



TECORP-GROUP

# A<sup>+</sup> P<sup>+</sup> H<sup>+</sup> SERIES

## AC MOTOR SPEED CONTROLLER

- ◉ Multifunction, Superior, Programmable
- ◉ Analog input/output, Digital input/output



Department and the points of sales:

Malaysia	Kuala Lumpur	Philippines	Manila
Thailand	Bangkok	Lebanon	Beirut
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India	Bombay	Chile	Santiago



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### TECORP TECHNOLOGY

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## TECORP TECHNOLOGY

## Product Features

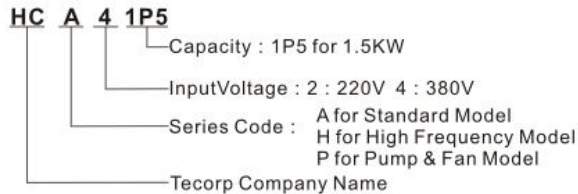


### Frequency Range :

0.4 ~ 7.5 KW (Single, three-phase with 220V)  
0.75 ~ 315KW (Three-phase with 380V)

1. Reliable IGBT
2. Standard RS485 Modbus
3. Simple PLC and PID function
4. Multi-control Function for 8 units

### MODEL



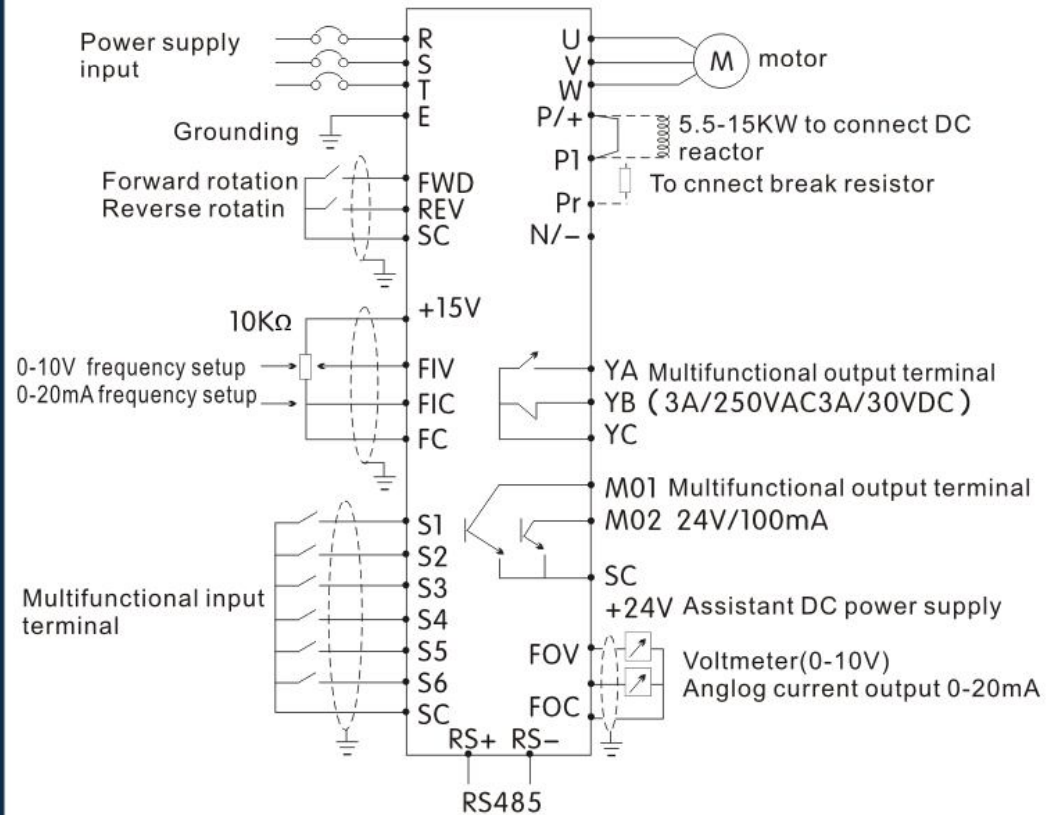
## Model Description

MODEL	HCA41P5
INPUT	3-phase with 380V (50/60Hz)
OUTPUT	3-phase with 380V (4.0amp & 1.5KW)
TECORP TECHNOLOGY	

