

PROUDLY 100% AUSTRALIAN OWNED

**MACFARLANE  
GENERATORS**



ESTABLISHED 1949

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Macfarlane Generators PTY. LTD. ACN 006 849 074 ABN 74 006 849 074

# GRW280V



## Power Rating

Emergency Standby Power ESP	kVA	275.0
Emergency Standby Power ESP	kW	220.0
Prime power PRP	kVA	250.0
Prime power PRP	kW	200.0
Frequency	Hz	50
Voltage	V	400/230
Phases	№	3
Power factor	cos $\phi$	0.8
Max current	A	397
Fuel		Diesel
[50Hz] Exhaust emission level		Stage IIIA
VERSION SWITCHABLE [50/60Hz]		YES



## Ratings definition (ISO-8528)

**ESP** - Emergency Standby Power:

It is the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200 h of operation per year with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. The permissible average power output over 24 h of operation shall not exceed 70 % of the ESP.

**PRP** - Prime Power:

It is defined as being the maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer. The permissible average power output over 24 h of operation shall not exceed 70 % of the prime power.

**G2 class load acceptance in accordance with ISO 8528-5:2013** Higher performance classes check upon request.

**Gensets are compliant with EC mark which includes the following directives:**

- 2006/42/CE Machinery safety.
- 2014/30/UE Electromagnetic compatibility.
- 2014/35/UE electrical equipment designed for use within certain voltage limits
- 2000/14/EC Sound Power level. Noise emissions outdoor equipment. (amended by 2005/88/EC) – If applicable
- 97/68/EC Emissions of gaseous and particulate pollutants. (amended by 2002/88/EC & 2004/26/EC) – If applicable
- EN 12100, EN 13857, EN 60204

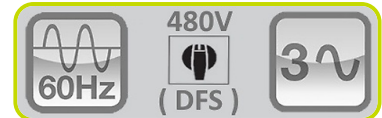
**Company with quality certification ISO 9001**

**Power supply 50Hz 230V Three Phase (with supplement VSS)**

Frequency	Hz	50
Voltage	V	230
Phases	№	3
Power factor	cos $\phi$	0.8
Emergency Standby Power ESP	kVA	275.0
Emergency Standby Power ESP	kW	220.0
Prime power PRP	kVA	250.0
Prime power PRP	kW	200.0
Max current	A	690
Nominal current	A	628

**Power supply 60Hz 480V Three Phase (with supplement DFS)**

Frequency	Hz	60
Voltage	V	480/277
Phases	№	3
Power factor	cos $\phi$	0.8
Emergency Standby Power ESP	kVA	286.3
Emergency Standby Power ESP	kW	229.0
Prime power PRP	kVA	259.5
Prime power PRP	kW	207.6
Max current	A	344
Nominal current	A	312

**Power supply 60Hz 208V Three Phase (with supplement DFS + VSS)**

Frequency	Hz	60
Voltage	V	208/120
Phase	№	3
Power factor	cos $\phi$	0.8
Emergency Standby Power ESP	kVA	286.3
Emergency Standby Power ESP	kW	229.0
Prime power PRP	kVA	259.5
Prime power PRP	kW	207.6
Max current	A	795
Nominal current	A	720



### Engine specifications

Engine Brand	Volvo	
Model	TAD754GE	
Engine cooling system	Water	
Nr. of cylinder and disposition	6 in line	
Displacement	cm <sup>3</sup>	7150
Aspiration	Turbocharged	
Speed governor	Electronic	
Oil capacity	l	34
Lube oil consumption PRP (max)	%	0.1
Coolant capacity	l	34
Electric circuit	V	24
Fuel	Diesel	
VERSION SWITCHABLE [50/60Hz]	YES	
ENGINE DATA	Hz	50
[50Hz] Operating Speed-Nominal	rpm	1500
[50Hz] Exhaust emission level	Stage IIIA	
[50Hz] Specific fuel consumption 75% PRP	g/kWh	225
[50Hz] Specific fuel consumption 100% PRP	g/kWh	210
ENGINE DATA	Hz	60
[60Hz] Operating Speed-Nominal	rpm	1800
[60Hz] Exhaust emission optimized for EPA tier (EPA)	Tier 3	
[60Hz] Specific fuel consumption 75% PRP	g/kWh	245
[60Hz] Specific fuel consumption 100% PRP	g/kWh	218



### Alternator Specifications

Alternator	Leroy Somer	
Model	LSA 46.3 S5	
Type	Brushless	
Class	H	
IP protection	23	
Insulation Protection Systems	Protection System 2	
Poles	4	
Winding leads	12	
Voltage regulation system	Electronic	
Voltage tolerance	%	0.5



### Installation data

[50Hz] Cooling air	m <sup>3</sup> /min	335.20
[50Hz] Exhaust gas flow PRP	m <sup>3</sup> /min	38.4
[50Hz] Exhaust gas temperature ESP	°C	550
[60Hz] Cooling air	m <sup>3</sup> /min	414.70
[60Hz] Exhaust gas flow PRP	m <sup>3</sup> /min	39.7
[60Hz] Exhaust gas temperature ESP	°C	525



## Genset Equipment

### CANOPY

Canopy painted made up of modular panels with 1000h+ tested salt spray resistant zined metal sheet, with access doors on each side with high quality gaskets and lockable handles for easy maintenance and service.

