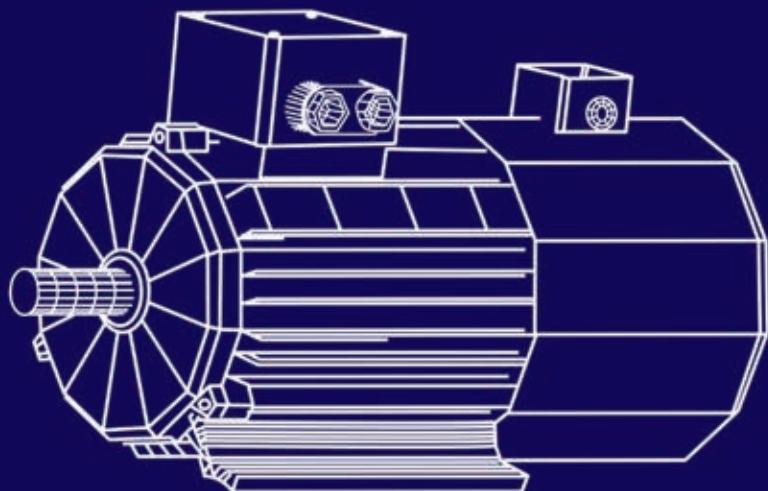


# YBPT 系列

隔爆型变频调速三相异步电动机



中国·佳木斯防爆电机有限公司

JIAMUSI EXPLOSION-PROOF ELECTRIC MOTOR CO.,LTD



## 一、概 述

1.1 YBPT 系列隔爆型变频调速三相异步电动机，是我公司在YB2系列电动机基础上结合了当前国内外电磁结构、工艺、材料等方面的新技术而开发研制成的新产品，其安装尺寸与YB2系列电动机相同。

1.2 本系列电动机具有调速性能好、节能、温升裕度大、寿命长、性能好、振动小、噪声低、隔爆结构先进、可靠性高、使用维护方便等特点。

1.3 本系列电动机符合国家标准GB3836.2-2000《爆炸性气体环境用电气设备 第2部分：隔爆型“d”》的规定。电动机隔爆结构和参数的设计也参考了IEC79和EN50018的规定。电动机制成隔爆型，适用于需要调速控制的爆炸气体环境危险场所。

I类: Exd I , 适用于煤矿井下非采掘工作面的场所。

II类: 适用于除煤矿外的其它爆炸性气体环境场所。

Exd II AT4适用于 II A级 , T1、T2、T3、T4级爆炸性气体混合物存在的场所。

Exd II BT4适用于 II A、 II B级 , T1、T2、T3、T4级爆炸性气体混合物存在的场所。

对 Exd II CT4 防爆标志的电动机也可按协议供货。

1.4 本系列电动机主体外壳防护等级为IP55，接线盒为IP55。

## General

1.1 YBPT series of flame - proof variadle - frequency adjustable - speed three - phase induction motors are the new products developed on YB2 - series motors basis and in combination with the new techniques, such as electromagnetic construction, process and material , etc . The mounting dimensions are the same as those of YB2.

1.2 The motors have the advantages of good adjustable - speed performance, saving energy, greater margin of temperature rise, longer lifetime, satisfactory performance, small vibration, lower noise, advanced flame - proof construction, higher reliability, convenient maintenance and protection, etc.

1.3 The motors comply with GB3836.2-2000 Electrical Apparatus for Use in Explosive Gas Atmosphere, Part2: Flame - proof enclosure "d" . The design of flame- proof constructions and parameters of the motors also refers to IEC79 and EN50018.The motors are made into flame - proof construction, and suitable for driving the equipment needing the adjustable speed control, and placing in the explosive hazardous areas.

Group I : Exd I, suitable for the non - excavated work surface in underground coal mine.

Group II : Suitable for explosive gas atmosphere other than coal mine.

Exd II AT4 :suitable for the area where explosive gas mixtures with groups of II A and II B and temper-ature classes T1, T2, T3 and T4 exist.

Exd II BT4: suitable for the places where explosive gas mixtures with groups of II A and II B and temper-ature classes T1, T2, T3 and T4 exist.

The motor marked with Exd II CT4 can be available on the agreement.

