

# KOMATSU PPU1200-6

**Diesel Power 50/60Hz  
Containerized Generator Set**



**50Hz at 0.8 Power Factor 380 - 400V 3-Phase Rated Voltage  
60Hz at 0.8 Power Factor 480V 3-Phase Rated Voltage**

**PRIME**

**800kW/1,000kVA**

**STANDBY**

**880kW/1,100kVA**

## GENERATOR SET PERFORMANCE

### Application

A factory designed generator set equipped with a standard AC/DC generator control panel. The generator set is ready to be connected to your fuel and power line to start up once the installation completed.

### Applicable Definitions

Prime: Applicable for supplying emergency power at varying load in the event of normal utility power interruption. 10% overload is allowed.

### Applicable Standard

Generator sets design, assembly and testing meet or exceed many international standards, such as IEC 34-1, IEC 34-5, IEC 34-6, JEC 114, JEC 139 and JEC 146. The power rating is set in accordance with ISO 8528, ISO 3046-1, DIN 6271 and BS 5514.

### Structure Outline

The generator set has selected materials and equipment of high performance, which are durable and anti-vibration. The assembly work meets the quality control system.

The concept of the design and manufacturing is for easy operation and maintenance, to be compact and light weight too.

The single bearing alternator frame is coupled to the engine housing directly. With one end of the rotor is supported by bearing and the other end of rotor shaft is connected to the engine flywheel with a steel laminate plates.

All components and necessary equipment are mounted on the common skid base.

### Rubber Isolator Mounting

The rubber isolators are mounted between engine, alternator and its common skid base.

### Applicable Conditions

Installation Place : Indoor/Outdoor  
Ambient Temperature : 0°C ~ 40°C  
Ambient Humidity : Below 99%  
Altitude : Maximum 1,000 m

### Dimensions and Weight

Overall Length : 6,060 mm  
Overall Width : 2,438 mm  
Overall Height : 2,591 mm(w/o silencer)  
Weight : Approx. 10,500kg

### Painting Color

Engine and Alternator : Yellow  
Generator Control Panel : Black and Yellow  
Skid Base : Black

### Control System

Panel Model : V500  
Controller Model : AMF25  
Controller Brand : ComAp

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### Diesel Power 50/60Hz Containerized Generator Set

### TECHNICAL DATA

		50/60Hz (1500/1800RPM)
<b>ENGINE BODY</b>	Maker and Model	KOMATSU SAA12V140-P1150
	Rating Type	Prime
	Engine Output	HP 1,154 kWm 861
	Engine Load Acceptance	kWe 560 (70%)
	Aspiration	Turbocharged and Air-to-Air Aftercooled
	Cylinder Arrangement	12 Vee
	Type	Water Cooled, 4 Cycles, Overhead Valve
	Bore x Stroke	mm x mm 140 x 165
	Piston Displacement	Liter 30.48
	Starting Method	Electric Motor, 24V – 7.5kW x 2
	Charging Alternator	DC 24V – 35A (Brushless)
	Cooling Fan and Diameter	mm 6 Blades Pusher Type, 1530
	Oil Cooler	Water Cooled, Multi-plate Type
	Air Cleaner	Dry Type, Cyclopac 2 Stage Paper Element
	Stop Solenoid	Energized to Run Mode
	Flywheel Housing / Flywheel	SAE #0 / SAE #18 (Metric Tread)
	Flywheel Ring Gear Teeth	138
	Battery (Lead Acid Type)	DC 12V – 200Ah x 4 pcs
	Frequency Regulation, Stead State	% ≤±0.5
	Frequency Regulation, Transient State	% ≤±10
Frequency Stable Time	s 2	
Frequency Waving	% ≤±0.25	
Frequency Regulation Range	% ±5.0	
<b>ENGINE LUBRICANT</b>	Oil Pan (High / Low Level)	Liter 135 / 85
	Oil Filter /By-pass Filter	Liter 12
	System Total	Liter 151
	Grade	SAE #30, 10W, 10W-30 or 15W-40 API, Class CF, CG
<b>ENGINE COOLANT</b>	Radiator and Ambient Temp.	°C Corrugate Fin Type, 40
	Cooling System	Forced Circulation by Centrifugal Water Pump
	Engine Capacity	Liter 85
	Radiator Capacity	Liter 137
	Radiator Heat Rejection	kcal/h 330,100 / 318,900
<b>ENGINE DATA</b>	Pressure Mean Effective (PME)	kPa 2,260 / 2,072
	Mean Piston Speed	m/s 8.25 / 9.9
	Sound Level (Average at 1m)	
	Full Load	dB(A) 99.3 / 102
	Speed Regulation	% Electronic Actuator, (Standard) GAC, Isochronous (Constant)
	Thermostat (Wax Type)	
	Water Coolant	°C Cracking 76.5, Fully Open 90
	Engine Shutdown Device	
	Coolant Temp (Sensor Type)	°C 101 + 3%
Oil Pressure (Sensor Type)	kPa 98 + 3% (1.0 + 3% bar)	
<b>FUEL CONSUMPTION</b>	BSFC (at 100% Load)	g/kWh 203 / 206
	Lubricating Oil (Nominal Value)	Liter/h 0.41
	Fuel Rate	Liter/h 206 / 209

