

# PYC690B

**Prime Power: 500KW/625KVA**

**Standby Power: 550KW/688KVA**

**Voltage: 400V**

**Powered by Yuchai YC6TD840-D31 Engine**

## Genset Performance

- 230/400V, 50Hz, 0.8PF, 3 Phases 4 wires
- Frequency drop  $\leq 3\%$
- Voltage regulation  $\leq 0.3\%$
- The steady state frequency  $\leq 0.5\%$
- The steady state voltage deviation  $\leq \pm 1\%$
- The transient frequency deviation  $\leq +10\% \leq -7\%$
- The transient voltage deviation  $\leq +20\% \leq -15\%$
- Frequency recovery time  $\leq 3S$
- Voltage recovery time  $\leq 1S(\text{Voltage} \pm 3\%)$
- THF (Telephone Harmonic Factor)  $< 3$
- TIF (Telephone Influence Factor)  $< 50$
- Comply to Standard NEMA MG1-22.43
- Standard equipped with ambient temperature  $40^{\circ}\text{C}$
- Connecting radiator
- Built-in vibration isolator with high performance on shock absorption.
- Product standards: (1) GB/T 2820-2022 / ISO8528:2018
- (2) GB/T 4712-2008 (3) YD/T 502-2020 (4) YD/T 1051-2018

## Optional Items

- Starting batteries
- Fuel tank
- Oil-water separator
- Sensor for low coolant level, low fuel/oil level
- Automatically monitoring & controlling system of city power
- Coolant heater
- Oil heater
- Heat exchanger--Water cooled tower system
- Silent type/Trailer
- Standardized container
- Design and construction of environmental protection; engineering for the Genset room.

## Standard Configuration

- Guangxi Yuchai Engine
- Brushless synchronous alternator
- POWERTEC intelligent controller
- $40^{\circ}\text{C}$  standard ambient temperature ( $50^{\circ}\text{C}$  Optional)
- Circuit breaker (3P)
- Float battery charger
- Battery connect wire
- Steel base frame
- Silencer, bellows, exhaust bend
- Manual book and files



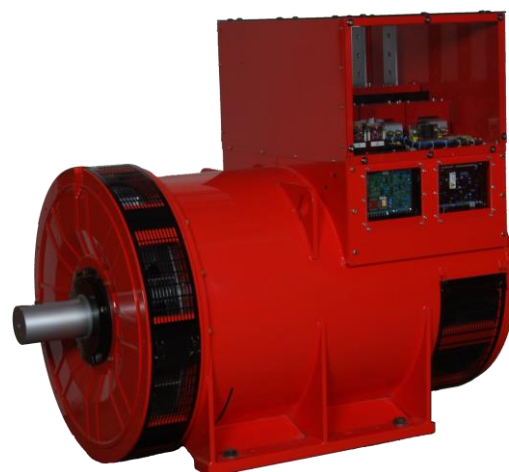
## Diesel Engine

- Model: YC6TD840-D31
- The main structures, such as engine body, are time-tested, which ensures the high reliability of the whole engine.
- Advanced and mature electronic unit pump and high-efficient turbocharged & intercooled technologies are adopted, which ensure precise control of fuel-injection quantity and sufficient air intake; and the full combustion, low fuel consumption and less emission of diesel engine under different load conditions are ensured;
- Full-flow oil cooler is adopted; thus heat dissipation efficiency is increased by 30% and oil temperature is effectively reduced; and the oil can lubricate the parts under reasonable temperature to reduce the friction loss.;
- The structure of one head for one cylinder is adopted, which ensures easy maintenance and reliable sealing;
- The internal cooling oil passage technology is adopted for piston, which effectively reduces piston temperature and ensures the long service life;
- YC6TD series engine is a classic engine product developed by Yuchai, which is well-known and highly recognized in the market and has market holdings of more than 400,000 sets. YC6TD840-D31 engines for generator sets, developed based on YC6TD engines, have advantages such as high reliability, durability, energy-saving and environment-friendly, compact structure, strong transient loading capacity and easy maintenance..



## Alternator

- Optional brands: **Stamford / Marathon / Faraday / Engga / Mecc Alt**
- Brushless, 4 pole rotating magnetic field, single bearing with protective cover.
- Insulation: H Class.
- IP Class: IP23
- Cooling system
- AC exciter, rotate rectifying
- The stator winding is impregnated and the surface is covered with moisture-proof epoxy insulating paint.
- Rotor and exciter made with high temperature insulating resin, to satisfy tough environment.
- Rotor dynamic balancing complies for BS5625, class 2.5
- Sealed with advanced lubricating grease to prolong life of bearing.



