



<b>ENGINE</b>
<b>ALTERNATOR</b>
<b>CONTROLLER</b>
<b>CIRCUIT BREAKER</b>

# TMP020

## STANDARD SPECIFICATIONS

### 1. ENGINE

Perkins four(4) stroke heavy duty high performance industrial type diesel engine.

### 2. ENGINE FILTRATION SYSTEM

- Air filter
  - Fuel filter
  - Full flow lube oil filter
- All filters elements are replaceable.

### 3. COOLING RADIATOR

Radiator and cooling fan, complete with safety guards.

### 4. EXHAUST SYSTEM

- Heavy duty Industrial Exhaust
- Noise reduction level : **20 (dBA)**
  - Maximum allowable back pressure: **10.2 (kPa)**

### 5. CIRCUIT BREAKER TYPE

- ABB 3 pole MCB.
- 4 pole CB is Optional

### 6. FUEL SYSTEM

On Generating Sets up to 500 KVA, the base-frame design is integrated with a fuel tank with a capacity of approx. 8 hours running at Full Load.

GENSET TYPE (TMP020)		
OUTPUT RATINGS	Ratings at 80% Power Factor	
400-415 V, 3 ph., 50 Hz, 1500 rpm	<b>Prime</b>	<b>Standby</b>
	20 KVA	22 KVA
	<b>16.0 kW</b>	<b>17.6 kW</b>

**Prime Power:** These ratings apply to producing continuous electrical power (at varying load) instead of commercially received electricity. 10% overload power is provided for one(1) hour every 12 hours of continuous operation.

**Standby Power:** These ratings apply to providing continuous electrical power (at variable load) in the case of a utility power outage. Overload is not allowed on these ratings.

ENGINE / TECHNICAL DATA		
Engine Make & Model	Perkins 404A-22G1	
Governor Type	Mechanical	
Number of Cylinders & Arrangement	4 Vertical in line	
Bore and Stroke mm	84x100	
Displacement / Cubic Capacity liters	2.216	
Induction System	Naturally Aspirated	
Cycle	4 stroke	
Combustion System	Indirect Injection	
Compression Ratio	23.3:1	
Rotation	Anti-clockwise (viewed from flywheel)	
Coolin System	Water - cooled	
Frequency and Engine Speed	50Hz / 1500rpm	
	<b>Prime</b>	<b>Standby</b>
Gross Engine Power kW (hp)	18.7 (25,1)	20.6 (27.6)
Fuel Consumption @ 50% load L/hr.	2.9	-
@ 75% load L/hr.	4	-
@100% load L/hr.	5.3	6.1
Total Lubrication System Capacity liters	10.6	10.6
Total Coolant Capacity (inc. radiator) liters	7,0	7
Exhaust Temperature: °C	445	505
Radiator Cooling Air Flow (Min): m³/sec	0.59	0.59
Combustion Air Flow: m³/min	1.45	1.45
Exhaust Gas Flow: m³/min	3.64	3.94

Alternator Data	
Make	Leroy Somer
Model	TAL 040F
No. of bearings	1
Insulation class	H
Total Harmonic Content	At no load <3.5% On-Load <5%
Ingress Protection	IP23
Excitation System	SHUNT
Winding Pitch	2/3
AVR Model	R120
Overspeed	2250 RPM
Voltage Regulation (steady)	± 1%
Short Circuit Capacity	-

Control Panel Details (Standard)	
Make	DSE
Model	<b>DSE6110</b>
<p>The DSE6110 is an Auto Mains (Utility) Failure Control Module .</p> <p>This module can either be programmed using the front panel or by using the DSE configuration suite PC software.</p> <p>Metering and Alarm indications not limited to:</p> <ul style="list-style-type: none"> <li>• Generator frequency</li> <li>• Under-speed, Overspeed</li> <li>• Generator current</li> <li>• Engine oil pressure</li> <li>• Engine coolant temperature</li> <li>• Fuel level (Warning or shutdown) - Optional</li> <li>• Battery volts</li> <li>• Fail to start/stop</li> <li>• Emergency stop</li> <li>• Failed to reach loading voltage/frequency</li> <li>• Charge fail</li> <li>• Loss of magnetic pick-up signal - Optional</li> <li>• Low DC voltage</li> </ul>	

