

Features:

- Excitation system: self-excited (AREP and PMG are optional)
- ATS (automatic transfer switch) receptacle
- Lockable battery isolator switch
- Stainless galvanized zinc plates with strong corrosion resistance
- Vibration isolators between the engine/alternator and base frame
- Integrated wiring design
- Base fuel tank for at least 8 hours running
- Equipped with an industrial muffler
- Engine oil pump
- 50 C radiator
- Top lifting and steel base frame with forklift holes
- Drainage for fuel tank
- Complete protection functions and safety labels
- IP44 (soundproof sets), IP54 (control system)
- Water jacket preheater, oil heater and double air cleaner, etc. are available.



Output Ratings

| Generating Set Model | Prime | Standby |
|----------------------|--------------|--------------|
| WCS220/S | 200kVA/160kW | 220kVA/176kW |

Ratings at 0.8 power factor.

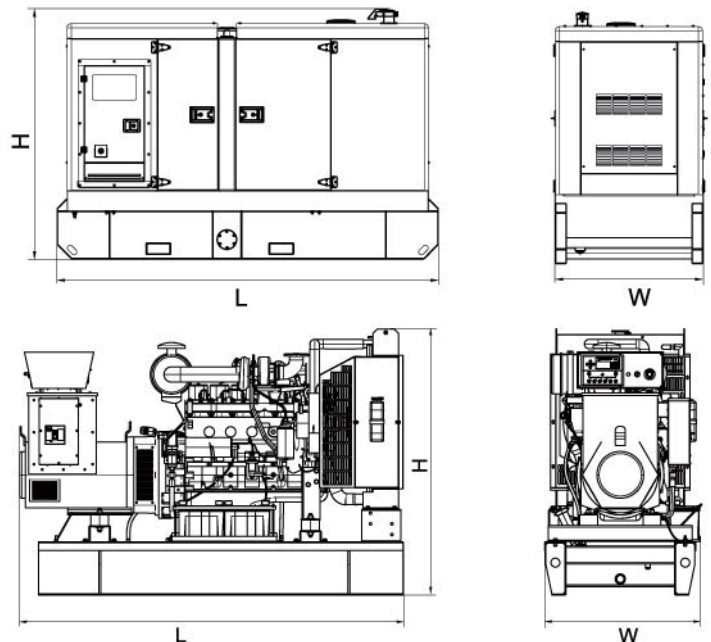
Ratings and Performance Data

| | | |
|---------------------------------|--------------------|------|
| Engine Make & Model: | QSB7-G5 | |
| Alternator Model: | UCI274H | |
| Alternator Brand: | STAMFORD | |
| Control System: | PLC-920 / PLC-7420 | |
| Noise Level@7m: | 64.4-75.2 | |
| Frequency & Phase: | 50Hz & 3PH | |
| Engine Speed: RPM | 1500 | |
| Structure Type: | WCS220 | A |
| | WCS220S | R |
| Fuel Tank Capacity: L | WCS220 | 330 |
| | WCS220S | 500 |
| Fuel Consumption: l/h | at 100% load | 42.8 |
| | at 75% load | 34.2 |

Dimensions and Weights

| Generating Set Model | Length (L) mm (in) | Width (W) mm (in) | Height (H) mm (in) | Dry kg (lb) |
|----------------------|-----------------------|----------------------|-----------------------|----------------|
| WCS220 | 2450 | 1000 | 1695 | 1810 |
| WCS220S | 3450 | 1150 | 1750 | 3110 |

Dry = With Lube Oil Wet = With Lube Oil and Coolant



Also available in the following voltages: 415/240V-380/220V-220/127V-200/115V;

ESP: Standby Power Standby duty, operation under variable load, without over load;

PRP: Prime Power-Continuous duty operation, under variable load 24/24h-10% over load permissible 1 hour/12 hours;

The data is only for your reference but not for use of sales.

