



**中国·方力控股有限公司**  
**CHINA FANGLI HOLDINGS CO., LTD.**



**FPM系列变频调速永磁系列同步电动机**  
**Permanent Magnet Motor**

*方力，就是动力*

**中国·方力控股有限公司**

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## 公司简介

COMPANY PROFILE

中国·方力控股有限公司是一家集研发、制造、销售为一体的民营企业。公司坐落于浙江省台州市三门沿海工业城，主营业务为中小型异步交流电机，主要产品包括YB2系列隔爆型三相异步电动机、YBF2系列风机用隔爆型三相异步电动机、YBX3系列超高效率隔爆型三相异步电动机、YBD2系列多极变速隔爆型三相异步电动机、YBVP2系列变频调速专用隔爆型三相异步电动机、YE2系列高效率三相异步电动机、YE3系列超高效率三相异步电动机、YE2/Y2系列铝壳三相异步电动机、YQB系列液压油泵专用三相异步电动机、Y系列(IP23)三相异步电动机、YK2系列螺杆压缩机用三相异步电动机、YEJ系列电磁制动三相异步电动机、YVF2系列变频调速专用三相异步电动机、YDT系列变极多速三相异步电动机、YD系列变极多速三相异步电动机、YCT系列电磁调速电动机、YJP系列抛光用三相异步电动机等。

公司创始于2000，前身为浙江方力电机有限公司，历经十余年的艰苦拼搏，现已颇具规模：总占地面积8万平方米，建筑面积6万多平方米，拥有员工约500人，产能500万千瓦、年产电机

30多万台。公司拥有先进的机械加工设备，成熟的制造工艺，完备的检测手段，以及高效的嵌线、安装、喷漆、包装流水线。同时公司具备较强的技术开发能力、高素质的职工队伍以及完善的质量管理体系，确保公司制造的电机质量上乘、性能一流。

“依靠完善的质量管理体系，始终提供令顾客满意的产品和服务”是公司一直秉持的发展宗旨，目前公司已通过ISO9001:2008质量管理体系认证。公司产品已获得国家CCC认证证书、欧盟CE证书、Rohs认证证书，其中YB2、YBF2和YBX3系列电机已获得防爆合格证书、生产许可证和矿用产品标志证书(MA/KA)。一流的品质带来良好的销路，目前公司产品已覆盖全国二十九省、市及自治区，并远销欧盟、东南亚、中东、南美洲、非洲、俄罗斯等国家地区。以科技创新求发展，以优良品质树信誉，是公司始终不渝的追求目标。热忱期待与各地客商携手协作，共创辉煌！

董事长：高 彦 造

Fangli Holdings Co., Ltd. is a private enterprise integrating R&D, manufacturing and marketing, specialized in small and medium sized asynchronous motors. Our company is located at Coastal industrial town, Sanmen county, Zhejiang province, China. Our main products including YB2 series flameproof three phase asynchronous motors, YBF2 series flameproof three phase asynchronous motors for fan, YBX3 series premium efficiency flameproof three phase asynchronous motors, YBD2 series change-pole multi-speed flameproof three phase asynchronous motors, YBVP2 series variable frequency adjustable-speed converter-fed flameproof three phase asynchronous motors, YE2 series high efficiency three phase asynchronous motors, YE3 series premium high efficiency three phase asynchronous motors, YE2/Y2 series AL-housing three phase asynchronous motors, YQB series three phase asynchronous motors for oil pumps, Y series (IP23) three phase asynchronous motors, YK2 series three phase asynchronous motors for screw compressors, YEJ series electromagnetic braking induction motors, YVF2 series variable frequency adjustable-speed converter-fed induction motors, YDT series change-pole multi-speed induction motors, YD series change-pole multi-speed induction motors, YCT series adjustable-speed induction motors by electromagnetic clutch, YJP series three phase induction motors for polishers etc.

