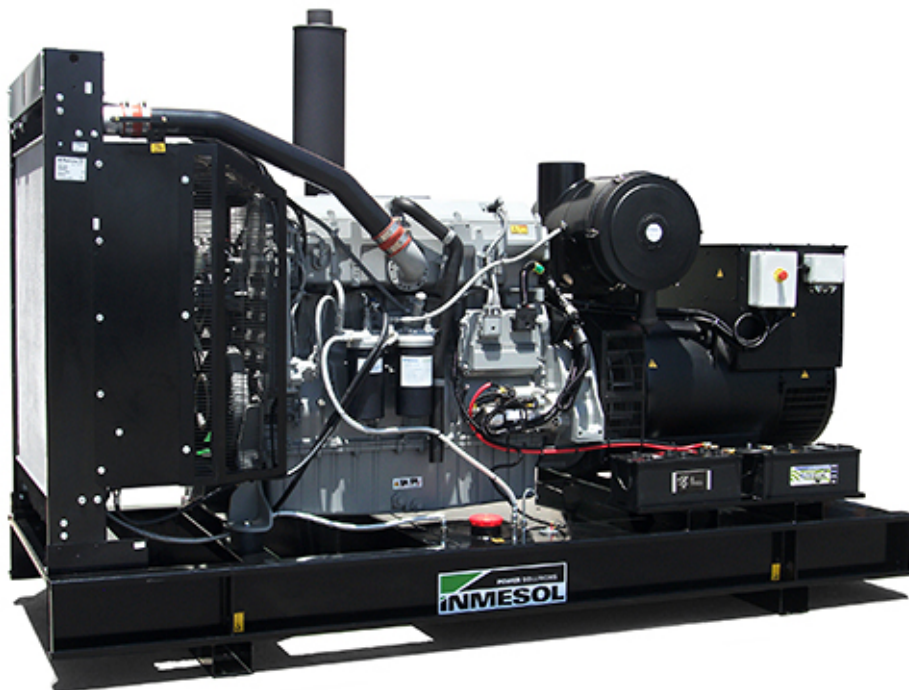


**AP-440 - PERKINS - 2206A-E13TAG3**

**1.500 R.P.M. | 50 Hz**

## TECHNICAL SPECIFICATIONS



Model:

**AP-440**

Stand-by automatic gen set.



Image for guidance purposes.

**(400 / 230 V)**

| ENGINE     | MAKE                 | MODEL             |
|------------|----------------------|-------------------|
|            | PERKINS              | 2206A-E13TAG<br>3 |
| ALTERNATOR | MODEL                |                   |
|            | MECC-ALTE ECO 40-1SN |                   |

CONTINUOUS POWER:  
(PRP "Prime Power" norma ISO 8528-1) **400 kVA**

STAND-BY POWER:  
(LTP "Limited Time Power" norma ISO 8528-1) **440 kVA**

### Amperes in the different voltages:

| VOLTAGE | HZ | PHASE | COS Ø | PRP KVA/KW  | LTP KVA/KW  | AMPERAGE |
|---------|----|-------|-------|-------------|-------------|----------|
| 415/240 | 50 | 3     | 0,8   | 400,0/320,0 | 440,0/352,0 | 612,86   |
| 400/230 | 50 | 3     | 0,8   | 400,0/320,0 | 440,0/352,0 | 635,84   |
| 380/220 | 50 | 3     | 0,8   | 400,0/320,0 | 440,0/352,0 | 669,3    |
| 240/139 | 50 | 3     | 0,8   | 400,0/320,0 | 440,0/352,0 | 1059,73  |
| 230/133 | 50 | 3     | 0,8   | 400,0/320,0 | 440,0/352,0 | 1105,81  |
| 220/127 | 50 | 3     | 0,8   | 400,0/320,0 | 440,0/352,0 | 1156,07  |

**AP-440 - PERKINS - 2206A-E13TAG3**

**1.500 R.P.M. | 50 Hz**

## ENGINE CHARACTERISTICS

| MAKE    | MODEL         |
|---------|---------------|
| PERKINS | 2206A-E13TAG3 |

### GENERAL DATA

|                          |               |
|--------------------------|---------------|
| Power PRP (kWm)          | 349.00        |
| Power LTP (kWm)          | 392.00        |
| No. cylinders            | 6             |
| Cylinder capacity (L)    | 12.50         |
| Diameter per stroke (mm) | 130 x 157     |
| Compression ratio        | 16.30         |
| Cooling system           | LIQUID        |
| Injection                | DIRECT        |
| Suction                  | TURBO-INTERC. |
| Series regulator         | ELECTRONIC    |
| Fly wheel coupling       | 1-14"         |

### Lubrication system

|                               |       |
|-------------------------------|-------|
| Oil capacity (L)              | 40.00 |
| Oil consumption (%)           | 0.10  |
| Min. alarm oil pressure (bar) | -     |