M: Mechanical speed governor, E/EUCU: Electronic speed governor;

NA: Naturally aspirated, TC: Turbocharged, TCA: Turbocharged and air-air aftercooled, TCW: Water-cooled Turbocharged;

The weights are approximate and without fuel.

Engine model: QSB7-G5

GENERAL ENGINE DATA

| | | | |
|--|--|------|--------|
| Type | 4-Cycle; In-line; 6-Cylinder Diesel | | |
| Aspiration | Turbocharged and Charge Air Cooled | | |
| Bore x Stroke | 4.21 x 4.88 (107 x 124) | | |
| Displacement | 408 (6.69) | | |
| Compression Ratio..... | 17.2 : 1 | | |
| | | | |
| Dry Weight (Approximate), Fan to Flywheel Engine..... | — lb (kg) | 1047 | (475) |
| Wet Weight (Approximate), Fan to Flywheel Engine..... | — lb (kg) | 1069 | (485) |
| | | | |
| Moment of Inertia of Rotating Components | | | |
| • with FW 9857 Flywheel | — lb _m • ft ² (kg • m ²) | 24.7 | (1.55) |
| • with FW 9878 Flywheel..... | — lb _m • ft ² (kg • m ²) | 36.8 | (2.47) |
| Center of Gravity from Rear Face of Block..... | — in (mm) | 13.7 | (348) |
| Center of Gravity Above Crankshaft Centerline | — in (mm) | 5.91 | (150) |
| Maximum Static Loading at Rear Main Bearing..... | — lb (kg) | N/A | (N/A) |

ENGINE MOUNTING

| | | | |
|--|-------------------|------|--------|
| Maximum Bending Moment at Rear Face of Block | — lb • ft (N • m) | 1000 | (1356) |
|--|-------------------|------|--------|

EXHAUST SYSTEM

| | | | |
|----------------------------|---------------|---|--------|
| Maximum Back Pressure..... | — in Hg (kPa) | 3 | (10.2) |
|----------------------------|---------------|---|--------|

AIR INDUCTION SYSTEM

| | | | |
|-----------------------------------|-----------------------------|----|-------|
| Maximum Intake Air Restriction | | | |
| • with Dirty Filter Element | — in H ₂ O (kPa) | 25 | (6.2) |
| • with Clean Filter Element..... | — in H ₂ O (kPa) | 15 | (3.7) |

COOLING SYSTEM

Jacket Water Circuit Requirements

| | | | |
|--|------------------|---------|-----------|
| Coolant Capacity — Engine Only | — US gal (litre) | 2.7 | (10.2) |
| Maximum Static Head of Coolant Above Engine Crank Centerline | — ft (m) | 60 | (18.3) |
| Standard Thermostat (Modulating) Range | — °F (°C) | 175-203 | (79-95) |
| Minimum Pressure Cap..... | — psi (kPa) | 15 | (103) |
| Maximum Top Tank Temperature for Standby / Prime Power | — °F (°C) | 233/225 | (112/107) |
| Maximum Coolant Friction Head External to Engine | — psi (kPa) | 5 | (35) |

Charge Air Cooler Requirements

| | | | |
|--|---------------|-------|------------|
| Maximum Temp. Rise Between Engine Air Intake and Intake Manifold - 1500/1800 rpm | — °F (°C) | 45 | (25) |
| Maximum Air Pressure Drop from Turbo Air outlet to Intake Manifold - 1500/1800 rpm . | — in Hg (kPa) | 2.5/4 | (8.5/13.5) |
| Maximum Intake Manifold Temperature @ 77 °F (25 °C) ambient - 1500/1800 rpm | — °F (°C) | 122 | (50) |
| Maximum Intake Manifold Temperature for engine protection (Shut Down Threshold) | — °F (°C) | 203 | (95) |

