

GRW210P



Generator engineered and designed to work in a wide variety of applications where temporary power supply is needed. Versatility, high efficiency, high structural resistance, high degree of protection and low noise emissions together with easy-to-use and easy access for maintenance make these generator sets the ideal solution for Rental companies.

Regim De Putere

| | | |
|---------------------|-------------|--------|
| Frecvență | Hz | 50 |
| Tensiune | V | 400 |
| Faze | № | 3 |
| Factor de putere | $\cos \phi$ | 0.8 |
| Putere pasivă LTP | kVA | 210.32 |
| Putere pasivă LTP | kW | 168.26 |
| Curent maxim | A | 304 |
| Putere nominală PRP | kVA | 190.43 |
| Putere nominală PRP | kW | 152.34 |
| Curent NOMINAL | A | 275 |



Definiție clasificări (Conform standardului ISO8528 1:2005)

PRP - Putere primă: Se definește ca fiind puterea maximă pe o poate livra continuu un grup electrogen, furnizând în același timp o sarcină electrică variabilă, când este utilizat un număr nelimitat de ore pe an în condițiile de utilizare convenite, cu intervalele de întreținere și procedurile respectate conform prevederilor producătorului. Puterea medie permisă în 24 h de funcționare nu va depăși 70% din puterea primă.

LTP - Putere de funcționare pe perioadă limitată: Se definește ca puterea maximă disponibilă, în condițiile de funcționare convenite, pe care grupul electrogen o poate livra pentru până la 500 h de funcționare pe an (și nu mai mult de 300 de utilizare continuă) cu intervalele de întreținere și procedurile respectate conform prevederilor producătorilor. Nu este disponibilă o capacitate de suprasarcină.

Alimentare 50Hz 230V trifazic (cu optional VSS)

| | | |
|---------------------|-------------|--------|
| Frecvență | Hz | 50 |
| Tensiune | V | 230 |
| Faze | № | 3 |
| Factor de putere | $\cos \phi$ | 0.8 |
| Putere pasivă LTP | kVA | 210.32 |
| Putere pasivă LTP | kW | 168.26 |
| Curent maxim | A | 528 |
| Putere nominala PRP | kVA | 190.43 |
| Putere nominala PRP | kW | 152.34 |
| Curent NOMINAL | A | 478 |

**Alimentare 60Hz 480V trifazic (cu optional DFS)**

| | | |
|---------------------|-------------|--------|
| Frecvență | Hz | 60 |
| Tensiune | V | 480 |
| Faze | № | 3 |
| Factor de putere | $\cos \phi$ | 0.8 |
| Putere pasivă LTP | kVA | 231.05 |
| Putere pasivă LTP | kW | 184.84 |
| Curent maxim | A | 278 |
| Putere nominala PRP | kVA | 209.04 |
| Putere nominala PRP | kW | 167.23 |
| Curent NOMINAL | A | 251 |

**Alimentare 60Hz 208V trifazic (cu optional VSS)**

| | | |
|---------------------|-------------|--------|
| Frecvență | Hz | 60 |
| Tensiune | V | 208 |
| Faze | № | 3 |
| Factor de putere | $\cos \phi$ | 0.8 |
| Putere pasivă LTP | kVA | 231.05 |
| Putere pasivă LTP | kW | 184.84 |
| Curent maxim | A | 641 |
| Putere nominala PRP | kVA | 209.04 |
| Putere nominala PRP | kW | 167.23 |
| Curent NOMINAL | A | 580 |



Date tehnice motor

| | | |
|--|-----------------|-------|
| Producător motor | Perkins | |
| Model piesă | 1106D-E70TAG4 | |
| Sistem de răcire motor | Apă | |
| Număr cilindri și amplasare | 6 in line | |
| Deplasament | cm ³ | 7010 |
| Aspirație | Turbocharged | |
| Regulator de viteză | Electronic | |
| Capacitate ulei | l | 17.5 |
| Consum lubrifianț la PRP (max) | % | 0.1 |
| Putere lichid de răcire | l | 21 |
| Circuit electric | V | 12 |
| VERSIUNE INTERSCHIMBABILA [50/60Hz] | YES | |
| DATE MOTOR | Hz | 50 |
| Frecvența 50Hz: Viteza nominală de operare | rpm | 1500 |
| Emisii de eșapament optimizate pentru 97/68 50Hz (COM) | Stage IIIA | |
| [50Hz] Consum specific de combustibil la @ 75% PRP | g/kWh | 221.2 |
| [50Hz] Consum specific de combustibil la @ 100% PRP | g/kWh | 211.3 |
| DATE MOTOR | Hz | 60 |
| Frecvența 60Hz: Viteza nominală de operare | rpm | 1800 |
| Emisii de eșapament optimizate pentru EPA nivel 60Hz (EPA) | Tier 3 | |
| [60Hz] Consum specific de combustibil la @ 75% PRP | g/kWh | 227.1 |
| [60Hz] Consum specific de combustibil la @ 100% PRP | g/kWh | 211.9 |