1.4 Degree of protection by motor enclosure is IP55, and by terminal box, IP55.

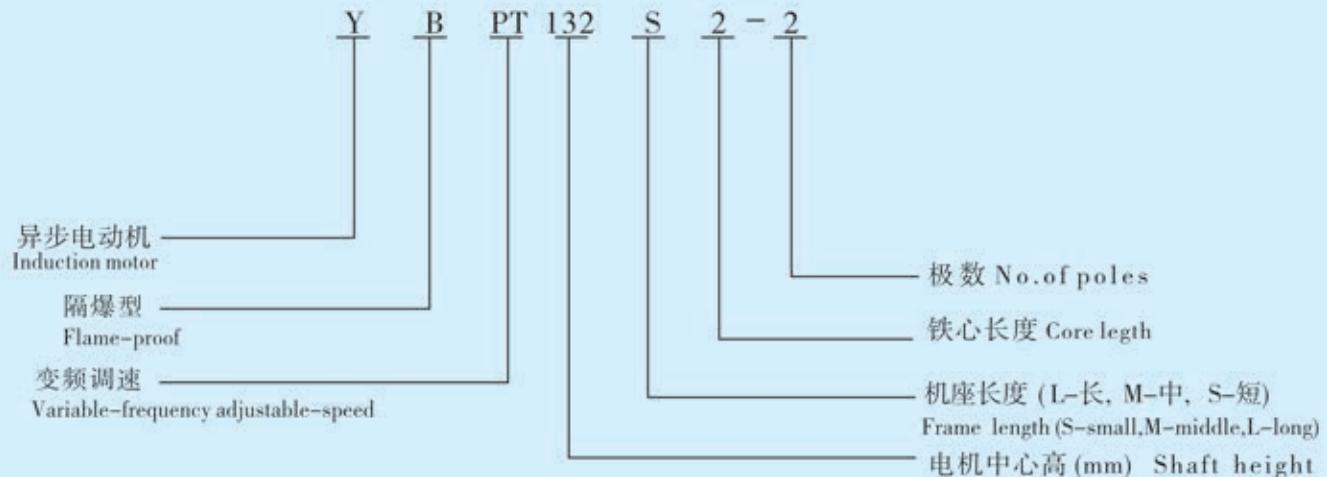


1.5 本系列电动机还可以制成YBPT—TH湿热带型或YBPT—W户外型。

1.5 The motors can be made into the moist tropical type ( YBPT - TH ) and outdoor type( YBPT - W )

## 二、结构说明 Description of construction

电动机型号说明: Meaning of type of motor:



2.1 定子：定子铁心嵌完绕组后经VPI真空压力浸渍处理，使之成为一个完整的整体，绕组及绝缘具有良好的电气、机械、防潮性能及热稳定性。

电动机的绝缘等级为F(H)级，电动机的电磁负荷设计考虑了一定的裕度，既能保证电机在高频时的过载能力又能保证在低频时的恒转矩输出，寿命长，使用可靠性高。

2.2 转子：采用热套或冷压工艺将铸铝转子固定在轴上，转子经动平衡校正，电机运转平稳。

2.3 接线盒：为圆筒形隔爆结构，盒内有较大的空腔便于接线。进线方式分橡套电缆和挠性管进线两种，按不同起动要求，分别制成一或二进线口。接线盒空腔至机座主空腔之间为螺纹隔爆结构，接线盒位于电动机顶部，可以两侧进线，订货时无特殊要求均按一个口进线。

**2.1 Stator:** The stator core with winding shall be treated by VPI and form an integral structure. The windings and insulation have good electrical, mechanical, damp-proof and thermal stability performances, etc.

The motors are class F(H) insulated. The motor is certain margin designed, and hence can not only ensure the overload capacity at high frequency, but also ensure the constant torque at low frequency. Therefore, the motor has long lifetime and high reliability.

**2.2 Rotor:** The cast aluminium rotor is fitted on to the shaft by using the shrink-fit and cold-press processes. After the rotor is well balanced, the motor can run smoothly.

**2.3 Terminal box:** The terminal box is of flameproof cylindrical construction. Interior of the box has generous cavity convenient to connection. Cabtyre cable and flexible conduit are used for cable entry. According to different starting requirements, the terminal box is provided with one or two leading-in holes. Flame-proof thread construction is adopted between the cavity for terminal box and the main cavity. The terminal box is located on the top of the motor, and cable can be led into from two sides. The motor shall be provided with one leading-in hole if no special requirements when ordering.



