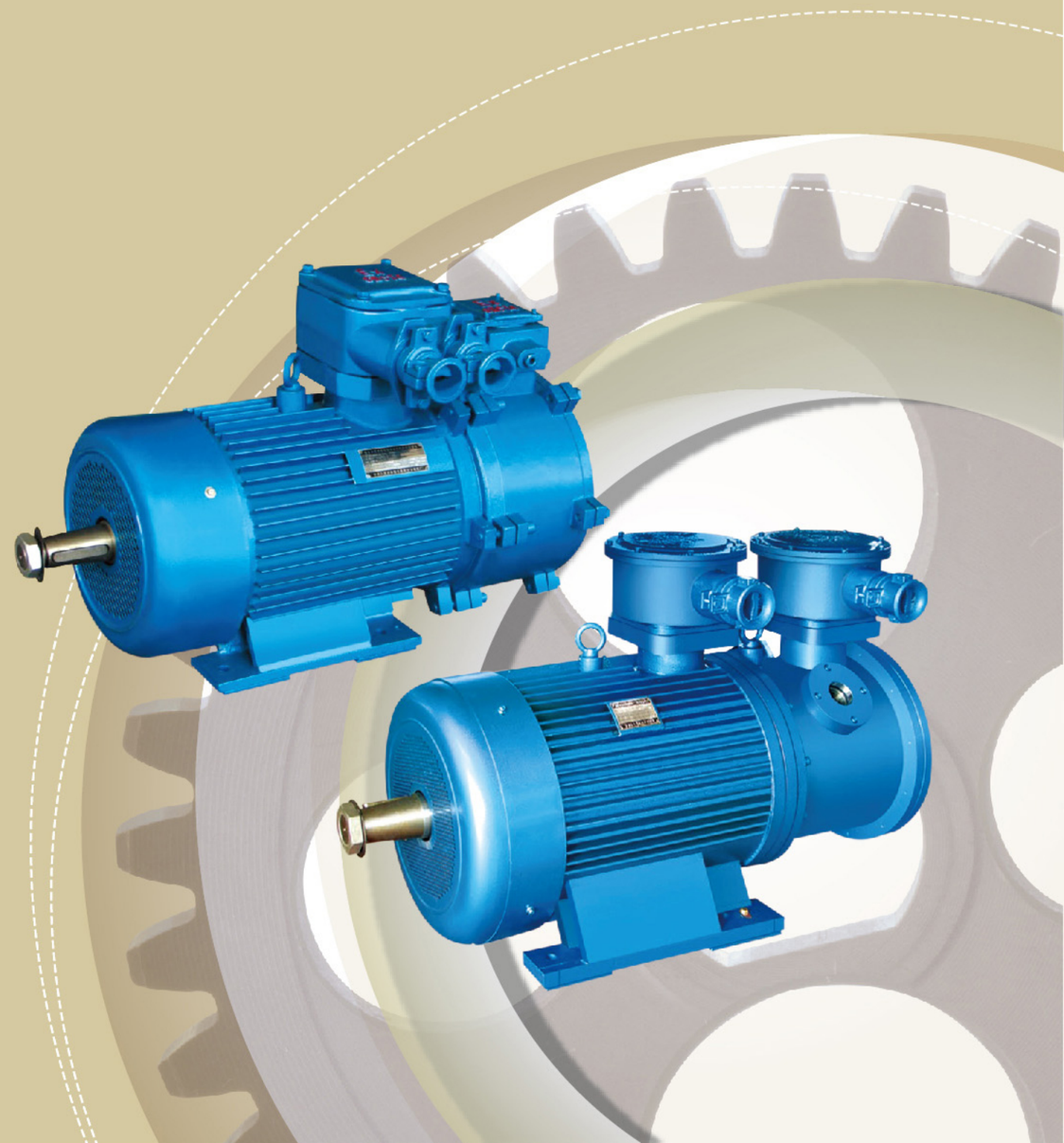
新大力
www.xdldj.com

YBZ YBZS 系列起重用隔爆型三相异步电动机
YBZ YBZS Series Flameproof three-phase asynchronous motor for hoisting

YBZE YBZSE 系列起重用隔爆型电磁制动三相异步电动机
YBZE YBZSE Series Flameproof electromagnetic brake & three-phase asynchronous motor for hoisting

YBZR 系列起重用隔爆型绕线转子三相异步电动机
YBZR Series Flameproof wound rotor three-phase asynchronous motor for hoisting

无锡新大力电机有限公司
WUXI NEW GREAT POWER ELECTRICAL MACHINE CO.,LTD



和信

无锡新大力电机有限公司
WUXI NEW GREAT POWER ELECTROMOTOR CO.,LTD.

Add:No.19 HuiChang Road ChangAn HuiShan Economic and Technological Development Zone WuXi 214177 P.R.C.
江苏无锡市惠山经济开发区长安惠畅路19号
[T]:+86-510-8376 1037　8376 0666　8376 0999
[F]:+86-510-8376 2288　8376 0777
[W]:http://www.xdldj.com　www.wuxingp.com
[E]:ngp@wuxingp.com

更多详情“扫一扫”

2019年4月

以人为本 诚实守信 务实创新 追求卓越

新大力电机

公司简介 Introduction

无锡新大力电机有限公司坐落于美丽的太湖之滨，无锡惠山经济开发区内，是国内起重及冶金用三相异步电动机和起重用隔爆型三相异步电动机行业的资深企业、全国旋转电机标准化技术委员会起重冶金电机分标委员会副主任委员、中国重机协会起重机专业分会理事单位、上海电机行业协会会员、中国船舶标准化工作促进会副主任委员。公司先后荣获“无锡市名牌产品”、“江苏省名牌产品”、“江苏省著名商标（和信）”、“无锡市质量信得过企业”、“劳动保障诚信单位”、“国家高新技术企业”等荣誉称号，资信等级AAA级企业。

公司占地面积39000平方米，建筑面积36000平方米，公司专业技术人员占员工总数的20%以上，并拥有多名专业设计制造专家，年生产电机120万千瓦。先进的专业生产设备及检测仪器、较强的工艺保障能力和检测水平，确保了产品质量的稳定性。依靠雄厚的技术力量和科学的管理模式，使企业在行业内位居前列。

公司的所有产品均按最新国家标准，消化吸收国内外领先技术、独立研发、精心制造。目前主导产品有起重及冶金用三相异步电动机、起重用隔爆型三相异步电动机、稀土永磁变频调速电动机、船用电机和车辆用蓄电池交流三相异步电动机五个大类，共20多个系列。其产品结构合理、性能可靠、品质优良、规格齐全，并已形成企业的产品优势和强大的生产能力。产品广泛应用于起重、建筑、造船、港口、军工、水利、冶金、化工、空压机等行业，用户遍布全国大部分省、市及自治区，并远销欧洲、东南亚等国家和地区，并且我公司生产的起重用隔爆型三相异步电动机已成功地运用于军工领域和航天事业。

公司具有完整的质量管理体系，1997年已通过ISO9001质量体系认证，2018年成功通过ISO9001：2015转版认证。体系持续有效运行，使企业生产制造全过程处于监控之中，为产品的优质可靠提供了科学保证。

公司一贯奉行**“团结拼搏、求实创新”**的企业宗旨。

公司追求的目标是：**紧跟世界先进技术，专注做好现有产品，不断推出一流精品，最大限度地满足客户的要求。**

NEW GREAT POWER

Wuxi New Great Power Electrical Machine Co.,Ltd is located in the beautiful Taihu Lake, Wuxi Huishan Economic Development Zone. It is a senior enterprise in the domestic lifting and metallurgical three-phase asynchronous motor and the explosion-proof three-phase asynchronous motor industry. Deputy Director of the Metallurgical Motor Sub-Standard Committee of the Motor Standardization Technical Committee, member of the China Heavy Machinery Association Crane Professional Branch, member of the Shanghai Motor Industry Association, and vice chairman of the China Ship Standardization Work Promotion Association. The company has won the honors of "Wuxi Famous Brand Products", "Jiangsu Province Famous Brand Products", "Jiangsu Famous Trademarks (and Letters)", "Wuxi Quality Trustworthy Enterprises", "Labor Insurance Integrity Units", "National High-tech Enterprises" and so on. Title, credit rating AAA enterprise.

