Introduction

The GreenTech Series is a sustainable generator solution designed to reduce environmental impact through alternative fuel compatibility, low emission levels, and reduced noise output. With HVO fuel support and advanced exhaust and safety systems, it ensures compliance with environmental standards and significantly reduces carbon emissions. The GreenTech Series offers lifecycle performance certified by EPD and LCA. Through the use of recycled and bioplastic materials, hybrid-ready infrastructure, and environmentally conscious production processes, the GreenTech Series contributes to long-term sustainability goals. (Image is for illustrative purposes only.)

Power

3 Phase,50 Hz, PF 0.8

Voltage (V)	STANDBY RATING (ESP)		PRIME RATING (PRP)		STANDBY CURRENT (A)
	kW	kVA	kW	kVA	
400 / 231	360.0	450	328.00	410	650

STANDBY RATING (ESP) Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. ESP is in accordance with ISO 8528-1. Overload is not allowed.

PRIME RATING (PRP) Applicable for supplying power to varying electrical load for unlimited hours. PRP is in accordance with ISO 8528-1. 10 % overload capability is available for a period of 1 hour within 12-hour period of operation.

General Characteristics

Model Name	AP 450 - GTS
Frequency (Hz)	50
Fuel Type	Diesel
Engine Make and Model	Perkins 2206A-E13TAG3
Alternator Make and Model	Mecc Alte ECO 40-2S/4 C
Control Panel Model	DSE 7320
Canopy	N/A 2
Noise Level @1m , @7m (dB(A))	86.3 / 79.2

Engine Specifications

General Data

Manufacturer	Perkins

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Engine Model	2206A-E13TAG3
Number of Cylinders / Type	6 cylinders - in line
Bore mm (in)	130
Stroke mm (in)	157
Displacement l (cu. In)	12.5
Compression Ratio	16.3:1
Engine Speed (rpm)	1500
Standby Power (kW/hp)	412.5/552,94
Prime Power (kW/hp)	368.4/493,83
Block Heater (QTY)	1
Block Heater Power (Watt)	3000
Governor System	ECM
Air Filter	Dry Type
Aspiration	Turbo Charged and Charge Air Cooled

Lubrication System

Oil Capacity l (qal)	40
Max. Oil Temperature ºC (F)	113

Fuel System

Fuel Type	Diesel
Injection Type	Direct
Type of Fuel Pump	MEUI

Electrical System

Operating Voltage (Vdc)	24 Vdc
Battery and Capacity (Qty/Ah)	2x120
Charge Alternator (A)	70

Cooling System

Cooling Method	Water Cooled

Exhaust System

Exhaust Gas Flow (m³/min)	64,8
Exhaust Back Pressure in-Hg (kPa)	10 (1800rpm için)
Exhaust Gas Temperature ºC (F)	630
Heat Rejection to Exhaust kW (BTU/min)	245,3

Radiator

Total Coolant Capacity (l)	51.4

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Cooling Fan Air Flow m³/min (ft³/min)	654
External Restriction to Cooling Airflow (Pa)	125

Fuel Consumption

Fuel Cons. @100% Prime Load l/h (kg/h)	81
Fuel Cons. @75% Prime Load l/h (kg/h)	62
Fuel Cons. @50% Prime Load l/h (kg/h)	42

Alternator Characteristics

Manufacturer	Mecc Alte
Alternator Model	ECO 40-2S/4 C
Frequency (Hz)	50
Power (kVA)	450
Voltage (V)	400
Phase	3
A.V.R.	DER1
Voltage Regulation	0.5
Insulation Class	H
Protection Class	IP23
Rated Power Factor	0.8
Weight Complete Generator (kg)	1131
Cooling Air (m³/min)	54

Open Generator Set Dımensıons

Length mm	3205
Width mm	1550
Height mm	2103
Open Gen.Set Gross Weight Dry kg	3260
Full Tank Capacity (l)	850

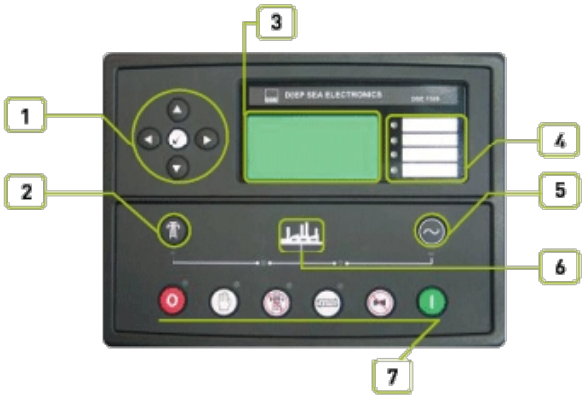
Canopy Characteristics

Length mm	N/A
Width mm	N/A
Height mm	N/A
Dry Weight kg	N/A
Full Tank Capacity (l)	N/A

Control Panel

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Manufacturer	DSE
Control Module Model	DSE 7320
Communication Ports	MODBUS



1. Menu navigation buttons
2. Close mains button
3. Main Status and instrumentation display
4. Alarm LED's
5. Close generator button
6. Status LED's
7. Operation selecting buttons

Standard Devices

DSE model 7320, Auto Mains Failure control module, with a highly sophisticated level of new features and functions
Static battery charger, Fuses for control circuits

Control Unit

- The DSE 7320 control module is a standard addition to our generator sets from 220 kVA upwards and it has been designed to start and stop diesel and gas generating sets that include electronic and non electronic engines.
- The DSE 7320 includes the additional capability of being able to monitor a mains (utility) supply and is therefore suitable for controlling a standby generating set in conjunction with an automatic transfer switch.
- The DSE7320 also indicates operational status and fault conditions, automatically shutting down the generating set and indicating faults by means of its LCD display on the front panel.

