Configuración YMY20B

GENERADOR DIESEL

MODELO:	**YMY20B (Versión Pramac GBW25Y)**
Potencia Emergencia (kw)	**19.16 kWe**
Potencia Prime (kw)	**18.18 kWe**
VOLTAJE (V) :	**220V Trifásico**
Frecuencia (hz)	**60HZ**
Configuración:	**CASETA ACUSTICA , silenciador grado Residencial**
Base Tanque :	**Capacidad 51lit, Pared sencilla platico**
Control Generador:	**DEEPSEA**

MOTOR

Motor:	**4TNV88-BGPGE YANMAR EPA , Aspiración Natural**
Certificación Emisiones:	**Tier 4i**
Tipo Gobernador:	**Mecánico**

YANMAR

ALTERNADOR

Alternador:	**ECP28-M4C Mecc Alte , sin escobillas**
Regulador de Voltaje:	**DSR Digital**
Protección:	**IP23 (Interiores)**
Clase Aislamiento:	**Clase H**

mecc alte

TRANSFERENCIA

MODELO:	**ACP Panel de control automatico**
Operación:	**Automática, transición abierta**
Frecuencia (hz)	**60HZ**
VOLTAJE (V) :	**208V Trifásico**
Amperaje (Amp):	**80A, 4 polos**
Protección:	**IP66 (Interiores)**

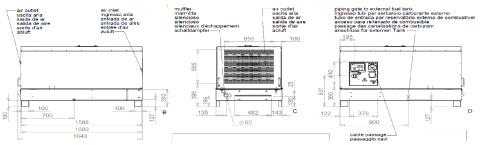
Size	Poles	Switch model
40A	4 poles	Socomec ATyS dM 4P 40A
63A		Socomec ATyS dM 4P 63A
80A		Socomec ATyS dM 4P 80A
100A		Socomec ATyS dM 4P 100A
125A		Socomec ATyS dM 4P 125A
160A		Socomec ATyS dM 4P 160A

NORMATIVIDAD

MOTOR	**ISO 8528/1, ISO 3046/1:1986, BS 5514/1**
	CEI 2-3, IEC 34-1, EN 60034-1, VDE 0530, BS
ALTERNADOR	**4999-5000, CAN/CSA-C22.2 No14-95-No100-95.**
TRANSFERENCIA	**IEC 60947-6,-1, IEC 60947-3, GB 14048.11 ; Socomec ATyS**

DIMENSIONES CASETA

Largo (mm):	**1645mm**
Ancho (mm):	**870mm**
Altura (mm):	**1072mm**
Peso (kg)	**510kg**



ADICIONALES

Precalentador:	**SI**
Baterías	**SI**
Cargador Baterías	**SI**

YMY20B

Main Features		
Frequency	Hz	60
Voltage	V	220
Power factor	cos ϕ	0.8
Phase		3

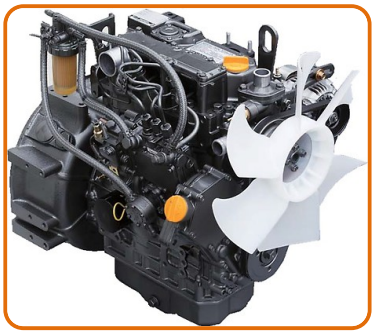
Power Rating		
Emergency Standby Power ESP	kVA	23.95
Emergency Standby Power ESP	kW	19.16
Prime power PRP	kVA	22.73
Prime power PRP	kW	18.18

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.

Engine specifications		
Engine Brand		Yanmar
Model		4TNV88-BGPGE
[60Hz] Exhaust emission optimized for EPA tier (EPA)		Non Emission Certified
Engine cooling system		Water
Nr. of cylinder and disposition		4 in line
Displacement	cm^3	2190
Aspiration		Natural
Speed governor		Mechanical
Prime gross power PRP	kW	21.4
Maximum gross power LTP ESP	kW	22.5
Oil capacity	l	7.4
Coolant capacity	l	2.7
Fuel		Diesel
Specific fuel consumption 75% PRP	g/kWh	251
Specific fuel consumption PRP	g/kWh	251
Starting system		Electric
Starting engine capability	kW	1.4
Electric circuit	V	12



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
• Direct injection system
• Fuel filter paper element
• Fuel pump Bosch in-Line

