

# GDZ

## SERIES



We are Exclusive Distributor of DEUTZ



# GENPOWER<sup>®</sup>

G E N E R A T O R

231/400V - 50Hz & 277/480V - 60Hz

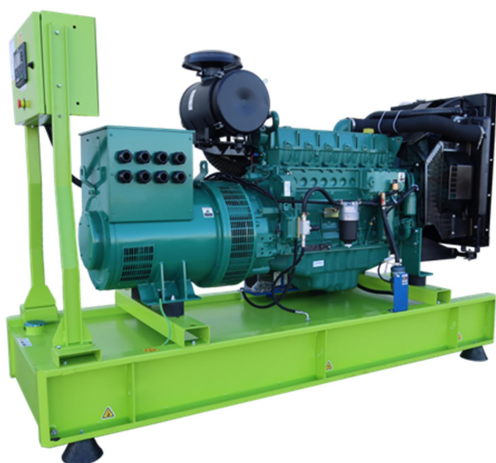
## GDZ 130 & 137

Genset General Information

| Generator | Frequency | Voltage | Power Factor | Speed | Diesel Engine         |                  |        | Alternator                           |             |               | Type of    | Generator Output |       |       |
|-----------|-----------|---------|--------------|-------|-----------------------|------------------|--------|--------------------------------------|-------------|---------------|------------|------------------|-------|-------|
| Model     | Hz        | V       | CosQ         | rpm   | Brand                 | Model            | Serial | Brand                                | Model       | Serial        | Operation  | kVA              | kW    | A     |
| GDZ 130   | 50        | 231/400 | 0,8          | 1500  | D<br>E<br>U<br>T<br>Z | BF4M1013EC<br>G2 | BF     | G<br>E<br>N<br>P<br>O<br>W<br>E<br>R | G<br>N<br>P | GNP 270<br>S  | Stand By   | 130,0            | 104,0 | 187,9 |
|           |           |         |              |       |                       |                  |        |                                      |             |               | Prime      | 118,0            | 94,4  | 170,5 |
| GDZ 137   | 60        | 277/480 | 0,8          | 1800  | D<br>E<br>U<br>T<br>Z | BF4M1013EC<br>G2 | BF     | G<br>E<br>N<br>P<br>O<br>W<br>E<br>R | G<br>N<br>P | GNP 225<br>LX | Continuous | 103,6            | 82,9  | 149,7 |
|           |           |         |              |       |                       |                  |        |                                      |             |               | Stand By   | 137,0            | 109,6 | 198,0 |
|           |           |         |              |       |                       |                  |        |                                      |             |               | Prime      | 124,5            | 99,6  | 180,0 |
|           |           |         |              |       |                       |                  |        |                                      |             |               | Continuous | 114,0            | 91,2  | 164,7 |

### Features and Benefits

- We are exclusive Distributor of DEUTZ Engine
- Half Century Experience in Generator Manufacturing
- Diesel Engines with Advanced Technology and Quality
- Alternators with Advanced Technology and Quality
- Control Panel Suitable for Flexible Application
- High Quality and Reliable Technology
- Patented Compact Designed and Soundproof Canopy
- Original DEUTZ AG Products
- Low Noise Level
- Low Exhaust Emission
- Low Operating Cost
- Low Fuel Consumption
- Low Oil Consumption
- Tropical 50°C Radiator
- Global DEUTZ AG Warranty
- Suitable for Heavy-Duty
- Durability
- Wide Range of Affordable Spare Parts
- Fuel Filter with Water and Particle Separator
- First Class Product Support
- Global Technical Service and Maintenance Support



### General Characteristics

#### 50Hz - 1500-min -1

##### Engine

|                           |                   |                |
|---------------------------|-------------------|----------------|
| Type                      |                   | BF4M1013EC     |
| Speed                     | min <sup>-1</sup> | 1500           |
| Net frequency             | Hz                | 50             |
| Power standard            |                   | LTP            |
| Power level               |                   | G2             |
| Exhaust emission standard |                   | Fuel optimized |

