



HIMOINSA®
THE ENERGY

MODEL
HFW-90 M5
INDUSTRIAL RANGE
Open Skid
Powered by FPT_IVECO



- K6
- WATER-COOLED
- SINGLE PHASE
- 50 HZ
- STAGE 3A
- DIESEL

Generating Rates



SERVICE		PRP	STANDBY
Power	kVA	88	92
Power	kW	71	74
Rated Speed	r.p.m.	1.500	
Standard Voltage	V	230/115	
Rated at power factor	Cos Phi	0,8	

01

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)
- 97/68/EC Emissions of gaseous and particulate pollutants. (amended by 2002/88/EC & 2004/26/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	72,5	80
Manufacturer		FPT_IVECO	
Model		N45 TE1F	
Engine Type		Diesel 4 strokes-cycle	
Injection Type		Direct. Common rail	
Aspiration Type		Turbocharged and aftercooled	
Cylinders Arrangement		4 - L	
Bore and Stroke	mm	104 x 132	
Displacement	L	4,5	
Cooling System		Liquid (water + 50% glycol)	
Lube Oil Specifications		ACEA E3 - E5	
Compression Ratio		17,5:1	
Fuel Consumption StandBy	l/h	20,5	
Fuel Consumption 100% PRP	l/h	18,8	
Fuel Consumption 80 % PRP	l/h	15,7	
Fuel Consumption 50 % PRP	l/h	11,5	
Lube Oil Consumption Full Load		0,1 % of fuel consumption	
Total oil capacity including tubes, filters	L	12,8	
Total Coolant Capacity	L	18,5	
Governor	Type	Electrical	
Air Filter	Type	Dry	

02

Generator

Generator		
Poles	Num	4
Winding Conections (standard)		Double delta
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	430
Maximum allowed back pressure	kPa	5
Heat evacuated through exhaust pipe	KCal/Kwh	630

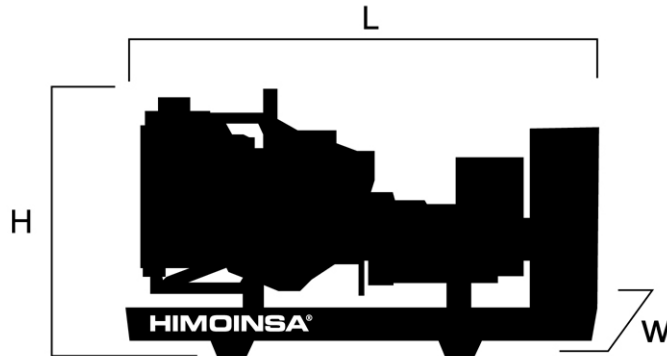
Air Inlet System		
Intake Air Flow	m3/h	500
Cooling Air Flow	m3/s	2,2
Alternator fan air flow	m3/s	0,514

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	1.634
(W) Width	mm	900
Maximum shipping volume (standard supplier)	m ³	4,26
(*) Wet weight	Kg	1.311
Fuel tank capacity	L	250
Autonomy	Hours	16

(*) (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

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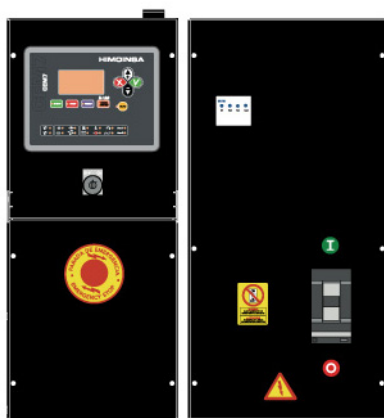
M5

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



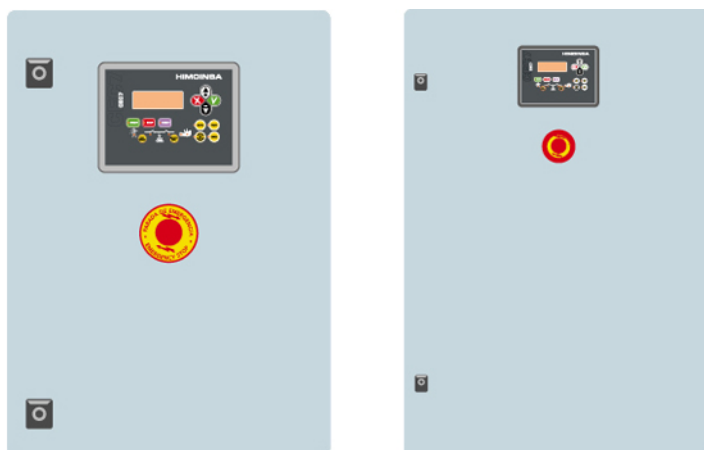
AS5

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



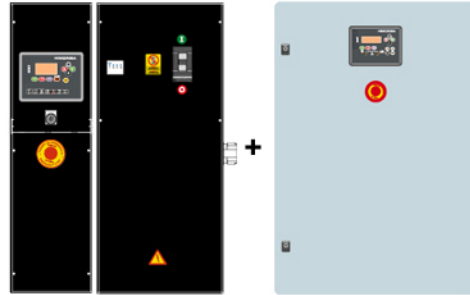


CONTROL PANEL MODEL

AS5 + CC2

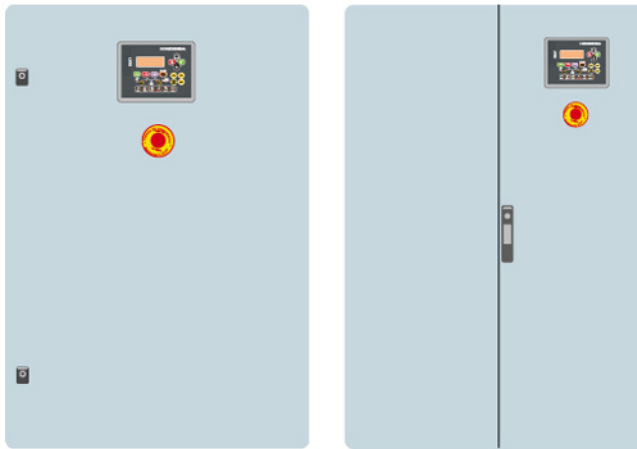
Automatic with mains control and ATS with visualization. The visualization will be in the genset and in the ATS box. CEM7+CEC7

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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
GENERATOR READINGS				
Voltage among phases
Voltage among phases and neutral
Amperage
Frequency
Apparent power (kVA)
Active power (kW)
Reactive power (kVAr)
Power factor
MAINS READINGS				
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	.	.
ENGINE READINGS				
Coolant temperature	.	X	.	.
Oil pressure	.	X	.	.
Fuel level (%)	.	X	.	.
Battery voltage	.	X	.	.
R.P.M.	.	X	.	.
Battery charge alternator voltage	.	X	.	.
ENGINE PROTECTIONS				
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
ALTERNATOR PROTECTIONS				
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
COUNTERS				
Total hour counter	•	•	•	•
Partial hour counter	•	•	•	•
Kilowattimeter	•	•	•	•
Starts valid counters	•	•	•	•
Starts failure counters	•	•	•	•
Maintenance	•	•	•	•
COMMUNICATIONS				
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	•	•
FEATURES				
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	•	•	•	•
SPECIAL FUNCTIONS				
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)
- 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
- IP23 protection degree
- Insulation H class

Electrical system

- Electric control panel with measurements devices and control display (according to necessity and configuration)
- 3 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)

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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http://www.himoinsa.com/generating-sets/819_22/diesel-generator-hfw-90-m5-fpt_iveco-50hz-industrial-range-prp_88,3kva.aspx

