



**HIMOINSA®**  
THE ENERGY

MODEL  
**HFW-160 T5**  
INDUSTRIAL RANGE  
Open Skid  
Powered by FPT\_IVECO



- K6
- WATER-COOLED
- THREE PHASE
- 50 HZ
- STAGE 2
- DIESEL

## Generating Rates



| SERVICE               |         | PRP           | STANDBY |
|-----------------------|---------|---------------|---------|
| Power                 | kVA     | 160           | 175     |
| Power                 | kW      | 127           | 140     |
| Rated Speed           | r.p.m.  | 1.500         |         |
| Standard Voltage      | V       | 400/230       |         |
| Available Voltages    | V       | 230 - 230/132 |         |
| Rated at power factor | Cos Phi | 0,8           |         |

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**HIMOINSA Company with quality certification ISO 9001**

**HIMOINSA gensets are compliant with EC mark which includes the following directives:**

- 2006/42/CE Machinery safety.
- 2006/95/EC Low voltage.
- 2004/108/CE Electromagnetic compatibility.
- 2000/14/EC Sound Power level. Noise emissions outdoor equipment. (amended by 2005/88/EC)
- EN 12100, EN 13857, EN 60204

Ambient conditions of reference according to ISO 8528-1:2005 normative: 1000 mbar, 25°C, 30% relative humidity.

**Prime Power (PRP):**

According to ISO 8528-1:2005, Prime power is the maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer. The permissible average power output (Ppp) over 24 h of operation shall not exceed 70 % of the PRP.

**Emergency Standby Power (ESP):**

According to ISO 8528-1:2005, Emergency standby power is the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200 h of operation per year with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. The permissible average power output over 24 h of operation shall not exceed 70 % of the ESP

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## Engine Specifications 1.500 r.p.m.

| ENGINE                                      |      | PRP                          | STANDBY |
|---|------|------------------------------|---------|
| Rated Output                                | kW   | 137,7                        | 152     |
| Manufacturer                                |      | FPT_IVECO                    |         |
| Model                                       |      | NEF67 TM 3A                  |         |
| Engine Type                                 |      | Diesel 4 strokes-cycle       |         |
| Injection Type                              |      | Direct                       |         |
| Aspiration Type                             |      | Turbocharged and aftercooled |         |
| Cylinders Arrangement                       |      | 6 - L                        |         |
| Bore and Stroke                             | mm   | 104 x 132                    |         |
| Displacement                                | L    | 6,7                          |         |
| Cooling System                              |      | Liquid (water + 50% glycol)  |         |
| Lube Oil Specifications                     |      | ACEA E3 - E5                 |         |
| Compression Ratio                           |      | 17,5 : 1                     |         |
| Fuel Consumption StandBy                    | l/h  | 39                           |         |
| Fuel Consumption 100% PRP                   | l/h  | 36                           |         |
| Fuel Consumption 80 % PRP                   | l/h  | 29                           |         |
| Fuel Consumption 50 % PRP                   | l/h  | 18                           |         |
| Lube Oil Consumption Full Load              |      | 0,5 % of fuel consumption    |         |
| Total oil capacity including tubes, filters | L    | 17,2                         |         |
| Total Coolant Capacity                      | L    | 25,5                         |         |
| Governor                                    | Type | Mechanical                   |         |
| Air Filter                                  | Type | Dry                          |         |
| Inner diameter exhaust pipe                 | mm   | 70                           |         |

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## Generator

| Generator                      |       |                                |
|--------------------------------|-------|--------------------------------|
| Poles                          | Num   | 4                              |
| Winding Conections (standard)  |       | Star-serie                     |
| Frame Mounting                 |       | S-3 11"1/2                     |
| Insulation                     | Class | H class                        |
| Enclosure (according IEC-34-5) |       | IP23                           |
| Exciter System                 |       | self-excited, brushless        |
| Voltage Regulator              |       | A.V.R. (Electronic)            |
| Bearing                        |       | Single bearing                 |
| Coupling                       |       | Flexible disc                  |
| Coating type                   |       | Standard (Vacuum impregnation) |



