

QUAD Voltage Optional



### Key Features

- Designed and manufactured in an ISO9001-certified facility in Statesville, North Carolina, USA.
- Heavy duty mobile generator system designed for prime power operation in rental, construction and special events applications.
- Generator is CSA certified for electrical equipment per C22.2, No. 14.

Voltage Configuration	Frequency (Hz)	Power Factor	Prime Power Rating		
			kVA	kW	Current (A)
600/346V - 3Ø WYE	60	0.8	197	158	190
480/277V - 3Ø WYE	60	0.8	181	145	218
240/139V - 3Ø WYE	60	0.8	181	145	436
208/120V - 3Ø WYE	60	0.8	181	145	502
240/120V - 1Ø ZIG ZAG	60	1.0	110	110	458
400/230V - 3Ø WYE	50	0.8	165	132	238

\* Note: Not all listed voltages are available on standard product. Some voltages may require selection of optional features.

### Skidbase and Enclosure

- Package foundation is a heavy duty, oilfield-ready skidbase equipped with four-point tie downs.
- The skidbase is a fully bonded, Environmental Containment design, sized to contain at least 110% of total oil and fuel volume, to prevent any leakage of hazardous fluids from the package.
- Ducted air intakes ensure near-zero water ingress into the containment area, even during operation in the heaviest rain conditions.
- The enclosure is constructed from corrosion-resistant galvanized steel and coated with a 13 stage powder paint process for long life even in harsh environments.
- The enclosure panels are fitted with sound-absorbing acoustical material to help reduce noise for quiet operation in noise sensitive applications such as concerts, events and nighttime construction.
- Wide opening access doors are side hinged, providing easy access to service and maintenance points and are equipped with recessed, pad-lockable handles and safety latches to hold doors open during servicing.
- Package is equipped with a center-point lifting eye for safe, well-balanced hoisting, designed with a 5 x safety factor for the weight of a fully fueled unit with running gear.

### Diesel Engine

- Heavy-duty Cummins diesel engine is emissions certified to EPA Tier 4-final standards and provides the optimum mix of performance and fuel economy.
- The Diesel Oxidation Catalyst (DOC) and Selective Catalyst Reduction (SCR) aftertreatment system meet the stringent NOx and particulate limits without the use of a Diesel Particulate Filter (DPF).
- Dual frequency capability allows operation at 50 hertz or 60 hertz with the flip of a switch.
- Electronically controlled engine provides isochronous frequency control and advanced diagnostic monitoring and protection.
- The engine generator assembly is mounted on fail-safe vibration isolators.
- Coolant and oil drains are piped to bulkhead fittings mounted on the enclosure and all filters and maintenance points are easily accessed for safe and easy servicing.
- Engines are globally supported by the engine OEM and Doosan Portable Power.

### DualBox Cooling System

- Doosan's industry-exclusive DualBox design provides an innovative solution to ensure optimum package cooling for virtually any ambient condition by independently controlling engine compartment temperature and cooling system performance.
- The engine compartment temperature is controlled by a pair of electric, variable speed cooling fans that are programmed to limit airflow in low ambient conditions to prevent freeze up of vital engine components while also ensuring the proper cooling of the package in high temperature / high load conditions.
- The cooling system compartment is isolated from the engine compartment to ensure the most efficient system performance as cooler airflow from outside the package is directed through the cooling system instead of using hotter air from the engine compartment.
- The engine driven cooling fan features a radial design which provides a significant performance advantage with respect to increased heat transfer, reduced noise level, and reduced fuel consumption.
- The DualBox solution maximizes performance to achieve the lowest noise levels, minimum water ingress and independent control of engine compartment temperature and cooling system to achieve optimum performance.
- Doosan generators provide performance at the full prime power rating at ambient temperatures up to 104°F (40°C) without derating.

### Alternator

- Leroy Somer alternators feature brushless excitation providing industry leading motor starting kVA and 300% overload capability.
- R450 automatic voltage regulator provides precision control of voltage level and fast response to load changes.
- Class H insulation with upgraded environmental coating for ultimate resistance to high temperature and humidity.
- Three position Voltage Selector Switch (VSS) to easily configure the units for operation at most common voltages.
- Optional quad voltage capability adds 600V-3Ø selection to the standard range of available voltages to support 600V applications without the need for a transformer.

### Control System

- A complete array of operator-preferred analog gauges provide at-a-glance monitoring of vital engine and generator parameters.