**2.4 轴承：**电动机的轴承均选用电动机专用轴承，H180~H400机座号的轴承采用有注排油和无注排油装置两种。订货时无注明者均按无注排油结构供货。

电动机采用独立通风的冷却结构，在非轴伸端设独立的轴向风机强迫通风，效率高、噪声低、结构简单、便于安装编码器、测速机及制动器等辅助设备，保证了电动机在低速运行时温升不超过限值。

**2.4 Bearing:** The special bearings are selected for motres. Frame sizes 180 to 400 motors are provided with bearings with oil-filling and-draining device and without oil-filling and draining device. The bearings without oil-filling and-draining device shall be available if nothing is stated when ordering.

The motors have the separately ventilated cooling consuuction. Separated axial fan are located on the outer shaft extension end to achieve forced-ventilation. The motors have the higher efficiency and lower noise, simple construction, and are easy to fit the auxiliary equipments such as encoder techogenerator, brake, etc. This fan assure that the temperature rise of motors at a low speed operation does not exceed limiting value.

### 三、技术数据

#### 3.1 使用条件

环境空气温度：随季节而变化，但不超过40℃。

海 拔：不超过1000m

额定频率：50Hz

额定电压：380V

工作方式：连续工作制(S1)

调频范围：2极电机及355~400机座号为3~60Hz，4极及以上为3~100Hz。低于额定频率以下为恒转矩输出，高于额定频率以上为恒功率输出。

注：对额定频率、额定电压、调频范围有特殊要求，请在订货时提出。

### Technical data

#### 3.1 Operation conditions

Ambient air temperature: changes with season, but does not exceeds 40°C;

Altitude above sea level: up to 1000m;

Rated frequency: 50Hz;

Rated voltage: 380V;

Duty type: continuous running duty(S1);

Frequency-adjusting range: 3 to 60 Hz for 2-pole motor, and 3 to 100 Hz for 4-pole motor. motors have constant-torque output when frequency of motors is lower than rated one and have constant-power output when frequency of motors is higher than rated one.

Note: If you have special requirements for rated frequency, rated voltage and range of adjust table frequency, please specify them when ordering.

### 配套冷却风机 matching cooling fan

电机机座号 Frame Size	80	90	100	112	132	160	180	200	225	250	280	315	355	400
风机功率 Output of fan (W)	60	60	60	60	60	60	230	230	230	230	370	450	550	1100
风机电压 Voltage of fan							380V 三相				380V Three-phase			



## 3.2 技术数据 Technical data

型 号 Type	功 率 Output (kW)	额定转速 Rated speed (r/min)	额定电流 Rated current (A)	额定效率 Rated Efficiency (%)	额定功率因数 Rated power factor (cos φ)	额定转矩 Rated torque	最大转矩 额定转矩 Breakdown torque Rated torque	重 量 Weight (kg)
同步转速 3000r/min      Synchronous speed 3000r/min 50Hz								
80M1-2	0.75	2830	1.83	75	0.83	2.5	2.3	27
80M2-2	1.1	2830	2.61	78	0.84	3.7		28
90S-2	1.5	2840	3.42	79	0.84	5.0		40
90L-2	2.2	2840	4.48	81	0.85	7.4		42
100L-2	3.0	2870	6.22	83	0.88	10.0		48
112M-2	4.0	2890	8.13	85	0.88	13.2		57
132S1-2	5.5	2900	11.1	86	0.88	18.1		77
132S2-2	7.5	2900	14.8	87	0.88	24.7		77
160M1-2	11	2930	21.6	88.4	0.88	35.9		165
160M2-2	15	2930	28.8	89.4	0.89	48.9		151
160L-2	18.5	2930	35.5	90	0.89	60.3	2.4	170
180M-2	22	2940	41.0	90.5	0.90	71.5		221
200L1-2	30	2950	55.5	91.4	0.90	97.1		250
200L2-2	37	2950	67.9	92	0.90	119.8		255
225M-2	45	2970	82.1	92.5	0.90	144.7	2.3	415
250M-2	55	2970	99.7	93	0.90	176.9		455
280S-2	75	2970	134	93.6	0.91	241.2		600
280M-2	90	2970	160	93.9	0.91	289.4		650
315S-2	110	2980	195	94	0.91	352.5	2.2	1015
315M-2	132	2980	233	94.5	0.91	423.0		1078
315L1-2	160	2980	279	94.6	0.91	512.8		1168
315L2-2	200	2980	348	94.8	0.92	640.9		1231
355S1-2	(185)	2980	323	94.6	0.91	592.9		1690
355S2-2	(200)	2980	348	94.8	0.92	640.9		1592
355M1-2	(220)	2980	383	94.8	0.92	705.0		1592
355M2-2	250	2980	433	95.2	0.92	801.2		1690
355L1-2	(280)	2980	485	95.2	0.92	897.3	2.5	1849
355L2-2	315	2980	544	95.4	0.92	1009.5		1947
400S-2	355	2984	604	96	0.93	1136.1		2189
400M-2	400	2984	681	96	0.93	1280.2		2389

