ZKGAS

中科广能
ZKG ENERGY

中科广能能源研究院（重庆）有限公司

ZKG Energy (Chongqing) Research Institute Co.,Ltd.

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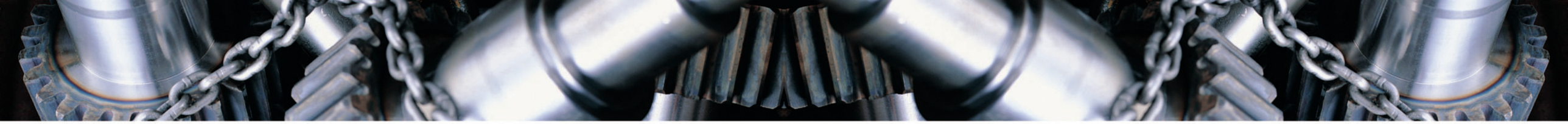

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发电机组命名
NAME OF GENSET

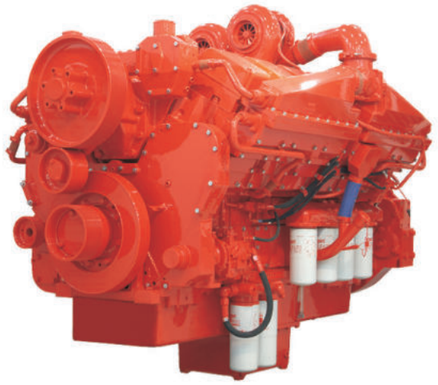
例：

ZKG	C	220	G	S

- S — 静音型机组 Silencing type genset
- G — 用途——发电用 Application-genset
- 220 — 备用功率（kW） Standby power (kW)
- C — Cummins柴油机品牌 Brand of Cummins diesel engine
- ZKG — 品牌——中科广能 Brand- ZKG Energy

4冲程V型12缸 / 4-Stroke,V type,12-Cylinder
排量/Displacement：38L
缸径 × 冲程 / Bore x Storke：159 × 159mm
功率范围 / Power Range：560-1100kW(761-1496HP)
最低燃油消耗率/Min SFC：196g/kw.h
外形尺寸 / Dimension：2341 × 1360 × 1053mm
净重 / Dry Weight：4200kg

K38



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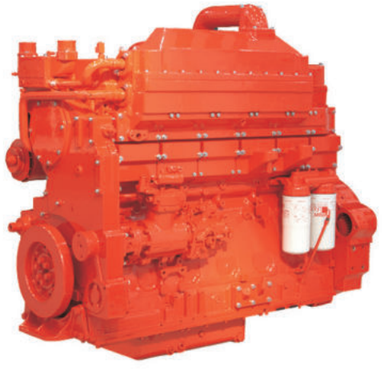

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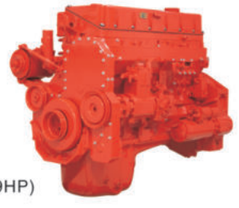
康明斯柴油机主要参数
Main Parameters of Cummins Diesel Engine

6CT(A)

4冲程直列6缸 / 4-Stroke,In-line,6-Cylinder
排量/Displacement：11L
缸径 × 冲程 / Bore x Storke：125 × 147mm
功率范围 / Power Range：161-284kW(220-386HP)
最低燃油消耗率/Min SFC：196g/kw.h
外形尺寸 / Dimension：1360 × 833 × 1086mm
净重 / Dry Weight：940kg

M11



4BT(A)

4冲程直列4缸 / 4-Stroke,In-line,4-Cylinder
排量/Displacement：3.9L
缸径 × 冲程 / Bore x Storke：102 × 120mm
功率范围 / Power Range：24kW（33 HP）
最低燃油消耗率/Min SFC：229g/kw.h
外形尺寸 / Dimension：880 × 678 × 860mm
净重 / Dry Weight：375kg

4冲程直列6缸 / 4-Stroke,In-line,6-Cylinder
排量/Displacement：8.3L
缸径 × 冲程 / Bore x Storke：114 × 135mm
功率范围 / Power Range：152-220kW(206-299HP)
最低燃油消耗率/Min SFC：229g/kw.h
外形尺寸 / Dimension：880 × 678 × 860mm
净重 / Dry Weight：375kg

4冲程直列6缸 / 4-Stroke,In-line,6-Cylinder
排量/Displacement：14L
缸径 × 冲程 / Bore x Storke：140 × 152mm
功率范围 / Power Range：180-418kW(245-568HP)
最低燃油消耗率/Min SFC：201g/kw.h
外形尺寸 / Dimension：1581 × 790 × 1364mm
净重 / Dry Weight：1221kg

4冲程直列6缸 / 4-Stroke,In-line,6-Cylinder
排量/Displacement：19L
缸径 × 冲程 / Bore x Storke：159 × 159mm
功率范围 / Power Range：336-605kW(457-823HP)
最低燃油消耗率/Min SFC：196g/kw.h
外形尺寸 / Dimension：1706 × 875 × 1343mm
净重 / Dry Weight：1786kg

3.9L 8.3L 11L 14L 19L 38L

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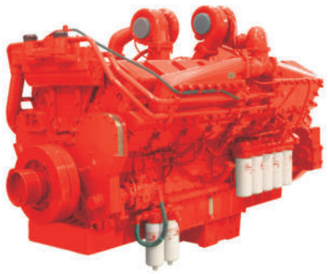
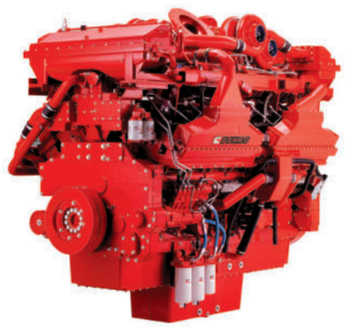


