



#### DESCRIPTIVE

- Mechanic governor
- Mechanically welded chassis with antivibration suspension
- Main line circuit breaker
- Radiator for wiring temperature of 48/50°C max with mechanical fan
- Protective grille for fan and rotating parts
- 9 dB(A) silencer supplied separately
- Charger DC starting battery with electrolyte
- 12 V charge alternator and starter
- Delivered with oil and coolant -30°C
- Manual for use and installation

#### POWER DEFINITION

**PRP** : Prime Power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO 8528-1.

**ESP** : The standby power rating is applicable for supplying emergency power in variable load applications in accordance with ISO 8528-1.

Overload is not allowed.

#### TERMS OF USE

According to the standard, the nominal power assigned by the genset is given for 25°C Air Inlet Temperature, of a barometric pressure of 100 kPA (100 m A.S.L), and 30 % relative humidity. For particular conditions in your installation, refer to the derating table.

#### ASSOCIATED UNCERTAINTY

For the generating sets used indoor, where the acoustic pressure levels depends on the installation conditions, it is not possible to specify the ambient noise level in the exploitation and maintenance instructions . You will also find in our exploitation and maintenance instructions a warning concerning the air noise dangers and the need to implement appropriated preventive measures.

## JD22M

John Deere Engine Model	3029DFU29
Meccalte Alternator type	ECP28 M4A
Performance class	G3

### GENERAL CHARACTERISTICS

Frequency (Hz)	50
Reference voltage (V)	400/230
Max power ESP (kVA)	22
Max power ESP (kWe)	17.6
Max power PRP (kVA)	20
Max power PRP (kWe)	16
Intensity (A)	32
Standard Control Panel	DSE 4610
Optional control panel	DSE 6010

### DIMENSIONS COMPACT VERSION

Length (mm)	2600
Width (mm)	900
Height (mm)	1650
Dry weight (kg)	750
Tank capacity (L)	132

### POWERS

Voltage	ESP		PRP		Standby Amps
	kWe	kVA	kWe	kVA	
415/240	17.6	22	16	20	31
400/230	17.6	22	16	20	32
380/220	17.6	22	16	20	33
240 TRI	17.6	22	16	20	53
230 TRI	17.6	22	16	20	55
220 TRI	17.6	22	16	20	58
200/115	17.6	22	16	20	64



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### ENGINE SPECIFICATIONS

#### GENERAL ENGINE DATA

Engine model	John Deere 3029DFU29, 4 stroke, 3 Cylinder
Cylinder arrangement	L
Displacement (C.I.)	2.91
Bore (mm) x Stroke (mm)	106 x 110
Compression ratio	17.8
Speed (RPM)	1500
Pistons speed (m/s)	5.5
Maximum stand-by power at rated RPM (kW)	31
Frequency regulation (%)	+/- 2.5%
BMEP (bar)	7.80
Governor type	Mechanical

#### COOLING SYSTEM

Radiator & Engine capacity (L)	14.5
Max water temperature (°C)	105
Outlet water temperature (°C)	93
Fan power (kW)	0.7
Fan air flow w/o restriction (m3/s)	1.74
Available restriction on air flow (mm H <sub>2</sub> O)	20
Type of coolant	Cool Guard
Thermostat (°C)	82-94

#### EMISSIONS

Emission PM (Mg/Nm <sup>3</sup> ) 5% O <sub>2</sub>	74
Emission CO (mg/Nm <sup>3</sup> ) 5% O <sub>2</sub>	1165
Emission HC+NO <sub>x</sub> (g/kWh)	0
Emission HC (g/kW.h)	1

#### EXHAUST

Exhaust gas temperature (°C)	555
Exhaust gas flow (L/s)	78
Max. exhaust back pressure (mm EC)	625

#### FUEL

Consumption @ 110% load (L/h)	8.50
Consumption @ 100% load (L/h)	7
Consumption @ 75% load (L/h)	5
Consumption @ 50% load (L/h)	3.60
Maximum fuel pump flow (L/h)	111

#### OIL

Oil capacity (L)	6
Min. oil pressure (bar)	1
Max. oil pressure (bar)	5
Oil consumption 100% load (L/h)	0
Carter oil capacity (L)	5.3