- Solid state engine control module provides convenient, microprocessor-controlled startup at the push of a button and protects the generator system from an array of faults while providing the operator with indication of any faults on the LED display.
- Standard Run / Idle selector switch allows operators to start and warm up the generator at low engine speed to prevent excess engine wear when operating in cold climates.
- Engine Diagnostic Trouble Codes (DTCs) are displayed on the LCD screen, providing operators and technicians with a numeric and text explanation of the fault code, minimizing the need for expensive hand-held code scanners.
- Standard remote Auto Start / Stop capability via two wire, closed contact logic, allows for connection to automatic transfer switchgear and other remote starting devices.
- Industry-leading Voltage Selector Switch (VSS) protection feature prevents switching the VSS while generator is operating.
- Pad-lockable battery disconnect switch is mounted inside the enclosure.

### Power Connections

- All controls and connection points are grouped at the rear of the unit for safety and operator convenience.
- Power cables are connected at an oversized five lug (L1 L2 L3 N PE) terminal board capable of accepting bare end cable or terminated cables.
- Convenience receptacle panel includes individual branch circuit breakers.
- Optional camlock panel includes two panel mounted sets of 400A female connectors to further expand connection capabilities.

### Fuel and DEF System

- Single fuel tank sized for 24 hour runtime at full load is mounted within the skid base, providing double wall protection.
- Fuel tank mounted low in frame and centered to ensure balanced lifting and low center of gravity.
- The fuel filler is located within the containment basin, minimizing possible spillage.
- Standard primary fuel / water separator and fine micron secondary fuel filter keep contaminants out of the system and increase reliability.
- The containment system features a three-inch drain plug for easy cleaning, and the fuel tank is equipped with a drain plug mounted behind the containment plug for easy cleaning.
- Leak-proof fuel vents eliminate the potential for fuel purge during out-of-level conditions during transport and load / unload.
- Low fuel shutdown ensures the engine will not lose prime if it runs out of fuel.
- Diesel Exhaust Fluid (DEF) tank sized for a minimum of 24 hour runtime.

### Running Gear

- Integrated running gear system mounts directly to generator skidbase providing an industry-best low center of gravity for safe, stable towing, on-road or off-road.
- Tandem axle torsion suspension with E-Z-Lube hub assemblies and electric brakes or optional hydraulic surge brakes.
- All models feature high quality, grommet-mount lighting and meet Federal Motor Vehicle Safety Standards for lighting and conspicuity.
- Trailer-to-vehicle connector is a 7-pole "SAE J560 plug with a high quality, jacketed wiring harness.
- All units are equipped with a 3-inch pintle eye or optional 2-5/16" ball hitch, heavy duty safety chains and a high quality, heavy-duty jack stand.