### Ventilation system

|                                   |         |
|-----------------------------------|---------|
| Air cooling flow (m3/h)           | 33780   |
| Combustion air flow (m3/h)        | 1584.00 |
| Max. back pressure for fan (mbar) | -       |

### Exhaust system

|                              |      |
|------------------------------|------|
| Exhaust gas flow (m3/h)      | 4350 |
| Exhaust back pressure (mbar) | 100  |
| Temp. exhaust gases (°C)     | 630  |

### Electrical system

|                      |         |
|----------------------|---------|
| VDC (V)              | 24      |
| Battery (Ah)         | 2 x 180 |
| Engine start-up (kW) | 7,8     |



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**AP-440 - PERKINS - 2206A-E13TAG3**

**1.500 R.P.M. | 50 Hz**

## ALTERNATOR CHARACTERISTICS

### MODEL

MECC-ALTE ECO 40-1SN (400 / 230 V)

### GENERAL DATA

|                       |        |
|-----------------------|--------|
| Power PRP (kVA)       | 400    |
| Power LTP (kVA)       | 440.00 |
| Efficiency Alt. 3/4 % | 94.40  |
| Efficiency Alt. 4/4 % | 94.20  |
| No. Poles             | 4      |
| Voltage regulator     | DER-1  |
| No. wires             | 12     |
| Insulation            | H      |
| Xd (%)                | 277.00 |
| X'd (%)               | 22.50  |
| X                     | 14.20  |
| Degree of protection  | IP21   |

## GENERATOR SET CONSUMPTION

| % POWER USED | LITRES/HOUR |
|--------------|-------------|
| 50%          | 42.00       |
| 75%          | 62.00       |
| 100%         | 81.00       |

## DIMENSIONS, CAPACITIES, APPROXIMATE WEIGHT AND NOISE

| DIMENSIONS (MM)      |       |             |
|----------------------|-------|-------------|
| LENGTH               | WIDTH | HEIGHT      |
| 3000                 | 1300  | 2141        |
| FUEL TANK (LITRES)   |       | WEIGHT (KG) |
| 558                  |       | 3200.00     |
| NOISE LEVEL (dB (A)) |       |             |



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AP-440 - PERKINS - 2206A-E13TAG3

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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**.

### REGULATIONS

The machine holds the "CE" marking, and the corresponding Declaration of Conformity is issued with each of them, in which it specifies that the machine complies with **R.D 842/2002 Low Voltage Regulations and with the European Directives:**

- 2006/42 on Safety in Machinery.
- 2006/95/CE on Electrical Safety.
- 2004/108/CE on Electromagnetic Compatibility.
- 2005/88/CE on NOISE EMISSIONS by equipment for outdoor use (for SOUNDPROOF GENERATOR SETS).



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## **SB STAND-BY RANGE / SCOPE OF SUPPLY**

|                                                                                                                                                                                                                                           |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 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 epoxy paint. | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Canopy of steel sheet sound proofed with fireproof rockwool, and treated with degreasing liquids and applied with a phosphate coat and epoxy paint.                                                                                       | <input type="checkbox"/>                                                            | <input checked="" type="checkbox"/>                                                 |
| Fuel tank integrated in the chassis provided with fuel level gauge and fuel lines to the engine.                                                                                                                                          | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Engine with mechanical engine driven pusher fan.                                                                                                                                                                                          | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Industrial silencer with -15 db(A) noise reduction and exhaust outlet tube.                                                                                                                                                               | <input checked="" type="checkbox"/>                                                 | <input type="checkbox"/>                                                            |
| Residential silencer with -35 db(a) noise reduction with exhaust tube and protection cap.                                                                                                                                                 | <input type="checkbox"/>                                                            | <input checked="" type="checkbox"/>                                                 |
| 4 Pole thermal and magnetic circuit breaker.                                                                                                                                                                                              | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Battery charge alternator.                                                                                                                                                                                                                | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Starter battery complete with cables to the engine and pole protection.                                                                                                                                                                   | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Installation prepared for earthing spike (spike not included).                                                                                                                                                                            | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Security protection for belts and moving parts as well as on electrical component.                                                                                                                                                        | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| External emergency stop push button.                                                                                                                                                                                                      | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Manual engine oil extraction pump.                                                                                                                                                                                                        | <input type="checkbox"/>                                                            | <input checked="" type="checkbox"/>                                                 |
| Self excited and auto regulated alternator.                                                                                                                                                                                               | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Integrated lifting hook for single point lifting with crane, gensets up to 450 kVA (Except in swing-out cover model)                                                                                                                      | <input type="checkbox"/>                                                            | <input checked="" type="checkbox"/>                                                 |
| 4 Lifting points for gen sets from 450 kVA and bigger.                                                                                                                                                                                    | <input checked="" type="checkbox"/>                                                 | <input type="checkbox"/>                                                            |
| Prepared for extended fuel tank, fully bonded for leakage protection.                                                                                                                                                                     | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Base frame prepared for trailer kit                                                                                                                                                                                                       | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Standard electronic speed governor on engines from 220 kVA and up.                                                                                                                                                                        | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Electric control cubicle with digital control module, automatic mains failure, manual start or remote start on signal.                                                                                                                    | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Battery charger for gen set with 12VCC battery (2A).                                                                                                                                                                                      | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Battery charger for gen set with 24VCC battery (5A).                                                                                                                                                                                      | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Electric engine coolant preheating on gen sets with automatic mains failure controller.                                                                                                                                                   | <input checked="" type="checkbox"/>                                                 | <input checked="" type="checkbox"/>                                                 |
| Horizontal outlet for hot air                                                                                                                                                                                                             | <input type="checkbox"/>                                                            | <input checked="" type="checkbox"/>                                                 |