Fangli Holdings Co., Ltd. was established in 2000 as the predecessor Zhejiang Fangli Electric Motor Co., Ltd. After few

years, our company has developed into a large enterprise. We own the land area of 80 thousand square meters and building area of 60 thousand square meters. We have 5 million kilowatts production capacity and an annual output more than 300 thousand pieces of motors with over 500 employees. We have advanced mechanical processing equipments, ripe manufacturing technology and perfect test equipments; also we have efficient inserting coil lines, assembly lines, painting lines and packing lines. As well as the equipments, we have an excellent R&D teams and a reliable quality management system, to ensure our products in high quality and good performance.

Our company has ISO9001:2008 international quality management system attestation, and we insist on technology innovation to promote development, scientific management to create high quality products. Our motors have obtained CCC, CE and Rohs approval, meanwhile YB2 series, YBF2 series and YBX3 series motors have Explosion-proof certificates and MA/KA certificates. Till now our sales have covered 29 provinces in the country, and our products have gained good reputations in domestic market. We also exported our motors to regions or countries such as Europe, Southeast Asia, the Middle East, South America, Africa, Russia etc. Warmly welcome customers to contact us and visit us, we would like to establish stable and long term business relationship with customers worldwide on mutual benefits.

## FPM系列变频调速永磁同步电动机

[ FPM Series Variable Frequency Permanent Magnet Synchronous Motor ]



FPM系列电动机是我司自主开发的一种是全封闭稀土永磁同步电动机，电机采用钕铁硼永磁体，经过特殊转子结构设计，电机具有高过载能力，高效率，高功率因数，运行平稳，维护简单，互换性强等系列特点，集中了异步电机和一般同步电机的优点，安装方式符合IEC标准，具有国际通用性是出口及替代进口的理想产品。

FPM系列电动机具有超强的节能性，当设备处于部分负载时电机能追踪负载功率并且能保持高的效率，实现节能，当负载满负荷运行时，电机能高效运行。与普通变频电机相比，调速范围更广，节能性能更卓越，在低速运行时，能保持很高的电机效率，符合GB 30253-2013变频驱动永磁电机I级能效标准，远超IE4效率。

FPM系列电动机具有超广的适用范围，具备与电梯、风机、水泵、皮带机、机床、纺织机械、电动汽车、空压机等器械的高度匹配性，能广泛用于石油、化工、电力、交通、纺织等行业。

FPM series motor is one kind of full closed rare earth permanent magnet synchronous motor by our own development. Based on NdFeB permanent magnet, special rotor structure design, the motor has high overload capacity, high efficiency, high power factor, stable operation and simple maintenance, strong interchangeability and other characteristics. It concentrates the advantages of both asynchronous motor and general synchronous motor. Installation method conforms to the IEC standard which is an ideal product for export or substitution of import as its international generality

FPM series motor has the feature of super energy saving, the motor tracks the load power and keep high efficiency when the equipment is in part load which achieves energy saving, it runs efficiently when the load is running at full load. Compared with the ordinary variable frequency motor, the speed regulation range is wider and the energy saving performance is more outstanding. It maintains high efficiency at low speed operating which conforms to GB 30253-2013 Class I energy efficiency standard for variable frequency permanent magnet motor which far exceeds IE4 efficiency.

FPM series motor has a wide range of applications, such as elevators, fans, pumps, belt machines, machine tools, textile machinery, electric vehicles, air compressors, etc. It can be widely used in petroleum, chemical, electric power, transportation, textile and other industries.