Lube oil system
• Forced feed system
• Trochoid pump
• Paper element lube oil filter

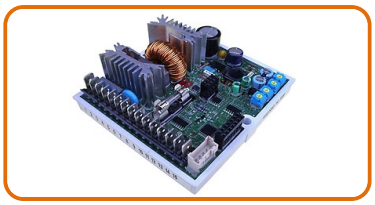
Induction system
• Mounted air filter

Cooling system
• Thermostatically-controlled system with gear-driven circulation pump and belt-driven pusher fan
• Mounted radiator and piping

Alternator Specifications		
Alternator		Mecc Alte
Model		ECP28-M4 C
Voltage	V	220
Frequency	Hz	60
Power factor	cos ϕ	0.8
Poles		4
Type		Brushless
Voltage tolerance	%	1
Efficiency @ 75% load	%	89.4
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.

Genset equipment

BASE FRAME MADE OF WELDER STEEL PROFILE, COMPLETE WITH:

• Anti-vibration mountings properly sized

• Visual fuel level indicator

• Integrated support legs.

PLASTIC FUEL TANK, COMPLETE WITH:

• Filler neck

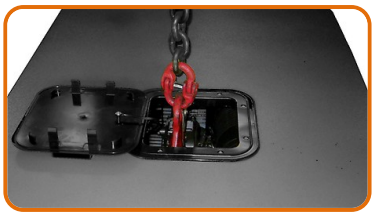
• Air breather (ventilation pipe)

• External fuel refilling

OIL DRAININ PIPE WITH CAP:

• Oil draining facilities

CANOPY:



• Single piece hinged soundproof canopy equipped with pneumatic arms and handles to lift up the canopy allowing easy access to the genset for maintenance purposes.

• Simple handling operations with central lifting eye

SOUNDPROOF:

• Noise attenuation thanks to soundproofing material (polyurethane foam) and efficient residential silencer placed inside the canopy.

Dimensional data		
Length	(L) mm	1645
Width	(W) mm	870
Height	(H) mm	1072
Dry weight	kg	510
Fuel tank capacity	l	51
Fuel tank material		Plastic

Autonomy		
Fuel consumption @ 75% PRP	l/h	4.83
Fuel consumption @ 100% PRP	l/h	6.39
Running time 75% PRP	h	10.56
Running time 100% PRP	h	7.98

Installation data		
Total air flow	m^3/min	69.57
Exhaust gas flow	m^3/min	4.6
Exhaust gas temperature	°C	540

Electrical Data		
Max current	A	62.85
Circuit breaker	A	63

Control panel availability	
MANUAL CONTROL PANEL	MCP
AUTOMATIC CONTROL PANEL	ACP

MCP - Manual control panel

Manual control panel, mounted on the genset and complete of: instrumentation, control, protection and sockets

INSTRUMENTATION (ANALOGUE)
• Voltmeter (1 phase)
• Ammeter (1 phase)
• Hours-counter

COMMANDS AND OTHERS
• Start/stop selector switch with key (Glow plugs preheating function also included).
• Emergency stop button installed on canopy side.

PROTECTION WITH ALARM
• Battery charger failure
• low oil pressure
• high engine temperature
• Earth Fault.

PROTECTIONS WITH SHUTDOWN
• Battery charger failure
• low oil pressure
• high engine temperature.
• Circuit breaker protection

OTHERS
• Emergency stop button

OUT PUT PANEL MCP

Power cables connection to Circuit Breaker.	√

ACP - Automatic control panel

Automatic control panel mounted on the genset, complete with digital control unit for monitoring, control and protection of the generating set.

INSTRUMENTATION DIGITAL

• Mains voltage.
• Generating set voltage (3 phases).
• Generating set frequency.
• Generator set current.
• Battery voltage
• Hours-counter.

COMMANDS AND OTHERS

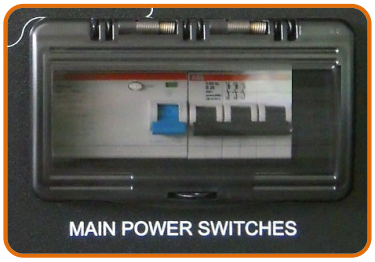
• Operation modes: OFF - Manual Starting - Automatic Starting.
• Push-buttons: start/stop, fault reset, up/down/page/enter selection.
• Emergency stop button.
• Remote starting availability.
• Automatic battery charger.
• USB port.