##### General

|                                   |     |                        |
|-----------------------------------|-----|------------------------|
| Aspiration                        |     | Turbo, CAC             |
| Governing System                  |     | Electronic             |
| Governor Brand                    |     | Heinzmann / DDE        |
| No of cylinders                   |     | 4                      |
| Configuration                     |     | in-line                |
| Injection system                  |     | single injection pumps |
| Displacement                      | l   | 4,76                   |
| Bore                              | mm  | 108                    |
| Stroke                            | mm  | 130                    |
| Compression ratio                 |     | 19:1                   |
| Mean effective pressure           | bar | 19,50                  |
| Piston speed                      | m/s | 6,50                   |
| Rotation (looking at flywheel)    |     | ccw                    |
| No of teeth on flywheel ring gear |     | 129                    |

##### Governor performance

|                                               |   |       |
|-----------------------------------------------|---|-------|
| Speed droop (static) mech. gov.               | % | 4-5   |
| Speed droop (static) electr. gov.(EMR/DDE)    | % | 0 - 3 |
| Governing standards to ISO 8528 Parts 1 and 5 |   | G3    |

##### Moment of inertia

|                                                     |                   |       |
|-----------------------------------------------------|-------------------|-------|
| Engine without flywheel                             | kg m <sup>2</sup> | 0.23  |
| Flywheel (standard genset spec.)                    | kg m <sup>2</sup> | 2,60  |
| Max. step load acceptance, 1st step                 | %                 | -     |
| Sound power at full load,incl. cooling system       | dB(A)             | 112.7 |
| Sound press.(1m average,full load), incl.cool.syst. | dB(A)             | 99    |

##### Engine Weight

|                                |    |     |
|--------------------------------|----|-----|
| Engine dry, w/o cooling system | kg | 526 |
| Engine with cooling system     | kg | 560 |

##### Lubrication system

|                                            |     |               |
|--------------------------------------------|-----|---------------|
| Oil specification                          |     | 15W40/CI-4/SL |
| Oil consumption (as % of fuel consumption) |     | 0.3           |
| Oil capacity (sump)                        | l   | 11            |
| Min. oil pressure (warning)                | bar | 2,70          |
| Min. oil pressure (shut down)              | bar | 2             |
| Max. permissible oil temperature(oil pan)  | °C  | 130           |

##### Output

|                                    |     |       |
|------------------------------------|-----|-------|
| Gross output(LTP or StandBy Power) | kW  | 116   |
| Fan reduction                      | kW  | 5,90  |
| Net flywheel                       | kW  | 110.1 |
| Electrical output (Stand By)       | kVA | 130   |
| Gross output(PRP or Prime Power)   | kW  | 105   |
| Gross output(Continuous Power)     | kW  | 96    |

#### 60Hz - 1800-min -1

##### Engine

|                           |                   |                |
|---------------------------|-------------------|----------------|
| Type                      |                   | BF4M1013EC     |
| Speed                     | min <sup>-1</sup> | 1800           |
| Net frequency             | Hz                | 60             |
| Power standard            |                   | LTP            |
| Power level               |                   | G2             |
| Exhaust emission standard |                   | Fuel optimized |

##### General

|                                   |     |                        |
|-----------------------------------|-----|------------------------|
| Aspiration                        |     | Turbo, CAC             |
| Governing System                  |     | Electronic             |
| Governor Brand                    |     | Heinzmann / DDE        |
| No of cylinders                   |     | 4                      |
| Configuration                     |     | in-line                |
| Injection system                  |     | single injection pumps |
| Displacement                      | l   | 4,76                   |
| Bore                              | mm  | 108                    |
| Stroke                            | mm  | 130                    |
| Compression ratio                 |     | 19:1                   |
| Mean effective pressure           | bar | 17,50                  |
| Piston speed                      | m/s | 7,80                   |
| Rotation (looking at flywheel)    |     | ccw                    |
| No of teeth on flywheel ring gear |     | 129                    |

##### Governor performance

|                                               |   |       |
|-----------------------------------------------|---|-------|
| Speed droop (static) mech. gov.               | % | 4-5   |
| Speed droop (static) electr. gov.(EMR/DDE)    | % | 0 - 3 |
| Governing standards to ISO 8528 Parts 1 and 5 |   | G3    |

