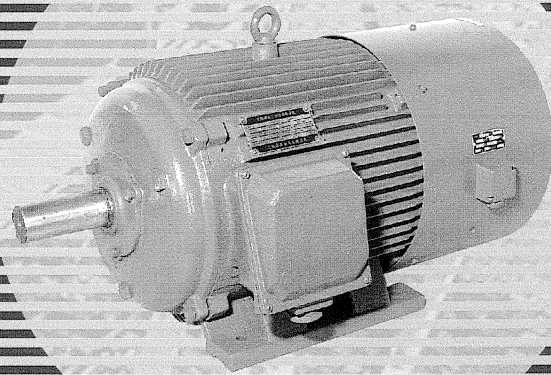


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YVP 系列

变频调速三相异步电动机

YVP series VVVF adjustable speed
three-phase induction motors



上海浩正电气有限公司

Hao Zheng Electric CO., Ltd

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简介

一、随着电力电子技术的发展，交流变频调速系统也在迅速发展。为了适应市场的需要，本公司在广泛调研和收集国内外有关资料的基础上，研制了YVP系列变频调速三相异步电动机。电机各项性能指标同国外八十年代水平相当，其基本技术条件符合IEC34-1和GB755国际和国家规定的规定。电机噪音低，振动小，调速范围广，外观新颖。

YVP系列变频调速三相异步电动机是为配合国内外各类高性能的IGBT脉宽调制变频器而特殊设计的，使用时一般不需配用外接滤波器。YVP系列变频调速三相异步电动机集国内外同类产品之优点，采用计算机辅助设计技术进行设计。为了使电机能适应PWM变频电源供电的状况，在设计上，对定子，转子槽形和定子绕组分布形式作了特殊的考虑，以期获得一个较为合适的电感值，来抑制和减小时间谐波和由其引起的一系列电机空间谐波所产生的不良影响。电机的电磁负荷设计也考虑了一定的裕度，这样既能保证电机在高频时的过载能力，又能在低频运行时仍能保持恒转矩输出。

YVP系列变频调速三相异步电动机绝缘结构的设计，考虑了采用IGBT的PWM变频器的高斩波频率的影响。尤其是匝间绝缘，为了能够承受由高压上升率在线圈匝间反复施加的陡度极大的冲击电压所导致的严酷考验，采用了真空浸烘绝缘处理。

电机的匝间耐压试验值远超过了JB/Z346-89对交流电机的规定。在结构设计方面，YVP系列的安装尺寸与Y系列相同，以使用户的配套和选用。YVP系列的冷却方式为IC0146系列，该系列使用单独的轴流风机强迫通风。保证了电机在低速（1-5HZ）时恒转矩长期运行温升不超过允许值。

YVP系列变频调速三相异步电动机出厂试验时均采用变频器电源供电，符合实际使用工况。为此，谨向各工况企业和设计院推荐。

二、YVPEJ系列变频调速制动三相异步电动机由YVP系列电机附加电磁制动器组合而成，具有运行可靠，使用寿命长，制动速度快，定位准确等优点。YVPEJ系列电动机轴向尺寸略长于YVP系列电动机的轴向尺寸，其它安装尺寸和外形均同YVP系列电动机。

General

1、With the development of power electronic technology, AC VVVF adjustable speed systems are forging rapidly ahead. In order to meet the demands of the market, YVP series VVVF adjustable speed three-phase induction motors are designed and manufactured on the basis of extensive investigation and research. ALL performance and characteristics of the motors reach the international advanced level in 1980s. The basic technical requirements conform to the international IEC34-1 standard and the national GB755 standard. With the feature of lower noise, lower vibration, wider speed range and better appearance, the motors can be matched with various frequency converters for good operation, conducive to energy saving and automatic control.

YVP series VVVF adjustable speed three-phase induction motors are specially designed for matching various IGBT pulsewidth modulation frequency converters of high performance. Generally it is not necessary for them to be supplied with an external filter of operation.