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## 3.2 技术数据 Technical data

型 号 Type	功 率 Output (kW)	额定转速 Rated speed (r/min)	额定电流 Rated current (A)	额定效率 Rated Efficiency (%)	额定功率因数 Rated power factor (cos φ)	额定转矩 Rated torque	最大转矩 额定转矩 Breakdown torque Rated torque		重 量 Weight (kg)
							同步转速 1500r/min	Synchronous speed 1500r/min 50Hz	
同步转速 1500r/min Synchronous speed 1500r/min 50Hz									
80M1 - 4	0.55	1390	1.5	71	0.75	3.8			27
80M2 - 4	0.75	1390	2.0	73	0.77	5.2			28
90S - 4	1.1	1400	2.9	76.2	0.77	7.5			41
90L - 4	1.5	1400	3.7	78.5	0.79	10.2			43
100L1 - 4	2.2	1430	5.1	81	0.81	14.7			45
100L2 - 4	3.0	1430	6.8	82.6	0.82	20.0			50
112M - 4	4.0	1440	8.8	84.2	0.82	26.5			57
132S - 4	5.5	1440	11.8	86	0.84	36.5			80
132M - 4	7.5	1440	15.4	87	0.85	49.7			95
160M - 4	11	1460	22.3	88.4	0.85	71.9			148
160L - 4	15	1460	30.1	89.4	0.85	98.1			166
180M - 4	18.5	1470	36.5	90.5	0.85	120.2			220
180L - 4	22	1470	43.1	91.2	0.85	142.9			225
200L - 4	30	1470	57.6	92	0.86	194.9			270
225S - 4	37	1480	69.9	92.5	0.87	238.8			350
225M - 4	45	1480	84.5	92.8	0.87	290.4			380
250M - 4	55	1480	102	93	0.87	354.9			471
280S - 4	75	1480	140	93.8	0.87	484			630
280M - 4	90	1480	167	94.2	0.87	580.7			700
315S - 4	110	1480	199	94.5	0.88	709.8			910
315M - 4	132	1490	238	94.8	0.88	846.0			1002
315L1 - 4	160	1490	284	94.9	0.89	1025.5			1089
315L2 - 4	200	1480	355	94.9	0.89	1290.5			1172
355S1 - 4	(185)	1480	329	94.9	0.89	1193.8			1532
355S2 - 4	(200)	1480	355	94.9	0.89	1290.5			1532
355M1 - 4	(220)	1480	390	94.9	0.90	1419.6			1567
355M2 - 4	250	1480	442	95.2	0.90	1613.2			1706
355L1 - 4	(280)	1480	495	95.2	0.90	1806.8			1883
355L2 - 4	315	1480	556	95.2	0.90	2032.6			2035
400S - 4	355	1487	628	95.5	0.90	2279.9			2345
400M - 4	400	1487	707	95.5	0.90	2568.9			2502
400L - 4	450	1487	795	95.5	0.90	2890			2554

