

# ***XN SERIES HIGH VOLTAGE ALTERNATOR***

**WUXI XINGNUO  
ELECTRIC PRODUCTION CO.,LTD.**





Wuxi Xingnuo Electric Production Co., Ltd. is a National Hi-tech enterprise, founded in 1970. It's a private limited company for professional R&D and produces all series of synchronous alternators, and it is a large enterprise for R&D and producing in domestic power industry.

It covers 50,000m<sup>2</sup>, and owns 300 staff, more than 300 modern production equipments and testing instruments. It's a First-class enterprise for brushless AC alternators, annual output is 500,000 sets. It has gained ISO9001-2008 Quality Management System, CE Certification and CCS Certification, and acquired Export Product Quality Permit. It's products comply with Standards of GB755, IEC34, BS5000, VDE0530, NEMA, MG1-22, C22.2-100, CSA, AS1359 etc. All of above products are inspected by national testing center, with excellent quality and reliable performance.

Since founded in 1970, Xingnuo has been focusing on developing, designing all series of generating and welding alternators, synchronous alternators, high-voltage alternators and marine alternators. Recent years, Xingnuo has absorbed advanced technology and developed 6.5KW-2000KW-XN series of brushless AC synchronous alternator, and had a large production capacity. It owns a specific R&D team, and holded many patents granted by State Intellectual Property Office. The products of "high performance AC alternator", "generating and welding alternator", "permanent magnet starter", "marine alternator" are granted as "Province High-tech Products" by Science and Technology Department of Jiangsu Province. Xingnuo is granted as "Jiangsu Private Technology Enterprise".

Nowadays Xingnuo has established long-term cooperation with international enterprises, it's products are exported to Europe, Middle East, America, Africa, Southeast Asia.





# XINGNUO ELECTRIC

## Introduction of XN series of high voltage alternator

### ◆ Product Configuration

- Power range: 300kW-2800kW
- Rated voltage: 6.3kV, 10.5kV, 13.8kV
- Basler Electric BECS-100-B15 AVR

### ◆ Features

- Applies PMG excitation, providing excitation at any condition.
- Double bearing structure and rotor (dynamic balanced)
- Advanced automatic voltage regulator (AVR) control, providing  $\pm 0.5\%$  voltage regulation rate
- Convenient for installation and maintenance
- Standard protection Class IP23
- Applies latest manufacture's standard
- Moisture-proof heater
- Stator three-phases winding temperature-measurement element PT100
- Bearing temperature-measurement element PT100

### ◆ Optional Device

- Temperature controller
- Current transformer
- Lightning arrester
- Protection Class IP44
- Air filter
- Parallel Droop Current Transformer

### ◆ Alternator Stator

- Stator coil applies Class F double glass covered rectangular copper wire; the ground insulation applies anti-corona structure
- Stator winding applies VIP vacuum pressure soaking paint process, ensuring fill in place within groove, improving heat radiation.
- Stator iron core applies chute, effectively decreasing harmonic waves.
- All alternator stators are wound to 2/3 pitch. This eliminates triplen (3rd, 9th, 15th.....) harmonics on the voltage waveform and is found to be the optimum design for trouble-free supply of non-linear loads. The 2/3 pitch design avoids excessive neutral currents sometimes seen with higher winding pitches, when in parallel with the mains. A fully connected damper winding reduces oscillations during paralleling. This winding, with the 2/3 pitch and carefully selected pole and tooth designs, ensures very low waveform distortion.
- Strengthen the mechanical strength of end of stator winding, preventing from deformation of winding end caused by sudden load and short circuit.

### ◆ Alternator Rotor

- Rotor coil applies structure of three layer insulation,
- Insulation Class: H
- Strengthen the mechanical strength of end of winding, preventing from deformation of rotor winding end caused by high speed rotation, improving life, reliability and environmental adaptability.
- Applies split rotary rectifier module structure, convenient for maintenance of alternator, which can unmount rotary rectifier module.

