

Series

TAW 系列

增安型无刷励磁同步电动机

Safety-Increased Brushless Excitation Synchronous Motor



上海电气集团上海电机厂有限公司
SHANGHAI ELECTRIC MACHINERY CO., LTD. (SEC)

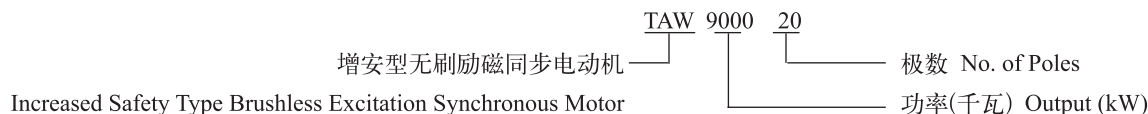
TAW 系列 增安型无刷励磁同步电动机

一、概述:

TAW系列增安型无刷励磁同步电动机是本公司针对当前石油化工、煤液化等工程迫切需要而开发的最新产品。是本公司在消化吸收多家国外公司先进技术的基础上,结合本公司50余年电机制造经验而研制的最新产品。

该系列电动机与往复式压缩机配套,适合于煤液化、石化加氢装置等设备。

二、型号说明 Type Description



三、基本性能:

3.1 电动机的防爆性能应符合以下标准:

a) GB3836.1-2000 《爆炸性环境用电气设备 第一部分:通用要求》

b) GB3836.3-2000 《爆炸性环境用电气设备 第三部分:增安型“e”》

c) JB8973-1999 《增安型无刷励磁同步电动机防爆技术要求》

d) JB8974-1999 《TAW 系列增安型无刷励磁同步电动机技术条件》

e) GB755-2000 《旋转电机 定额和性能》

3.2 防爆标志为 e II T3, 适用于工厂中具有温度组别为 T3 组的 2 区爆炸危险的场所。

3.3 电动机功率范围(1000~9000)kW, 电压 6000V、10000V, 频率 50Hz, 功率因数 $\cos \phi$ 0.9 (超前), 励磁采用无刷励磁。

3.4 电动机极数: 16、18、20, 对应的转速为 375r/min、333r/min 和 300r/min。

3.5 电动机在额定电压下, 失步转矩的保证值为 1.6 倍额定转矩。

3.6 电动机的效率:

功率 Output	极数 No. of Poles			
	效率 Efficiency	16	18	20
1000		94.5	94.0	93.5
1250		95.0	94.5	94.0
1600		95.0	95.0	94.5
2000		95.0	95.0	95.0
2500		95.5	95.0	95.0
3200		96.0	95.5	95.0
4000		96.0	96.0	95.5
5000		96.5	96.0	96.0
6300		96.5	96.5	96.0
8000		97.0	96.5	96.5
9000		97.0	97.0	96.5

如用户需要其他功率、电压可另行协商。 If other output、voltage are required, please contact us for special design.

1. General Description

TAW Series Increased Safety Type Brushless Excitation Synchronous Motor is a newly developed product of SEMC to meet the demand of petroleum industry、 coal condensation industry and other applicable industries. The development of TAW series is based on advanced technologies from various overseas companies, in combination with SEMC's fifty years of experience in manufacturing motors.

The TAW motor is to drive reciprocal compressor, and is applicable to equipment such as coal condensation facility, petro-chemistry hydrogenation facility etc..

3. Basic Performance

3.1 The explosive-proof performance of the motor shall conform to the following standards:

a) GB 3836.1-2000 General Requirements for Explosive-Proof Electric Equipment Used in Explosive Environment

b) GB 3836.3-2000 Explosive-Proof Electric Equipment Used in Explosive Environment

Part 3: Increased Safety Type: "e"

c) JB8973-1999 Explosive-Proof Technical Requirements for the Increased Safety Type Brushless Excitation Synchronous Motor

d) JB8974-1999 Technical Requirements for the TAW Series Increased Safety Type Brushless Excitation Synchronous Motor

e) GB755-2000 Rotation Motors: Ratings and Performance

3.2 Explosive-proof symbol eIIT3 is applicable to the dangerous environment with T3 group temperature area 2 that is inclined to explode in the factory.

3.3 Output Range of the Motor(1000-9000)kW, Voltage 6000V、10000V, Frequency 50Hz, Power Factor $\cos \phi$ 0.9 (in advance), Brushless Excitation.

