



# Sentry

17Kva - 68Kva  
50Hz

## Diesel Powered Generating Sets

### Single Source Responsibility

Design, manufacture and testing of the complete generating sets are all carried out within the Cummins group. This provides the assurance and strength of a major international corporation able to provide single source warranty

### Self Contained Generating Sets

Built-in anti-vibration mounts, set mounted prewired control system with engine protection circuits, and display panel plus optional fuel tank (33-68 Kva)

### Ready-to-run Specification

Each generator is supplied with the following equipment as standard:

- Heavy-duty engine and alternator with Class H insulation.
- 50°C ambient temperature standard.
- Self excited automatic voltage regulator (AVR)
- Electric starting system with engine driven battery charger.
- Steel base frame with integral anti-vibration mounts.
- PCC0300 with Emergency stop button
- User manual.
- Exhaust silencer and connector.
- Cummins Power Generation Warranty
- Base fuel tank with gauge and fuel lines (16-27 Kva only)

### Options

- Engine coolant heater
- PCC1301 controller
- Electronic governor
- Silenced housing for 85dba @ 1m for 33 Kva & 80dba @ 1m for 16-27 Kva
- Fuel tank with gauge and fuel lines (33-68 Kva)
- Circuit breaker (MCB for 16-27 Kva, MCCB for 33-68 Kva)
- CE guarding
- Battery

### Engine

Water cooled, direct injection in line diesel engine. Full flow replaceable element oil and fuel filters. Replaceable cartridge air cleaner with restriction indicator. 12 volt electric starting with engine driven battery charge alternator. Governor to Class A2 limits. Tropical radiator with fan and pulley safety guards.

### Alternator

Self exciting, self regulating, brushless construction with Class H insulation throughout as standard. Screen protection drip proof enclosure to IP23. All machines are supplied as 12 lead reconnectable as standard. Automatic voltage regulator to within +/- 1.5% between 0.8 to unity power factor.

### General Arrangement

The engine and alternator are coupled together via a flexible steel disc coupling, and the complete assembly is mounted onto a fabricated steel base via anti-vibration mounts. The steel chassis is complete with 4 point lifting and bolting down holes.

50Hz Ratings			
Generating Set Model	Prime kW (Kva)	Standby kW (Kva)	Engine Model
ES17D5	12 (15)	13 (16.5)	X1.7G1
ES22D5	16 (20)	18 (22)	X2.5G1
ES28D5	20 (25)	22 (27.5)	X2.5G2
ES33D5	24 (30)	26 (33)	S3.8G2
ES38D5	28 (35)	30 (38)	S3.8G3
ES43D5	32 (40)	35 (43)	S3.8G4
ES55D5	40 (50)	44 (55)	S3.8G6
ES68D5	50 (62)	55 (68)	S3.8G7

## TECHNICAL DATA

Generating Set	Genset Model	ES17D5	ES22D5	ES28D5
	Prime Power Rating Kva/kW	15/12	20/16	25/20
	Standby Rating Kva/kW	16.5/13	22/18	27.5/22
	Standby Rating Current (Amps)	23(3ph) 74(1ph)	31(3ph) 102(1ph)	38(3ph) 125(1ph)
	Make	Cummins Power Generation		
	Specific Fuel Consumption (gsm/bhp-hr) @ 100% Load	161	161	161
Engine	Model	X1.7G1	X2.5G1	X2.5G2
	BHP(Prime power)	20	32	32
	Cooling	Water cooled	Water cooled	Water cooled
	Aspiration	Natural	Natural	Natural
	No of Cylinders	2	3	3
	RPM	1500	1500	1500
	Bore (mm)	91.44	91.44	91.44
	Stroke (mm)	127	127	127
	Compression Ratio	18.5:1	18.5:1	18.5:1
	Displacement (Ltrs)	1.7	2.5	2.5
	Fuel	No.2D	No.2D	No.2D
	Governor	Mechanical A2	Mechanical A2	Mechanical A2
	Starting System	12V Electrical	12V Electrical	12V Electrical
	Lub Oil Specification	15W40	15W40	15W40
	Lub Oil Sump Capacity (Ltrs)	5	6.5	6.5
Lub Oil Consumption (LPH)	0.01	0.01	0.01	
Coolant Capacity (Ltrs)	6	7.5	7.5	
Exhaust Pipe Size (mm)	50	50	50	
Alternator	Make (Brand)	Newage (Stamford)		
	3 Phase Frame Size * (1 Phase)	BC 164D (BC 184F)	BC 184E (BC 184H)	BC 184F (BC 184J)
	3 Phase Voltage (1 Phase) Volts	380-415 (220)	380-415 (220)	380-415 (220)
	RPM/Frequency	1500rpm/50Hz	1500rpm/50Hz	1500rpm/50Hz
	No. Phases	3 phase/1 phase	3 phase/1 phase	3 phase/1 phase
	Power Factor	0.8 (lag)	0.8 (lag)	0.8 (lag)
	Enclosure	IP 23	IP 23	IP 23
	Voltage Regulator (Max.)	./-1.5%	./-1.5%	./-1.0%
	Class of Insulation	H	H	H
	Recommended Cable size (Armoured)	6 sq.mm(3ph) 25 sq.mm(1ph) (3½ core)	10 sq.mm(3ph) 35 sq.mm(1ph) (3½ core)	10 sq.mm(3ph) 50 sq.mm(1ph) (3½ core)
Control Panel	Enclosure	IP 42	IP 42	IP 42
	Breaker Rating (amps) (MCB)	32, 4 Pole (3ph) 2 Pole (1ph)	40, 4 Pole (3ph) 100, 3 Pole (1ph)	40, 4 Pole (3ph) 125, 3 Pole (1ph)
	Make	Siemens or equal		
Fuel Tank	Capacity (Ltrs)	55	55	55
Battery	Rating (AH)	88 AH 12V	88 AH 12V	88 AH 12V

