

60Hz/1800 r.p.m-P.F.0.8					Prime Power	Standby Power	Rated Current
GenSet	Engine	Alternator	PH	PH	KW/KVA	KW/KVA	Amps
FC30X-C	4B3.9-G1	LSA42.3S5 PI144K TPA224S1	240 (220-240)	1	24/30	26/33	125.0
		LSA42.3VS2 PI144E TPA184M8	380/220	3	24/30	26/33	45.6
		LSA42.3VS1 PI144F TPA184M7	416/240	3	24/30	26/33	41.6
		LSA42.3VS1 LSAP 42C PI144E TPA184M7	440-460	3	24/30	26/33	39.4 (440V) 37.6 (460V)
		LSA42.3VS1 LSAP 42C PI144E TPA184M6	480/277	3	24/30	26/33	36.1

**Ratings:** All three Phase generator sets are rated at 0.8 power factor. All single-phase generator sets are rated at 0.8 or 1.0 power factor. POWERGEN reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

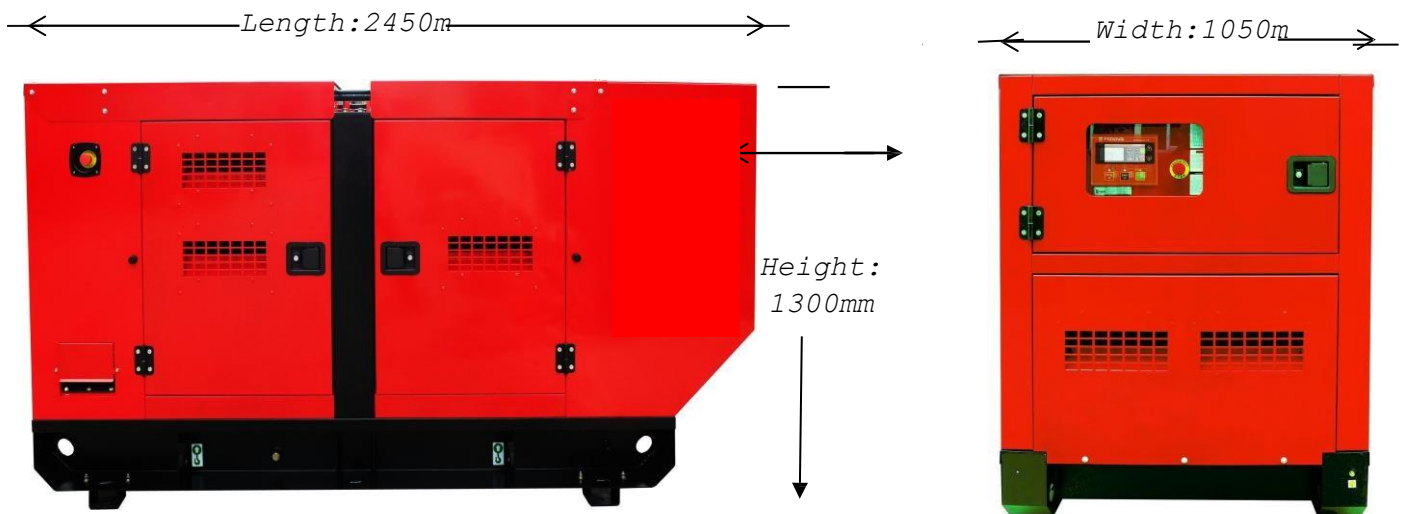
**Prime Power:**

Available continuously at variable load in lieu of commercially purchased power for an unlimited number of hours per year in accordance with ISO8528-1, and an overload of 10% permitted for one hour in every twelve hours of operation in accordance with ISO 3046-1.

**Standby Power:**

Emergency Standby Power in variable load applications in accordance with ISO8528-1 in the event of a utility power failure. No overload available for this service as relevant alternators are peak continuous rated at 27°C.

