

### 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	N/A	N/A	N/A
480/277V - 3Ø WYE	60	0.8	402	321	484
240/139V - 3Ø WYE	60	0.8	402	321	969
208/120V - 3Ø WYE	60	0.8	402	321	1118
240/120V - 1Ø ZIG ZAG	60	1.0	216	216	900
400/230V - 3Ø WYE	50	0.8	387	310	559

\* 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 fluid 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 multi-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 (EPA Tier 4-final ) provides the optimum mix of performance and fuel economy.
- The Diesel Oxidation Catalyst (DOC), Diesel Particulate Filter (DPF) and Selective Catalyst Reduction (SCR) aftertreatment system meet the stringent NOx and particulate limits required by the EPA Tier 4-final emissions standards.
- 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.

### **CoolBox+ Cooling System**

- Doosan's CoolBox+ cooling system brings cool air into the enclosure through ducted inlet panels to ensure low noise levels.
- Cooling air flows through the package by an engine-driven pusher fan which moves airflow from the inlet panels, across the powertrain and through the heat exchangers before being exhausted through the roof outlets in the discharge plenum.
- The engine driven fan is equipped with a clutch to allow the fan to operate at variable speeds to optimize cooling system performance and maintain internal enclosure temperature at a broad range of ambient temperatures and load conditions.
- The CoolBox+ solution maximizes performance to achieve the lowest noise levels and minimum water ingress within a compact footprint.
- 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.
- The unit is configured for operation at most common voltages via a multi-position link board, easily accessible from the control panel and equipped with a safety interlock to prevent access while energized.

### **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.
- 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 five panel-mounted sets of 400A female connectors to further expand connection capabilities.

### **Fuel and DEF System**

- Single fuel tank sized for 20-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.
- 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 20-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.
- 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 round pin SAE J560 plug with a high quality, jacketed wiring harness.
- All units are equipped with a 3-inch pintle eye, heavy-duty safety chains and a high quality, heavy-duty jack stand.