##### Moment of inertia

|                                                     |                   |       |
|-----------------------------------------------------|-------------------|-------|
| Engine without flywheel                             | kg m <sup>2</sup> | 0.23  |
| Flywheel (standard genset spec.)                    | kg m <sup>2</sup> | 2,60  |
| Max. step load acceptance, 1st step                 | %                 | -     |
| Sound power at full load,incl. cooling system       | dB(A)             | 117,3 |
| Sound press.(1m average,full load), incl.cool.syst. | dB(A)             | 103.5 |

##### Engine Weight

|                                |    |     |
|--------------------------------|----|-----|
| Engine dry, w/o cooling system | kg | 526 |
| Engine with cooling system     | kg | 560 |

##### Lubrication system

|                                            |     |               |
|--------------------------------------------|-----|---------------|
| Oil specification                          |     | 15W40/CI-4/SL |
| Oil consumption (as % of fuel consumption) |     | 0.3           |
| Oil capacity (sump)                        | l   | 11            |
| Min. oil pressure (warning)                | bar | 2,90          |
| Min. oil pressure (shut down)              | bar | 2,2           |
| Max. permissible oil temperature(oil pan)  | °C  | 130           |

##### Output

|                                    |     |       |
|------------------------------------|-----|-------|
| Gross output(LTP or StandBy Power) | kW  | 125   |
| Fan reduction                      | kW  | 10,20 |
| Net flywheel                       | kW  | 114.8 |
| Electrical output (Stand By)       | kVA | 137   |
| Gross output(PRP or Prime Power)   | kW  | 115   |
| Gross output(Continuous Power)     | kW  | 105   |

## SERIES

### 50Hz - 1500-min -1

### 60Hz - 1800-min -1

#### Fuel System, Fuel consumption

|           |     |       |
|-----------|-----|-------|
| 110% Load | l/h | 28,46 |
| 100% Load | l/h | 25,76 |
| 75% Load  | l/h | 19,05 |
| 50% Load  | l/h | 12,76 |

#### Fuel System, Fuel consumption

|           |     |       |
|-----------|-----|-------|
| 110% Load | l/h | 30,67 |
| 100% Load | l/h | 27,88 |
| 75% Load  | l/h | 20,61 |
| 50% Load  | l/h | 13,81 |

#### Cooling System, General engine cooling data

|                                                     |      |       |
|-----------------------------------------------------|------|-------|
| Max.perm.coolant outlet temperature                 | °C   | 105   |
| Max. perm. flow resistance (cool. syst. and piping) | bar  | 0.25  |
| Max.temperature of coolant (warning)                | °C   | 108   |
| Max. temperature of coolant (shutdown)              | °C   | 110   |
| Temperature at which thermostat starts to open      | °C   | 83    |
| Temperature at which thermostat is fully open       | °C   | 98    |
| Delivery of coolant pump                            | m3/h | 10,20 |
| Min. pressure before coolant pump                   | bar  | 0.3   |
| Temperature at CAC outlet at standard conditions    | °C   | 40    |

#### Cooling System, General engine cooling data

|                                                     |      |       |
|-----------------------------------------------------|------|-------|
| Max.perm.coolant outlet temperature                 | °C   | 105   |
| Max. perm. flow resistance (cool. syst. and piping) | bar  | 0.35  |
| Max.temperature of coolant (warning)                | °C   | 108   |
| Max. temperature of coolant (shutdown)              | °C   | 110   |
| Temperature at which thermostat starts to open      | °C   | 83    |
| Temperature at which thermostat is fully open       | °C   | 98    |
| Delivery of coolant pump                            | m3/h | 12,30 |
| Min. pressure before coolant pump                   | bar  | 0.3   |
| Temperature at CAC outlet at standard conditions    | °C   | 40    |

#### Engine Cooling System

|                                                       |      |       |
|-------------------------------------------------------|------|-------|
| Coolant capacity (engine)                             | l    | 7,40  |
| Coolant capacity (incl. cooling unit)                 | l    | 19,70 |
| Air to boil (max. permissible cool. air temp. at fan) | °C   | 54    |
| Fan power consumption                                 | kW   | 5,90  |
| Cooling air flow                                      | m3/h | 6100  |
| Air pressure loss, external                           | mbar | 1,50  |

#### Engine Cooling System

|                                                       |      |       |
|-------------------------------------------------------|------|-------|
| Coolant capacity (engine)                             | l    | 7,40  |
| Coolant capacity (incl. cooling unit)                 | l    | 19,70 |
| Air to boil (max. permissible cool. air temp. at fan) | °C   | 57    |
| Fan power consumption                                 | kW   | 10,20 |
| Cooling air flow                                      | m3/h | 7600  |
| Air pressure loss, external                           | mbar | 2,00  |