**Overall Dimensions (mm) & Weight (kg)**



**Weight (kg) : 1100**

## Standard and optional accessories



System	Standard	Optional
<b>Air Intake System</b>	<ul style="list-style-type: none"> <li>● Standard air filter</li> <li>● Air filter overload alarm</li> </ul>	<ul style="list-style-type: none"> <li>○ Air prefilter</li> <li>○ Heavy air filter</li> </ul>
<b>Cooling System</b>	<ul style="list-style-type: none"> <li>● 50°C radiator</li> <li>● Low water level alarm</li> </ul>	<ul style="list-style-type: none"> <li>○ Antifreeze</li> <li>○ Water jacket heater</li> </ul>
<b>Exhaust System</b>	<ul style="list-style-type: none"> <li>● Discharge valve</li> <li>● Stainless steel bellow</li> <li>● Residential silencer</li> <li>● Complete exhaust pipe</li> </ul>	<ul style="list-style-type: none"> <li>○ Stainless steel silencer</li> <li>○ Stainless steel exhaust pipe</li> </ul>
<b>Fuel System</b>	<ul style="list-style-type: none"> <li>● Rain cap</li> <li>● 8 Hours integrated base fuel tank</li> <li>● Standard fuel filter</li> <li>● Fuel level gauge</li> </ul>	<ul style="list-style-type: none"> <li>○ 6 Hours double wall base fuel tank</li> <li>○ Fuel-water separator</li> <li>○ Oil level sensor ① ②</li> </ul>
<b>Lubrication System</b>	<ul style="list-style-type: none"> <li>● Fuel filling cap</li> <li>● Fuel hose</li> <li>● Standard oil filter</li> <li>● Manual oil pump and drain</li> </ul>	<ul style="list-style-type: none"> <li>○ Automatic fuel top up system ①</li> <li>○ Oil heater</li> <li>○ Lube oil level indicator</li> </ul>
<b>Alternator and Electric Switch</b>	<ul style="list-style-type: none"> <li>● Shunt or self excited</li> <li>● Class H insulation</li> <li>● H class temperature rise</li> <li>● DELIXI MCCB</li> <li>● Terminal connection lugs (L1, L2, L3, LN)</li> </ul>	<ul style="list-style-type: none"> <li>○ Oil temperature indicator ①</li> <li>○ PMG or AREP (Leroy-somer only)</li> <li>○ Alternator space heaters</li> <li>○ PT100 winding temperature sensors</li> <li>○ Weaver AVR</li> <li>○ Weaver prolapse transformer</li> <li>○ F class temperature rise</li> <li>○ 4 Pole circuit breaker with leakage protection</li> <li>○ Circuit breaker - 4 pole</li> <li>○ ABB MCCB</li> </ul>
<b>Control System</b>	<ul style="list-style-type: none"> <li>● Intelligent 1.0 for 4 cylinders engine</li> <li>● Intelligent 3.0 for 6 cylinders engine</li> </ul>	<ul style="list-style-type: none"> <li>○ MCCB auxiliary contact and shunt tripping device</li> <li>○ Panel lighting</li> </ul>
<b>Silent / Base</b>	<ul style="list-style-type: none"> <li>● Intelligent 5.0 for ECU engine</li> <li>● 67-72 db(A) @ 3 meters</li> <li>● 4mm -6mm Steel base</li> <li>● Transportation support leg</li> <li>● Single hook</li> <li>● Power coating enclosure</li> <li>● Anti-vibration mounting between engine /alternator and baseframe</li> <li>● Emergency stop mounted outside the</li> </ul>	<ul style="list-style-type: none"> <li>○ Forklift holes</li> <li>○ Enclosure color:</li> <li>○ Trailer for off road or on road</li> </ul>
<b>Start / Charge</b>	<ul style="list-style-type: none"> <li>● Standard color: Ral 302</li> <li>● Battery with bracket and cables</li> <li>● Engine battery charger</li> <li>● 3A Mains charger</li> </ul>	<ul style="list-style-type: none"> <li>○ Low temperature starting batteries</li> <li>○ Battery switch</li> <li>○ High current charger (10A, 20A)</li> </ul>

**Remark:**

① When you need the automatic oil top up system, you have to use the electrical oil level sensor.

