ENERGEN
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PRAMAC

GL Series

Standby Power Rating

Model GL02224MNAX (Aluminum – Bisque) – 17.6KVA, 50 Hz, 1ø
Model GL02724MNAX (Aluminum – Bisque) – 21.6KVA, 50 Hz, 1ø
Model GL02224RNAX (Aluminum – Bisque) – 22 KVA, 50 Hz, 3ø
Model GL02724RNAX (Aluminum – Bisque) – 27 KVA, 50 Hz, 3ø

INCLUDES:

- Two Line LCD Tri-Lingual Digital Evolution™ Controller
- Isochronous Electronic Governor
- Sound Attenuated Enclosure
- Closed Coolant Recovery System
- Smart Battery Charger
- UV/Ozone Resistant Hoses
- ±1% Voltage Regulation
- Natural Gas or LP Operation
- 3 Year Limited Warranty

Not for sale in EU

Generator Output Voltage / kVA - 50Hz

		kVA LPG	Amp LPG	kVA Nat. Gas	Amp Nat. Gas	CB Size (Both)
17.6 kVA	110/220 V, 1Ø, 1.0 pf	17.6	80	17.6	80	90
21.6 kVA	110/220 V, 1Ø, 1.0 pf	21.6	98	19.7	89	125
22 kVA	231/400 V, 3Ø, 0.8 pf	22	31	22	31	35
27 kVA	231/400 V, 3Ø, 0.8 pf	27	39	25	36	50

Engine Fuel Consumption

		Natural Gas		Propane		
		(ft^3/hr)	(m^3/hr)	(gal/hr)	(l/hr)	(ft^3/hr)
17.6 kVA & 22 kVA	25% of rated load	100	2.8	1.1	4.2	40
	50% of rated load	190	5.4	2.1	7.8	75
	75% of rated load	255	7.2	2.8	10.5	101
	100% of rated load	316	9	3.4	13	125
21.6 kVA & 27 kVA	25% of rated load	108	3.1	1.2	4.5	43
	50% of rated load	197	5.6	2.1	8.1	78
	75% of rated load	287	8.2	3.1	11.8	114
	100% of rated load	359	10.2	3.9	14.8	143

STANDBY RATING: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046-1. Design and specifications are subject to change without notice.

Application and engineering data

Generator Specifications

Type	Synchronous
Rotor Insulation Class	H
Stator Insulation Class	H
Telephone Interference Factor (TIF)	<50
Alternator Output Leads 1-Phase	4 wire
Alternator Output Leads 3-Phase	4 wire
Bearings	Sealed Ball
Coupling	Flexible Disc
Excitation System	Direct

Voltage Regulation

Type	Electronic
Sensing	Single Phase
Regulation	± 1%

Governor Specifications

Type	Electronic
Frequency Regulation	Isochronous
Steady State Regulation	± 0.25%

Electrical System

Battery Charge Alternator	12V 30 Amp
Static Battery Charger	2 Amp
Recommended Battery	Group 26, 525CCA
System Voltage	12 Volts

Generator Features

Revolving field heavy duty generator
Directly connected to the engine
Operating temperature rise 120 °C above a 40 °C ambient
Class H insulation is rated at 150 °C rise at 25 °C ambient
All models fully prototyped tested

Enclosure Features

Aluminum weather protective enclosure	Ensures protection against mother nature. Electrostatically applied textured epoxy paint for added durability.
Enclosed critical grade muffler	Quiet, critical grade muffler is mounted inside the unit to prevent injuries.
Small, compact, attractive	Makes for an easy, eye appealing installation.
SAE	Sound attenuated enclosure ensures quiet operation.

Engine Specifications

Model	In line
Cylinders	4
Displacement (Liters)	2.4
Bore (in/mm)	3.41/86.5
Stroke (in/mm)	3.94/100
Compression Ratio	9.5:1
Intake Air System	Naturally Aspirated
Lifter Type	Hydraulic

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full flow spin-on cartridge
Crankcase Capacity (qt/l)	4/3.8

Engine Cooling System

Type	Closed
Water Pump	Belt driven
Fan Speed (rpm)	1980 - 17.6 kVA 1650 - 21.6 kVA
Fan Diameter (in/mm)	17.75/450.9
Fan Mode	Pusher

Fuel System

Fuel Type	Natural gas, propane vapor
Carburetor	Down Draft
Secondary Fuel Regulator	Standard
Fuel Shut Off Solenoid	Standard
Operating Fuel Pressure	5-14" water column/9-26 mm HG

