ISO 9001 TIDE POWER SYSTEM

Generator Set Ratings

50Hz/1500 r.p.m-P.F.0.8					*Prime Power*	*Standby Power*	*Rated Current*
Genset	**Engine**	**Alternator**	**Voltage（V）**	**PH**	**kW/kVA**	**kW/kVA**	**Amps**
FC40-C	4BT3.9-G2	LSA44.3S2 UCI224E TPA224M4	230 （220-240）	1	32/40	36/45	173.9
		LSA42.3S5 LSAP 43C PI144J TPA184L11	380-415	3	32/40	36/45	60.8（380V） 57.7（400V） 55.6（415V）
		LSA42.3M8 PI144K TPA224S1	440	3	32/40	36/45	52.5

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. TIDE Power reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

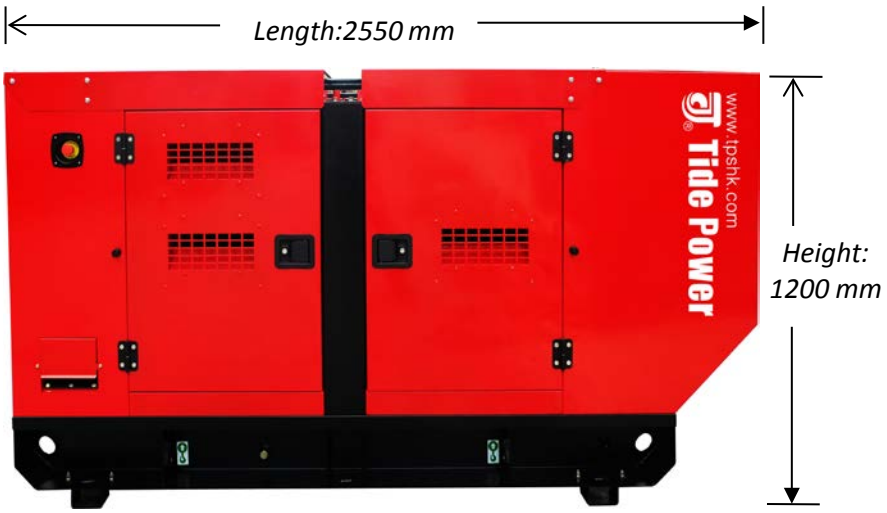
Prime Power:

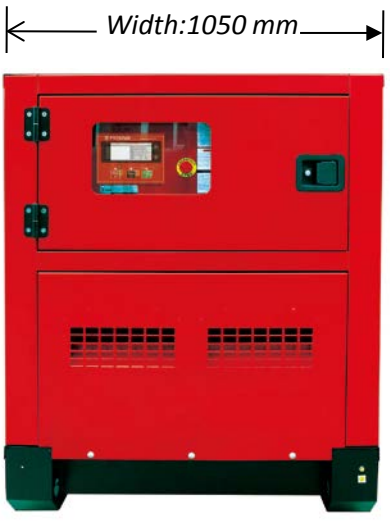
Available continuously at variable load in lieu of commercially purchased power for an unlimited number of hours per year in accordance with ISO8528-1, and an overload of 10% permitted for one hour in every twelve hours of operation in accordance with ISO 3046-1.

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℃.

Overall Dimensions (mm) & Weight (kg)





Weight (kg)： 1050

System	Standard ●	Optional ○
Air Intake System	● Standard air filter ● Air filter overload alarm	○ Air prefilter ○ Heavy air filter
Cooling System	● 50℃ radiator ● Low water level alarm ● Fan and belt guard ● Discharge valve	○ Antifreeze ○ Water jacket heater
Exhaust System	● Stainless steel bellow ● Residential silencer ● Complete exhaust pipe ● Rain cap	○ Stainless steel silencer ○ Stainless steel exhaust pipe
Fuel System	● 8 Hours integrated base fuel tank ● Standard fuel filter ● Fuel level gauge ● Fuel filling cap ● Fuel hose	○ 6 Hours double wall base fuel tank ○ Fuel-water separator ○ Oil level sensor ① ② ○ Automatic fuel top up system ①
Lubrication System	● Standard oil filter ● Manual oil pump and drain	○ Oil heater ○ Lube oil level indicator ○ Oil temperature indicator ①
Alternator and Electric Switch	● Shunt or self excited ● Class H insulation ● H class temperature rise ● DELIXI MCCB ● Terminal connection lugs (L1, L2, L3, LN)	○ PMG or AREP（Leroy-somer only） ○ Alternator space heaters ○ PT100 winding temperature sensors ○ Weaver AVR ○ Weaver prolapse transformer ○ F class temperature rise ○ 4 Pole circuit breaker with leakage protection ○ Circuit breaker - 4 pole ○ ABB MCCB ○ MCCB auxiliary contact and shunt tripping device
Control System	● Intelligent 1.0 for 4 cylinders engine ● Intelligent 3.0 for 6 cylinders engine ● Intelligent 5.0 for ECU engine	○ Panel lighting
Silent / Base	● 67-72 db(A) @ 3 meters ● 4mm -6mm Steel base ● Transportation support leg ● Single hook ● Power coating enclosure ● Anti-vibration mounting between engine /alternator and baseframe ● Emergency stop mounted outside the canopy ● Standard color: Ral 3020	○ Forklift holes ○ Enclosure color: Ral:2011 Ral:9016 Ral:5002 ○ Trailer for off road or on road
Start / Charge	● Battery with bracket and cables ● Engine battery charger ● 3A Mains charger	Low temperature starting batteries Battery swtich High current charger（10A，20A）