#### HEAT BALANCE

Heat rejection to exhaust (kW)	31
Radiated heat to ambient (kW)	6
Heat rejection to coolant (kW)	18

#### AIR INTAKE

Max. intake restriction (mm H <sub>2</sub> O)	300
Intake air flow (L/s)	28



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### ALTERNATOR SPECIFICATIONS

#### GENERAL DATA

Alternator brand	Mecc Alte
Alternator type	ECP28 M4A
Number of phase	3
Power factor (Cos Phi)	0.8
Altitude (m)	1000
Overspeed (rpm)	2250
Number of pole	4
Excitation system	Brushless
Insulation class / T° class, continuous 40°C	H / H / 125°K
Regulation	DSR
Harmonic factor, no load TGH/THC	N/A
Wave form : NEMA=TIF-(TGH/THC)	N/A
Wave form : CEI=FHT-(TGH/THC)	N/A
Number of bearing	1
Coupling	Direct
Voltage regulation at established rating (%)	N/A
Recovery time (Delta U = 20% transient) (ms)	N/A

#### OTHER DATAS

Continuous Nominal Rating 40°C (kVA)	20
Standby Rating 27°C (kVA)	21.5
Efficiencies 4/4 load (%)	87.4
Air flow (m3/min)	5.3
Short circuit ratio (Kcc)	0.64
Direct axis synchro reactance unsaturated (Xd) (%)	180
Quadra axis synchro reactance unsaturated (Xq) (%)	78
Open circuit time constant (T'do) (ms)	850
Direct axis transient reactance saturated (X'd) (%)	16.8
Short circuit transient time constant (T'd) (ms)	44
Direct axis subtransient reactance saturated (X''d) (%)	9.6
Subtransient time constant (T''d) (ms)	14
Quadra axis subtransient reactance saturated (X''q) (%)	22
Zero sequence reactance unsaturated (Xo) (%)	3.3
Negative sequence reactance saturated (X2) (%)	14.4
Armature time constant (Ta) (ms)	12
No load excitation current (io) (A)	0.5
Full load excitation current (ic) (A)	1.5
Full load excitation voltage (uc) (V)	N/A
Recovery time (Delta U = 20% transient) (ms)	N/A
Engine start (Delta U = 20% perm. or 50% trans.) (kVA)	N/A
Transient dip (4/4 load) - PF : 0,8 AR (%)	N/A
No load losses (W)	N/A
Heat rejection (W)	2253



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### CONTROL PANEL

DSE Deep Sea Electronics 4610 Standard

DSE Deep Sea Electronics 6010 optional

The DSE 4610 MRS is a versatile unit which can be operated in manual or automatic mode. It offers the following features:

Measurements:

phase-to-neutral and phase-to-phase voltages, fuel level

(In option: active power currents, effective power, power factor, oil pressure and coolant temperature levels)

Supervision:

Modbus RTU communication on RS485

Reports:

(In option: 2 configurable reports)

Safety features:

Over speed, oil pressure, coolant temperatures, minimum and maximum voltage, minimum and maximum frequency

(Maximum active power  $P < 66\text{kVA}$ )

Traceability:

Stack of 12 stored events

For further information, please refer to the data sheet for the DSE 4610.

The DSE 6010 MRS is a versatile control unit which allows

operation in manual or automatic mode

Measurements:

voltage and current, kW/kWh/kVA power meters

Standard specifications: Voltmeter, Frequency meter.

Optional: Battery ammeter.

J1939 CAN ECU engine control

Alarms and faults: Oil pressure, Coolant temperature,

Over speed, Start-up failure, alternator min/max,

Emergency

stop button.

Engine parameters: Fuel level, hour counter, battery voltage.

Optional (standard at 12V): Oil pressure, water temperature.

Event log/ Management of the last 50 gen set events.

Mains and gen set protection

Clock management

USB connections, USB Host and PC,

Communications: RS485 INTERFACE

ModBUS protocol /SNMP

Optional: Ethernet, GPRS, remote control, 3G, 4G, Websupervisor, SMS, E-mails