### ◆ Reliable performance

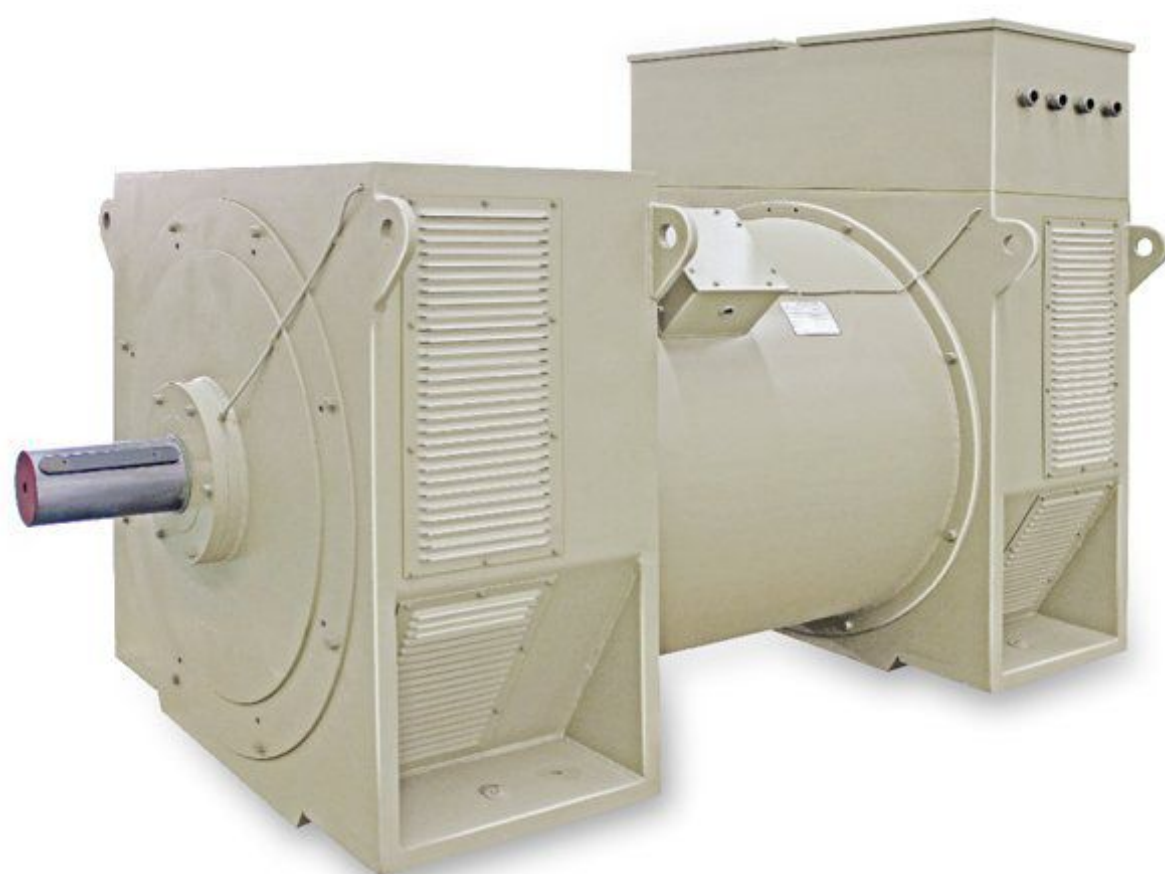
- Enameled wire with UL certification.
- High-effective cold rolled steel sheet for improving alternator efficiency to decrease temperature rise.
- NSK bearing to extend the using life of alternator.
- Reliable AVR to ensure stability of power output.