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	4BT3.9-G2
Engine type	4 cycle, in-line
Engine speed	1500 r.p.m
Prime power	36kW/48hp
Standby power	40kW/54hp
Governor type	Electronic
Governor make / model	BYC A/GAC
Aspiration:	Turbocharged
Displacement	3.9 L
Bore * Stroke	102mm × 120mm
NO. of cylinders	4
Compression ratio	17.3:1
Engine idle speed	950-1050 rpm
Piston speed	6.0 m/s
Air clearner type	Dry
Exhaust System	
Maximum back pressure	10 kPa
Exhaust pipe size normally acceptable	75 mm
Exhaust gas temperature	463-487 ℃
Exhaust gas flow	101 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	44 Litres/sec.

Lubrication System	
Oil capacity （high - low)	9.5 - 8.5 Litres
Maximum oil temperature	121℃
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	10.3 Litres/hour
Fuel consumption at 100% prime power	9.3 Litres/hour
Fuel consumption at 75% prime power	7.3 Litres/hour
Fuel consumption at 50% prime power	5.3 Litres/hour
Fuel consumption at 25% prime power	3.4 Litres/hour
Fuel tank capacity	12 hours
Cooling System	
Coolant capacity - engine only	7.2 Litres
Standard thermostat (modulating) range	82 - 95℃
Maximum top tank temperature	
- Standby power	104 ℃
- Prime power	100 ℃
Electric System	
Electrical system voltage	24V
Battery	Maintenance-free
Connecting cables	Auailable
Thermal Data	
Radiated heat to ambient	TBD
Heat rejection to coolant	25.9-29 kW
Heat rejection to exhaust	To Be Decided

Alternator

50HZ/1500R.P.M

General Data	
Power factor	Cosϕ = 0.8
Excitation	Shunt / Brushless

Insulation class	H
Bearing	Single
Altitude	⩽ 1000 m

Ratings

Brand	Alternator	Number of wires	AVR Model	PH	Voltage（V）	***Prime Power*** kW/kVA	***Standby Power*** kW/kVA
Leroy-somer	LSA44.3S2	12	R250	1	230（220-240）	33.6/42	36.8/46
Stamford	UCI224E	12	AS440			32/40	N/A
Tide	TPA224M4	12	SX460			34/42	36/45
Leroy-somer	LSA42.3S5	12	R220	3	380-415	32/40	36/45
Leroy-somer	LSAP 43C	6	R201			32/40	35/44
Stamford	PI144J	12	AS480			32/40	36/45
Tide	TPA184L11	12	SX460			32/40	34/44
Leroy-somer	LSA42.3M8	12	R220	3	440	34.4/43	37.8/47.3
Stamford	PI144K	12	AS480			32.3/40.4	35.6/44.5
Tide	TPA224S1	12	SX460			32/40	35/44

Control System

		 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	●	●	●
Engine protection	Low 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	×	●	●

Remark: ● Standard ○ Optional × NA

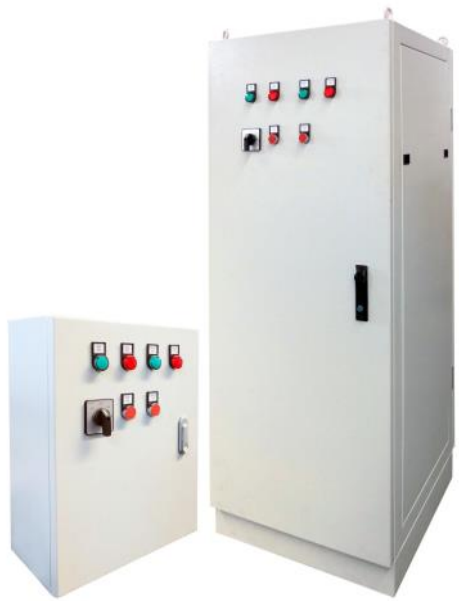
Automatic Transfer Switch *A.T.S - 4 Poles*

(Safety Installation: Detect - Control – Switch System)

Tide Power 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	×	B	×
63	A	B	B
80	×	×	B
100	A	B	B
125	×	B	B
160	B	B	B
200	×	B	×
250	C	B	B
300	×	×	×
315	×	C	×
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	×	E

Dimensions : mm

A：400×200×500　　B：500×300×650
C：600×400×1200　　D：800×600×1400
E：1000×800×1600