PROTECTIONS WITH ALARM

• Engine protections: low oil pressure, high engine temperature
• Genset protections: under/over voltage, overload, under/over frequency, starting failure, under/over battery voltage, battery charger failure

PROTECTIONS WITH SHUTDOWN

• Engine protections: low oil pressure, high engine temperature
• Genset protection: under/over voltage, overload, under/over battery voltage
• Circuit breaker protection



OTHERS

• Cover protection Power switch

OUT PUT PANEL ACP

Plinth row for connection from ACP to LTS panel.	√
Power cables connection to Circuit Breaker.	√

Supplements:

To be ordered with equipment (when necessary)	:

ENGINE SUPPLEMENTS

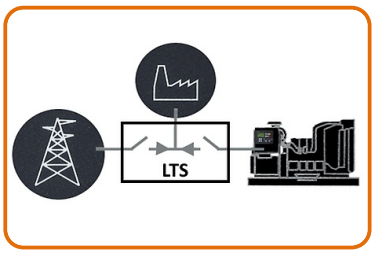
PHS - Coolant Pre-Heating System	ACP

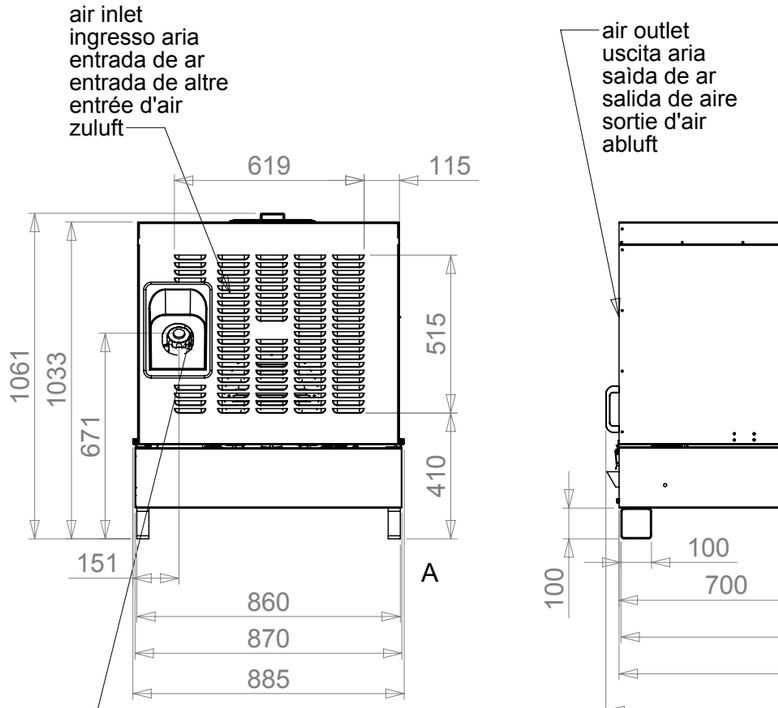
Accessories

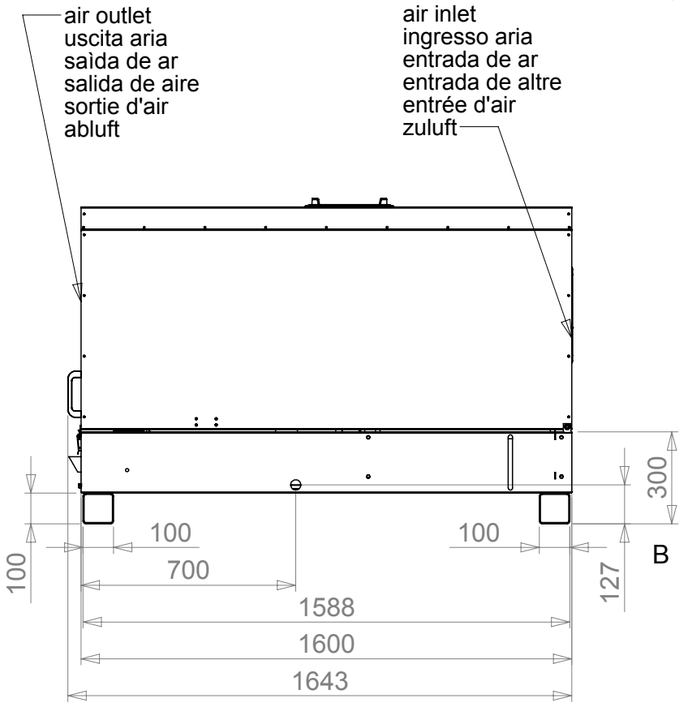
Items available as accessory equipment	
Site trailer	•
Road Trailer	•