YVP series VVVF adjustable speed three-phase induction motors, designed with computer aided technology, gather the advantages of similar motors at home and abroad. In order to apply the PWM supply, the stator, rotor slot and distribution of stator winding have been given special consideration to get a suitable inductance value for restraining and reducing adverse effects caused by time harmonic wave and a series of space harmonic waves produced by the former. Allowance for electromagnetic load has been taken into account to ensure the overload capability at high frequency and constant torque output at low frequency.

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The impact of high chopping frequency of the PWM frequency converter with IGBT has been pondered in designing the insulation structure of the motors. Especially for the turn-to-turn insulation, in order to make it capable of being subjected to the severe ordeal resulting from the steep shock voltage rise, vacuum soak and bake insulating have been adopted. The tested values of interturn voltage indurance of the motors are much higher than the specified figures for AC motors in JB/Z346-89 standard.

In mechanical design, to be convenient for users, the mounting dimensions of YVP series motors are same as those of Y series motors. cooling method of YVP series motors is IC0146, the forced ventilation by an independent axial blower is adopted, with which the motors can be guaranteed to operate for constant torque over a long period of time at the low speed (1-5HZ), with the temperature rise not exceeding a prescribed limit. The frequency converter supplied power source is used during the ex-works test for all YVP motors, so they conform with the actual operating conditions. Therefore, the motors are recommended to various users and customers of industrial and mining enterprises or designing institute.

2、YVPEJ series VVVF adjustable speed and brake three-phase induction motor consists of YVP series motor and electromagnetic brake. With features of stability of running, long life of use, quick speed of braking accurateness of orientaing, etc. Axial dimension of YVPEJ is longer slightly than that of YVP series motor. The other mouting and overall dimensions of YVPEJ series motor are the same with those of YVP series motor.

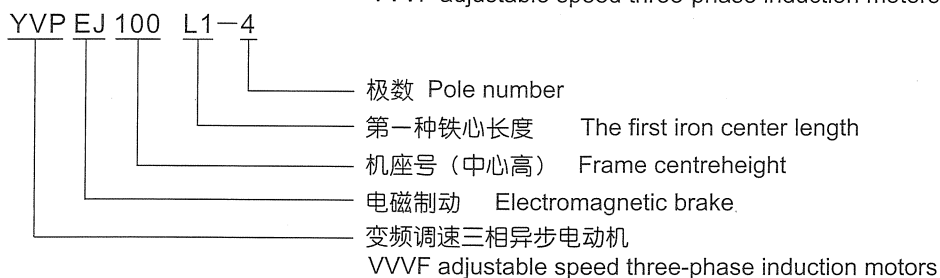
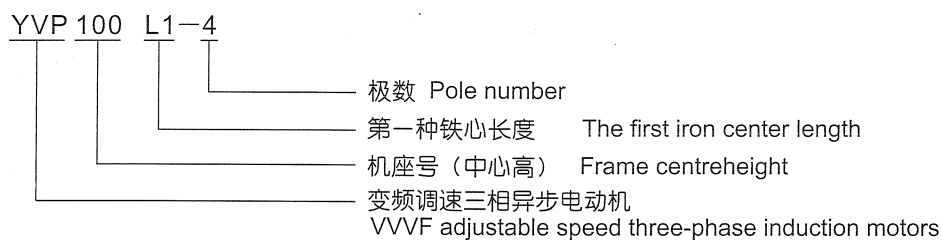
● 使用条件

环境温度：-15°C~+40°C；
海拔：不大于1000m；
防护等级：IP44；IP54；IP55；
电压：380V(220V)；
频率：50(60)Hz；
绝缘：F级；
工作制：S₁

● Usable condition

Ambient temperature: 15centigrade~+40centigrade;
Altitude: not more than 1000m;
Pretection: IP44; IP54; IP55;
Voltage: 380V(220V);
Frequency: 50(60)hz;
Insulation: F class;
Duty: S 1

● 型号说明 Type designation



● 用途

可用于各种需要调速的传动装置中。广泛应用于轻工、纺织、化工、冶金、机床等行业。配合高精度传感器，可实现高精度闭环运行。

Appllication

The motors can be used for various operation systems by which speed regulation is needed, so they have wide applications in light industry, textile chemistry, metallurgy, machine tool, etc. Fitted with highly accurate sensor, the motors can achieve highly accurate operation of closed loop.

