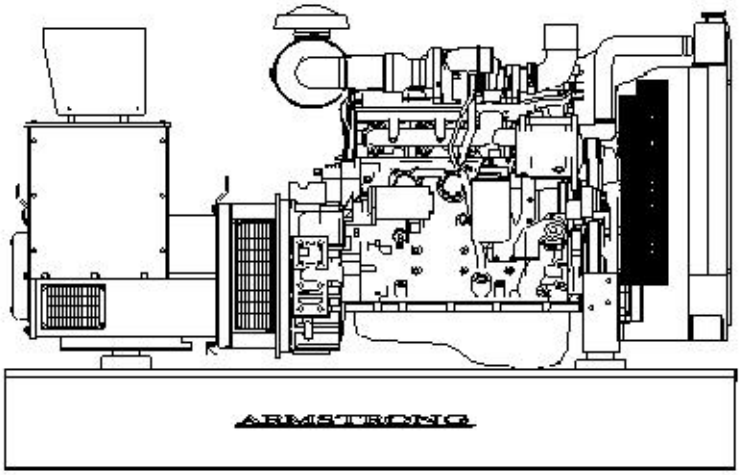
ARMSTRONG
POWER SYSTEMS

Model: A105CU
Diesel Generator Set



FEATURES

- Armstrong provides one-source responsibility for the generator system and its accessories.
- All units and components are factory tested during prototype and manufacturing stages assuring long product life.
- Generator set accepts one-step 100% of full load per NFPA 110.
- A **one-year** limited **warranty** covers all systems and components. Extended warranties are available.
- Rugged 4 cycle heavy-duty diesel engine, with swirl intake ports for a low fuel consumption and excellent transient response.

Generator features:

- Unique Volts per Hertz compensated electronic AVR excitation system delivers reliable voltage response for in rush loads.
- Brushless, rotating-field generator has low reactance, 2/3 pitch, class H insulation, minimizes voltage distortion when powering non-linear loads.

More features:

- Controllers are available to meet your most demanding applications.
- In the event of low oil pressure or high coolant temperature the self-protecting system will automatically stop the engine.

GENERATOR SET RATINGS

Model	Volt Code	Voltage	Winding Connection	Phase	Power Factor	Hz	Amps Standby	Standby kW / kVA	Prime kW / kVA
A105CU	61	480 / 277	12 - HI WYE	3	0.8	60	158	105 (131)	94.5 (118)
A105CU	63	440 / 254	12 - HI WYE	3	0.8	60	172	105 (131)	94.5 (118)
A105CU	64	240 / 139	12 – HI DELTA	3	0.8	60	316	105 (131)	94.5 (118)
A105CU	65	220 / 127	12 – LOW WYE	3	0.8	60	345	105 (131)	94.5 (118)
A105CU	66	208 / 120	12 – LOW WYE	3	0.8	60	365	105 (131)	94.5 (118)
A105CU	67	240 / 120	12 – 2 DELTA	1	1.0	60	438	105 (105)	94.5 (94.5)
A105CU	51	415 / 240	12 – HI WYE	3	0.8	50	156	90 (112)	81 (101)
A105CU	53	380 / 220	12 – HI WYE	3	0.8	50	171	90 (112)	81 (101)
A105CU	55	220 / 127	12 – LOW WYE	3	0.8	50	296	90 (112)	81 (101)
A105CU	57	220 / 110	12 – 2 DELTA	1	1.0	50	409	90 (90)	81 (81)

Stand-By ratings are continuous electrical service during the interruption of normal power. No overload capacity is specified at these ratings.
Prime ratings available with variable loads are continuous, 10% overload capacity for one hour in twelve hours periods.
Both ratings per BS 5514, DIN 6271, ISO-3046
Many industrial, commercial and residential voltages are available

ALTERNATOR SPECIFICATIONS

Type	**Four pole, revolving field**
Rotor Insulation	**Class H**
Temperature Rise	**150°C Standby**
Material	**Epoxy resin**
Line-To-Line Harmonic Factor (Max)	**5%**
Telephone Interference Factor (Tif)	**1%**
Voltage Regulator	**Solid State**
Cooling	**Self-ventilated and drip proof**
Bearing	**1 each, pre-lubed**
Coupling	**Direct, Flexible Disc**
Load Capacity (Standby)	**100%**
Overload Capacity (Prime)	**110%**
Voltage Regulation	
No Load To Full Load	**±1 %**
One Step Load Acceptance	
Per NFPA 110	**100%**