(All ratings in accordance with BS5514, ISO3046, ISO8528, SAE J1349 and DIN6271)

Operating Data

Engine Cooling

	17.6 kVA & 22 kVA	21.6 kVA & 27 kVA
Air flow (inlet air including alternator and combustion air in cfm/cmm)	2000/56.6	
System coolant capacity (gal/liters)	2.5/9.5	
Heat rejection to coolant (BTU per hr/MJ per hr)	83,000/87.6	100,000/105.5
Maximum operation air temperature on radiator (°C/°F)	60/150	
Maximum ambient temperature (°C/°F)	50/140	

Combustion Requirements

Flow at rated power (cfm/cmm)	57/1.6

Sound Emissions

Sound output in dB(A) at 23 ft (7 m) with generator operating at normal load*	62	61

*Sound levels are taken from the front of the generator. Sound levels taken from other sides of the generator may be higher depending on installation parameters.

Exhaust

Exhaust flow at rated output (cfm/cmm)	140/4	110/3.1
Exhaust temperature at muffler outlet (°C/°F)	468/875	474/885

Engine Parameters

Rated Synchronous rpm	1500

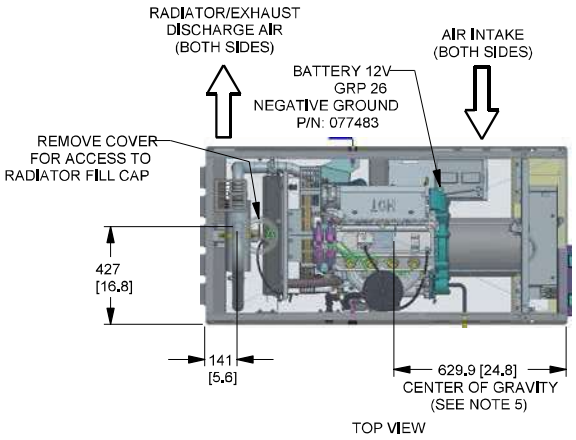
Power Adjustment for Ambient Conditions

Temperature Deration ..... 3% for every 10 °C above 40 °C or 1.65% for every 10 °F above 104 °F
Altitude Deration (17.6 kVA) ..... 1% for every 100 m above 915 m or 3% for every 1000 ft above 3000 ft
Altitude Deration (21.6 kVA) ..... 1% for every 100 m above 183 m or 3% for every 1000 ft above 600 ft

Controller Features

2-Line Plain Text LCD Display ..... Simple user interface for ease of operation
Mode Switch: Auto ..... Automatic Start on Utility failure. 7 day exerciser
Off ..... Stops unit. Power is removed. Control and charger still operate.
Manual ..... Start with starter control, unit stays on. If utility fails, transfer to load takes place.
Programmable start delay between 5-30 seconds ..... Standard
Engine Start Sequence ..... Cyclic cranking: 16 sec on, 7 rest (90 sec maximum duration)
Engine Warm-up ..... 5 sec
Engine Cool-Down ..... 1 min
Starter Lock-out ..... Starter cannot re-engage until 5 sec after engine has stopped.
Smart Battery Charger ..... Standard
Automatic Voltage Regulation with Over and Under Voltage Protection ..... Standard
Automatic Low Oil Pressure Shutdown ..... Standard
Overspeed Shutdown ..... Standard, 72 Hz
High Temperature Shutdown ..... Standard
Overcrank Protection ..... Standard
Safety Fused ..... Standard
Failure to Transfer Protection ..... Standard
Low Battery Protection ..... Standard
50 Event Run Log ..... Standard
Future Set Capable Exerciser ..... Standard
Incorrect Wiring Protection ..... Standard
Internal Fault Protection ..... Standard
Common External Fault Capability ..... Standard
Governor Failure Protection ..... Standard