The company covers an area of 39,000 square meters and a construction area of 36,000 square meters. The company's professional and technical personnel account for more than 20% of the total number of employees, and has many professional design and manufacturing experts, with an annual production of 1.2 million kilowatts of motor. Advanced professional production equipment and testing equipment, strong process support capability and testing level ensure the stability of product quality. Relying on strong technical strength and scientific management mode, the company is in the forefront of the industry.

All products of the company are based on the latest national standards, digesting and absorbing domestic and foreign leading technologies, independent research and development, and meticulous manufacturing. At present, the leading products include three-phase asynchronous motor for lifting and metallurgy, three-phase asynchronous motor for lifting, three-phase asynchronous motor for rare earth permanent magnet, four-phase asynchronous motor for marine motor and vehicle battery, and a total of 20 Multiple series. Its product structure is reasonable, reliable performance, high quality, complete specifications, and has formed the company's product advantages and strong production capacity. Products are widely used in lifting, construction, shipbuilding, port, military, water conservancy, metallurgy, chemical, air compressors and other industries, users in most provinces, municipalities and autonomous regions, and exported to Europe, Southeast Asia and other countries and regions, and The explosion-proof three-phase asynchronous motor for lifting used by our company has been successfully used in the military industry and aerospace industry.

The company has a complete quality management system. In 1997, it passed the ISO9001 quality system certification. In 2018, it successfully passed the ISO9001:2015 transfer certification. The system continues to operate effectively, so that the entire process of production and manufacturing is under monitoring, providing scientific assurance for the high quality and reliability of the products.

The company has always pursued the corporate tenet of "Unity and hard work, truth-seeking and innovation".

The company's goal is to keep up with the world's advanced technology, focus on existing products, and constantly introduce first-class products to maximize customer satisfaction.

1、概 述

1.1 YBZ、YBZS系列起重用隔爆型三相异步电动机和YBZE、YBZSE系列起重用隔爆型电磁制动三相异步电动机（简称电动机）主要用于各种型式的防爆起重机械的电力驱动。具有较大的过载能力和较高的机械强度，因此它特别适用于那些短时或断续运转、频繁起动、制动的设备。YBZE、YBZSE系列电动机设有盘式制动器，使电机具有良好的制动效果。电动机的防爆性能符合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，制成隔爆型，防爆标志分别为ExdII　BT4和ExdII CT4两种。适用于传爆能力不高于IIB或IIC级，引爆温度组别为T1~T4组的可燃性气体或蒸气与空气形成的爆炸性混合物的场所。

YBZ系列起重用隔爆型三相异步电动机的基础上可派生YBZP系列起重及冶金用隔爆型变频调速三相异步电动机；YBZE系列起重用隔爆型电磁制动三相异步电动机的基础上可派生YBZPE系列起重及冶金用隔爆型电磁制动变频调速三相异步电动机。

1.2 电动机的防护等级与冷却方法

1.2.1 电动机外壳防护等级为IP44，根据需要也可制成IP54，接线盒的防护等级为IP54。

1.2.2 电动机的冷却方法：112~132机座号为IC410；160~250机座号为IC411。

1.3　电动机的绝缘等级为F级与H级两种，F级绝缘电机适用于环境空气温度不超过40℃的场所，H级绝缘电机适用于环境空气温度不超过60℃的场所。

1.4 电动机适用于下列工作环境：

a、环境空气温度：一般环境为–15℃～40℃，冶金环境不超过60℃；

b、海拔不超过1000m；

c、额定频率为50Hz或60Hz；

d、额定电压为380V或440V。

e、频繁地起动、制动（电气或机械的）及逆转；

f、环境空气湿度不大于90%（当25℃时）。

1.1 YBZ & YBZS Series flameproof three-phase asynchronous motor for hoisting and YBZE & YBZSE Series flameproof electromagnetic brake & three-phase asynchronous motor for hoisting (hereafter referred to motor) are mainly used in electric driving for all kinds of flameproof hoisting machines.With the feature of larger of larger loading capability and higher mechanical strength,they are typically used for devices which run for short time or spasmodically,start or brake frequently.With tray-shape brake,YBZE & YBZSE series motors have good braking effect.Flameproof performances of motor should be conformed to GB3836.2-2000,part 2 flameproof definitions for electrical device under explosive gas surrounding.There are two types marked Exd II BT4 and Exd II CT4 respectivel.They can be applied on location with explosive mixture of air with flammable gas or vapour with transmission level of detonation not more than II B or II C and igniting temperature group from T1 to T4.Based on YBZ Series flameproof three-phase asynchronous motor for hoisting,YBZP Series flameproof three-phase conversion & timing asynchronous motor for hoisting and melting will be derived.Based on YBZE Series flameproof electromagnetic brake & three-phase asynchronous motor for hoisting,YBZPE Series flameproof electromagnetic brake & three-phase conversion & timing asynchronous motor for hoisting and melting will be derived.

1.2 Protection level and cooling method of motor.

1.2.1 Protection level for motor shield is IP44,and is also IP54 if necessary.Protection level for terminal box is IP54.

1.2.2 Cooling method for motor:IC410 for base frame 112 to 132,IC411 for base frame 160 to 250.

1.3 Insulation class for motor is F and H.Motor with insulation class F can be applied the location where surrounding air temperature is no more than 40°C, while motor with insulation class H can be applied at location where surrounding air temperature is no more than 60°C.

1.4 Motor can be applied under following operating surrounding:

a. Surrounding air temperature:-15°C~40°C under common surrounding,no more than 60°C under melting surrounding

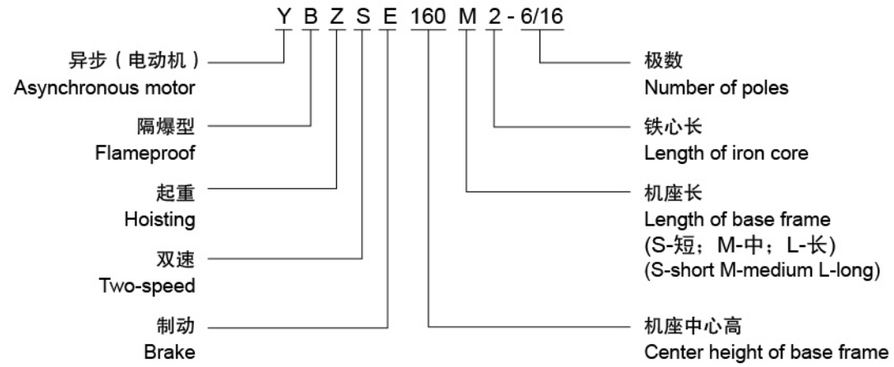
b. Altitude:no more than 1000m above sea level

c. Rated voltage:380V or 440V

e. Starting,braking (electrically or mechanically) and reversing frequently

f. Surrounding air humidity:no more than 90% (25°C)

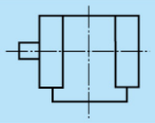
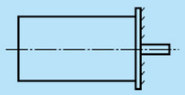
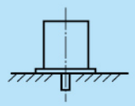
1.5 型号说明：Nomenclature



1.6 电动机的结构及安装型式为IM1001、IM1003、IM3001、IM3003、IM3011、IM3013，可按表1制造。

Structure and installation types for motor:IM1001、IM1003、IM3001、IM3003、IM3011、IM3013，Refer to Table 1.