- ❑ Four pole, revolving field, direct coupled to engine flywheel, provides excellent alignment.
- ❑ Insulation is of class H, ready to be used on harsh environments where sea spray, sand and chemical corrosion are existing factors.
- ❑ Voltage regulator provides Volts/Hertz compensation to improve the motor starting capabilities, therefore support the engine handling transient loads.
- ❑ Dynamically balanced rotor, with damper winding, help dissipate transient voltage interference during load variations.
- ❑ The windings have a 2/3 pitch in order to reduce the harmonic content of voltage.
- ❑ Robust mechanical structure permits easy access to connections.

ENGINE SPECIFICATIONS

Manufacturer	**CUMMINS**
Model	**QSB5-G5**
Bore	**4.21 in (107 mm)**
Stroke	**4.88 in (124 mm)**
Number Of Cylinders	**4-Cylinder**
Piston Displacement	**272 in^3 (4.5 L)**
Compression Ratio	**17.3:1**
Combustion System	**Bosh HPCR**
Engine Type	**4-Cycle; In-line**
Aspiration	**Turbocharged and Charge Air Cooled**
Engine Crankcase Vent System	**Closed**
Cylinder	**Borable**
Crankshaft Material	**Forged Steel**
Governor Type	**Mechanical**
Frequency Regulation	
No Load To Full Load	**5 %**
Air Cleaner	**Dry Element**

- ❑ Robust industrial grade CUMMINS diesel engine, for reliable endurance.
- ❑ Direct fuel injection system and swirl intake ports combine for a low fuel consumption and excellent transient response.
- ❑ Cylinder Head provides superior airflow through specially designed intake manifold ports, large valves and seats resulting in superior engine performance in torque reserve, fuel consumption and emissions.
- ❑ Extra strong engine block with provisions for overhaul.
- ❑ Dynamically Balanced Crankshaft, with induction-hardened journal surfaces significantly increases wear life.
- ❑ Heavy-duty Cummins engines are known for their fuel efficiency, responsive transient performance and rugged reliability

Powered By:

STANDARD EQUIPMENT

ENGINE
- Air Cleaner
- Fuel Pump
- Fuel Filter
- Oil Pump
- Full Flow Oil Filter
- Jacket Water Pump
- Thermostat and Housing
- Exhaust Manifold Dry
- Oil Cooler
- Blower Fan & Fan Drive
- Radiator - Unit Mounted
- Electric Starting Motor 12v
- Housing & Flywheel
- Charging Alternator - 12v
- Battery Kit & Battery Rack

GENERATOR
- Synchronous, Brush-less
- Four Pole
- Single Bearing
- Direct Coupled With Flex
- Class H Insulation
- Drip-Proof Construction

CONTROL PANEL
- Digital controller
- Stop-Manual-Auto Pushbuttons
- Standard Engine Control Monitoring
- Automatic Shutdowns
  * High Water Temperature
  * Low Oil Pressure
  *Protective 12vdc Circuit Breaker
- Display Lights For:
  * Water Temperature
  * Oil Pressure
  * Overcrank
  * Underspeed
  * Overspeed
  * Battery Charging

GENERAL
- Industrial Muffler
-- Rain Cap
- In Frame Lifting Points
- Acrylic Enamel Paint

