



#### DESCRIPTIVE

- Generating set running on natural gas or LPG (natural gas supplied configuration)
- Mechanically welded chassis with antivibration suspension
- Main line circuit breaker
- Radiator for core temperature of 48/50°C max with mechanical fan
- Protective grille for fan and rotating parts (CE option)
- 40 dB(A) silencer supplied separately
- Charger DC starting battery with electrolyte
- 12 V charge alternator and starter
- Delivered with oil and coolant -30°C
- Manual for use and installation

#### POWER DEFINITION

PRP : Prime Power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO 8528-1. ESP : The standby power rating is applicable for supplying emergency power in variable load applications in accordance with ISO 8528-1. Overload is not allowed.

#### TERMS OF USE

According to the standard, the nominal power assigned by the genset is given for 25°C Air Inlet Temperature, of a barometric pressure of 100 kPa (100 m A.S.L), and 30 % relative humidity. For particular conditions in your installation, refer to the derating table.

#### ASSOCIATED UNCERTAINTY

For the generating sets used indoor, where the acoustic pressure levels depends on the installation conditions, it is not possible to specify the ambient noise level in the exploitation and maintenance instructions . You will also find in our exploitation and maintenance instructions a warning concerning the air noise dangers and the need to implement appropriated preventive measures.

## GZ350

|                 |             |
|-----------------|-------------|
| Engine ref.     | D183TIC-319 |
| Alternator ref. | 4M4019      |

#### GENERAL CHARACTERISTICS

|                        |          |
|------------------------|----------|
| Frequency (Hz)         | 50 Hz    |
| Voltage (V)            | 400/230  |
| Standard Control Panel | DEC 3000 |

#### POWER

| Voltage | ESP |     | PRP |     | Standby Amps |
|---------|-----|-----|-----|-----|--------------|
|         | kWe | kVA | kWe | kVA |              |
| 400/230 | 280 | 350 | 254 | 318 | 505          |

#### DIMENSIONS COMPACT VERSION

|             |      |
|-------------|------|
| Length (mm) | 3745 |
| Width (mm)  | 1680 |
| Height (mm) | 2383 |

#### DIMENSIONS SOUNDPROOFED VERSION

|                                      |            |
|--------------------------------------|------------|
| Type soundproofing                   | SSE300-350 |
| Length (mm)                          | 6305       |
| Width (mm)                           | 2229       |
| Height (mm)                          | 2865       |
| Dry weight (kg)                      | 5926       |
| Acoustic pressure level @1m in dB(A) |            |
| Sound power level guaranteed (Lwa)   |            |

#### Fuel System 50 Hz:

*Natural gas fuel supply pressure, kPa (in. H2O) :*  
**Nat. Gas** : 1.74--2.74 (7-11)

#### Fuel Composition Limits \* (Nat.Gaz):

|   |                 |
|---|-----------------|
| <i>Methane, % by volume</i>                                   | <i>90 min.</i>  |
| <i>Ethane, % by volume</i>                                    | <i>4.0 max.</i> |
| <i>Propane, % by volume</i>                                   | <i>1.0 max.</i> |
| <i>Propene, % by volume</i>                                   | <i>0.1 max.</i> |
| <i>C4 and higher, % by volume</i>                             | <i>0.3 max</i>  |
| <i>Sulfur, ppm mass</i>                                       | <i>25 max.</i>  |
| <i>Lower heating value, MJ/m3 (Btu/ft3), min : 33.2 (890)</i> |                 |

*\* Fuels with other compositions may be acceptable. If your fuel is outside the listed specifications*

**Online carburation entry : 1 (<=GZ100) / 1.5 (<=GZ150) / 2 (<=GZ250) / 3 (>=GZ300) NPTF**



## GZ350

### ENGINE CHARACTERISTICS

#### GENERAL ENGINE DATA

|   |                    |
|---|--------------------|
| Engine brand                                    | PSI BASE<br>DOOSAN |
| Engine ref.                                     | D183TIC-319        |
| Air inlet system                                | Turbo              |
| Cylinders configuration                         | V                  |
| Number of cylinders                             | 10                 |
| Displacement (L)                                | 18,27              |
| Charge Air coolant                              | Air/Air DC         |
| Bore (mm) x Stroke (mm)                         | 128 x 142          |
| Compression ratio                               | 10.5 : 1           |
| Speed (RPM)                                     | 1500               |
| Pistons speed (m/s)                             | 7,1                |
| Maximum stand-by power at rated RPM (kW)        | 319                |
| Frequency regulation, steady state (%) +/- 0.5% |                    |
| BMEP (bar)                                      | 12,7               |
| Governor type                                   | Electronic         |

#### COOLING SYSTEM

|  |                 |
|--|-----------------|
| Radiator & Engine capacity (L)             | 242             |
| Fan power (kW)                             | 12              |
| Fan air flow w/o restriction (m3/s)        | 7,7             |
| Available restriction on air flow (mm H2O) | 12,5            |
| Type of coolant                            | Glycol-Ethylene |

#### EMISSIONS

|                         |   |
|-------------------------|---|
| Emission PM (g/kW.h)    |   |
| Emission CO (g/kW.h)    |   |
| Emission HC+NOx (g/kWh) | 0 |
| Emission HC (g/kW.h)    |   |