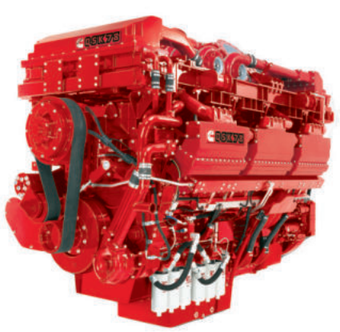
4冲程V型16缸/4-Stroke,V type,16-Cylinder
排量/Displacement：50L
缸径×冲程/Bore× stroke：159×159mm
功率范围/Power range：1120-1500 kW(1523-2040HP)
最低燃油消耗率/Min SFC：196g/kW.h
外形尺寸/Dimension：2857×1415×1765mm
净重/Dry Weight：5160kg

QSK60



4冲程V型16缸/4-Stroke,V type,16-Cylinder
排量/Displacement：60L
缸径×冲程/Bore× stroke：159×190mm
功率范围/Power range：1500-2000kW (2040-2720HP)
最低燃油消耗率/Min SFC：196g/kW.h
外形尺寸/Dimension：2781×1794×2155mm
净重/Dry Weight：7185kg

QSK78



4冲程V型18缸/4-Stroke,V type,18-Cylinder
排量/Displacement：78L
缸径×冲程/Bore× stroke：170×190mm
功率范围/Power range：2400- 2750kW(3264-3740HP)
最低燃油消耗率/Min SFC：196g/kW.h
外形尺寸/Dimension：3062×1570×2031mm
净重/Dry Weight：9180kg

交流发电机

AC GENERATOR

可选用马拉松、斯坦福、英格、西门子等世界著名电气公司设计的新型无刷发电机，其设计独特，结构先进，所以体积小，重量轻，性能优良，运行可靠，使用方便。

New type brushless generators of unique design, advanced structure, small volume, light weight, excellent performance, reliable operation and easy use ,and designed by world famous electrical companies such as Marathon, Stamford, Engga and Siemens can be selected.

技术参数

- 稳态电压调整率：1%
- 瞬态电压调整率：（-15%，+20%）
- 电压调整范围：>10%
- 线电压波形正弦性畸变率<5%
- 配用APM2000并联模块，可稳定地并联运行，无功分配度差<10%
- 额定电压：400V
- 频率：50HZ
- 功率因数：0.8(滞后)

TECHNICAL PARAMETERS
Steady voltage regulation: 1%
Transient voltage regulation: (-15%, +20%)
Voltage regulation range: >10%
Line voltage waveform sinusoidal distortion factor: <5%
Equipped with APM2000 synchronous module, stable synchronous operation with reactive power distribution difference <10% is possible.
Rated voltage: 400v
Frequency: 50HZ
Power factor: 0.8 (lagging)

设计特点

- 发电机为全防护结机，内部通风散热合理，通风效率高，温升低。
- 无刷励磁，配用固态电压调节器，具有低速保护过励关断，电磁干扰抑止等功能。
- 整体凸极转子，阻尼绕组与铁心成为一体，磁场绕组用热固性环氧填充，具有较高的机械和电气强度。
- 绝缘等级为H级。
- 发电机采用双面防尘，特殊高性能润滑脂，电机专用滚珠轴承，噪音小，使用寿命长。

DESIGN FEATURES
The generator is of fully protected structure with rational internal ventilation and heat dispersion, high ventilation efficiency and low temperature rise.
It is of brushless excitation, and is equipped with steady voltage regulator for low speed protection, overexcitation shutoff and electromagnetic interference suppression.
It has integral salient pole rotor. Damping winding and iron core are in one. Field winding is filled with thermosetting epoxy. It is of high mechanical and electrical strength.
Insulation level is H.
The generator is double-sidely dustproof. Special high performance lubricating grease is used. Ball bearing of low noise and long service life for motor is used.

中科广能陆用柴油发电机组
ZKG ENERGY ONSHORE DIESEL GENSET

发电机组标准构成

- 发动机：康明斯4冲程/增压/中冷柴油发动机。
- 发电机：上海马拉松交流发电机。
- 控制系统：采用高性能计算机芯片技术，具有国际领先水平。操作简便、性能可靠的控制系统。
- 冷却系统：闭式水冷，风扇水箱冷却，允许最高环境温度40℃。
- 起动系统：24V直流启动。
- 机座：用于安装发动机、发电机、冷却系统等，具有良好的减震性能。
- 附件：排气消声器、波纹管、连接接头等安装附件。

STANDARD COMPOSITIONS OF GENSET
Engine: 4 stroke / boost / cooling diesel engine.
Shanghai: a marathon generator AC generator.
Control systems: the high performance computer chip technology, a leading international level. Is easy to operate, reliable performance of the control system.
Cooling system: closed water cooling, fan cooling, allowing maximum ambient temperature of 40 DEG C.
starting system: 24V DC starting.
Stand: for mounting an engine, generator, cooling system, has good damping properties.
Attachment: exhaust muffler, bellow pipe, joints and other installation accessories.