# XN500

## *XN-500-Series of high-voltage alternator*

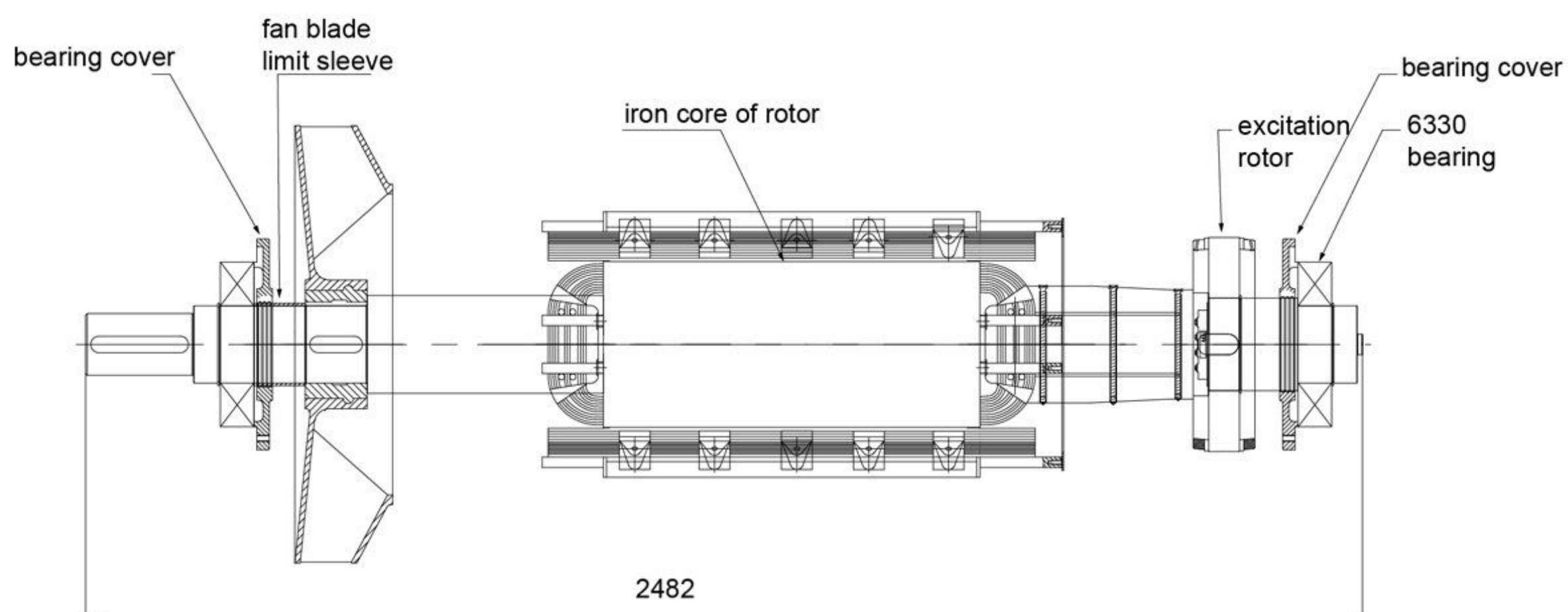


### Features

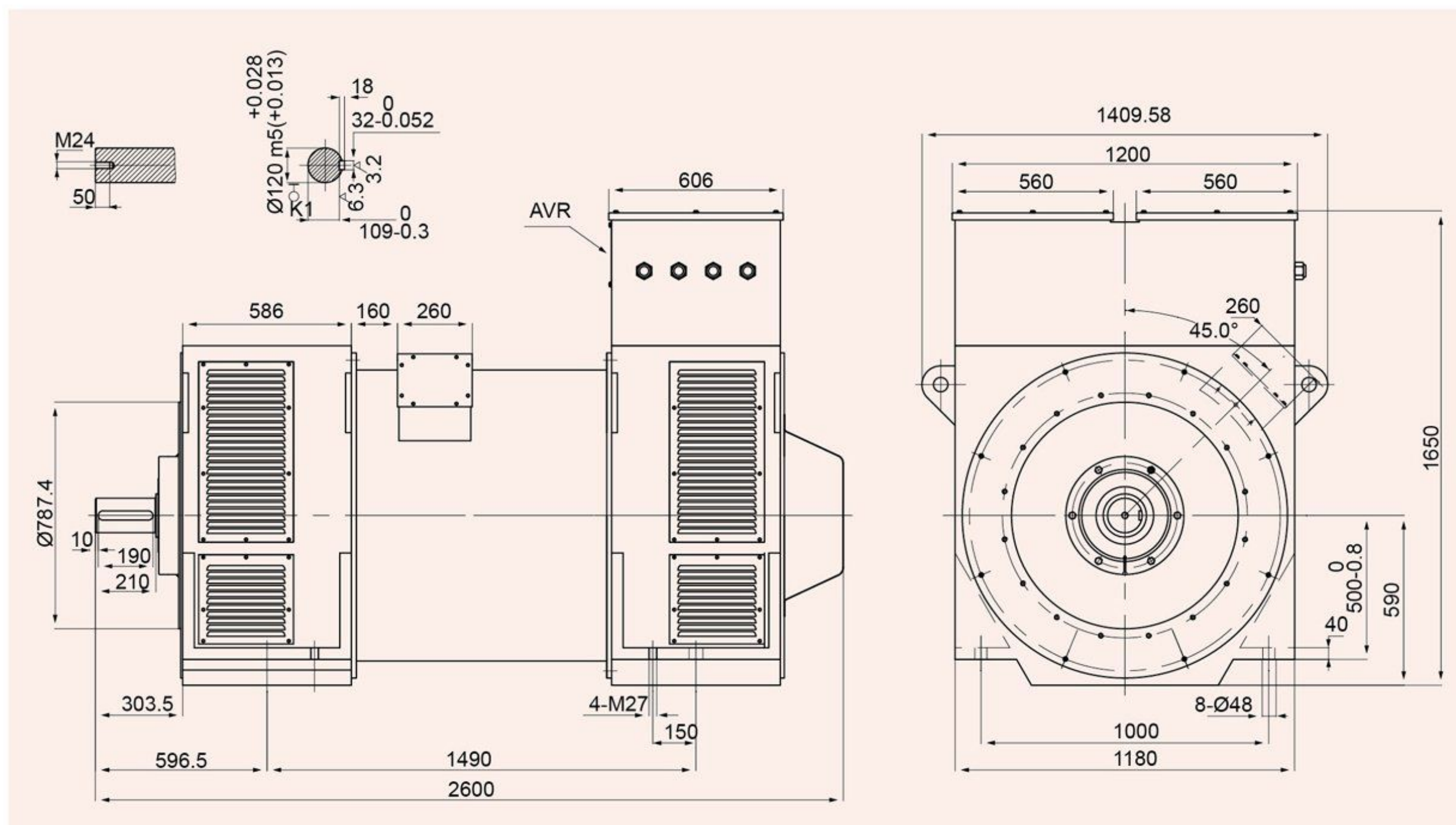
- PMG excitation
- Double bearing structure and rotor (dynamic balanced)
- Advanced automatic voltage regulator (AVR) control, providing  $\pm 0.5\%$  voltage regulation rate
- Convenient for installation and maintenance
- Standard protection Class IP23
- Applies latest manufacture's standard

### Options and Accessory

- Winding temperature test (RTD)
- Winding temperature protection themistor
- Bearing temperature test
- Anti-condensation heater
- Air filter
- Parallel droop current transformer







Type	Rated Power (Kw)	Rated Capacity (kVA)	Rated Current (A)	Weight (Kg)	Rated Voltage (V)	Rated Frequency (Hz)	Rated speed (r/min)	Power Factor
XN500-1200G/10500	1200	1500	82.5	5260	10500	50	1500	0.8
XN500-1000G/10500	1000	1250	68.7	4820				
XN500-800G/10500	800	1000	55	4560				