表（Table）1

结构及安装型式 Structure and installation form	代号 Symbol	制造范围（机座号） Production range (base frame number)
	IM1001	112～160
	IM1003	180～250
	IM3001	112～160
	IM3003	180～225
	IM3011	112～160
	IM3013	180～250

2.电动机的工作方式与技术数据

2.1 电动机适用于断续周期性负荷，根据负荷的不同性质电动机的工作制分为S2、S3、S4、S5四种类型，基准工作制：单速时为S3 40%，双速时、高速为S3 25%；低速为S3 15%（即S3工作制，负载持续率分别为40%、25%、15%，每个工作周期为10min）。

2.2 电动机的主要技术数据

2.2.1 电动机在基准工作制时的额定功率、转子转动惯量（Jm）、静态制动力矩（YBZ、YBZS电动机无静态制动力矩）与机座号的对应关系符合表2的规定。

2.2.2 电动机在额定电压、基准工作制时，最大转矩及堵转转矩对额定转矩之比的保证值不小于表3–1（单速）和表3–2（双速）的规定。

2.1 Motor is applied for intermittent periodical laod.There are for for types of operating system,namely S2,S3,S4,S5,dependent on different load characteristcs.Reference operating system is:if operating system is S3,for single-speed it is 40%,and for it is 25% at high-speed and 15% at low-speed (That is to say,if operating system is S3,duration ratio of load is 40%,25%,15% respectively and operating period is 10min.)

2.2 Main technical data

2.2.1 With reference operating system for motor,corresponding relation of its rated power,moment of inertia of rotor (Jam),static brake moment (YBZ & YBZS motor is nothing with static brake moment.) with its base frame number is compatible with Table 2.

2.2.2 With rated voltage and reference operating system,ratio between maximum torque & stall torque with rated torque is no less than value regulated on Table 3-1(single-speed) and Table 3-2 (two-speed).

表（Table）2

机座号 Base frame number	同步转速 r/min Synchronized rotating speed							Jm Kg.m²	额定静态制动力矩 N.m Rated static braking torque	
	1500	1000	750	1500/375	1000/375	750/300	1000/250			
	功率 KW Power								运行用 Applied in running	起升用 Applied in hoisting
112M	2.2	1.5			0.75/0.2			0.022	15	30
132 M1	3.7	2.2		2.2/0.55	1.5/0.4			0.059	30	45
132 M2	5.5	3.7		3.0/0.75	2.2/0.55		2.2/0.55	0.064	40	
160 M1	7.5	5.5		3.7/1.0	3.7/1.0			0.117	50	75
160 M2	11	7.5		5.5/1.5	5.5/1.5		2.2/0.55	0.148	75	100
160 L	15	11	7.5	7.5/2.0	7.5/2.0			0.198	90	135
180L		15	11	11/3.0	11/3.0		7.5/2.0	0.360		270
200L		22	15	13/4.5	11/3.7	11/3.7	11/3.0	0.632		270
225M		30	22	22/5.0	17/4.5	15/4.5	18.5/4.0	0.832		360
250M		37	30		22/5.5	22/6.3	22/5.5	1.432		530

表（Table）3–1

额定功率 KW Rated power	最大转矩 / 额定转矩 Maximum torque / Rated torque	堵转转矩 / 额定转矩 Stall torque / Rated torque
≤5.5	2.0	2.0
>5.5～11	2.3	2.3
>11	2.5	2.5

表（Table）3–2

转速 Rotating speed	最大转矩 / 额定转矩 Maximum torque / Rated torque	堵转转矩 / 额定转矩 Stall torque / Rated torque
高速	2.2	1.8
低速	1.8	1.8

3.结　构

3.1 该系列电动机有单、双速两种，双速电动机为双绕组双速鼠笼型电机，YBZE、YBZSE系列电动机内，200～250机座号电动机和制动器各设一个接线盒。

3.2 YBZE、YBZSE电动机制动器的选用：电动机制动一般选用国产DCZ系列弹簧压力失电制动器，根据用户要求也可选用德国伦茨公司的BFK458系列弹簧压力电磁安全制动器，这两种制动器的结构形式、安装方式完全相同。

3.2.1 112–200机座号选用单制动器(总体结构见图1)；225–250机座号选用双倍制动力矩制动器（总体结构见图2）。

3.2.2 制动器选用六极半波整流器，输入电压为交流380V，由起重机控制部分供电。

3.3 轴承

本系列电动机所用轴承见表4。

3.1 There are two yes of this series motor,single-speed and two-speed.Two-speed motor is dual-winding & two-speed squirrel-cage motor.For YBZE & YBZSE serier motor,motor and brake is coaxial together.For base frame 112 to 180,there is no separate terminal box for brake,power supply and rectifier is for brake is within motor terminal box.For base frame 200 to 250,there is separate terminal box for motor and brake.

3.2 Selectio of brake for YBZE & YBZSE motor:It is usually applied domestically DCZ series spring pressure nonelectric brake and it is also applied BFK458 series spring pressure electromagnetic brake made by Germany Lenz Company.Such two types of brake are similar in structure and installation method completely.

3.2.1 For base frame 112 to 200,it is applied single-brake(whole structre can refer to Fig.1).For base frame 225 to 250,it is apped double-braking torque brake (whole structure can refer to Fig.2).

3.2.2 Brake applies six pole half-wave rectifiers,with input voltage AC 380V and power supply partially controlled by crane.

3.3 Bearing

Bearing applied in this series motor can refer to Table 4.

表（Table）4

安装形式 Installation method / 中心高 Height of center	IM1		IM3	
	驱动端 Driving end	非驱动端 Non-driving end	驱动端 Driving end	非驱动端 Non-driving end
112	308Z	308Z	308Z	308Z
132	309Z	309Z	309Z	309Z
160	311Z	311Z	311Z	311Z
180	313Z	313Z	313Z	313Z
200	NU315	315Z	NU315	7315AC
225	NU315	315Z	NU315	7315AC
250	NU316	316Z	NU316	7316AC

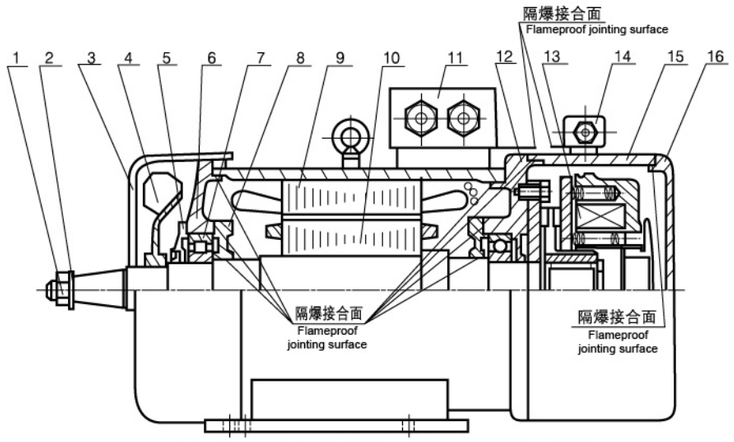


图1 YBZE、YBZSE112–200电动机结构示意图
Fig.1 YBZE & YBZSE 112-200 motor structure diagram

1、轴头螺母 Shaft head nut
2、垫圈 Gasket
3、风罩 Wind shield
4、风扇 Fan
5、轴承外盖 Outer cover for bearing
6、端盖 End cover
7、轴承 Bearing
8、轴承内盖 Inner cover for bearing
9、定子 Stator
10、转子 Rotor
11、电动机接线盒 Terminal box 16 for motor,end cover
12、端盖 End cover
13、制动器 Bracer
14、制动器接线盒 Terminal box for brake
15、端盖 End cover
16、端盖 End cover

图2 YBZE、YBZSE225–250电动机结构示意图
Fig.2 YBZE & YBZSE 225-250 motor structure diagram

1、轴头螺母 Shaft head nut
2、垫圈 Gasket
3、风罩 Wind shield
4、风扇 Fan
5、轴承外盖 Outer cover for bearing
6、端盖 End cover
7、轴承 Bearing
8、轴承内盖 Inner cover for bearing
9、定子 Stator
10、转子 Rotor
11、电动机接线盒 Terminal box 16 for motor,end cover
12、端盖 End cover
13、制动器 Bracer
14、制动器接线盒 Terminal box for brake
15、端盖 End cover
16、端盖 End cover

4.安装及外形尺寸
4.1 YBZ、YBZS系列电动机安装及外形尺寸见表5、6、7

4.Installation and outline dimension
4.1 Installation and outline dimension of YBZ & YBZS series motor can refer to Table 5,6,7

