QAC 1500 TwinPower T4F/StV VD - Product Reference Sheet

This document gives a complete list of technical data with some detailed explanations of the main systems, subsystems and performance of our generators, in order to support local sales documentation, tenders or even technical doubts.

While every effort has been made to ensure that the information in this manual is correct Atlas Copco does not assume responsibility for possible errors. Atlas Copco reserves the right to make changes without prior notice.

Standard Model Scope

The QAC is our twenty-foot containerized unit, which provides superior power, is super silent and ideal for heavy duty applications. Its complete configuration makes it our High spec product.

The innovative dual compartment design whereby the power compartment and the cooling compartment are completely separate ensures maximum efficiency and safe operation in the most extreme conditions. In the power compartment, which houses the alternator and the engine, there are dual, contra-rotating fans facing each other, which help to reduce the noise level.

Serviceability is one our main concerns. Doors can be easily opened so that all components are always within reach, ensuring maintenance a service. Engine has full step-in access, alternator and air filters share same door access to avoid wasting time and sliding base concept also enables parts to be accessed by simply sliding out the appropriate section

Standard Qc4004 controller with paralleling system makes possible to work with the mains and with other units (till 16) in applications as Independent Power Plants (IPP). Providing Atlas Copco Power Management System (PMS), which is a smart management of the load of our customers, saving costs in terms of fuel, maintenance and performance.

Features

- Carefully selected components, accurately developed and tested configuration
- Superior standard configuration and extensive option list
- 500 hours service interval and superior accessibility to all service points
- Compact and safe concept and sturdy design
- Designed and built to last

Benefits

- Accurate and stable power regardless of the conditions
- Ability to power a wide range of applications
- Service efficiency: increased up-time
- Increased transport efficiency, separated control and power cubicle
- Superior resale value / longer life time

Manufacturing and Environmental Standards

The QAC range is manufactured following stringent ISO 9001 regulations, and by a fully implemented Environmental Management System fulfilling ISO 14001 requirements.

Attention has been given to ensure minimum negative impact to the environment.

The QAC range complies with the latest noise emission directives.

1. Performance Data

Generator		QAC 1500 TwinPower Vd	
Rated speed	rpm	1500	1800
Rated power factor (lagging)		0.80	0.80
Rated Prime Power, PRP	**kVA**	**1365**	**1450**
	kW	**1092**	**1160**
Limited Time Power, ESP (Stand-by)	kVA	1447	1588
	kW	1157	1270
Rated voltage (3ph. line to line)	V	400	480
Rated voltage (1ph. line to neutral)	V	230	277
Rated current 3ph. (PRP)	A	1970	1774
Rated current 3ph. (ESP)	A	2059	1716
Maximum sound power level (LWA)	dB(A)	103	105
Maximum sound pressure level (LPA) at 7 m	dB(A)	76	78
Coupling engine/alternator		Direct	
Fuel Autonomy at 75% load	h	8.4	7.3
Fuel Tank Capacity	gal(l)	2 x 209 (2x793)	
DEF Tank	gal(l)	2 x 18.5 (2x70)	
Single step load acceptance (within G2, acc. ISO 8528-5:1993)	%	50	60

Derating Table (%)

Height m (ft)	Temperature °C (°F)										
	0 (32)	**5 (41)**	**10 (50)**	**15 (59)**	**20 (68)**	**25 (77)**	**30 (86)**	**35 (95)**	**40 (104)**	**45 (113)**	**50 (122)**
0	100	100	100	100	100	100	100	100	95	90	80
500 (1640)	100	100	100	100	100	100	100	100	90	90	80
1000 (3280)	100	100	100	100	100	100	100	100	90	90	80
1500 (4921)	100	100	100	100	100	100	100	100	90	90	80
2000 (6561)	80	80	80	80	80	80	80	80	80	80	80
2500 (8202)	80	80	80	80	80	80	80	80	80	NA	NA
3000 (9842)	75	75	75	75	75	75	75	75	75	NA	NA
3500 (11482)	70	70	70	70	70	70	70	NA	NA	NA	NA
4000 (13123)	70	70	70	70	70	70	70	NA	NA	NA	NA

