

# PowerCo Systems International Ltd.

UK MANUFACTURED GENERATORS



POWERCO MODEL:

## PCS462-630V

### VOLVO 1640 SERIES TECHNICAL DATA SHEET

#### Cost Effective Power:

- Economic Power- Electronic fuel injection
- Reliable Power-High compression ratios
- Clean efficient power-Exceptional power to weight ratio
- Global distributor network



PowerCo Generating Set Model	Volvo Engine Model	380-415 50hz		480v 60hz	
		KVA	KW	KVA	KW
PCS462V (PRIME)	TAD1640GE	462	397	507	406
PCS509VS (STANDBY)	TAD1640GE	509	407	558	446
PCS509V (PRIME)	TAD1641GE	509	407	577	462
PCS560VS (STANDBY)	TAD1641GE	560	448	635	508
PCS570V (PRIME)	TAD1642GE	570	456	620	496
PCS627VS (STANDBY)	TAD1642GE	627	502	682	546
PCS630V (PRIME)	TWD1643GE	630	504	690	552
PCS693VS (STANDBY)	TWD1643GE	693	554	759	607

#### RATING DEFINITIONS

##### Prime Power

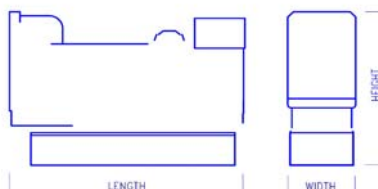
These ratings are applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power. There is no limitation to the annual hours of operation and these models can supply 10% overload power for 1 hour in 12 hours.

##### Standby Power

These rating are applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings.

#### DIMENSIONS AND WEIGHTS

Genset Models:	Net kg	Length mm	Width mm	Height mm
PCS462V	4200KG	3300	1290	2250
PCS509V	4200KG	3300	1290	2250
PCS570V	4350KG	3300	1290	2250
PCS630V	4950KG	3500	1350	2280



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## VOLVO ENGINE TECHNICAL DATA

Generating Set Model:	PCS462V	PCS509V	PCS570V	PCS630V
Engine Manufacturer:	VOLVO	VOLVO	VOLVO	VOLVO
Model:	TAD1640GE	TAD1641GE	TAD1642GE	TWD1643GE
Number of Cylinder:	6 In line	6 In line	6 In line	6 In line
Displacement:	16.12ltrs	16.12ltrs	16.12ltrs	16.12ltrs
Cycle	4 stroke	4 stroke	4 stroke	4 stroke
Cooling System	Water cooled	Water cooled	Water cooled	Water cooled
Combustion System	Direct Inj.	Direct Inj.	Direct Inj.	Direct Inj.
Bore/Stroke: (mm)	144x165	144x165	144x165	144x165
Aspiration:	Turbo charged A2A	Turbo charged A2A	Turbo charged A2A	Turbo charged W2A
Direction of rotation	Anti-clockwise	Anti-clockwise	Anti-clockwise	Anti-clockwise
Lub. Oil Capacity ltrs:	42	42	42	42
Coolant capacity ltrs:	60	60	60	60
Electrical equipment	24vDC	24vDC	24vDC	24vDC
Compression Ratio:	17.5:1	17.5:1	17.5:1	17.5:1
<b>50 hz</b>				
Engine Speed:	<b>1500rpm</b>	<b>1500rpm</b>	<b>1500rpm</b>	<b>1500rpm</b>
Maximum Continuous Power at Flywheel: kw	393	433	485	536
Maximum Standby Power at Flywheel: kw	431	476	536	596
Fuel Cons: g/KWh				
110%	202	200	204	200
100%	200	199	201	199
75%	198	196	197	196
50%	203	199	198	196
<b>60hz</b>				
Engine Speed:	<b>1800rpm</b>	<b>1800rpm</b>	<b>1800rpm</b>	<b>1800rpm</b>
Maximum Continuous Power at Flywheel: kw	432	490	532	585
Maximum Standby Power at Flywheel: kw	480	551	585	644
Fuel Cons: g/KWh				
110%	206	210	212	204
100%	202	206	209	202
75%	202	202	202	197
50%	210	204	204	201

**NOTE:** All engine performance data based on our maximum continuous rating at the standard reference conditions specified.

Fuel consumption data at full load with a diesel fuel with a specific gravity of 0.85 conforming to BS2869: 1988, Class A2

### ALTERNATOR MODELS

Mecc Alte (UK)	ECO40-3S	ECO40-1L	ECO40-1.5L	ECO40-2L
Newage Stamford	HCI544C	HCI544D	HCI544E	HCI544F
Leroy somer	LSA47.2M7	LSA47.2M8	LSA47.2L9	LSA49.1 S4

In line with our policy of continuous product development, we reserve the right to change specifications without notice.

#### STANDARD OPTION:

12/24volt axial starter motor  
12/24v Heavy duty batteries  
Engine driven charging alternator  
Engine starting motor  
Set mounted heavy duty tropical radiator and pusher fan  
Fuel oil filter  
Lub oil filter  
Air intake filter  
Energised to run solenoid  
Low oil pressure switch  
High engine temperature switch  
Industrial silencer with flexible section  
Mechanical/electrical governor or ECM(check with sales)  
8hr base fuel tank upto 800kva  
Open Skid base above 800kva  
Captive AVMs  
One set operation manuals  
One set engine and alternator maintenance books  
One set electrical schematic drawings  
TESTING All units are fully tested in our works prior to despatch and each unit is issued with a Test Certificate.  
WARRANTY All PowerCo equipment carries a full 12 month warranty in accordance with our conditions of sale. 24monthys warranties are available FOC for standby units running at limited hours (please checkwith sales for full details.