机组特点

- 100%严格出厂测试，机组完全符合GB/T2820-97国家标准。
- 发动机为康明斯公司开发、设计、制造、能够充分发挥最大效能。
- 发电机为马拉松公司制造，具有当今世界领先技术。
- 发电机励磁系统，能使机组在承受任何瞬间加载时电压降能迅速恢复。
- 发电机低电抗设计使非线性负载下的波形失真极小，并有良好的带电动机起动性能。
- 康明斯公司开发的PT燃油系统，工作稳定，燃烧充分，高效节能，排放良好。

CHARACTERISTICS OF GENSET
It is subject to 100% strict factory test. It conforms to national standard GB/T2820-97.
Engine is developed, designed and manufactured by Cummins Co., of which, the maximum efficiency can be brought into full play.
Generator excitation system, can make the generator set to bear any momentary voltage can be quickly restored.
Exciting system of the generator can enable genset to recover frequency drop at any transient loading.
Due to low reactance design of the generator, waveform distortion at non-linear load is extremely small and the generator is of perfect performance of motor starting .
PT fuel system developed by Cummins operates steadily and is of adequate burning, high efficiency and energy conservation and perfect discharge.

机组电气性能

- 230/400VAC，50HZ，0.8PF（滞后）三相四线交流输出。
- 电压调整范围：>10%
- 频率调整范围：0–5%
- 稳态电压调整率：1%
- 瞬态电压波动率：（–15%，+20%）
- 稳态频率调整率：<±0.25%
- 瞬态频率波动率：<9%
- 电压畸变率<5%
- 电压恢复时间：（±3%）<1S

ELECTRICAL PERFORMANCE OF GENSET
230/400VAC, 50HZ, 0.8PF (lagging) three-phase four-wire AC output.
Voltage regulation range: >10%
Frequency regulation range: 0-5%
Steady voltage regulation: 1%
Transient voltage fluctuation ratio: (-15%，+20)
Steady frequency adjustment rate: <±0.25%
Transient frequency fluctuation ratio: <9%
Voltage distortion factor: <5%
Voltage recovery time: (± 3%)<1S

机组操作系统保护功能

- 高水温报警停机。
- 低油压报警停机。
- 超速运行报警停机。
- 启动失败报警。
- 充电机故障报警。
- 过电流保护停机。
- 过电压保护停机。

GENSET OPERATING SYSTEM PROTECTION FUNCTION
High water temperature warning and shutdown.
Low oil pressure warning and shutdown.
Overspeed warning and shutdown
Starting failure alarm.
Alternator trouble alarm.
Overcurrent protection shutdown.
Overvoltage protection shutdown.

机组可选配置

- 柴油机机油加热器。
- 柴油机冷却液加热器。
- 柴油油水分离器。
- 启动电瓶及电瓶线。
- 自动浮充电器。
- 自动切换柜（ATS）。
- 并联柜。
- 日用柴油油箱。
- 空气启动马达/弹簧储能起动机

OPTIONAL CONFIGURATION OF GENSET
Diesel engine lubricating oil heater.
Diesel engine cooling fluid heater.
Diesel engine oil-water separator.
Starting battery and wire.
Automatic floating charger.
Automatic transfer switch (ATS).
Synchronization cabinet.
Domestic diesel oil tank for daily use.
Air starting motor / spring energy-storage starter

中科广能陆用发电机组（标准配置）

ZKG ENERGY ONSHORE GENSET (STANDARD DISPOSITION)

发电机组型号	柴油机型号	备用功率		常用功率		燃油消耗	机组净重	机组外形尺寸		
Generator Set Models	Diesel Engine Models	Standby power		Prime power		Fuel consumption	Net weight Genset	Dimension,Genset		
		kW	kVA	kW	kVA	L/h	kg	长(mm) length	宽(mm) wide	高(mm) high
ZKG22G	4B3.9-G2	22	28	20	25	5	580	1650	700	1170
ZKG36G	4BT3.9-G2	36	45	32	40	8	640	1700	700	1170
ZKG50G	4BTA3.9-G2	50	63	45	56	13	750	1750	730	1190
ZKG75G	6BT5.9-G2	75	94	68	85	17	900	2150	730	1180
ZKG90G	6BT5.9-G2	90	113	80	100	20	950	2150	730	1180
ZKG100G	6BTA5.9-G2	100	125	90	113	23	1050	2250	790	1220
ZKG120G	6BTAA5.9-G2	120	150	110	137	26	1050	2300	790	1220
ZKG160G	6CTA8.3-G2	160	200	140	175	36	1500	2350	840	1390
ZKG180G	6CTAA8.3-G2	180	225	160	200	41	1550	2400	950	1420
ZKG200G	6LTAA8.9-G2	200	250	180	225	41	1530	2500	950	1520
ZKG220G	NT855-GA	220	275	200	250	41	2350	2900	1000	1750
ZKG200G	NT855-G	200	250	180	225	46	2350	2800	1000	1750
ZKG220G	6LTAA8.9-G2	220	275	200	250	52	1640	2500	950	1520
ZKG220G	MTA11-G2	220	275	200	250	52	2700	2700	1000	1610
ZKG280G	MTAA11-G3	280	350	250	313	61	2150	2800	1120	1610
ZKG280G	NTA855-G1A	280	350	250	313	61	2450	2900	1000	1750
ZKG280G	NTA855-G2	280	350	250	313	61	2500	2900	1000	1750
ZKG315G	NTA855-G4	315	394	280	350	68	2570	2900	1000	1750
ZKG315G	NTA855-G2A	315	394	280	350	68	2570	2900	1000	1750
ZKG330G	NTAA855-G7	330	413	300	375	73	2660	3500	1120	1750
ZKG330G	KTA19-G2	330	413	300	375	73	3340	3200	1250	2000
ZKG360G	NTAA855-G7A	360	450	–	–	80	2660	3100	1120	1750
ZKG400G	KTA19-G3	400	500	360	450	85	3400	3200	1250	2000
ZKG450G	KTA19-G4	450	563	400	500	98	3450	3200	1250	2000
ZKG550G	KTAA19-G5	505	631	450	563	110	3700	3400	1550	2100
ZKG550G	KTA1A9-G6A	550	688	–	–	122	3770	3400	1550	2100
ZKG560G	KT38-G	560	688	500	625	122	5730	3800	1810	2470
ZKG660G	KTA38-G2	660	838	600	750	147	6150	4200	1810	2470
ZKG800G	KTA38-G2A	800	1000	730	913	178	6500	4200	1810	2470
ZKG880G	KTA38-G5	880	1100	800	1000	176	6780	4450	1810	2310
ZKG1000G	KTA38-G9	1000	1250	–	–	220	7820	4500	2100	2350
ZKG1100G	KTA50-G3	1100	1375	1000	1250	245	8750	5100	2150	2460
ZKG1320G	KTA50-G8	1320	1625	1100	1375	294	10200	5250	2250	2580
ZKG1320G	KTA50-GS8	1320	1650	1200	1500	345	12500	5350	2050	2470
ZKG1650G	QSK60-G3	1650	2063	1500	1875	414	17000	6350	2150	2750
ZKG1778G	QSK60-G4	1778	2223	1677	2096	437	18000	6400	2150	2750
ZKG1800G	QSK60-G11	1800	2250	1600	2000	472	18800	6500	2250	3050
ZKG2000G	QSK60-G13	2000	2500	1600	2000	523	20800	6500	2250	3050