Limitations*		QAC 1500 TwinPower Vd
Maximum ambient temperature	ºF (ºC)	104 (40)
Altitude capability	ft(m)	13,123 (4,000)
Relative air humidity maximum	%	85
Minimum starting temperature	ºF (ºC)	14 (-10)
Minimum starting temperature, with cold start Equipment (*)	ºF (ºC)	0 (-18)

*** on high humidity regions freezing may occur on the *breather pipes***

Application Data		QAC 1500 TwinPower Vd
Mode of operation		PRP / ESP / COP
Max. Inclination		15 º
Operation		Single / Parallel
Start-up and control mode		Manual / Auto

Application Data – Fuel consumption **QAC 1500 TwinPower Vd**

		QAC1500 TwinPower VD			
	rpm	1500		1800	
Fuel consumption at*:		Single	Twin	Single	Twin
0% Load(Single/ Twin)	gal/h (l/h)	2,9 (11)	5,9 (22)	3,7 (14)	7,4 (28)
50% Load(Single/ Twin)	gal/h (l/h)	19,3 (73)	38,7 (146)	19,7 (74)	39,4 (149)
75% Load(Single/ Twin)	gal/h (l/h)	25,0 (94,6)	50,0 (189)	28,7 (108)	57,4 (217)
100% Load(Single/ Twin)	gal/h (l/h)	32,6 (123)	65,2 (247)	37,2 (140)	74,4 (281)

(Reference conditions at 25ºC(77F) Air Inlet Temperature, 60% Relative Humidity, 1bar Absolute inlet pressure, for different conditions or limitations contact Atlas Copco technical support).

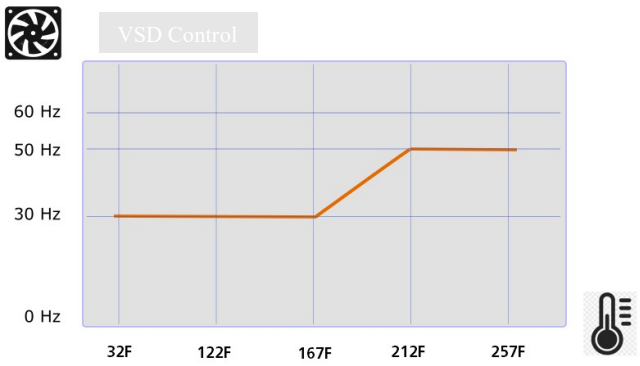
2. Box

Dimensions (L x W x H)	ft (mm)	20 x 8 x 9,6 (6058 x 2438 x 2900) ISO 20' High Cube
Weight		
Net mass	lb (kg)	40124(18200)
Wet mass	lb (kg)	43430(19700)
Capacity of spillage free frame	gal(l)	468(1771)

3. Engine

		QAC 1500 TwinPower Vd	
	rpm	1500	1800
General			
Manufacturer		Volvo	
Model		2 x TWD 1683 GE	
US EPA Tier		T4F	
US EPA Family		LVPXL16.1CDC	
Standard		ISO 3046 / ISO 8528-2	
Power rated speed	hp(kW)	2 x 802(600)	2 x 851(626)
Number of cylinders	u	6	
Configuration		6 in L	
Aspiration		Turbocharged	
Speed governor		Electronic	
Electrical system (DC)	V	24	
Compression ratio		16,7:1	
Displacement (swept volume)	l	16.12	
Piston speed	m/s	7.7	9.24
Combustion system		Direct injection	
Charged air cooling system		Intercooled	
Maximum permissible load factor of PRP during 24h period	%	70	
Air intake system			
Air consumption 77ºF (PRP)	cfm	1519	1695
Air filter cleaning efficiency	%	99.9	
Cooling system(per engine)			
Coolant volume engine	gal(l)	8.7 (33)	
Coolant radiator volume	gal(l)	18(70)	
Charge Air Cooler volume	gal(l)	2.64(10)	
Expansion Tank volume	gal(l)	5.28(20)	
Total coolant volume	**gal(l)**	**35 (133)**	
Coolant radiator medium		Water / Glycol 50/50	