YVP series VVVF adjustable speed three-phase induction motors

● 结构形式

- 1) 电动机的外壳防护等级为IP44, 也可按用户需要制成IP54:IP55;
- 2) 电动机的冷却方式为全封闭带单独轴流风机的外表轴向风机冷却(IC0146), 也可按需要制成其它冷却方式;
- 3) 电动机的结构及安装型式为IMB3、IMB5、IMB35,并可在这三种基本安装型式的基础上派生其他安装形式。
- 4) 根据用户要求可带电磁式制动器、齿轮减速机等附件。
- 5) IC0146系列可根据用户要求带各种高分辨率的传感器(光电编码器、旋转变压器及测速发电机)。

Construction

- 1) The degree of protection of enclosure is Ip44 and can also be Ip54; Ip55; in accordance with users requirement.
- 2) Cooling method is the totally enclosed with independent axial blower cooling on the surface(IC0146).Other cooling methods are also available by request.
- 3) Type of construction and mounting arrangement is IMB3,IMB5,IMB35,and other derivatives based upon the three basic ones.
- 4) Motors can be fitted with electromagnetic brake ,gear reducer or other accessories in accordance with users requirement.
- 5) In accordance with users requirement,IC0146 motors can be fitted with high resolving sensors,such as optical encoder,resolver,tachogenerator,etc.

● 主要技术性能

- 1) 电动机为连续工作制S1。
- 2) 电动机的额定电压为380V、频率为50HZ.也可根据用户要求确定额定点的电压和频率。
- 3) 电动机的绝缘等级为F或H级, 绝缘结构具有对变频器输出高载波频率电压的适应能力。
- 4) 电动机的调速范围广。IC0146系列在开环U/F控制的条件下, 可实现2-50HZ时的恒转矩调速, 50-100HZ(315机座号的4级电机为50-70HZ)时的恒功率调速; 在矢量控制的条件下, 调速范围还可以扩大到200HZ。
- 5) 过载能力强。能够承受额定转矩的160%过载, 历时1min。
- 6) 低速性能好。低速时转矩平滑, 无爬行现象。
- 7) 电动机的接线方式, 3KW及以下功率为Y接法。4KW及以上功率为三角形接法。

Technical performance

- 1) Continuous duty(S1)is applied.
- 2) The rated voltage is 380 V and the frequency is 50HZ.In accordance with users requirement ,the rating of voltage and frequency can be also determined.
- 3) The insulation of motors is of class F or H.The insulation structure has the adaptability to high carrier frequency voltage supplied by frequency converter.
- 4) Speed can be adjusted in a wide range.IC0146motors can ,under the condition of open-loop u/f control,maintain torque constant during 2-50HZand output constant during 50-100HZ (50-70HZ for 4P motor of frame size315) And under the condition of vector control ,speed range can be even expanded 200HZ.
- 5) The overload capability of the motors is good ,and the motors can be operated with the overload of 160% of rated torque within 1minute.
- 6) Motors have good performance at low speed that torque is smooth and no crawling circumstance exists.
- 7) For the type of wire-connection,motors of output 3KWand below are of Y-connection,motors of output 4KW and above are of triangular connection.