LUBRICATION SYSTEM

| | | | |
|---|------------------|---------|-------------|
| Oil Pressure @ Idle Speed..... | — psi (kPa) | 10 | (69) |
| @ Governed Speed | — psi (kPa) | 40-60 | (276-414) |
| Maximum Oil Temperature..... | — °F (°C) | 280 | (138) |
| Oil Capacity with OP 9457 Oil Pan : Low - High..... | — US gal (litre) | 4.0-4.6 | (15.1-17.4) |
| Total System Capacity (Including Filter) | — US gal (litre) | 5.0 | (18.9) |

Engine model: QSB7-G5

FUEL SYSTEM

| | |
|--|--------------|
| Type Injection System | Bosch HPCR |
| Maximum Restriction at Lift Pump(clean/dirty filter)..... — in Hg (kPa) | 5/10 (17/34) |
| Maximum Allowable Head on Injector Return Line (Consisting of Friction Head and Static Head) — in Hg (kPa) | 6 (20) |
| Maximum Fuel Flow to Injector Pump | 28 (106) |
| Maximum Return Fuel Flow | 27 (103) |
| Maximum Fuel Inlet Temperature | 160 (71) |

ELECTRICAL SYSTEM

| | | | |
|--|-----------|-------|-------|
| Cranking Motor (Heavy Duty, Positive Engagement) | — volt | 12 | 24 |
| Battery Charging System, Negative Ground | — ampere | 100 | 70 |
| Maximum Allowable Resistance of Cranking Circuit | — ohm | 0.001 | 0.002 |
| Minimum Recommended Battery Capacity | | | |
| • Cold Soak @ 0 °F to 32 °F (-18 °C to 0 °C) | — 0°F CCA | 1100 | (550) |

COLD START CAPABILITY

| | | | |
|---|-----------|----|-------|
| Minimum Ambient Temperature for NFPA 110 Cold Start (90 degree F Coolant Temperature) | — °F (°C) | 40 | (4) |
| Minimum Ambient Temperature for Unaided Cold Start | — °F (°C) | 10 | (-12) |

PERFORMANCE DATA

- All data is based on:
- Engine operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer; not included are battery charging alternator, fan, and optional driven components.
 - Engine operating with fuel corresponding to grade No. 2-D per ASTM D975.
 - ISO 3046, Part 1, Standard Reference Conditions of:

| | |
|---|---------------------------------|
| Barometric Pressure : 100 kPa (29.53 in Hg) | Air Temperature : 25 °C (77 °F) |
| Altitude : 110 m (361 ft) | Relative Humidity : 30% |

| | | | |
|---|-------|-----|------|
| Steady State Stability Band at Any Constant Load | — % | +/- | 0.25 |
| Estimated Free Field Sound Pressure Level of a Typical Generator Set; | | | |
| Excludes Exhaust Noise; at Rated Load and 7.5 m (24.6 ft); @1800 rpm..... | — dBA | | 88 |
| Exhaust Noise at 1 m Horizontal from Centerline of Exhaust Pipe Outlet Upwards at 45 °..... | — dBA | | 95.2 |

| | |
|---|------------------|
| Governed Engine Speed | rpm |
| Engine Idle Speed..... | rpm |
| Gross Engine Power Output..... | hp (kW) |
| Brake Mean Effective Pressure..... | psi (kPa) |
| Piston Speed | ft/min (m/s) |
| Friction Horsepower..... | hp (kW) |
| Engine Water Flow at Stated Friction Head External to Engine: | |
| • 2.5 psi Friction Head..... | US gpm (litre/s) |
| • Maximum Friction Head | US gpm (litre/s) |

