011P									
HCB2011G/HCB2015P	147	250	460	480	246	9	20		Iron Case
HCB2015G/HCB2018P	197	310	482	500	260	9	24		
HCB2018G/HCB2022P									
HCB2022G/HCB2030P	240	360	620	650	280	9	44.5		Iron Case
HCB2030G/HCB2037P	260	420	775	800	334	11	65		
HCB2037G/HCB2045P									
HCB2045G/HCB2055P									
HCB2055G/HCB2075P	360	552	840	875	410	13	116		Iron Case
HCB2075G/HCB2090P									
HCB40P7G / HCB41P5P	117	125	162	170	140	5	1.8	Wall Hang	
HCB41P5G / HCB42P2P									
HCB42P2G / HCB43P7P									
HCB43P7G / HCB45P5P	105	120	208	225	149	5	2.5		Plastic Case
HCB45P5G / HCB47P5P	168	185	248	260	170	6.5	4.5		
HCB47P5G									
HCB4011P	213	228	330	347	196	6	8.5		Iron Case
HCB4011G / HCB4015P									
HCB4015G / HCB4018P									

Model Code	A	B	C	D	E	∅F	Rough Weight (KG)	Installation	Remark
HCB4018G / HCB4022P	147	250	460	480	246	9	20	Cabinet	Iron Case
HCB4022G / HCB4030P									
HCB4030G / HCB4037P	197	310	482	500	260	9	24		
HCB4037G / HCB4045P									
HCB4045G / HCB4055P	240	360	620	650	280	9	44.5		
HCB4055G / HCB4075P									
HCB4075G / HCB4090P	260	420	775	800	334	11	65		
HCB4090G / HCB4110P									
HCB4110G / HCB4132P	360	552	840	875	410	13	116		
HCB4132G / HCB4160P									
HCB4160G / HCB4185P									

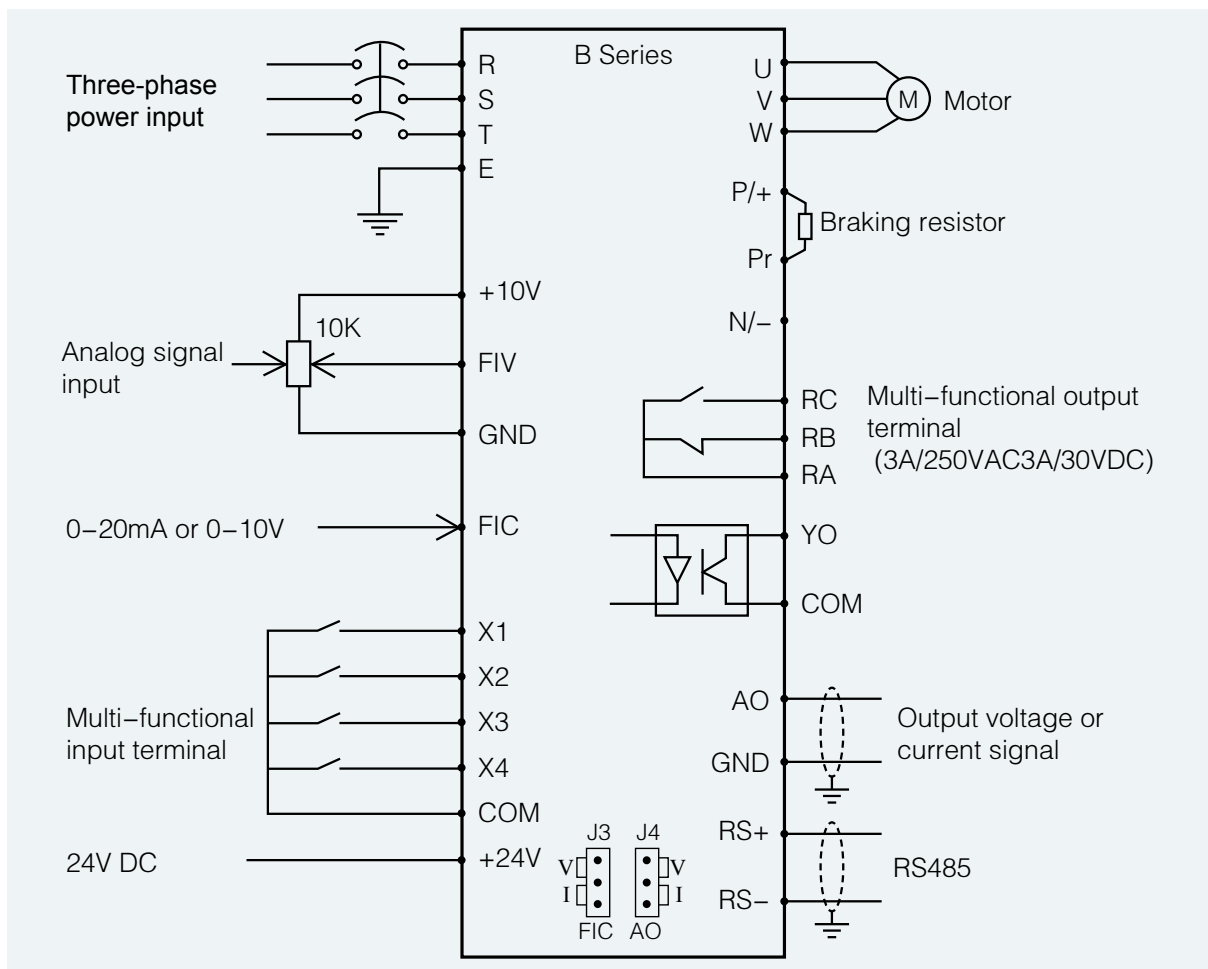
The hole size of the tray for the operating panel