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## 3.2 技术数据 Technical data

型 号 Type	功 率 Output (kW)	额定转速 Rated speed (r/min)	额定电流 Rated current (A)	额定效率 Rated Efficiency (%)	额定功率因数 Rated power factor (cos φ)	额定转矩 Rated torque	最大转矩 额定转矩 Breakdown torque Rated torque	重 量 Weight (kg)
同步转速 1000r/min      Synchronous speed 1000r/min  50Hz								
90S - 6	0.75	910	2.3	69	0.72	7.9	2.1	41
90L - 6	1.1	910	3.1	73	0.73	11.5		42
100L - 6	1.5	940	3.9	76	0.76	15.23		44
112M - 6	2.2	940	5.6	79	0.76	22.4		57
132S - 6	3.0	960	7.3	81	0.77	29.8	2.4	76
132M1 - 6	4.0	960	9.40	83	0.78	39.8		86
132M2 - 6	5.5	960	12.6	85	0.78	54.7		101
160M - 6	7.5	970	16.8	86	0.79	73.8		141
160L - 6	11	970	24.3	87.5	0.79	108.3	2.1	168
180L - 6	15	970	31.6	89	0.81	147.7		260
200L1 - 6	18.5	970	37.6	90	0.83	182.1		250
200L2 - 6	22	970	44.7	90	0.83	216.6		255
225M - 6	30	980	57.6	92	0.86	292.3	2.4	350
250M - 6	37	980	69.8	92	0.86	360.6		448
280S - 6	45	980	86	92.5	0.86	438.5		590
280M - 6	55	980	105	92.8	0.86	536.0		640
315S - 6	75	990	142	93.5	0.86	723.5	2.0	851
315M - 6	90	990	170	93.8	0.86	868.2		958
315L1 - 6	110	990	207	94	0.86	1061.1		1027
315L2 - 6	132	990	245	94.2	0.87	1273.3		1068
355S - 6	160	980	292	94.5	0.88	1559.2	2.2	1930
355M1 - 6	(185)	980	338	94.5	0.88	1802.8		1829
355M2 - 6	200	980	365	94.5	0.88	1949.0		1965
355L1 - 6	(220)	980	401	94.5	0.88	2143.9		2115
355L2 - 6	250	980	454	94.5	0.88	2436.2	2.2	2236
400S - 6	280	993	509	95	0.88	2692.8		2459
400M - 6	315	992	573	95	0.88	3032.5		2522
400L - 6	355	992	645	95	0.88	3417.6		2589

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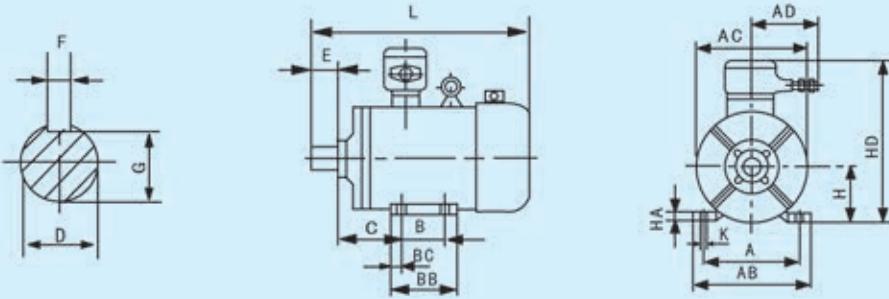
## 3.2 技术数据 Technical data

型 号 Type	功 率 Output (kW)	额定转速 Rated speed (r/min)	额定电流 Rated current (A)	额定效率 Rated Efficiency (%)	额定功率因数 Rated power factor (cos φ)	额定转矩 Rated torque	最大转矩 额定转矩 Breakdown torque Rated torque	重 量 Weight (kg)
同步转速 750r/min Synchronous speed 750r/min 50Hz								
132S-8	2.2	710	5.6	79	0.73	29.6	2.2	101
132M-8	3.0	710	7.6	81	0.73	40.3		87
160M1-8	4.0	720	10.3	81	0.73	53.1		135
160M2-8	5.5	720	13.4	83	0.75	72.9		123
160L-8	7.5	720	17.5	85	0.76	99.5		165
180L-8	11	730	25.3	87	0.76	143.9		250
200L-8	15	730	33.7	89	0.76	196.2		255
225S-8	18.5	730	40.0	90	0.78	242.0		330
225M-8	22	740	47.7	90.5	0.78	283.9		350
250M-8	30	740	63.4	91.0	0.79	387.1		453
280S-8	37	740	77.8	91.5	0.79	477.5		500
280M-8	45	740	94.1	92	0.79	580.7		640
315S-8	55	740	111	92.8	0.81	709.7		824
315M-8	75	740	151	93.5	0.81	967.9		966
315L1-8	90	740	178	93.8	0.82	1161.5		1068
315L2-8	110	740	217	94	0.82	1419.5		1194
355S-8	132	740	260	94.2	0.82	1703.5		1814
355M-8	160	740	313	94.2	0.82	2064.8		1814
355L1-8	(185)	740	362	94.2	0.82	2387.5		2155
355L2-8	200	740	386	94.5	0.83	2581.0		2209
400S-8	250	742	487	94	0.83	3217.7		2376
400M-8	280	742	545	94	0.83	3603.8		2452
400L-8	315	742	613	94	0.83	4054.2		2587
同步转速 600r/min Synchronous speed 600r/min 50Hz								
315S-10	45	580	99.1	91.5	0.75	740.9	2.0	811
315M-10	55	580	121	92.0	0.75	905.6		911
315L1-10	75	580	162	92.5	0.76	1234.9		1161
315L2-10	90	590	191	93	0.77	1456.8		1237
355M1-10	110	590	230	93.2	0.78	1780.5		1782
355M2-10	132	590	275	93.5	0.78	2136.6		1852
355L1-10	160	590	333	93.5	0.78	2589.8		2148
355L2-10	(185)	590	385	93.5	0.78	2994.5		2255
400S1-10	185	593	367	93.5	0.82	2979.3	1.9	2365
400S2-10	200	593	396	93.5	0.82	3220.9		2365
400M-10	220	593	436	93.5	0.82	3543		2365
400L-40	250	592	495	93.5	0.82	4032.9		2491