Reactance(%) - Time constant(ms)													
Type	Rated Power (Kw)	Kc	Xd	Xq	Tdo	X'd	X'g	T'd	X'd	X'g	T'd	X2	X0
XN500-1200G/10500	1200	0.6464	1.7862	0.8937	2.467s	0.3099	0.8937	0.428s	0.1492	0.1450	0.0535s	0.1473	0.0184
XN500-1000G/10500	1000	0.6601	1.7566	0.8837	2.28s	0.3166	0.8837	0.411s	0.1578	0.1541	0.051s	0.1559	0.0202
XN500-800G/10500	800	0.6879	1.6787	0.8489	2.134s	0.3132	0.8489	0.3981s	0.1607	0.1573	0.1498s	0.159	0.0192

Type	Power(Kw)	Length of iron core (L1)	Length of axis (L2)	Weight (Kg)	G	Moment of inertia (kgm <sup>2</sup> )
XN500-1200G/10500	1200	720	2482	1783	1205	81.3
XN500-1000G/10500	100	600	2482	1612	1055	73.5
XN500-800G/10500	800	500	2482	1488	950	67.8



# XN-630

## *XN-630-Series of high voltage alternator*

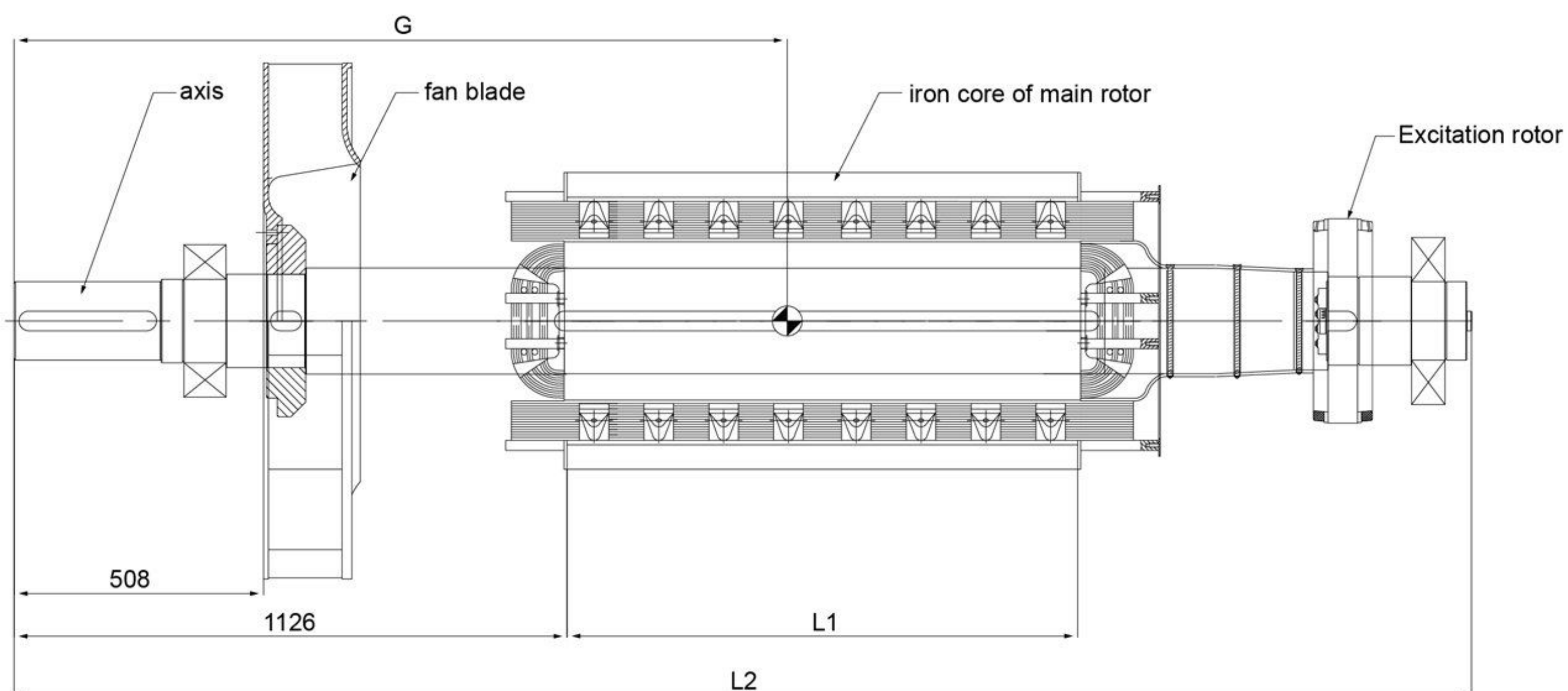


### Features

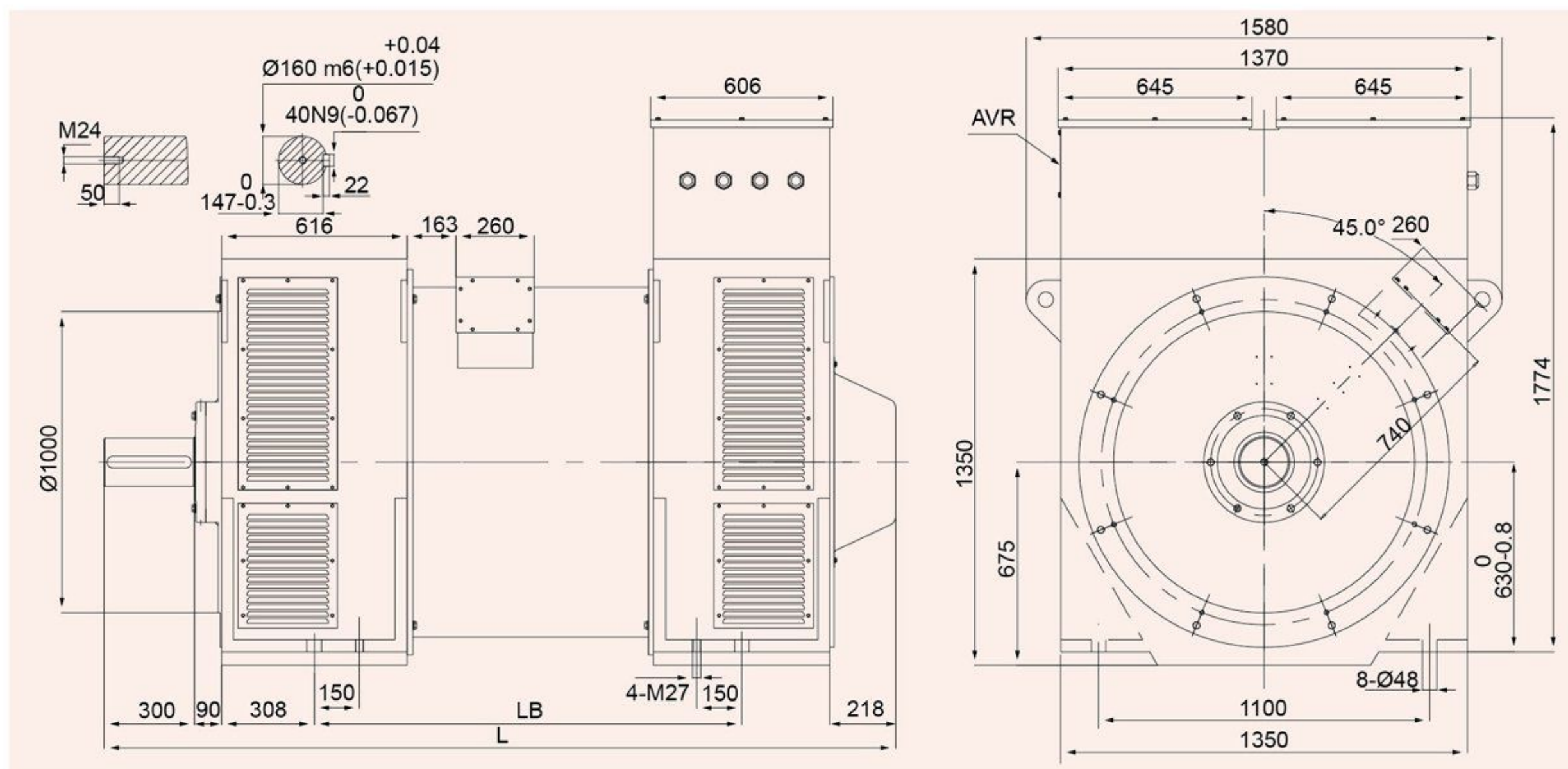
- PMG excitation
- Double bearing structure and rotor (dynamic balanced)
- Advanced automatic voltage regulator (AVR) control, providing  $\pm 0.5\%$  voltage regulation rate
- Convenient for installation and maintenance
- Standard protection Class IP23
- Latest manufacture's standard

