

## Model: V165D5

Powered by VOLVO



### Generator Specification

Service	PRP <sub>(1)</sub>	ESR <sub>(2)</sub>
Power (kVA)	150	165
Power (kW)	120	132
Rated speed (r.p.m)	1500	
Standard voltage (V)	400/230V	
Rated at power factor(cos phi)	0.8	



AGG Power gensets are compliant with ISO 9001 and CE standard, which include the following directives:

- 2006/42/EC Machinery safety.
- 2006/95/EC Low voltage
- EN 60204-1: 2006+A1: 2009, EN ISO 12100: 2010, EN ISO 13849-1: 2008, EN 12601 : 2010

#### (1) PRP (Prime Power):

According to ISO8528-1, 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. The permissible average power output during at 24 hours period shall not exceed 80% of the prime power. 10% overload available for governing purposes only.

#### (2) ESP (Standby Power):

According to ISO 8528-1, It is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 hours of operation per year (of which no more than 300 hours for continuative use) with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. No overload capability is available.

Powers Voltage (V)	ESP KVA	ESP KW	PRP KVA	PRP KW	Standby Amps
415/240	165	132	150	120	299.6
400/230	165	132	150	120	238.2
380/220	165	132	150	120	250.7

### Performance Data

Model	V165D5	
Engine brand	Volvo	
Engine model	TAD713GE	
Speed control type	ECM	
Phase	3	
Control system	Digital	
Starter motor voltage	24V	
Frequency	50HZ	
Engine speed (RPM)	1500	
Fuel Consumption (L/H)	100% standby power	197
	100% prime power	197
	75% prime power	189
	50% prime power	191

#### Standard reference Conditions

Note: Standard reference condition 25°C[77°F] air inlet temp, 100m(328ft) A.S.L 30% relative humidity. Fuel consumption dat with diesel fuel with specific gravity of 0.85 and conforming to BS 2869: 1998, Class A2



### Dimension and Weight

Dimension	Open	Silent
Length (L)	2500mm	3520mm
Width (W)	1134mm	1100mm
Height (H)	1610mm	1945mm
Net Weight	1676 KG	2181 KG
Fuel Tank (L)	300 L	240 L

## ■ Engine Specification: TAD731GE

### General data

No. of cylinders	6
Cylinder arrangement	In-line
Cycle	4 stroke
Displacement	7 L
Bore	108 mm
Stroke	130 mm
Compression ratio	18:1
Dry weight-engine only	NA
Dry weight-include cooling system	760 kg
Wet weight-engine only	NA
Wet weight-Genpac	804 kg

### Cooling system

Heat rejection radiation from engine at	
- standby power	15 kW
- prime power	14 kW
Heat engine rejection to coolant at	
- standby power	68 kW
- prime power	62 kW
Fan power consumption	5 kW
Fan drive ratio	1.73:1
Coolant capacity-engine	9.8 L
Coolant capacity-std radiator	14 L
Coolant pump(drive/ratio)	1.73:1
Coolant flow with standard system	2.9 L/S
Radiator core thickness	55mm
Max. external coolant system restriction	25 kPa
Thermostat-start to open	83 °C
Thermostat-fully open	95 °C
Max. static pressure head	100 kPa
Pressure cap setting	60 kPa
Shutdown switch setting	113 °C
Max. top tank temp	105 °C

### Inlet / Exhaust Data

Max. intake restriction	3.5 kPa
Heat rejection to exhaust	
- standby power	131kW
- prime power	117 kW
Exhaust gas temp after turbine at	
- standby power	540 °C
- prime power	520 °C
Max. back pressure in exhaust line	5 kPa
Exhaust gas flow at:	
- standby power	30.2 m <sup>3</sup> /min
- prime power	27.5 m <sup>3</sup> /min

### Fuel system

System supply flow	360 L/H
Fuel supply line max. restriction	35 kPa
Fuel supply line max pressure	20 kPa
Fuel filter micron size	0.005mm
Fuel return line max restriction	15 kPa
Max. allowable inlet fuel temp	70 °C

### Lubrication system

Oil consumption	
- standby power	0.1 L/H
- prime power	/
Oil system capacity-include filters	20 L
Oil sump capacity-max.	17 L
Oil sump capacity- min.	14 L
Oil change intervals	500 H
Oil pressure at rated speed	450-550 kPa
Lubrication oil temp in oil sump	110 °C
Oil filter micron size	0.04mm