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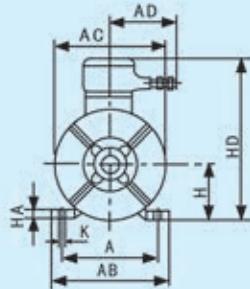
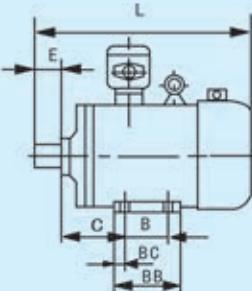
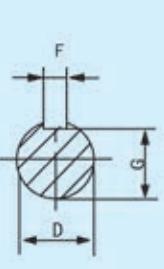
## 四、安装及外形尺寸

### Mounting and Overall dimensions



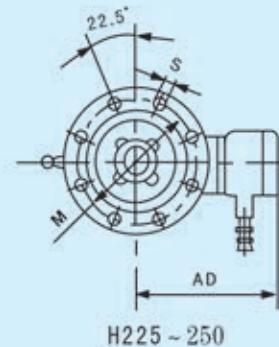
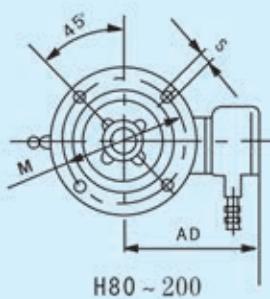
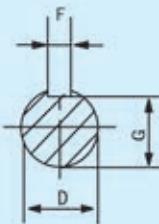
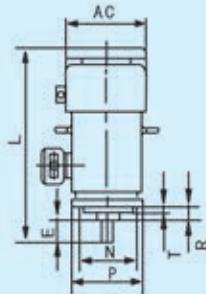
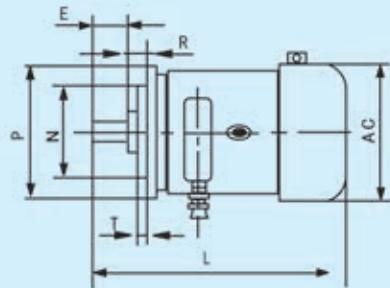
机座带底脚、端盖上无凸缘的电动机

## **Motor of being frame with feet, endshield without flange**



### 机座带底脚、端盖上无凸缘的电动机

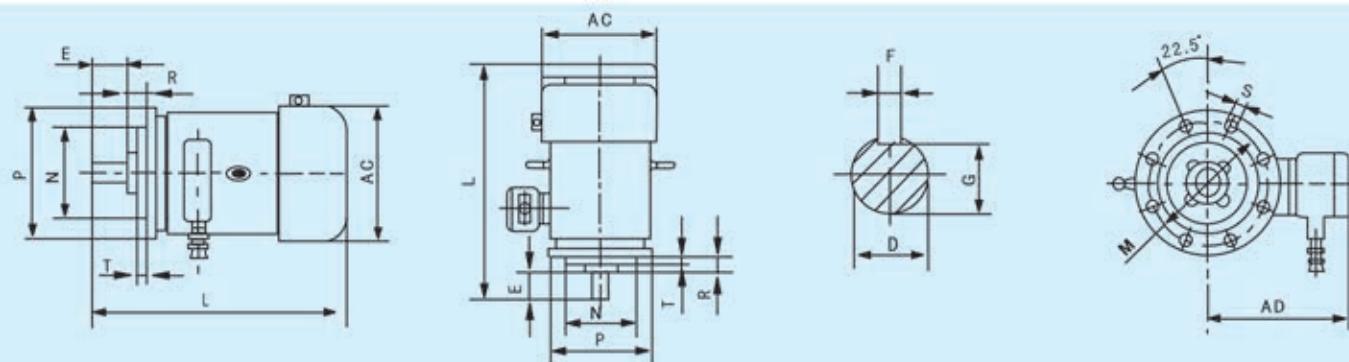
Motor of being frame with feet, endshield without flange