Thermostat temperature range	ºF(ºC)	180 -198(82-92)	
Maximum Top Tank Temperature	F(ºC)	107(225)	
Radiator values at PRP			
Fan airflow	cfm(m^3/h)	882,866(25,000)	
Fan power consumption at nominal speed	kW	6	
Fan static pressure	Psi(Pa)	0.07(477)	
Fan nominal speed	rpm	1800	
Fan inside diameter	Inch(mm)	35.4(900)	
VSD Commander		Schneider ATV320	
Lubrication system			
Oil system capacity including filters	gal(l)	12.7(48)	
Oil sump capacity:	gal(l)	11.1(42)	
Maximum oil consumption 100% load	gal/h(l/h)	0.018(0.07)	0.022(0.08)
Capacity of oil level maintainer tank	gal(l)	2 x 12(45)	



4. Alternator

		QAC 1500 TwinPower Vd	
	rpm	1500	1800
General			
Manufacturer		Leroy Somer	
Model		LSA 49.3 M6	
Standard		IEC 60034 / NEMAG MG 1.32-33 / ISO 8528-3 / CSA / UL 1446	
Number of wires		6	
Voltage regulator accuracy		+/- 0.5%	
Degree of protection / Insulation class		IP 23 / H	
Environment Protection		System 2 (Humid atmosphere)	
Excitation system		AREP	
Sustained short-circuit current	%	300% (3 x In)	
Time sustained short-circuit current	s	10	
AVR			
Model		D350	
Sensing		3 phase	
Range of sensing	V(AC)	0-530	
Battery			
Quantity		2 + 2	
Voltage	V	12	
Capacity (one unit)	Ah	44	
Connection		2x Serie / Parallel	
Cold cranking current (one unit)	A	815 (0ºF) / 1000 (32ºF)	
Sensor			
Oil (temp, pressure & level)		via EMS	
Coolant (temp & level)		via EMS	

Intake manifold (temp)		via EMS
Fuel (boost pressure)		via EMS
Charge air (temp & pressure)		via EMS
Fuel Level		4-20 mA sensor
Air Temperature		PT100 sensor
Coolant (temp) VSD		PT100 sensor

6. Power Output

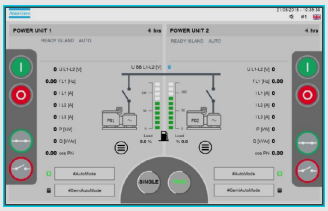
		QAC 1500 TwinPower Vd	
	rpm	1500	1800
Circuit Breaker			
Model		NS1200 (Schneider Electric) UL	
Poles		3P	
Rated current (In)	A	2 x 1200	
Long time protection (Ir)	A	1200 (In x 0.8)	1200 (In x 0.7)
Long time protection timer (tr)	s	12	
Short time protection (Isd)	A	4000 (4 x Ir)	3500 (4 x Ir)
Motor Driven DC voltage	V	24	
Breaking capacity (at 480V AC 50/60 Hz)	kA	50	
Rated service breaking cap. (at 480VAC 50/60 Hz)	kA	37	
Mounting mode		Fixed	
Neutral position		Left	
Status of neutral			
TN-S (earthed)		Standard	
Terminal Board			
Type		4 + 4 Strip copper 100x10 mm	
Bolts x Size per strip		4 x M12	
Camlock Panel			
		6 lines of 5 x 400Amps(PE-N-L1-L2-L3)	

7. Controller

Controller		
Base Box model		2 x Qc4004
Touchscreen / Display model		Qd1001

Qc4004

Qc4004



Qd1001

8. Additional standard features

Battery Cut Off Switch
Internal Lights
Battery Charger
EFT External Fuel Tank connections
AST Automatic fuel transfer system
Integrated spark arrestor
Fleetlink Advanced

9. Options

Mechanical Options

		QAC 1500 TwinPower Vd	
	rpm	1500	1800
Inlet shutdown valve			
Model		AMOT XT 4”	
Max charge air pressure	psi	58	
Reset		Manual	
Actuator		Electric power to close – 24VDC	
Ambient air temperature	ºF(ºC)	From -4(-20º) to + 257(125º)	
Switch type		Valve open, switch closed (failsafe)	

Offshore Container		
Standards & Regulations		EN 12079-1 / DNV 2.7-1
Painting		One colour / Special colour

Earth leakage protection		
Relay model		RH99M (Schneider Electric)
Type		A
Relay power supply	V(DC)	24
Threshold	A	0,03

AVR		
Model		D510C
Sensing		3 phase
Range of sensing	V(AC)	0-480
Field excitation rated	A	0-6
Field excitation short-circuit (max.)	A	10
Constant power supply	V(DC)	24
PC Software		EasyReg