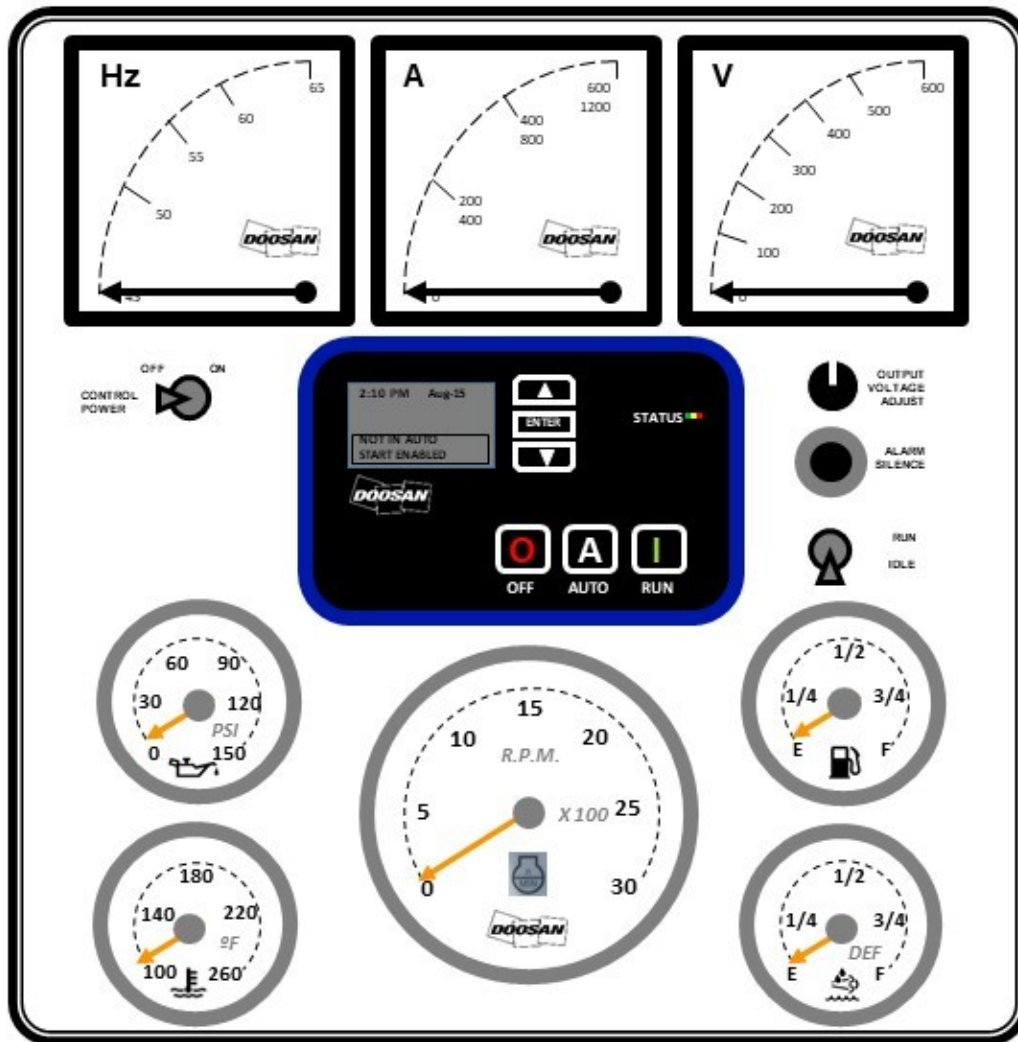
### **Options**

- Doosan models can be equipped with a broad array of optional equipment to meet the need of specific applications. Common selections include:
  - Cold start system including engine coolant heater and battery pad warmers
  - Three-way fuel valve for connection to a remote fuel tank and external DEF fill port with transfer pump control logic for connection to an external DEF supply tank.
  - Battery charger
  - 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
  - Cummins engine: 1 year / unlimited hours or 2 years / 2000 hours
  - Leroy Somer alternator: 2 years / 4000 hours

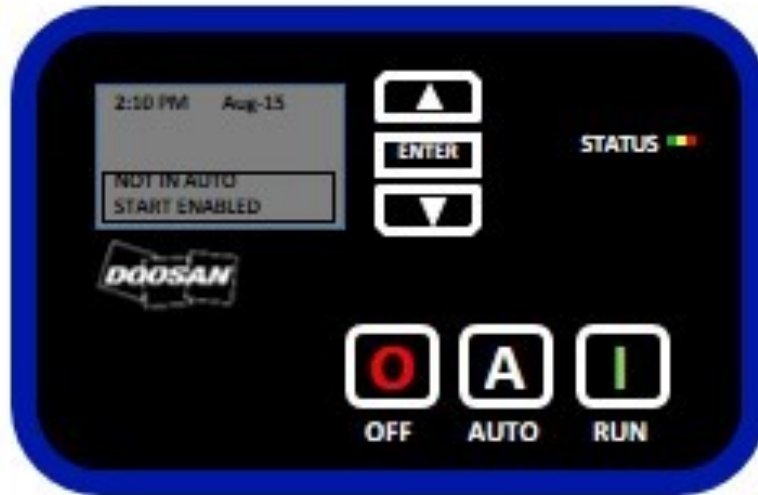
## Operator Panel



## 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: 0-600A @ 480V / 0-1200A @ 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

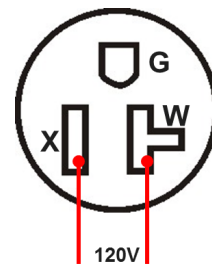
- 6-Button control
- 6-Line LCD Display with user adjustable contrast and temperature compensation from -4°F (-20°C) to 158°F (70°C)
- 1 Multicolor (Red/Yellow/Green) Status LED
- Front Gasket Seal for water ingress prevention to IP65 protection
- Conformal coated circuit board for protection against 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