YVP 系列变频调速三相异步电动机













技术数据表 Technical data table

表中数据是电压为380v、频率为50HZ时的设计值，仅供用户选型时参考。4级电机(50HZ时同步转速1500r/min);
6级电机(50HZ时同步转速1000r/min);8级电机(50HZ时同步转速750r/min)。
The data listed in the table are design values at 380v and 50HZ, only for reference when users select a required motor.
4p motor (synchronous speed is 1500r/min at 50hz);6p motor (synchronous speed is 1000r/min at 50hz);
8p motor (synchronous speed is 750r/min at 50hz);

4级			6级			8级					
机座号	标称功率 Nominal power(kw)	额定电流 Rated current(A)	额定转矩 Rated Torque(N.M)	机座号	标称功率 Nominal power(kw)	额定电流 Rated current(A)	额定转矩 Rated Torque(N.M)	机座号	标称功率 Nominal power(kw)	额定电流 Rated current(A)	额定转矩 Rated Torque(N.M)
801	0.55	1.8	3.5	801	—	—	—	—	—	—	—
802	0.75	2.3	4.7	802	—	—	—	—	—	—	—
90S	1.1	3.0	7.0	90S	0.75	2.5	7.1	—	—	—	—
90L	1.5	4.0	9.5	90L	1.1	3.5	10.5	—	—	—	—
100L1	2.2	5.2	14.0	100L	1.5	4.4	14.3	—	—	—	—
100L2	3.0	7.2	19.0	112M	2.2	6.1	21.0	—	—	—	—
112M	4.0	9.5	25.4	132S	3.0	7.5	28.6	132S	2.2	6.4	28.0
132S	5.5	12	35.0	132M1	4.0	9.5	38.2	132M	3	8.5	38.2
132M	7.5	15.5	47.7	132M2	5.5	12.8	52.5	160M1	4	10.8	50.9
160M	11	22	70.0	160M	7.5	18	71.6	160M2	5.5	14.5	70.0
160L	15	29	95.5	160L	11	26	105.0	160L	7.5	19	95.5
180M	18.5	36.8	117.1	180L	15	34	143.0	180L	11	26	140.1
180L	22	43.7	140.0	200L1	18.5	38	176.0	200L	15	35	191.0
200L	30	58	190.9	200L2	22	45	210.0	225S	18.5	39	235.6
225S	37	70	235.5	225M	30	60	286.0	225M	22	47	280.1
225M	45	84	286.4	250M	37	72	353.0	250M	30	63	382.0
250M	55	105	350.1	280S	45	85	429.0	280S	37	76	471.1
280S	75	136	477.4	280M	55	104	525.0	280M	45	92	573.0
280M	90	162	572.9	315S	75	140	716.1	315S	55	118	700.3
315S	110	200	700.2	315M1	90	168	859.4	315M1	75	153	955.0
315M1	132	235	840.3	315M2	110	205	1050.3	315M2	90	182	1146.0
315M2	160	285	1018.5	315L	132	245	1260.0	315L	110	220	1400.7

YVP series VVVF adjustable speed three-phase induction motors

● 安装型式 Mounting type

安装结构型式 Mounting type	B3	B6	B7	B8	V5	V6	B5	V1	V3	B35	V15	V36
示意图 Diagram												
制造范围 (机座号) Frame number	80-315	80-160					80-280	80-280	80-160	80-315	80-160	

● 制动器及IC0146系列所配风机参数

Specifications of brake and cooling blower for the IC0146 motors

机座号 Frame		80	90	100	112	132	160	180	200	225	250	280	315
风机驱动电机输出功率 Blower motor power(w)		18	25	30	30	65	65	120	120	280	320	370	450
风机电压 Blower motor voltage		380V三相 3-phase 380V											
失电制动器 Magnetic brake	转矩Torque(N.m)	8	15	30	40	80	150	200	300	450	—	—	—
	励磁功率 (W) / 直流电压 (V) Magnetizing power(w)/ DC voltage(v)	50/ 99	60/ 99	80/ 99	110/ 170	130/ 170	150/ 170	150/ 170	200/ 170	200/ 170	—	—	—

● 接线盒

从轴伸端视之，电机接线盒位于机座右侧。用户如有特殊要求，请在订货时说明，另行商议。

Terminal box

Standard terminal box mounting is on the right hand side viewed from the drive end of the motor.
And if you have special request, it is necessary to state clearly and consult with us when placing orders.