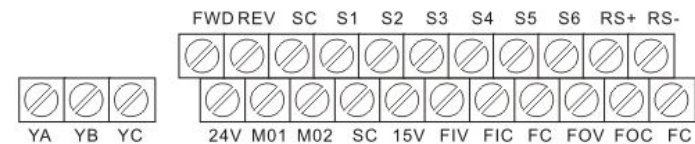
## Operator Functions



## Basic Wiring Diagram



## Control Terminals



## Product Series Model

MODEL	INPUT VOLTAGE	OUTPUT KW	KVA	(A)	(60s)(A)	KW
HCA20P4	1/3Φ 220V 50/60Hz	0.4	1	2.5	3.75	0.4
HCA20P7	1/3Φ 220V 50/60Hz	0.7	2	5	7.5	0.7
HCA21P5	1/3Φ 220V 50/60Hz	1.5	2.8	7	10.5	1.5
HCA22P2	1/3Φ 220V 50/60Hz	2.2	4.4	11	16.5	2.2
HCA23P7	1/3Φ 220V 50/60Hz	3.7	6.8	16.5	24.75	3.7
HCA25P5	3Φ 220V 50/60Hz	5.5	10	24.5	36.75	5.5
HCA27P5	3Φ 220V 50/60Hz	7.5	13.2	33	49.5	7.5
HCA2011	3Φ 220V 50/60Hz	11	19.6	48	72	11
HCA2015	3Φ 220V 50/60Hz	15	26	66	99	15
HCA2018	3Φ 220V 50/60Hz	18	32	82	123	18
HCA2022	3Φ 220V 50/60Hz	22	38.4	98	147	22
HCA2030	3Φ 220V 50/60Hz	30	52	108	162	30
HCA2037	3Φ 220V 50/60Hz	37	64	162	243	37
HCA2045	3Φ 220V 50/60Hz	45	72	185	277.5	45
HCA2055	3Φ 220V 50/60Hz	55	84	210	315	55
HCA2075	3Φ 220V 50/60Hz	75	116	310	465	75
HCA40P7	3Φ 380V 50/60Hz	0.7	2.2	2.7	4.05	0.7
HCA41P5	3Φ 380V 50/60Hz	1.5	3.2	4	6	1.5
HCA42P2	3Φ 380V 50/60Hz	2.2	4	5	7.5	2.2
HCA43P7	3Φ 380V 50/60Hz	3.7	6.8	8.6	12.9	3.7
HCA45P5	3Φ 380V 50/60Hz	5.5	10	12.5	18.75	5.5
HCA47P5	3Φ 380V 50/60Hz	7.5	14	17.5	26.25	7.5
HCA4011	3Φ 380V 50/60Hz	11	19	24	36	11
HCA4015	3Φ 380V 50/60Hz	15	26	30	45	15
HCA4018	3Φ 380V 50/60Hz	18	32	40	60	18
HCA4022	3Φ 380V 50/60Hz	22	37	47	70.5	22
HCA4030	3Φ 380V 50/60Hz	30	52	65	97.5	30
HCA4037	3Φ 380V 50/60Hz	37	64	80	120	37
HCA4045	3Φ 380V 50/60Hz	45	72	90	135	45
HCA4055	3Φ 380V 50/60Hz	55	84	110	165	55
HCA4075	3Φ 380V 50/60Hz	75	115	152	228	75
HCA4090	3Φ 380V 50/60Hz	90	135	176	264	90
HCA4110	3Φ 380V 50/60Hz	110	160	210	315	110
HCA4132	3Φ 380V 50/60Hz	132	193	255	382.5	132
HCA4160	3Φ 380V 50/60Hz	160	230	305	457.5	160
HCA4185	3Φ 380V 50/60Hz	185	260	340	510	185
HCA4200	3Φ 380V 50/60Hz	200	290	380	570	200
HCA4220	3Φ 380V 50/60Hz	220	320	425	637.5	220
HCA4250	3Φ 380V 50/60Hz	250	650	480	720	250
HCA4280	3Φ 380V 50/60Hz	280	427	560	840	280
HCA4300	3Φ 380V 50/60Hz	300	450	580	870	300
HCA4315	3Φ 380V 50/60Hz	315	460	605	907.5	315