### ▶ 3000r/min永磁变频调速电机技术参数

电机型号 Motor Type	级数	额定功率 (kw)	额定电压 (V)	频率 (Hz)	额定电流 (A)	接法	额定扭矩 Nm	额定转速	效率 (%)	防护等级 IP	重量 (KG)
FPM100M30-2.2	8	2.2	380V	200Hz	4.3	Y	7	3000	91.8%	IP55	27
FPM100L30-3	8	3	380V	200Hz	5.8	Y	9.6	3000	92.6%	IP55	30
FPM100L30-4	8	4	380V	200Hz	7.7	Y	12.7	3000	93.3%	IP55	34
FPM112M30-5.5	8	5.5	380V	200Hz	10.5	Y	17.5	3000	94%	IP55	40
FPM132S30-7.5	8	7.5	380V	200Hz	13	Y	23.88	3000	94.5%	IP55	55
FPM132S30-11	8	11	380V	200Hz	18.7	Y	35.2	3000	95%	IP55	62
FPM132M30-15	8	15	380V	200Hz	25.2	Y	47.8	3000	95.3%	IP55	70
FPM160M30-18.5	8	18.5	380V	200Hz	31	Y	58	3000	95.6%	IP55	100
FPM160M30-22	8	22	380V	200Hz	37	Y	70	3000	95.9%	IP55	114
FPM160L30-30	8	30	380V	200Hz	50.1	Y	95	3000	96.1%	IP55	150
FPM180M30-37	8	37	380V	200Hz	64	Y	118	3000	96.3%	IP55	170
FPM180L30-45	8	45	380V	200Hz	77.9	Y	143	3000	96.4%	IP55	200
FPM225S30-55	8	55	380V	200Hz	90.3	Y	175	3000	96.5%	IP55	260
FPM225S30-75	8	75	380V	200Hz	123.2	Y	238	3000	96.6%	IP55	290
FPM225M30-90	8	90	380V	200Hz	147.9	Y	286	3000	96.7%	IP55	350
FPM280S30-110	8	110	380V	200Hz	180.8	Y	350	3000	96.7%	IP55	650
FPM280S30-132	8	132	380V	200Hz	225	Y	420	3000	96.7%	IP55	690
FPM280M30-160	8	160	380V	200Hz	240	Y	509	3000	96.7%	IP55	720
FPM315M30-200	8	200	380V	200Hz	369.3	Y	636.7	3000	96.7%	IP55	1133
FPM315L30-250	8	250	380V	200Hz	461.7	Y	795.8	3000	96.7%	IP55	1225
FPM315L30-315	8	315	380V	200Hz	581.7	Y	1003	3000	96.7%	IP55	1290