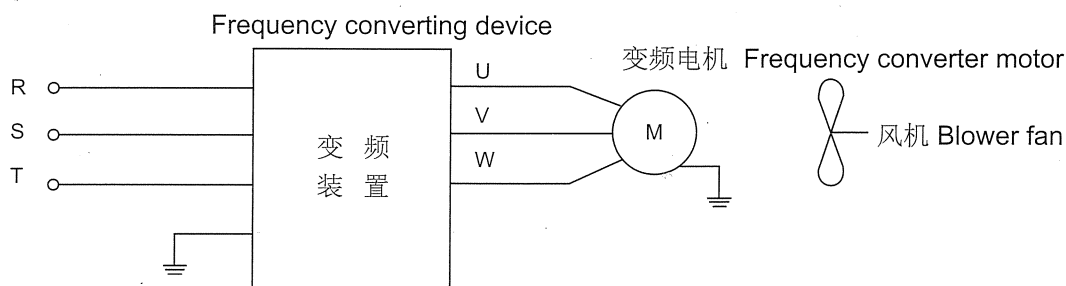
YVP 系列变频调速三相异步电动机

接线盒主要数据 Main data for terminal box

接线盒分档 Classified No	机座号范围 Frame size(mm)	进线孔尺寸(引接电缆) Entry hole size(for lead cable)
1	80-90	M24X1.5
2	100-132	M30X2
3	160-180	M36X2
4	200-225	M48X2
5	250-280	M64X2
6	315	M76X2

变频调速系统的运行方式

Operation mode of frequency-control and speed-regulating system



订货须知

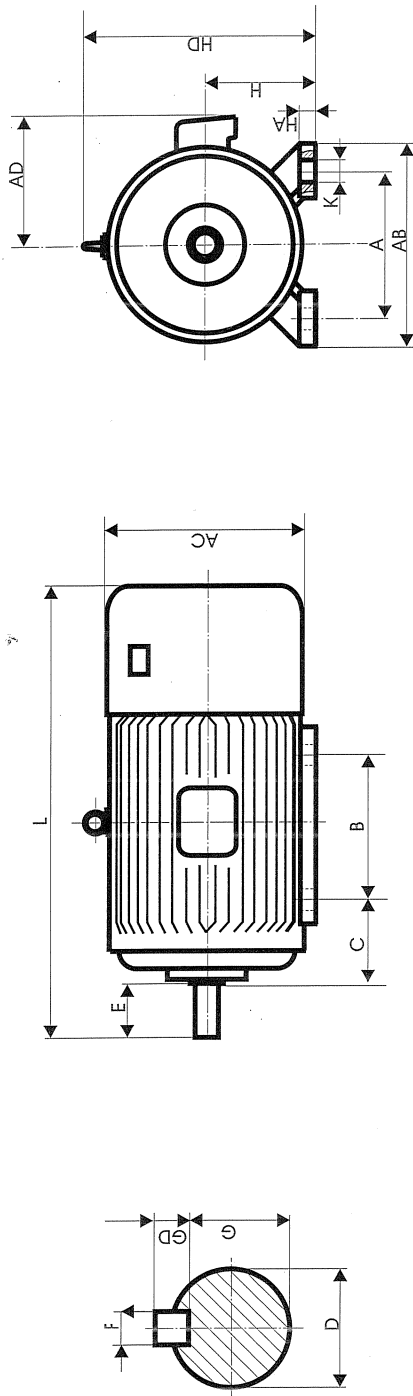
订货时请注明电机型号、额定功率、额定电压、额定频率、安装型式；若对电机极数、电压等级、调速特性、绝缘等级、防护型式、安装尺寸等有特殊要求，请在订货时说明，另行商议；本公司还可为用户配套各种型号的变频装置（益东电器为美国EMERSON一级代理商）