### Options and Accessory

- Winding temperature test (RTD)
- Winding temperature protection thermistor
- Bearing temperature test
- Anti-condensation heater
- Air filter
- Parallel droop current transformer







Type	Rated Power (Kw)	Rated Capacity (kVA)	L (mm)	LB (mm)	Weight(Kg)
XN630-2000G/10500	2000	2500	3090	1880	8170
XN630-1800G/10500	1800	2250	3090	1880	7740
XN630-1500G/10500	1500	1875	2850	1640	7010
XN630-1240G/10500	1240	1550	2630	1420	6020
XN630-1000G/10500	1000	1250	2630	1420	5540
XN630-800G/10500	800	1000	2630	1420	5160

Reactance(%)-Time constant(ms)													
Type	Rated Power (Kw)	Kc	X <sub>d</sub>	X <sub>q</sub>	T <sub>do</sub>	X' <sub>d</sub>	X' <sub>g</sub>	T <sub>d</sub>	X <sub>d</sub>	X' <sub>g</sub>	T <sub>d</sub>	X <sub>2</sub>	X <sub>0</sub>
XN630-2000G/10500	2000	0.7457	1.5737	0.779	2.918s	0.2524	0.779	0.468s	0.1121	0.1085	0.0585s	0.1103	0.0164
XN630-1800G/10500	1800	0.757	1.553	0.7698	2.85s	0.2518	0.7698	0.462s	0.1131	0.1097	0.058s	0.1114	0.0162
XN630-1500G/10500	1500	0.7597	1.5412	0.7661	2.727s	0.255	0.7661	0.451s	0.1171	0.1137	0.0564s	0.1154	0.016
XN630-1240G/10500	1240	0.6464	1.7862	0.8937	2.467s	0.3099	0.8937	0.428s	0.1492	0.1450	0.0535s	0.1473	0.0184
XN630-1000G/10500	1000	0.6601	1.7566	0.8837	2.28s	0.3166	0.8837	0.411s	0.1578	0.1541	0.051s	0.1559	0.0202
XN630-800G/10500	800	0.6879	1.6787	0.8489	2.134s	0.3132	0.8489	0.3981s	0.1607	0.1573	0.1498s	0.159	0.0192

Type	Power (Kw)	Length of iron core (L1)	Length of axis (L2)	Weight (Kg)	G	Moment of inertia (kgm <sup>2</sup> )
XN630-2000G/10500	2000	1040	2968	2652	1575	120
XN630-1800G/10500	1800	940	2968	2497	1470	113.8
XN630-1500G/10500	1500	800	2728	2188	1375	99.7
XN630-1240G/10500	1240	580	2508	1783	1205	81.3
XN630-1000G/10500	1000	470	2508	1612	1055	73.5
XN630-800G/10500	800	390	2508	1488	950	67.8





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## **WUXI XINGNUO ELECTRIC PRODUCTION CO.,LTD.**

Add:Xinya Road, Luoshe Town, Wuxi, Jiangsu, Province, China

Tel : +86-510-83305578 83311285

Fax : +86-510-83303017 83316386

P.C : 214187

E-mail:[xingnuo\\_elec@sina.com](mailto:xingnuo_elec@sina.com)

[Http://www.xingnuo.cc](http://www.xingnuo.cc)