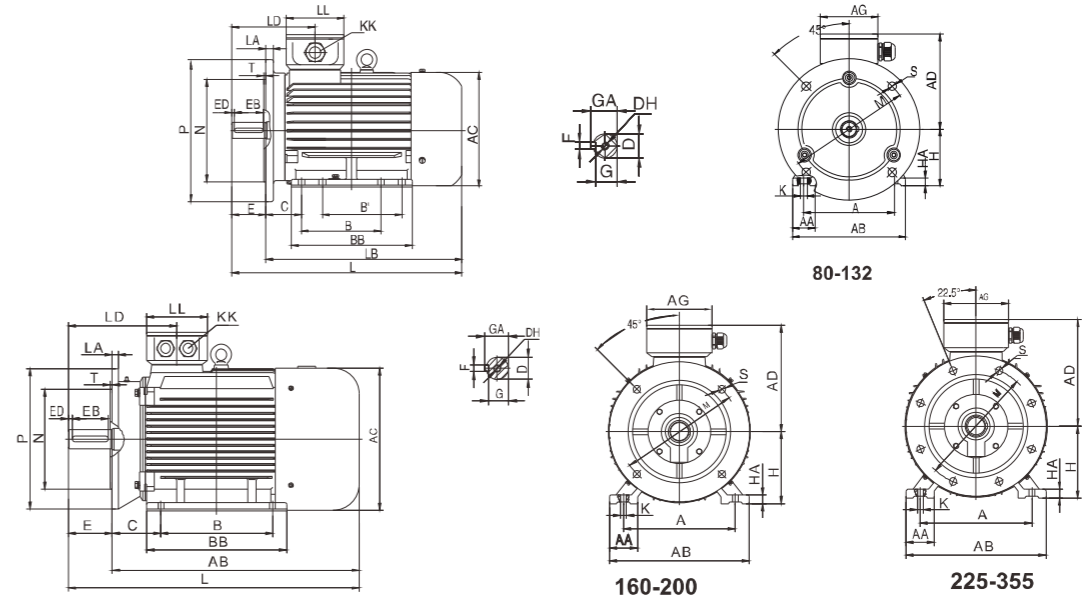
► 1500r/min永磁变频调速电机技术参数

电机型号 Motor Type	级数	额定功率 (kw)	额定电压 (V)	频率 (Hz)	额定电流 (A)	接法	额定扭矩 Nm	额定转速	效率 (%)	防护等级 IP	重量 (KG)
FPM100M15-2.2	8	2.2	380V	100Hz	4.4	Y	14	1500	89.7%	IP55	30
FPM100L15-3	8	3	380V	100Hz	5.9	Y	19.1	1500	90.3%	IP55	34
FPM100L15-4	8	4	380V	100Hz	7.9	Y	25.5	1500	90.9%	IP55	40
FPM112M15-5.5	8	5.5	380V	100Hz	10.7	Y	35	1500	92.1%	IP55	45
FPM132S15-7.5	8	7.5	380V	100Hz	13	Y	47.7	1500	92.6%	IP55	62
FPM132S15-11	8	11	380V	100Hz	18.7	Y	70	1500	93.6%	IP55	70
FPM132M15-15	8	15	380V	100Hz	25.2	Y	95.5	1500	94.0%	IP55	100
FPM160M15-18.5	8	18.5	380V	100Hz	31	Y	117.8	1500	94.3%	IP55	114
FPM160L15-22	8	22	380V	100Hz	37	Y	140	1500	94.7%	IP55	150
FPM180M15-30	8	30	380V	100Hz	50.1	Y	191	1500	95.0%	IP55	170
FPM180L15-37	8	37	380V	100Hz	64	Y	235.5	1500	95.3%	IP55	200
FPM225S15-45	8	45	380V	100Hz	77.9	Y	286.5	1500	95.6%	IP55	260
FPM225S15-55	8	55	380V	100Hz	90.3	Y	350	1500	95.8%	IP55	290
FPM225M15-75	8	75	380V	100Hz	123.2	Y	477.5	1500	96.0%	IP55	350
FPM280S15-90	8	90	380V	100Hz	147.9	Y	573	1500	96.2%	IP55	650
FPM280S15-110	8	110	380V	100Hz	180.8	Y	700	1500	96.2%	IP55	690
FPM280M15-132	8	132	380V	100Hz	225	Y	840	1500	96.5%	IP55	720
FPM315M15-160	8	160	380V	100Hz	240	Y	1018	1500	96.5%	IP55	1133
FPM315M15-200	8	200	380V	100Hz	370	Y	1273	1500	96.6%	IP55	1225
FPM315L15-250	8	250	380V	100Hz	462	Y	1591	1500	96.7%	IP55	1290

