

# Smartgen®

## AMF+ATS CONTROL PANEL

### SELECTION INSTRUCTION



Smartgen Technology



众智电子 Chinese trademark

**Smartgen**<sup>®</sup> English trademark

**Smartgen** — make your generator *smart*

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If there are any differences between the contents of the instruction and the product, please regard the actual product as the truth.

#### Version history

Date	Version	Note
2012-11-15	1.0	Original release
2012-12-10	1.1	Add wiring diagram introductions; Modify the installation dimension.

## Contents





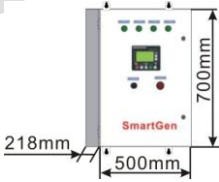
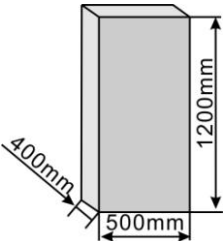
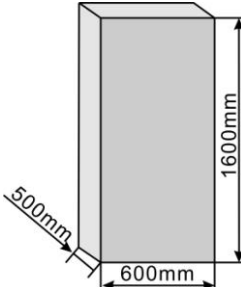
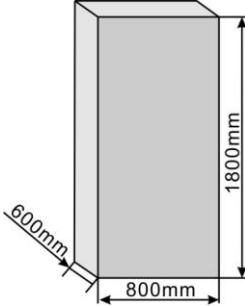
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## 1 OVERVIEW

The **AMF+ATS control panel** is particularly applicable to the 1-way Mains (Grid) in addition with 1-way Gens power supply situation. When Mains is failure, the genset is started automatically and changeover the load from Mains to Gens automatically; When Mains get normal, changeover the load from Gens to Mains automatically. Then Genset is stopped and cooling down automatically too. This whole transferring procedure can be done unattended. The panel not only shows all the parameters of Gens and Mains, but protects the Genset from faults and alarms. The panel's appearance structure will remain same under the same power capacity. For different power capacity's panel, the working theories are same but appearance sizes are difference. Control capacity's range is from 63A to 1250A (corresponding capacity under three phase is from 35kW to 700kW).

Each control panel is equipped with Smartgen Controller as main control units, as well as other accessories are all come from famous company. The box adopts metal body; deals with electrostatic coating process, fully efficient for using under different environmental conditions. It is reliable and cost-effective with simple connection and easy operation. Control panel can also be customized according to the user's requirements.