DIMENSIONS AND WEIGHT ( OPEN TYPE )				
Length cm	Width cm	Height cm	Weight kg (with oil and coolant)	Fuel Tank (liters)
149	52	112	533	51



**TMS020 65 dBA @ 1 Meter**



**TMS020 75 dBA @ 3 Meters**

**SOUND REDUCTION LEVEL:**

- Tow(2) options are available:
  1. 65 dBA @ 1 meter
  2. 75 dBA @ 3 meters

**TRANSPORTABILITY AND MOVEABILITY:**

- Multiple points lifting facility
- Dragging points at base-frame

**GENERAL SPECIFICATIONS :**

- Unique appearance with high sound absorbing and thermal properties.
- Vertically hinged allow 180° opening rotation and retention with door stays.
- Lockable access doors which give full access to control panel and breaker.
- High quality locks and hinges.
- Internal emergency stop is standard with optional external emergency stop.
- Full weather proof enclosure and suitable operations in harsh conditions.
- Manufactured from galvanized metal sheet for doors & louvers.

**DIMENSIONS AND WEIGHT (Closed Type 65 dBA @ 1 meter)**

Length cm	Width cm	Height cm	Weight kg (with oil and coolant)	Fuel Tank liters
230	90	155	1038	40

**DIMENSIONS AND WEIGHT (Closed Type 75 dBA @ 3 meters)**

Length cm	Width cm	Height cm	Weight kg (with oil and coolant)	Fuel Tank liters
200	80	115	821	85

**AVAILABLE OPTIONS & ACCESSORIES**

We offer a variety of additional features, accessories, and other technical specifications to customize our generating sets to match our customers' power requirements.

**OPTIONS ACCESSORIES NOT LIMITED TO:**

- A variety of GenSet control and synchronizing panels
- Additional protection alarms and shutdowns
- Water fuel separator
- Water jacket heater
- Battery charger
- Genuine spare parts
- Load banks
- Auxiliary fuel tanks
- Manual & automatic transfer switches

**7. ALTERNATOR**

**Based on the manufacturer specs:**

**7.1 INSULATION SYSTEM**

- The insulation system is Class H.
- All windings are impregnated in either a triple dip thermosetting liquid, oil and acid resisting polyester varnish or vacuum pressure impregnated with a special polyester resin.
- Heavy coat of antitracking varnish additional protection against moisture or condensation.

**7.2 AUTOMATIC VOLTAGE REGULATOR (AVR)**

The fully sealed Automatic Voltage Regulator maintains the Voltage Regulation at ±1%. Nominal adjustment by means of a trim pot incorporated on the AVR.

**7.3 MOTOR STARTING**

An overload capacity equivalent to 300% of the Full Load impedance at zero Power Factor can be sustained for 10 seconds, when PMG option is fitted.

**8. MOUNTING ARRANGEMENT**

**8.1 BASE-FRAME**

The complete Generating Set is mounted as a whole on a heavy duty fabricated steel Base-frame.

**8.2 COUPLING**

The Engine and Alternator are directly coupled. The Engine flywheel is flexibly connected to the alternator rotor.

**8.3 ANTI-VIBRATION MOUNTING PADS**

Anti-Vibration pads are fasten between the Engine / Alternator feet and the Base-frame.

**8.4 SAFETY GUARDS**

The Fan and Fan Drive, as well as the Battery Charging Alternator, are Safety Guard protected for the safety of the personnel.

**9. FACTORY TESTS**

- Before delivery, the generating set is load tested.
- Site load conditions and all protective device control functions are simulated.
- Before delivery, the generator and its systems are checked.

**10. EQUIPMENT FINISHING**

To provide the highest level of durability and scuff resistance, all mild steel components are completely degreased and coated.

**11. DOCUMENTATIONS**

- Operation & Maintenance manual,
- Circuit wiring diagrams and,
- Commissioning accompanied with the Generator.

**13. WARRANTY**

All of the Generating Sets are covered under a warranty policy for a period of 12 months or One Thousand Hours Run Time (1000hrs.). Warranty of the equipment is in line with manufacturers warranty terms & conditions.

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