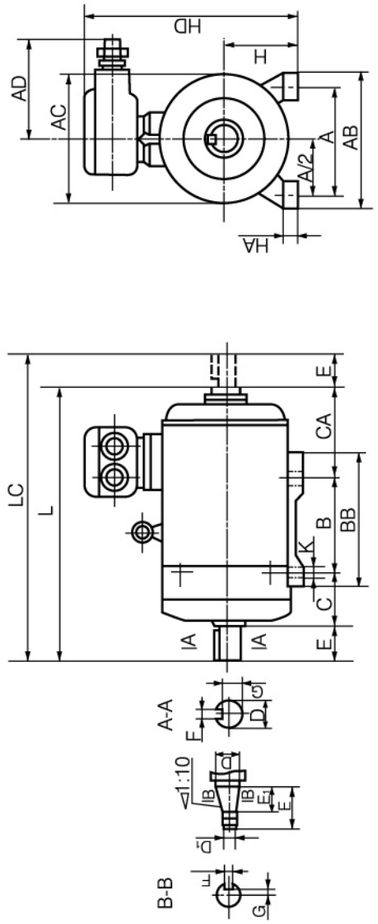


表5 IM1001及IM1003机座带底脚、端盖上无凸缘的电动机
Table 5 IM1001 & IM1003 motor with footing under base frame and end cover without flange

机座号 Basic frame number	A 基本尺寸 Basic dimension	A/2[1] 基本尺寸 Basic dimension	A/2[1] 极限偏差 Limit deviation	B 基本尺寸 Basic dimension	C[2] 基本尺寸 Basic dimension	C[2] 极限偏差 Limit deviation	CA	D[3] 基本尺寸 Basic dimension	D[3] 极限偏差 Limit deviation	D1	E 基本尺寸 Basic dimension	E 极限偏差 Limit deviation	E1 基本尺寸 Basic dimension	E1 极限偏差 Limit deviation	F 极限偏差 Limit deviation	F 基本尺寸 Basic dimension	G 极限偏差 Limit deviation	G 基本尺寸 Basic dimension	H 极限偏差 Limit deviation	H 基本尺寸 Basic dimension	K 基本尺寸 Basic dimension	K 极限偏差 Limit deviation	K 位置度公差 Location tolerance	K 螺栓直径 Bolt diameter	AB	AC	BB	HA	HD	L	AD	LC
112M	190	95	±0.50	140	70	±2.0	135	32	+0.018 +0.002	-	80	±0.37	-	-	0 -0.036	10	0 -0.2	27	0 -0.5	112	12	+0.43 0	φ1.0Ⓜ	M10	250	245	235	18	430	440		550
132M	216	108		178	89		191	38										33		132					275	285	260		440	555		618
160M	254	127	±0.75	210	108	±3.0	202	48			110	±0.43	82	-	0 -0.043	14		42.5		160	15		φ1.5Ⓜ	M12	330	325	290	20	490	622	210	740
160L				254			226																			335			690		810
180L	279	139.5		279	121		226	55		M36×3														360	360	380	25	510	735	285	860
200L	318	159		305	133		210	60	+0.046 +0.002	M42×3	140	±0.50	105	0 -0.46	0 -0.043	16	0 -0.2	49	0 -0.5	180	19	+0.52 0		M16	405	470	400	25	590	830		970
225M	356	178		311	149	±4.0	258	65										53.8		200					455	480	410	28	635	900		1040
250M	406	203	±1.0	406	168		295	70		M48×3						18		59		225	24		φ2.0Ⓜ	M20	515	480	580	30	675	980	285	1120

注：1）如K孔的位置度合格，则A/2可不作考核。2）C尺寸的极限偏差包括轴的?动。3.圆锥形轴伸按GB/T757的规定进行检查。
Notes:1.If location degree of hole K is acceptable,A/2 can not be checked. 2.Limit deviation of dimension C should include shaft flutter. 3.Conical quill can be checked as per GB/T757.

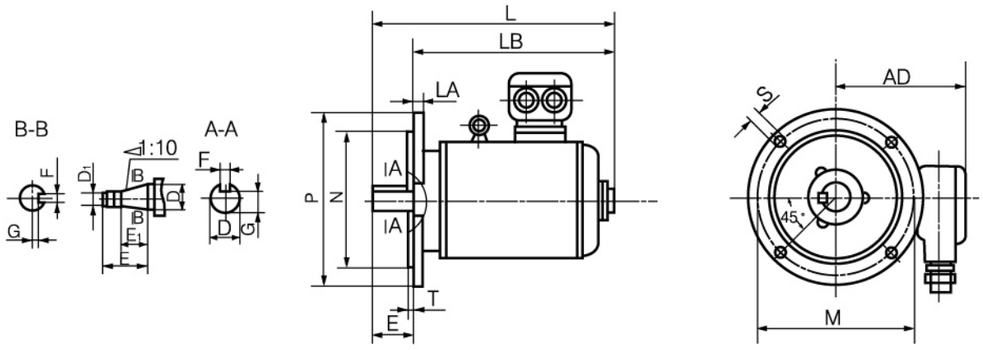


表6 IM3001及IM3003卧式安装、机座不带底脚、端盖有凸缘的电动机

Table 6 IM3001 & IM3003 motor horizontally installed,with base frame without footing and end cover with flange

机座号 Basic frame number	安装尺寸及公差 Installation dimension and tolerance																					外形尺寸 Outline dimension			
	凸缘代号 Flang number	D[1]		D_1	E		E_1		F		G		M	N		$P^{2)}$	$R^{3)}$		S				T	孔数(个) Whole number	AD	L	LA	LB
		基本尺寸 Basic dimension	极限偏差 Limit deviation		基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation		基本尺寸 Basic dimension	极限偏差 Limit deviation		基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	位置度公差 Location tolerance	螺栓直径 Bolt diameter						
112M	FF215	32	+0.018 +0.002	-	80	±0.37	-	-	10	0 -0.036	27	0 -0.2	215	180	+0.014 -0.011	250	0	±2.0	15	+0.43 0	ϕ1.5Ⓜ	M12	4	4	230	440	14	360
132M	FF265	38									33		265	230	+0.016 -0.013	300									250	585		505
160M	FF300	48			110	±0.43			14	0 -0.043	42.5		300	250		350		±3.0	19	+0.52 0		M16	5		280	725	18	615
160L																										760		650
180L		55	+0.046 0	M36×3			82	0 -0.46			19.9														300	785		675
200L	FF400	60		M42×3	140	±0.50	105		16		21.4		400	350	±0.018	450							8		340	925	20	785
225M		65									23.9							±4.0								980		840
250M	FF500	70		M48×3					18		25.4		500	450	±0.026	550									380	1050	22	910

注：1）圆锥形轴伸按GB/T757的规定进行检查。2）P尺寸为最大极限尺寸。3）R为凸缘配合面至轴伸肩的距离，其极限偏差包括轴的窜动。

Notes:1.Conical quill can be checked as per GB/T757. 2.Dimension P is maximum limit dimension. 3.R is distance from mating surfae to shaft shoulder and its limit deviation should include shaft flutter.