#### Heat Balance

|                                    |    |       |
|------------------------------------|----|-------|
| Heat dissipation (engine radiator) | kW | 56,50 |
| Heat dissipation (CAC)             | kW | 18,40 |
| Heat dissipation (convection)      | kW | 11,30 |

#### Heat Balance

|                                    |    |       |
|------------------------------------|----|-------|
| Heat dissipation (engine radiator) | kW | 61,20 |
| Heat dissipation (CAC)             | kW | 22,90 |
| Heat dissipation (convection)      | kW | 12,30 |

#### Inlet / Exhaust Data

|                                         |      |      |
|-----------------------------------------|------|------|
| Max. intake depression (Switch setting) | mbar | 25   |
| Combustion air volume                   | m3/h | 433  |
| Max. exhaust back pressure              | mbar | 30   |
| Max. exhaust gas temperature            | °C   | 560  |
| Exhaust gas flow (at above temp)        | m3/h | 1225 |
| Exhaust flange / pipe diameter          | mm   | -    |

#### Inlet / Exhaust Data

|                                         |      |      |
|-----------------------------------------|------|------|
| Max. intake depression (Switch setting) | mbar | 25   |
| Combustion air volume                   | m3/h | 514  |
| Max. exhaust back pressure              | mbar | 30   |
| Max. exhaust gas temperature            | °C   | 520  |
| Exhaust gas flow (at above temp)        | m3/h | 1465 |
| Exhaust flange / pipe diameter          | mm   | -    |

#### Electrical System

|                                                    |    |      |
|----------------------------------------------------|----|------|
| Voltage                                            | V  | 12   |
| Starter                                            | Kw | 6    |
| Alternator output                                  | A  | 35   |
| Batteries(minimum capacity, cold start limit -5°C) | Ah | 1*85 |

#### Electrical System

|                                                    |    |      |
|----------------------------------------------------|----|------|
| Voltage                                            | V  | 12   |
| Starter                                            | Kw | 6    |
| Alternator output                                  | A  | 35   |
| Batteries(minimum capacity, cold start limit -5°C) | Ah | 1*85 |

#### Alternator Technical Parameters

|                  |        |              |                                 |          |              |
|------------------|--------|--------------|---------------------------------|----------|--------------|
| Insulation Class |        | H            | Field Control System            |          | Self Excited |
| Winding Pitch    |        | 2/3 - (N° 6) | A.V.R. Model                    | Standard | SX460        |
| Wires            |        | 12           | Voltage Regulation              | %        | ± 1          |
| Protection       |        | IP 23        | Sustained Short-Circuit Current | 10 sec   | 300% (3 IN)  |
| Altitude         | m      | 1000         | Total Harmonic (*) TGH / THC    | %        | < 4          |
| Overspeed        | rpm    | 2250         | Wave Form: NEMA = TIF - (*)     |          | < 50         |
| Air Flow         | m³/sec | 0.514        | Wave Form :I.E.C. = THF - (*)   | %        | < 2          |
| Bearing Drive    | N/A    | -            | Bearing Non - Drive             | Bearing  | 6310-2RZ     |
| Rotor Winding    | 100%   | Copper       | Stator Winding                  | 100%     | Copper       |

(\*) Total harmonic content line to line, at no load or full rated linear and balanced load

Genpower synchron alternators are produced according to TSE 60034-1; IEC 60034-22; GB755; BS4999-5000; NEMA MG 1.22 standards