## 2 APPEARANCE AND CLASSIFICATION

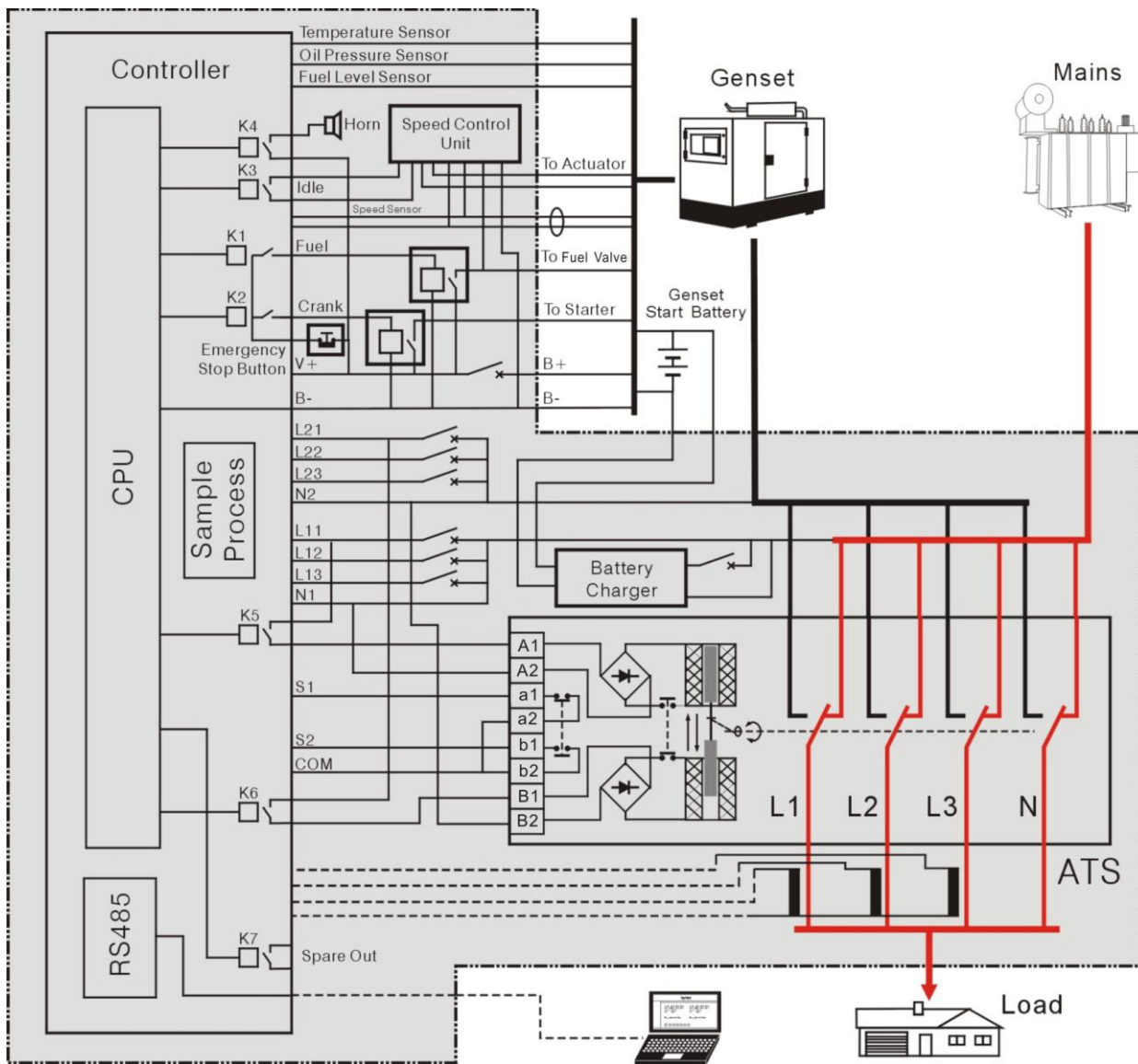
Current (Power )	63A~125A (35kW~70kW)	250A 139kW	400A~630A (220kW~360kW)	400A~1250A (220kW~700kW)
Appearance				
Installation way	Wall-mounted	Vertical	Vertical	Vertical
Overall Size(mm)				
Installation Size(mm)	734X365 (height*length)	440X200 (length*width)	440X410 (length*width)	640X490 (length*width)
Installation aperture	4xø8	4xø10	4xø10	4xø10

Outlet connection position	Bottom	Bottom and back		
Weight (not include ATS & cooper bar )	Approx. 35kg	Approx. 70kg	Approx. 85kg	Approx. 100kg

### 3 BASIC TECHNICAL PARAMETERS

Parameters	Contents
Working Voltage range	(176~265)VAC
DC power voltage	(8~35)V(not necessary)
Body	Metal electrostatic coating, off-white
Type of ATS	SMARTGEN SGQ series
Changeover time	Min. 10 ~ 30 sec.
Control module	All Smartgen Genset Controllers with AMF
Communication interface	RS485 Modbus-RTU(partly does not have)
Language	Chinese /English
Installation way	Wall-mounted and vertical
Ambient	(-25~+70)°C
Humidity	(20~90)%
Elevation	≤5000 M
Safety requirements	Object: among Input/output/Power Test method: AC1.5KV/1min leakage current 3.5mA





### 4 THEORY AND APPLICATION



Note: The above drawing is suitable for N type and T type switch (SGQ), please refer to SGQ instruction for more details about M type switch.