备注：

发电机正常使用环境温度不超过40℃，海拔不超过1525米。

常用功率：指变动负载工况下的连续运行功率，每12小时允许1小时超载10%。

备用功率：指备用电源的瞬时最大功率在备用功率下使用，发动机无超负荷能力。

随着产品的不断更新和完善，以上内容可能会有变动，详细内容请参阅最新技术资料。

NOTE:

The normal working ambient temperature of the generator is not greater than 40℃ and altitude is not greater than 1525m.

Prime power: The continuously working power under variable loading condition, overloading by 10% allowable for one hour in every 12 hours.

Standby power: The instantaneous maximum power are used under stand-by power at present the engine has no overloading cap ability.

The above contents may change with continuous updating and consummation of products. Detailed contents can be found in the latest technical data.

陆用发电机组

ZKGAS

中科广能船用柴油发电机组

中科广能船用系列发电机租，机组选用康明斯公司制造的柴油机及马拉松公司生产的交流发电机，功率覆盖：24 kW——2000kW。广泛运用于船舶、石油钻井平台、工作船等。本公司生产的产品经CCS型式认可，并可通过BV、ABS等船级社认证。

ZKG ENERGY MARINE DIESEL GENSET

ZKG marine genset series use diesel engines manufactured by Cummins Company and AC generators manufactured by Marathon with power coverage of 24kW -2000kW. They find wide application in ships, oil drilling rigs, working ships and so forth. The products manufactured by our company are CCS certified and approved by classification societies such as BV and ABS.

中科广能船用发电机组（标准配置）

ZKG ENERGY MARINE GENSETS (STANDARD DISPLACEMENT)

发电机组型号	柴油机型号	备用功率		常用功率		燃油消耗	机组净重	机组外形尺寸		
Generator Set Models	Diesel Engine Models	Standby power		Prime power		Fuel consumption	Net weight Genset	Dimension,Genset		
		kW	kVA	kW	kVA	L/h	kg	长(mm) length	宽(mm) wide	高(mm) high
ZKG40M	4BTA3.9-D(M)	44	56	40	50	10	1540	1700	800	1200
ZKG70M	6BT5.9-D(M)	77	96	70	88	18	1600	1700	800	1200
ZKG100M	6CT8.3-D(M)	110	138	100	125	26	1800	2310	820	1300
ZKG140M	6CTA8.3-D(M)	154	188	140	175	36	2000	2310	820	1300
ZKG200M	NTA855-D(M)	220	275	200	250	52	2500	2790	890	1777
ZKG250M	NTA855-D(M)	275	350	250	313	61	2580	2790	890	1777
ZKG300M	KTA19-D(M)	330	413	300	375	73	3300	3100	1266	1830
ZKG350M	KTA19-D(M)	385	481	350	438	85	3400	3100	1266	1830
ZKG400M	KTA19-D(M)	440	550	400	500	98	3700	3100	1266	1830
ZKG500M	KT38-D(M)	550	688	500	625	122	6600	4000	1850	2100
ZKG600M	KTA38-D(M)	660	826	600	750	147	7250	4100	1850	2100
ZKG800M	KTA38-D(M)	880	1100	800	1000	196	8300	4600	1950	2450

中科广能特种电源发电机组

可生产静音型发电机组，车载式应急电站，防雨型发电机组，拖车式移动电站等产品。

ZKG ENERGY SPECIAL POWER SUPPLY CENSET
We can produce silencing genset, emergency mobile power stations, waterproof genset, tow mobile power stations and so forth.