FBM

安装及外形尺寸  
MOUNTING AND OVERALL DIMENS

IM B35 H80-355



型号 Type	极数 Pole	A	AA	AB	AC	AD	AG	B	BB	C	D	DH	E	EB	ED	F	G	GA	H	HA	K	KK	L	LA	LD	LL	M	N	P	S	T
80	2, 4, 6, 8	125	34	160	167	147	102	100	150	50	19	M6X16	40	30	5	6	15.5	21.5	80	10	4-φ10	1-M25X1.5	305	12	120	102	165	130	200	12	3.5
90S	2, 4, 6, 8	140	36	180	205	170	102	100	161	56	24	M8X19	50	40	5	8	20	27	90	12	4-φ10	1-M25X1.5	360	12	145	102	165	130	200	12	3.5
90L	2, 4, 6, 8	140	36	180	205	170	102	125	186	56	24	M8X19	50	40	5	8	20	27	90	12	4-φ10	1-M25X1.5	390	12	145	102	165	130	200	12	3.5
100L	2, 4, 6, 8	160	40	205	215	180	102	140	213	63	28	M10X22	60	50	5	8	24	31	100	14	4-φ12	1-M32X1.5	435	13	150	102	215	180	250	14.5	4
112M	2, 4, 6, 8	190	50	240	255	200	118	140	225	70	28	M10X22	60	50	5	8	24	31	112	15	4-φ12	2-M32X1.5	450	14	155	110	215	180	250	14.5	4
132S	2, 4, 6, 8	216	55	270	310	230	118	140	200	89	38	M12X28	80	65	7.5	10	33	41	132	18	4-φ12	2-M32X1.5	510	14	175	110	265	230	300	14.5	4
132M	4, 6, 8	216	55	270	310	230	118	178	238	89	38	M12X28	80	65	7.5	10	33	41	132	18	4-φ12	2-M32X1.5	550	14	175	110	265	230	300	14.5	4
160M	2, 4, 6, 8	254	65	320	340	260	162	210	260	108	42	M16X36	110	90	10	12	37	45	160	20	4-φ14.5	2-M40X1.5	730	15	260	152	300	250	350	18.5	5
160L	2, 4, 6, 8	254	65	320	340	260	162	254	304	108	42	M16X36	110	90	10	12	37	45	160	20	4-φ14.5	2-M40X1.5	770	15	260	152	300	250	350	18.5	5
180M	2, 4, 8	279	70	355	390	285	162	241	311	121	48	M16X36	110	90	10	14	42.5	51.5	180	22	4-φ14.5	2-M40X1.5	810	15	275	152	300	250	350	18.5	5
180L	4, 6, 8	279	70	355	390	285	162	279	349	121	48	M16X36	110	90	10	14	42.5	51.5	180	22	4-φ14.5	2-M40X1.5	850	15	275	152	300	250	350	18.5	5
200L	2, 4, 6, 8	318	70	395	445	320	210	305	369	133	55	M20X42	110	100	5	16	49	59	200	25	4-φ16.5	2-M50X1.5	890	17	300	190	350	300	400	18.5	5
225S	4, 8	356	75	435	495	350	210	286	368	149	60	M20X42	140	125	7.5	18	53	64	225	28	4-φ18.5	2-M50X1.5	870	20	330	190	400	350	450	18.5	5
225M	2	356	75	435	495	350	210	311	393	149	55	M20X42	110	100	5	16	49	59	225	28	4-φ18.5	2-M50X1.5	865	20	330	190	400	350	450	18.5	5
225M	4, 6, 8	356	75	435	495	350	210	311	393	149	60	M20X42	140	125	7.5	18	53	64	225	28	4-φ18.5	2-M50X1.5	895	20	330	190	400	350	450	18.5	5
250M	2	406	80	490	550	390	248	349	445	168	60	M20X42	140	125	7.5	18	53	64	250	30	4-φ24	2-M63X1.5	1000	22	350	220	500	450	550	18.5	5
250M	4, 6, 8	406	80	490	550	390	248	349	445	168	65	M20X42	140	125	7.5	18	58	69	250	30	4-φ24	2-M63X1.5	1000	22	350	220	500	450	550	18.5	5
280S	2	457	85	550	630	430	248	368	485	190	65	M20X42	140	125	7.5	18	58	69	280	35	4-φ24	2-M63X1.5	1030	22	360	220	500	450	550	18.5	5
280S	4, 6, 8	457	85	550	630	430	248	368	485	190	75	M20X42	140	125	7.5	20	67.5	79.5	280	35	4-φ24	2-M63X1.5	1030	22	360	220	500	450	550	18.5	5
280M	2	457	85	550	630	430	248	419	536	190	65	M20X42	140	125	7.5	18	58	69	280	35	4-φ24	2-M63X1.5	1080	22	360	220	500	450	550	18.5	5
280M	4, 6, 8	457	85	550	630	430	248	419	536	190	75	M20X42	140	125	7.5	20	67.5	79.5	280	35	4-φ24	2-M63X1.5	1080	22	360	220	500	450	550	18.5	5
315S	2	508	120	635	645	530	320	406	570	216	65	M20X42	140	125	7.5	18	58	69	315	45	4-φ28	2-M63X1.5	1210	22	405	280	600	550	660	24	6
315S	4, 6, 8, 10	508	120	635	645	530	320	406	570	216	80	M20X42	170	160	5	22	71	85	315	45	4-φ28	2-M63X1.5	1240	22	435	280	600	550	660	24	6
315M	2	508	120	635	645	530	320	457	680	216	65	M20X42	140	125	7.5	18	58	69	315	45	4-φ28	2-M63X1.5	1320	22	405	280	600	550	660	24	6
315M	4, 6, 8, 10	508	120	635	645	530	320	457	680	216	80	M20X42	170	160	5	22	71	85	315	45	4-φ28	2-M63X1.5	1350	22	435	280	600	550	660	24	6
315L	2	508	120	635	645	530	320	508	680	216	65	M20X42	140	125	7.5	18	58	69	315	45	4-φ28	2-M63X1.5	1320	22	405	280	600	550	660	24	6
315L	4, 6, 8, 10	508	120	635	645	530	320	508	680	216	80	M20X42	170	160	5	22	71	85	315	45	4-φ28	2-M63X1.5	1350	22	435	280	600	550	660	24	6
355M	2	610	116	730	710	655	380	560	750	254	75	M20X50	140	130	5	20	67.5	79.5	355	52	6-φ28	2-M63X1.5	1500	25	420	330	740	680	800	24	6
355M	4, 6, 8, 10	610	116	730	710	655	380	560	750	254	95	M24X50	170	160	5	25	86	100	355	52	6-φ28	2-M63X1.5	1530	25	450	330	740	680	800	24	6
355L	2	610	116	730	710	655	380	630	750	254	75	M20X50	140	130	5	20	67.5	79.5	355	52	6-φ28	2-M63X1.5	1500	25	420	330	740	680	800	24	6
355L	4, 6, 8, 10	610	116	730	710	655	380	630	750	254	95	M24X50	170	160	5	25	86	100	355	52	6-φ28	2-M63X1.5	1530	25	450	330	740	680	800	24	6

