# GSW370V

| Main Features | | |
|---|---|---|
| Frequency | Hz | 50 |
| Voltage | V | 400 |
| Power factor | cos ϕ | 0.8 |
| Phase | | 3 |

| Power Rating | | |
|---|---|---|
| Standby power LTP | kVA | 370.00 |
| Standby power LTP | kW | 296.00 |
| Prime power PRP | kVA | 354.13 |
| Prime power PRP | kW | 283.30 |

**Ratings definition (According to standard ISO8528 1:2005)**

**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.

**LTP** - Limited-Time running Power:
It is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 h of operation per year (whose no more than 300 for continuative use) with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. No overload capability is available.

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| Engine specifications | | |
|---|---|---|
| Engine manufacturer | | Volvo |
| Model | | TAD1342GE |
| [50Hz] Exhaust emission level | | Stage II |
| Engine cooling system | | Water |
| Nr. of cylinder and disposition | | 6 in line |
| Displacement | cm³ | 12780 |
| Aspiration | | Turbocharged intercooled |
| Speed governor | | Electronic |
| Prime gross power PRP | kW | 313 |
| Maximum gross power LTP | kW | 343 |
| Oil capacity | l | 36 |
| Coolant capacity | l | 44 |
| Fuel | | Diesel |
| Specific fuel consumption @ 75% PRP | g/kWh | 193 |
| Specific fuel consumption @ PRP | g/kWh | 191 |
| Starting system | | Electric |
| Starting engine capability | kW | 7 |
| Electric circuit | V | 24 |

**ENGINE EQUIPMENT**

**Standards**

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. Power output guaranteed within 0 to +2% att rated ambient conditions at delivery. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 8528-5.

**Engine and block**

• Optimized cast iron cylinder block with optimum distribution of forces
• Wet, replaceable cylinder liners
• Crankshaft induction hardened bearing surfaces and fillets with seven bearings for moderate load on main and high-end bearings
• Keystone top compression rings for long service life
• Replaceable valve guides and valve seats
• Tapered connecting rods for increased piston lifetime
• Over head camshaft and four valves per cylinder

**Fuel system**

• Electronic unit injectors
• Fuel prefilter with water separator and waterin-fuel indicator / alarm
• Fine fuel filter with manual feed pump and fuel pressure switch

**Lubrication system**

• Full flow oil cooler
• Full flow disposable spin-on oil filter, for extra high filtration
• Gear type lubricating oil pump, gear driven by the transmission

**Cooling system**

• Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block. Reliable sleeve thermostat with minimum pressure drop
• Belt driven coolant pump with high degree of efficiency

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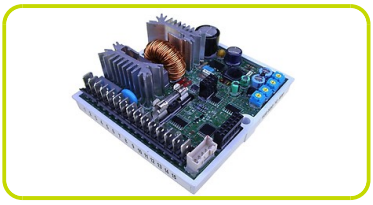
| Alternator Specifications | | |
|---|---|---|
| Alternator | | Mecc Alte |
| Model | | ECO38-3LN/4 |
| Voltage | V | 400 |
| Frequency | Hz | 50 |
| Power factor | cos ϕ | 0.8 |
| Poles | | 4 |
| Type | | Brushless |
| Standard AVR | | DSR |
| Voltage tolerance | % | 1 |
| Efficiency @ 75% load | % | 93.7 |
| Class | | H |
| IP protection | | 23 |

**Mechanical structure**
Robust mechanical structure which permits easy access to the connections and components during routine maintenance check-ups.

**Voltage regulator**
Voltage regulation with DSR. The digital DSR controls the range of voltage, avoiding any possible trouble that can be made by unskilled personnel. The voltage accuracy is ±1% in static condition with any power factor and with speed variation between 5% and +30% with reference to the rated speed.