中科广能静音型发电机组（标准配置）

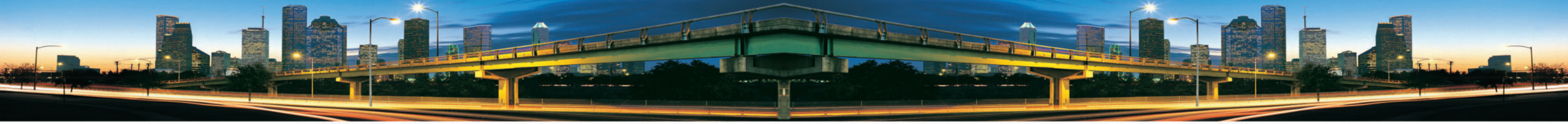
ZKG ENERGY SILENCING GENSET (STANDARD DISPOSITION)

发电机组型号 Generator Set Models	柴油机型号 Diesel Engine Models	备用功率 Standby power		常用功率 Prime power		燃油消耗 Fuel consumption	机组净重 Net weight Genset	机组外形尺寸 Dimension,Genset		
		kW	kVA	kW	kVA	L/h	kg	长(mm) length	宽(mm) wide	高(mm) high
ZKG36GS	4BT3.9-G2	36	45	30	38	8	1300	2140	950	1370
ZKG50GS	4BTA3.9-G2	50	63	45	56	12	1420	2140	950	1370
ZKG75GS	6BT5.9-G2	75	94	68	85	17	1650	2690	950	1370
ZKG90GS	6BT5.9-G2	90	106	77	96	20	1700	2690	950	1370
ZKG100GS	6BTA5.9-G2	100	125	90	113	23	1753	2690	950	1370
ZKG120GS	6BTAA5.9-G2	120	150	100	125	26	1800	3000	1140	1500
ZKG160GS	6CTA8.3-G2	160	200	140	175	36	1854	3000	1140	1500
ZKG200GS	NT855-GA	200	250	180	225	41	1900	3980	1500	1750
ZKG280GS	NTA855-G1A	280	350	250	313	61	3150	3900	1500	1750
ZKG315GS	NTA855-G4	315	394	280	350	68	4620	3900	1500	1750
ZKG440GS	KTA19-G4	440	550	400	500	98	4980	4250	1700	2000
ZKG550GS	KTA19-G6A	550	688	500	625	122	5500	4750	200	2150
ZKG800GS	KTA38-G2A	800	1000	730	913	178	9800	5820	2800	2750

中科广能防雨型发电机组（标准配置）

ZKG ENERGY WATER PROOF GENSET (STANDARD DISPOSITION)

发电机组型号 Generator Set Models	柴油机型号 Diesel Engine Models	备用功率 Standby power		常用功率 Prime power		燃油消耗 Fuel consumption	机组净重 Net weight Genset	机组外形尺寸 Dimension,Genset		
		kW	kVA	kW	kVA	L/h	kg	长(mm) length	宽(mm) wide	高(mm) high
ZKG36GF	4BT3.9-G2	36	45	30	38	8	1300	2100	940	1300
ZKG50GF	4BTA3.9-G2	50	63	45	56	12	1420	2100	940	1300
ZKG75GF	6BT5.9-G2	75	94	68	85	17	1650	2350	940	1300
ZKG90GF	6BT5.9-G2	90	106	77	96	20	1700	2350	940	1300
ZKG100GF	6BTA5.9-G2	100	125	90	113	23	1753	2350	940	1300
ZKG120GF	6BTAA5.9-G2	120	150	100	125	26	1800	2700	940	1500
ZKG160GF	6CTA8.3-G2	160	200	140	175	36	1854	2700	1140	1500
ZKG200GF	NT855-GA	200	250	180	225	41	1900	3300	1300	1750
ZKG280GF	NTA855-G1A	280	350	250	313	61	3150	3300	1300	1750
ZKG315GF	NTA855-G4	315	394	280	350	68	4620	3300	1300	1750
ZKG440GF	KTA19-G4	440	550	400	500	98	1986	3350	1500	1900
ZKG550GF	KTA19-G6A	550	688	500	625	122	5500	4750	2000	2350
ZKG800GF	KTA38-G2A	800	1000	730	913	178	9800	4300	2000	2250



中科广能移动拖车发电机组（标准配置）

ZKG ENERGY TOW MOBILE GENSET (STANDARD DISPOSITION)

发电机组型号 Generator Set Models	柴油机型号 Diesel Engine Models	备用功率 Standby power		常用功率 Prime power		燃油消耗 Fuel consumption	机组净重 Net weight Genset	机组外形尺寸 Dimension,Genset		
		kW	kVA	kW	kVA	L/h	kg	长(mm) length	宽(mm) wide	高(mm) high
LYC50GT	4BTA 3.9-G2	50	63	45	56	12	2000	2500	950	1900
LYC75GT	6BT5.9-G2	75	94	68	85	17	2200	3000	1050	2250
LYC100GT	6BT5.9-G2	100	125	90	113	23	2450	3000	1080	2250
LYC115GT	6BTAA5.9-G2	115	144	105	131	26	2500	3000	1080	2250
LYC165GT	6CTAA8.3-G2	165	207	140	175	36	2600	3000	1080	2250
LYC220GT	MTA11-G2A	220	275	200	250	52	3100	3300	1200	2450
LYC280GT	NTA855-G1A	280	350	250	313	61	4000	3300	1200	2600
LYC315GT	NTA855-G4	315	394	280	350	68	5230	3350	1200	2650
LYC440GT	KTA19-G4	440	550	400	500	98	6000	3650	1300	2850
LYC550GT	KTA19-G6A	550	688	500	625	122	6500	3650	1300	2900