3.4 No. of Poles: 16、18、20, with 375r/min、333r/min、and 300r/min respectively.

3.5 Under rated voltage, the guarantee value of the pull out torque is 1.6 times of the rated torque.

3.6 Efficiency of the Motor

TAW Series Increased Safety Type Brushless Excitation Synchronous Motor

3.7 电动机在额定电压下,堵转转矩为0.6倍额定转矩,标称牵入转矩为0.6倍额定转矩;堵转电流为6.5倍额定电流。

四、结构说明:

4.1 冷却方法: IC81W, 电动机的上部装有空-水冷却器。

4.2 防护等级: IP54 (本体)。

4.3 安装型式: IM7311 或 IM7315。

4.4 电动机采用座式滑动轴承, 压力油循环润滑。

4.5 定子绕组采用 F 级绝缘, 整体真空压力浸渍 (VPI) 处理。

4.6 转子励磁绕组采用 F 级绝缘; 阻尼绕组的绝缘采用西门子公司的引进技术, 确保电机无火花起动。

4.7 旋转励磁控制模块能实现无冲击的顺极性投励。励磁系统设有失步保护和自动再步功能。

4.8 电动机定子绕组埋设 6 个铂热电阻 Pt100 测温元件。

4.9 电动机装有防凝露加热器, 防止停机产生凝露。

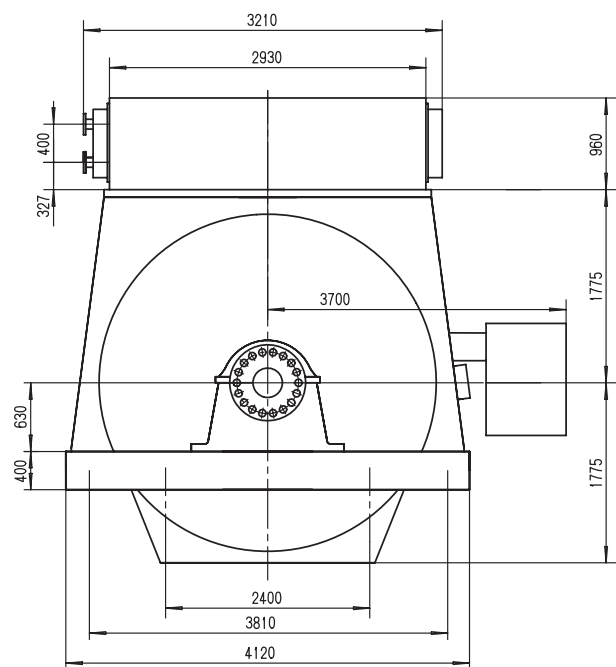
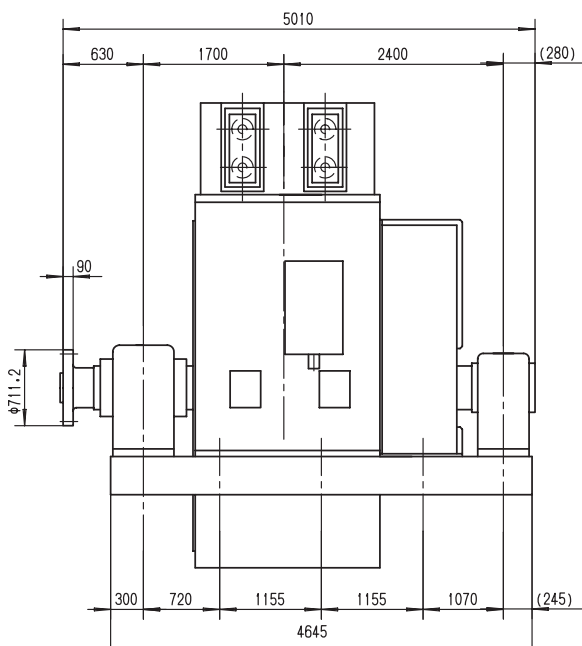
4.10 空水冷却器装设漏水检测仪, 冷却器漏水时可发出报警信号。

注:

- 1、其他特殊要求, 需另订技术协议后方可签订订货合同。
- 2、随着技术的进步和有国内外标准的修改, 样本内技术参数有所变动, 恕不另行通知。

五、TAW 系列 9000-20 增安型无刷励磁同步电动机外型尺寸图

5.The outline drawing and dimensions of TAW series 9000-20 increased safety type brushless excitation synchronous motor are as follows



3.7 Under rated voltage, the locked torque is 0.6 times of the rated torque; the nominal pull in torque is 0.6 times of the rated torque; the locked current is 6.5 times of the rated current.

4. Construction Description

4.1 Cooling Method: IC81W, the top of the motor is mounted with air-water cooler.

4.2 Protection Class: IP54 (the motor body)

4.3 Mounting Type: IM7311 or IM7315

4.4 The motor adopts pedestal sliding bearing with pressed oil circulating lubrication facility.

4.5 The insulation class of the stator winding is F class, and the motor is treated with VPI.

4.6 The insulation class of the rotor winding is F class, and advanced technology from Siemens has been introduced to the insulation of the damping winding to ensure sparkless starting.

4.7 Paramagnetic excitation can be achieved by applying the rotating excitation controlling module. The excitation system has the function of pull out protection and automatic resynchronization.

4.8 The stator winding is equipped with six Pt100.

4.9 The motor is equipped with anti-condensation space heater to prevent the motor from moisture when it is out of operation.

4.10 The air-water cooler is equipped with water leak detector which will alarm when the water is leaking.

Notes:

(1) If there are other special requirements, a technical agreement shall be achieved before signing the contract.

(2) The technical parameters in this brochure are subject to change without notice due to the technical advancement and revising of relevant China national standards and international standards.



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