## Product Series Model

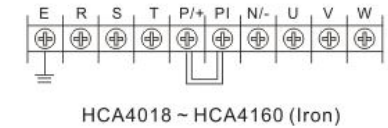
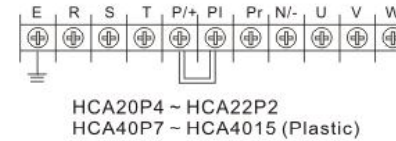
MODEL	INPUT VOLTAGE	OUTPUT KW	KVA	(A)	(60s)(A)	KW
HCP25P5	3Φ 220V 50/60Hz	5.5	10	24.5	29.4	5.5
HCP27P5	3Φ 220V 50/60Hz	7.5	13.2	33	39.6	7.5
HCP2011	3Φ 220V 50/60Hz	11	19.6	48	57.6	11
HCP2015	3Φ 220V 50/60Hz	15	26	66	79.2	15
HCP2018	3Φ 220V 50/60Hz	18.5	32	82	98.4	18.5
HCP2022	3Φ 220V 50/60Hz	22	38.4	98	117.6	22
HCP2030	3Φ 220V 50/60Hz	30	52	108	129.6	30
HCP2037	3Φ 220V 50/60Hz	37	64	162	194.4	37
HCP2045	3Φ 220V 50/60Hz	45	72	185	222	45
HCP2055	3Φ 220V 50/60Hz	55	84	210	252	55
HCP2075	3Φ 220V 50/60Hz	75	116	310	372	75
HCP47P5	3Φ 380V 50/60Hz	7.5	14	17.5	21	7.5
HCP4011	3Φ 380V 50/60Hz	11	19	24	28.8	11
HCP4015	3Φ 380V 50/60Hz	15	26	30	36	15
HCP4018	3Φ 380V 50/60Hz	18.5	32	40	48	18.5
HCP4022	3Φ 380V 50/60Hz	22	37	47	56.4	22
HCP4030	3Φ 380V 50/60Hz	30	52	65	78	30
HCP4037	3Φ 380V 50/60Hz	37	64	80	96	37
HCP4045	3Φ 380V 50/60Hz	45	72	90	108	45
HCP4055	3Φ 380V 50/60Hz	55	84	110	132	55
HCP4075	3Φ 380V 50/60Hz	75	115	152	182.4	75
HCP4090	3Φ 380V 50/60Hz	90	135	176	211.2	90
HCP4110	3Φ 380V 50/60Hz	110	160	210	252	110
HCP4132	3Φ 380V 50/60Hz	132	193	255	306	132
HCP4160	3Φ 380V 50/60Hz	160	230	305	366	160
HCP4185	3Φ 380V 50/60Hz	185	260	340	408	185
HCP4200	3Φ 380V 50/60Hz	200	290	380	456	200
HCP4220	3Φ 380V 50/60Hz	220	320	425	510	220
HCP4250	3Φ 380V 50/60Hz	250	650	480	576	250
HCP4280	3Φ 380V 50/60Hz	280	427	560	672	280
HCP4300	3Φ 380V 50/60Hz	300	450	580	696	300
HCP4315	3Φ 380V 50/60Hz	315	460	605	726	315