智能化自动柴油水泵机组

INTELLIGENT AUTOMATIC DIESEL ENGINE DRIVEN WATER PUMP UNITS

中科广能水泵机组（标准配置）

ZKG ENERGY WATER PUNP UNITS (STANDARD DISPOSITION)

发电机组型号 Generator Set Models	柴油机型号 Diesel Engine Models	备用功率 Standby power		常用功率 Prime power		燃油消耗率 SFC	机组净重 Net weight Genset	机组外形尺寸 Dimension,Genset		
		kW	RPM	kW	RPM	g/kw/h	kg	长(mm) length	宽(mm) wide	高(mm) high
LYC36P	4BT3.9-G2	36	1800	30	1800	8	1120	1900	250	1163
LYC100P	6BTA5.9-G2	100	1800	90	1800	23	1500	2320	830	1270
LYC220P	6LTA8.9-G2	200	1800	180	1800	46	1800	3300	1200	2500
LYC200P	NT855-P	200	1800	180	1800	46	2200	3150	990	1780
LYC300P	KTA19-P	330	1800	300	1800	73	3000	3400	1200	1900
LYC550P	KTA19-P	550	1800	500	1800	122	3460	3720	1450	1890
LYC800P	KTA38-P	800	1800	730	1800	178	4500	4580	1670	2200

中科广能发电机组可选颜色

OPTIONAL COLORS FOR LONGYER GENSET

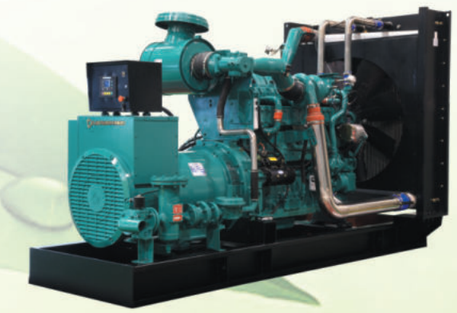
颜色名称：Color name:	大红	驼灰	中黄	艳绿	酞菁海蓝
颜色编号：Color No.:	011	089	020	068	044

中科广能天然气发电机组

天然气发电机组以清洁、廉价的可燃性气体为能源，其运行成本低、排放污染小，在如今全球提倡环保、节能的大环境下，天然气发电机组的大规模使用成为了一种趋势。我公司的天然气发电机组是以当今最前沿的燃气技术为基础，结合公司技术人员的智慧研制开发而成，代表了行业内的领先水平。

LONGYER NATURAL GAS GEN-SETS

Natural gas gen-sets use clean, low price and combustible gas as fuel, have lower operation cost, lower pollution, beneficial to environment protection and economy on power source. So use natural gas as engine fuel of the gen-set is a tendency.The natural gas gen-sets manufactured by Longyer Company are based advantage technique and combine the intelligence of technical staff and represent the leading level in the gen-set trade.



机组特点

- 采用了稀薄燃烧技术，即加大空燃比，使过量的空气与天然气混合燃烧，提高了发动机的经济性和使用可靠性，降低了排气温度。
- 采用先进的霍尔点火传感器和高能点火系统，使点火更可靠，启动更容易。
- 采用文氏混合器，对天燃气进气压力要求极低，一般的天燃气供气压力均可满足要求。
- 根据天然气发动机的特点优化了配气系统和燃烧室结构，燃烧经济性更高。
- 关键零部件选用进口产品，机组运行更可靠，维护成本低。
- 由于以气体为燃料，减少了积碳，从而减少了缸套及活塞的磨损，使发动机寿命更长。

Gen-set Characteristics

Use rare combustion technique, higher air and fuel ratio, make the mixed gas completely to burn. So it raises the economy and reliability of the engine and reduces exhaust gas temperature of the engine.
Use excellent sensors and high performance spark system, make the ignition of natural gas more reliable and engine starting easy.
Using air/gas ratio control GIK can offer suitable gas pressure. General city pipe gas pressure can easily meet the combustion requirement of the engine.
Based on characteristics requirement of the natural gas engine, the combustion chamber and intake and exhaust time of the engine have been improved. So engine operation cost gets better.
Using natural gas as fuel reduces carbon deposit in the cylinders and reduces the wear between cylinder liners, pistons and piston rings, makes the engine life-span much longer.

中科广能天然气发电机组参数

ZKG ENERGY PARAMETERS OF THE NATURAL GAS ENGINE

	ZKG220G	ZKG300G	ZKG600G	ZKG800G
常用功率 Prime Power(kW)	200	280	550	720
备用功率 Standby Power(kW)	220	300	600	800
额定电压 Rated Voltage(V)	400	400	400	400
额定频率 Frequency (Hz)	50	50	50	50
天然气消耗 Gas Consurmption of natural gas	0.3 m3/kWh	0.3 m3/kWh	0.3 m3/kWh	0.3 m3/kWh
缸数排列 Cylinder quantity/arrangement	直列六缸 6 in line	直列六缸 6 in line	V型12缸 12 V	V型16缸 16 V
缸径×冲程 Bore and stroke	140 × 152mm	159 × 159mm	159 × 159mm	159 × 159
排量 Displacement	14L	19L	38L	50L
压缩比 Comprseeion ratio	10:1	10:1	10:1	10:1
进气方式 Intake air	增压、中冷 Boost and after-cooler	增压、中冷 Boost and after-cooler	增压、中冷 Boost and after-cooler	增压、中冷 Boost and after-cooler
冷却方式 Cooling mode	闭式水冷 Closed Water circulation	闭式水冷 Closed Water circulation	闭式水冷 Closed Water circulation	闭式水冷 Closed Water circulation
外形尺寸 Dimension（L×W×H）	3000 × 1150 × 1750	3300 × 1550 × 2100	4800 × 1900 × 2560	5500 × 2300 × 2600
机组重量 Dry weight of gen-set	2700kg	3650kg	6800kg	11000kg