### BASE FRAME

Heavy duty base guarantees the highest standards of durability and resistance, painted using a high quality powder coating process (1000+h tested salt spray resistance).  
Fully bunded, able to retain 110% of all the sets fluids, the base frame is provided with integrated fork pockets and pull bar for easy maneuverability and site positioning.

### SINGLE LIFTING POINT

Access easy by rung and handle incorporated (available on both sides).

### MANUAL BATTERY SWITCH

Single pole battery switch inside the enclosure.

### EARTH ROD

Earth stock with cable fixed inside the genset.

### DOCS HOLDER

Box intenal for documents, manuals and electrical drawings.

### LUBE OIL DRAIN PUMP

Makes it easier to the engine oil change.

### FUEL VALVE (6 WAY)

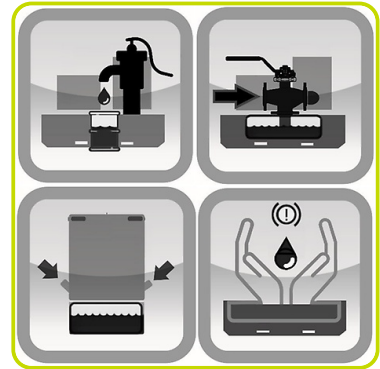
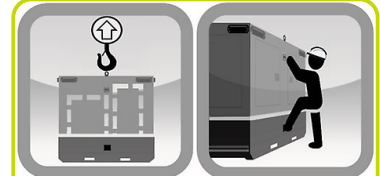
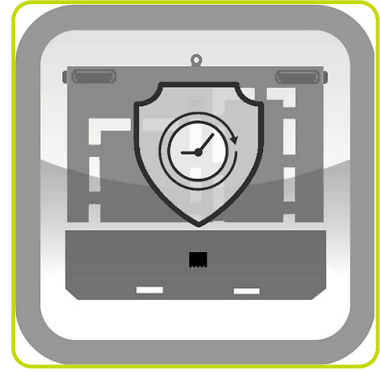
System designed for use the fuel from external tank and increase the autonomy of the generator.

### FUEL TANK

Integrated metal fuel tank complete with double fuel refiling point (one each side).

### LEAK PROOF TRAY WITH DETECTOR SENSOR

Fluid leak check in the leak proof tray.



## Fuel Tank - Autonomy

Fuel tank location		Internal
Fuel tank material		Metal
Fuel tank capacity	l	1120
[50Hz 400V] Fuel consumption 75% PRP	l/h	45.47
[50Hz 400V] Running time 75% PRP	h	24.63
[50Hz 400V] Fuel consumption 100% PRP	l/h	56.19
[50Hz 400V] Running time 100% PRP	h	19.93
[60Hz 480V] Fuel consumption 75% PRP	l/h	53.26
[60Hz 480V] Running time 75% PRP	h	21.03
[60Hz 480V] Fuel consumption 100% PRP	l/h	61.52
[60Hz 480V] Running time 100% PRP	h	18.21



## Control panel - Options Available:

AUTOMATIC CONTROL PANEL	ACP
MODULAR PARALLEL PANEL	MPP



## ACP - AUTOMATIC CONTROL PANEL

### CONTROL SECTION:

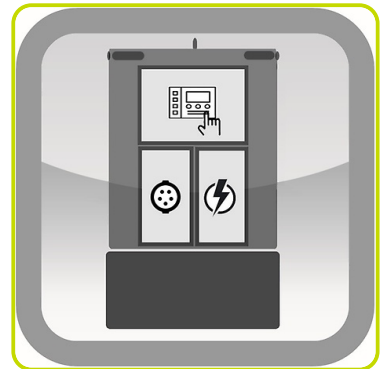
- Auto Mains Failure (AMF) function
- Gen-set controller for single genset operating in standby or prime power modes
- Full gen-set monitoring and protection
- Detailed event and performance log with time and date
- Emergency push button
- Extra Instrumentation (analogue): Fuel level meter; Mechanical hour counter
- Differential protection with internal switch
- Battery charger.

### SOCKET SECTION:

- Two wires facility for remote start/stop
- Plug for auxiliary power supply
- Socket Kit: Equipment and configurations available as a supplement.

### POWER SECTION:

- It integrates 4 poles modular circuit breaker suitably rated with thermal and magnetic overloads.
- Large and robust busbar with cables passage opening from the bottom for easy power cable connection.
- Provided with safety switch to trip circuit breaker if operator open the power section door to operate on the bus bar.



