



**HIMOINSA®**  
THE ENERGY



MODEL  
**HFW-400 T5**  
INDUSTRIAL RANGE  
Soundproof  
Powered by FPT\_IVECO

- G1
- WATER-COOLED
- THREE PHASE
- 50 HZ
- STAGE 2
- DIESEL

## Generating Rates



SERVICE		PRP	STANDBY
Power	kVA	400	449
Power	kW	320	360
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	352	387
Manufacturer		FPT_IVECO	
Model		C13 TE 3A	
Engine Type		Diesel 4 strokes-cycle	
Injection Type		Direct	
Aspiration Type		Turbocharged and aftercooled	
Cylinders Arrangement		6 - L	
Bore and Stroke	mm	135 x 150	
Displacement	L	12,9	
Cooling System		Liquid (water + 50% glycol)	
Lube Oil Specifications		ACEA E3 - E5	
Compression Ratio		16,5 : 1	
Fuel Consumption StandBy	l/h	98,5	
Fuel Consumption 100% PRP	l/h	87,5	
Fuel Consumption 80 % PRP	l/h	72,5	
Fuel Consumption 50 % PRP	l/h	48,6	
Lube Oil Consumption Full Load		0,5 % of fuel consumption	
Total oil capacity including tubes, filters	L	35	
Total Coolant Capacity	L	68	
Governor	Type	Electrical	
Air Filter	Type	Dry	
Inner diameter exhaust pipe	mm	108	

## Generator

Generator		
Poles	Num	4
Winding Connections (standard)		Star-serie
Frame Mounting		S-1 14"
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	445
Exhaust Gas Flow	Kg/s	0,613
Maximum allowed back pressure	kPa	5
Exhaust Flange Size (external diameter)	mm	140
Heat evacuated through exhaust pipe	KCal/Kwh	703

Air Inlet System		
Intake Air Flow	m3/h	1770
Cooling Air Flow	m3/s	6,8
Alternator fan air flow	m3/s	0,8

Starting System		
Starting Motor	kW	6
Starting Motor	CV	8,16
Recommended Battery Capacity	Ah	185 x 2
Auxiliary Voltage	Vcc	24

Fuel System		
Fuel Oil Specifications		Diesel
Fuel Tank	L	597
Other Fuel tank capacity	L	1.660



## Dimensions



G1 Weight and Dimensions		
(L) Length	mm	4.100
(H) Height	mm	2.200
(W) Width	mm	1.600
Maximum shipping volume (standard supplier)	m <sup>3</sup>	14,43
(*) Wet weight	Kg	4.376
Fuel tank capacity	L	597
Autonomy	Hours	8
Sound pressure level	dB(A)@7m	68 ± 2,3
(*) (with standard accessories)		

STANDARD VERSION (Steel tank)

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



## Dimensions of other available versions

Weight and Dimensions		
(L) Length	mm	4.100
(H) Height	mm	2.600
(W) Width	mm	1.600
Maximum shipping volume (standard supplier)	m <sup>3</sup>	17,06
(*) Wet weight	Kg	5.011
Fuel tank capacity	L	1.660,0
Autonomy	Hours	23
Sound pressure level	dB(A)@7m	68 ± 2,3

(\*) (with standard accessories)

HIGH CAPACITY VERSION (Steel tank)



## 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



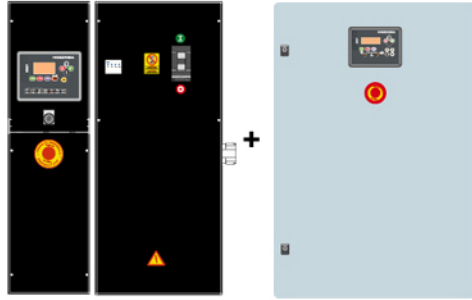


## CONTROL PANEL MODEL

### AS5 + CC2

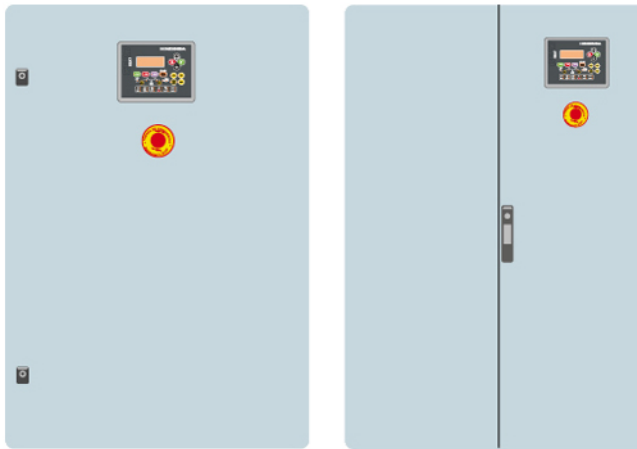
Automatic with mains control and ATS with visualization. The visualization will be in the genset and in the ATS box. CEM7+CEC7

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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
- 24V Electrical system
- Radiator with blowing fan
- water separator decanting filter (no visible level)
- Electronic governor
- Sender WT
- Senders OP
- Radiator coolant level sender
- Dry air cleaner
- Hot parts protection
- Moving parts protection

### 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
- Battery isolator
- 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)



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## Generating Sets Standard and Optional Features

### Soundproofed version

- Steel made chassis
  - Oil sump extraction kit
  - Versatility to assemble high capacity metallic fuel tank chassis
  - Antivibration shock absorber
  - Fuel tank
  - Fuel level sender
  - Emergency stop button
  - Sound attenuated canopy made of high quality steel metal.
  - High mechanical strenght
  - Low noise level
  - Attenuation through high density rock wool material
  - Epoxy Powder coating
  - Easy acces for service mainteance
  - Reinforced lifting eye to lift by crane
  - Bunded chassis (works as liquids retention tray)
  - Drain fuel tank cap
  - Drain chassis cap
  - Chasis ready for future mobile kit installation
  - Steel made residential silencer -35db(A) attenuation.
- Optional :
- 3 way valve fuel filling (available in 1/2" and 3/8" fittings)
  - Fuel transfer pump



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## PDF Summary

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