卧式安装或立式安装，机座不带底脚、端盖上有凸缘（带通孔）的电动机

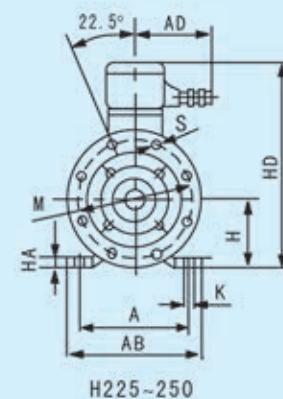
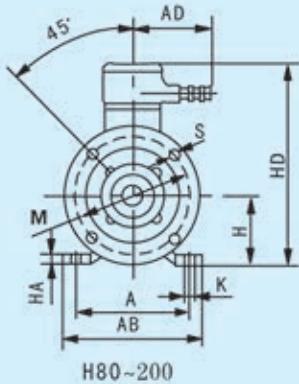
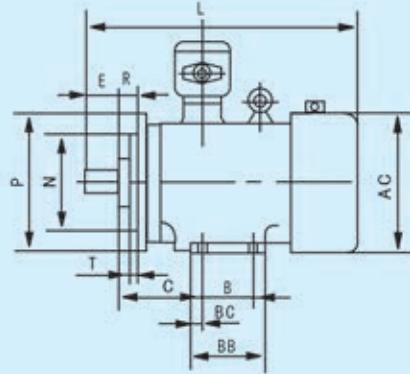
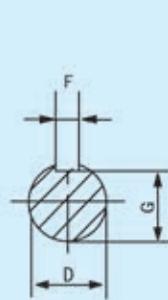
Horizontally or vertically mounted motor of being, frame without feet, endshield with flange (with through holes)

机座号 Frame size	凸缘号 Flange symbol	极数 No. of poles	安 装 尺 寸 Mounting dimensions										外 形 尺寸 Overall dimensions							
			D	E	F	G	M	N	Pmax	R	S	T	凸缘孔数 No. of holes in flange	进线口管螺纹 Pipe thread at cable entry	AC	AD	L			
80M	FF165	2,4	19	40	6	15.5	165	130	200	12	3.5	4	M30×2	165	240	460	—			
90S		2,4,6	24	50	8	20.0								180	260	500				
90L	FF215	2,4,6	28	60		24.0	215	180	250	15	4			205	300	500				
100L			28	60		24.0	215	180	250					230	310	580				
112M	FF265	2,4,6,8	38	80	10	33.0	265	230	300	0	19			270	320	630	—			
132S			42	110	12	37.0	300	250	350					325	360	780				
132M	FF300	2,4,6,8	48		14	42.5			5	8				360	370	820				
160M			55		16	49.0	350	300						400	400	445	935	1000		
160L	FF350	4,8	60	140	18	53.0	400	350	450	M48×2	450	8	M64×2	500	500	1090	1180			
180M			2	55	110	16								450	465	995	1065			
180L	FF400	4,6,8	60	140	18	53.0								500	500	1030	1100			
200L			2		58.0	500	450	550	500					500	1090	1180				
225S	FF500	4,6,8	65		58.0	500	450	550						500	500	1090	1180			
225M			4,6,8		58.0									500	500	1090	1180			