#### EXHAUST

|   |      |
|---|------|
| Exhaust gas temperature @ ESP 50Hz (°C) | 600  |
| Exhaust gas flow @ ESP 50 Hz (L/s)      |      |
| Max. exhaust back pressure (mm H2O)     | 1000 |

#### FUEL

|                                       |      |
|---------------------------------------|------|
| Gaznat Consumption @ 110% load (m3/h) | 88,1 |
| Gaznat Consumption @ 100% load (m3/h) | 79,9 |
| Gaznat Consumption @ 75% load (m3/h)  | 60   |
| Gaznat Consumption @ 50% load (m3/h)  | 46,8 |

#### OIL

|                                |      |
|--------------------------------|------|
| Oil capacity (L)               | 42,1 |
| Min. oil pressure (bar)        |      |
| Max. oil pressure (bar)        |      |
| Oil consumption 100% ESP (L/h) | 0    |
| Oil sump capacity (L)          | 35   |

#### HEAT BALANCE

|                                   |     |
|-----------------------------------|-----|
| Heat rejection to exhaust (kW)    |     |
| Radiated heat to ambient (kW)     | 48  |
| Heat rejection to coolant HT (kW) | 293 |

#### AIR INTAKE

|                                  |  |
|----------------------------------|--|
| Max. intake restriction (mm H2O) |  |
| Intake air flow (L/s)            |  |

### GENERAL DATA

|   |                         |
|---|-------------------------|
| Alternator commercial brand                             | KOHLER                  |
| Alternator ref.   | 4M4019                  |
| Number of Phase   | Three phase             |
| Power factor (Cos Phi)                                  | 0,8                     |
| Altitude (m)  | 0 à 2500                |
| Overspeed (rpm)   | 2250                    |
| Number of pole  | 4                       |
| Capacity for maintaining short circuit at 3 In for 10 s | Yes                     |
| Insulation class  | H                       |
| T° class (H/125°), continuous 40°C                      | H / 125°K               |
| T° class (H/163°C), standby 27°C                        | H / 163°K               |
| AVR Regulation  |                         |
| Total Harmonic Distortion in no-load DHT (%)            | 0.91                    |
| Total Harmonic Distortion, on linear load DHT (%)       | 2.75                    |
| Wave form : NEMA=TIF                                    | 50                      |
| Wave form : CEI=FHT                                     | 1.5                     |
| Number of bearing                                       | 1                       |
| Coupling  | Direct                  |
| Voltage regulation at established rating (+/- %)        | 1                       |
| Recovery time (Delta U = 20% transient) (ms)            | 780                     |
| Indication of protection                                | IP 23                   |
| Technology  | Without collar or brush |

### OTHER DATA

|   |       |
|---|-------|
| Continuous Nominal Rating 40°C (kVA)                    | 369   |
| Standby Rating 27°C (kVA)                               | 406   |
| Efficiencies 100% of load (%)                           | 92,5  |
| Air flow (m3/s)   | 0,406 |
| Short circuit ratio (Kcc)                               | 0,827 |
| Direct axis synchro reactance unsaturated (Xd) (%)      | 195   |
| Quadra axis synchro reactance unsaturated (Xq) (%)      | 57    |
| Open circuit time constant (T'do) (ms)                  | 1550  |
| Direct axis transient reactance saturated (X'd) (%)     | 9,6   |
| Short circuit transient time constant (T'd) (ms)        | 75    |
| Direct axis subtransient reactance saturated (X''d) (%) | 8,3   |
| Subtransient time constant (T''d) (ms)                  | 8     |
| Quadra axis subtransient reactance saturated (X''q) (%) | 25,5  |
| Subtransient time constant (T''q) (ms)                  |       |
| Zero sequence reactance unsaturated (Xo) (%)            | 3,1   |
| Negative sequence reactance saturated (X2) (%)          | 17    |
| Armature time constant (Ta) (ms)                        | 9     |
| No load excitation current (io) (A)                     |       |
| Full load excitation current (ic) (A)                   |       |
| Full load excitation voltage (uc) (V)                   |       |
| Engine start (Delta U = 20% perm. or 30% trans.) (kVA)  | 390   |
| Transient dip (4/4 load) - PF : 0,8 AR (%)              | 13    |
| No load losses (W)                                      | 5950  |
| Heat rejection (W)                                      | 25217 |
| Unbalanced load acceptance ratio (%)                    |       |

## DIMENSIONS

### Dimensions soundproofed version

|                                      |            |
|--------------------------------------|------------|
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DEC3000, comprehensive and simple



Generator Controls / Decision-Maker® 3000

The Decision-Maker® 3000 generator set controller provides advanced control, system monitoring, and system diagnostics for optimum performance. The Decision-Maker® 3000 controller meets NFPA 110, Level 1 when equipped with the necessary accessories and installed per NFPA standards. The Decision-Maker® 3000 controller uses patented software logic to manage sophisticated functions, such as voltage regulation and alternator thermal overload protection, normally requiring additional hardware. Additional features include:

- A digital display and pushbutton/rotary selector al provide easy local access to data.
- Measurements selectable in metric or English units.
- Scrolling display shows critical data at a glance.
- Digital display of power metering (Kw and Kva).
- Integrated hybrid voltage regulator providing  $\pm 0.5\%$  regulation.
- Built-in alternator thermal overload protection.