## SERIES

### Alternator Specifications

#### 50 Hz - 231/400V - Cos Q 0,8 - 1500 rpm

50Hz

##### Standard Using Alternator

| Brand/Model       | Genpower | GNP 270 S  |         | Optional Using Alternator |         | Leroy Somer |         | TAL044E |         | Stamford |  | UC274D |  |
|-------------------|----------|------------|---------|---------------------------|---------|-------------|---------|---------|---------|----------|--|--------|--|
| Duty              |          | Continuous |         | Stand By                  |         |             |         |         |         |          |  |        |  |
| Ambient           | C°       | 40°C       |         | 27°C                      |         |             |         |         |         |          |  |        |  |
| Class/Temp. Rise  | C°       | H / 125° K |         | H / 163° K                |         |             |         |         |         |          |  |        |  |
| Series Star (V)   | V        | 380/220    | 400/231 | 415/240                   | 1 Phase | 380/220     | 400/231 | 415/240 | 1 Phase |          |  |        |  |
| Parallel Star (V) | V        | 190/110    | 200/115 | 208/120                   | 220     | 190/110     | 200/115 | 208/120 | 220     |          |  |        |  |
| Series Delta (V)  | V        | 220        | 230     | 240                       | 230     | 220         | 230     | 240     | 230     |          |  |        |  |
| Output Power      | kVA      | 123,0      | 123,0   | 128,0                     | -       | 135,0       | 135,0   | 140,0   | -       |          |  |        |  |
| Output Power      | kW       | 98,4       | 98,4    | 102,4                     | -       | 108,0       | 108,0   | 112,0   | -       |          |  |        |  |

#### 60 Hz - 277/480V - Cos Q 0,8 - 1800 rpm

60Hz

##### Standard Using Alternator

| Brand/Model       | Genpower | 225LX      |         | Optional Using Alternator |         | Leroy Somer |         | TAL044D |         | Stamford |  | UC 274C |  |
|-------------------|----------|------------|---------|---------------------------|---------|-------------|---------|---------|---------|----------|--|---------|--|
| Duty              |          | Continuous |         | Stand By                  |         |             |         |         |         |          |  |         |  |
| Ambient           | C°       | 40°C       |         | 27°C                      |         |             |         |         |         |          |  |         |  |
| Class/Temp. Rise  | C°       | H / 125° K |         | H / 163° K                |         |             |         |         |         |          |  |         |  |
| Series Star (V)   | V        | 416/240    | 440/254 | 480/277                   | 1 Phase | 416/240     | 440/254 | 480/277 | 1 Phase |          |  |         |  |
| Parallel Star (V) | V        | 208/120    | 220/127 | 240/138                   | -       | 208/120     | 220/127 | 240/138 | -       |          |  |         |  |
| Series Delta (V)  | V        | 240        | 254     | 277                       | 240     | 240         | 254     | 277     | 240     |          |  |         |  |
| Output Power      | kVA      | 117,0      | 123,0   | 129,0                     | -       | 129,0       | 135,0   | 142,0   | -       |          |  |         |  |
| Output Power      | kW       | 93,6       | 98,4    | 103,2                     | -       | 103,2       | 108,0   | 113,6   | -       |          |  |         |  |

### Other Details

#### Diesel Engine and Genset Rating Classifications

*The below ratings represent the engine performance capabilities to conditions specified in TS ISO 8528/1, 8528-4, 8528-5, 8528-8, BS5000, ISO 3046/1:1986, NEMA MG-1.22.1, BS 5514/1.*

#### STAND BY POWER RATING (ESP):

ESP is applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. Under no condition is an engine allowed to operate in parallel with the public utility at the Stand By Power rating. This rating should be applied where reliable utility power is available. A Stand By rated engine should be sized for a maximum of an 70% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Stand By Power rating. Stand By ratings should never be applied except in true emergency power outages. Negotiated power outages contracted with a utility company are not considered an emergency.

#### PRIME POWER RATING (PRP):

Applicable for supplying electric power in lieu of commercially purchased power. Prime Power applications must be in the form of one of the following two categories:

#### UNLIMITED TIME RUNNING PRIME POWER (ULTP):

PRP (Prime Power) is available for an unlimited number of hours per year in a variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 250 hours. The total operating time at 100% Prime Power shall not exceed 500 hours per year. A 10% overload capability is available for a period of 1 hour within a 12-hour period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

#### LIMITED TIME RUNNING PRIME POWER (LTP):

LTP (Limited Time Prime Power) is available for a limited number of hours in a nonvariable load application. It is intended for use in situations where power outages are contracted, such as in utility power curtailment. Engines may be operated in parallel to the public utility up to 750 hours per year at power levels never to exceed the Prime Power rating. The customer should be aware, however, that the life of any engine will be reduced by this constant high load operation. Any operation exceeding 750 hours per year at the Prime Power rating should use the Continuous Power rating.

