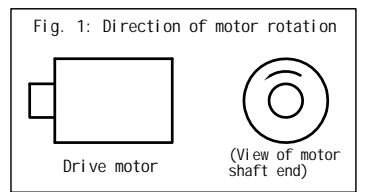
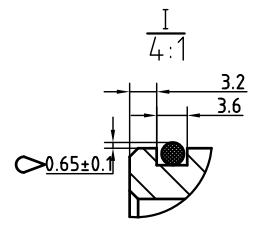
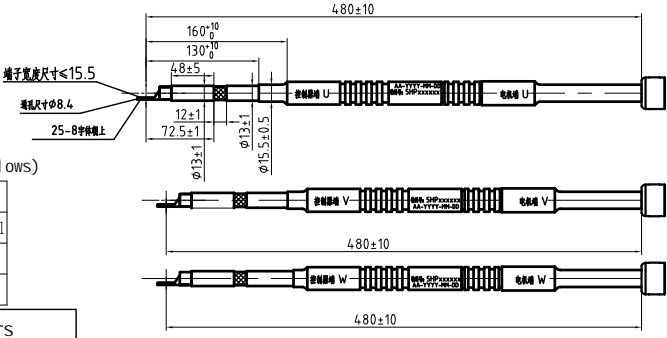


Nameplate Schematic
4:1

合普动力® Permanent Magnet Synchronous Motor HEPU POWER CO., LTD.			
Model	TZ160X13H-96	Voltage	96 VDC
Rated Output	13 kW	Peak Torque	85 Nm
Peak Output	25 kW	Pole Pairs	4
Rated Speed	4775 r/min	INS. Class	H
Peak Speed	8200 r/min	Duty	S9
SER. NO	YYYYMMDDXXXX	IP Grade	IP 67

3-phase cable Schematic
1:2



- Technical requirements
- The motor is in line with GB/T18488.1-2015 "Drive Motor System for Electric Vehicles Part I: Technical Conditions" and the technical agreement.
 - The electrical performance of the motor is in line with QC/T413-2002 "Basic Technical Conditions for Automotive Electrical Equipment".
 - The content of banned substances in the materials used in the motor shall meet the requirements of the national standard GB/T30512-2014 "Requirements for Banned Substances in Automobiles".
 - The recyclable marking and reusable marking of the motor shall be implemented in accordance with the provisions of GB/T23384-2009 "Marking of Products and Components for Recycling" and GB/T26988-2011 "Marking of Automotive Parts for Recyclability".
 - Material marking of motors shall be implemented in accordance with the provisions of QC/T797-2008 "Material Marking and Labelling of Automotive Plastic Parts, Rubber Parts and Thermoplastic Elastomer Parts".
 - According to GB2894-2008 Table 2 in 2-7 of the provisions of the production of "Beware of electric shock" logo, warning signs next to the necessary safety tips, and paste the location of the diagram.
 - Appearance requirements: the surface should not be obvious corrosion, bruises, bumps, coating layer should not be obvious peeling, fasteners should be firmly connected. The lead wires or terminals should be intact, and the colours and signs should be correct.
 - The motor according to the contents of the marking engraving, motor number before and after the asterisk separated from the motor number must be unique, not allowed to repeat.
 - Stator winding insulation resistance to the chassis, not less than 20MΩ in the cold state, not less than 1MΩ in the hot state; three-phase power lines with the insulation resistance between the shield in the cold, hot state, the insulation resistance is not less than 1MΩ.
 - The motor before storage should be spline output shaft rust treatment to ensure that the spline working surface in the transport and storage period does not occur corrosion.
 - From the direction of the motor shaft end, anticlockwise rotation is the positive direction.
 - The motor should be zero-rotation before storage to ensure that the motor performance consistency and interchangeability.
 - It is recommended to apply Liqui Moly LM 48 assembly paste (Germany) to the spline during motor installation/loading.
 - Change the symbol " "; key symbols " ", ⊕ for the important symbols.

钢印内容及含义:
TZ160X13H-96 ☆202411240001 ☆

流水号,当天生产的电机由0001开始。
年月日, 2023表示2023年,
11表示11月, 24表示24日。
电机型号(固定不变)

打印要求: 字体: 宋体, 字高3mm, 总宽±0.5mm, 字深≥0.3mm, 字间距合理, 刻记清晰工整。

Temperature Sensor Model: PT1000 (Corresponding graduation table is as follows)

Tem (°C)	0	10	20	30	40	50	60	70	80	90	100
Resi (Ω)	1000	1039.0	1077.9	1116.7	1155.4	1194.0	1232.4	1270.8	1309.0	1347.1	1385.1
Tem (°C)	110	120	130	140	150	160	170	180	190	200	
Resi (Ω)	1422.9	1460.7	1498.3	1535.8	1573.3	1610.5	1647.7	1684.8	1721.6	1758.6	

Table 1: Spline data is as follows

序号	Output spline shaft parameters	Motor parameters
1	Reference to national standards: GB3478.1-2008	Batter voltage: 96VDC
2	Module: 1	Rated power: 13KW
3	Number of teeth: 18	Peak power: 25KW
4	Pressure angle: 30°	Rated speed: 4775rpm
5	Diameter of indexing circle: 18.0	Peak speed: 8200rpm
6	Base diameter: 15.6	Rated torque: 26N.m
7	Root diameter: Tooth root circle	Peak torque: 85N.m
8	Tolerance class: 7H	Rated Current: 130A
9	Inner spline major diameter: 19.5 ^{+0.21}	Peak current: 370A
10	Inner spline small diameter: 17.128 ^{+0.02}	No-load EMF (1000r): 11±0.5V
11	Effective spline length: 28.3 ³	Protect class: IP67
12	Tooth side fit: Tooth side fit	Insulation class: H
13	Displacement coefficient: 0	Cooling method: Natural air cooling
14	Diameter of measuring rod: 2	Pole pairs: 4 pairs
15	Cross bar distance: 14.608 ^{+0.204}	Motor weight (kg): 18±0.5

Pin Definition	
1	Red Resolver-R1 (excitation positive)
2	Yellow Resolver - S1 (cosine feedback positive)
3	White Resolver-S2 (sine feedback positive)
4	Grey tmp-
5	Spare
6	Spare
7	Resolver-R2(negative excitation)
8	Resolver - S3 (cosine feedback negative)
9	Resolver-S4(Sine feedback negative)
10	tmp+
11	Spare
12	Spare
Hole number	Definition

TZ160X13H-96LT				图号	1HP2911435WX	版本 REV.	1
永磁同步电动机外形图 (4层)				DRW.#			
				重量 WEIGHT	比例 SCALE	幅面 SIZE	A3
				1:3.5			
版本 REV.	更改文件号 ECN NO.	签字 APPR.	日期 DATE				
制图 DRWN.BY:	钟志安	工艺 M.TECH.BY:	苏柱德				
校对 CHK.BY:	彭国超	批准 APPR.BY:	梁昌勇				
审核 REVW.BY:	李志健	日期 DATE:	2025.5.10				