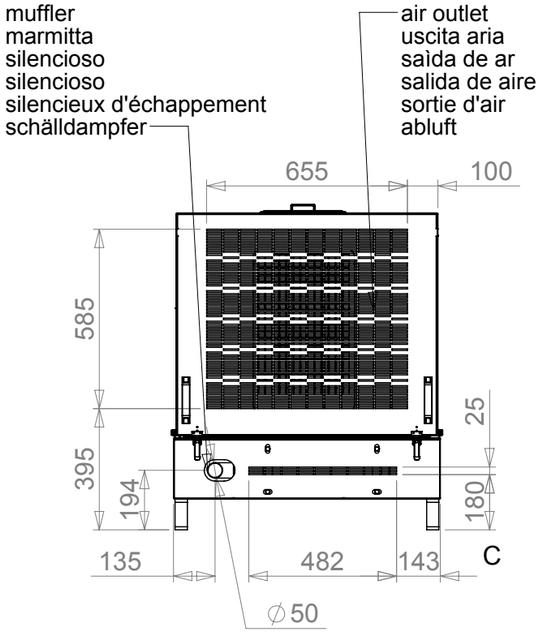
LTS - Load Transfer Switch [Accessories for ACP Automatic Control Panel]

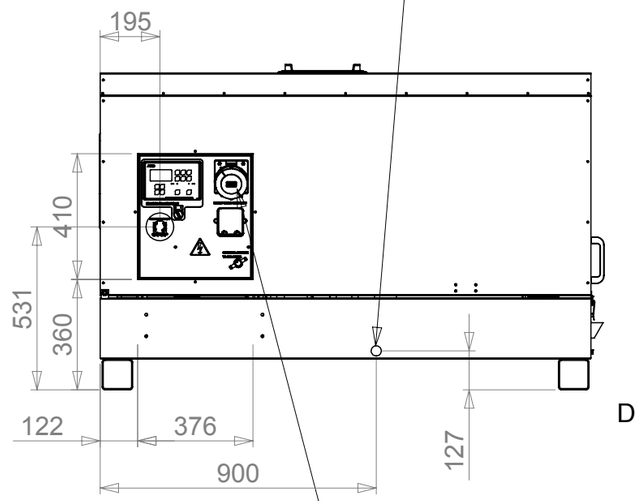
The Load Transfer Switch (LTS) panel operates the power supply changeover between the generator and the Mains in backup applications, guarantying the feeding to the load within a short period of time.
It consists of a standalone cabinet which can be installed separate from the generating set. The logic 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.



