

Model: IV-110 - STAND-BY RANGE

400/230 V - THREE-PHASE | 1.500 R.P.M. | 50 Hz

Automatic without ats panel Stand-by Genset V3.



Image for guidance purposes.

PRP

CONTINUOUS POWER: 100 kVA

PRP "Prime Power" norma ISO 8528-1

LTP

STAND-BY POWER: 110 kVA

LTP "Limited Time Power" norma ISO 8528-1

ENGINE

MAKE	MODEL
VOLVO	TAD 531 GE

ALTERNATOR

MAKE	MODEL
MECC-ALTE	ECP 34-2S / 4

VOLTAGE	HZ	PHASE	COS Ø	PRP kVA/kW	LTP kVA/kW	AMP. (LTP)
400/230	50	3	0,8	101,4/81,1	113,0/90,4	163,22

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ENGINE CHARACTERISTICS

MAKE	MODEL
VOLVO	TAD 531 GE

General Data

Power PRP (kWm)	88
Power LTP (kWm)	98
No. cylinders	4
Cylinder capacity (L)	4.76
Diameter per stroke (mm)	108 x 130
Compression ratio	18
Cooling system	LIQUID
Injection	DIRECT
Suction	TURBO-INTERC.
Series regulator	-
Fly wheel coupling	3-11,5

Lubrication system

Oil capacity (L)	13
Oil consumption (%)	0.41
Min. alarm oil pressure (bar)	2

Ventilation system

Air cooling flow (m ³ /h)	7200
Combustion air flow (m ³ /h)	342
Max. back pressure for fan (mbar)	0

Exhaust system

Exhaust gas flow (m ³ /h)	1002
Exhaust back pressure (mbar)	50
Temp. exhaust gases (°C)	544

Electrical system

VDC (V)	12
Battery (Ah)	96
Engine start-up (kW)	3.10

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ALTERNATOR CHARACTERISTICS

MAKE	MODEL
MECC-ALTE	ECP 34-2S / 4

General Data

Power PRP (kVA)	105
Power LTP (kVA)	115.50
Efficiency Alt. 3/4 %	92.50
Efficiency Alt. 4/4 %	92.20
No. Poles	4
Voltage regulator	DSR
No. wires	12
Insulation	H
Xd (%)	230
X'd (%)	17.60
X	7.40
Degree of protection	IP23

GENERATOR SET CONSUMPTION

% POWER USED	LITRES/HOUR
50%	12
75%	17
100%	23

DIMENSIONS, CAPACITIES, APPROXIMATE WEIGHT

Dimensions (mm)		
LENGTH	WIDTH	HEIGHT
2950	1100	1759

FUEL TANK (LITRES)	WEIGHT (KG)
220	

NOISE LEVEL (dB (A))
70 dB (A) @ 7 m

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INMESOL GENERATOR SET

GENERAL DESCRIPTION

The “INMESOL” generator set is an electrical energy generating machine which is used in places where there is **no mains supply** or when there is a MAINS failure.

The mobile elements, distribution belt, fan, etc., and those parts which reach high temperatures during operation, exhaust manifold, etc, include their corresponding protections, in compliance with the requirements of the Machinery Directive **2006/42**.



INMESOL S.L company with ISO 9001 quality certification system for the:

Design, manufacture, marketing and technical assistance of power GENSETS, lighting towers, welding GENSETS, tractor with PTO GENSET and hybrid generation systems.

Europe regulations:

Inmesol power GENSET sets comply with European legislation and were given the CE marking which includes the following directives:

- 2006/42/EC on machinery safety.
- 2005/88/EC on NOISE EMISSIONS by equipment for outdoor use (amends the 2000/14/EC).
- 2014/30/UE on Electromagnetic Compatibility.
- 2014/35/UE on electrical safety, electrical equipment designed to be used within certain voltage limits

International regulations:

Upon request, INMESOL can supply equipment that complies with the International Legislation and Regulations:

- “Technical Regulation on Safety of Machinery & Equipment” No. 753, repealing GOST R standards for exports to Russia.
- Resolution n° 90708 dated August 30th 2013 “Reglamento Técnico de Instalaciones Eléctricas RETIE” issued by the Ministry of Mining and Energy, Section 20.21 Engines and power generators, for exports to Colombia.