#### AVAILABLE OPTIONS:

55DBA-85DBA weatherproof acoustic canopies and containers  
Residential silencers  
Critical silencers  
Full EEC trailers  
Non EEC trailers  
Free Standing fuel tanks  
Bunded fuel tanks  
Automatic fuel make-up system  
Fuel level warnings  
Unlimited other options are available.

#### ALTERNATOR:

We use Cummins Generator technology (Newage Stamford), Leroy Somer of France and also MeccAlte of the UK(upto 350kva) and MeccAlte of Italy (360-3000kva)  
Brushless revolving field  
4 pole  
Class H Temperature rise 125/40  
Class H Insulation  
Automatic voltage regulator  
Single bearing  
0.5% Voltage regulation (Leroy)  
1.0% Voltage regulation 200kva and above (MeccAlte)  
1.5% Voltage regulation 0-180kva and above (MeccAlte)  
0.5% Frequency regulation  
TIF 50/NEMA MG1-22-43  
THF >3%  
RFI to BS800  
50HZ Voltage range- 380/220 – 415/240v  
60HZ Voltage range- 220/127 – 480/277v

#### SET MOUNTED DIGITAL CONTROL SYSTEM:

PowerCo model 6110 microprocessor engine control module provides metering and alarm facilities via the LCD display as follows:  
Emergency stop pushbutton  
Generator volts line/line  
Generator volts line/neutral  
Generator amps 3 phase  
Generator frequency Hz  
Engine speed  
Engine oil pressure  
Engine coolant temperature  
Engine battery/volts  
Engine hours run

#### PROTECTIONS:

Generator over-volts – shutdown  
Generator under-volts – shutdown  
Over speed – shutdown  
Under speed – shutdown  
Over frequency Hz – shutdown  
Under frequency Hz – shutdown  
High current – alarm  
Battery charge fail – alarm  
Emergency stop  
Low oil pressure – shutdown  
High engine temperature – shutdown  
Fail to start – alarm  
High battery volts – alarm  
Low battery volts – alarm  
Fail to come to rest – alarm  
Loss of speed sensing signal – alarm  
LED indication indicates – alarm  
(amber) or shutdown (red flashing)  
USB PROGRAMME PORT – standard printer cable connection

#### TIMERS:

Start delay  
Stop delay  
Crank/crank rest timer  
Engagement attempt and manual crank limit  
Safety on delay timer  
Warm up timer  
Cooling timer  
Energise to stop timer

#### CONTROL SYSTEM UPGRADES:

7210 auto-start unit gives the following extra's:-  
Generator KVA  
Generator KW  
Generator COS

5510 auto-synchronising unit gives you the following upgrades:-  
Generator KVA L1, L2, L3, Total  
Generator KW L1, L2, L3, Total  
Generator Pf L1, L2, L3, Average  
Generator kVAr L1, L2, L3, Total  
Generator kWh  
Generator kVAh  
Generator kVArh  
Generator Phase Sequence  
Full automatic synchronising  
Automatic load sharing  
Automatic load level demand (switches units on and off line depending on load levels)

### Automatic transfer panel (ATS) 25 – 1000A Contactors

IP55 wall or freestanding sheet steel cubicle with hinged front access door and base entry gland plate. Finished in grey epoxy polyester powder-coat.

AC1 Rating at 40oC

Fitted with;

- 1 x Pair of 4 pole mechanically and electrically interlocked contactors.
- x Set of load links and terminals upto 125A.
- 1 x Set of copper bar load links above 125A.
- 1 x 3 ph + N mains detector.
- 1 x Mains available indicator.
- 1 x Mains on load indicator.
- 1 x Generator available indicator.
- 1 x Generator on load indicator.
- 1 x Set of control and monitoring MCB's.
- 1 x Earth stud.
- 1 x Set of interconnecting terminals.
- 1 x Hazard warning label
- 1 x Rating label.

Dimensions 4 pole ;

25A – 125A	H600mm x W400mm x D200mm
200A – 450A	H800mm x W600mm x D300mm
550A –1000A	H1200mm x W800mm x D400mm

### Automatic transfer panel (ATS) 800 – 6300A Circuit Breaker

Floor-standing cubicle with hinged front access door and removable side and rear covers for ease of installation. Top and base entry aluminium gland plate. Control compartment IP2X and segregated from load switching. Secondary screening over switchgear. Finished in grey polyester powder-coat RAL7035.

Fitted with;

- 1 x Pair of motorised mechanically and electrically interlocked fixed pattern circuit breakers (Non Auto).
  - 800 - 1600A MCCB (MCS)
  - 800 – 6300A ACB
- 1 x Set of load connection terminals.
  - Generator / Mains / Load.
- 1 x Mains available indicator.
- 1 x Mains on load indicator.
- 1 x Generator available indicator.
- 1 x Generator on load indicator.
- 1 x Set of control and monitoring MCB's.
- 1 x Earth bar.
- 1 x Set of interconnecting terminals.
- 1 x Hazard warning labels
- 1 x Rating label.

Dimensions;

MCCB;

800 - 1600A H1800mm x W600mm x D800mm

ACB;

800A – 1600A H1800mm x W 600mm x D800mm

2000A H2000mm x W 800mm x D800mm

2500A – 3200A H2000mm x W1000mm x D800mm

4000A H2000mm x W2000mm x D800mm

5000A – 6300A H2000mm x W2400mm x D800mm