

Model: II-110 - INDUSTRIAL 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: 99 kVA

PRP "Prime Power" norma ISO 8528-1

LTP

STAND-BY POWER: 109 kVA

LTP "Limited Time Power" norma ISO 8528-1

ENGINE

| MAKE | MODEL |
|------|---------|
| FPT | N45TM2A |

ALTERNATOR

| MAKE | MODEL |
|-------------|----------|
| LEROY SOMER | TAL044-D |

| VOLTAGE | HZ | PHASE | COS Ø | PRP kVA/kW | LTP kVA/kW | AMP. (LTP) |
|---------|------|-------|-------|------------|------------|------------|
| 400/230 | 50Hz | 3 | 0,8 | 99,3/79,4 | 108,7/87,0 | 156,89 |

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ENGINE CHARACTERISTICS



| MAKE | MODEL |
|------|---------|
| FPT | N45TM2A |

General Data

| | |
|--------------------------|---------------|
| Power PRP (kWm) | 87.5 |
| Power LTP (kWm) | 96.2 |
| No. cylinders | 4 |
| Cylinder capacity (L) | 4.5 |
| Diameter per stroke (mm) | 104 x 132 |
| Compression ratio | 17.5 |
| Cooling system | LIQUID |
| Injection | DIRECT |
| Suction | TURBO-INTERC. |
| Series regulator | MECHANICAL |
| Fly wheel coupling | 3-11.5 |

Lubrication system

| | |
|-------------------------------|------|
| Oil capacity (L) | 12.8 |
| Oil consumption (%) | 0.1 |
| Min. alarm oil pressure (bar) | 3 |

Ventilation system

| | |
|---|------|
| Air cooling flow (m ³ /h) | 7920 |
| Combustion air flow (m ³ /h) | 427 |
| Max. back pressure for fan (mbar) | 1.47 |

Exhaust system

| | |
|--------------------------------------|------|
| Exhaust gas flow (m ³ /h) | 1184 |
| Exhaust back pressure (mbar) | 50 |
| Temp. exhaust gases (°C) | 535 |

Electrical system

| | |
|----------------------|-----|
| VDC (V) | 12 |
| Battery (Ah) | 120 |
| Engine start-up (kW) | 3 |

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ALTERNATOR CHARACTERISTICS

| MAKE | MODEL |
|-------------|----------|
| LEROY SOMER | TAL044-D |

General Data

| | |
|-----------------------|------------|
| Power PRP (kVA) | 100 |
| Power LTP (kVA) | 110 |
| Efficiency Alt. 3/4 % | 90.8 |
| Efficiency Alt. 4/4 % | 90.4 |
| No. Poles | 4 |
| Voltage regulator | AREP+ R180 |
| No. wires | 6 |
| Insulation | H |
| Xd (%) | 341 |
| X'd (%) | 14.7 |
| X | 8.8 |
| Degree of protection | IP23 |

GENERATOR SET CONSUMPTION

| % POWER USED | LITRES/HOUR |
|--------------|-------------|
| 50% | 11 |
| 75% | 16.2 |
| 100% | 22 |

DIMENSIONS, CAPACITIES, APPROXIMATE WEIGHT

| Dimensions (mm) | | |
|-----------------|-------|--------|
| LENGTH | WIDTH | HEIGHT |
| 2990 | 1140 | 1933 |

| FUEL TANK (LITRES) | WEIGHT (KG) |
|--------------------|-------------|
| 240 | 1980 |

| NOISE LEVEL (dB (A)) |
|----------------------|
| 68+/-2dB(A) @7m |

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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.U. company with ISO 9001 quality certification system for the:
Design, manufacture, marketing and technical assistance of power GENSETS
and lighting towers.**

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.
- Only in GENSETs in soundproof canopies - 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 nº 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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IN INDUSTRIAL
RANGE

Scope of supply

V3

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



SOUNDPROOF

Engine/alternator monoblock directly connected and installed via anti vibration mounts on a base frame made from high tensile electro welded steel profiles that are treated with degreasing liquids and aplicated with a phosphate coat and polyester (QUALICOAT) paint.

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

Sealed base frame.