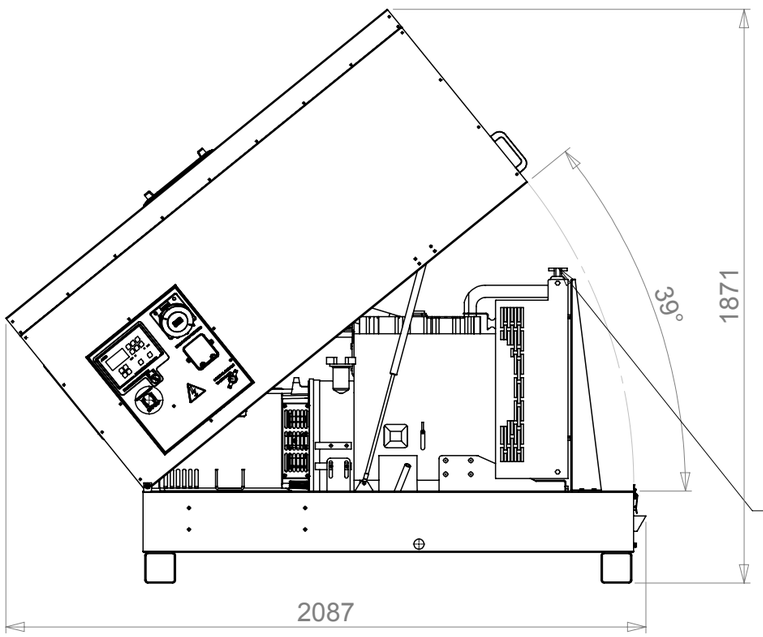




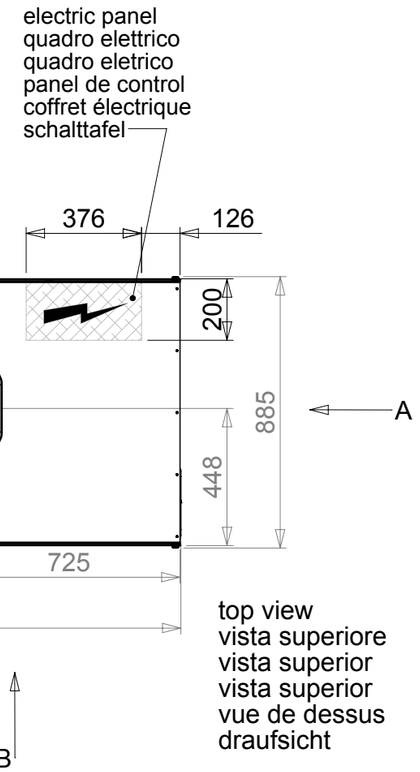




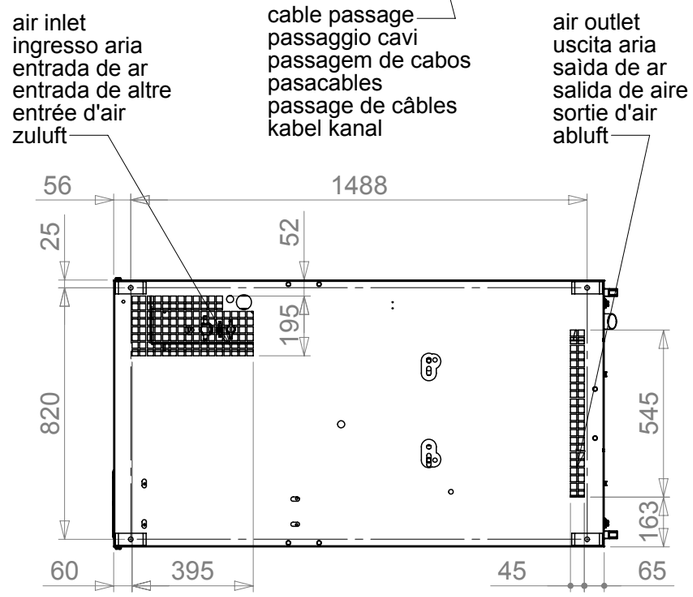
internal fuel tank refilling cap
tappo rifornimentocarburante serbatoio interno
tampa de rebastecimento de combustível do resrvatório interno
tapa de tanque de combustible interna
bouchon de remplissage du réservoir de carburant
tankdeckel



coolant refill
rabocco liquido refrigerante
reabastecimento de líquido refrigerante
relleno de anticongelante
remplissage liquide de refroidissement
kühlerdeckel



top view
vista superiore
vista superior
vista superior
vue de dessus
draufsicht



bottom view
vista inferiore
vista inferior
vista inferior
vue de dessous
untersicht

Rev.	Date-Data-Data-Fecha-Date-Datum / Modification-Modifica-Modificaçâo-Modificación-Modification-Änderung
04	
03	
02	
01	

PRAMAC

Model Modello Modelo Modelo Modèle Modell	**GBW10 - 15 - 22 - 25P - CANOPIED** **GBW10 - 15 - 22 - 25Y - CANOPIED**
Scale/Scala/Escala/Escala/Echelle/Maßstab	1:20
Code/Codice/Código/Código/Code/Code	**ID0052-00**
Date/Data/Data/Fecha/Date/Datum	25/06/2013

Load Transfer Switch (LTS)

Internal manufacturing

PRODUCT GUIDE

REV 1.0

PRAMAC

INDEX

All pictures shown in this document are for illustration purpose only. Actual product features may vary due to product enhancement. For Internal use only.

The load transfer switch (LTS) panel allows to transfer the power source from the mains to the generator and vice versa.

