

# GENERATING SET GE SX-16000 KDM

The images are for reference



## FEATURES

- Digital control unit
- Alternator with electronic voltage regulation "AVR"
- General magnetothermic switch
- High sensitivity differential switch 30mA
- Sealed base capable of containing any leaks of liquids present in the engine, avoiding environmental pollution
- Central lifting hook
- Rounded edges to allow rainwater to drain
- Canopy with wide opening to allow easy maintenance (replacement of air, oil and fuel filters)
- Large capacity tank
- Fuel level sensor
- External plugs for oil and water drainage
- Emergency button
- Prepared for remote Start and Stop control
- Prepared for connection to PAC-I switchboard (ATS)
- Automatic version for emergency intervention in the event of a power failure. (Switchboard excluded)
- Low noise level
- Compliant with EC / EU Directives



water cooled



diesel



single-phase



electric start

## POWER RATINGS

|                                     |                                |
|-------------------------------------|--------------------------------|
| * Stand-By single-phase power (LTP) | 16 kVA (14.4 kW) / 230V/69.6A  |
| * PRP single-phase power            | 14.5 kVA (13 kW) /230V/63A     |
| * Stand-By single-phase power (LTP) | 16 kVA (14.4 kW) / 115V/139.2A |
| * PRP single-phase power            | 14.5 kVA (13 kW) /115V/126A    |
| Frequency                           | 50 Hz                          |
| Cos φ                               | 0.9                            |

\* Powers declared according to ISO 8528

## DEFINITION

**Valid declared powers up to the followings environmental conditions: temperature 25°C, altitude 100 meters above sea level)**

**LTP power: stand-by power:** Maximum available power for use with variable loads for a yearly number of hours limited at 500 h. No overload is admitted.

**PRP power:** continue power with variable loads. Maximum power for use with variable loads for a yearly illimited nubers of hours.

**COP power:** continuous power with constant load. Maximum power for use with constant loads for a yearly unlimited numbers of hours.

## ENGINE 3000 RPM

### 4 STROKE, NATURAL ASPIRATED

|  |                                      |
|--|--------------------------------------|
| Model  | KOHLER KDW1003                       |
| Stand-By net power                               | 17.15 kW (23.3 hp)                   |
| PRP net power                                    | 15.6 kW (21.2 hp)                    |
| COP net power                                    | /                                    |
| Cylinders / Displacement                         | 3 / 1028 cm <sup>3</sup> (1,028 lt.) |
| Bore / Stroke                                    | 75 / 77.6 (mm)                       |
| Compression ratio                                | 22.8 :1                              |
| BMEP (Brake Mean Effective Pressure : LTP - PRP) | /                                    |
| Speed governor type                              | Mechanical                           |
| <b>FUEL CONSUMPTION</b>                          |                                      |
| 110 % (Stand-by power)                           | 5.4 lt./h                            |
| 100 % to PRP                                     | 4.9 lt./h                            |
| 75 % to PRP                                      | 3.7 lt./h                            |
| 50 % to PRP                                      | 2.7 lt./h                            |
| <b>COOLING SYSTEM</b>                            |                                      |
| Total system cap. - only engine                  | /                                    |
| Fan air flow                                     | 93 m <sup>3</sup> /min.              |
| <b>LUBRICATION SYSTEM</b>                        |                                      |
| Total oil system capacity                        | 2.6 lt.                              |
| Oil capacity in sump                             | 2.5 lt                               |
| Oil consumption at full load                     | /                                    |

## EXHAUST SYSTEM

|                                   |                          |
|-----------------------------------|--------------------------|
| Maximum exhaust gas flow          | 3.2 m <sup>3</sup> /min. |
| Max. exhaust gas temp.            | 540 °C                   |
| Maximum back pressure             | 8000 kPa (0.08 bar)      |
| External diameter exhaust pipe    | /                        |
| <b>ELECTRICAL SYSTEM</b>          |                          |
| Starter motor power               | 1.6 kW                   |
| Battery charging alternator cap.  | 40 A                     |
| Cold start                        | - 15 °C                  |
| With cold start aid               | /                        |
| <b>AIR FILTER</b>                 |                          |
| Combustion air flow               | 1.6 m <sup>3</sup> /min. |
| <b>HEAT REJECTED AT FULL LOAD</b> |                          |
| To exhaust system                 | /                        |
| To water and oil                  | /                        |
| Radiated to room                  | /                        |
| To charge cooler                  | /                        |