Notice on order

When placing order, please specify the type, rated output, rated voltage, rated frequency, mounting arrangement and dimensions of the motor. If you have special request to No of poles, degree of voltage, performance of speed regulation, class of insulation, type of protection, mounting type, it is necessary to state clearly and consult with us when placing orders. Besides, we also supply all types of frequency control devices for clients (YiDong Electric is the primary agent of American EMERSON)

外形及安装尺寸 Overall and mounting dimensions

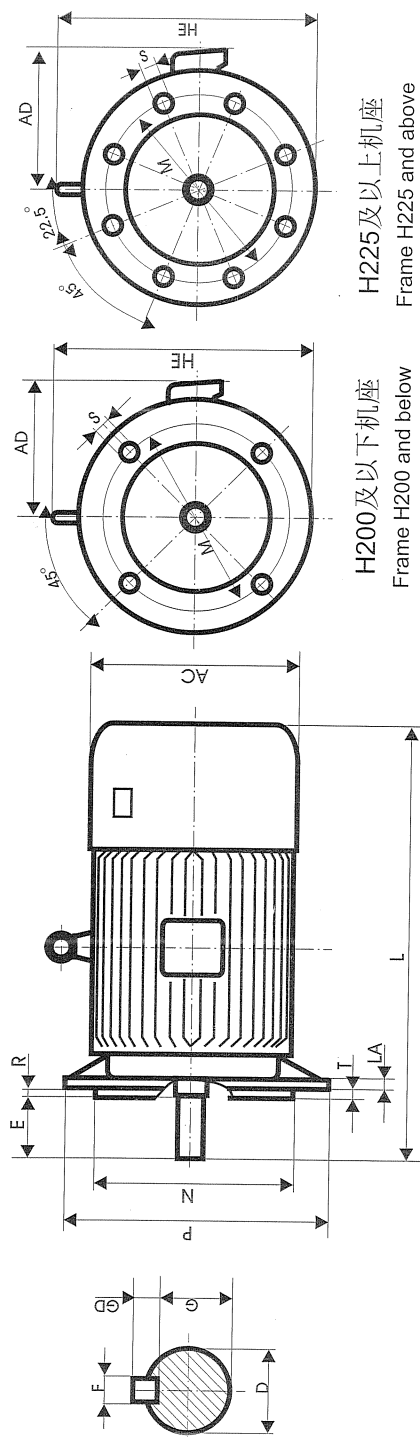
YVP series VVVF adjustable speed three-phase induction motors



1) 机座带底脚, 端盖无凸缘 (B3,B6,B7,B8,V5,V6) Frame with feet and endshield without flange (B3,B6,B7,B8,V5,V6)

机座号 Frame	安装尺寸											外形尺寸									
	H	A	B	C	D	E	FXGD	G	K	AB	AC	AD	HD	HA	YVP	L	YVPEJ				
80	80	125	100	50	19	40	6X6	15.5	10	165	175	150	175	10	380	405					
90S	90	140	100	56	24	50	8X7	20	10	180	195	160	195	12	410	435					
90L	90	140	125	56	24	50	8X7	20	10	180	195	160	195	12	440	465					
100L	100	160	140	63	28	60	8X7	24	12	205	215	180	245	14	490	515					
112M	112	190	140	70	28	60	8X7	24	12	245	240	190	265	15	530	555					
132S	132	216	140	89	38	80	10X8	33	12	280	275	210	315	18	610	635					
132M	132	216	178	89	38	80	10X8	33	12	280	275	210	315	18	700	725					
160M	160	254	210	108	42	110	12X8	37	15	330	335	265	385	20	730	755					
160L	160	254	254	108	42	110	12X8	37	15	330	335	265	385	20	780	805					
180M	180	279	241	121	48	110	14X9	42.5	15	355	380	285	430	22	840	865					
180L	180	279	279	121	48	110	14X9	42.5	15	355	380	285	430	22	880	905					
200L	200	318	305	133	55	110	16X10	49	19	395	420	315	475	25	940	965					
225S	225	356	286	149	60	140	18X11	53	19	435	475	345	530	28	970	1000					
225M	225	356	311	149	60	140	18X11	53	19	435	475	345	530	28	1000	1030					
250M	250	406	349	168	65	140	18X11	58	24	490	515	385	575	30	1080	1110					
280S	280	457	368	190	75	140	20X12	67.5	24	550	580	410	640	35	1150	1180					
280M	280	457	419	190	75	140	20X12	67.5	24	550	580	410	640	35	1200	1230					
315S	315	508	406	216	80	170	22X14	71	28	744	645	576	865	50	1300	1330					
315M	315	508	457	216	80	170	22X14	71	28	744	645	576	865	50	1350	1380					
315L	315	508	508	216	80	170	22X14	71	28	744	645	576	865	50	1450	1500					