LTS is helpful for all emergency standby applications, where an automatic quick switch is necessary in case of main failure.

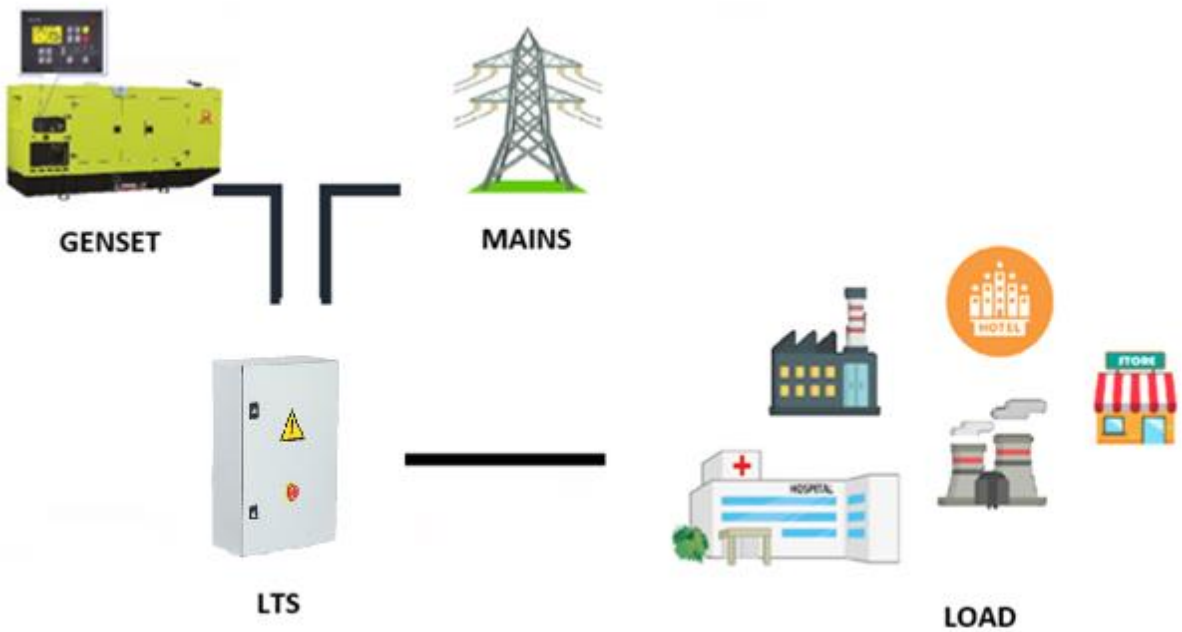
The transfer switch is protected by a dedicated cabinet and sell separated from the genset.

The LTS optional is available with the ACP control panel only.

System Operation:

The genset ACP control unit shows continuously the Mains source voltage.
In case of Mains failure or voltage out of margin the genset ACP control unit operates as follows:

1. Opening of the Mains contactor (mounted into the LTS panel).
2. Starting of the generating set and closing of the genset contactor (mounted into the LTS panel); since this moment on, the load is supplied by the generating set.
3. When the Mains is restored into the rated values, the genset ACP control unit opens the genset contactor (after an adjustable delay) and closes the Mains contactor; since this moment on, the power is supplied by the Mains source.
4. The Generating set keeps running for an adjustable period of time to cool down the engine.



Our LTS are designed to enhance the operation of your standby generator with our automatic control panels, to **provide automatic control of your standby generator in the event of mains failure, 24 hours a day, 365 days a year.**

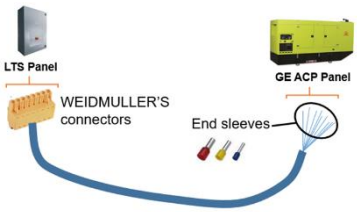
All pictures shown in this document are for illustration purpose only. Actual product features may vary due to product enhancement. For Internal use only.