Note: A+ series and H+ series are the same model

## Product Specifications

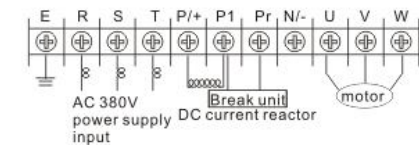
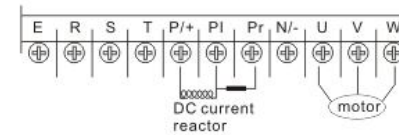
Items		Description
Input	Rated Voltage Frequency	Three-phase 380V 50/60Hz; one-phase 220V 50/60Hz
	Allowed Voltage Range	380V model: 330 ~ 440V; 220V model: 170~240V
Output	Voltage	380V: 0~380V 220V: 0~220V
	Frequency	0.10~400.0Hz
Control mode		Space vector, V/F control
Display		Five-digit LED display, Indicator display; Display setup frequency, Output frequency, Output current, DC voltage, Module temperature, Running state, and fault
Control Characteristics	Output Frequency Range:0.10Hz~400.00Hz	
	Frequency Setup Definition	Digital setting: 0.01 Hz. Analog setup: 0.1% of maximum output frequency
	Output Frequency Accuracy: 0.01Hz	
	V/F Control	Setting V/F curve can satisfy various load requirements.
	Torque Control	Auto increase: auto raise torque by loading condition Manual increase: enable to set 0 to 20 % of raising torque
	Multi-functional Input Terminal	8 multi-function input, take 15 speed control, process 4 acceleration/deceleration speed, up and down function, scram
	Multi-functional Output Terminal	Three multi-function output take working, zero speed external fault, signal and alarm
	Speed up / down Time Setup	0~6000s acceleration/deceleration time can be respectively set.
Other Functions	PID Control	Built-in PID control
	RS485	Standard RS485 communication function (MODBUS)
	Frequency Setup	Analog 0~10V, 0~20mA, direct set operating panel RS485 specify value, up/down specify value.
	Multiple Speed	Eight multifunctional input terminals, 15 section speed can be set
	Auto Stabilizer	Option for auto Stabilizer
	Counter	Built-in 2 group of Counters
Protection Function	Overload	Constant torque 150% 1 minute, blowing machine 120% 1 minute
	Under Voltage	Over voltage protection can be set
	Under Voltage	Under voltage protection can be set
	Others	Overheat protection, short-circuit protection over current protection and parameter lock
Installation	Temperature	-10°C to 40°C (non-freezing)
	Humidity	Max. 95% (non-condensing)
	Altitude	Under 1000m
	Vibration	Max. 0.5G
	Cooling mode	Compulsory cooling
	Protection Level	IP 20
Mode		Below 90 KW wall mounted 110-200 KW wall mounted or in cabinet Above 220 KW in cabinet

## Main loop Terminals and Description



Signal	Description
E ↓	Grounding terminal
R, S, T	Power supply input terminal, one-phase 220V, select any two of the terminals to connect
P/+	DC voltage positive terminal
P1	Remove the connecting sheet between P1 and P/+ to connect with DC reactor
Pr	The brake resistor can be connected between P1 and Pr (suitable for 15KW below models)
N/-	DC voltage negative terminal, the brake unit can be connected between P1 and N/- (suitable for 18.5 KW above models)
U, V, W	Connect with three-phase AC motor

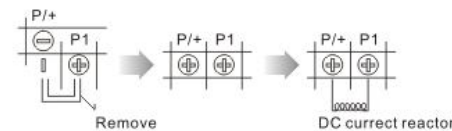
### Wiring Example



1. Model A, P, H, with three-phase 380V/18.5 or above.

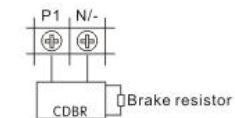
2. Model A with three-phase 380V/11 ~ 15KW, and model P with 11~18.5 KW

### DC current reactor connection



- remove the short connecting sheet.
- connect DC reactor between P/+ and P1

### Method of connecting with brake unit (apply to 18.5 KW above machines, including 18.5KW)



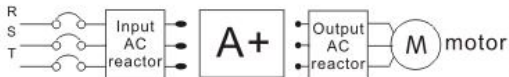
Due to different definitions of the brake unit terminal given by different producers, please refer to the relative instructions.