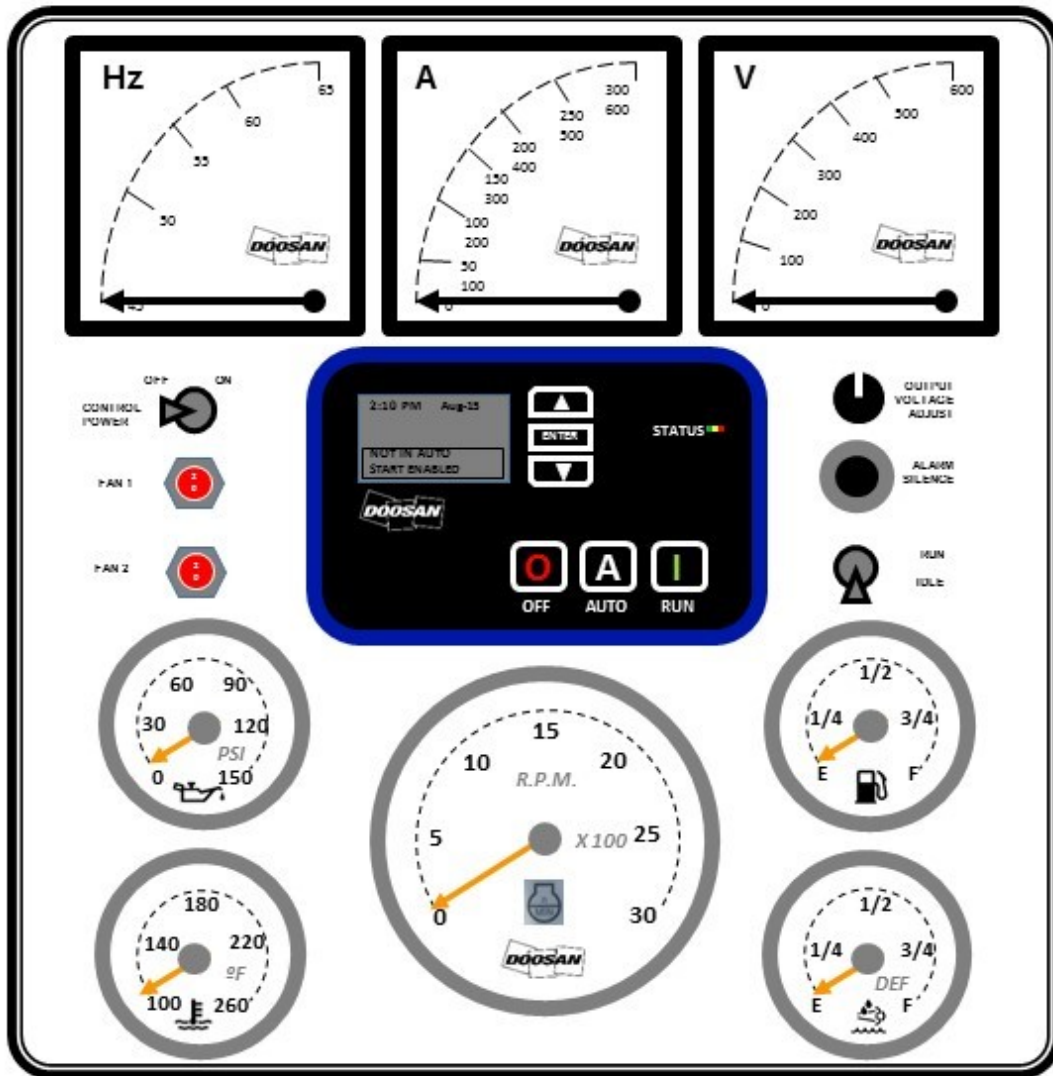
### Options

- Doosan models can be equipped with a broad array of optional equipment to meet the need of specific applications. Common selections include:
  - Cold start options including engine coolant heater, battery pad warmers, and heated crankcase breather systems
  - Three-way fuel valve for connection to a remote fuel tank
  - Battery charger
  - Keyed door locks
  - Intelligent load management system (ILMS)
  - Running gear options including rear stabilizer jacks, drawbar-mounted tool box and spare tire

### Warranty

- All models are covered by a comprehensive limited warranty:
  - Package: 1 year / 2000 hours

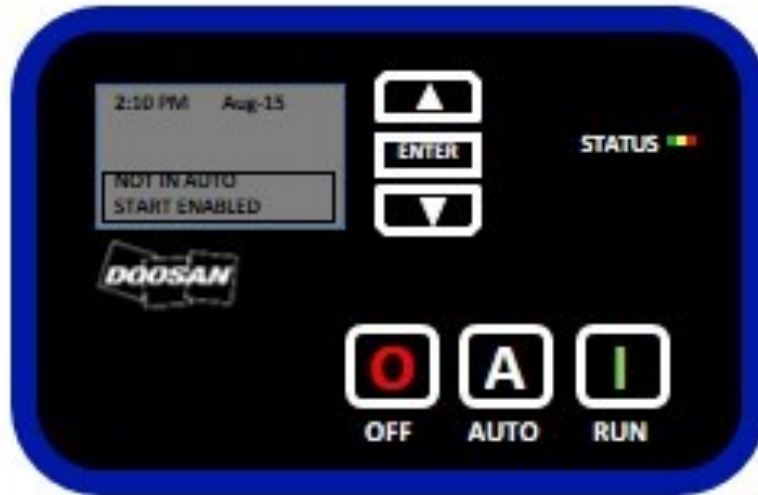
## Operator Panel



## Operator Panel Features

1. Tachometer: 0-3000 RPM scale
2. Oil Pressure: 0-150 PSI scale
3. Coolant Temperature: 100°-260°F scale
4. Fuel Level: E-1/4-1/2-3/4-F scale
5. Diesel Exhaust Fluid (DEF) Level: E-1/4-1/2-3/4-F scale
6. Control Power On / Off Switch
7. Engine Compartment Cooling Fan Circuit Breakers
8. Alarm Silence Button (optional)
9. Voltage Adjustment Control
10. Run / Idle Control Switch
11. TG410 Controller
12. Frequency-meter: 45-65 Hz scale
13. AC Ammeter: Dual scale: 0-300A @ 480V / 0-600A @ 208V
14. AC Voltmeter: 0-600 V scale