#### CONTINUOUS POWER RATING (COP):

COP is the power that the engine can continue to use under the prescribed speed and the specified environment condition in the normal maintenance period stipulated in the manufacturing plant. And Continuous Power is applicable for supplying utility power at a constant 100% load for an unlimited number of hours per year. No overload capability is available for this rating.

#### PAY ATTENTION to the points below in picking and using the generator

- \* Generators can work on Continuous Power at 70% of Prime power value if only all maintenances are done on time with original spare parts and high quality oils that manufacturer advice.
- \* Generators should not operate below 50% of Prime Power value. In such a case, the engine will burn excessive oil and eventually have irreparable damage.
- \* If your need is 1000 kVA or above, you should prefer Synchronic Systems with 2-3 generators with failure back up and simultaneous aging.
- \* These points will provide advantage for you with purchasing and operating the generator.

## SERIES

### Control Panel Specifications

|                                                |                        |                      |                            |
|------------------------------------------------|------------------------|----------------------|----------------------------|
| Powder Painted Steel Pannel with Lockable Door | Battery Charger        | Control Relays       | System Protection MCBs     |
| ATS (Automatic Transfer Panel) - Optional      | Emergency Stop Button  | Terminal Blocks      | Circuit Breaker - Optional |
| Control Module                                 | Backlit, 128x64 Pixels | Load Output Terminal | LCD Screen                 |

### Control Module Technical Parameters

|                                       |                   |                                   |                                       |
|---------------------------------------|-------------------|-----------------------------------|---------------------------------------|
| Brand                                 | GENPOWER/FORTRUST | Model                             | 6120-D Version                        |
| Dimensions                            | 120mm x 94mm      | Protection Class                  | IP65 From the Front                   |
| Weight                                | 260 gr.           | Environmental Conditions          | 2000 Meters Above Sea Level           |
| Ambient Humidity                      | 90% max.          | Ambient Temperature               | -20 ° C to + 70 ° C                   |
| DC Battery Supply Voltage             | 8 - 32 V          | Battery Voltage Measurement       | 8 - 32 V                              |
| Network Frequency                     | 5 - 99,9 Hz       | Mains Voltage Measurement         | 3 - 300 V Phase-Neutral, 5 - 99.9 Hz  |
| Generator Voltage Measurement         | 3 - 300 V         | Generator Frequency               | 5 - 99.9 Hz                           |
| Current Transformer Secondary         | 5A                | Working Period                    | Continuous                            |
| Charge Alternator Voltage Measurement | 8 - 32 V          | Charge Alternator Excitation      | 210mA & 12V, 105mA & 24V Nominal 2.5W |
| Communication Interface               | RS-232            | Analog Sender Measurement         | 0 - 1300ohm                           |
| Generator Contactor Relay Output      | 5A & 250V         | Mains Contactor Relay Output      | 5A & 250V                             |
| Solenoid Transistor Outputs           | 1A with DC Supply | Start Transistor Outputs          | 1A with DC Supply                     |
| Configurable-3 Transistor Outputs     | 1A with DC Supply | Configurable-4 Transistor Outputs | 1A with DC Supply                     |

### Control Module Functions

|                                    |                                                      |                                      |                                        |
|------------------------------------|------------------------------------------------------|--------------------------------------|----------------------------------------|
| Mains Voltage Level Control        | Generator Voltage Level Control                      | 3 phase Generator Protections        | 3 phase AMF Function                   |
| Network Frequency Level Control    | Generator Frequency Level Control                    | - High / Low Voltage                 | - High / Low Frequency                 |
| Engine Operating Option Control    | Generator Current Level Control                      | - High / Low Frequency               | - High / Low Voltage                   |
| Engine Stop Option Control         | Generator Power Level Control                        | - Current / Voltage Asymmetry        | - High / Low Water Temperature         |
| Engine Speed (RPM) Level Control   | Generator Work Schedule and Timing Control           | - Overcurrent / Overload             | - High / Low Load                      |
| Battery Voltage Options Control    | Oil Pressure Controllers Control                     | Overheat Control                     | Mains, Generator ATS control           |
| Check Engine Maintenance Times     | Configurable Analog Inputs and Outputs               | 1 Phase or 3 Phase, Phase Selection  | Network, Voltage, Frequency Display    |
| Communication Interfaces GPRS, GSM | Keeping Error Records of Past Events                 | Parameter Setting via Control Module | Parameter Setting via Computer         |
| Engine Speed                       | Configurable Programmable Digital Inputs and Outputs | Water Temperature                    | Hours of Operation                     |
| Voltage                            | Current and Frequency                                | Phase Sequence                       | Earting                                |
| Alarm Horn                         | Modbus and SNMP                                      | Ground Leakage                       | Ethernet, USB, RS232, RS485            |
| Heater Tube Thermostat Control     | Working Hour                                         | Analog Modem                         | Selectable Protection Alarm / Shutdown |
| Battery Voltage                    | Oil Pressure                                         |                                      |                                        |