## Accessories



### Input / Output AC reactor

220V			400V		
Input reactor Part No	Power (KW)	Output reactor Part No	Input reactor Part No	Power (KW)	Output reactor Part No
ACL-L0.4	0.4	ACL-LO0.4	ACL-H0.75	0.75	ACL-HO0.75
ACL-L0.75	0.75	ACL-LO0.75	ACL-H1.5	1.5	ACL-HO1.5
ACL-L1.5	1.5	ACL-LO1.5	ACL-H2.2	2.2	ACL-HO2.2
ACL-L2.2	2.2	ACL-LO2.2	ACL-H3.7	3.7	ACL-HO3.7
ACL-L3.7	3.7	ACL-LO3.7	ACL-H5.5	5.5	ACL-HO5.5
ACL-L5.5	5.5	ACL-LO5.5	ACL-H7.5	7.5	ACL-HO7.5
ACL-L7.5	7.5	ACL-LO7.5	ACL-H11	11	ACL-HO11
ACL-L11	11	ACL-LO11	ACL-H15	15	ACL-HO15
ACL-L15	15	ACL-LO15	ACL-H18	18.5	ACL-HO18
ACL-L18	18.5	ACL-LO18	ACL-H22	22	ACL-HO22
ACL-L22	22	ACL-LO22	ACL-H30	30	ACL-HO30
ACL-L30	30	ACL-LO30	ACL-H37	37	ACL-HO37
ACL-L37	37	ACL-LO37	ACL-H55	55	ACL-HO55
ACL-L55	55	ACL-LO55	ACL-H75	75	ACL-HO75
ACL-L75	75	ACL-LO75	ACL-H90	90	ACL-HO90
			ACL-H110	110	ACL-HO110
			ACL-H132	132	ACL-HO132
			ACL-H160	160	ACL-HO160
			ACL-H185	185	ACL-HO185
			ACL-H200	200	ACL-HO200
			ACL-H220	220	ACL-HO220
			ACL-H250	250	ACL-HO250
			ACL-H280	280	ACL-HO280
			ACL-H300	300	ACL-HO300
			ACL-H315	315	ACL-HO315



### Input / Output AC Filter

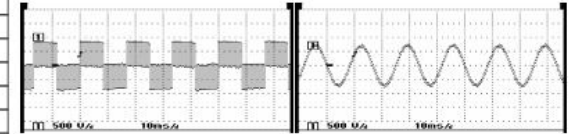
220V			400V		
Input Filter Part No	Power (KW)	Output Filter Part No	Input Filter Part No	Power (KW)	Output Filter Part No
NFS32010	0.4~1.5	RFI 32010	NFS34010	0.75~3.7	RFI 34010
NFS32020	2.2~3.7	RFI 32020	NFS34020	5.5~7.5	RFI 34020
NFS32040	5.5	RFI 32040	NFS34040	11~15	RFI 34040
NFS32060	7.5~11	RFI 32060	NFS34060	18.5~22	RFI 34060
NFS32090	15~18.5	RFI 32090	NFS34090	30~37	RFI 34090
NFS32130	22	RFI 32130	NFS34130	40~55	RFI 34130
NFS32180	30~37	RFI 32180	NFS34180	75	RFI 34180
NFS32220	40	RFI 32220	NFS34220	90	RFI 34220
NFS32270	55	RFI 32270	NFS34270	110	RFI 34270
NFS32400	75	RFI 32400	NFS34320	132	RFI 34320
			NFS34400	150	RFI 34400

## Accessories

### Sin Wave Filter

400V	
Part No	Power (KW)
TESFR44001	0.75
TESFR44002	1.5
TESFR44003	2.2
TESFR44005	3.7
TESFR44007	5.5
TESFR44010	7.5
TESFR44015	11
TESFR44020	15
TESFR44025	18.5
TESFR44030	22
TESFR44040	30
TESFR44050	37
TESFR44060	45
TESFR44075	55
TESFR44100	75
TESFR44120	90
TESFR44150	110
TESFR44200	150
TESFR44250	185
TESFR44300	220
TESFR44400	300

Application Range: frequency inverter at output side  
 Working field: altitude of less than 1000 meter inside  
 Temperature: maximum less than 40 degrees, average less than 35 degrees in one whole day  
 Phase frequency: 3-phase 60Hz  
 Input voltage: 380 ~ 480V  
 Carrier frequency: 5KHz ~ 10KHz  
 Functional effectiveness:  
 1. dv/dv protection  
 2. overcurrent protection  
 3. reduce noise and temperature of motors  
 4. prolong lifetime of motors



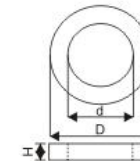
### Harmonic Filter



Confirmed Effectiveness:  
 total harmonic distortion THDi = less than 12%  
 (THDi = 8% or 5% is agreed as well)  
 Power Factor Cosθ = more than 0.95

400V	
Part No	Power (KW)
TEHRF94020-12	15
TEHRF94025-12	18.5
TEHRF94030-12	22
TEHRF94040-12	30
TEHRF94050-12	37
TEHRF94060-12	45
TEHRF94075-12	55
TEHRF940100-12	75
TEHRF940120-12	90
TEHRF940150-12	110
TEHRF940200-12	160
TEHRF940250-12	185
TEHRF940300-12	220
TEHRF940400-12	300