Information:

The power ratings are for reference to environmental conditions: barometric pressure 100 kPa, 25°C and 30% relative humidity. These are defined by ISO 8528 and ISO 3046.

PrimePower (PRP) “Main Service” is applicable for power GENSETS that function as main electric power source. It may be overloaded by 10% in limited time points, maximum once every 12 hours.

StandbyPower (LTP) “Emergency Service” applies to power GENSETS that run during Electrical Grid failure. This power may NOT BE OVERLOADED.

Nevertheless, to obtain long engine life, it is recommended that the active power average load (kW) connected to the power GENSET set in any period of 24 hours of operation does not exceed the following values:

- In Main Service 70% of the PRP power.
- In Emergency Service during Electrical Grid failure 80% of the LTP power.

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SB **STAND-BY**
RANGE

Scope of supply

V3 GENSET WITH AMF CONTROL PANEL WHITOUT TRANSFER SWITCH. READY TO ADD SEPARATED LTS PANEL.



Engine/alternator monobloc directly connected and installed via silent blocks on a frame made from high tensile electro welded steel profiles that are treated with degreasing liquids and applied with a phosphate coat and Polyester (QUALICOAT) paint.

Canopy of steel sheet sound proofed with fireproof rockwool, and treated with degreasing liquids and applied with a phosphate coat and Polyester (QUALICOAT) paint.

Sealed chassis

Fuel tank integrated in the chassis provided with fuel level gauge and fuel lines to the engine.

Engine with mechanical engine driven pusher fan.

Residential silencer with -35 db(a) noise reduction with exhaust tube and protection cap.

Thermal and magnetic circuit breaker

Battery charge alternator.

Starter battery complete with cables to the engine and pole protection.

Installation prepared for earthing spike (spike not included).

Security protection for belts and moving parts as well as on electrical component.

External emergency stop push button.

Manual engine oil extraction pump.

Self excited and auto regulated alternator.

Integrated lifting hook for single point lifting with crane, gensets up to 450 kVA (Except in swing-out cover model)

Base frame prepared for trailer kit

Standard electronic speed governor on engines from 220 kVA and up.

Electric control cubicle with digital control module, automatic mains failure, manual start or remote start on signal.

Battery charger for gen set with 12VCC battery (2A).

Battery charger for gen set with 24VCC battery (5A).

Electric engine coolant preheating on gen sets with automatic mains failure controller.

Horizontal outlet for hot air (till canopy 4200x1600x2245)

OPTIONS

Earth fault relay

LTS Panel in metal cabinet

Integral additional socket panel (from 20 kVA till 400 kVA PRP)

Residential silencer

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DSE 6120 MKII AUTOMATIC CONTROL PANEL WITHOUT ATS PANEL

V3

PROTECTION, DISTRIBUTION AND AUTOMATIC CONTROL panel which starts the generator set when it detects a mains failure and stops it when the mains is restored with the control unit DSE 6120 MKII. It also starts and stops the group manually via a pushbutton or remote start-up by contact.



Image for guidance purposes.

It has the following:

1. EMERGENCY STOP PUSHBUTTON

2. PROTECTIONS:

Magnetothermal switch (preheating resist.) 2P (16 A)

Protection fuses for control module

3. BATTERY CHARGER

V1 PREWIRED GENSET READY TO INSTALL AMF CONTROL PANEL.

V2 GENSET WITH AMF CONTROL PANEL WITH TRANSFER SWITCH.

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4. DSE 6120 MKII PROTECTION CONTROL MODULE.

LCD SCREEN:

It is equipped with a digital LCD screen, which makes it easy to read the information concerning the ENGINE, ALTERNATOR and LOAD available in several languages. The readings that can be obtained are:

ENGINE:	ALTERNATOR AND CHARGE:	MAINS:
Coolant temperature	Voltages between phases and between phases and neutral.	Frequency
Oil pressure	Intensities	Voltages between phases and neutral (L1-N, L2-N, L3-N).
Turning speed (rpm)	Frequency	Voltages between phases and (L1-L2, L2-L3, L1-L3).
Fuel level	Active Power (kW)	Active Power (kW)
Battery voltage	Reactive Power (kVAr)	Reactive Power (kVAr)
Battery alternator voltage.	Apparent Power (kVA)	Apparent Power (kVA)
Operating hours	Cos phi	Cos phi
Number of start-ups	Active energy meter (kW-h)	

CONTROL OF THE SET:

STARTS and STOPS the set AUTOMATICALLY when mains failure is detected and when it is restored, respectively.