INSTALLATION AND APPLICATION DATA

	Item	Units	Type of Operation and Application			
			60 Hz		50 Hz	
			Prime	Standby	Prime	Standby
Engine	Rated Speed	rpm	1800		1500	
	Gross Engine Output	bhp (kWm)	152 (113)	176 (131)	130 (97)	151 (113)
	BMEP	psi (kPa)	245 (1693)	284 (1960)	252 (1738)	293 (2018)
	Mean Piston Speed	Ft/s (m/s)	24.4 (7.4)		20.3(6.2)	
Cooling System	Ambient Air Temperature	°F (°C)	122 (50)			
	Engine Heat Reject to Coolant	BTU/min (kW)	2674 (47)	3003 (53)	2674 (47)	3003 (53)
	Coolant Capacity	Gal (L)	2.25 (8.5)			
	Standard Thermostat Range	°F (°C)	175-203 (79-95)			
	Minimum Pressure Cap	Psi (kpa)	15 (103)			
	Maximum coolant friction	Psi (kpa)	5 (35)			
Fuel System	Total drain flow	gal/h (L/h)	33 (125)			
	Fuel Type		Diesel #2			
	Fuel Consumption @ 25% Power	gal/hr (L/hr)	1.92	2.22	1.63	1.89
	Fuel Consumption @ 50% Power	gal/hr (L/hr)	3.84	4.45	3.25	3.78
	Fuel Consumption @ 75% Power	gal/hr (L/hr)	5.76	6.67	4.88	5.66
	Fuel Consumption @ 100% Power	gal/hr (L/hr)	7.69	8.90	6.50	7.55
Air Requirement	Combustion Air Flow	ft^3/min (L/s)	354 (167)	361 (171)	289 (137)	304 (144)
	Air Intake Restriction clean filter	In.H_2O (kPa)	15 (3.7)			
	Air Intake Restriction dirty filter	In.H_2O (kPa)	25 (6.2)			
	Exhaust Temperature	°F (°C)	808 (431)	913 (490)	834 (446)	890 (477)
	Maximun Allowable Back Pressure	In.H_2O (kPa)	40.78 (10)			
Lubrication System	Maximum oil temperature	°F (°C)	280 (138)			
	Oil Pan Capacity	gal (L)	2.4-2.9 (9-11)			
	Total Engine Oil Cap. w/filter	gal (L)	3.2 (12.2)			
	Oil Filter Type		Cartridge			
	Lube oil specifications grade		SAE 15W - 40			
Engine Electricals	Battery Charging Alternator	Volts, Ground	12V, negative			
	Baterry Charging Alternator	Rated amps	100			
	Recommended Battery Cold Crank	CCA amps	1000			
	Starter Motor	Volts, Ground	12V, negative			
Operation	Temperature and Altidtude Losses	%	Consult factory for values			

OPTIONAL EQUIPMENT

Cooling System
- ❑ Remote Radiator
- ❑ Jacket Water Heater
- ❑ Crankcase Oil Heater

Fuel System
- ❑ Fuel/Water Separator
- ❑ Auxiliary Fuel Pump
- ❑ Sub-Base Fuel Tank
  - ❑ Double Wall
  - ❑ UL Listed

Start System
- ❑ Battery Nicad
- ❑ Battery Warmer Plate
- ❑ Battery Charger
  - ❑ Automatic Float Equalizing
  - ❑ Trickle

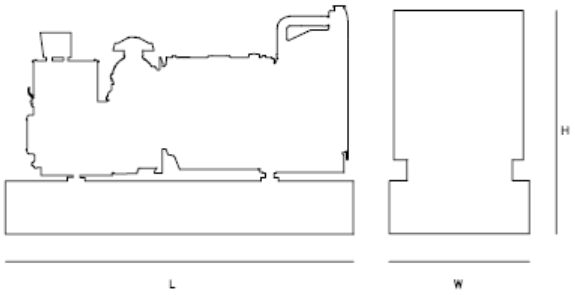
Switchgear
- ❑ Main Line Circuit Breaker
  - ❑ Shunt trip
  - ❑ Auxiliary switch
- ❑ Automatic Transfer Switch
- ❑ Paralleling
- ❑ Protective Relays

Generator
- ❑ Permanent Magnet Excitation
- ❑ Space Heaters
- ❑ Temperature Rise Detectors

Control Panel
- ❑ NFPA 110 Ready
- ❑ Remote Annunciation Panel
- ❑ Audible Alarm

General
- ❑ Aluminum enclosure
- ❑ Sound attenuation kit
- ❑ Spring vibration isolators
- ❑ Interior lights AC or DC
- ❑ Trailer
- ❑ Export Packaging
- ❑ Special Testing
- ❑ Warranties
  - ❑ ____ Year

For Other Options Consult



DIMENSIONS AND WEIGHT

	Units	Open Unit	Enclosed Unit	Sound Att. Unit
Length	In. (mm)	89.5 (2273)	89.5 (2273)	109 (2769)
Width	In. (mm)	37 (940)	37 (940)	37 (940)
Height	In. (mm)	60 (1524)	76 (1930)	76 (1930)
Weight	Lbs (kg)	2300 (1032)	2832 (1284)	3467 (1572)

General configuration for reference only, do not use these dimensions for installation purposes. Contact your local dealer for certified drawings.

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