**Windings / Excitation system**
Generator stator is wound to 2/3 pitch. This eliminates triplen (3rd, 9th, 15th …) harmonics on the voltage waveform and is found to be the optimum design for trouble-free supply of non-linear loads. The 2/3 pitch design avoids excessive neutral currents sometimes seen with higher winding pitches. MAUX (Standard): The MAUX MeccAlte Auxiliary Winding is a separate winding within the main stators that feeds the regulator. This winding enables to take an overload of 300% forced current (short circuit maintenance) for 20 seconds. This is ideal for motor starting requirements.

**Insulation / Impregnation**
Insulation is of class H standard. Impregnation is made with premium tropicalised epoxy resins by dipping and dripping. High voltage parts are impregnated by vacuum, so the insulation level is always very good. In the high-power models, the stator windings undergo a second insulation process. Grey protection is applied on the main and exciter stator to give enhanced protection.

**Reference standards**
Alternator manufactured according to , and complies with , the most common specification such as CEI 2-3, IEC 34-1, EN 60034-1, VDE 0530, BS 4999-5000, CAN/CSA-C22.2 No14-95-No100-95.

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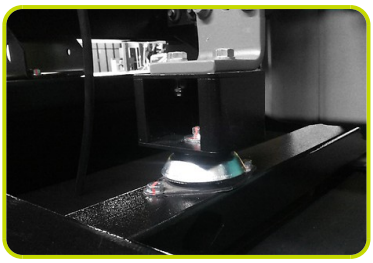
## Genset equipment

**BASE FRAME MADE OF WELDED STEEL PROFILE, COMPLETE WITH:**

• Anti-vibration mountings properly sized

• Welded or Screwed support legs.



**PLASTIC FUEL TANK WITH THE FOLLOWING COMPONENT:**

• Filler neck

• Air breather (ventilation pipe)

• Minimum fuel level sensor

**MANUAL OIL DRAINING PUMP**:

• Oil draining facilities

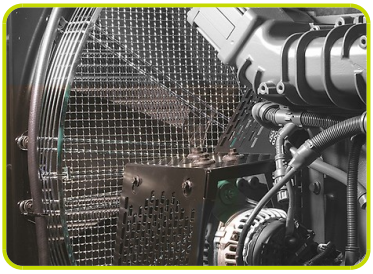
**ENGINE COMPLETE WITH:**

• Battery

• Liquids (no fuel)

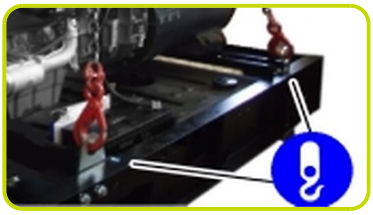
**PROTECTIONS**:

• Moving and rotating parts protection against accidental contacts



**LIFTING:**

• Lifting points frame structure.



**EXHAUST (STANDARD):**

• Industrial silencer (loose)

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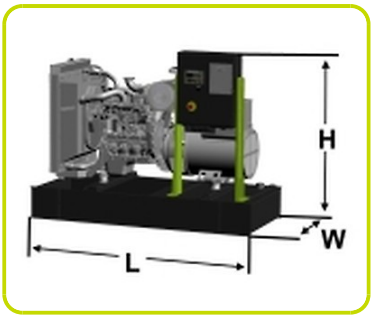
| Dimensional data | | |
|---|---|---|
| Length | (L) mm | 3300 |
| Width | (W) mm | 1400 |
| Height | (H) mm | 1965 |
| Dry weight | Kg | 3160 |
| Fuel tank capacity | l | 636 |
| Fuel tank material | | Plastic |




| Autonomy | | |
|---|---|---|
| Fuel consumption @ 75% PRP | l/h | 54.40 |
| Fuel consumption @ 100% PRP | l/h | 71.17 |
| Running time @ 75% PRP | h | 11.69 |
| Running time @ 100% PRP | h | 8.94 |

| Installation data | | |
|---|---|---|
| Total air flow | m³/min | 458.58 |
| Exhaust gas flow @ PRP | m³/min | 53.5 |
| Exhaust gas temperature @ LTP | °C | 408 |

| Electrical Data | | |
|---|---|---|
| Battery capacity | Ah | 155 |
| MAX current | A | 534.06 |
| Circuit breaker | A | 630 |

| Control panel availability | |
|---|---|
| AUTOMATIC CONTROL PANEL | ACP |
| MODULAR PARALLEL PANEL | MPP |