\* Alternator Model/Frame size are subjected to change without notification. Please verify this at the time of order.

### RATINGS DEFINITION

#### PRIME POWER

Prime Power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO8528-1.

A 10% overload capability is available for a period of 1 hour within 12-hour period of operation, in accordance with ISO3046-1

#### STANDBY POWER

The Standby Power is applicable for supplying emergency power for the duration of a utility power interruption. No overload, utility parallel or negotiated outage operation capability is available at this rating.

In installations served by unreliable utility sources (where outages last longer or occur more frequently), where operation is likely to exceed 200 hours per year, the prime power should be applied.

All ratings are based on the following reference conditions:

- Ambient temperature : 27°C
- Altitude above sea level : 150 metres
- Relative humidity : 60%

## TECHNICAL DATA

Generating Set	Genset Model	ES33D5	ES38D5	ES43D5	ES55D5	ES68D5
	Prime Power Rating Kva/kW	30/24	35/28	40/32	50/40	62/50
	Standby Rating Kva/kW	33/26	38/30	43/35	55/44	68/55
	Standby Rating Current (Amps)	45	52	61	77	96
	Make	Cummins Power Generation				
	Specific Fuel Consumption (gsm/bhp-hr) @ 100% Load	160	160	151	151	151
Engine	Model	S3.8G2	S3.8G3	S3.8G4	S3.8G6	S3.8G7
	BHP(Prime power)	37	43	52	65	76
	Cooling	Water cooled	Water cooled	Water cooled	Water cooled	Water cooled
	Aspiration	Natural	Natural	Turbocharged	Turbocharged	Turbocharged Aftercooled
	No of Cylinders	4	4	4	4	4
	RPM	1500	1500	1500	1500	1500
	Bore (mm)	97	97	97	97	97
	Stroke (mm)	128	128	128	128	128
	Compression Ratio	17.5:1	17.5:1	17.5:1	17.5:1	17.5:1
	Displacement (Ltrs)	3.8	3.8	3.8	3.8	3.8
	Fuel	HSD	HSD	HSD	HSD	HSD
	Governor	Mechanical A2	Mechanical A2	Mechanical A2	Mechanical A2	Mechanical A2
	Starting System	12V Electrical	12V Electrical	12V Electrical	12V Electrical	12V Electrical
	Lub Oil Specification	15W40	15W40	15W40	15W40	15W40
	Lub Oil Sump Capacity (Ltrs)	9	9	9	9	9
	Lub Oil Consumption (LPH)	0.017	0.019	0.024	0.029	0.034
Coolant Capacity (Ltrs)	11	11	11	11	11	
Exhaust Pipe Size (mm)	75	75	75	75	75	
Alternator	Make (Brand)	Newage (Stamford)				
	3 Phase Frame Size *	UC224C	UC224C	UC224C	UC224E	UC224F
	3 Phase Voltage (Volts)	380-415	380-415	380-415	380-415	380-415
	RPM/Frequency	1500rpm/50Hz	1500rpm/50Hz	1500rpm/50Hz	1500rpm/50Hz	1500rpm/50Hz
	No. Phases	3 phase	3 phase	3 phase	3 phase	3 phase
	Power Factor	0.8 (lag)	0.8 (lag)	0.8 (lag)	0.8 (lag)	0.8 (lag)
	Enclosure	IP 23	IP 23	IP 23	IP 23	IP 23
	Voltage Regulator (Max.)	./-1.5%	./-1.5%	./-1.5%	./-1.5%	./-1.5%
	Class of Insulation	H	H	H	H	H
	Recommended Cable size (Armoured)	25 sq.mm (3½ core)	25 sq.mm (3½ core)	25 sq.mm (3½ core)	35 sq.mm (3½ core)	50 sq.mm (3½ core)
Control Panel	Enclosure	IP 42	IP 42	IP 42	IP 42	IP 42
	Breaker Rating (amps) (MCCB)	50, 3 Pole	60, 3 Pole	60, 3 Pole	80, 3 Pole	100, 3 Pole
	Make	Schneider or equal				
Fuel Tank	Capacity (Ltrs)	100	100	100	100	100
Battery	Rating (AH)	120 AH 12V	120 AH 12V	120 AH 12V	120 AH 12V	120 AH 12V