| | STANDBY POWER | | PRIME POWER | |
|--|---------------|------------|-------------|------------|
| | 60 hz | 50 hz | 60 hz | 50 hz |
| | 1800 | 1500 | 1800 | 1500 |
| | 700 - 900 | 700 - 900 | 700 - 900 | 700 - 900 |
| | 324 (242) | 285 (213) | 279 (208) | 244 (182) |
| | 349 (2404) | 368 (2537) | 300 (2070) | 315 (2172) |
| | 1464 (7.4) | 1220 (6.2) | 1464 (7.4) | 1220 (6.2) |
| | 25 (19) | 19 (14) | 25 (19) | 19 (14) |
| | | | | |
| | 38 (2.4) | 32 (2.0) | 38 (2.4) | 32 (2.0) |
| | 33 (2.1) | 26 (1.6) | 33 (2.1) | 26 (1.6) |
| | | | | |
| | 569 (269) | 448 (212) | 541 (256) | 434 (205) |
| | 988 (532) | 1041 (561) | 907 (487) | 1011 (544) |
| | 1549 (732) | 1265 (597) | 1342 (634) | 1205 (569) |
| | 22.6:1 | 20.6:1 | 25.1:1 | 22.5:1 |
| | 1342 (24) | 1163 (21) | 1154 (21) | 1032 (19) |
| | 4858 (86) | 4475 (79) | 4231 (75) | 3932 (70) |
| | 10734 (189) | 9261 (163) | 9078 (160) | 8542 (151) |
| | 52 (1) | 44 (1) | 39 (1) | 32 (1) |
| | 2786 (49) | 2041 (36) | 2499 (44) | 1893 (34) |
| | 42 (19) | 33 (15) | 39 (18) | 32 (15) |
| | 35 (239) | 31 (214) | 32 (219) | 29 (199) |
| | 399 (204) | 379 (193) | 376 (192) | 363 (184) |

Engine Data

| | |
|---|-----------------|
| Intake Air Flow | cfm (litre/s) |
| Exhaust Gas Temperature | °F (°C) |
| Exhaust Gas Flow | cfm (litre/s) |
| Air to Fuel Ratio..... | air : fuel |
| Radiated Heat to Ambient | BTU/min (kW) |
| Heat Rejection to Jacket Coolant..... | BTU/min (kW) |
| Heat Rejection to Exhaust | BTU/min (kW) |
| Heat Rejected to Fuel | BTU/min (kW) |
| Heat Rejected to Aftercooler..... | BTU/min (kW) |
| Charge Air Flow..... | lb/min (kg/min) |
| Turbocharger Compressor Outlet Pressure | psi (kPa) |
| Turbocharger Compressor Outlet Temperature..... | °F (°C) |

N.A. - Not Available
 N/A - Not Applicable to this Engine
 TBD - To Be Determined