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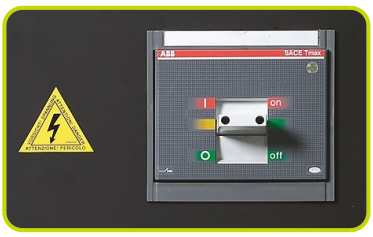
## ACP - Automatic control panel

Mounted on the genset, complete with digital control unit for monitoring, control and protection of the generating set, protected through door with lockable handle

**DIGITAL INSTRUMENTATION**
- Generating set voltage (3 phases)
- Mains voltage
- Generating set frequency
- Generating set current (3 phases)
- Battery voltage
- Power (kVA - kW - kVAr)
- Power factor Cos φ
- Hours-counter
- Engine speed r.p.m.
- Fuel level (%)
- Engine temperature (depending on model)

**COMMANDS AND OTHERS**
- Four operation modes: OFF - Manual starting - Automatic starting - Automatic test
- Pushbutton for forcing Mains contactor or Genset contactor
- Push-buttons: start/stop, fault reset, up/down/page/enter selection
- Remote starting availability
- DC system disconnection switch
- Acoustic alarm
- Automatic battery charger
- RS232 Communication port
- Settable PASSWORD for protection level



**PROTECTIONS WITH ALARM**
- 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

**PROTECTIONS WITH SHUTDOWN**
- Engine protections: low fuel level, low oil pressure, high engine temperature
- Genset protection: under/over voltage, overload, under/over battery voltage, battery charger failure
- Circuit breaker protection: III poles
- Earth Fault included in the control unit

**OTHERS PROTECTIONS**
- Emergency stop button

**OUT PUT PANEL ACP**

| | |
|---|---|
| Predisposed for remote control optional: | RCG |
| External Terminal Board (ETB) | Standard |
| Socket kit | Optional |

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## MPP - Modular parallel panel

Mounted on the genset, complete with digital control unit InteliVision5 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).

**DIGITAL INSTRUMENTATION**
- Mains: voltage, Intensity, Frequency.
- Mains kW - kVAr -Power factor Cos f.
- Generating set voltage (3 phases).
- Generating set frequency.
- Generating set current (3 phases).
- Generating set Power (kVA - kW - kVAr).
- Generating set Power factor Cos f.
- Generating set kWh and kVAh.
- Battery voltage.
- Hours-counter.
- Engine speed r.p.m.
- Fuel level (%).
- Engine temperature (depending on model).
- Oil pressure (depending on model).

**COMMAND AND OTHERS**
- Graphical display 320x240 pixels.
- Operation modes: OFF - AMF function - Single Parallel to mains Island application - Single Parallel to Mains AMF application - Multiple parallel genset Island application.

- Pushbutton for forcing Mains Breaker/contactor or Genset Breaker/contactor.

- Push-buttons: start/stop, fault reset, up/down/page/enter selection.
- Multiple parallel and Power Management operation with digital load AVR sharing.

- Automatic synchronizing and power control (via speed goveroner or ECU)
- Baseload Import/Export and Peak shaving
- Voltage and PF control (AVR).
- Configurable digital I/O (12/12) and analogue inputs (3).
- Integrate PLC programmable functions.
- Event-based history (up to 500records).
- Selectable measurement range 120/277V and 0-1/0-5A.
- Remote starting and Blocking signal availability.
- DC system disconnection switch.
- Acoustic alarm.
- Automatic battery charger.
- 2xRS232/RS485/USB Communication ports.
- Settable PASSWORD for protection level.