5.5KW and above of HC1-B series ac motor drive: 141.5mm x 79.5mm

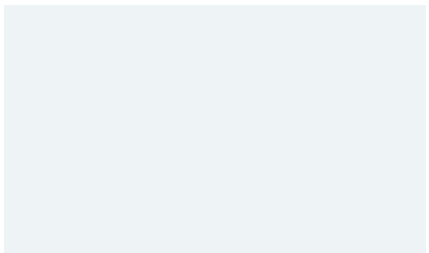
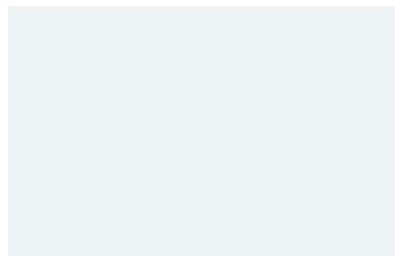
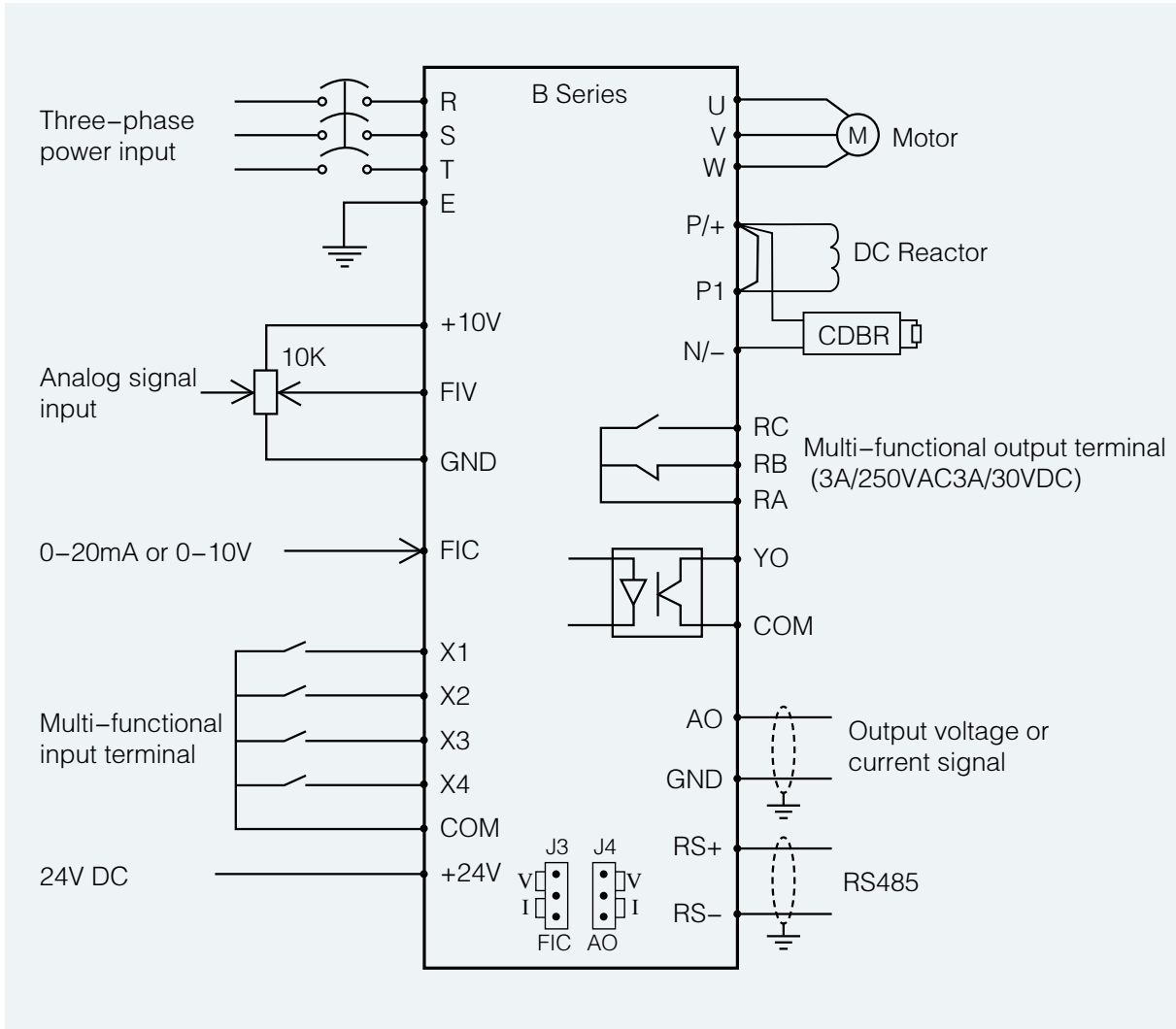
3.7KW and under of HC1-B series ac motor drive: 99.5mm x 56mm

HC1-B Typical Wirup Diagram

(1) Below 15KW



(2) Above 18.5KW



External Fittings Selection



Braking Unit



Reactor



Filter



Braking Resistor

Target Market