Installation Layout



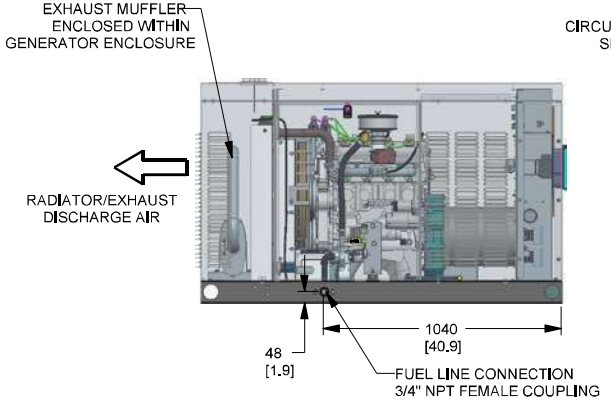
TOP VIEW

SERVICE ITEM	2.4L
OIL FILL CAP	EITHER SIDE
OIL DIP STICK	RIGHT SIDE
OIL FILTER	RIGHT SIDE
OIL DRAIN HOSE	LEFT SIDE
RADIATOR DRAIN	LEFT SIDE
COOLANT RECOVERY BOTTLE	LEFT SIDE
RADIATOR FILL CAP	ROOF TOP
AIR CLEANER ELEMENT	LEFT SIDE
SPARK PLUGS	LEFT SIDE
MUFFLER	SEE NOTE 11
DRIVE BELT	EITHER SIDE
FAN BELT	SEE NOTE 11
BATTERY	LEFT SIDE

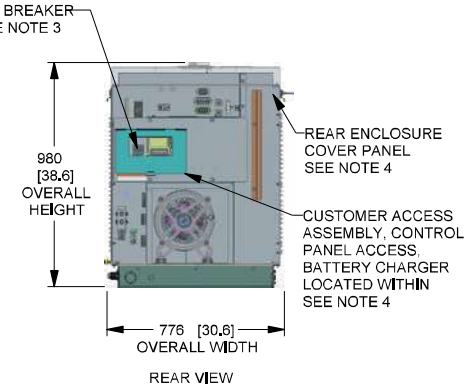
REFERENCE OWNERS MANUAL
FOR PERIODIC REPLACEMENT
PART LISTINGS.

NOTES:

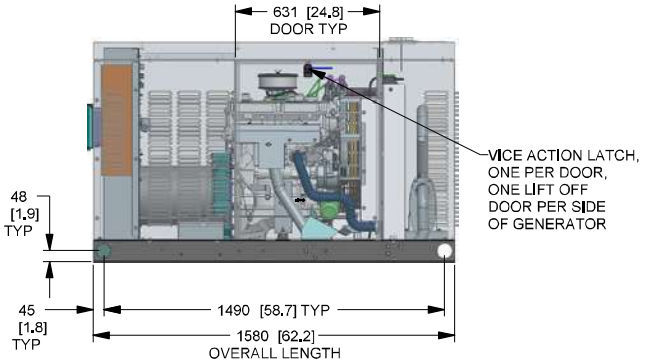
1. MINIMUM RECOMMENDED CONCRETE PAD SIZE: 1092 (43") WIDE X 1885 (74.2") LONG. REFERENCE INSTALLATION GUIDE SUPPLIED WITH UNIT FOR CONCRETE PAD GUIDELINES.
2. ALLOW SUFFICIENT ROOM ON ALL SIDES OF THE GENERATOR FOR MAINTENANCE AND SERVICING. THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
3. CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
   - SEE SPECIFICATION SHEET OR OWNERS MANUAL
   - ACCESSIBLE THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
4. REMOVE THE REAR ENCLOSURE COVER PANEL TO ACCESS THE STUB-UP AREAS AS FOLLOWS:
   - HIGH VOLTAGE CONNECTION INCLUDING AC LOAD LEAD CONDUIT CONNECTION NEUTRAL CONNECTION, BATTERY CHARGER 120 VOLT AC (0.5 AMP MAX) CONNECTION.
   - LOW VOLTAGE CONNECTION INCLUDING TRANSFER SWITCH CONTROL WIRES.
5. CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
6. BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
7. REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
8. MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS)
9. MUST ALLOW FREE FLOW OF INTAKE AIR, DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
10. GENERATOR MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM RADIATOR IS NOT RECIRCULATED.
11. EXHAUST MUFFLER AND FAN BELT ENCLOSED WITHIN GENERATOR ENCLOSURE, REMOVE FRONT PANEL TO ACCESS.



LEFT SIDE VIEW



REAR VIEW



RIGHT SIDE VIEW

WEIGHT DATA				
ENGINE/KW KVA	ENCLOSURE MATERIAL	WEIGHT GENSET ONLY KG [LBS]	WEIGHT SHIPPING SKID KG [LBS]	SHIPPING WEIGHT KG [LBS]
2.4L 22KW (60HZ) SINGLE PHASE 17.4KVA (50HZ) THREE PHASE 22KVA (50HZ)	AL	410.5 [905]	30 [66]	440 [971]
2.4L 27KW (60HZ) SINGLE PHASE 21.6KVA (50HZ) THREE PHASE 27KVA (50HZ)	AL	426 [940]	30 [66]	456 [1006]

DIMENSIONS: MM [INCH]

Installation Layout