Technical specifications

for QES 9 units

Gauge	*Reading*	*Unit*
Ammeter L3 (PA1)	Below max. rating	A
Voltmeter (PV1)	Below max. rating	V

Settings of switches

Switch	*Function*	*Activates at*
Engine oil pressure	Shut down	0.5 bar
Engine coolant temperature	Shut down	103°C

Specifications of the engine/alternator/unit

		QES 9 400/230V - 3ph	***QES 9 380/220V - 3ph***	***QES 9 415/240V - 3ph***	***QES 9 230V - 1ph***
Reference conditions 1)	Rated frequency	50 Hz	50 Hz	50 Hz	50 Hz
	Rated speed	1500 rpm	1500 rpm	1500 rpm	1500 rpm
	Generator service duty	PRP	PRP	PRP	PRP
	Absolute air inlet pressure	1 bar(a)	1 bar(a)	1 bar(a)	1 bar(a)
	Relative air humidity	30%	30%	30%	30%
	Air inlet temperature	25°C	25°C	25°C	25°C
Limitations 2)	Maximum ambient temperature	40°C	40°C	40°C	40°C
	Altitude capability	3000 m	3000 m	3000 m	3000 m
	Maximum relative air humidity	85%	85%	85%	85%
	Minimum starting temperature unaided	-10°C	-10°C	-10°C	-10°C
	Minimum starting temperature with cold start equipment (optional)	-25°C	-25°C	-25°C	-25°C
Performance data 2) 3) 4) 5)	Rated active power (PRP)	7.4 kW	7.4 kW	7.4 kW	6.8 kW
	Rated active power (ESP)	8.1 kW	8.1 kW	8.1 kW	7.5 kW
	Rated power factor 3phase	0.8	0.8	0.8	-
	Rated power factor 1phase	-	-	-	1
	Rated apparent power (PRP)	9.2 kVA	9.2 kVA	9.2 kVA	6.8 kVA

Rated apprant power (ESP)	10.1 kVA	10.1 kVA	10.1 kVA	7.5 kVA
Rated voltage line to line	400 V	380 V	415 V	230 V
Rated current	13.3 A	14.0 A	29.6 A	12.8 A
Performance class (acc.ISO 8528-5:1993)	G1	G1	G1	G1
Single step load acceptance	100%	100%	100%	100%
	7.4 kW	7.4 kW	7.4 kW	N/A
Frequency droop	N/A	N/A	N/A	N/A
Fuel consumption at no load (0%)	0.69 kg/h	0.69 kg/h	0.69 kg/h	N/A
Fuel consumption at 50% load	1.33 kg/h	1.33 kg/h	1.33 kg/h	N/A
Fuel consumption at 75% load	1.80 kg/h	1.80 kg/h	1.80 kg/h	N/A
Fuel consumption at full load (100%)	2.07 kg/h	2.07 kg/h	2.07 kg/h	N/A
Specific fuel consumption (at full load, 100%)	0.288 kg/kWh	0.288 kg/kWh	0.288 kg/kWh	N/A
Fuel autonomy at full load with standard tank	22.9 h	22.9 h	22.9 h	N/A
Fuel autonomy at full load with 48h tank	103.9 h	103.9 h	103.9 h	N/A
Fuel autonomy at full load with 1000L tank	411.3 h	411.3 h	411.3 h	N/A
Max. oil consumption at full load	0.02 l/h	0.02 l/h	0.02 l/h	0.02 l/h
Maximum sound power level (Lw) complies with 2000/14 EC	85 dB(A)	85 dB(A)	85 dB(A)	85 dB(A)
Capacity of standard fuel tank	55 l	55 l	55 l	55 l
Capacity of 48h fuel tank	250 l	250 l	250 l	250 l
Capacity of 1000L fuel tank	990 l	990 l	990 l	990 l
Single step load capability	7.4 kW	7.4 kW	7.4 kW	N/A
	100%	100%	100%	-
Application data	Mode of operation	PRP	PRP	PRP	PRP
Site	land use	land use	land use	land use
Operation	single	single	single	single
Start-up and control mode	manual/automatic	manual/automatic	manual/automatic	manual/automatic
Start-up time	unspecified	unspecified	unspecified	unspecified
Mobility/Config. acc. to ISO 8528-1:1993	transportable/D	transportable/D	transportable/D	transportable/D
(optional)	mobile/E	mobile/E	mobile/E	mobile/E
Mounting	fully resilient	fully resilient	fully resilient	fully resilient
Climatic exposure	open air	open air	open air	open air
Alternator 4)	Standard	IEC34-1	IEC34-1	IEC34-1	IEC34-1
	ISO8528-3	ISO8528-3	ISO8528-3	ISO8528-3
Make	MeccAlte	MeccAlte	MeccAlte	MeccAlte
Model	ECP3-1LN/4	ECP3-1LN/4	ECP3-1LN/4	ECP3-2L/4
Rated output, class H temp. rise - 3ph	11 kVA	11 kVA	11 kVA	9.6 kVA
rating type acc. ISO 8528-3	125/40°C	125/40°C	125/40°C	125/40°C
Degree of protection (IP index acc. NF EN 60-529)	IP 23	IP 23	IP 23	IP 23
Insulation stator class	H	H	H	H
Insulation rotor class	H	H	H	H
Number of wires	12	12	12	12