1 KEY FEATURES LTS PRAMAC

After a long experience of PRAMAC in selling genset and LTS for stationary applications, a market requirements analysis has been defined three main product key features:

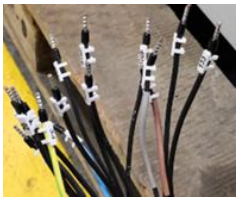
1.1 LTS PRAMAC KEY FEATURES – COMPREHENSIVE STANDARD EQUIPMENT

Supply a Comprehensive standard equipment's, according to market requirements:

EMERGENCY PUSH BUTTON	Emergency push button positioned in the cubicle door, allow to stop energy flow from genset and grid to the load in case of emergency. 
PLEXIGLAS PROTECTION (FOR SIZES >160A)	Plexiglas protection panel positioned in front of the transfer switch, inside the cubicle, allow to protect the operator from possible accidental contact and electric arc. 
LTS-GE CONNECTION CABLE	LTS-GE connection cable with PIN connector for faster installation. Cable Length 10 meter. 

1.2 LTS PRAMAC KEY FEATURES – IMPROVE CONNECTIVITY SYSTEM BETWEEN GENSET AND LTS

Improved LTS-GE connection for faster installation.

✓ **WEIDMULLERS CONNECTORS FOR LTS SIDE** ✓ **END SLEEVES FOR GENSET SIDE**	 

1.3 LTS PRAMAC KEY FEATURES – INCREASE LTS FLEXIBILITY ON OTHER BRAND CUSTOMIZATION

2 LTS GROUP SIZES

LTS PRAMAC cover a range from 40A up to 3200A.

According to main features, LTS PRAMAC can be divided into three groups:

- **40-160A**
- **200-1250A**
- **1600-3200A**

LTS PRAMAC are equipped with Socomec transfer switch, able to work with the following Voltages and connection system:

<table>
<tr><th>Groups</th><th>Voltages</th><th>Frequencies</th><th>Connection Systems</th></tr>
<tr><td>40-160A</td><td rowspan="3">• 208V-254V with N
• 208V-254V without N
• 380V-480V with N

Single* and Three phases

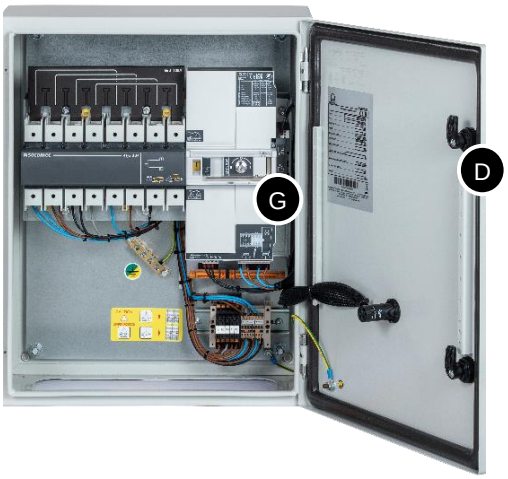
*For Single phase, follow right connection instruction available in the wiring-diagram</td><td rowspan="3">50/60Hz</td><td>All LTS panel are suitable for the following electrical system: TT – TNS – IT</td></tr>
<tr><td>200-1250A</td><td rowspan="2">All LTS panel are suitable for the following electrical system: TT – TNS – TNC* – IT

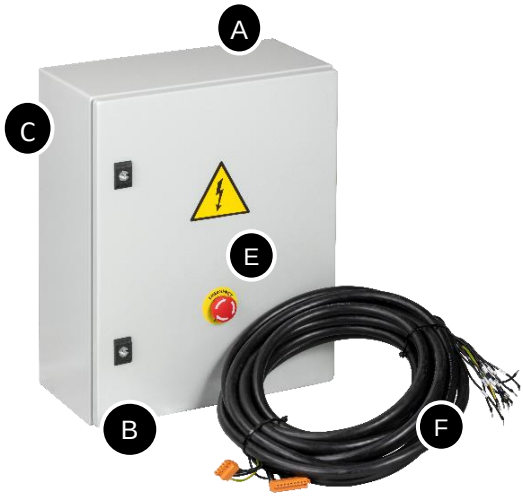
*TNC version is available with dedicated LTS panel</td></tr>
<tr><td>1600-3200A</td></tr>
</table>

40-160A

3 GROUP 40-160A

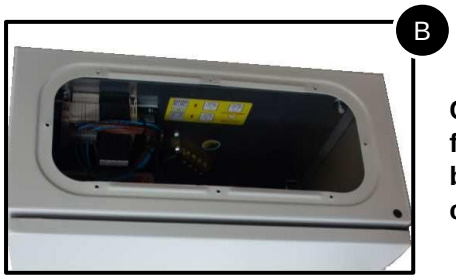
3.1 GENERAL FEATURES GROUP 40-160A





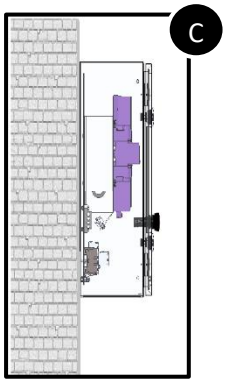
Cubicle made of steel, epoxy-polyester coated.