AP-440 - PERKINS - 2206A-E13TAG3

1.500 R.P.M. | 50 Hz

## DSE 7320 AUTOMATIC CONTROL PANEL

### DSE 7320 AUTOMATIC CONTROL PANEL

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 7320.



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

AP-440 - PERKINS - 2206A-E13TAG3

1.500 R.P.M. | 50 Hz

## DSE 7320 AUTOMATIC CONTROL PANEL

- 4 DSE 7320 CONTROL and PROTECTION CENTRE.** It has a digital LCD screen, which provides easy reading of the information regarding the ENGINE, ALTERNATOR, MAINS and CHARGING.

### READINGS that can be made:

#### ENGINE:

- Coolant temperature
- Oil pressure
- Turning speed (rpm)
- Fuel level
- Battery voltage
- Battery alternator voltage.
- Operating hours
- Number of start-ups

#### ALTERNATOR AND CHARGE:

- Voltages between phases and between phases and neutral.
- Intensities
- Frequency
- Active Power (kW)
- Reactive Power (kVAr)
- Apparent Power (kVA)
- Cos phi
- Active energy meter (kW-h)

#### MAINS:

- Frequency
- Phase rotation order
- Voltages between phases and neutral (L1-N, L2-N, L3-N).
- Voltages between phases and (L1-L2, L2-L3, L1-L3).
- Earth current

### 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

### Protection of the engine and alternator, with the ALARMS activated:

#### ENGINE:

- Low oil pressure
- High coolant temperature
- Low and High battery Voltage.
- Failure of the alternator to charge batteries
- Low fuel level

AP-440 - PERKINS - 2206A-E13TAG3

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## DSE 7320 AUTOMATIC CONTROL PANEL

### ALTERNATOR:

- Low and High Voltage
- Low and High Frequency
- Overload due to Intensity (A)
- Short-circuit
- Negative Phase Sequence.
- Power Overload (KW-kVA)
- Load control:
  - 1.Connection and disconnection of artificial loads.
  - 2.Disconnection of non-essential loads

### MAINS:

- Low and High Voltage
- Low and High Frequency

### OTHER CHARACTERISTICS:

- The real-time clock provides an exact record of events.
- Extensive number of configurable inputs and outputs.
- Configurable alarms and timers.
- USB connectivity
- Fully configurable via software and PC.
- Modbus RTU
- Possibility of SMS text messages
- Communications Ethernet, RS 232 and RS 485
- Programmer Clock with multiple maintenance events which can be configured for the optimal operation of the engine. Weekly and/or monthly programming of up to 16 starts and stops per week.
- ALTERNATIVE CONFIGURATIONS, which open up the working possibilities

## 5 DISTRIBUTION:

- Direct output of the magnetothermal switch.

## 6 OPTIONAL:

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

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## DSE 7320 AUTOMATIC CONTROL PANEL

The following table shows the different amperages of the magnetothermal switches and the switchboards according to the set's power - Three-phase generators (single phase by request):

|             | CONT. POW       | MAGNETOTHERMAL PROTECTION IV POLES (A) | SWITCHBOARD IV POLES (A) |
|-------------|-----------------|----------------------------------------|--------------------------|
| SET'S POWER | 250 - 275 kVA   | 400                                    | 400                      |
|             | 300 - 430 kVA   | 630                                    | 630                      |
|             | 450 - 500 kVA   | 800                                    | 800                      |
|             | 570 - 650 kVA   | 1000                                   | 1250                     |
|             | 780 - 800 kVA   | 1250                                   | 1250                     |
|             | 915 - 1100 kVA  | 1600                                   | 1650                     |
|             | 1150 - 1300 kVA | 2000                                   | 2000                     |
|             | 1400 - 1750 kVA | 2500                                   | 2500                     |
|             | 1800 - 2100 kVA | 3200                                   | 3200                     |