## Standard Meters

- 3 phases voltage:  $U_a$ ,  $U_b$ ,  $U_c$
- Frequency  $F1$
- Apparent power  $PR$
- Power factor  $PF$
- Coolant temperature  $WT$
- Temperature  $^{\circ}C$  display
- Oil pressure  $OP$
- Engine speed
- 3 phases current:  $I_a$ ,  $I_b$ ,  $I_c$
- Active power  $PA$
- Power factor  $PF$
- Temperature  $^{\circ}C$  display
- KPa/Psi/Bar display
- Battery voltage  $V$
- Running Hour
- Starting timer:(999999)



## Standard Protection Function

### Genset Protection

- Programmable I/O signal
- Emergency stop

### Engine Protection

- Stop for over speed
- Low oil pressure
- High Coolant temperature
- Sensor fail
- Alarm for low/high battery voltage
- Low battery voltage
- Fail to start/Cranking fail

### Alternator Protection

- Over Voltage
- Over current
- Voltage signal lost
- Over Voltage
- Over frequency
- Under frequency

### Control System Components

- Manual/auto/stop/start
- Setting button
- Fault status indicators
- Screen menu selection button
- Emergency stop button
- Digital displayer



## Communication Interface (Option)

- International standard MODBUS communication protocol RS232/ RS485 is suitable for remote control and monitor; It is easy integrated with SCADA;.

## Genset

|                     |         |
|---------------------|---------|
| Model               | PYC690B |
| Prime Rating (kw)   | 500     |
| Standby Rating (kw) | 550     |
| Rate current(A)     | 902     |
| Power factor        | 0.8     |
| Frequency(Hz)       | 50      |