中科广能混合燃料发电机组

混合燃料发电机组是以柴油和天然气混合作为燃料的发电机组，与天然气发电机组相比，取消了点火系统，依靠柴油压燃，结构更简单；与柴油发电机组相比，由于采用油、气混合燃烧，具备了天然气发电机组经济性高、污染小的特点。还可以比较简单的实现现有柴油发电机组燃气化的改造。

LONGYER DUEL FUEL GEN-SETS

Duel fuel gen-sets are special gen-sets, the engine uses diesel full and natural gas as fuel. Comparing with natural gas engine, no need spark system, just relying on burning fuel to fire the mixed gas, simple construction; comparing with diesel fuel engine, has competitive economy and lower pollution, is suitable to innovation for existing diesel gen-set engines.

中科广能高压发电机组

高压发电机组是一种直接输出3300～13800V高压电的柴油发电机组。与普通柴油发电机组相比，在同等功率的情况下，通过提高输出电压，降低了输出电流。高压发电机组具有大容量、远距离输电、机房集中建设、可靠性强、配套配电系统简单等优点。是大型柴油发电站选型应用的趋势。

- 高压发电机组用作高压供电系统的备用电源时，因为发电机组输出电压与原供电系统电压一致，可直接接入供电系统，省去了升压配电设备的投资。
- 由于输出电流低，在动力传输过程中功率损失小，更适合远距离传输，便于集中建设机房，向各个分散的负载点供电。
- 由于输出电流低，在多台机组并联运行时，更加安全可靠。
- 我公司生产的高压发电机组，选用马拉松、英格等著名品牌的高压发电机，性能安全可靠。

LONGYER HIGH VOLTAGE ENGINE

High voltage engine is a power supply equipment output 3300V-13800V voltage power directly. Comparing with general gen-set, under the same power, lower the delivery current. High voltage gen-sets have the special such advantage as high capacity, long distance electricity transmission, centralized equipment room construction, high reliability, simple matching and distribution of electronic systems and so on.

When use high voltage gen-set as a standby power, because of the same output voltage as main power system, it can be directly connected to the main power supply system, save investment cost of equipments required in voltage raising system.
Because of low output current, power loss is reduced during electricity transmission. It is better suits to long distance transmission of electricity, easier to centralize equipment room and load distribution for different locations.
Because of low current output, during synchronization operation condition of many gen-sets, it can be more safe and reliable.
The high voltage gen-sets manufactured by Longyer Company use high voltage generators supplied by Shanghai marathon and Wuxi Stamford, that have good performance and reliability.

ZKGAS

中科广能发电机组控制系统

ZKG ENERGY GENSET CONTROL SYSTEM

ZKG641CC 型智能自启动控制系统

ZKG641CC Self-Startup control system

ZKG641CC型控制器集成了数字化、智能化、网络化等技术，以微处理器为核心，系统采用大屏幕，具有中英文菜单选择,LCD显示面板及LED指示灯，使用户在操作过程中时刻能得到系统的支持，操作非常简便。

显示功能：LCD显示发电机输出的三相电压、电流、频率及发动机转速、油压、水温、直流电源电压和运行时间。

保护功能：发动机超速报警停机，低油压、高水温报警停机，启动失败，紧急停机，充电机故障报警。

报警功能：系统具有报警和自诊断功能，并采用面板内独特的“报警点亮”LED显示技术，仅在发电机组出现故障时，LED点亮简单易懂的“报警图形”便于操作者找出故障。

通讯功能：可选配RS485或RS232通讯口，实现远程监控，或与PC通讯，完全实现遥信、遥测、遥控功能，可读出和设置控制器的运行参数。

ZKG641CC controllers integrate digital, intellectual networking and other techniques. They are microprocessor-cored with large screen for system, English menu, LCD display panel and LED indicator lamps. Users are offered systematic support at any time during operation. The operation is very simple.
Display function: LCD displays the generator output, including three-phase voltage, current, frequency, engine speed, oil pressure, water temperature, DC power supply voltage and running time.
Protection function: Alarm and shutdown for over-speed of engine, low oil pressure, high water temperature alarm and shutdown, start failure, emergency shutdown, and charger malfunction alarm.
Alarm function: The system has alarm and self-diagnosis functions. It uses special panel“alarm light-up” LED indication technique; LED only lights up simple and understandable “alarm picture”when the genset malfunctions to facilitate operators to find out the malfunction.
Communication function: Provision with RS485 or RS232 communication port can realize remote monitor or communication with PC can fully realize remote signaling, telemetry, remote control and read out and set running parameter of controller.

