

# PowerCommand® Controls



PCC0300



PCC1301

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- 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.

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- 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.
- Enhances reliability and performance as compared to conventional control systems.
- Suitable for use in a wide range of generator sets in non-parallel applications.
- Provides a simple operator interface to the genset.
- Works with any power configuration from 120-480V AC.

## Dimensions and Weights - 50Hz



Genset Model	Standby Rating (kVA)	Open Set Dimension for 3 Phase (1 Phase)			Open Set Dry Weight (Kg)		Enclosed Set Dimension for 3 Phase (1 Phase)			Enclosed Set Dry Weight (Kg)	
		Length (mm)	Width (mm)	Height (mm)	3 Phase	1 Phase	Length (mm)	Width (mm)	Height (mm)	3 Phase	1 Phase
ES17 D5	16.5	1250 (1305)	680 (680)	1105 (1105)	490	525	1850 (1850)	900 (900)	1375 (1375)	810	845
ES22 D5	22	1400 (1400)	680 (680)	1040 (1040)	540	625	1850 (1850)	900 (900)	1375 (1375)	860	945
ES28 D5	27.5	1400 (1515)	680 (680)	1040 (1040)	565	640	1850 (1850)	900 (900)	1375 (1375)	885	960
ES43 D5	43	1800	730	1215	750	NA	2300	1100	1650	1250	NA
ES55 D5	55	1800	730	1215	800	NA	2300	1100	1650	1300	NA
ES68 D5	68	1800	800	1320	850	NA	2300	1100	1650	1350	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

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See your distributor for more information.



## Diesel generator set ES Range 50Hz



## > Specification sheet 17-68 kVA

Our energy working for you.™



### Single Source Responsibility

Design, manufacture and testing of the complete generating sets for stationery application 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 pre-wired 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 (16.5-27.5 kVA only).
- Circuit breaker for 16.5-27.5 kVA only.

### Options

- Engine coolant heater
- PCC1301
- Electronic governor
- 80dBa @ 1m soundproof enclosure
- Single phase genset powered by X engines
- Fuel tank with gauge and fuel lines (33-68 kVA)
- Circuit breaker 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 +/- 1.0% 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			
Genset Model	*Standby kW (kVA)	*Prime kW (kVA)	Engine Model
ES17 D5	13 (16.5)	12 (15)	X1.7G1
ES22 D5	18 (22)	16 (20)	X2.5G1
ES28 D5	22 (27.5)	20 (25)	X2.5G2
ES43 D5	35 (43)	32 (40)	S3.8G4
ES55 D5	44 (55)	40 (50)	S3.8G6
ES68 D5	55 (68)	50 (62)	S3.8G7

### TECHNICAL DATA

Genset	Genset Model	ES17 D5	ES22 D5	ES28 D5
	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 (gm/bhp-hr) @ 100% Load	161	161	160
<b>Engine</b>	Model	X1.7G1	X2.5G1	X2.5G2
	kWm (Prime Power)	15	24	24
	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 (L)	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 (L)	5	6.5	6.5	
Coolant Capacity (L)	6	7.5	7.5	
Exhaust Pipe Size (mm)	50	50	50	
<b>Alternator</b>	Make (Brand)	Newage (Stamford)		
	3 Phase Frame Size * (1 Phase)	BC164D (BC184F)	BC184E (BC184H)	BC184F (BC184J)
	3 Phase Voltage (1 Phase) Volts	415 (220)	415 (220)	415 (220)
	RPM/Frequency	1500rpm/50Hz	1500rpm/50Hz	1500rpm/50Hz
	No. of Phase	3 phase/1 phase	3 phase/1 phase	3 phase/1 phase
	Power Factor (lag)	0.8	0.8	0.8
	Enclosure	IP 23	IP 23	IP 23
	Voltage Regulator (Max.)	./-1.0%	./-1.0%	./-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)
<b>Control Panel</b>	Control	PCC0300	PCC0300	PCC0300
	MCB Rating (amps)	32, 4 Pole (3ph) 80, 2 Pole (1ph)	40, 4 Pole (3ph) 100, 3 Pole (1ph)	40, 4 Pole (3ph) 125, 3 Pole (1ph)
<b>Fuel Tank</b>	Capacity (L)	55	55	55
<b>Battery</b>	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

##### EMERGENCY STANDBY POWER (ESP)

Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

##### LIMITED-TIME RUNNING POWER (LTP)

Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

##### PRIME POWER (PRP)

Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

##### BASE LOAD (CONTINUOUS) POWER (COP)

Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

### TECHNICAL DATA

Genset	Genset Model	ES43 D5	ES55 D5	ES68 D5
	Prime Power Rating kVA/kW	40/32	50/40	62/50
	Standby Rating kVA/kW	43/35	55/44	68/55
	Standby Rating Current (Amps)	61	77	96
	Make	Cummins Power Generation		
	Specific Fuel Consumption (gm/bhp-hr) @ 100% Load	151	151	151
<b>Engine</b>	Model	S3.8G4	S3.8G6	S3.8G7
	kWm (Prime Power)	39	48	57
	Cooling	Water cooled	Water cooled	Water cooled
	Aspiration	Turbocharged	Turbocharged	Turbocharged Aftercooled
	No of Cylinders	4	4	4
	RPM	1500	1500	1500
	Bore (mm)	97	97	97
	Stroke (mm)	128	128	128
	Compression Ratio	17.5:1	17.5:1	17.5:1
	Displacement (L)	3.8	3.8	3.8
	Fuel	HSD	HSD	HSD
	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 (L)	9	9	9	
Coolant Capacity (L)	11	11	11	
Exhaust Pipe Size (mm)	75	75	75	
<b>Alternator</b>	Make (Brand)	Newage (Stamford)		
	3 Phase Frame Size *	UC224C	UC224E	UC224F
	3 Phase Voltage (Volts)	415	415	415
	RPM/Frequency	1500rpm/50Hz	1500rpm/50Hz	1500rpm/50Hz
	No. of Phase	3 phase	3 phase	3 phase
	Power Factor (lag)	0.8	0.8	0.8
	Enclosure	IP 23	IP 23	IP 23
	Voltage Regulator (Max.)	./-1.0%	./-1.0%	./-1.0%
	Class of Insulation	H	H	H
	Recommended Cable size (Armoured)	25 sq.mm (3½ core)	35 sq.mm (3½ core)	50 sq.mm (3½ core)
<b>Control Panel</b>	Control	PCC0300	PCC0300	PCC0300
	MCB Rating (amps) (Optional)	60, 3 Pole	80, 3 Pole	100, 3 Pole
<b>Fuel Tank (Optional)</b>	Capacity (L)	100	100	100
<b>Battery (Optional)</b>	Rating (AH)	120 AH 12V	120 AH 12V	120 AH 12V

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### GTEC

GTEC series transfer switches covering the range 40 to 1250 amps - provide normal and generator set source monitoring, generator set starting, and load transfer functions for emergency, standby, and optional standby applications. GTEC transfer switches are continuously rated, so they can be applied in applications up to their nameplate rating.

The transfer switch power contacts are silver alloy composition with high pressure design that can withstand thousands of switching cycles without burning, pitting or welding. They require no routine contact maintenance and provide 100% continuous current ratings.

The transfer switch control is reliable and easy to understand, utilizing LED lamps for status indications, and push-button controls for operator functions. The control is field-programmable without the use of service tools.



For more details on GTEC and other power electronic products, please contact your local distributor. Specifications may change without notice and may vary from pictures shown.