Engine Equipment

Standards

The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1986, BS 5514/1

Fuel system

Rotary type pump

Lube oil system

Wet steel sump with filler and dipstick

Filter

- Fuel filter
- Air filter
- Oil filter

Cooling system

- Mounted radiator
- Thermostatically-controlled system with belt driven coolant pump and pusher fan

Date tehnice alternator

| | |
|----------------------------------|------------------------|
| Alternator | LEROY SOMER |
| Model piesă | LSA 46.3 S3 |
| Tip | Fara perii |
| Clasă | H |
| Clasificare protecție infiltrare | 23 |
| Insulation Protection Systems | Protection System 2 |
| Borne | 4 |
| Winding leads | 12 |
| Sistem de regulare tensiune | Electronic |
| Standard AVR | R 450 M |
| Toleranță tensiune | % 0.5 |



SPECIALLY ADAPTED TO APPLICATIONS

The alternator is designed to be suitable for typical generator applications, such as: backup, marine applications, rental, telecommunications, etc.

TOP OF THE RANGE ELECTRICAL PERFORMANCE

- Class H insulation.
- Standard 12 wire re-connectable winding, 2/3 pitch, type no. 6.
- Voltage range:
 - 50 Hz: 220 V - 240 V and 380 V - 415 V
 - 60 Hz: 208 V - 240 V and 380 V - 480 V
- High efficiency and motor starting capacity.
- R 791 interference suppression conforming to standard EN 55011 group 1 class B standard for European zone (CE marking).

EXCITATION AND REGULATION SYSTEM

- Excitation system: AREP
- Voltage A.V.R.: R 450

REINFORCED MECHANICAL STRUCTURE

- Compact rigid assembly to better withstand generator vibrations.
- Steel frame
- Cast iron flanges and shields.
- single-bearing designed to be suitable for heat engines.
- Half-key balancing bearing.
- Sealed for life ball bearing.

PROTECTION SYSTEM SUITED TO THE ENVIRONMENT

- The LSA is IP 23.
- Winding Protection Standard: for clean environments with relative humidity $\leq 95\%$, including indoor marine environments.
- Winding Protection System 2: reinforced insulation for tropical environment (abrasive atmosphere), rental (except for coastal area), relative humidity $> 95\%$

COMPLIANT WITH INTERNATIONAL STANDARDS

The LSA alternator conforms to the main international standards and regulations:
- IEC 60034, NEMA MG 1.32-33, ISO 8528-3, CSA / UL 1146 (UL 1004 on request), marine regulations, etc.

It can be integrated into a CE marked generator.

The LSA is designed, manufactured and marketed in an ISO 9001 environment and ISO 14001.

Echipse generator

CANOPY

Canopy painted in RAL9016 made up of modular panels with 1000h+ tested salt spray resistant zinc metal sheet, with access doors on each side with high quality gaskets and lockable handles for easy maintenance and service.



SUPER SILENT

Soundproofing by means washable and fireproof soundproofing material, to get noise attenuation.

Exhaust silencer integrated in the genset shape with flat rain flap.



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 bundled, 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.



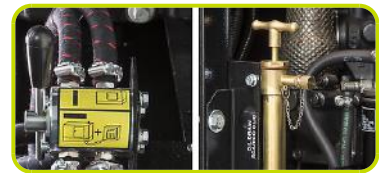
FUEL TANK

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



LEAK PROOF TRAY WITH DETECTOR SENSOR

Fluid leak check in the leak proof tray .



FUEL VALVE (6 WAY)

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



LUBE OIL DRAIN PUMP

Makes it easier to the engine oil change



SINGLE LIFTING POINT

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



PLASTIC BUMPER

Protections for the transport and stocking



MANUAL BATTERY SWITCH

EARTH ROD

Earth stock with cable fixed inside the genset

DOCS HOLDER

Box intenal for documents, manuals and electrical drawings

Date dimensionale

| | | |
|---------------------------------|--------|-------|
| Lungime | (L) mm | 3460 |
| Lățime | (W) mm | 1200 |
| Înălțime | (H) mm | 2050 |
| Greutate fără combustibil | Kg | 2860 |
| Fuel tank material | | Metal |
| Capacitate rezervor combustibil | l | 940 |