计算机直接连线控制（示意图）
Computer direct on-line control(schematic drawing)

ZKG5110型自启动控制系统

ZKG5110 Self-Startup Control System

ZKG5110型控制器，采用高性能的计算机芯片，可修改发电机组的控制程序和保护参数，它集测量、控制、保护、自启动等众多功能为一体。

显示功能：LCD显示发电机输出的三相电压、电流、频率及发动机转速、油压、水温、直流电源电压和运行时间。

保护功能：发动机超速报警停机，低油压、高水温报警停机，启动失败，紧急停机，充电机故障报警。

报警功能：系统具有报警和系统自诊断功能，并采用面板内“报警点亮”LED显示技术，仅在发电机组出现故障时，LED点亮简单易懂的“报警图形”便于操作者找出故障。

ZKG5110 controllers use high performance computer chips. They can modify control program and protection parameters of the generator. They integrate measurement, control, protection, auto- start and other functions.
Display function: LCD displays the generator output, including three-phase voltage, current, frequency, engine speed, oil pressure, water temperature, DC power sourie voltage and running time.
Protection function: Alarm and shutdown for over-speed of engine, low oil pressure, high water temperature alarm and shutdown, start failure, emergency shutdown, charger malfunction alarm.
Alarm function: The system has alarm and self-diagnosis functions. It uses panel“alarm light-up” LED indication technique; LED only lights up simple and understandable “larm picture” when the genset malfunctions to facilitate operators to find out the malfunction.

ZKG501型控制系统

ZKG501 Control System

ZKG501型控制系统，适用于单台柴油发电机组控制及检测，控制箱采用直感表显示，钥匙开关启动。该系统便于操作者更直观的观察机组运行状况，操作简单，运行可靠。

ZKG501 control system is applicable to control and inspection of single diesel genset. Control box is provided with analog meter for display and started by key switch. This system provides more visual observation of running status of the unit with easy operation and reliable running.

基本配置	Basic configuration:
一个交流电流表	One AC ammeter
一个电流选择开关	One current selection switch
一个交流电压表	One AC voltmeter
一个相位选择开关	One phase selection switch
一个频率表	One cymometer
一个计时器	One timer
一个蓄电池电压表	One alternator voltmeter
一个机油油压表	One machine oil manometer
一个水温表	One water thermometer
操作控制器	Operation controller

保护功能：发电机超速报警停机，低油压、高水温报警停机，启动失败紧急停机，充电故障报警等功能。

Protection function: Alarm and shutdown for over-speed of generator, low oil pressure, high water temperature alarm and shutdown, start failure, emergency shutdown, charging malfunction alarm and other functions

中科广能并联控制系统

ZKG ENERGY SYNCHRONOUS CONTROL SYSTEM

并联方式

- 手 动 并 联：采用手动并联，手动解列。
- 半自动并联：自动并联，手动分配负载，手动解列。
- 全自动并联：自动并联，自动分配负载，自动解列，自动起停机。

Synchronization

Manual synchronization : the use of manual synchronization disconnection.
Semi automatic synchronization: automatic synchronization, manually assigned load, manual disconnection.
Automatic synchronization: automatic synchronization, automatic load distribution, automatic disconnection, automatic shutdown.

性能特点

- 中科广能柴油发电机组并联柜主要并联元器件采用进口/国产知名品牌元件
- 适用于两台或两台以上不同功率或相同功率的柴油发机组并联组成备用电站。
- 全自动并联柜具有结构简单，可避免误操作，可靠性高等优点。
- 并联柜具有自动分配负载、均衡运行时间、集中控制等功能，满足用户不同的需求。
- 并联柜有开放的通讯接口，支持RS232C、CAN总线及MODUS通讯协议。

Performance characteristics

ZKG Energy diesel generator synchronization cabinet mainly synchronous components imported/domestic brand element.
Applied to two or more than two different power or the same power diesel generators to be compo sed into a standby power station.
Automatic parallel cabinet has the advantages of simple structure, can avoid the error operation, high reliability.
Synchronization cabinet with automatic load distribution, equilibrium running time, centralized control and other functions, to meet the needs of different users.
Synchronization cabinet having open communication interface, support RS232C, CAN bus and MODUS communication protocol.

ZKGAS

中科广能电源自动切换柜（ATS柜）

ZKG ENERGY AUTOMATIC TRANSFER SWITCHES（ATS）

双电源自动切换柜（简称ATS柜）主要用于主电源和应急电源之间的自动切换，它与自起动柴油发电机组一起组成了自动应急供电系统，可以在主电源停电后将应急照明、保安电源、消防设备等负载切换到发电机组上，是医院、银行、电信、机场、电台、宾馆及工厂企业等应急供电系统中不可缺少的电力设施。

性能特点

- 中科广能ATS柜选用进口/国产知名品牌元件，采用标准GGD柜体，品质优良，性能可靠。
- 切换柜具备I-0-II三个位置，便于电路检修。
- 切换柜具备三重互锁安全结构，使用更安全可靠，可带载切换，备有旋转式手柄，提供快捷手动操作。

Automatic transfer switches (ATS) of two different powers is mainly used to switch over between main and emergency power. It is combined with auto-start gen-set system and consisted into an automatic emergency power supply system, the emergent light, safe-guarding, fire equipments and so on load can be automatically connected to the gen-set, when the main power supply interrupted or electricity supply quality can not meet the loading requirement. That is a essential emergency power supply equipment for hospitals, banks, telecommunication, airports, broadcasting stations, hotels, plants and enterprises and so on.

Performance characteristics:

ZKG Energy ATS cabinets choose imported parts and components as their element,use standard GGD cabinet box,have excellent quality and reliable performance.
The transfer switches cabinets have I-O-II three locations, convenient for circuit inspection and equipment repair.
The transfer switches cabinets have 3 sets of interlock safety equipments, convenient for safe, switching under load; rotary handle is convenient for quick manual operation.

ZKGAS