Alternator model: UC1274H

| | | | | | | | | |
|--|--|---------|--------------------------|---------|------------------------------------|---------|---------|---------|
| CONTROL SYSTEM | SEPARATELY EXCITED BY P.M.G. | | | | | | | |
| A.V.R. | MX321 | MX341 | | | | | | |
| VOLTAGE REGULATION | ± 0.5 % | ± 1.0 % | With 4% ENGINE GOVERNING | | | | | |
| SUSTAINED SHORT CIRCUIT | REFER TO SHORT CIRCUIT DECREMENT CURVES (page 7) | | | | | | | |
| CONTROL SYSTEM | SELF EXCITED | | | | | | | |
| A.V.R. | SX460 | AS440 | | | | | | |
| VOLTAGE REGULATION | ± 1.0 % | ± 1.0 % | With 4% ENGINE GOVERNING | | | | | |
| SUSTAINED SHORT CIRCUIT | SERIES 4 CONTROL DOES NOT SUSTAIN A SHORT CIRCUIT CURRENT | | | | | | | |
| INSULATION SYSTEM | CLASS H | | | | | | | |
| PROTECTION | IP23 | | | | | | | |
| RATED POWER FACTOR | 0.8 | | | | | | | |
| STATOR WINDING | DOUBLE LAYER CONCENTRIC | | | | | | | |
| WINDING PITCH | TWO THIRDS | | | | | | | |
| WINDING LEADS | 12 | | | | | | | |
| STATOR WDG. RESISTANCE | 0.0155 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED | | | | | | | |
| ROTOR WDG. RESISTANCE | 1.82 Ohms at 22°C | | | | | | | |
| EXCITER STATOR RESISTANCE | 20 Ohms at 22°C | | | | | | | |
| EXCITER ROTOR RESISTANCE | 0.091 Ohms PER PHASE AT 22°C | | | | | | | |
| R.F.I. SUPPRESSION | BS EN 61000-6-2 & BS EN 61000-6-4, VDE 0875G, VDE 0875N. refer to factory for others | | | | | | | |
| WAVEFORM DISTORTION | NO LOAD < 1.5% NON-DISTORTING BALANCED LINEAR LOAD < 5.0% | | | | | | | |
| MAXIMUM OVERSPEED | 2250 Rev/Min | | | | | | | |
| BEARING DRIVE END | BALL. 6315-2RS (ISO) | | | | | | | |
| BEARING NON-DRIVE END | BALL. 6310-2RS (ISO) | | | | | | | |
| | 1 BEARING | | | | 2 BEARING | | | |
| WEIGHT COMP. GENERATOR | 626 kg | | | | 641 kg | | | |
| WEIGHT WOUND STATOR | 253 kg | | | | 253 kg | | | |
| WEIGHT WOUND ROTOR | 227.53 kg | | | | 216.57 kg | | | |
| WR ² INERTIA | 1.9349 kgm ² | | | | 1.8843 kgm ² | | | |
| SHIPPING WEIGHTS in a crate | 659 kg | | | | 673 kg | | | |
| PACKING CRATE SIZE | 123 x 67 x 103 (cm) | | | | 123 x 67 x 103 (cm) | | | |
| | 50 Hz | | | | 60 Hz | | | |
| TELEPHONE INTERFERENCE | THF<2% | | | | TIF<50 | | | |
| COOLING AIR | 0.514 m ³ /sec 1090 cfm | | | | 0.617 m ³ /sec 1308 cfm | | | |
| VOLTAGE SERIES STAR | 380/220 | 400/231 | 415/240 | 440/254 | 416/240 | 440/254 | 460/266 | 480/277 |
| VOLTAGE PARALLEL STAR | 190/110 | 200/115 | 208/120 | 220/127 | 208/120 | 220/127 | 230/133 | 240/138 |
| VOLTAGE SERIES DELTA | 220/110 | 230/115 | 240/120 | 254/127 | 240/120 | 254/127 | 266/133 | 277/138 |
| kVA BASE RATING FOR REACTANCE VALUES | 200 | 200 | 200 | N/A | 237.5 | 245 | 245 | 255 |
| X _d DIR. AXIS SYNCHRONOUS | 2.11 | 1.91 | 1.77 | - | 2.50 | 2.31 | 2.11 | 2.02 |
| X' _d DIR. AXIS TRANSIENT | 0.18 | 0.16 | 0.15 | - | 0.21 | 0.19 | 0.18 | 0.17 |
| X'' _d DIR. AXIS SUBTRANSIENT | 0.12 | 0.11 | 0.10 | - | 0.14 | 0.13 | 0.12 | 0.11 |
| X _q QUAD. AXIS REACTANCE | 1.28 | 1.15 | 1.07 | - | 1.53 | 1.41 | 1.29 | 1.23 |
| X'' _q QUAD. AXIS SUBTRANSIENT | 0.17 | 0.15 | 0.14 | - | 0.20 | 0.18 | 0.17 | 0.16 |
| X _L LEAKAGE REACTANCE | 0.08 | 0.08 | 0.07 | - | 0.10 | 0.09 | 0.08 | 0.08 |
| X ₂ NEGATIVE SEQUENCE | 0.13 | 0.12 | 0.11 | - | 0.16 | 0.15 | 0.13 | 0.13 |
| X ₀ ZERO SEQUENCE | 0.08 | 0.08 | 0.07 | - | 0.10 | 0.09 | 0.08 | 0.08 |

WCS220 / WCS220S

Control System PLC-920 (Optional)

PowerLink PLC-920 generator controllers integrating digital, intelligent and network techniques are used as the automatic control systems for diesel generators. It can carry out functions including pre-alarm, warning & electrical trip, fail monitoring and controls etc.