- Paper Making Equipment
- Drawing Equipment
- Molding Equipment
- Lathe Equipment
- Chemistry & Fiber Equipment
- Textile equipment
- Bolt, Screw & Nut making equipment
- Dye and ironing equipment
- Air conditional system
- Boiler system
- Water and oil supply equipment



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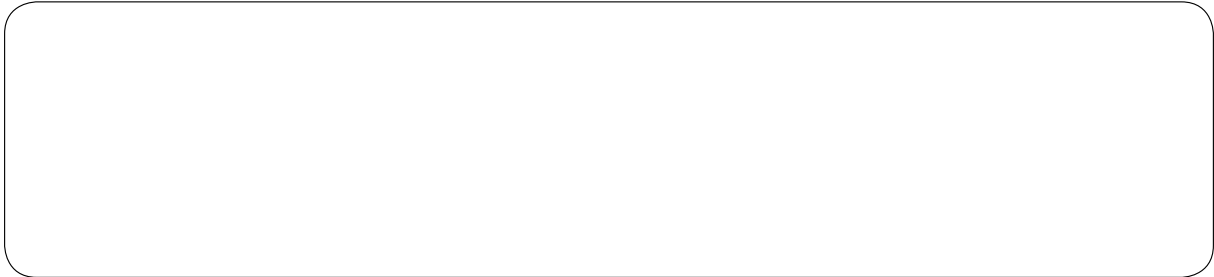
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