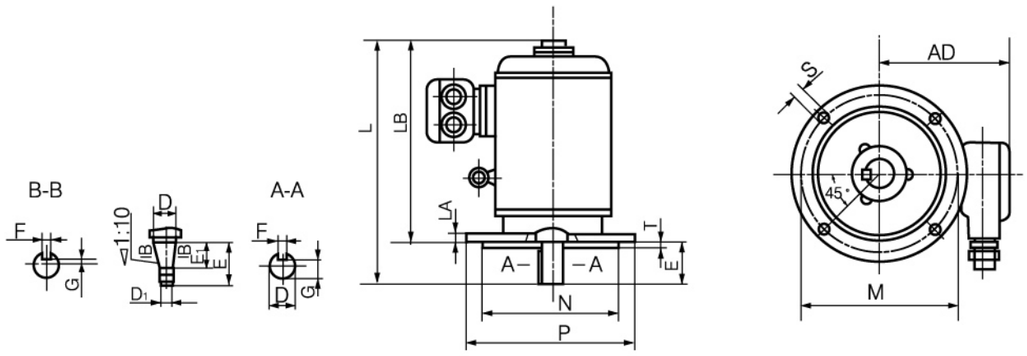


表7 IM3011及IM3013立式安装、机座不带底脚、端盖有凸缘、轴伸向下的电动机

Table 7 IM3011 & IM3013 motor vertically installed,with base frame without footing,end cover with flange and shaft stretching downward

机座号 Basic frame number	安装尺寸及公差 Installation dimension and tolerance																					外形尺寸 Outline dimension			
	凸缘代号 Flang number	D[1]		D_1	E		E_1		F		G		M	N		$P^{2)}$	$R^{3)}$		S				T	孔数(个) Whole number	AD	L	LA	LB
		基本尺寸 Basic dimension	极限偏差 Limit deviation		基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation		基本尺寸 Basic dimension	极限偏差 Limit deviation		基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	位置度公差 Location tolerance	螺栓直径 Bolt diameter						
112M	FF215	32	+0.018 +0.002	-	80	±0.37	-	-	10	0 -0.036	27	0 -0.2	215	180	+0.014 -0.011	250	0	±2.0	15	+0.43 0	ϕ1.5Ⓜ	M12	4	4	220	440	14	360
132M	FF265	38									33		265	230	+0.016 -0.013	300									230	585		505
160M	FF300	48			110	±0.43			14	0 -0.043	42.5		300	250		350		±3.0	19	+0.52 0		M16	5		260	725	18	615
160L																										760		650
180L		55	+0.046 0	M36×3			82	0 -0.46			19.9														280	785		675
200L	FF400	60		M42×3	140	±0.50	105		16		21.4		400	350	±0.018	450							8		320	925	20	785
225M		65									23.9							±4.0								980		840
250M	FF500	70		M48×3					18		25.4		500	450	±0.026	550									345	1050	22	910

注：1）圆锥形轴伸按GB/T757的规定进行检查。2）P尺寸为最大极限尺寸。3）R为凸缘配合面至轴伸肩的距离，其极限偏差包括轴的窜动。

Notes:1.Conical quill can be checked as per GB/T757. 2.Dimension P is maximum limit dimension. 3.R is distance from mating surfae to shaft shoulder and its limit deviation should include shaft flutter.

YBZ YBZS 系列起重用隔爆型三相异步电动机
Series Flameproof three-phase asynchronous motor for hoisting
YBZE YBZSE 系列起重用隔爆型三相异步电动机
Series Flameproof electromagnetic brake & three-phase asynchronous motor for hoisting

4.2 YBZE、YBZSE系列电动机安装及外形尺寸见表8、9、10

4.2 Installation and outline dimension of YBZE & YBZSE series motor can refer to Table 8,9,10

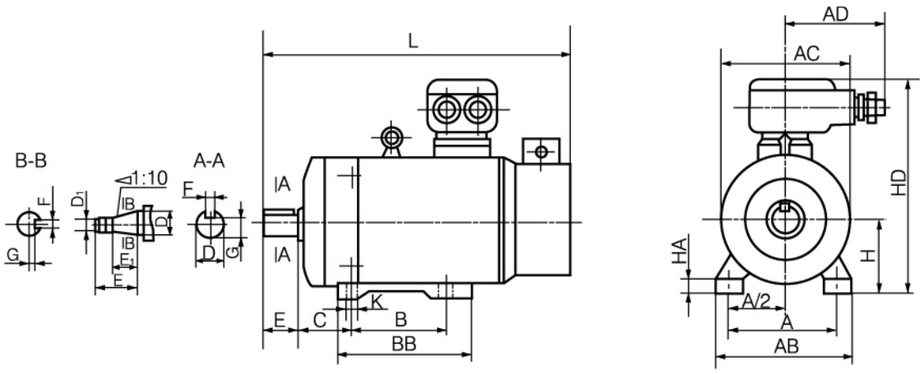


表8 IM1001及IM1003机座带底脚、端盖上无凸缘的电动机

Table 8 IM1001 & IM1003 motor with footing under base frame and end cover without flange

机座号 Basic frame number	安装尺寸及公差 Installation dimension and tolerance																				外形尺寸 Outline dimension						
	A	A/2[1]		B	C[2]		D[2]		D_1	E		E_1		F		G		H		K								
	基本尺寸 Basic dimension	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation		基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	位置度公差 Location tolerance	螺栓直径 Bolt diameter	AB	AC	BB	HA	HD	L	AD
112M	190	95	±0.50	140	70	±2.0	32	+0.018 +0.002	-	80	±0.37	-	-	10	0 -0.036	27	0 -0.2	112	0 -0.5	12	+0.43 0	ϕ1.0Ⓜ	M10	250	245	235	18	430	580	210
132M	216	108		178	89		38									33		132						275	285	260		440	680	
160M	254	127		210	108	±3.0	48			110	±0.43			14	0 -0.043	42.5		160		15		ϕ1.5Ⓜ	M12	330	325	290	20	490	780	
160L				254																						335			850	
180L	279	139.5	±0.75	279	121		55		M36×3			82	0 -0.46			19.9		180						360	360	380	25	510	1080	
200L	318	159		305	133		60	+0.046	M42×3	140	±0.50	105		16		21.4		200		19	+0.52 0		M16	405	470	400		590	1085	285
225M	356	178		311	149	±4.0	65									23.9		225						455	480	410	28	635	1220	
250M	406	203	±1.0	406	168		70		M48×3					18		25.4		250		24		ϕ2.0Ⓜ	M20	515	480	580	30	675	1650	285

注：1）如K孔的位置度合格，则A/2可不作考核。2）C尺寸的极限偏差包括轴的? 动。3）圆锥形轴伸按GB/T757的规定进行检查。

Notes:1.If location degree of hole K is acceptable,A/2 can not be checked. 2.Limit deviation of dimension C should include shaft flutter. 3.Conical quill can be checked as per GB/T757.

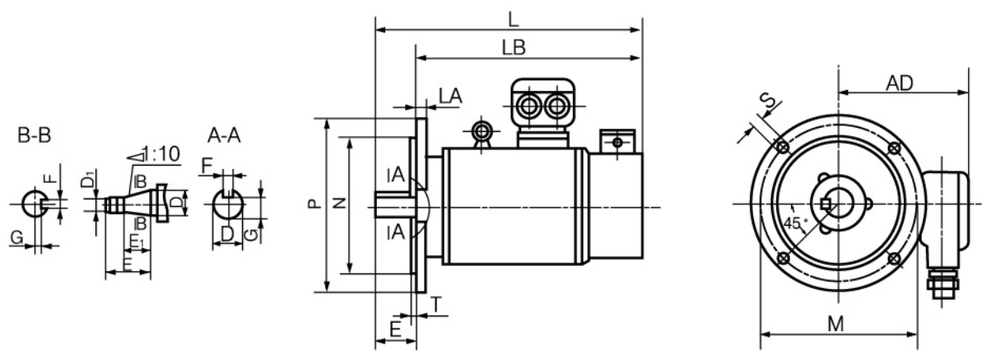


表9 IM3001及IM3003卧式安装、机座不带底脚、端盖有凸缘的电动机

Table 9 IM3001 & IM3003 motor horizontally installed,without footing under base frame and end cover with flange

机座号 Basic frame number	安装尺寸及公差 Installation dimension and tolerance																												外形尺寸 Outline dimension			
	凸缘代号 Flang number	D[1]		D_1	E		E_1		F		G		M	N		P[2]	R[3]		S				T	孔数(个) Whole number	AD	L	LA	LB
		基本尺寸 Basic dimension	极限偏差 Limit deviation		基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation		基本尺寸 Basic dimension	极限偏差 Limit deviation		基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	位置度公差 Location tolerance	螺栓直径 Bolt diameter								
112M	FF215	32	+0.018 +0.002	-	80	±0.37	-	-	10	0 -0.036	27	0 -0.2	215	180	+0.014 -0.011	250	0	±2.0	15	+0.43 0	ϕ1.5Ⓜ	M12	4	4	230	580	14	500
132M	FF265	38									33		265	230		300									250	710		630
160M	FF300	48			110	±0.43			14	0 -0.043	42.5		300	250	+0.016 -0.013	350		±3.0	19	+0.52 0		M16	5		280	880	18	770
160L											42.5															920		810
180L		55		M36×3			82	0 -0.46			19.9														300	1130		1020
200L	FF400	60	+0.046 0	M42×3	140	±0.50	105		16		21.4		400	350	±0.018	450		±4.0					8		340	1180	20	1040
225M		65									23.9															1300		1160
250M	FF500	70		M48×3					18		25.4		500	450	±0.026	550									380	1720	22	1580

注：1）圆锥形轴伸按GB/T757的规定进行检查。2）P尺寸为最大极限尺寸。3）R为凸缘配合面至轴伸肩的距离，其极限偏差包括轴的窜动。

Notes:1.Conical quill can be checked as per GB/T757. 2.Dimension P is maximum limit dimension. 3.R is distance from mating surfae to shaft shoulder and its limit deviation should include shaft flutter.