FUNCTION

Pre-Alarm

- Engine temperature
- Oil pressure
- Over/under voltage
- Over/under frequency
- Over/under speed

Warning & Electrical trip

- Over current
- Short circuit

Error

- Over/under speed
- Speed loss
- Battery low voltage
- Battery high voltage
- Maintenance
- Over current
- Short circuit
- Engine stop
- CAN bus
- Charge alternator

Controls

- Fuel and stop solenoid
- ECU power and stop
- Starter motor
- Automatic generator start
- Preheat
- External alarm horn
- Engine cooling
- Idle mode

Fail monitoring

- Emergency stop
- Multiple engage fail
- Failed to start
- Low oil pressure
- High temperature
- Speed failure
- Voltage
- Charging fail
- Shutdown
- Warning



FEATURES

- Largest back-lit icon display in its class
- Extremely efficient power save mode
- 3 configurable analogue/digital inputs
- Configurable staged loading outputs
- 15 events log
- LCD alarm indication
- Configurable remote start input
- Power factor measurement for 3 phases
- 3 phase Load current measurement
- 3 phase alternator voltage measurement
- Configurable 4 inputs and 8 outputs
- Engine run-time scheduler
- Engine hours counter
- Automatic start control
- CAN and alternator speed sensing in one variant
- Active, Reactive, Apparent power measurement
- Fully configuration via the fascia or PC using USB communication
- Motoring Engine Speed, Coolant Temperature, Oil Pressure and Fuel Level

SPCIFICATION

- Dimensions: 140mm*113mm*43mm
- Panel cut-out: 118mm*92mm
- Protection: IP65 at front panel
- Weight: approximately 0.16kg
- Operating temperature: -30 °C to 70 °C
- DC battery supply voltage: 8 to 35V
- Max. operating current: 85mA at 12V
96mA at 24V
- CT secondary: 5A
- Flexible sensor measurement:
Full scale: 480ohm;
Accuracy: ±2%FS; Resolution: 1%