## Application Data

| Exhaust System                      |          |       |
|-------------------------------------|----------|-------|
| Maximum exhaust temperature         | °C       | 570   |
| Exhaust Gas Flow                    | Kg/s     | 0,205 |
| Maximum allowed back pressure       | kPa      | 5     |
| Heat evacuated through exhaust pipe | KCal/Kwh | 688,9 |

| Air Inlet System        |      |       |
|-------------------------|------|-------|
| Intake Air Flow         | m3/h | 586   |
| Cooling Air Flow        | m3/s | 3,8   |
| Alternator fan air flow | m3/s | 0,514 |

| Starting System              |     |      |
|------------------------------|-----|------|
| Starting Motor               | kW  | 3    |
| Starting Motor               | CV  | 4,08 |
| Recommended Battery Capacity | Ah  | 100  |
| Auxiliary Voltage            | Vcc | 12   |

| Fuel System             |   |        |
|-------------------------|---|--------|
| Fuel Oil Specifications |   | Diesel |
| Fuel Tank               | L | 250    |



## Dimensions



### Weight and Dimensions

|   |                |       |
|---|----------------|-------|
| (L) Length                                  | mm             | 2.900 |
| (H) Height                                  | mm             | 1.576 |
| (W) Width                                   | mm             | 900   |
| Maximum shipping volume (standard supplier) | m <sup>3</sup> | 4,11  |
| (*) Wet weight                              | Kg             | 1.450 |
| Fuel tank capacity                          | L              | 250   |
| Autonomy                                    | Hours          | 9     |

(\*) (with standard accessories)

STANDARD VERSION

Himoinsa has the right to modify any characteristic without prior notice.  
Weights and dimensions based on standard products. Illustrations may include optional equipment.  
Technical data described here correspond with the available information at the moment of printing.  
Industrial design under patent.

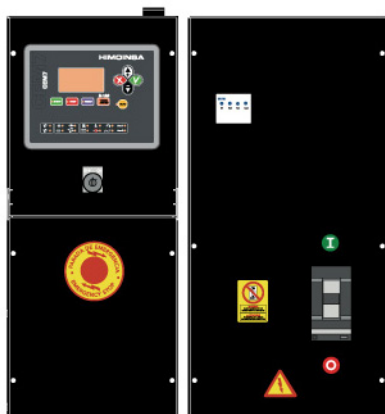
Local Distributor



## CONTROL PANEL MODEL

### M5

Digital manual auto-start control panel and thermal magnetic protection (according to voltage and phase) and differential relay. CEM7



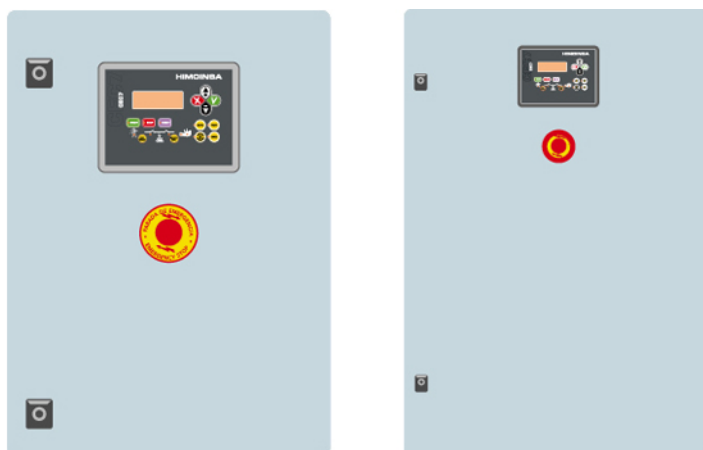
### AS5

Automatic control panel WITHOUT ATS (Automatic Transfer Switch) and WITHOUT mains control with CEM7.  
(\* ) As optional AS5 with CEA7. Automatic control panel without ATS (automatic transfer switch) and with mains control.