It can also operate MANUALLY a REMOTE STAR.

Breaker control via fascia buttons.

PROTECTION OF THE ENGINE AND ALTERNATOR, WITH THE ALARMS ACTIVATED:

ENGINE:	ALTERNATOR:	MAINS:
Low oil pressure	Low and High Voltage	Low and High Voltage
High coolant temperature	Low and High Frequency	Low and High Frequency
Low and High battery Voltage.	Overload due to Intensity (A)	
Failure of the alternator to charge batteries	Power Overload (KW)	
Low fuel level	Low load	

Engine maintenance alarms for fuel filter, air filter and oil filter

OTHER CHARACTERISTICS:

The real-time clock records the last 100 events.	USB connectivity	ALTERNATIVE CONFIGURATIONS, which open up the working possibilities
"DSE Net" for the connection of expansion modules. The possibilities of adapting the operation of the generator sets to the different current applications are expanded.	Fully configurable via software and PC.	DATA LOGGING. Option to display, either graphically or in editable tables, information on the genset operation.
Extensive number of configurable inputs and outputs.	Communication via USB cable for remote control	Sleep Mode
Configurable alarms and timers.	Programmable clock with multiple maintenance events which can be configured for optimal motor functioning. Weekly and/or monthly programming for up to 8 startups and shutdowns per week.	Option to inhibit start-up by external signal during a specific period.

V1 PREWIRED GENSET READY TO INSTALL AMF CONTROL PANEL.

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5. PROTECTIONS

MAGNETO. PROTECTION (A)	EARTH LEAK PROTECTION	DISTRIBUTION
160A, 4P	Optional	Direct from circuit breaker

OPTION:

4-Pole Switchboard in metal cabinet independent from the Automatic Panel

V1 PREWIRED GENSET READY TO INSTALL AMF CONTROL PANEL.

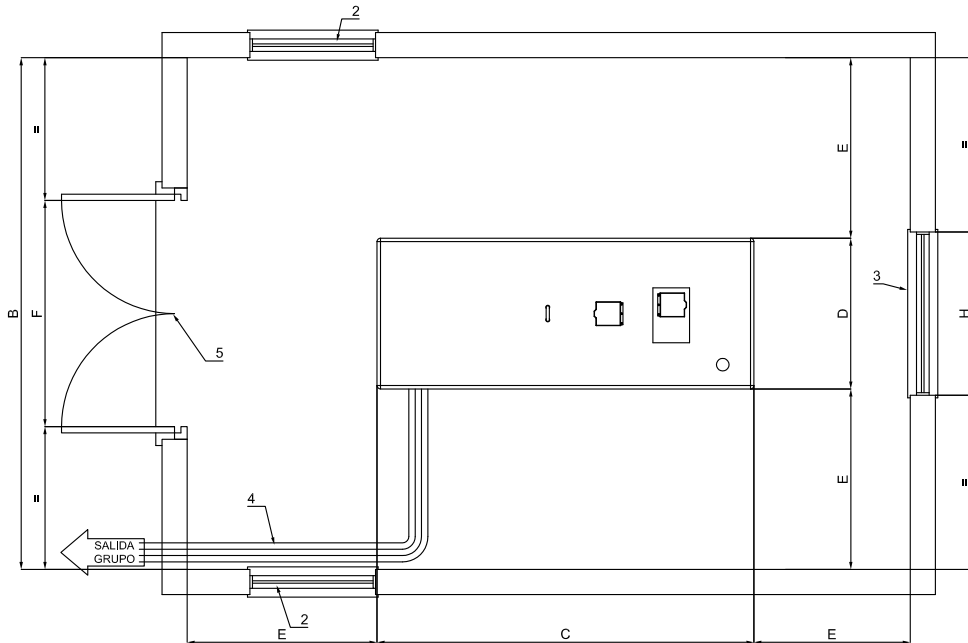
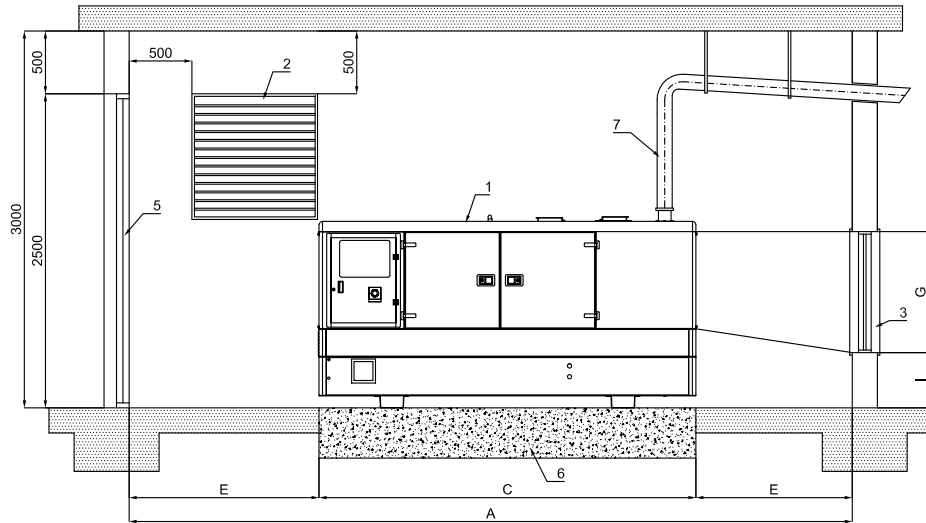
V2 GENSET WITH AMF CONTROL PANEL WITH TRANSFER SWITCH.