### Control Module Alerts

|                                 |                            |                        |                                |
|---------------------------------|----------------------------|------------------------|--------------------------------|
| Emergency Stop Malfunction      | Low Generator Voltage      | Low Water Temperature  | Charge Alternator Error        |
| High Generator Voltage          | High Generator Frequency   | Heat Sensor Broken     | Unbalanced Load                |
| Low Generator Frequency         | Phase Sequence Error       | Reverse Power          | Maintenance Time Alarm         |
| Low Load                        | Overload                   | Start Error            | Low Speed                      |
| Over Current                    | Low Water Level (Optional) | Stop Error             | High Speed                     |
| Unbalanced Current              | Low Oil Pressure           | Magnetic Pickup Error  | Broken Oil Sensor Cable        |
| High Oil Temperature (Optional) | High Battery Voltage       | High Water Temperature | Electronic Canbus Errors (ECU) |
| Low Fuel Level (Optional)       | Low Battery Voltage        |                        |                                |

### Sound Proof Canopy and Base Frame (Chassis) Specifications

|                                                   |                                                    |                                  |                                     |
|---------------------------------------------------|----------------------------------------------------|----------------------------------|-------------------------------------|
| Special, Registered GENPOWER Design and Color     | Robotic Painting with Electrostatic Powder Paint   | Temperature Tests                | Fuel Inlet and Return Records       |
| A1 Quality DKP / HRU /Galvanized Steel            | Drying and Stabilizing on 200°C Ovens              | Rustproof Accessories            | Impermeability Test for Fuel Tank   |
| Sensitive Twist on Automatic Press Brake          | 1500 Hour Salt Test                                | Cable Exit Connectors and Glands | Vacummed Rubber Mounted             |
| Delicate Cut on Automatic Punch and Laser Bench   | Glasswool Isolation, A1 Class Material - 50/+500°C | Emergency Stop Button            | High Quality Weatherstrips          |
| Sensitive Welding on Robotic Welding Bench        | Special Covering Over Glass Wool                   | Fuel Level Gauge                 | High Quality Shock Absorbers        |
| Chemical Cleaning Nano Technology Before Painting | Best Sound Level (in dBA)                          | Fuel Drain Cap                   | Fuel Filling Cap (with ventilation) |
| Lifting and Carrying Equipments                   | External Exhaust Mufflers (Silencers)              | Daily Fuel Tank                  | External Fuel Tank                  |
| Internal Exhaust Mufflers (Silencers)             | Radiator Water Filling Cap                         |                                  |                                     |

### Special Products / Non - Standardized

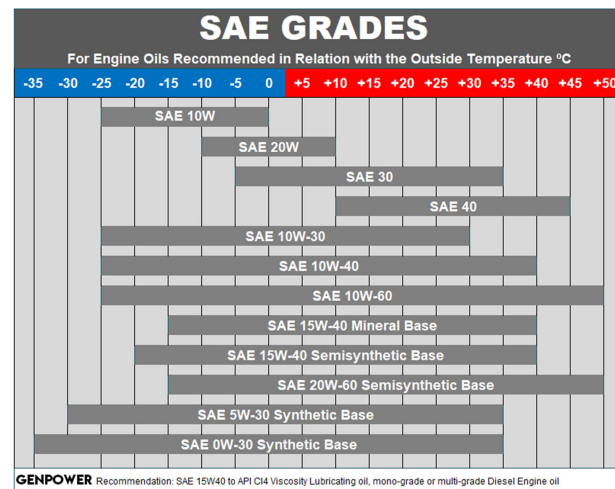
|                              |                               |                                |                           |
|------------------------------|-------------------------------|--------------------------------|---------------------------|
| Synchronised Systems         | Generators - with Trailer     | DC Generators                  | High Frequency Generators |
| Scada Systems                | Medium Voltage - MV           | High Voltage - HV              | Variable Speed Generators |
| Mobile Systems               | IP44-IP54 Class Generators    | Power Plants                   | Super Silent Canopy       |
| Light Towers                 | Welding Machines              | Trigeneration Systems          | Cogeneration Systems      |
| Ground Power Unit Generators | Natural Gas Generator         | Biogas Generator               | LPG Generator             |
| Marine Generators            | Automatic Voltage Stabilizers | Electrical and Diesel Forklift | HFO Generator             |
| Dual Generators              |                               |                                |                           |