YVP 系列变频调速三相异步电动机



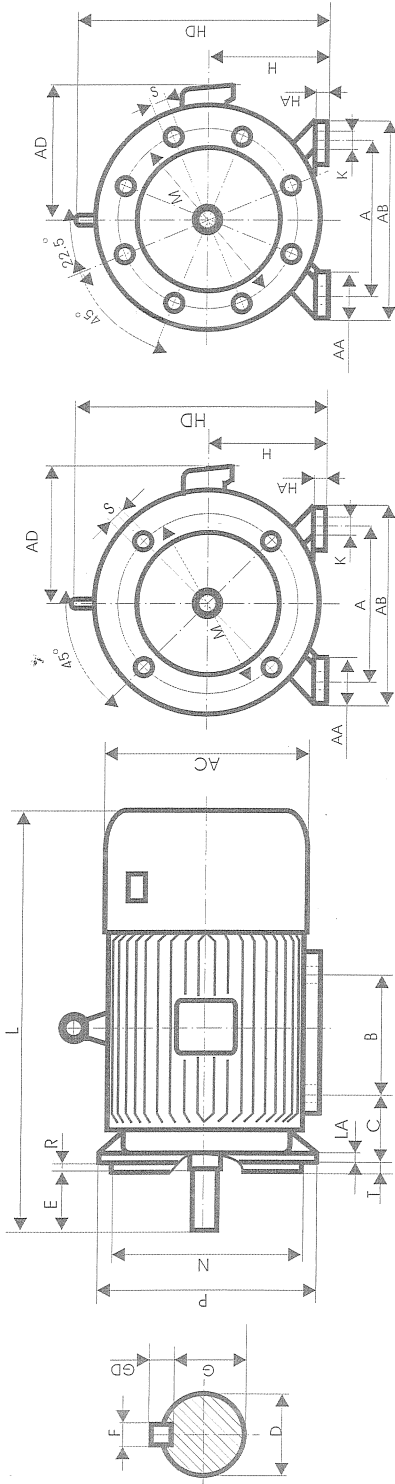
H225及以上机座
Frame H225 and above

H200及以下机座
Frame H200 and below

2)机座不带底脚, 端盖有凸缘 (B5, V1, V3) Frame without feet and endshield with flange (B5, V1, V3)

机座号 Frame	安装尺寸										外形尺寸									
	D	E	FXGD	G	T	M	N	P	S	R	LA	AC	AD	AD	L	YVP	YVPEJ			
80	19	40	6X6	15.5	3.5	165	130	200	12	0	12	175	150	380	405					
90S	24	50	8X7	20	3.5	165	130	200	12	0	12	195	160	410	435					
90L	24	50	8X7	20	3.5	165	130	200	12	0	12	195	160	440	465					
100L	28	60	8X7	24	4	215	180	250	15	0	14	215	180	490	515					
112M	28	60	8X7	24	4	215	180	250	15	0	14	240	190	530	555					
132S	38	80	10X8	33	4	265	230	300	15	0	14	275	210	610	635					
132M	38	80	10X8	33	4	265	230	300	15	0	14	275	210	700	725					
160M	42	110	12X8	37	5	300	250	350	15	0	16	335	265	730	755					
160L	42	110	12X8	37	5	300	250	350	19	0	16	335	265	780	805					
180M	48	110	14X9	42.5	5	300	250	350	19	0	18	380	285	840	865					
180L	48	110	14X9	42.5	5	300	250	350	19	0	18	380	285	880	905					
200L	55	110	16X10	49	5	350	300	400	19	0	18	420	315	940	965					
225S	60	140	18X11	53	5	400	350	450	19	0	20	475	345	970	1000					
225M	60	140	18X11	53	5	400	350	450	19	0	20	475	345	1000	1030					
250M	65	140	18X11	58	5	500	450	550	19	0	22	515	385	1080	1110					
280S	75	140	20X12	67.5	5	500	450	550	19	0	22	580	410	1150	1180					
280M	75	140	20X12	67.5	5	500	450	550	19	0	22	580	410	1200	1230					