## ALTERNATOR

| SYNCHRONOUS, SINGLE-PHASE, SELF-EXCITED, SELF-REGULATED |                        |
|---|------------------------|
| Continuous power  | 15 kVA                 |
| Stand-by power  | 16.5 kVA               |
| Three phase voltage                                     | 220 ÷ 240 Vac          |
| Frequency   | 50 Hz                  |
| Cos φ   | 0.9                    |
| Model A.V.R.  | AVR960D                |
| Voltage regulation acc.                                 | ± 2 %                  |
| Sustained short circuit current                         | ≤ 4 In                 |
| Transient dip (100% load)                               | < 15 %                 |
| Recovery time   | /                      |
| Efficiency at 100% load                                 | 83.5 % (230V - Cos φ1) |
| Insulation  | Class H                |
| Connection - Terminals                                  | Serie - N°4            |
| Electromagnetic compatibility (R.F.I. suppr.)           | /                      |
| Waveform distortion - THD                               | < 6 %                  |
| Telephone interference - THF                            | /                      |

| REACTANCES (15 KVA - 230V)       |                            |
|----------------------------------|----------------------------|
| Direct axis synchronous - Xd     | /                          |
| Direct axis transient - X'd      | /                          |
| Subdirect axis transient - X''d  | /                          |
| Quadrature axis synchronous - Xq | /                          |
| Quadr. axis subtransient - X''q  | /                          |
| Negative sequence - X2           | /                          |
| Zero sequence - X0               | /                          |
| TIME CONSTANTS                   |                            |
| Transient - T'd                  | /                          |
| Subtransient - T''d              | /                          |
| Open circuit - T'do              | /                          |
| Armature - Ta                    | /                          |
| Short-circuit ratio Kcc          | /                          |
| IP protection degree             | IP 23                      |
| Cooling air flow                 | /                          |
| Coupling   Bearing               | Direct SAE 5 - 6 1/2 - N°1 |

## GENERAL SPECIFICATIONS

|                           |                             |
|---------------------------|-----------------------------|
| Fuel tank capacity        | 38 lt.                      |
| Running time (75% to PRP) | 10.3 h                      |
| Starter battery           | 12 Vdc -50Ah / 420A CCA(EN) |
| IP protection degree      | IP 23                       |

|  |                              |
|--|------------------------------|
| * Measured acoustic power LwA (pressure LpA)   | 93.6 dB(A) (68.6 dB(A) @ 7m) |
| * Guaranteed acoustic power LwA (pressure LpA) | 95 dB(A) (70 dB(A) @ 7m)     |
| Performance class                              | G1                           |

\* Acoustic power in accordance with Directive 2000/14/EC

## AUTOMATIC CONTROL PANEL 230V

- IntelliNano Plus controller
- Thermal cut-offs for motor protection: 1x30A - 1 x 16A
- Emergency stop button
- Siren
- TCM 35 remote control connector
- 16-pin PAC connector (ATS)
- Charger
- Fuses: 2x 2A
- Circuit breaker
- ELCB-GFI (Ground Fault Interruptor)
- Magnetothermic switch for 230V 32A sockets
- Magnetothermic switch for 230V 16A sockets
- Output sockets: 1x 230V 63A 2P + T CEE IP 67
  - 1x 230V 32A 2P + T CEE IP 67
  - 1x 230V 16A 2P + T CEE IP 67
  - 1x 230V 16A 2P + T Schuko
- Earth terminal (PE)

## CONTROL PANEL 230V/115V

- IntelliNano Plus controller
- Thermal cut-offs for motor protection: 1x30A - 1 x 16A
- Emergency stop button
- Siren
- TCM 35 remote control connector
- Fuses: 2x 2A
- Circuit breaker
- ELCB-GFI (Ground Fault Interruptor)
- Output sockets: 1x 230V 32A 2P + T CEE
  - 2x 230V 16A 2P + T CEE
  - 2x 115V 32A 2P + T CEE
  - 3x 115V 16A 2P + T CEE
- Thermal cut-offs for socket protection: 3 x 30A - 5 x16A
- Earth terminal (PE)



# CONTROL PANEL

## CONTROL PANEL 230V

- IntelliNano Plus controller
- Thermal cut-offs for motor protection: 1x30A - 1 x 16A
- Emergency button
- Siren
- TCM 35 remote control connector
- 2x2A fuses
- Circuit breaker
- ELCB-GFI (Ground Fault Interruptor)
- Magnetothermic switch for 230V 32A sockets
- Magnetothermic switch for 230V 16A sockets
- CEE output sockets: 1x 230V 63A 2P + T CEE IP 67  
 1x 230V 32A 2P + T CEE IP 67  
 2x 230V 16A 2P + T CEE IP 67
- SCHUKO output sockets: 1x 230V 63A 2P + T CEE IP 67  
 1x 230V 32A 2P + T CEE IP 67  
 2x 230V 16A 2P + T SCHUKO
- Earth terminal (PE)



| INTELINANO PLUS CONTROLLER CHARACTERISTICS |   |
|--|---|
| Operating mode                             | <ul style="list-style-type: none"> <li>• MAN.- AUTO</li> </ul>  |
| Display                                    | <ul style="list-style-type: none"> <li>• Graphic back-light LCD display 128x64 pixels</li> </ul>  |
| LEDs                                       | <ul style="list-style-type: none"> <li>• Engine operation</li> <li>• AUTO operating mode</li> <li>• Alarm</li> </ul>  |
| Buttons                                    | <ul style="list-style-type: none"> <li>• START button</li> <li>• STOP button</li> <li>• AUTO button</li> <li>• N° 2 buttons for controller programming</li> </ul>   |
| Generator Measures                         | <ul style="list-style-type: none"> <li>• Voltage : L1-L2</li> <li>• Current : I1</li> <li>• Powers : kVA</li> <li>• Frequency</li> </ul>  |
| Engine Measures                            | <ul style="list-style-type: none"> <li>• Water temperature (optional)</li> <li>• Oil pressure (optional)</li> <li>• Fuel level</li> <li>• Rpm meter</li> <li>• Battery voltage</li> <li>• Maintance</li> <li>• Hours meter</li> </ul> |
| Generator Protections                      | <ul style="list-style-type: none"> <li>• Short circuit</li> <li>• Over-Udervoltage</li> <li>• Over-Uderfrequency</li> <li>• Phase sequence</li> </ul>   |