Autonomie

| | | |
|--|-----|-------|
| [50Hz] Consum combustibil la @ 75% PRP | l/h | 34.11 |
| [50Hz] Consum combustibil la @ 100% PRP | l/h | 43.14 |
| [50hz] Timp de funcționare la @ 75% PRP | h | 27.56 |
| [50Hz] Timp de funcționare la @ 100% PRP | h | 21.79 |
| [60Hz] Consum combustibil la @ 75% PRP | l/h | 39.16 |
| [60Hz] Consum combustibil la @ 100% PRP | l/h | 48.03 |
| [60hz] Timp de funcționare la @ 75% PRP | h | 24.00 |
| [60Hz] Timp de funcționare la @ 100% PRP | h | 19.57 |



Nivel zgomot 50Hz (2000-14)

| | | |
|---|-------|----|
| Nivelul de zgomot garantat (LWA) | dB(A) | 96 |
| Nivel de stridență a zgomotului la 1 mt | dB(A) | 78 |
| Nivel de stridență a zgomotului la 7 mt | dB(A) | 67 |



Date instalare

| | | |
|---|--------|--------|
| [50Hz] Circuitul aerului de răcire | m³/min | 293.58 |
| [50Hz] Flux gaze eșapament la @ PRP | m³/min | 30.2 |
| [50Hz] Temperatură gaze de eșapament la LTP | °C | 530 |
| [60Hz] Circuitul aerului de răcire | m³/min | 361.98 |
| [60Hz] Flux gaze eșapament la @ PRP | m³/min | 33.82 |
| [60Hz] Temperatură gaze de eșapament la LTP | °C | 509 |



DISPONIBILITATE PANOU DE COMANDĂ

| | |
|--------------------------|-----|
| PANOU DE COMANDĂ MANUAL | MCP |
| Panou de control automat | ACP |
| Panou paralel modular | MPP |

MCP - PANOU DE COMANDĂ MANUAL STĂȚIONAR

Mounted on the genset, complete with digital control unit (InteliNanoNT Plus) for monitoring, control and protection of the generating set, protected through doors with lockable handle.

CONTROL SECTION

- ON/OFF selector switch
- Emergency push button
- Differential protection with internal switch
- 5A Battery charger.
- Potentiometer for voltage adjustment (internal)
- Alternator AVR (single plug wiring)

Control unit InteliNanoNT Plus

- Biggest LCD screen
- Generating set voltage (3 phases).
- Generating set frequency.
- Generating set current (1 phases).
- Battery voltage, Service time and Running hours indication
- Remote start/stop from external signal

Protection:

- Low fuel level
- Battery charger failure
- low oil pressure
- high engine temperature

Extra Instrumentation (analogue)

- Voltmeter with selector switch (3 phases)
- Ammeters (n.3)
- Fuel level meter
- Mechanical hour counter

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.

PANOU IEȘIRE MCP

| | |
|---|------------|
| • Posibilitate start/stop de la distanta | √ |
| • Priza pentru alimentare cu tensiune din sursa externa | √ |
| SUPPLEMENT - Only available when order | : |
| Socket Kit | Type SPKB1 |
| 3P+N+T CEE 400V 125A | n 1 |
| 3P+N+T 400V 63A | n 1 |
| 3P+N+T CEE 400V 32A | n 1 |
| 3P+N+T CEE 400V 16A | n 1 |
| 2P+T CEE 230V 16A | n 1 |
| 230V 16A SCHUKO | n 1 |
| Fiecare priza cu intrerupator propriu | • |
| Protectie diferentiala pentru prizele trifazice | • |
| Fiecare faza este protejata cu impamantare | • |
| Other Kit Socket combinations available | √ |



ACP - Panou de control automat

Mounted on the genset, complete with digital control unit (AC-03) for monitoring, control and protection of the generating set, protected through doors with lockable handle.

CONTROL SECTION

- ON/OFF selector switch
- Differential protection with internal switch
- 5A Battery charger.
- Potentiometer for voltage adjustment (internal)
- Alternator AVR (single plug wiring)

Control unit (AC-03)

- Generating set voltage (3 phases).
- Mains voltage.
- Generating set frequency.
- Generating set current (3 phases).
- Battery voltage.
- Power (kVA - kW - kVA_r - Cos φ).
- Hours-counter.
- Engine speed r.p.m.
- Fuel level (%).
- Engine temperature

Comand and others:

- Four operation modes: OFF - Manual starting - Automatic starting - Test.
- Pushbutton for forcing Mains contactor or Genset contactor.
- Push-buttons: start/stop, fault reset, up/down/page/enter selection.
- Remote starting availability.
- Acoustic alarm.
- Automatic battery charger.
- RS232 Communication port.
- Settable PASSWORD for protection level

Protections:

- Engine protections: low fuel level, low oil pressure, high engine temperature,
- Genset protection: under/over voltage, overload, under/over battery voltage, battery charger failure.