Items	Function description
Genset Controller	Automatic start, stop and protect genset. Control ATS to changeover automatically. Collecting and protecting electrical parameters of Genset and Mains. Achieve communication function.
A. T. S.	Changeover the load to Gens or Mains. Partly ATS has 2Poles and 3Poles.
Float Charger	Automatic charging the engine starter battery.
Speed Control Unit	Control engine's speed.
Accessory	Including expansion relay board, alarming horn, emergency stop button and etc.
Loaded in each control panel components varies with the user requirements.	

## 5 CONTROL MODULE'S PARAMETER LIST

Items	HGM420	HGM6120U	HGM7220	HGM9X20
Appearance				
DC Power input range	(8~35)V DC			
AC voltage input range	(50~360)V (phase-N)			
AC input wiring system	1P-2wire; 2P-3wire; 3P-3wire; 3P-4wire			
Rated frequency	50/60Hz			
Electricity detection protection	Voltage, current, power, over & under voltage, loss-phase, anti-phase, over & under frequency, over current and etc.			
Engine detecting	Coolant temperature, oil pressure, fuel level and speed ect			
Engine protection	Water high temperature warn or alarm, under oil pressure warn or alarm, over speed warn or alarm and ext.			
Fault alarm	Yes			
Communication interface	RS485, standard Modbus-RTU (controller with RS485 only)			
Charging genset excitation (WL or D+)	Yes			
Charge Failed Warning	Yes			
Configurable input / output ports	Yes			
CANBUS(J1939)	No	No	Yes (partly)	
Other functions	Please refer to controller manual for more details.			
Overall size(mm)	130x112x39	197x152x47	197x152x47	266x182x45
Net Weight	0.26kg	0.56kg	0.75kg	0.85kg

## 6 AUTOMATIC TRANSFER SWITCH PARAMETER LIST

### 6.1. 63A ATS (N TYPE)



Item	2P	3P	4P
Appearance			
Weight	4kg	4.5kg	4.7kg
Overall size(mm)	172x186x155	200x186x155	228x186x155
Width of outlet cooper bar	12mm		
Aperture of bar	Ø5mm		

### 6.2. 125A (N TYPE)



Item	2P	3P	4P
Appearance			
Weight	4.5kg	5kg	5.65kg
Overall size(mm)	193x186x155	228x186x155	265x186x155
Width of outlet cooper bar	20mm		
Aperture of bar	Ø7mm		



### 6.3. 160A/200A/250A (T TYPE)

Item	3P	4P
Appearance		
Weight	16.5kg	18.5kg
Overall size(mm)	326x292x150	375x292x150
Width of outlet cooper bar	20mm	
Aperture of bar	Ø9mm	



### 6.4. 400A (T TYPE)

Item	3P	4P
Appearance		
Weight	18kg	20kg
Overall size(mm)	355x292x150	406x292x150
Width of outlet cooper bar	L line: 30mm N line: 20mm	
Aperture of bar	L line: Ø11mm N line: Ø 9mm	

### 6.5. 630A (T TYPE)

Item	3P	4P
Appearance		
Weight	20kg	22kg
Overall size(mm)	364x310x150	424x310x150
Width of outlet cooper bar	L line: 40mm N line: 30mm	
Aperture of bar	L line: Ø15mm N line: Ø15mm	

### 6.6. 630A/800A/1000A/1250A (M TYPE)

Item	3P	4P
Appearance		
Overall size(mm)	510x260x340	600x260x340
Weight	630A	42.3kg
	800A	45.3 kg
	1000A	48.3 kg
	1250A	51.3 kg
Width of outlet cooper bar	630A	30mm
	800A	40mm
	1000A	45mm
	1250A	55mm
Aperture of bar	630A	Ø12mm
	800A	Ø15mm
	1000A	Ø15mm
	1250A	Ø15mm