YVP series VVVF adjustable speed three-phase induction motors



H225及以上机座

Frame H225 and above

H200及以下机座

Frame H200 and below

3) B35, V15, V36机座带底脚，端盖有凸缘。 Frame with feet and with flange on the end-shield(B35, V15, V36)

机座号 Frame	安装尺寸																	外形尺寸									
	H	A	B	C	D	E	FXGD	G	K	T	M	N	P	R	S	AB	AC	AD	AD	HD	HA	LA	L	YVPEJ	YVPEJ		
80	80	125	100	50	19	40	6X6	15.5	10	3.5	165	130	200	0	12	165	175	150	175	10	12	380	405				
90S	90	140	100	56	24	50	8X7	20	10	3.5	165	130	200	0	12	180	195	160	195	12	12	410	435				
90L	90	140	125	56	24	50	8X7	20	10	3.5	165	130	200	0	12	180	195	160	195	12	12	440	465				
100L	100	160	140	63	28	60	8X7	24	12	4	215	180	250	0	15	205	215	180	245	14	14	490	515				
112M	112	190	140	70	28	60	8X7	24	12	4	215	180	250	0	15	245	240	190	265	15	14	530	555				
132S	132	216	140	89	38	80	10X8	33	12	4	265	230	300	0	15	280	275	210	315	18	14	610	635				
132M	132	216	178	89	38	80	10X8	33	12	4	265	230	300	0	15	280	275	210	315	18	14	700	725				
160M	160	254	210	108	42	110	12X8	37	15	5	300	250	350	0	15	330	335	265	385	20	16	730	755				
160L	160	254	254	108	42	110	12X8	37	15	5	300	250	350	0	19	330	335	265	385	20	16	780	805				
180M	180	279	241	121	48	110	14X9	42.5	15	5	300	250	350	0	19	355	380	285	430	22	18	840	865				
180L	180	279	279	121	48	110	14X9	42.5	15	5	300	250	350	0	19	355	380	285	430	22	18	880	905				
200L	200	318	305	133	55	110	16X10	49	19	5	350	300	400	0	19	395	420	315	475	25	18	940	965				
225S	225	356	286	149	60	140	18X11	53	19	5	400	350	450	0	19	435	475	345	530	28	20	1000	1030				
225M	225	356	311	149	60	140	18X11	53	19	5	400	350	450	0	19	435	475	345	530	28	20	1000	1030				
250M	250	406	349	168	65	140	18X11	58	24	5	500	450	550	0	19	490	515	385	575	30	22	1080	1110				
280S	280	457	368	190	75	140	20X12	67.5	24	5	500	450	550	0	19	550	580	410	640	35	22	1150	1180				
280M	280	457	419	190	75	140	20X12	67.5	24	5	500	450	550	0	19	550	580	410	640	35	22	1200	1230				
315S	315	508	406	216	80	170	22X14	71	28	6	600	550	660	0	24	744	645	576	865	50	25	1300	1330				
315M	315	508	457	216	80	170	22X14	71	28	6	600	550	660	0	24	744	645	576	865	50	25	1350	1380				
315L	315	508	508	216	80	170	22X14	71	28	6	600	550	660	0	24	744	645	576	865	50	25	1450	1500				