Extra Instrumentation (analogue)

- Fuel level meter
- Mechanical hour counter

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.

PANOU IEȘIRE ACP

- Posibilitate start/stop de la distanta ✓
- Priza pentru alimentare cu tensiune din sursa externa ✓
- Conector pentru LTS ✓

SUPPLEMENT - Only available when order :

| Socket Kit | Type | SPKB1 |
|---|------|-------|
| 3P+N+T CEE 400V 125A | n | 1 |
| 3P+N+T 400V 63A | n | 1 |
| 3P+N+T CEE 400V 32A | n | 1 |
| 3P+N+T CEE 400V 16A | n | 1 |
| 2P+T CEE 230V 16A | n | 1 |
| 230V 16A SCHUKO | n | 1 |
| Fiecare priza cu intrerupator propriu | | • |
| Protectie diferentiala pentru prizele trifazice | | • |
| Fiecare faza este protejata cu impamantare | | • |
| Other Kit Socket combinations available | | ✓ |



MPP - Panou paralel modular

Mounted on the genset, complete with digital control unit IntelliVision5 for monitoring, control, protection and load sharing for both single and multiple gen-sets operating in standby or parallel modes (up to 32 gen-sets in island).

CONTROL SECTION

- ON/OFF selector switch
- Emergency push button
- Differential protection with internal switch
- 5A Battery charger.
- Potentiometer for voltage adjustment (internal)
- Alternator AVR (single plug wiring)

CONTROL UNIT IntelliVision5 (5,7" Colour TFT display 320×240 pixels)

Majors Measures Available:

- Generating set: Voltage, Current, Frequency, Hours-counter
- Generating set Power: kVA, kW, kVAr, Cos φ, kWh, kVAh.
- Mains: Voltage, Current, Frequency, kW, kVAr, Cos φ.
- Engine: Speed (r.p.m.), Temperature, Oil Pressure
- Fuel level, Battery voltage

Comand and Others:

- Operation modes: OFF, AMF function, Single Parallel to mains Island application, Single Parallel to Mains AMF application, Multiple parallel genset Island application.
- Pushbuttons: start/stop, fault reset, up/down/page/enter selection.
- Acoustic alarm.

Protection:

- Engine protections: low fuel level, low oil pressure, high engine temperature.
- Genset protections: under/over voltage, overload, under/over frequency, starting failure, under/over battery voltage
- Others: overcurrent, shortcircuit, reverse power, Earth fault

Extra Instrumentation (analogue)

- Fuel level meter
- Mechanical hour counter

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.

PANOU IEȘIRE MPP

- Conector pentru functionare in paralel ✓
- Posibilitate start/stop de la distanta ✓
- Priza pentru alimentare cu tensiune din sursa externa ✓

SUPPLEMENT - Only available when order :

| Socket Kit | Type | SPKB1 |
|---|------|-------|
| 3P+N+T CEE 400V 125A | n | 1 |
| 3P+N+T 400V 63A | n | 1 |
| 3P+N+T CEE 400V 32A | n | 1 |
| 3P+N+T CEE 400V 16A | n | 1 |
| 2P+T CEE 230V 16A | n | 1 |
| 230V 16A SCHUKO | n | 1 |
| Fiecare priza cu intrerupator propriu | | • |
| Protectie diferentiala pentru prizele trifazice | | • |
| Fiecare faza este protejata cu impamantare | | • |
| Other Kit Socket combinations available | | ✓ |

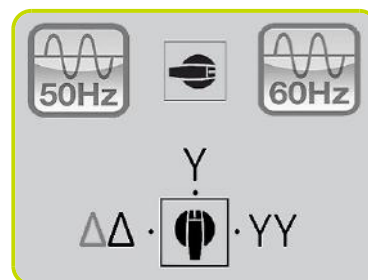


Suplimente:

Disponibil doar la comandă :

ECHIPAMENT CONTROL GRUP ELECTROGEN

| | | |
|--|--|------|
| Switch frecventa 50/60Hz | Y400/230V 50Hz Y480/277V 60Hz | DFS |
| Selector de tensiune cu 2 pozitii (doar versiunile ACP/MPP si DFS) | Y400/230V 50Hz Y480/277V 60Hz YY208/120V 60Hz | VSS1 |
| Selector de tensiune cu 3 pozitii (doar versiunile ACP/MPP si DFS) | Y400/230V 50Hz Δ230V 3P 50Hz Y480/277V 60Hz YY208/120V 60Hz | VSS2 |
| Selector de tensiune cu 2 pozitii (doar versiunile ACP/MPP si DFS) | Y400/230V 50Hz Δ230V 3P 50Hz Y480/277V 60Hz | VSS4 |