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<b>ALTERNATOR</b>	Model	HCI634J1	
	Construction	Single Bearing, Self Ventilated	
	Control System	MX321 with PMG Excited	
	Insulation	Class H	
	Protection	IP23	
	Rated Power Factor	0.8	
	Efficiency (Cont. 100%)	95.0 / 95.2	
	No of Pole and Phase	4 Poles 3 Phase 4 Wire	
	Stator Winding	Double Layer lab	
	Winding Pitch	2/3	
	Winding Leads	6	
	Voltage Regulation, Stead State	≤±0.5	
	Voltage Regulation, Transient State	+20 ~ -15	
	Voltage Stable Time	≤0.5	
	Voltage Waving	≤±0.5	
	Voltage Regulation(at No Load)	95 ~ 105	
	Voltage Waveform Distortion		
	No Load	< 1.5	
Non-Distorted      Balanced	< 5.0		
Linear Load			
Maximum Overspeed	rpm	2250	
Telephone Interference	%	THF<2 / TIF<50	
Voltage Dip. at 15%	kVA	900kVA / 1275kVA	
Voltage Dip. at 20%	kVA	1250kVA / 1800kVA	
<b>AIR VENTILATION</b>	Combustion Air Flow	m <sup>3</sup> /min	62.4 / 75.8
	Cooling Fan Air Flow	m <sup>3</sup> /min	1,167 / 1,420
	Alternator Air Flow	m <sup>3</sup> /min	96.84 / 117.66
	Total	m <sup>3</sup> /min	1,326.24 / 1,613.46
<b>EXHAUST GAS</b>	Gas Flow (at Full Load)	m <sup>3</sup> /min	157 / 190
	Temperature (at T/C Outlet)	°C	527
	Allowable Back Pressure	kPa	10 (1,020mmAq)
	Bellow Size (Inner Diameter)	mm	154 x 2
<b>RECOMMEND</b>	Diesel Fuel (Grade)		ASTM D975, 1-D or 2-D
	Pipe Size of Fuel Line		
	Supply (Minimum)	Inch	3/4 (Branch), 1.5 (Main)
Return (Minimum)	Inch	3/4 (Branch), 1.0 (Main)	
<b>GENERATOR CONTROL PANEL</b>	Genset Controller		ComAp AMF25
	Analog Measurement	°C	Coolant Temperature
		bar	Engine Oil Pressure
		PRM	Engine Speed
		V	Battery Voltage
		Hrs	Hour Run
		%	Fuel Level (Optional)
	AC Measurement	V	Gen U1 – U3
		A	Gen I1 – I3
		Hz	Gen Frequency
		kW	Gen Active Power
		kVAr	Gen Reactive Power
		kWh	Gen Power Consumption
	V	Mains U1 – U3	
	Hz	Mains Frequency	
	V	Mains Voltage (L1-L2, L2-L3, L3-L1)	

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### Diesel Power 50/60Hz Containerized Generator Set