## SERIES

### Generator Dimensions

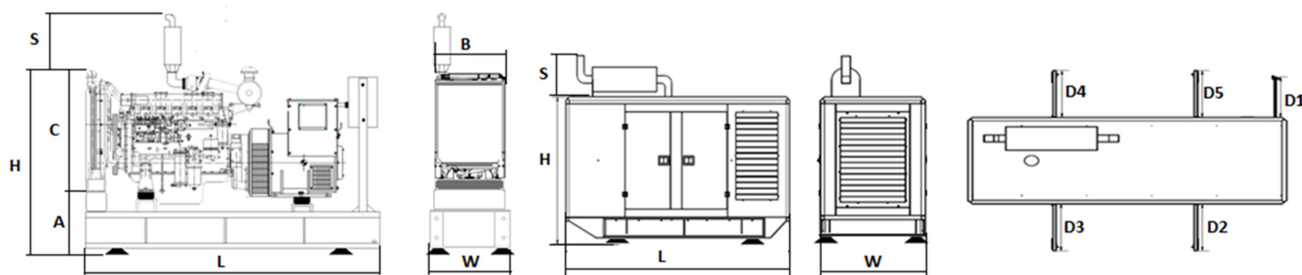
### Oil Recommendation and Oil Grades

| Values             |    | Open Type Generator | Canopy Type Generator |
|--------------------|----|---------------------|-----------------------|
| Width              | mm | 800                 | 1153                  |
| Length             | mm | 2150                | 2971                  |
| Height             | mm | 1549                | 2027                  |
| Weight (Net)       | Kg | 1205                | 1610                  |
| Fuel Tank Capacity | L  | 190                 | 376                   |



### Generator Technical Drawings

| SYMBOL | OPEN | CANOPY |
|--------|------|--------|
| L      | 2150 | 2971   |
| W      | 800  | 1153   |
| H      | 1002 | 1807   |
| S      | 547  | 220    |
| A      | 696  |        |
| B      | 650  |        |
| C      | 680  |        |
| D1     |      | 520    |
| D2     |      | 604    |
| D3     |      | 604    |
| D4     |      | 604    |
| D5     |      | 604    |



## Why You Should Buy GENPOWER?

### Only because it is the biggest generator factory in the World? NO!

- \* It is one of the most trustworthy and distinguished generator manufacturers in the world with its almost half century experience in the field.
- \* It has interiorized the strategy of **unconditional customer satisfaction** and has been working with this work ethic together with its whole crew.
- \* Customers and end users get their moneys' worth and more with every penny.
- \* It has become a big family with customers and users who receive durable, long-lasting and high quality products.
- \* It has been appreciated many times by customers and suppliers about the investments that have been made for quality enhancement.
- \* Both its suppliers and customers always know GENPOWER is and will always be there for them. GENPOWER on their side in bad and good days.
- \* In order not to harm brand reputation and recognition, each day, they work harder than the day before.
- \* It continues its business only with the suppliers, customers, dealers and technical services that also embrace the same mind set and work ethics.
- \* It proves its loyalty for quality and customer satisfaction with its mottos "**Your power is the core of our business**" and "**nothing will be left unfinished**".
- \* The specifications and/or modifications you can receive with extra costs by other manufacturers are included in standard production in GENPOWER.
- \* When you purchase GENPOWER products, you are not a customer or a buyer but GENPOWER perceives and accepts you as a valuable member of its continuously growing family.

These are why you should buy from GENPOWER...