### CC2

Himoinsa External ATS WITH visualization display. CEC7



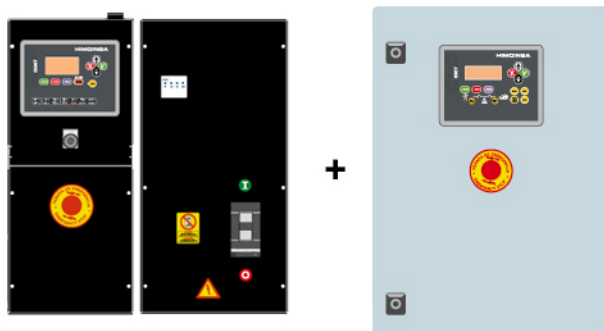


## CONTROL PANEL MODEL

### AS5 + CC2

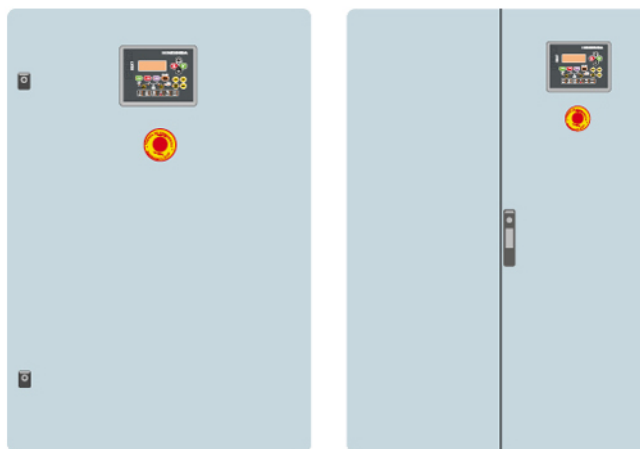
Automatic with mains control and ATS with visualization. The visualization will be in the genset and in the ATS box. CEM7+CEC7

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### AC5

Automatic Mains Failure control panel. Wall mounted Automatic control panel including transfer switch with thermal magnetic protection (according to voltage and phase). CEA7





## Controllers Features

|                                    | CEM 7 | CEC 7 | CEA 7 | CEM7 + CEC7 |
|------------------------------------|-------|-------|-------|-------------|
| <b>GENERATOR READINGS</b>          |       |       |       |             |
| Voltage among phases               | .     | .     | .     | .           |
| Voltage among phases and neutral   | .     | .     | .     | .           |
| Amperage                           | .     | .     | .     | .           |
| Frequency                          | .     | .     | .     | .           |
| Apparent power (kVA)               | .     | .     | .     | .           |
| Active power (kW)                  | .     | .     | .     | .           |
| Reactive power (kVAr)              | .     | .     | .     | .           |
| Power factor                       | .     | .     | .     | .           |
| <b>MAINS READINGS</b>              |       |       |       |             |
| Voltage among phases               | x     | .     | .     | .           |
| Voltage among phase and neutral    | x     | .     | .     | .           |
| Amperage                           | x     | .     | .     | .           |
| Frequency                          | x     | .     | .     | .           |
| Apparent power                     | x     | X     | .     | .           |
| Active power                       | x     | X     | .     | .           |
| Reactive power                     | x     | X     | .     | .           |
| Power factor                       | x     | X     | .     | .           |
| <b>ENGINE READINGS</b>             |       |       |       |             |
| Coolant temperature                | .     | X     | .     | .           |
| Oil pressure                       | .     | X     | .     | .           |
| Fuel level (%)                     | .     | X     | .     | .           |
| Battery voltage                    | .     | X     | .     | .           |
| R.P.M.                             | .     | X     | .     | .           |
| Battery charge alternator voltage  | .     | X     | .     | .           |
| <b>ENGINE PROTECTIONS</b>          |       |       |       |             |
| High water temperature             | .     | X     | .     | .           |
| High coolant temperature by sensor | .     | X     | .     | .           |
| Low engine temperature by sensor   | .     | X     | .     | .           |
| Low oil pressure                   | .     | X     | .     | .           |
| Low oil pressure by sensor         | .     | X     | .     | .           |
| Low coolant level                  | .     | X     | .     | .           |
| Unexpected shutdown                | .     | X     | .     | .           |
| Fuel storage                       | .     | X     | .     | .           |
| Fuel storage by sensor             | .     | X     | .     | .           |
| Stop failure                       | .     | X     | .     | .           |
| Battery voltage failure            | .     | X     | .     | .           |
| Battery charge alternator failure  | .     | X     | .     | .           |
| Overspeed                          | .     | X     | .     | .           |
| Underspeed                         | .     | X     | .     | .           |
| Start failure                      | .     | X     | .     | .           |
| Emergency Stop                     | .     | .     | .     | .           |
| <b>ALTERNATOR PROTECTIONS</b>      |       |       |       |             |
| High frequency                     | .     | .     | .     | .           |
| Low frequency                      | .     | .     | .     | .           |
| High voltage                       | .     | .     | .     | .           |
| Low voltage                        | .     | .     | .     | .           |
| Short-circuit                      | .     | X     | .     | .           |
| Asymmetry among phases             | .     | .     | .     | .           |
| Incorrect phase sequence           | .     | .     | .     | .           |
| Inverse power                      | .     | X     | .     | .           |
| Overload                           | .     | X     | .     | .           |
| Genset signal droop                | .     | .     | .     | .           |

- Standard
- x Not included
- Optional

NOTE: All protections are programmable to make "warning" or "stop with cooling time" or "without"