**PROTECTION WITH ALARM AND SHUTDOWN**
- 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

**OTHERS PROTECTION**:
- Circuit breaker protection: IV poles Motorized.
- Emergency stop button.

**OUT PUT PANEL MPP**

| | | |
|---|---|---|
| Multi-pin connectors (in and out ) for parallel with other generators | n | 2 |
| Connecting cable with 2 connectors multipin (length 10m) | n | 1 |
| External terminal board | | ETB |

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| Supplements: | |
|---|---|
| To be ordered with the equipment | : |

**CONTROL PANEL SUPPLEMENT**

| | |
|---|---|
| RCG - Various supplements for remote controls - available for models: | ACP MPP |
| TLP - Various supplements for remote signals - available for models: | ACP MPP |
| ADI - Adjustable Differential Intensity - available only for models: | ACP |
| TIF - IV Poles Circuit Breaker instead of III - available for models: | ACP |

**Socket kit**

| | | |
|---|---|---|
| Kit SKB or Kit SKC (for total n. 4 socket) - available for model: | | ACP |
| Individual CB and Earth Fault protection | | |
| 3P+N+T 400V 63A | n | 1 |
| 3P+N+T CEE 400V 32A | n | 1 |
| 230V/16A SCHUKO | n | 1 |
| With version SKB: | | |
| 3P+N+T CEE 400V 16A | n | 1 |
| With version SKC: | | |
| 400V/125A 3P+N+T CEE | n | 1 |

**GENSET EQUIPMENT**

| | |
|---|---|
| LPT - Leak Proof Tray | |
| AFP - Automatic Fuel Pump | ACP MPP |

**ENGINE SUPPLEMENTS**

| | |
|---|---|
| PHS - Coolant Pre-Heating System - available for models: | ACP MPP |

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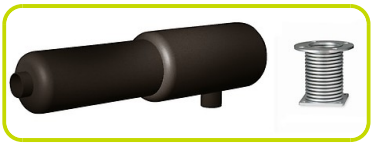
## Accessories

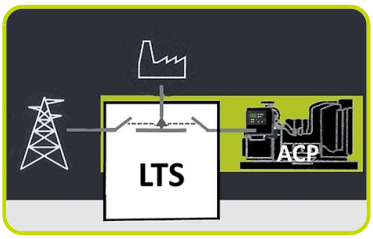
Items available as accessory equipment

FEC - Flexible Exhaust Compensator Bellow and flanges

RES - Residential silencer



**LTS - Load Transfer Switch [Accessories for ACP Automatic Control Panel]**




The Load Transfer Switch (LTS) panel operates the power supply changeover between the generator and the Mains in backup applications, guarantying the feeding to the load within a short period of time.
It consists of a standalone cabinet which can be installed separate from the generating set. The logic control of the power supply changeover is operated by means of the Automatic Control Panel (ACP) mounted on the generating set, so therefore none logic device is required on the LTS panel.

**LTS Type ATyS_D:**

- Box type: steel enclosures
- Installation mode: Wall mounted <400A; Floor Standing =>630A
- Door: Hinged door closed with double barb locking.
- Ingress Protection: IP43
- Gland Plates: Removable on the top & bottom side
- Connections: Bottom/Bottom
- Motor unit
- Gland Plates: Removable on the top & bottom side
- Connections: Bottom/Bottom
- Motor unit
- Switch position indicator
- Auto/Manual cover selector
- Housing for manual handle
- Padlocking mechanism
- Two side by side mounted load break switches
- Poles 4
- Double coils self-powered
- Voltage (coils): 208/277VAC (Tolerance+/-20% 166/333VAC)
- Frequency 50 & 60HZ
- Interface ATyS D10, fixed on the door for the status indication: Two lights to indicate the voltage presence of the grid and the diesel generator; Two lights for the switch position; Functionality mode (auto/manual) and cover protection IP65.
- *Compliant with IEC 60947-3, EN 61439-6-1 and GB 14048-11*

*LTS SUPPLEMENTS AVAILABLE ON REQUEST:*

- ***ESB -*** *Emergency Stop Button (installed on the panel front)*
- ***APP*** *- Additional IPXXB Protection (internal plexiglass)*

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