# 主要特点

- 高效节能**  
 无励磁电流和转子损耗，选用高牌号硅钢片和优质稀土永磁体，采用特殊的定子槽型与转子结构，使电机效率达到IE4标准。  
 No excitation loss and rotor loss, with high grade silicon steel sheet and high quality rare earth permanent magnet, special stator groove and rotor structure which makes the efficiency realizes IE4 standard.
- 小型轻量**  
 电机功率密度大，比同功率的异步机小1至2个机座号。  
 Higher power with reduced frame.
- 高性能**  
 转动惯量小，起动转矩大，过载能力强，运行频率宽，变频调速是速度响应快。  
 Small inertia, large starting torque, strong overload capacity, wide operation frequency and fast response of frequency control.
- 高可靠性**  
 功率因素 (cosφ) 和效率高，电流减小，温升降低，电机寿命更长。  
 High power factor, high efficiency, low current, low temperature rise, long working life.
- 通用性强**  
 与异步电机结构相同，可直接替代异步机。  
 With the same structure as asynchronous motor, it can be used as a direct substitution for asynchronous motor.
- 控制方便**  
 采用变频器矢量控制方式，控制精度高，并减少故障环节。  
 Adopting the vector control mode of converter, high control precision, low failure rate.
- 模块化设计**  
 根据负载特性及控制精度要求，随意选择冷却方式及是否安装旋转变压器或编码器、控制器等。  
 According to the load characteristics and precise control requirements, choose the cooling method by rotary transformer, encoder or controller at will. High power factor, high efficiency, low current, low temperature rise, long life of moto
- 适应性强**  
 适用于各种恶劣工况。可长时间低速、超速运行、频繁启动。  
 Suitable for all kinds of bad working conditions, operate at low speed, over speed or start up frequently.