## Controllers Features

|                                    | CEM 7         | CEC 7 | CEA 7         | CEM7 + CEC7   |
|------------------------------------|---------------|-------|---------------|---------------|
| <b>COUNTERS</b>                    |               |       |               |               |
| Total hour counter                 | •             | •     | •             | •             |
| Partial hour counter               | •             | •     | •             | •             |
| Kilowattimeter                     | •             | •     | •             | •             |
| Starts valid counters              | •             | •     | •             | •             |
| Starts failure counters            | •             | •     | •             | •             |
| Maintenance                        | •             | •     | •             | •             |
| <b>COMMUNICATIONS</b>              |               |       |               |               |
| RS232                              | •             | •     | •             | •             |
| RS485                              | •             | •     | •             | •             |
| Modbus IP                          | •             | •     | •             | •             |
| Modbus                             | •             | •     | •             | •             |
| CCLAN                              | •             | X     | •             | •             |
| Software for PC                    | •             | •     | •             | •             |
| Analogic modem                     | •             | •     | •             | •             |
| GSM/GPRS modem                     | •             | •     | •             | •             |
| Remote screen                      | •             | X     | •             | •             |
| Telesignal                         | •(8+4)        |       | •(8+4)        | •(8+4)        |
| J1939                              | •             | X     | •             | •             |
| <b>FEATURES</b>                    |               |       |               |               |
| Alarms history                     | (10) / (+100) | -10   | (10) / (+100) | (10) / (+100) |
| External start                     | •             | •     | •             | •             |
| Start inhibition                   | •             | •     | •             | •             |
| Mains failure start                | •(CEC7)       | •     | •             | •             |
| Start under normative EJP          | •             | X     | •             | •             |
| Genset contactor activation        | •             | X     | X             | •             |
| Main & Genset contactor activation | X             | •     | •             | •             |
| Fuel transfer control              | •             | X     | •             | •             |
| Engine temperature control         | •             | X     | •             | •             |
| Manual override                    | •             | X     | •             | •             |
| Programmable alarms                | •             | X     | •             | •             |
| Genset start function in test mode | •             | X     | •             | •             |
| Programmable outputs               | •             | X     | •             | •             |
| Multilingual                       | •             | •     | •             | •             |
| <b>SPECIAL FUNCTIONS</b>           |               |       |               |               |
| Positioning GPS                    | •             |       | •             | •             |
| Synchronization with mains         | •             |       | •             | •             |
| Mains Synchronism                  | •             |       | •             | •             |
| Second Zero suppression            | •             |       | •             | •             |
| RAM 7                              | •             |       | •             | •             |
| Remote screen                      | •             |       | •             | •             |
| Timer                              | •             |       | •             | •             |

- Standard
- x Not included
- Optional

CEC7: available when the controller CEC7 is incorporated to the installation  
 MPS 5.0: available application when the module MPS 5. has been incorporated to the panel.  
 Note: AS5 + CC2 configuration, will have all CEM7 functionality plus CEC7 mains readings.





## Generating Sets Standard and Optional Features

### Engine

- Diesel engine
- 4 strokes-cycle
- Water-cooled
- 12V Electrical system
- Radiator with blowing fan
- water separator decanting filter (no visible level)
- Mechanical governor
- Dry air cleaner
- Hot parts protection
- Moving parts protection
- Optional :
  - Sender WT
  - Senders OP
  - Radiator coolant level sender

### Alternator

- Self-excited and Self-regulated
- 4 poles
- AVR governor
- IP23 protection degree
- Insulation H class
- Single drive-shaft
- Flexible disc coupling

### Electrical system

- Electric control panel with measurements devices and control display (according to necessity and configuration)
- 4 poles circuit breaker
- Earth leakage protection adjustable (time & sensibility) standard in M5 and AS5 configuration with MCCB
- Battery charger (standard on automatic control panels)
- Pre-heating resistance (standard on automatic control panels) / water jacket heater
- Battery charger alternator with ground connection
- Starting battery/ies installed and connected to the engine (supports included)
- Ground connection electrical installation with connection ready for ground pike (not supplied)
- Optional :
  - Battery isolator

### Open set version

- Steel made chassis
- Emergency stop button
- Oil sump extraction kit
- Antivibration shock absorber
- Chassis with integrated fuel tank
- Fuel level sensor
- High mechanical strenght
- Epoxy Powder coating
- Drain cap fuel tank
- Steel made residential silencer -15db(A) attenuation
- Optional :
  - Fuel transfer pump
  - Steel made residential silencer -35db(A) attenuation.



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## PDF Summary

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