Fuel tank integrated in the base frame, provided with fuel level gauge and fuel connections to the engine.

Engine with mechanical driven pusher fan.

Residential exhaust silencer with -35 dB(A) attenuation with exhaust pipe and protection cap.

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

Circuit breaker.

Battery charge alternator.

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

Ground terminal (earth rod not included).

Security protection for hot and moving parts as well as live electrical components.

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, up to canopy 4.2m long.

Base frame prepared for trailer kit installation.

Static battery charger for genset with 12VCC battery (3A).

Static battery charger for genset with 24VCC battery (5A).

Electric engine coolant preheating.

OPTIONS

Earth fault protection.

LTS panel in metal cabinet.

Integrated additional sockets panel.

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V3 DSE 6120 MKIII AUTOMATIC CONTROL PANEL WITHOUT ATS PANEL

AUTOMATIC CONTROL, PROTECTION AND DISTRIBUTION panel with control unit DSE 6120 MKIII that starts the generating set when it detects a mains failure and stops it when the mains is restored. It is ready for being connected to an external load transfer switch panel (LTS).



Image for guidance purposes.

It has the following:

1. ON/OFF KEY & EMERGENCY STOP PUSH BUTTON

2. PROTECTIONS

Main circuit breaker, located on the generating set.

Circuit breaker for coolant heater (option).

Protection fuses for control unit.

V1 PREWIRED GENSET READY TO INSTALL AMF CONTROL PANEL.

V2 GENSET WITH AMF CONTROL PANEL WITH TRANSFER SWITCH.

V3 GENSET WITH AMF CONTROL PANEL WITHOUT TRANSFER SWITCH. READY TO ADD SEPARATED LTS PANEL.

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3. DSE 6120 MKIII CONTROL UNIT

LCD SCREEN:

It has a digital LCD screen, which provides easy reading of the information regarding the ENGINE, ALTERNATOR, MAINS and LOAD.

| ENGINE | ALTERNATOR AND LOAD | MAINS |
|----------------------------|---|---|
| Coolant temperature. * | Phase to phase and phase to neutral voltages. | Phase to phase and phase to neutral voltages. |
| Oil pressure. * | Currents. | Frequency. |
| Running speed (rpm). | Frequency. | Phase secuency. |
| Fuel level. | Active power (kW). | |
| Battery voltage. | Reactive power (kVAr). | |
| Charge alternator voltage. | Apparent power (kVA). | |
| Running hours. | Power factor (cos φ). | |
| Number of starts. | Active energy meter (kW-h). | |

* In generating sets equipped with the corresponding sensor.

CONTROL OF THE SET:

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

It can also be done MANUALLY or by REMOTE START SIGNAL.

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 current (A). | |
| Charge alternator failure. | Overload due to power (kW-kVA). | |
| Low fuel level. | Short-circuit. | |
| Low load. | Negative phase sequence. | |

OTHER CHARACTERISTICS:

| | | |
|--|--|---|
| Fully configurable via PC software. | USB connectivity. | PLC functionality. |
| Extensive number of configurable inputs and outputs. | Real-time clock for an accurate record of events. | Expandable functionalities with additional devices. |
| Configurable alarms and timers. | Programmer clock for the optimal maintenance of the set. | Posibility of remote control with additional devices. |

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V2 GENSET WITH AMF CONTROL PANEL WITH TRANSFER SWITCH.

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V3 DSE 6120 MKIII AUTOMATIC CONTROL PANEL **WITHOUT ATS PANEL**

4. PROTECTIONS

| MAIN CIRCUIT BREAKER | EARTH LEAKAGE PROTECTION | DISTRIBUTION |
|----------------------|--------------------------|-----------------------------|
| 160A, 4P | Optional | Direct from circuit breaker |

OPTION:

Load Transfer Switch panel (LTS) in a separated metal cabinet.

V1 PREWIRED GENSET READY TO INSTALL AMF CONTROL PANEL.

V2 GENSET WITH AMF CONTROL PANEL **WITH TRANSFER SWITCH.**

V3 GENSET WITH AMF CONTROL PANEL **WITHOUT TRANSFER SWITCH.** READY TO ADD SEPARATED LTS PANEL.

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