Engine 4)	Standard	ISO 3046 ISO 8528-2	ISO 3046 ISO 8528-2	ISO 3046 ISO 8528-2	ISO 3046 ISO 8528-2
	Type KUBOTA	D1105-E4GB	D1105-E4GB	D1105-E4GB	D1105-E4GB
	Rated net output (PRP)	8.6 kW	8.6 kW	8.6 kW	8.6 kW
	rating type acc. ISO 3046-7	ICXN	ICXN	ICXN	ICXN
	Coolant	coolant	coolant	coolant	coolant
	Combustion system	indirect injection	indirect injection	indirect injection	indirect injection
	Aspiration	natural aspirated	natural aspirated	natural aspirated	natural aspirated
	Number of cylinders	3	3	3	3
	Swept volume	1.12 l	1.12 l	1.12 l	1.12 l
	Speed governing	mechanical	mechanical	mechanical	mechanical
	Capacity of oil sump - initial fill	5.1 l	5.1 l	5.1 l	5.1 l
	Capacity of cooling system	3.1 l	3.1 l	3.1 l	3.1 l
	Electrical system	12 Vdc	12 Vdc	12 Vdc	12 Vdc
	Emission compliance	EU Stage 5	EU Stage 5	EU Stage 5	EU Stage 5
	Maximum permissible load factor of PRP during 24h period	100%	100%	100%	100%
Power circuit	**Circuit-breaker**				
	Number of poles	4	4	4	2
	Thermal release It (thermal release is higher at 25°C)	16 A	16 A	16 A	32 A
	Magnetic release Im	C curve	C curve	C curve	C curve
	Fault current protection				
	Residual current release IDn	0.030-30 A	0.030-30 A	0.030-30 A	0.030-30 A
	Insulation resistance	1-200 kOhm	1-200 kOhm	1-200 kOhm	1-200 kOhm

Notes

1)	Reference conditions for engine performance to ISO 3046-1.
2)	See derating diagram or consult the factory for other conditions.
3)	At reference conditions unless otherwise stated.
4)	Rating definition (ISO 8528-1): LTP: Limited Time Power is the maximum electrical power which a generating set is capable of delivering (at variable load), in the event of a utility power failure (for up to 500 hours per year of which a maximum of 300 hours is continuous running). No overload is permitted on these ratings. The alternator is peak continuous rated (as defined in ISO 8528-3) at 25°C. PRP: Prime Power is the maximum power available during a variable power sequence, which may be run for an unlimited number of hours per year, between stated maintenance intervals and under the stated ambient conditions. A 10% overload is permitted for 1 hour in 12 hours. The permissible average power output during a 24h period shall not exceed the stated load factor as indicated in the Technical Specifications above.
5)	Specific mass fuel used: 0.86 kg/l.
6)	Thermal release is higher at 25°C.
7)	Optional equipment.