② You can choose either electrical oil level sensor or oil temperature sensor.

# Engine

## Engine specifications

Manufacture	DCEC Cummins
Engine model	4B3.9-G1
Engine type	4 cycle, in-line
Engine speed	1800 r.p.m
Prime power	30kW/40hp
Standby power	33kW/44hp
Governor type	Electronic
Governor make / model	BYC A
Aspiration:	Naturally Aspirated
Displacement	3.9 L
Bore * Stroke	102mm x 120mm
NO. of cylinders	4
Compression ratio	18.0:1
Engine idle speed	950-1050 rpm
Piston speed	7.2 m/s
Air cleaner type	Dry

## Exhaust System

Maximum back pressure	10 kPa
Exhaust pipe size normally acceptable	75 mm
Exhaust gas temperature	326-352 °C
Exhaust gas flow	78.5 Litres/sec.

## Air Intake System

Maximum intake air restriction with heavy duty air cleaner	
- Dirty element	6 kPa
- Clean element	4 kPa
Recommended intake piping size	76 mm
Intake air flow	43 Litres/sec.

## Lubrication System

Oil capacity (high - low)	9.5 - 8.5 Litre
Maximum oil temperature	121°C
Minimum required lube system capacity	
- Sump plus filters	10.9 Litres

## Fuel System

Type injection system	BYC A Direct Injection
Total drain flow (constant for all loads)	30 Litres/hour Fuel
consumption at 100% standby power	9.4 Litres/hour Fuel
consumption at 100% prime power	8.6 Litres/hour Fuel
consumption at 75% prime power	6.8 Litres/hour Fuel
consumption at 50% prime power	5.0 Litres/hour Fuel
consumption at 25% prime power	3.6 Litres/hour Fuel
Fuel tank capacity	8-12 hours

## Cooling System

Coolant capacity - engine only	7.2 Litre
Standard thermostat (modulating) range	83 - 95°C
Maximum top tank temperature	
- Standby power	110 °C
- Prime power	104 °C

## Electric System

Electrical system voltage	24V
Battery	Maintenance-free
Connecting cables	Available

## Thermal Data

Radiated heat to ambient	To be decided
Heat rejection to coolant	32-35 kW
Heat rejection to exhaust	To be decided

## Alternator

### General Data

Power factor	Cos φ = 0.8
Excitation	Shunt / Brushless

### Ratings

Brand	Alternator	Number of wires	AVR Model	PH	Voltage (V)	kW/kVA	kW/kVA
Leroy-somer	LSA42.3S5	12	R220			25/31.3	27.5/34.4
Stamford	PI144K	12	AS480	1	240	24/30	26.4/33
Tide	TPA224S1	12	SX460		(220-240)		
Leroy-somer	LSA42.3VS2	12	R220			23.7/29.9	26/32.5
Stamford	PI144E	12	AS480	3	380/220	24/30	26.2/32.7
Tide	TPA184M8	12	SX460			24/30	27/34
Leroy-somer	LSA42.3VS1	12	R220			25/31.3	27.5/34.4
Stamford	PI144F	12	AS480	3	416/240	24.2/30.3	26.6/33.3
Tide	TPA184M7	12	SX460			24/30	26/32.5
Leroy-somer	LSA42.3VS1	12	R220			25.2/31.5	27.7/34.7
Leroy-somer	LSAP 42C	6	R201	3	440-460	23.3/29	25/31.5
Stamford	PI144E	12	AS480			23.5/29.4	25.8/32.3
Tide	TPA184M7	12	SX460			25/31	26.8/33.5
Leroy-somer	LSA42.3VS1	12	R220			25.2/31.5	27.7/34.7
Leroy-somer	LSAP 42C	6	R201	3	480/277	24/30	28/35
Stamford	PI144E	12	AS480			25/31.3	27.5/34.4
Tide	TPA184M6	12	SX460			26/32.5	27.8/35