## TECHNICAL DATA

		50/60Hz (1500/1800RPM)
<b>GENERATOR CONTROL PANEL</b>	Default Protection Settings	
	Low Oil Pressure                      bar	< 1.5
	High Coolant Temperature            °C	> 98
	Over Speed                                RPM	> 10% of Rated Speed
Fail to Start                                Sec.	> 39 (failed to start up after 3 attempts)	
Low / High Battery Voltage            V	18 / 30	
Charge Fail                                 V	< 18	
Under / Over Gen Voltage              V	70% / 110% of Rated Voltage	
Under / Over Gen Frequency          Hz	85% / 110% of Rated Frequency	
Over Current                                A	> 120% (IDMTL)	
Push Buttons		
MODE →		Cyclic forward selection of Genset operation mode (OFF → MAN → AUT → TEST)
MODE ←		Cyclic backward selection of Genset operation mode (TEST → AUT → MAN → OFF)
HORN RESET		Deactivates the "HORN"
FAULT RESET		Acknowledges faults and alarms
START		Start Genset
STOP		Stop Genset
MCB ON/OFF		Manual open/close the Mains CB
GCB ON/OFF		Manual open/close the Gen CB
PAGE		Cyclic selection of the display mode (MEASUREMENT ↔ ADJUSTMENT)
△		Select set point, screen or increase set point value
▽		Select set point, screen or decrease set point value
ENTER		Confirm set point value
LED's (from left to right)		<p><b>MAINS FAILURE:</b> RED LED starts flashing when the mains failure occurs and Genset does not run; steady light when Genset starts; off when Mains restores.</p> <p><b>MAINS PRESENT:</b> GREEN LED is on, if mains is present and within limits.</p> <p><b>MCB ON:</b> GREEN LED is on, if MCB is closed. Driven by feedback signal.</p> <p><b>GCB ON:</b> GREEN LED is on, if GCB is closed. Driven by feedback signal.</p> <p><b>GEN VOLTAGE PRESENT:</b> GREEN LED is on, if Gen voltage is present and within limits.</p> <p><b>GENSET FAILURE:</b> RED LED starts flashing when genset failure occurs. After FAULT RESET button is pressed, it should become steady light (if an alarm is still active) or is off (if no alarm is active).</p>
Emergency Stop Button		Stop Genset in case of emergency
Key Switch		ON/OFF Power to the control panel
LED		Common Engine Fault LED
Buzzer		Audible alarm

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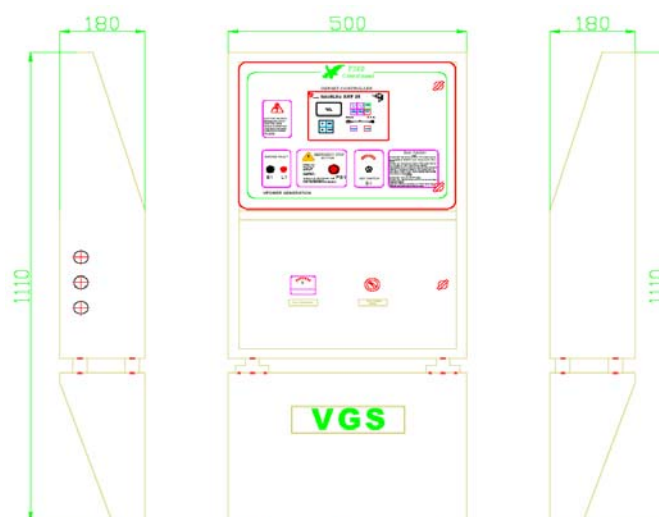
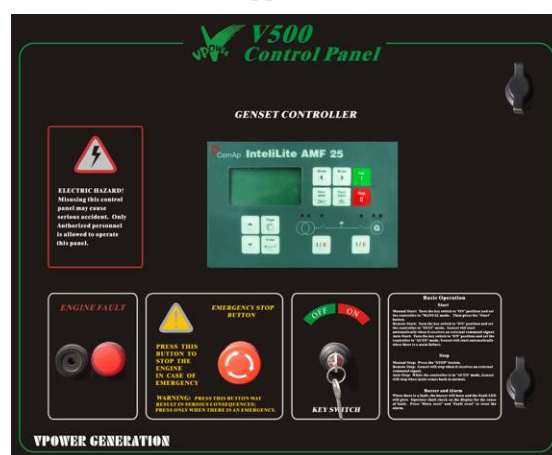
## V500 GENSET CONTROL SYSTEM

- ◆ Genset Output Data Display and Protection
- ◆ Genset Status Display and Protection
- ◆ Genset Remote Start-up and Auto Start-up
- ◆ Power Monitoring System
- ◆ Fault LED Indicators
- ◆ Modular design and expandable

### V500 Genset Control System Features:

InteliLite® Genset Controller features with multiple functions for Genset control, operation and protection. It provides logical control and Graphical LCD display for local or remote applications. These features include:

- (1) Auto/Manual Start-Stop
- (2) Phase sequence detects and protection
- (3) 128\*64 LCD display
- (4) Genset overspeed protection
- (5) Oil pressure display and protection
- (6) Water Temperature display and protection
- (7) DC Volt measurement and Over/Under Volt protect
- (8) Fuel Level detect and alarm
- (9) Engine Idle support
- (10) Lube Oil Timer
- (11) Electrical Measurement
  - a. Active Power
  - b. Reactive Power
  - c. Voltage(L-L/L-N)
  - d. Frequency
  - e. Line Currents
  - f. kWh
  - g. kVAh
- (12) Protections:
  - a. Over/Under Voltage
  - b. Over/Under Frequency
  - c. IDMT Over-current
- (13) LED Indicator for Normal/Breaker Close/Breaker Open/Alarm
- (14) Programmable I/O s
- (15) Hour-run meter
- (16) 100 Event Log
- (17) Support RS232 / Modbus Protocol
- (18) Front Panel IP65 Protection



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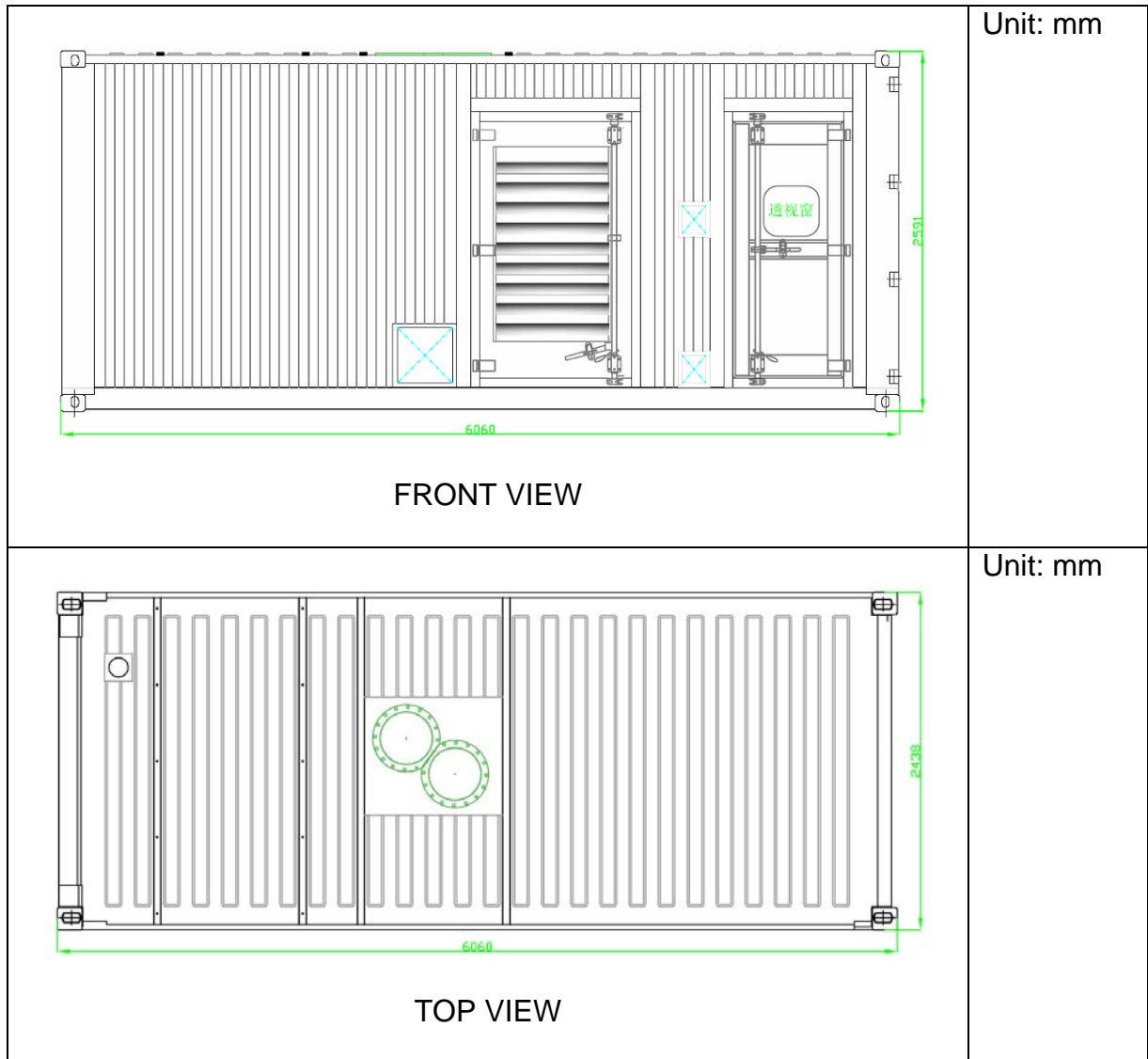
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### GENERATOR SET DRAWING



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