## Engine

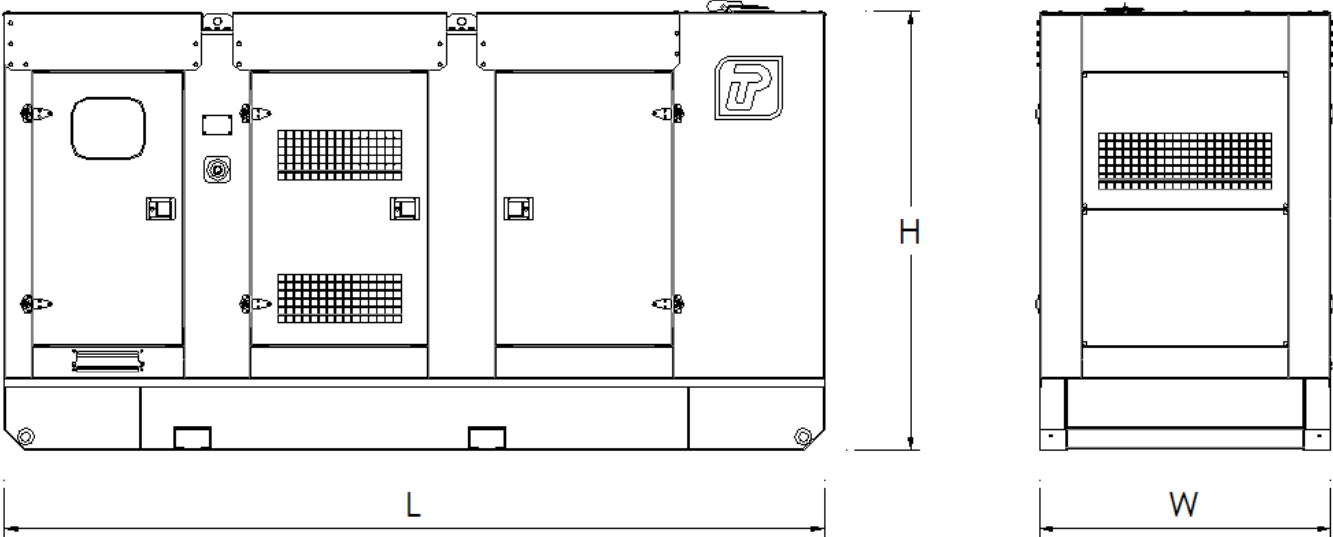
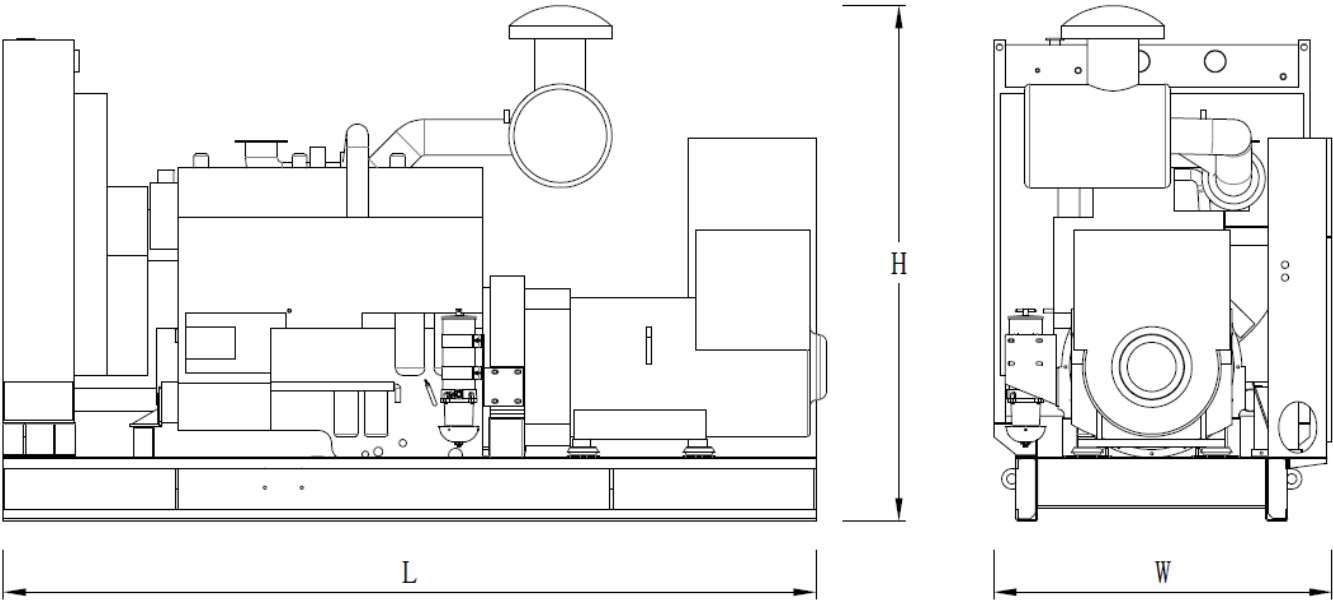
|                                     |                                  |
|-------------------------------------|----------------------------------|
| Engine Model                        | YC6TD840-D31                     |
| Gross Engine output-Prime (kw)      | 561                              |
| Gross Engine output-Standby (kw)    | 616                              |
| Bore * stroke (mm)                  | 152*180                          |
| Cylinders and structure             | 6 In line                        |
| Displacement(Liter)                 | 19.6                             |
| Compression Ratio                   | 14:1                             |
| Intake way                          | Supercharge/Air-Air intercooling |
| Max intake resistance (KPa)         | 5                                |
| Air intake (m3/h)                   | 2286                             |
| Max exhaust back pressure (KPa)     | 10                               |
| Exhaust gas flow (m3/h)             | 6972                             |
| Exhaust temp (°C)                   | 550                              |
| Cooling way                         | Water Radiator & Fan             |
| Fan exhaust flow (m3/min)           | 1160                             |
| Coolant capacity (L)                | 131                              |
| Highest water temperature(°C)       | 97                               |
| Minimum air opening to room (m2)    | 2.8/2.4                          |
| Thermostat range (°C)               | 75-85                            |
| Max oil temperature (°C)            | 120                              |
| Lubrication system oil capacity (L) | 56                               |
| Rate load fuel consumption(L/H)     | 143.2                            |
| Standard Governor/Class             | Electronic unit pump             |
| Emission                            | China Tier 3                     |

## Alternator

|                        |                         |
|------------------------|-------------------------|
| Rated Voltage(V)       | 230/400                 |
| Output Way             | 3 Phases, 4 wires       |
| Rated power factor     | 0.8                     |
| Exciter                | Brushless, Self-exciter |
| Max voltage regulation | ±1%                     |
| Phase                  | 3                       |
| Protection class       | IP21-23                 |
| Insulation class       | H                       |

## Controller

|       |          |
|-------|----------|
| Brand | POWERTEC |
|-------|----------|



| Type        | Dimension (mm)<br>(L*W*H) | Weight<br>(kg) | Fuel Tank Capacity<br>(L) |
|-------------|---------------------------|----------------|---------------------------|
| Open Type   | 3690*1640*1876            | 4500           | —                         |
| Silent Type | 4700*1700*2450            | 6450           | 1100                      |

Contact Us

**Powertec Generator System Inc.**

**Add:** Danshui Yanna Industry Zone, Huiyang, Huizhou, Guangdong, China  
**Tel:** +86 752-3911119 / 3911118  
**Fax:** +86 752-3911110  
**Web:** [www.powertec.com.cn](http://www.powertec.com.cn)  
**Email:** [powertec@powertec.com.cn](mailto:powertec@powertec.com.cn)