|   |  |
|---|--|
| Engine Protections                          | <ul style="list-style-type: none"> <li>• Overspeed</li> <li>• High water temperature warning</li> <li>• Low oil pressure warning</li> <li>• Low fuel level warning</li> <li>• Under battery voltage</li> <li>• Battery charge alternator failure</li> <li>• Start failure</li> <li>• Stop failure</li> <li>• Emergency stop</li> </ul>   |
| AMF functins (Automatic control panel only) | <ul style="list-style-type: none"> <li>• Measure mains voltage : L1-L2 / L2-L3 / L3-L1 - N-L1 / N-L2 / N-L3</li> <li>• Measure mains frequency</li> <li>• Three phase detection</li> <li>• Over-Under mains voltage</li> <li>• Over-Under mains frequency</li> <li>• Phase sequence</li> </ul>   |
| Features                                    | <ul style="list-style-type: none"> <li>• Event log and alarms (10 events)</li> <li>• Operator interface with icons, no text</li> <li>• Remote Start and Stop</li> <li>• Pre-heating</li> <li>• Fully programmable from the panel or from PC</li> <li>• Direct connection to engines with ECU via Can bus J1939</li> <li>• Manual operation (MRS) with remote start</li> <li>• IP65 protection</li> <li>• Operation temperature: -20°C / +70°C</li> </ul> |
| Communication                               | <ul style="list-style-type: none"> <li>• Setup USB port</li> <li>• CAN BUS interface (J1939 only)</li> </ul>   |



# WEIGHT - DIMENSIONS AND ACCESSORIES

GE SX-16000 KDM



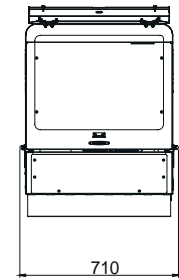
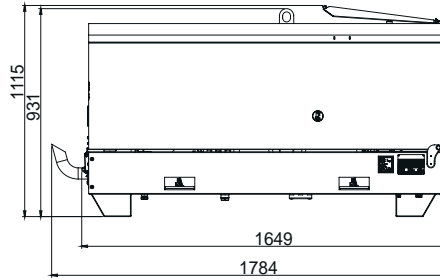
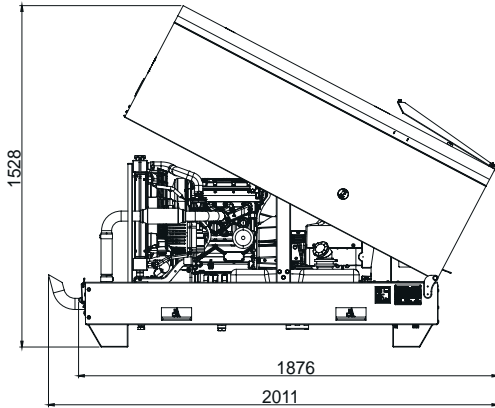
### DRY WEIGHT MACHINE:

- 388 Kg

Generating set pictured may include optional accessories.



### DIMENSIONS DRAW (mm)



### OPTIONS ON REQUEST

- Load transfer switch (ATS) PAC 28 - Single-Phase (70A) (Only with automatic control panel)
- Load transfer switch (ATS) PAC I-28 809ATS - Single-Phase(70A)
- Remote control TCM35
- Site tow CTL255
- Road trailer CTV4
- Earthing



### AVAILABLE VERSIONS

|        |   |
|--------|---|
| REMOTE | • Radio control                                 |
| HEATER | • Heater WH (Only with automatic control panel) |
| PLUS   | • Gauges - water temperature and oil pressure   |
|        | • Main battery switch                           |
| TOP    | • Gauges - water temperature and oil pressure   |
|        | • Main battery switch                           |
|        | • Radio control                                 |

## GENERAL INFORMATION

### COMPLIANCE GENERATING SETS WITH EC DIRECTIVES AND STANDARDS

- 2006/42 / EC (Machines Directive)
- 2014/35 / EU (Low Voltage Directive)
- 2014/30 / EU (EMC Directive)
- 2000/14 / EC (Directive Acoustic Emission for machines for use outdoors)
- ISO 8528 (Reciprocating internal combustion engine driven alternating current generating sets)



ISO 9001:2015 - Cert. 0192

### WARRANTY

All devices are covered by the manufacturer's warranty.

The company reserves the right to change this specification without notice. For further information please contact the sales department.

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