## TG410 Automatic Start Stop Controller



## TG410 Genset Controller Features

## Functionality

- Automatic shutdowns and warnings
- Manual and remote AutoStart
- Engine speed adjustment
- Aftertreatment conditioning controls and status icons  
Auto / Force / Inhibit
- SAE J1939 electronic engine communication
- Engine Fault Code Annunciation  
SPN / FMI / OC
- 150 Event Fault Log
- Isolated RS 485 Modbus communication capable
- NFPA 110 Level 1 capable
- Maintenance counter
- AutoStart on low battery capable
- Exerciser clock
- Automatic, inverse time delay overcurrent protection

## Form Factor

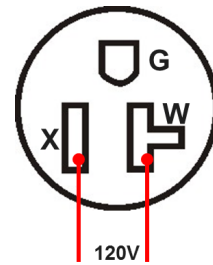
- 6-Button control
- 6-Line LCD Display with user adjustable contrast and temperature compensation from -4°F (-20°C) to 158°F (70°C)
- 1 Multicolor (Red/Yellow/Green) Status LED
- Front Gasket Seal for water ingress prevention to IP65 protection
- Conformal coated circuit board for protection against moisture and contaminants
- Rugged polycarbonate enclosure designed to survive extreme applications and abuse
- Controller functions in ambient conditions ranging from -40°F/C to 158°F (70°C)
- Meets or exceeds SAE J1113-11 with respect to electrical transients
- Meets or exceeds SAE J1455 with respect to vibration, thermal shock and cycling
- Meets or exceeds MIL-STD-461E with respect to electromagnetic compatibility
- Maximum 600V AC, true RMS sensing, +/- 1% full scale accuracy
- Current sensing, +/- 2% full scale accuracy

<p>MANUAL RUN . . .</p> <p>Genset Current</p> <p>A: 100 A</p> <p>B: 100 A</p> <p>C: 100 A</p>	<p>MANUAL RUN . . .</p> <p>Genset Voltage</p> <p>A-B: 480.0V</p> <p>B-C: 480.0V</p> <p>C-A: 480.0V</p>
<p>MANUAL RUN . . .</p> <p>Oil Pressure 75.0 PSI</p> <p>Fuel Level 95.3%</p>	<p>MANUAL RUN . . .</p> <p>Engine Temp 180.5 F</p> <p>DEF Fluid Level 90.5%</p>
<p>MANUAL RUN . . .</p> <p>Engine Speed 1800.0RPM</p> <p>Hold AUTO+ ▼ / ▲</p> <p>To Adjust RPM</p>	<p>MANUAL RUN . . .</p> <p>Regen Status Auto</p> <p>Hold ENTER for 3s to change</p>
<p>MANUAL RUN . . .</p> <p>Battery Voltage 13.6 V</p> <p>AC Frequency 60.0 Hz</p>	<p>MANUAL RUN . . .</p> <p>Running Time 8.3 Hours</p> <p>Engine Hours 250.7 Hours</p>

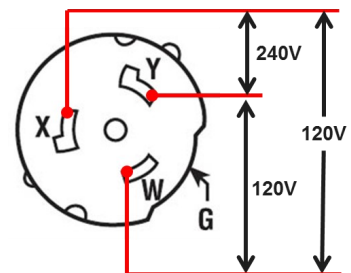
Engine Data			
Engine Manufacturer	Cummins		
Model Number	QSB7-G8		
Prime Output @ 1800 RPM	232 bhp	173 kWm	
Standby Output @ 1800 RPM	256 bhp	191 kWm	
Prime Output @ 1500 RPM	202 bhp	151 kWm	
Standby Output @ 1500 RPM	222 bhp	166 kWm	
Engine Type	Four Cycle, Inline		
Engine Control	ECU		
Emissions Certification	EPA Tier 4 Final		
Number of Cylinders	6		
Aspiration	Turbocharged / Intercooled / cEGR		
Aftertreatment Technology	Diesel Oxidation Catalyst (DOC) / Selective Catalyst Reduction (SCR)		
Bore × Stroke	4.21 x 4.88 in	107 x 124 mm	
Displacement	409 in <sup>3</sup>	6.7 L	
Compression Ratio	17.3:1		
Governor Type	Isochronous		
Speed Regulation Accuracy	+ / - 0.25% Steady State		
Single Step Load Acceptance	100%		
Cooling System	50% Glycol / 50% Water		
Charging Alternator Output	70A		
DC System Voltage	24 V		
Battery Size / Output	2 × Group 31 / 1000CCA		
Fluid Capacities		Gal	L
Engine Crankcase Lubricant Capacity		4.5	17
Cooling System Capacity		10	37.9
Usable Fuel Cell Capacity		368	1393
Usable DEF Tank Capacity		24	91
60Hz Fuel Consumption	Gal / h	L / h	Runtime
@ 25% Load	3.2	12.0	115
@ 50% Load	5.6	21.0	65.5
@ 75% Load	8.0	30.0	46
@ 100% Load	10.4	40.0	35
DEF Runtime		>24	
Reference Conditions			
Rated Ambient Temperature		-20°F—104°F	-29°C—40°C
Minimum Starting Temperature (Standard)		0°F	-18°C
Minimum Starting Temperature (w/ Cold Start Opt)		-20°F	-29°C
Maximum Altitude			