## MPP - MODULAR PARALLEL PANEL

### CONTROL SECTION:

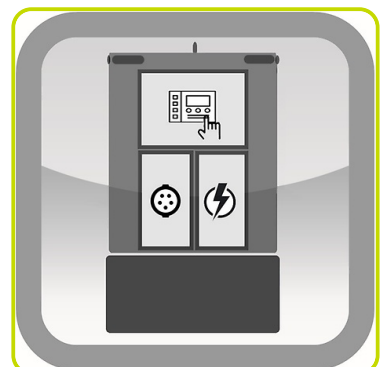
- Modular parallel panel allows the genset to work in parallel (up to 32 gen-sets)
- Easy switching between parallel to mains or multiple genset applications
- Full gen-set monitoring and protection
- Detailed event and performance log with time and date
- Colour display 7" TFT with 800x480 px resolution
- Wide range of communication and connection capabilities available
- Emergency push button
- Extra Instrumentation (analogue): Fuel level meter; Mechanical hour counter
- Differential protection with internal switch
- Battery charger.

### SOCKET SECTION:

- Multi-pin connectors for parallel running.
- Two wires facility for remote start/stop.
- Plug for auxiliary power supply.
- Socket Kit: Equipment and configurations available as a supplement.

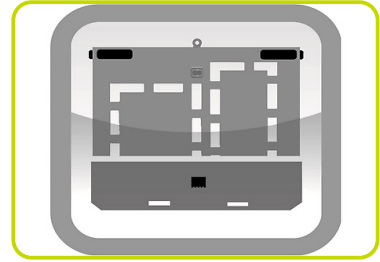
### POWER SECTION

- It integrates 4 poles motorized moulded case circuit breaker suitably rated with thermal and magnetic overloads
- Large and robust busbar with cables passage opening from the bottom for easy power cable connection.
- Provided with safety switch to trip circuit breaker if operator open the power section door to operate on the bus bar.



## CANOPY VERSION

- Weatherproof Enclosure made of galvanized sheet metal allows to protect genset from corrosion and aggressive condition.
- Enclosure soundproofed by means of washable and fireproof soundproofing material, allow to reach low noise level.
- Exhaust residential silencer integrated inside the genset equipped with rain flap.
- Enclosure equipped with bumpers to prevent damage during genset handling and transport.



### Dimensional data Canopy Version

Length	(L) mm	3860
Width	(W) mm	1300
Height	(H) mm	2000
Weight	Kg	3563

### Noise Level 50Hz

Guaranteed noise level (LWA)	dB(A)	97
Noise pressure level @ 1 m	dB(A)	78
Noise pressure level @ 7 m	dB(A)	68



## Supplements:

To be ordered with equipment (when necessary) :

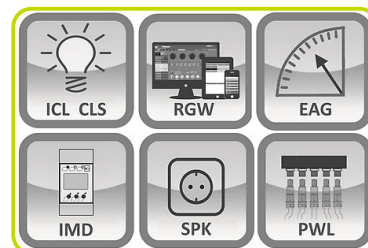
### GENSET CONTROL EQUIPMENT

Dual Frequency Switch (50/60Hz)	Y400/230V 50HzY480/277V 60Hz	DFS
Voltage Selector Switch 2 positions (only with ACP/MPP and DFS)	Y400/230V 50HzY480/277V 60HzYY208/120V 60Hz	VSS1
Voltage Selector Switch 3 positions (only with ACP/MPP and DFS)	Y400/230V 50HzΔ230V 3P 50HzY480/277V 60HzYY208/120V 60Hz	VSS2
Voltage Selector Switch 2 positions (only with ACP/MPP and DFS)	Y400/230V 50HzΔ230V 3P 50HzY480/277V 60Hz	VSS4



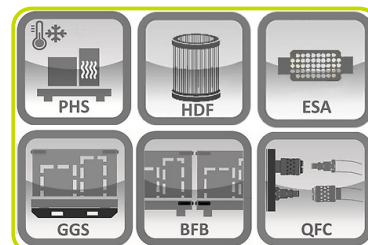
### ELECTRICAL OPTION

Internal Canopy Lighting system with manual switch	ICL
Control section internal lighting (automatic with door switch)	CLS
DSE2157 Output (8) Expansion Module	ARM7
DSE890 MKII DSEWebNet ® Gateway 4G (GSM/Ethernet)	RGW2
Engine analogue gauges (water temp / oil pressure)	EAG
Insulation Monitoring Device (Replace standard differential protection)	IMD
Socket kit	SPK
Power lock	PWL
Bus bar arrangement	ERDF



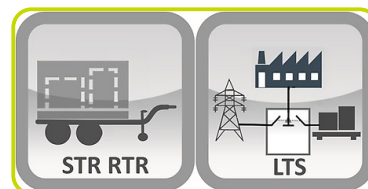
### MECHANICAL OPTION

Pre-heating system	PHS
Water Separator Filter	WSP
Heavy-Duty Air Filter	HDF
Hot Parts Protections	HPP
Exhaust Spark Arrestor ATEX certified	ESA
Air Shut-Off Valve	ASV
Galvanized Sliding Skid	GGG
Baseframe Bumpers	BFB
Quick Fit Fuel connectors	QFC
Quick Fit Connectors inside the canopy	QFC1



## Accessories

Items available as accessory equipment	:
Site trailer	STR
Road Trailer	RTR
Road Trailer with Drawbar Height-Adjustable	RTR-B
Load Transfer Switch [Accessories for ACP Panel]	LTS



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