\* Alternator Model/Frame size are subjected to change without notification. Please verify this at the time of order.

### RATINGS DEFINITION

#### PRIME POWER

Prime Power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO8528-1.

A 10% overload capability is available for a period of 1 hour within 12-hour period of operation, in accordance with ISO3046-1

#### STANDBY POWER

The Standby Power is applicable for supplying emergency power for the duration of a utility power interruption. No overload, utility parallel or negotiated outage operation capability is available at this rating.

In installations served by unreliable utility sources (where outages last longer or occur more frequently), where operation is likely to exceed 200 hours per year, the prime power should be applied.

All ratings are based on the following reference conditions:

- Ambient temperature : 27°C
- Altitude above sea level : 150 metres
- Relative humidity : 60%

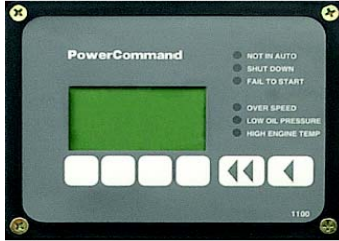
## Control Options



PCC 0300

### PCC0300

- Microprocessor-based generator set monitoring and control system.
- Manual and remote start/stop control, shutdown fault indication and LCD hours control.
- Engine Protection - Overspeed, Low Oil Pressure and High Engine Temperature.
- Certification - UL - Type 1
- Circuit breaker with suitable rating for overload and short circuit protection.



PCC 1301

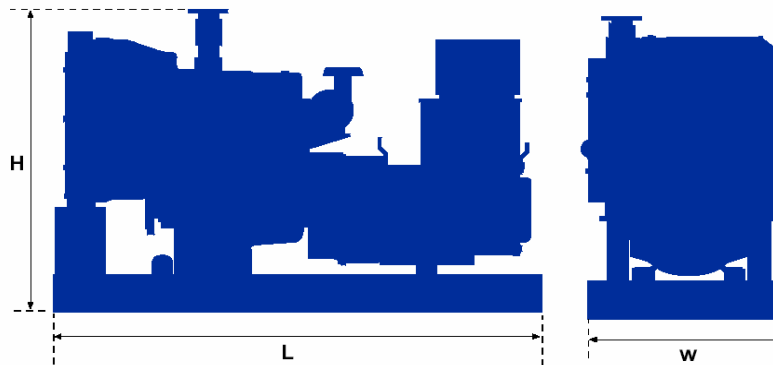
### PCC1301

The PowerCommand Control (1301):

- Is a microprocessor-based generator set monitoring, metering and control system.
- Enhances reliability and performance as compared to conventional control systems.
- Is suitable for use in a wide range of generator sets in non-paralleling applications.
- Has a simple operator interface to the genset.
- Works with any power configuration from 120-480VAC.

Control options may change without notice.

## Dimension and Weights - 50Hz



Genset Model	Standby Rating (Kva)	Dimension for 3 Phase (1 Phase)			Open Set Dry Weight (kg)	
		Length (mm)	Width (mm)	Height (mm)	3 phase	1 phase
ES17D5	16.5	1250 (1305)	680 (680)	1105 (1105)	490	525
ES22D5	22	1400 (1400)	680 (680)	1040 (1040)	540	625
ES28D5	27.5	1400 (1515)	680 (680)	1040 (1040)	565	640
ES33D5	33	1800	750	1262	700	NA
ES38D5	38	1800	750	1262	700	NA
ES43D5	43	1800	750	1207	750	NA
ES55D5	55	1800	750	1207	850	NA
ES68D5	68	1800	800	1320	850	NA

Dimensions and weights are for guidance only. Do not use for installation design. Ask for certified drawings on your specific application.

### Cummins Power Generation

Asia Pacific  
 10 Toh Guan Road #07-01  
 TT International Tradepark  
 Singapore 608838  
 Tel: (65) 6417 2388  
 Fax: (65) 6417 2399  
 Email: mktg.sing@cummins.com  
 www.cumminspower.com

See your distributor for more information.