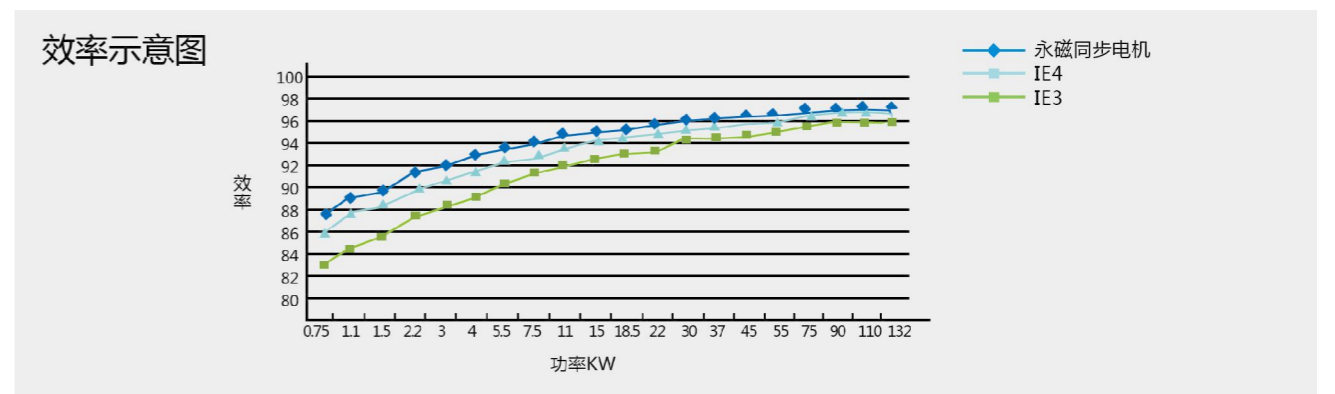
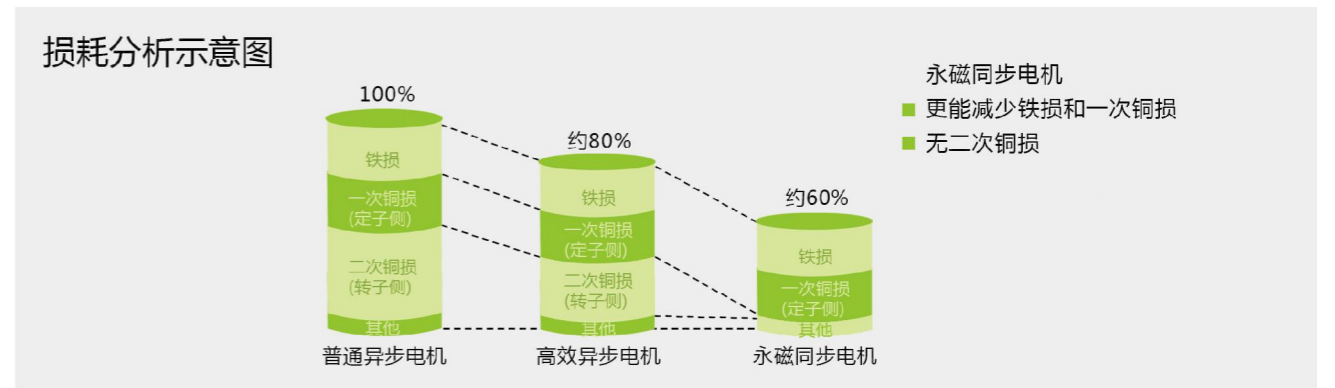
## 电机特征 高效、节能

我公司永磁同步电机为IPM同步电机，采用高效钕铁永磁体，无励磁损耗，经过特殊转子结构设计，大大降低铁损于杂散损耗，整机效率达到IE4标准，比三相异步电机效率提高5-10%，功率因数提高10-15%以上。

我公司永磁同步电机在20-120%负载范围内可保持较高效率与功率因数，功率因数可为1，三相异步电机只能达到0.86左右，有效降低了线路损耗,轻载节能更为显著,并提高电网利用率。

Our permanent magnet motor is IPM synchronous, adopts high efficiency NdFeB permanent magnet, no excitation loss, by the special rotor structure design, greatly reduces iron loss and stray loss. Motor efficiency reaches IE4 standard. Compared with three phase asynchronous motor, the efficiency of permanent magnet synchronous motor increases of 5% - 10%, the power factor increases of 10% - 15%.