Cubicle IP protection with door and cable passage close IP66.

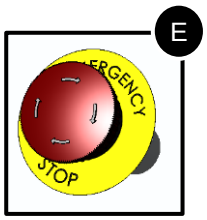


Cables ingress from the bottom of cubicle.

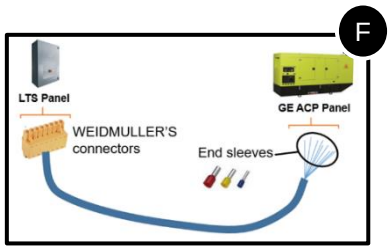
2 points of 3mm double-bar locking



Wall mounted.



Emergency stop button



LTS-GE connection cable with PIN connector for faster installation. Length 10 meter.
Included in the LTS scope of supply.

LTS designed to work with most of Voltages around the world

3.2 GROUP 40-160A – LINE-UP

Size	Poles	Switch model	Maximum Power Cable Size [mm²]	Cubicle size LxWxH [mm]
40A	4 poles	Socomec ATyS dM 4P 40A	70	400x200x500
63A		Socomec ATyS dM 4P 63A		
80A		Socomec ATyS dM 4P 80A		
100A		Socomec ATyS dM 4P 100A		
125A		Socomec ATyS dM 4P 125A		
160A		Socomec ATyS dM 4P 160A		

3.3 GROUP 40-160A – SWITCH MAIN FEATURES

Transfer switch Conformity to:

- IEC 60947-6,-1
- IEC 60947-3
- GB 14048.11

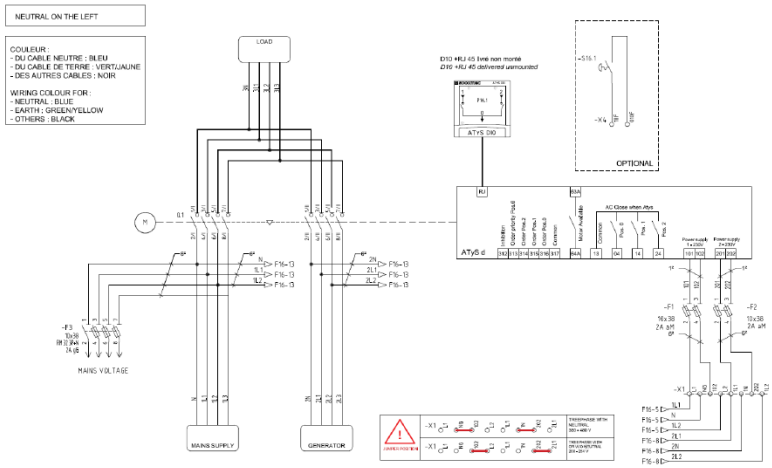
Transfer switch Certification:

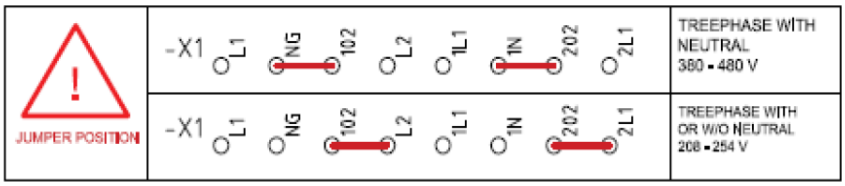
- ✓ Easy selection of AUT/MAN mode
- ✓ Manual emergency operation
- ✓ Padlocking facility

4 APPENDIX A – LTS VOLTAGES/FREQUENCIES CONFIGURATION

The LTS is sold with standard configuration 380-480V.

The LTS setting is managed by the customer.
The Voltage /Frequency requested is set by **Jumper position**.





A stickers with jump positions setting instructions is attached inside the cubicle**.**