ENGINEERING SOLUTIONS
Customized Power Technology

(50 Hz) CPT 176KR5

Gensets
Small Range

kirloskar

Nidec
All for dreams
LEROY-SOMER

NOTES

1. The applicable voltage range is 380V to 415V for 50 Hz application. For other voltages, Please consult the factory

2. This generating set is of fixed speed of 1500 rpm.

3. (160 kVA) is the prime power rating of the generating set is where a variable loadand unlimited hour usage are appliedwith an average load factor of 80% of the prime rating over each 24-hour period. Noting that a 10% overload is permitted for 1 hour in every 12-houroperation.

4. (176 kVA) is the standby power ratingof the generating set is where a variableload limited to an annual usage up to 500hours is applied, with 300 hours of whichmay be continuous running. Noting that no overload is permitted.

Certifications

The complete Generating Set is type-tested according to ISO 8528-8 Standard

The control panel is certified by an ISO 17025 accredited laboratory to have IP55 according to IEC 60355

Quality ISO 9001 SAI GLOBAL

Dimensions*

	Open Type	Close Type
Length (mm)	2700	3400
Width (mm)	800	1400
Height (mm)	1520	1794
Weight (kg)	1800	2393

* Dimensions may be changed as per each project case

PF 0.8 @ Ratings		Prime Rating	Stand-by Rating
Voltage	Frequency	128 kWe	140.8 kWe
230/400 V	50 Hz	160 kVA	176 kVA

The above ratings represent the generating set capability guaranteed within ±3% at the reference conditions equivalent to those specified in ISO 8528/1 standard.

Engine Technical Data

Make & Model	Kirloskar 6K1080TA
Standby / Prime Gross Power kWm (hp)	161.9 / 147.2 (220 / 200)
Cylinders & arrangement	6 in-line
Bore & Stroke (mm)	105 & 125
Induction system	Turbocharged After cooled
Cycle	4 Stroke
Compression ratio	17.5 : 1
Cooling system	Water cooled
Displacement	6.48 liters
Lube oil capacity	21 liters
Coolant Capacity	54 liters
Standard governor	Electronic
Engine speed	1500 rpm
Fuel consumption (l/h) @ 100% load	34
Fuel consumption (l/h) @ 75% load	25
Radiator Cooling air flow m3/s	TBA
Emissions regulations	Non Regulated
Exhaust temperature °C (max)	550
Max Exhaust gas flow (m3/min)	TBA
Max. allowed back pressure (kpa)	TBA

The above performance data are valid as per the following specs:
- Diesel Fuel is according to BS2869 Class A2 or equivalent.
- Lubricating oil is according to Grade SAE 15W-40 API CI4.
- The coolant should be 50% antifreeze and 50% fresh water.

Alternator Technical Data

MAKE & MODEL	LEROY SOMER	TAL 044 K	
Frequency / No. of poles	50 Hz / 4P	Winding pitch	2/3
Ingress protection	IP23	AVR model	R120
Insulation class	H	Overspeed	2250 R.P.M
Terminals (Optional)	6 (12)	Voltage regulation	± 1 %
Excitation system	Shunt	Air flow	0.29 m^3/s

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Control Panel Specifications

Control panel with (DSE6110 MKII) is an automatic start generating set panel of microprocessor-based design which is capable of interfacing with electronic engine through the can-bus. It is fully configurable by front fascia buttons and PC software as well. If Mains voltage is to be monitored, Auto Mains Failure, So DSE6120MKII shall be offered.
Circuit Breaker is mounted inside the panel 3 Pole as standard and 4 Pole can be offered.