60Hz/1800R.P.M

Insulation class

H

Bearing

Single

Altitude

≤ 1000 m

Prime Power Standby Power



Intelligent  
1.0



Intelligent  
3.0



Intelligent  
5.0

Viewable parameters	Phase voltage	3	3	3
	Wire voltage	3	3	3
	Current	Instrument	3	3
	Frequency	●	●	●
	Active power	×	●	●
	Reactive power	×	●	●
	Apparent power	×	●	●
	Power factor	×	●	●
	Electric energy metering	×	×	●
Generator protection	Abnormal voltage	●	●	●
	Over-current warning	×	●	● Over
	current protection	×	●	● Over
	Frequency protection	●	●	● Short
	circuit protection	MCCB	MCCB+○	MCCB+○
Engine figure	Oil pressure	●	●	●
	Water temperature	●	●	●
	Fuel level	○	○	○
	Speed	●	●	●
	Battery voltage	●	●	●
	Elapsed time	●	●	● Low
Engine protection	oil pressure warning	●	●	● Low oil
	pressure protection	●	●	● High
	temperature warning	●	●	●
	High temperature protection	●	●	●
	Overspeed warning	●	●	●
	Overspeed protection	●	●	●
	Charge fault	●	●	●
Function	Remote start-stop	●	●	●
	AMF	●	●	●
	Programmable input	3	7	7
	Programmable output	6	7	7
	Port extension	USB	○	○
	Remote monitoring	×	○	○
	Communication port	×	○	○ CAN
	● ○ ● Start/Stop time control			×
	× ● Maintenance tips		×	×
	● Fault record	×	×	●
	Multi-language function	×	●	●
<b>Remark:</b>	● Standard	○ Optional	×	

# Automatic Transfer Switch

A.T.S - 4 Poles

## (Safety Installation: Detect - Control – Switch System)

POWERGEN offers not only a changeover switch but also an integrated mains detection and switch system for your 24 Hour Power Protection. The system enables automatic start-up and operation of the generating set in the event of a mains power failure, overvoltage or loss of phase; and also mains automatic re-transfer once it come back. The system has a wide application such as hospital, bank, telecom, air port, broadcasting station and hotels.

### System Advantages

- Automatically transfer and re-transfer load from main power to gen-power without operator intervention.operation. (Both automatic and manual)
- ATS Controller (AMF function), seamless integration with Intelligent 5.0
- Available from 32 – 3200A, better protection for 4 pole switch.
- Available in standard, bypass isolation and service-entrance configurations.
- Configurable in open, closed and programmed transition operating modes.
- Designed to interface seamlessly with TIDE POWER generators and switchgear.
- Drip Proof IP23 Enclosure.
- Easy Installation: Wall-mounted & Floor standing
- Comes fully loaded with the technology to do the job.



Rated Current	Breaker Type			
	A	Chinese	ABB	Socomec
32	x		B	x
63	A		B	B
80	x		x	B
100	A		B	B
125	x		B	B
160	B		B	B
200	x		B	x
250	C		B	B
300	x		x	x
315	x		C	x
400	C		C	C
630	C		D	D
800	D		D	D
1000	D		D	D
1250	D		D	D
1600	D		D	E
2000	E		E	E
2500	E		E	E
3200	E		x	E

### Dimensions : mm

A : 400x200x500

B : 500x300x650

C : 600x400x1200

D : 800x600x1400

E : 1000x800x1600

## **Controller**

### **StandardParameters**

- Gen phase voltage
- Generator frequency
- Engine speed
- Battery voltage
- Engine running hours counter
- Engine temperature
- Oil pressure



### **WarningandShutdownAlarms**

- Low oil pressure
- High engine temperature
- Over speed
- Under speed
- Start failure
- Stop failure
- Emergency stop
- High/low battery voltage
- Aux. shutdown alarm
- Aux. Warning