Alternator Data		
Alternator Manufacturer	Leroy Somer	
Alternator Model	LSA 46.2 M5 C7	
Alternator Type	Four Pole Revolving Field	
Number of Leads	12	
Insulation Class	H	
Winding Pitch	2/3	
Voltage Connection Method	Three Position Voltage Selector Switch	
Excitation Method	Brushless w/ AREP	
Voltage Regulator Model	R450	
Voltage Regulation Accuracy	+/-0.5%	
Maximum Unbalance Load	25%	
Total Harmonic Distortion (THD)	<2.5% @ 0% Load	
Telephone Influence Factor (TIF)	<50	
Motor Starting Capability	480V	600V
SKVA @ 20% Voltage Dip	202	320
SKVA @ 25% Voltage Dip	270	427
SKVA @ 30% Voltage Dip	347	548
SKVA @ 35% Voltage Dip	435	689

Power Connections	
Main Circuit Breaker Rating	600 A
Overcurrent Trip Setpoint (240V-1Ø)	463 A
Overcurrent Trip Setpoint (208V-3Ø & 240V-3Ø)	571 A
Overcurrent Trip Setpoint (240V-3Ø Delta)	N/A
Overcurrent Trip Setpoint (480V-3Ø)	256 A
Overcurrent Trip Setpoint (600V-3Ø)	203 A
20A—125V GFCI Duplex (NEMA 5-20R) Receptacles	2
50A—125/250V Temp Power (CS6369) Receptacles	3
400A-600V Camlock Connectors (Optional)	2 Sets
Terminal Board Maximum Cable Size (Bare Wire)	4 × AWG 2—600MCM
Terminal Board Maximum Cable Lug Size	1/2 in (12.7 mm)



**NEMA 5-20R Receptacle**



**CS6369 Receptacle**



Running Gear	To 49CFR571 requirements	
Gross Vehicle Weight Rating (GVWR)	12766 lb	5791 kg
Gross Axle Weight Rating (GAWR)	13668 lb	6200 kg
Configuration	Tandem Axle	
Suspension	Torsion	
Standard Brake System Configuration	Electric	
Optional Brake System Configuration	Hydraulic Surge	
Tires	ST235/80R16, Radial	
Wheels	16" x 6", 8 lug on 6.5" bolt circle	
Track Width	71.5 in	1815 mm
Lighting and Reflectors	Meets Federal/Canada Motor Vehicle Safety Standard 571.108	
Electrical Connection to Towing Vehicle	7-Pole Round SAE J560 Connector	
Standard Trailer Coupling	3" (78 mm) Pintle Eye	
Optional Trailer Coupling	2-5/16" Ball Coupler	
Hitch Height	4-Position Adjustment 20.5" - 34"	
Safety Chains	2 x 3/8" with slip hooks and safety latches	
Jack Stand Configuration	Fixed Mount, 10000 lb Capacity	

Package Data	With Running Gear		Skidmount	
Length (A)	224 in	5689 mm	161 in	4090 mm
Width (B)	83.2 in	2114 mm	53.7 in	1365 mm
Height (C)	102.9 in	2615 mm	85.9 in	2181 mm
Weight (Shipping)	8690 lb	3950 kg	7784 lb	3538 kg
Weight (Ready to Run)	11377 lb	5172 kg	10201 lb	4636 kg
Sound Level @ 23ft (7m), 100% Load	69 dB(A)			