### Electrical system

Voltage	12 V
Alternator make/output	55 Amp
Starter motor	3 kW

## ■ Alternator Specification

Alternator	
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding Connections (standard)	Star-serie
Terminals	12
Insulation type	H class
Winding Pitch	2/3
IP rating	IP23
Excitation system	Self-excited
Bearing	Single bearing
Coating	Vacuum impregnation
Voltage regulator	A.V.R
Couping	Flexible disc



Emergency voltage curve



Emergency frequency curve



## ■ Options

Engine	Alternator	Generator Sets	Fuel System
<ul style="list-style-type: none"> <li>Water Jacket Pre-heater</li> <li>Fuel heater</li> </ul>	<ul style="list-style-type: none"> <li>Winding Temp measuring Instrument</li> <li>Alternator Pre-heater</li> <li>PMG</li> <li>Anti-damp and anti-corrosion treatment</li> <li>Anti-condensation heater</li> <li>Winding and bearing RTD</li> </ul>	<ul style="list-style-type: none"> <li>Tools with the machine</li> <li>Extended range fuel tank</li> <li>Bunded fuel tank</li> </ul>	<ul style="list-style-type: none"> <li>Low fuel level alarm</li> <li>Automatic fuel feeding system</li> <li>Fuel T-valves</li> </ul>
Canopy	Lub oil system	Cooling System	Control Panel
<ul style="list-style-type: none"> <li>Rental type Canopy</li> <li>Trailer</li> </ul>	<ul style="list-style-type: none"> <li>Oil Pre-heater</li> <li>Oil temp sensor</li> </ul>	<ul style="list-style-type: none"> <li>Front heat protection</li> </ul>	<ul style="list-style-type: none"> <li>Remote control panel</li> <li>ATS</li> <li>Synchronizing controller</li> <li>Adjustable earth leakage relay</li> </ul>

## ■ Control Panel

### Configuration

- Emergency stop button
- Protection MCB
- Battery charger
- Integrated aviation plug
- ATS connection
- Digital control module

### Features

- 3 phase generator set monitoring
- Support of engines equipped with electronic control unit
- Comprehensive diagnostic message
- Automatic or manual start/stop of the gensets
- Push buttons for simple control, lamp test
- Graphic back-lit LCD display
- Parameters adjustable via keyboard or PC
- Mains measurements ( 50HZ/60HZ)
- Generator measurements ( 50HZ/60HZ)
- Comprehensive shutdown or warning on fault condition
- 3 phase Generator protections
  - Over-/under voltage
  - Over-/under frequency
  - Current/voltage asymmetry
  - Over current/overload
- 3 phase AMF function
  - Over-/under frequency
  - Over-/under voltage
  - Voltage asymmetry
- Configurable analog inputs
- Battery voltage, engine speed (pick-up) measurement
- Configurable programmable binary inputs and outputs
- Warm-up and cooling functions
- Generator C.B. and Mains C.B. control with feedback and return timer
- RS232 interface
- Modem communication support
- Hours counter
- Sealed to Ip65
- Event log

### Benefits

- Less wiring and components
- Integrated solution
- Less engineering and programming
- User friendly set-up and button layout
- Module can be configured to suit individual applications
- PC software for simplified configuration
- Wide range of communication capabilities

### Operation conditions

- Operation temp: -20 °C to + 70 °C
- Storage temp: -30 °C to + 80 °C
- Operating humidity: 95% w/o condensation
- Vibration : 5-25Hz,  $\pm 1.6\text{mm}$   
5-100Hz,  $a=4g$
- Shocks:  $a= 500\text{m/s}^2$

### Options

- Ethernet interface (Remote monitoring and control)
- GSM modem/wireless internet (Remote monitoring and control)
- RS232-RS485 Dual port interface
- Synchronizing control panel
- Distribution board with sockets kit and power busbar
- Battery trickle charge ammeter
- Earth leakage protection
- Earth fault protection
- Low fuel level alarm
- Low fuel level shutdown
- High fuel level alarm
- Fuel transfer system control
- Low coolant level shutdown
- High lube oil temp shutdown
- Overload via alarm switch on breaker
- Engine coolant heater controls
- Control panel heater
- Speed adjust switch
- Oil temp displayed on LCD screen
- Additional 8 inputs and outputs