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

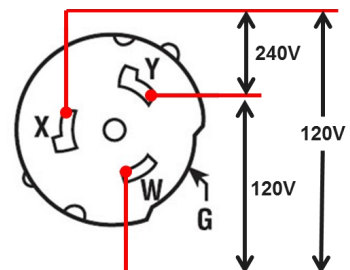
Engine Data			
Engine Manufacturer		Cummins	
Model Number		QSG12	
Prime Output @ 1800 RPM		475 bhp	354 kWm
Standby Output @ 1800 RPM		513 bhp	382 kWm
Prime Output @ 1500 RPM		458 bhp	341 kWm
Standby Output @ 1500 RPM		472 bhp	352 kWm
Engine Type		Four Cycle, Inline	
Engine Control		ECU	
Emissions Certification		EPA Tier 4 Final	
Number of Cylinders		6	
Aspiration		Turbocharged / Intercooled	
Aftertreatment Technology		Diesel Oxidation Catalyst (DOC) / Diesel Particulate Filter (DPF) / Selective Catalyst Reduction (SCR)	
Bore × Stroke		5.2 x 5.7 in	132 x 144 mm
Displacement		720 in <sup>3</sup>	11.8 L
Compression Ratio		17:1	
Governor Type		Isochronous	
Speed Regulation Accuracy		+ / - 0.25% Steady State	
Single Step Load Acceptance		100%	
Cooling System		50% Glycol / 50% Water	
Charging Alternator Output		70 A	
DC System Voltage		24 V	
Battery Size / Output		2 × 8D / 1300 CCA	
Fluid Capacities		Gal	L
Engine Crankcase Lubricant Capacity		9	34
Cooling System Capacity		10.3	40
Usable Fuel Cell Capacity		470	1780
Usable DEF Tank Capacity		46	174
60Hz Fuel Consumption	Gal / h	L / h	Runtime Hrs
@ 25% Load	5.8	22	81
@ 50% Load	11.6	44	40.5
@ 75% Load	17.4	66	27
@ 100% Load	23.2	88	20.2
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 47.2 S4 C6	
Alternator Type	Four Pole Revolving Field	
Number of Leads	12	
Insulation Class	H	
Winding Pitch	2/3	
Voltage Connection Method	Two-Position Link Board: Series Wye / Parallel Wye	
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	700	N/A
SkVA @ 25% Voltage Dip	950	N/A
SkVA @ 30% Voltage Dip	1200	N/A
SkVA @ 35% Voltage Dip	1550	N/A

Power Connections	
Main Circuit Breaker Rating	1200A
Overcurrent Trip Setpoint (240V-1Ø)	909 A
Overcurrent Trip Setpoint (208V-3Ø & 240V-3Ø)	1241 A
Overcurrent Trip Setpoint (240V-3Ø Delta)	1076 A
Overcurrent Trip Setpoint (480V-3Ø)	537 A
Overcurrent Trip Setpoint (600V-3Ø)	N/A
20A—125V GFCI Duplex (NEMA 5-20R) Receptacles	2
50A—125/250V Temp Power (CS6369) Receptacles	3
400A-600V Camlock Connectors (Optional)	5 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)	17267 lb	7848 kg
Gross Axle Weight Rating (GAWR)	15840 lb	7200 kg
Configuration	Tandem Axle	
Suspension	Torsion	
Standard Brake System Configuration	Electric	
Tires	ST235/85R16, Radial	
Wheels	16" x 6", 8 lug on 6.5" bolt circle	
Track Width	72.5 in	1841 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	
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)	241 in	6121 mm	180 in	4572 mm
Width (B)	83 in	2108 mm	59 in	1498 mm
Height (C)	115 in	2921 mm	96 in	2438 mm
Weight (Shipping)	11150 lb	5068 kg	10180 lb	4627 kg
Weight (Ready to Run)	15450 lb	7022 kg	14570 lb	6622 kg
Sound Level @ 23ft (7m), 100% Load	76 dB(A)			