And our permanent magnet synchronous motor maintains high efficiency, high power factor in the operating range of 20% - 120% load power. The power factor can be 1 while three phase asynchronous motor can only reach around 0.86. The line loss is effectively reduced, the energy saving of light load is remarkable and the utilization ratio of power grid is improved.



## FYPM 系列变频驱动永磁同步一体电机

[FYPM series pm synchronous integrated motor driven by variable frequency converter ]



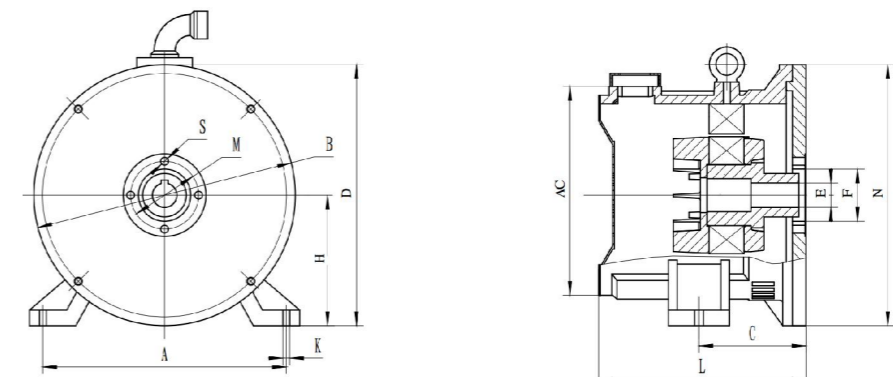
### 一体机的特点 CHARACTERISTIC OF INTEGRATED MOTOR

- ▲采用超高内禀矫顽力、耐高温稀土永磁材料，抗去磁能力强
- ▲使用优化的电磁设计，几乎在整个转速范围内可恒转矩输出
- ▲正弦波磁场设计，低速转矩平稳，过载能力强
- ▲F级绝缘、IP23防护结构，环境适用性强，使用安全可靠
  
- ▲Ultra – high intrinsic coercivity,high temperature rare earth Permanent magnet materials, strong resistance to magnetic en ergy
- ▲Using electromagnetic design optimization,almost with the entire speed range constant torque output
- ▲Sinusoidal magnet field design,smooth low – speed torque high overload capability
- ▲Class F insulation,IP23 protection structure,environmental applicability,safe and reliable use

### 一体机技术参数 INTEGRATED MOTOR TECHNICAL SPECIFICATIONS

电机型号 Frame size		FYPM112	FYPM112	FYPM132	FYPM132	FYPM160	FYPM160	FYPM160	FYPM180	FYPM180
额定功率 Rated Power	KW	5.5	7.5	11	15	18.5	22	30	37	45
额定转速 Rated Speed	rpm	3000	3000	3000	3000	3000	3000	3000	3000	3000
额定转矩 Rated Torque	N.m	23.9	23.9	47.8	47.8	70.7	70.0	124.6	117.8	119.4
额定电流 Rated Current	A	11	13	18.7	25.2	31	37	50.1	64	77.9
效率 Efficiency	%	94	94.5	95	95.3	95.6	95.9	96.1	96.3	96.4
额定电压 Rated Voltage	V	380	380	380	380	380	380	380	380	380
重量 Weight	kg	35	40	50	55	55	60	65	80	90

### 一体机外形尺寸 INTEGRATED MOTOR TECHNICAL SPECIFICATIONS



电机型号	A	B	C	D	E	F	AC	H	K	L	M	N	S
FYPM112	190	250	117	237	Φ28	Φ60	195	112	Φ12	222	78	250	4-Φ6.8
FYPM132	270	300	122.5	300	Φ35	Φ60	230	150	Φ13.5	255	109	300	4-Φ9
FYPM160	270	330	112	315	Φ40	Φ80	280	150	Φ13.5	250	120	330	6-Φ9
FYPM180	270	360	122	360	Φ50	Φ90	310	180	Φ18.5	255	140	360	6-Φ12