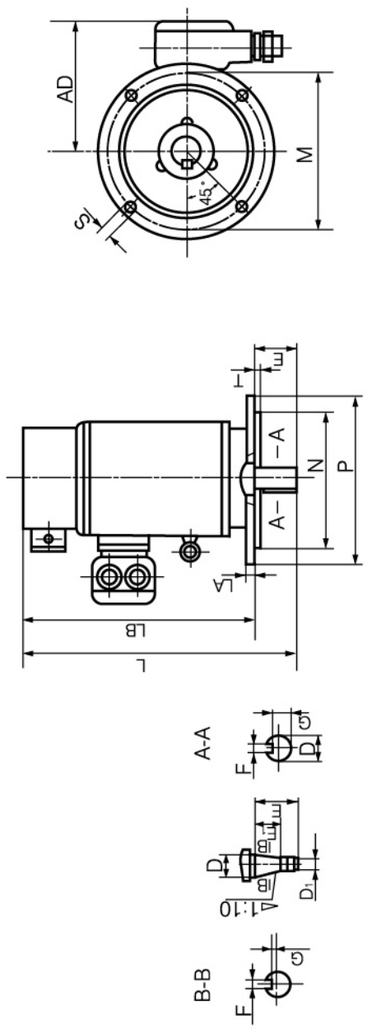


表10 IM3011及IM3013立式安装、机座不带底脚、端盖有凸缘、轴伸向下的电动机

Table 10 IM3011 & IM3013 motor vertically installed,without footing under base frame and with end cover flanged and shaft extension downward

机座号 Basic frame number	凸缘代号 Flang number	D[1] 基本尺寸 Basic dimension	D[1] 极限偏差 Limit deviation	D₁ 基本尺寸 Basic dimension	E 基本尺寸 Basic dimension	E 极限偏差 Limit deviation	E₁ 基本尺寸 Basic dimension	E₁ 极限偏差 Limit deviation	F 基本尺寸 Basic dimension	F 极限偏差 Limit deviation	G 基本尺寸 Basic dimension	G 极限偏差 Limit deviation	M 基本尺寸 Basic dimension	M 极限偏差 Limit deviation	N 基本尺寸 Basic dimension	N 极限偏差 Limit deviation	P[2]	R[3] 基本尺寸 Basic dimension	R[3] 极限偏差 Limit deviation	S 基本尺寸 Basic dimension	S 极限偏差 Limit deviation	S 位置度公差 Location tolerance	S 螺栓直径 Bolt diameter	T	孔数(个) Whole number	AD	L	LA	LB
112M	FF215	32	+0.018 +0.002	-	80	±0.37	-	-	10	0 -0.036	27	0 -0.2	215	0 -0.2	180	+0.014 -0.011	250	0	±2.0	15	+0.43 0	φ1.5Ⓜ	M12	4	4	220	580	14	500
132M	FF265	38									33		265		230		300									230	710		630
160M	FF300	48			110	±0.43			14		42.5		300		250	+0.016 -0.013	350		±3.0	19	+0.52 0		M16	5	8	260	880	18	770
160L																											920		810
180L		55	+0.030 +0.011	M36×3			82	0 -0.46			19.9															260	1130		1020
200L	FF400	60	+0.046 0	M42×3	140	±0.50	105		16	0 -0.043	21.4		400		350	±0.018	450		±4.0							320	1160	20	1150
225M		65									23.9																1290		
250M	FF500	70	+0.046 +0.027	M48×3					18		25.4		500		450	±0.026	550									320	1720	22	1580

注：1）圆锥形轴伸按GB/T757的规定进行检查。2）P尺寸为最大极限尺寸。3）R为凸缘配合面至轴伸肩的距离，其极限偏差包括轴的窜动。

Notes:1.Conical quill can be checked as per GB/T757. 2.Dimension P is maximum limit dimension. 3.R is distance from mating surfee to shaft shoulder and its limit deviation should include shaft flutter.

1.概 述

1.1 YBZR系列起重用隔爆型绕线转子三相异步电动机（简称电动机）主要用于各种型式的防爆起重机械的电力驱动。具有较大的过载能力和较高的机械强度，因此它特别适用于那些短时或断续运转、频繁起动、制动的设备。电动机的防爆性能符合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，制成隔爆型，防爆标志为Exd Ⅰ、Exd Ⅱ BT4及Exd Ⅱ CT4叁种。适用于井下有甲烷或煤尘与空气形成的爆炸性混合物的场所和工厂用传爆能力不高于Ⅱ B或Ⅱ C级，引燃温度组别为T1~T4组的可燃性气体或蒸气与空气形成的爆炸性混合物的场所。

1.1 YBZR series flameproof 3-phase wound-rotor asynchronous motor (hereafter referred to motor) is mainly applied for electrically driving various kinds of explosion-proof hoisting machinery.With its greater overload capacity and higher machinery strength the motor is especially suitable for short time or intermittent running,frequently starting and stopping equipment.Its explosion-proof performance is conformed to GB3836.2-2000 Electrical Equipment Used in Explosive Gas Environment,Part 2:Definition of Flameproof “d”,including three explosion-proof signs—Exd I,Exd II BT4 and Exd II CT4.Thereby,the products can be used in the places under wells full of explosive mixture of methane or coaldust and air and in the place in factory full of explosive mixture of inflammable gas with igniting temperature classed T1~T4 and transmission level of detonation not greater than IIB or IIC.

1.2 电动机的防护等级与冷却方法

1.2.1 电动机的外壳防护等级为IP54，接线盒防护等级为IP55。

1.2.2 电动机的冷却方式：112～132机座号为IC410；160～400机座号为IC411（参见GB1993）。

1.3 电动机的绝缘等级为F级与H级两种，F级绝缘电机适用于环境空气温度不超过40℃的场所，H级绝缘电机适用于环境空气温度不超过60℃的场所。

1.4 电动机适用于下列工作环境：

a）使用地点的海拔不超过1000m；

b）最低环境空气温度不低于–15℃，最高环境空气温度：煤矿用不高于35℃，工厂用不超过40℃，也可根据用户要求特殊高等。

c）用于煤矿井下时环境相对湿度不大于97%（环境温度为25℃时）。

d）额定频率为50Hz或60Hz；

e）额定电压为380V或440V、380/660V、660/1140V。

f）频繁地起动、制动及逆转。

1.2 Protection level and cooling method of motor

1.2.1 Protection levels IP54 for shell and IP55 for terminal box

1.2.2 Cooling form:IC410 for base Nos.112~132 and IC411 for base Nos.160~400 (refer to GB1993)

1.3 Insulation Classes F and H are suitable:Class F applicable for the places having surrounding air temperature of less than 40℃ and Class H for the places having surrounding air temperature of less than 60℃

1.4 Applicable operating conditions are as below:

a) Using place not more than 1000 above sea level;

b) Minimum surrounding air temperature not less than -15□;Maximum surrounding air temperature:<35□ in coalmine and <40□ in factory;specially high temperature is avalable for customer's requirement;

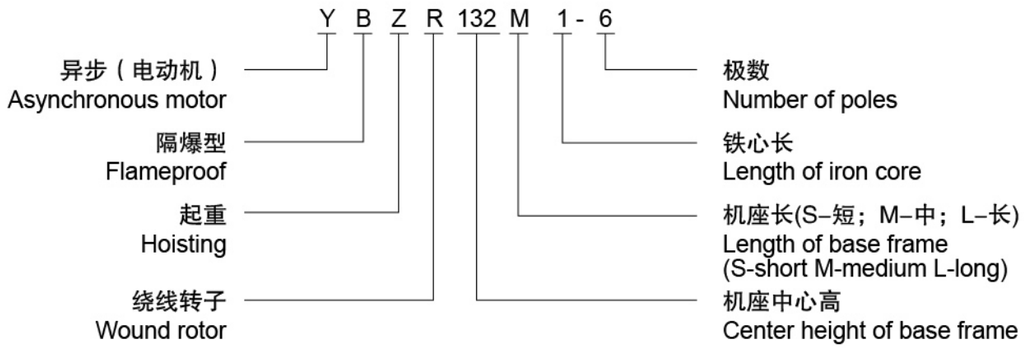
c) Relative humidity not more than 97% under well (Ambient temperature is 25□);

d) Rated frequency:50Hz or 60 Hz;

e) Rate voltage:380V or 440V,380/660V and 660/1140V;

f) Flequent start,brake or reversing.