Construction

Sheet fabrication	CNC shearing & bending
Paint type	Epoxy painted
Paint application	Oven Spray
Durability tests	• IMPACT [EN ISO 6272] • Salt spray resistance [ASTM B117-73] • Humidity Resistance [ASTM D2247]
Compliance	• Panel is compliant with [ISO8528-8] • Clearance & Creepage [IEC60355-1] • Leakage current & Dielectric strength [IEC60355-1] • Protection against electric shock [IEC600 364-4-41]
Degree of Protection	IP44
Wire crimping	• Crimping force up to 20KN • Accuracy of 0.01mm • Each crimping is checked by Komax CFA+
Wire coding	• Wires are coded by wire color and cross-section • Wires are coded by printed numbers • Wires are coded by printed function of the wire

Protection (standard) (Optional Note[1,3])

Over /Under AC voltage	High oil temperature
Over /Under Frequency	High exhast temperature
Delayed Over current	Low fuel pressure
Short-circuit	Low coolant pressure
Over kW	Low fuel level
High Engine Temperature	Low oil level
Low oil pressure	High winding temperature
Maintenance Alarm	High bearing temperature
High/Low Battery voltage	Low bost pressure
Low coolant level * *Note 2*	Fusible link fire protection
	Low coolant temperature

Control (standard) (Optional Note[1])

Remote start input	Battery Changer: 5A, 10A , UL
Emergency Stop button	Fuel pump control
Common Alarm volt-free contact	Extension:
Event log (50 events)	Ethernet –Modbus TCP
Weekly Exerciser	RS485- Modbus RTU
Audible Alarm	Webnet – GPS tracker
Standard CANbus J1939	
Preheat control	

Instrumentation (standard) (Optional Note[1,3])

Gen AC Voltage: 3ph VLL & VLN	Lube oil temperature
Gen Frequency: Hz	Exhaust temperature
Gen Current: 3 phase A	Engine Inlet air (Boost) pressure
Power: KW, KVA, KVAR & PF	Charging ammeter
Energy: KWhr, KVAhr, KVARhr	Fuel pressure
Lube Oil pressure	Coolant pressure
Engine coolant temperature	Fuel level
Battery DC Voltage	Lube oil level
DC Alternator Voltage	Winding temperature 3xRTD
Engine Speed	Bearing temperature RTD
Operating hours	

Note 1: some OPTIONAL features could be standard if CANbus is established within electronic engines.
Note 2: Low coolant level protection is standard feature for Gensets above 200 kVA, otherwise it is optional.
Note 3: There is limitation in the number of protections and measurements that can be offered with control panel.

Other types of control Panels & Modules can be offered according to required specifications (DSE 7310/20, 7410/20, 8610, 8810 and Others)

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Genset Standard Features

Assembly:

Gensets are assembled at CPT Factory at Badr, Cairo in compliance with ISO 8528-8 standard.

Fabrication:

- The engine/alternator assembly rests on skid with Anti-vibration mounting pads.
- The skid is made up of durable sheet metals and beams exceeding “Vibration & Torsion” Resistance Norms.
- A skid built in Fuel Tank is supplied as a standard for Gen-sets up to 700 kVA with fuel gauge, filler cap, fuel inlet and outlet hoses.
- The control panel enclosure is made up of metal sheet .

Paint:

- The skid and control panel enclosure are painted with Primer Zinc rich, Zince epoxy, then last layer as Acrylic - KAPCI.
- Paints passed durability tests conforming to international quality standards.
- Impact (EN ISO 6272)
- Salt Spray Resistance (ASTM B117-73)- Humidity Resistance (ASTM D2247)

Works-Testing:

- All Gensets are tested at factory prior to dispatch.
- Test is automatically generated and checked according to ISO8528
- Test certificate is issued for each Genset.

Equipment:

- Water cooled Radiator with belt driven blower fan and full guarding.
- Electric starter with solenoid Relay.
- Battery Charging Alternator.
- Energized to run solenoid.
- Replaceable fuel, oil and air filter.
- Heavy duty lead acid battery with matching capacity (Amps & CCA).
- One loose supplied Industrial Exhaust Silencer – 16 DB noise reduction level. (Residential silencer as optional)

Documentation:

- User Manual for Operation, Installation and Maintenance guidance
- Wring Diagram
- Test Report
- Maintenance Schedule
- Catalogues for Engine, Alternator & AVR

Genset Optional Features

- Manual & Automatic Transfer Switches,
- Synchronizing & Totalizing Panels
- Fuel / water separator filter
- Water jacket heater (pre-heating system)
- Oil heater
- Fuel heater
- Battery heater
- Anti-condensation Heater
- Air Shut-off Valve
- Oil Sampler
- Pre-lube Oil Pump

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