

QGS - 400 | INDUSTRIAL RANGE POWER BY CUMMINS



No quality - No born

Model: QGS - 400

Powered by CUMMINS



Generator Specification

Service	PRP ⁽¹⁾	ESP ⁽²⁾
Power (kVA)	400	440
Power (kW)	320	352
Rated speed (r.p.m)	1500	
Standard voltage (V)	400/230V	
Rated at power factor(cos phi)	0.8	



QNG Power gensets are compliant with ISO 9001 and CE standard, which include the following directives:

- 2006/42/EC Machinery safety.
- 2006/95/EC Low voltage
- EN 60204-1: 2006+A1: 2009, EN ISO 12100: 2010, EN ISO 13849-1: 2008, EN 12601 : 2010

(1) PRP (Prime Power):

According to ISO8528-1, prime power is the maximum power available during a variable power sequence, which may be run for an unlimited number of hours per year; between stated maintenance intervals. The permissible average power output during at 24 hours period shall not exceed 80% of the prime power. 10% overload available for governing purposes only.

(2) ESP (Standby Power):

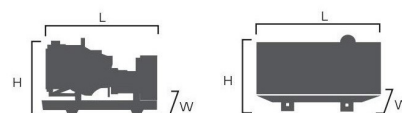
According to ISO 8528-1, It is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 hours of operation per year (of which no more than 300 hours for continuative use) with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. No overload capability is available.

Powers Voltage (V)	ESP		PRP		Standby Amps
	KVA	KW	KVA	KW	
415/240	440	352	400	320	612.1
400/230	440	352	400	320	635.1
380/220	440	352	400	320	668.5

Performance Data		
Model	QGS - 400	
Engine brand	Cummins	
Engine model	NTAA855G7A	
Speed control type	Electronic	
Phase	3	
Control system	Digital	
Starter motor voltage	24V	
Frequency	50HZ	
Engine speed (RPM)	1500	
Fuel Consumption (L/H)	100% standby power	98
	100% prime power	89.2
	75% prime power	67.8
	50% prime power	47.5

Standard reference Conditions

Note: Standard reference condition 25°C (77°F) air inlet temp, 100m(328ft) A.S.L 30% relative humidity. Fuel consumption dat with diesel fuel with specific gravity of 0.85 and conforming to BS 2869: 1998, Class A2



Dimension and Weight		
Dimension	Open	Silent
Length (L)	3280mm	4365mm
Width (W)	1270mm	1650mm
Height (H)	1885mm	2525mm
Net Weight	3175KG	4278KG
Fuel Tank (L)	550	900

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■ Engine Specification: NTAA855G7A

Basic technical data	
No. of cylinders	6
Cylinder arrangement	In-line
Cycle	4 stroke
Induction system	Turbocharged&Air-AirCooled
Compression ratio	14.0:1
Bore	140mm
Stroke	152mm
Displacement	14L
Engine idle speed	575-650 RPM
Approximate engine weight	1270kg

Cooling system	
Coolant capacity-engine	20.8L
Maximum coolant friction head external to engine:	
-1800 rpm	/
-1500 rpm	41 kPa
Maximum static head of coolant above engine crank centerline	14m
Standard Thermostat (Modulating) Range	82 - 94 °C
Minimum Pressure Cap	103 kPa
Maximum Top Tank Temperature for Standby / Prime Power	/

Fuel system	
Injection system	Cummins PT
Governor type	Electronic
FuelRailPressure-PSI(kPa)	1196kPa
Maximum fuel inlet temperature	71 °C
Total drain flow (constant for all loads)	/

Air intake system	
Maximum intake air restriction with heavy duty air cleaner:	
-Dirty element	6.22kpa
-Clean element	3.74kpa

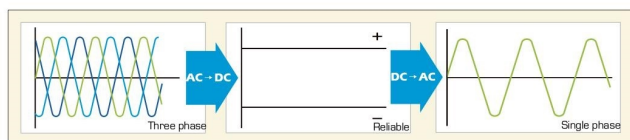
Lubrication system	
Engine oil pressure for engine protection devices:	
— Idle speed(Minimum)	103kPa
— Governed speed(Maximum)	241-345kPa
Maximum oil temperature	121 °C
Minimum required lube system capacity-sump plus filters	38.6L

Electrical system	
Cranking motor (Heavy duty, positive engagement)	24V
Battery charging system, negative ground	35 ampere
Maximum allowable resistance of cranking circuit	0.002 ohm
Minimum recommended battery capacity- cold soak	900 CCA

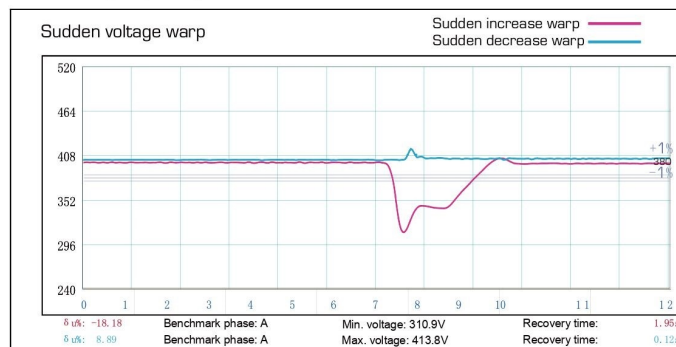
General installation	Prime power
Gross engine power output	407kw
Piston speed	7.62 m/s
Friction horsepower	22 kW
Engine water flow to engine	5 l/min
Intake air flow	549 l/sec
Exhaust gas flow	1240 l/sec
Exhaust gas temperature	473 °C
Radiated heat to ambient	254kW
Heat rejection to coolant	305 kW
Heat rejection to fuel	/