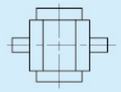
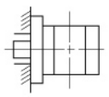
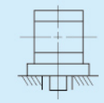
1.5 型号说明：Nomenclature



1.6 电动机的结构及安装型式见表1

Structure and installation form referring to Table.1

表（Table）1

结构及安装型式 Structure and installation form	代　号 Code No.	可供的机座 Available machine base	轴　伸 Quill (shaft extension)
	IM1001	112~160	一端圆柱轴伸 Quill with one cylindrical end
	IM1003	180~400	一端圆锥轴伸 Quill with one conical end
	IM1002	112~160	两端圆柱轴伸 Quill with two cylindrical end
	IM1004	180~250	两端圆锥轴伸 Quill with two conical end
	IM3001	112~160	一端圆柱轴伸 Quill with one cylindrical end
	IM3003	180	一端圆锥轴伸 Quill with one conical end
	IM3011	112~160	一端圆柱轴伸 Quill with one cylindrical end
	IM3013	180~315	一端圆锥轴伸 Quill with one conical end

2.电动机的工作方式与技术数据

2.1 电动机的工作制分为S2、S3、S4、S5、S6、S7及S9七种类型（参见GB755），基准工作制为：S3 40%（即S3工作制，负载持续率为40%，每一个工作周期为10min）。

2.2 电动机的主要技术数据

2.2.1 电动机基准工作制时的额定功率、转子转动惯量（Jm）、转子绕组的开路电压（U2）与机座号的对应关系符合表2的规定。

2.1 Operating systemincludes seven modes—S2,S3,S4,S5,S6,S7 and S9 (refer to GB755),Basic work system:S3,load continuity 40%,operating cycle 10 minute.

2.2 Main technical data

2.2.1 Relation of rated power,rotating inertia of rotat (Jm) and open-circuit voltage of wound rotator (U2) to corresponding base No.in basic operating system should be conformed to than specified in Table 2.

表（Table）2

机座号	同步转速 r/min Synchronous speed								
	1000			750			600		
	额定功率 Rated power kW	转子转动惯量 Rotating inertia of rotator kg·m²	转子绕组开路电压 Open-circuit voltage of wound rotator V	额定功率 Rated power kW	转子转动惯量 Rotating inertia of rotator kg·m²	转子绕组开路电压 Open-circuit voltage of wound rotator V	额定功率 Rated power kW	转子转动惯量 Rotating inertia of rotator kg·m²	转子绕组开路电压 Open-circuit voltage of wound rotator V
112M	1.5	0.03	100	—	—	—	—	—	—
132M1	2.2	0.06	132	—	—	—	—	—	—
132M2	3.7	0.07	185	—	—	—	—	—	—
160M1	5.5	0.12	138	—	—	—	—	—	—
160M2	7.5	0.15	185	—	—	—	—	—	—
160L	11	0.20	250	7.5	0.20	205	—	—	—
180L	15	0.39	218	11	0.39	172	—	—	—
200L	22	0.67	200	15	0.67	178	—	—	—
225M	30	0.84	250	22	0.82	232	—	—	—
250M1	37	1.52	250	30	1.52	272	—	—	—
250M2	45	1.78	290	37	1.79	335	—	—	—
280S	55	2.35	280	45	2.35	305	37	3.58	150
280M	75	2.86	370	55	2.86	360	45	3.98	172
315S	—	—	—	75	7.22	302	55	7.22	242
315M	—	—	—	90	8.68	372	75	8.68	325
355M	—	—	—	—	—	—	90	14.32	330
355L1	—	—	—	—	—	—	110	17.08	388
355L2	—	—	—	—	—	—	132	19.18	475
400L1	—	—	—	—	—	—	160	24.52	395
400L2	—	—	—	—	—	—	200	28.10	460

注：M、L后面的数字1、2分别代表同一机座号和转速下不同的功率。
Notes:Figures 1、2 Behind M、L respectively represent different powers for the same base No. and rotating speed.

2.2.2 电动机在额定电压，基准工作制时，最大转矩对额定转矩之比的保证值不小于表3的规定。

2.2.2 In rated voltage and basic operating system guarantee value of ratio of maximum torque to rated torque should be no more than that specified in Table 3.

额定功率（kW） Rated power	最大转矩 / 额定转矩 Maximum torque/rated torque
≤5.5	2.3
>5.5~11	2.5
>11	2.8

3.结 构

3.1 电动机的定子接线盒位于机座上方，接线盒结构为橡套电缆，有三个或六个铜质接线头，供连接电缆用，接线盒内另有一个铜质接线头供接地用。电动机的转子接线盒在高端盖上方，盒内有三个铜质接线端子和一个接地端子，三个铜质接线头供连接控制系统，电动机结构见附图1。

3.2 传动方式

电动机采用联轴器或正齿轮传动，在采用正齿轮传动时，齿轮节圆直径应不小于轴伸直径的2倍。

3.3 刷握和电刷

本系列电动机刷握装有最新设计的恒压弹簧、当电刷在运行中磨损时，集电环与电刷之间的压力能保持不变。

所有电刷的牌号为J201，尺寸见表4。

3.1 Terminal box of stator located above the base has a structure for rubber cable,which contains 3 or 6 copper terminals for connection and another terminal for earthing.Terminal box of rotor above top cover has 3 copper terminals for connecting control system and one earthing terminal.Motor structure is shown in Figure 1.

3.2 Transmission form

Coupler or spur-gear drive is applied in the motor series.When spur-gear drive is used,pitch diameter of the gear should not be less than twice quill diameter.

3.3 Brush and brush holder

In the motor series the newly-designed constant springs are fitted.When brush is worn during operation,pressure between collector and brush can be kept steady.

Make of the brushes being used is J201.Their size are shown in Table.4.

表（Table）4

中心高 Center height	电刷尺寸 Brush size	集电环外径 Diameter of collector ring	中心高 Center height	电刷尺寸 Brush size	集电环外径 Diameter of collector ring
112	20×8×32	100	250	40×12.5×50	160
132	20×8×32	100	280	40×20×60	200
160	25×10×50	112	315	40×20×60	200
180	25×10×50	125	355	50×20×60	250
200	32×12.5×50	140	400	2（40×20×60）	250
225	32×12.5×50	140			