卧式安装或立式安装、机座不带底脚、端盖上有凸缘（带通孔）的电动机

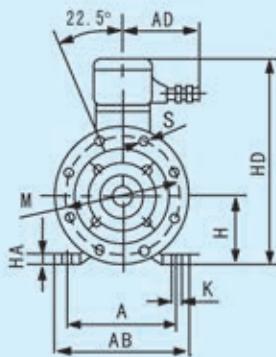
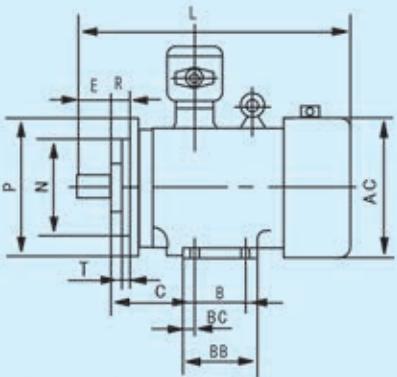
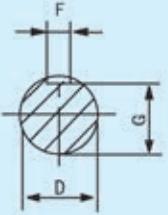
**Horizontally or vertically mounted motor of being, frame without feet, endshield with flange (with through holes)**



机座带底脚、端盖上有凸缘（带通孔）的电动机

The motor of being,frame with feet,endshield with flanges(with through holes)

机座号 Frame size	凸缘号 Flange symbol	极数 No.of poles	安 装 尺 寸 Mounting dimensions															外 形 尺寸 Overall dimensions																								
			A	B	C	D	E	F	G	H	K	M	N	P <sub>max</sub>	R	S	T	凸缘孔数 No.of holes in flange	进线口管螺纹 Pipe thread at cable entry	AB	AC	AD	HD	HA	BB	BC	L															
80	FF165	2, 4	125	100	50	19	40	6	15.5	80	10	165	130	200	12	3.5	4	M30 × 2	165	165	320	10	130	15	460																	
90S			140		56	24	50	8	20.0	90									180	180	180	14	130	15	500																	
90L		2, 4, 6	125		160	63	28		100	24.0	112	215	180	250	15	4			200	205	400	14	176	18	560																	
100L			140			70			24.0										245	230	420	16	180	20	580																	
112M			190		216	89	38	80	10	33.0	132	12	265	230	300	0	19			280	270	200	450	18	205	32	630															
132S			178			108			42	12	37.0	160	15	300	250	350									243	680																
132M			254			210			42							330				325	520	20	270	32	780																	
160M	FF300	2, 4, 6, 8	254			254			108	110	14	42.5	180	15	300	250	350									314	820															
160L			279			241			121																	355	850															
180M			279			279			48																	360	870															
180L			318			305			133																	390	935															
200L			356		4, 8	286	149	60	140	19	18	53.0	225	350	300	400											400	1000														
225S			311			55			110																		435	995														
225M			65			60			140																		450	1030														
250M	FF500	4, 6, 8	406			349			168																		490	500														
			406			349			168																		550	555														



机座带底脚、端盖上有凸缘（带通孔）的电动机

The motor of being frame with feet, endshield with flanges (with through holes)



## 五、安装结构型式

## Mounting arrangements

### 基本结构形式

- B3 机座带底脚，端盖无凸缘。
- B5 机座不带底脚，端盖有凸缘。
- B35 机座带底脚，端盖有凸缘。

### Basic mounting arrangements

- B3, frame with feet, endshield without flange,
- B5, frame without feet, endshield with flange,
- B35, frame with feet, endshield with flange.

基本结构形式 Basic mounting ar- rangements	B3						B5			B35		
安装结构型式 Mounting arrange- ment	B3	B6	B7	B8	IV5	V6	B5	V1	V3	B35	V15	V36
示意图 Diagram												
适用范围 Application range	80 ~ 400	80 ~ 160					80 ~ 280	80 ~ 400	80 ~ 160	80 ~ 400	80 ~ 160	

## 六、订货须知

本样本仅供用户选型用,具体数据容有变化。订货时请注明电动机型号、功率、同步转速、额定电压、额定频率、调频范围、安装结构型式、防爆标志、防护等级、轴承注排油结构等。如有特殊要求时,须在订货合同上注明,无注明者均按上述有关条款的规定供货。

## Ordering information

This catalogue is for selection of motor by subject to change without notice.

Please specify the motor type, output, synchronous speed, rated voltage, rated frequency, frequency-adjusting range, mounting arrangement, explosion-proof mark, degree of protection, etc.

If you have special requirements for oil-filling and draining construction of bearing, please specify them in the contract. If nothing is stated, the motor should be supplied according to the above relative items.

为全球提供节能、环保、可靠的驱动力



▲ 隐形导弹驱逐舰

## 中国·佳木斯防爆电机有限公司

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