Construction and Finish

- Components installed in sheet steel enclosure.
- Phosphate chemical, pre-coating of steel provides corrosion resistant surface
- Polyester composite powder topcoat forms high gloss and extremely durable finish
- Lockable hinged panel door provides for easy component access

Installation

The Control panel is mounted at the generating set baseframe on robust steel stand or power module. Located at side of generating set with properly panel visibility.

Engine

-Engine speed
-Oil pressure
-Coolant temperature
-Run time
-Battery volts
-Engine maintenance due

Shut Down

-Fail to start
-Emergency stop
-Low oil pressure
-High engine temperature
-Low coolant level
-Under/over speed
-Under/over generator frequency
-Under/over generator voltage

Warnings

-Charge failure
-Battery under voltage
-Fail to stop
-Low fuel level (opt.)
-kW over load
-Negative phase sequence
-Loss of speed signal

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-Oil pressure sensor open
-Phase rotation

Generator

-Voltage (L-L, L-N)
-Current (L1-L2-L3)
-Frequency
-Earthcurrent
-kW
-Pf
-kVAr
-kWh, kVAh, kVArh
-Phasesequence

Pre-alarms

-Low oil pressure
-High engine temperature
-Low engine temperature
-Under/over speed
-Under/over generator frequency
-Under/over generator voltage
-ECU warning

Electrical Trip

-Earth fault
-kW over load
-Generator over current
-Negative phase sequence

Mains

-Voltage (L-L, L-N)
-Frequency

Expensions

-Additional LED module (2548)
-Expansion relay module (2157)
-Expansion input module (2130)

Options

- High oil temperature shut down
- Low fuel level shut down
- Low fuel level alarm
- High fuel level alarm

Control Panel Compliance List

- Electrical Safety / Electro Magnetic Compatibility (EMC)
- BS EN 61000-6-2 EMC Generic Immunity Standard
- BS EN 61000-6-4 EMC Generic Emission Standard
- BS EN 60950 Electrical Safety

Static Battery Charger

- Battery charger is manufactured with switching-mode and SMD technology and it has high efficiency.
- Battery charger models' output V-I characteristic is very close to square
- 2405 has fully output shot circuit protection and it can be used as a current source.
- 2405 charger has high efficiency, long life, low failure rate, light-weight and low heat radiated in accordance with linear alternatives.
- The charger is fitted with a protection diode across the output.
- Charge fail output is available.
- Connect charge fail relay coil between positive output and CF output.
- Input: 196-264V.
- Output: 27,6V 5A or 13,8V 5A.

Standard Equipment

- Water cooled, Diesel engine
- Radiator with mechanical fan
- Protective grille for rotating and hot parts
- Electric starter and charge alternator
- Starting battery (with lead acid) including rack and cables
- Engine coolant heater
- Base frame design incorporates an integral fuel tank and anti-vibration isolators
- Flexible fuel connection hoses
- Single bearing, class H alternator
- Industrial exhaust silencer and steel bellows supplied separately(for open sets)

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- Static battery charger
- Manual for application and installation

Optıonal Equıpment

Engine

- Fuel-Water Seperator Filter
- Oil heater

Alternator

- Anti-Condensation Heater
- Over sized alternator
- PMG excitation + AVR
- Main line circuit breaker

Control Panel

- Automatic synchronising and power control system (Multi gen-set Parallel)
- Parallel system with mains
- Transition synchronization with mains
- Alarm output relays
- Earth fault, single set
- Parallel system with mains
- Remote relay output
- Remote communication with modem
- Charge Ammeter

Transfer Panel

- Three or four pole contactor
- Three or four pole motor operated circuit breaker

Auxiliary Equipment

- Main Fuel Tank
- Automatic or manual fuel filling system
- Electrical or manual oil drain pump
- Low and high fuel level alarm
- Inlet and outlet motorized louvers
- Inlet and outlet acoustic baffles
- Tool kit for maintenance
- 1500/3000 hours maintenance kit
- Supplied with oil and coolant (-30°C)

Exhaust

- Residential Silencer
- Silencer Spark Arrester
- Critical Silencer
- Catalytic Convertor

Canopy

- Galvanized Coating
- ISO Container
- Marine Grade Paint

Optional Alternator and Control Panel

Please contact to your reseller for additional Alternator, Control Panel and Breaker Switch options.

Aksa Certificates

Directive

- 2006/42/EC : Machinery Safety Directive
- 2014/30/EU : Electromagnetic Compatibility Directive
- 2014/35/EU : Low Voltage Directive

Standarts

- TS ISO 8528-5:2022 / TS EN ISO 8528-13:2018 : Reciprocating internal combustion engine-driven alternating current generating sets- Part:13: Safety

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Quality Management Systems
ISO 9001:2015
ISO 14001:2015
ISO 45001:2018
ISO 50001:2018
ISO 27001:2013
ISO 10002:2018

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