OPTIUNE ELECTRICA

| | | |
|--|-----------------|--------|
| Comunicare prin IL-NT-GPRS + ANTENNA | (ACP) | RCG 16 |
| Contacte libere de potential cu modul IL-NTEFCPM2 si rele IR-B8 | (ACP) | TLP 6 |
| Comunicare prin InternetBridge-NT | (only with MPP) | RCG 13 |
| Contacte libere de potential cu modul IGS-PTM si rele IR-B8 | (only with MPP) | TLP 4 |
| Protectie diferentiala de tip B | | ADI-B |
| Dispozitiv monitorizare izolatie (inlocuieste protectia diferentiala standard) | | IMD |
| Sistem de prize configurabile | | SPKS |
| Control section internal lighting (automatic with door switch) | | CLS |
| Internal Canopy Lighting system with manual switch | | ICL |
| Engine analogue gauges (water temp / oil pressure) | | EAG |



OPTIUNE MECANICA

| | | |
|--|--|------|
| Răcitor Sistem Preîncălzire | | PHS |
| Conectori sistem alimentare combustibil facili | | QFC |
| Sistem de conectare facil in interiorul carcasei | | QFC1 |
| Filtru separator apa | | WSP |
| Filtru aer Heavy-DUTY | | HDF |
| Protectie componente supra-incalzite | | HPP |
| Sistem retinere scantei evacuare certificat ATEX | | ESA |
| Supapa de inchidere aer | | ASV |
| Sasiu galvanizat | | GGS |
| Protectie cadru | | BFB |



Accesorii

| | |
|---|---|
| Articole disponibile ca echipament accesoriu | : |
| RTR-B remorca echipata cu bara ajustabila pe inaltime | • |
| RTR - Remorcă rutieră | • |
| STR - Trailer șantier | • |



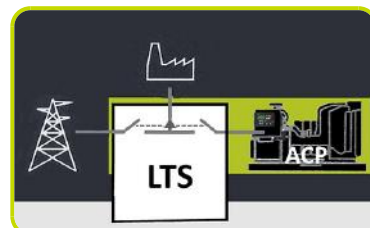
LTS - COMUTATOR DE TRANSFER DE SARCINĂ - Accesorii ACP

LTS - Panou de Transfer Sarcina [Optional pentru panoul de control automat ACP]
Panoul de transferului de sarcină (LTS) operează comutarea sursei de alimentare între generator și rețeaua de alimentare în aplicații de rezervă, garantând alimentarea într-o perioadă scurtă de timp.

Panoul LTS este compus dintr-un dulap independent care poate fi instalat separat de setul de generare. Comanda logică a comutării sursei de alimentare este acționată prin intermediul panoului de control automat (ACP) montat pe generator, deci nu este necesar nici un dispozitiv logic pe panoul LTS.

LTS de tip ATyS_D:

- Cutie: carcasa din oțel
- Mod de instalare: Montat pe perete <400A; Montat pe podea => 630A
- Usa: Usa articulată este închisă cu blocare dublă.
- Tip protecție: IP43
- Placute acces: se pot scoate pe partea superioară și inferioară
- Conexiuni: partea inferioară
- Unitate motor
- Placute acces: se pot scoate pe partea superioară și inferioară
- Conexiuni: partea inferioară
- Unitate motor
- Indicatorul de poziție a comutatorului
- Selector de acoperire automată / manuală
- Carcasa pentru manerul manual
- Mecanism de blocare
- Două întrerupătoare a sarcinii
- 4 Poli
- Bobine duble auto-alimentate
- Tensiune (bobine): 208 / 277VAC (Toleranță +/- 20% 166 / 333VAC)
- Frecvență 50 și 60 Hz
- Interfața ATyS D10, fixată pe usa pentru indicarea stării: Două lumini pentru a indica prezența tensiunii rețelei și a generatorului diesel; Două lumini pentru comutator poziție; Modul funcțional (auto / manual) și protecția IP65.
- Conform cu IEC 60947-3, EN 61439-6-1 și GB 14048-11



OTIONALE LTS DISPONIBILE LA CERERE:

- **ESB** - buton de oprire de urgență (instalat pe panoul frontal)
- **APP** - Protecție suplimentară IPXXB (plexiglas intern)

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