### Zero-Phase Filter



Part No	d	D	H
ZFM5038D	38	63	12.5
ZFM5050D	50	80	20

### Frequency Meter Current Meter



### VR-2K Dial BM-20

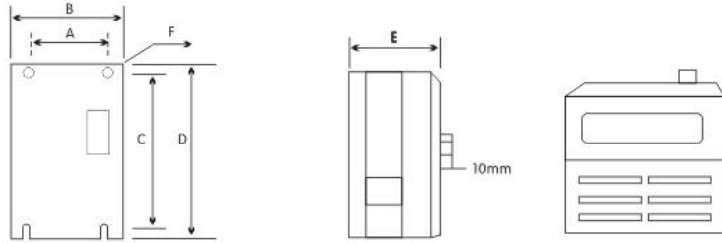


### Braking Unit



220V	400V
CDBR-2015	CDBR-4030
CDBR-2022	CDBR-4045
CDBR-2110	CDBR-4220

### Outline Dimension Form



Model	A	B	C	D	E	F	KG	Install	Casing
HCA20P4	117	125	162	170	140	5	1.8	Wall Hang	Plastic
HCA20P7									
HCA21P5									
HCA22P2									
HCA23P7	105	120	208	225	149	5	2.5		Semi-plastic
HCA25P5	213	228	230	347	196	6	7.5		Plastic
HCA27P5									
HCA40P7	117	125	162	170	140	5	1.8		Plastic
HCA41P5									
HCA42P2									
HCA43P7	105	120	208	225	149	5	2.5	Semi-plastic	
HCA45P5	168	185	248	260	170	6.5	4.5	Plastic	
HCA47P5									
HCA4011	213	228	330	347	196	6	7.5	Plastic	
HCA4015									
HCA4018									
HCA4022	197	310	482	500	260	9	24.5	Iron	
HCA4030									
HCA4037									
HCA4045									
HCA4055	240	360	620	650	280	9	52	Wall hang or Cabinet	
HCA4075	260	420	775	800	334	11	72		
HCA4090									
HCA4110	360	552	840	875	410	13	118	Cabinet	
HCA4132	360	552	840	875	410	13	122		
HCA4160									
HCA4185	360	552	975	1000	410	13	---	Cabinet	
HCA4200									
HCA4220									
HCA4250	400	600	370	1850	600	15	---		
HCA4280	470	700	355	1850	600	16	---		
HCA4300									
HCA4315									

PS:A series & H series are the same dimension

abvolt:mm

### Breaking Resistor



Controller Type	Braking resistance		CDBR	Torsion (10% ED)	KW
	W	Ω			
HCA20P4	80	200		220	0.4
HCA20P7	100	200		125	0.7
HCA21P5	300	100		125	1.5
HCA22P2	300	70		120	2.2
HCA23P7	390	40		125	3.7
HCA25P5	520	30		115	5.5
HCA27P5	780	20		125	7.5
HCA2011	2400	13.6	2015	125	11
HCA2015	3000	10	2015	125	15
HCA2018	4800	8	2022	125	18
HCA2022	4800	6.8	2022	125	22
HCA2030	3000x2	10x2	2015x2	125	30
HCA2037	3000x2	10x2	2015x2	100	37
HCA2045	4800x2	6.8x2	2022x2	120	45
HCA2055	4800x2	6.8x2	2022x2	100	55
HCA2075	4800x3	6.8x3	2022x3	110	75
HCA40P7	80	750		130	0.7
HCA41P5	300	400		125	1.5
HCA42P2	300	250		135	2.2
HCA43P7	400	150		135	3.7
HCA45P5	500	100		135	5.5
HCA47P5	1000	75		130	7.5
HCA4011	1000	50		135	11
HCA4015	1500	40		125	15
HCA4015	1500	40	4030x1	125	15
HCA4018	4800	32	4030x1	125	18
HCA4022	4800	27.2	4030x1	125	22
HCA4030	6000	20	4030x1	125	30
HCA4037	9600	16	4045x1	125	37
HCA4045	9600	13.6	4045x1	125	45
HCA4055	6000x2	20	4045x2	135	55
HCA4075	9600x2	13.6	4045x2	145	75
HCA4090	9600x3	20	4045x3	120	90
HCA4110	9600x3	13.6	4045x3	100	110