3.4 轴承
本系列电动机所用轴承的型号见表5

3.4 Bearing
Type of bearing used in the motor series are given in Table 5.

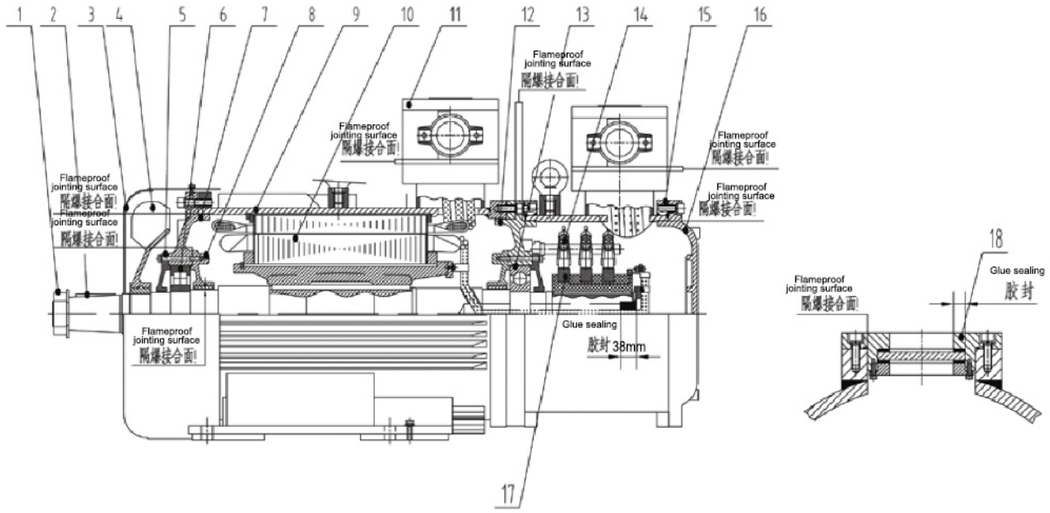
表（Table）5

安装型式 Mounting form / 中心高 Center height	IM1		IM3	
	驱动端 Driving end	非驱动端 Non-driving end	驱 动端 Driving end	非驱动端 Non-driving end
112	6308	6308	6308	6308
132	6309	6309	6309	6309
160	6311	6311	6311	6311
180	6313	6313	6313	6313
200	NU315	6315	NU315	46315
225	NU315	6315	NU315	46315
250	NU316	6316	NU316	46316
280	NU320	6320	NU320	46320
315	NU322	6322	NU322	46322
355	NU326	6326		
400	NU328	6328		

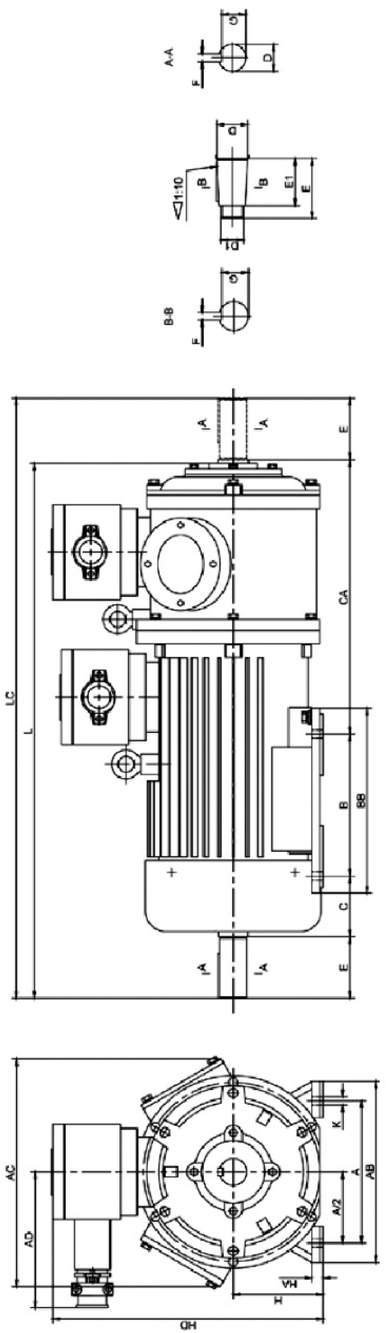
3.5 集电环
电动机的集电环用塑料模压结构。

3.5 Collector ring
The collector rings used in motors are plastic-moulded.

附图1：YBZR电动机结构图
Figure 1:Structural Diagram of YBZR Motor



1、螺母M64×4 nut
2、键 Key
3、风罩 Wind shield
4、风扇 Fan
5、轴承外盖 Outer cover for bearing
6、轴承 Bearing
7、前端盖 Former cover
8、轴承内盖 Inner cover for bearing
9、定子 Stator
10、转子 Rotor
11、接线盒 Box for brake
12、端盖 End cover
13、轴承 Bearing
14、刷握装置 Brush holding device
15、高端盖 High End cover
16、后端盖 After cover
17、集电环 Pediatrias delboni auriemo
18、观察窗装配 Watch window assembly



4.电动机的安装尺寸与外形尺寸见表6
The size and appearance of the motor dimensions are shown in table 6.

表6 IM1001、IM1003、IM1002、IM1004机座带底脚、端盖上无凸缘的电动机
Table 6 IM1001、IM1003、IM1002、IM1004 motor,with footing under base frames and without franges on end covers

机座号 Basic frame number	安装尺寸及公差 Installation dimension and tolerance																						外形尺寸 Outline dimension					
	A	A/2[1]		B	C[2]		CA	D[3]		D1	E		E1		F		G		H		K		AB	AC	AD	BB	HA	HD	L	LC
	基本尺寸 Basic dimension	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	基本尺寸 Basic dimension	极限偏差 Limit deviation	Basic dimension	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	基本尺寸 Basic dimension	极限偏差 Limit deviation	位置度公差 Location tolerance	螺栓直径 Bolt diameter								
112M	190	95	±0.5	140	70	±2.0	430	32	+0.018 +0.002	—	80	±0.37	—	—	10	0 -0.036	27	0 -0.2	112	0 -0.5	Φ1.0Ⓜ	M10	235	270	210	260	18	430	740	820
132M	216	108		178	89		446	38									33		132				260	310		290	20	440	790	875
160M	254	127		210	108		466	48		M12	110	±0.43	82		14	0 -0.043	42.5		160		Φ1.5Ⓜ	M12	320	430		335	25	490	900	1010
160L				254			490										42.5		160				360	455		380		510	970	1080
180L	279	139.5	±0.75	279	121	±3.0	530	55	+0.030 +0.011	M36×3							19.9		180				405	500	285	400	28	590	1040	1150
200L	318	159		305	133		579	60	+0.046 0	M42×3	140		105	0 -0.46	16		21.4		200			M16	455	500		410		635	1160	1300
225M	356	178		311	149		615	65									23.9		225				515	545		510	30	675	1400	1360
250M	406	203		406	168		686	70		M48×3					18		25.4		250				530	650	305	530	32	790	1465	1540
280S	457	228.5		368	190		670	85	+0.054 0	M56×4	170		130	0 -0.54	20	0 -0.052	31.7	0 -1.0	280	0 -1.0	Φ2.0Ⓜ	M20	575	650		610	32	790	1515	—
280M				419			664																640	625		660	35	860	1580	—
315S	508	254	±1.0	406	216	±4.0	—	95		M64×4					22		35.2		315			M24	740	695	365	780	40	1000	1830	—
315M				457																			780	695		850			1900	—
355M	610	305		560	254		—	110		M80×4	210	±0.58	165	0 -0.63	25	0 -0.052	41.9		355				910	840		910	45	1120	2370	—
355L				630																										
400L	686	343	±1.25	710	280		—	130	+0.063 0	M100×4	250		200		28		50		400		Φ2.5Ⓜ	M30	855	840		910	45	1120	2370	—

注：1）如K孔的位置度合格，则A/2可不作考核。2）C尺寸的极限偏差包括轴的？动。3）圆锥形轴伸按GB/T757的规定进行检查。
Notes:1.If location degree of hole K is acceptable,A/2 can not be checked. 2.Limit deviation of dimension C should include shaft flutter. 3.Conical quill can be checked as per GB/T757.

订货须知

订货时应注明电动机型号、功率、额定电压、同步转速、安装结构型式、工作制、防爆标志、绝缘等级、防护等级以及应用领域等。

由于产品的不断提升，产品的技术数据可能有所变动，如有变动不再另行通知，请与我公司联系。如有特殊要求请在订货时注明。

NOTICE FOR ORDERING

When ordering motor,please indicate motor type,power,rated voltage,synchronous speed,Installing structure form,work system,explosionproof sign,insultation class,protection class and application purpose.

For constant perfection of products,technical data might be alterred without notice.If required,please contact us.Any special requirement can be indicated during ordering.

随着产品的技术进步和国内外相关标准的修订，样本内技术参数如有变动，恕不另行通知。