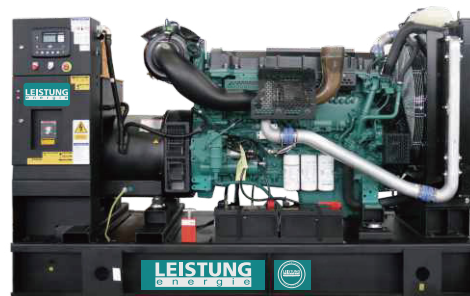


## Model: V110D5

Powered by VOLVO



### Generator Specification

Service	PRP <sub>(1)</sub>	ESR <sub>(2)</sub>
Power (kVA)	100	110
Power (kW)	80	88
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	110	88	100	80	153.0
400/230	110	88	100	80	158.8
380/220	110	88	100	80	167.1

### Performance Data

Model	V110D5	
Engine brand	Volvo	
Engine model	TAD531GE	
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	218
	100% prime power	217
	75% prime power	219
	50% prime power	231

#### 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)	2177mm	3050mm
Width (W)	990mm	1100mm
Height (H)	1550mm	1832mm
Net Weight	1275 KG	1765 KG
Fuel Tank (L)	210 L	190 L

## ■ Engine Specification: TAD531GE

### General data

No. of cylinders	4
Cylinder arrangement	In-line
Cycle	4 stroke
Displacement	5 L
Bore	108 mm
Stroke	130 mm
Compression ratio	18:1
Dry weight-engine only	NA
Dry weight-include cooling system	575 kg
Wet weight-engine only	NA
Wet weight-Genpac	606 kg

### Cooling system

Heat rejection radiation from engine at	
- standby power	9 kW
- prime power	8kW
Heat engine rejection to coolant at	
- standby power	48 kW
- prime power	43 kW
Fan power consumption- high temp	5.9 kW
Fan power consumption - low temp	4.2 kW
Fan drive ratio	1.73:1
Coolant capacity-engine	7.2 L
Coolant capacity-std radiator	12.5 L
Coolant pump(drive/ratio)	1.73:1
Coolant flow with low temp system	2.7 L/S
Max. out circuit restriction	25 kPa
Thermostat-start to open	83 °C
Thermostat-fully open	95 °C
Max. static pressure head	100 kPa
Min. static pressure head	90 kPa
Standard pressure cap setting	75 kPa
Max. top tank temp	105 °C

### Inlet / Exhaust Data

Max. intake restriction	3.5 kPa
Heat rejection to exhaust	
- standby power	75kW
- prime power	66 kW
Exhaust gas temp after turbine at	
- standby power	540 °C
- prime power	527 °C
Max. back pressure in exhaust line	5 kPa
Exhaust gas flow at:	
- standby power	16.3 m <sup>3</sup> /min
- prime power	14.9 m <sup>3</sup> /min

### Fuel system

Total fuel flow	360 L/H
Feed pump pressure	500-550 kPa
Feed pump max suction head	1.5 m
Fuel filter micron size	0.05mm
Prefilter / Water separator	0.063
Injection pump type/make	PFM 1 P100 S 2005

### Lubrication system

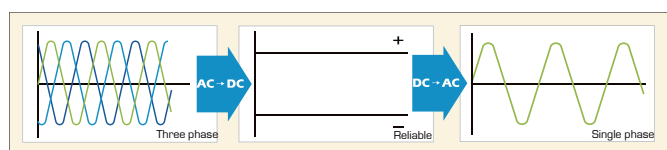
Oil consumption- standby power	0.08 L/H
Oil system capacity-include filters	13 L
Oil sump capacity-max.	11 L
Oil sump capacity- min.	9 L
Oil change intervals	500 H
Oil pressure at rated speed	450-480 kPa
Lubrication oil temperature-normal	110 °C
Lubrication oil temperature-max	125 °C
Oil filter micron size	0.04mm

### Electrical system

Voltage	12 V
Alternator make/output	55 Amp
Starter motor	3.1 kW

## ■ Alternator Specification

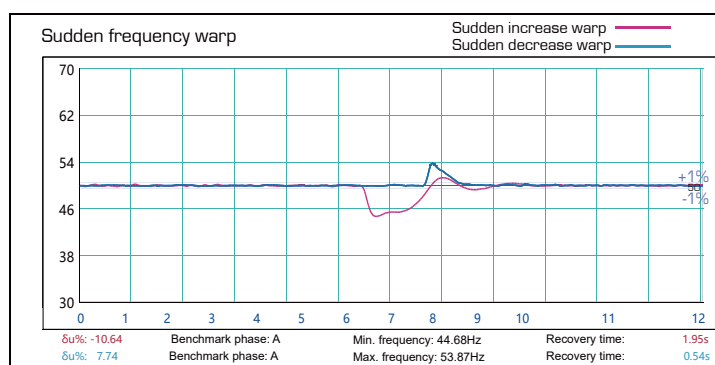
Alternator	
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding Connections (standard)	Star-serie
Terminals	12
Insulation type	H class
Winding Pitch	2/3
IP rating	IP23
Excitation system	Self-excited
Bearing	Single bearing
Coating	Vacuum impregnation
Voltage regulator	A.V.R
Couping	Flexible disc



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