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DIMENSIONES MINIMAS DE SALA SEGUN POTENCIA											
POTENCIA (Kva)	A	B	C	D	E	F	G	H	I	PESO	SECCION HUECO ENTRADA AIRE
8-15 ABATIBLE	3365	2800	1365	800	1000	900	700	850	450		2x0.50 m2
10-15	3600	2900	1600	900	1000	1100	700	850	450	804	2x0.50 m2
20-30	4000	2950	2000	950	1000	1200	750	850	450	980	2x0.50 m2
40-60-75	4500	3100	2500	1100	1000	1400	900	1100	450	1680	2x0.90 m2
85-105-130	5000	3200	3000	1200	1000	1400	900	1100	450	2120	2x1.00 m2
150-180-200-250	5600	3350	3600	1350	1000	1550	1150	1300	500	2340	2x2.50 m2
300-400	6200	3600	4200	1600	1000	1800	1250	1600	650	6340	2x3.00 m2
450-470-500-510-630-650	6800	4000	4800	2000	1000	2200	1300	1800	725	6900	2x3.50 m2

- NOMENCLATURA**
- 1.- GRUPO ELECTROGENO
 - 2.- HUECO ENTRADA DEL AIRE
 - 3.- TUNEL EXPULSION DEL AIRE
 - 4.- BANDEJA PASACABLES
 - 5.- PUERTA DE ACCESO
 - 6.- BASE HORMIGON ARMADO H-175
 - 7.- TUBO DE ESCAPE

CALCULO ESPESOR LOSA DE HORMIGON

$$E = \frac{W}{d \times D \times C}$$

E = altura bloque de hormigón
 W = peso total grupo electrógeno
 d = densidad del hormigón (2400 kg/m³)
 D = anchura bloque de hormigón (m)
 C = longitud bloque de hormigón (m)

h = 20/100 mm

EL Ø DE LA TUBERIA DE EXTENSION DEL ESCAPE PUEDE SER EL MISMO QUE EL DEL SILENCIADOR HASTA 5 m. PARA DISTANCAS MAYORES DE 5 m, DEBE AUMENTARSE EL Ø DE LA TUBERIA 10 mm POR CADA 10 m MAS DE DISTANCIA ENTRE EL GRUPO ELECTROGENO Y LA SALIDA EXTERIOR

		PROYECTO: GRUPO INSONORIZADO			
MODIFICADO	A.AGUILAR	02-Ene-2015	MATERIAL		
DIBUJADO	J.G.BEJAR	27-Feb-2006	TOLERANCIA GENERAL		
COMPROBADO	J.L.SOLANO	04-Oct-2012	UDS.	Nº MOD.	
CODIGO	DENOMINACION:		EXPEDIENTE:	Nº PLANO	MARCA
PESO	GRUPO INSONORIZADO				
ESCALA	DIMENSIONES DE SALA				