■ Alternator Specification

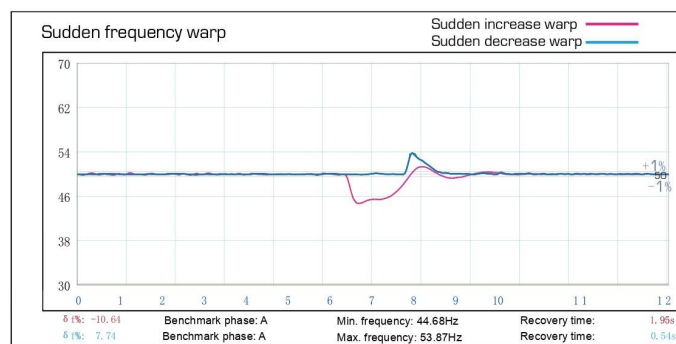
Alternator	
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding Connections (standard)	Star-serie
Terminals	12
Insulation type	H class
Winding Pitch	2/3
IP rating	IP23
Excitation system	Self-excited
Bearing	Single bearing
Coating	Vacuum impregnation
Voltage regulator	A.V.R
Couping	Flexible disc



Emergency voltage curve



Emergency frequency curve



■ Options

Engine	Alternator	Generator Sets	Fuel System
<ul style="list-style-type: none"> Water Jacket Pre-heater Fuel heater 	<ul style="list-style-type: none"> Winding Temp measuring Instrument Alternator Pre-heater PMG Anti-damp and anti-corrosion treatment Anti-condensation heater Winding and bearing RTD 	<ul style="list-style-type: none"> Tools with the machine Extended range fuel tank Bunded fuel tank 	<ul style="list-style-type: none"> Low fuel level alarm Automatic fuel feeding system Fuel T-valves
Canopy	Lub oil system	Cooling System	Control Panel
<ul style="list-style-type: none"> Rental type Canopy Trailer 	<ul style="list-style-type: none"> Oil Pre-heater Oil temp sensor 	<ul style="list-style-type: none"> Front heat protection 	<ul style="list-style-type: none"> Remote control panel ATS Synchronizing controller Adjustable earth leakage relay



■ Control Panel

Configuration

- Emergency stop button
- Protection MCB
- Battery charger
- Integrated aviation plug
- ATS connection
- Digital control module

Benefits

- Less wiring and components
- Integrated solution
- Less engineering and programming
- User friendly set-up and button layout
- Module can be configured to suit individual applications
- PC software for simplified configuration
- Wide range of communication capabilities

Features

- 3 phase generator set monitoring
- Support of engines equipped with electronic control unit
- Comprehensive diagnostic message
- Automatic or manual start/stop of the gensets
- Push buttons for simple control, lamp test
- Graphic back-lit LCD display
- Parameters adjustable via keyboard or PC
- Mains measurements (50HZ/60HZ)
- Generator measurements (50HZ/60HZ)
- Comprehensive shutdown or warning on fault condition
- 3 phase Generator protections
 - Over-/under voltage
 - Over-/under frequency
 - Current/voltage asymmetry
 - Over current/overload
- 3 phase AMF function
 - Over-/under frequency
 - Over-/under voltage
 - Voltage asymmetry
- Configurable analog inputs
- Battery voltage, engine speed (pick-up) measurement
- Configurable programmable binary inputs and outputs
- Warm-up and cooling functions
- Generator C.B. and Mains C.B. control with feedback and return timer
- RS232 interface
- Modem communication support
- Hours counter
- Sealed to Ip65
- Event log

Operation conditions

- Operation temp: -20 °C to + 70 °C
- Storage temp: -30 °C to + 80 °C
- Operating humidity: 95% w/o condensation
- Vibration : 5-25Hz, ± 1.6 mm
5-100Hz, $a=4g$
- Shocks: $a= 500m/s^2$

Options

- Ethernet interface (Remote monitoring and control)
- GSM modem/wireless internet (Remote monitoring and control)
- RS232-RS485 Dual port interface
- Synchronizing control panel
- Distribution board with sockets kit and power busbar
- Battery trickle charge ammeter
- Earth leakage protection
- Earth fault protection
- Low fuel level alarm
- Low fuel level shutdown
- High fuel level alarm
- Fuel transfer system control
- Low coolant level shutdown
- High lube oil temp shutdown
- Overload via alarm switch on breaker
- Engine coolant heater controls
- Control panel heater
- Speed adjust switch
- Oil temp displayed on LCD screen
- Additional 8 inputs and outputs