Control System function list

| MODEL | PLC-920 | PLC-7420 |
|--|---------|----------|
| General accessory | | |
| AVR | ● | ● |
| Electronic Governing | × | × |
| Glow plug control | ● | ● |
| Cycle Cranking | ● | ● |
| (MODBUS) Networking | × | ● |
| Fault History | ● | ● |
| Operator Interface | | |
| manual start/stop | ● | ● |
| Auto/remote start | ● | ● |
| Regular Test | ● | ● |
| Auto operation LED | ● | ● |
| Manual operation LED | ● | ● |
| Common Shutdown LED | ● | ● |
| Common warning LED | ● | ● |
| Fail to start LED | ● | ● |
| Emergency stop(local) | ● | ● |
| Alphanumeric screen | ● | ● |
| Remote start input active LED | × | ● |
| Alarm reset | ● | ● |
| Measurement and Instrumentation | | |
| Engine | | |
| Oil pressure | ● | ● |
| Water Temperature | ● | ● |
| Engine Speed | ● | ● |
| Hours Run | ● | ● |
| Number of Starts | ● | ● |
| Battery Voltage | ● | ● |
| Coolant Temperature | ● | ● |
| 3Phase-L Voltage&Frequency | ● | ● |
| 3phase Current | ● | ● |
| Frequency | ● | ● |
| kWh | ● | ● |
| Apparent Power | ● | ● |
| Active Power and Reactive Power | ● | ● |
| Power Factor | ● | ● |
| Per PhasekW, kWh | ● | ● |
| Per Phase KVA | ● | ● |
| Phase Voltage | ● | ● |
| Output Power | × | ● |
| Grid Line Voltage | × | ● |
| Grid Phase Voltage | × | ● |
| Grid Frequency | | ● |
| Alternator | | |
| Low Fuel Level | ● | ● |
| High Fuel Level | × | ○ |
| Low Oil Pressure | ● | ● |
| High Water Temperature | ● | ● |
| Failure to Stop | ● | ● |
| Failure to Start | ● | ● |
| Controlable start circles/times | × | ● |
| Overspeed | ● | ● |
| Under&Over Voltage | ● | ● |
| Under&Over Frequency | ● | ● |
| Overcurrent | ● | ● |
| Earth Leakage | ○ | ○ |
| Reverse Power | × | × |
| Reverse kWh | × | × |
| Shutdown Protection and Indication | | |
| Low Oil Pressure | ● | ● |
| Low Water Temperature | ○ | ○ |
| High Water Temperature | ● | ● |
| Low Water Level | ● | ● |
| Low/High Battery Voltage | ● | ● |
| Failure to Charge | ● | ● |
| Overcurrent | ● | ● |
| Overload | ● | ● |
| Genset Under/Over Voltage | ● | ● |
| Genset Under/Over Frequency | ● | ● |
| under/over Speed | ● | ● |
| High Engine Temperature | ● | ● |
| Earth Leakage | ○ | ○ |
| Threshold Warning&Indication | | |
| Synchroscope(Independent Bus) | × | × |
| Active and Reactive Power Control | × | × |
| Synchroscope(Shared Bus) | × | × |
| Synchronization Detector | × | × |
| Peak Logging | × | × |
| Paralleling Capability | | |
| Automatic Transfer | ○ | ● |
| Hard Closed Transition | ● | ● |
| Soft Closed Transition | × | × |
| Gen/Mains Breaker | × | ● |
| Gen/Mains Breaker Status Protection | × | ● |
| Speed/Voltage Control | × | × |
| Power Indication | × | ● |
| Fuel&Solenoid Valve Control | ● | ● |
| Starter Control | ● | ● |
| Preheating | ○ | ○ |
| Mains Transfer Switch (Standard) | × | ● |
| Mains Transfer Switch (Emergency) | × | ● |
| Power Transfer Function | | |
| Operating Temperature (-40 °C-70 °C) | ● | ● |
| Ambient Temperature (-25 °C-45 °C) | ● | ● |
| Humidity <= 80% | ● | ● |
| Environment | | |
| Grid Over/Under Voltage Control | × | ● |
| Grid Over/Under Frequency Control | × | ● |
| Remote Start Output(Load/No-load) | ● | ● |
| Optional Relay Output | ● | ● |
| Remote Telecom Control with All Functions | × | ● |
| Engine Instrument Monitoring | ● | ● |
| Alternator Output Instrument Monitoring | ● | ● |
| Connection Point with All-around Setting For 6 Users | ● | ● |
| 3 Users Input Connection Point | ● | ● |
| LCD Light Control of Low Light Operation Environment | ● | ● |
| Safe PIN Code | ● | ● |
| RS232/485 Interface | × | ● |
| Language Selection | ● | ● |
| Multi-Language Function | ● | ● |
| Monitoring Function | | |

Control System

Digital, intelligent control system allows easier operation.

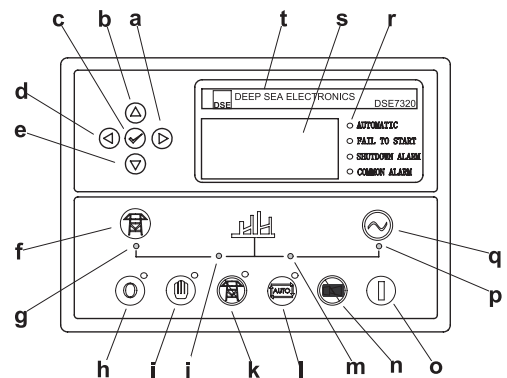
PLC-7420

PLC-7420 is an advanced control module based on micro-processor, containing all necessary functions for protection of the genset and the breaker control. It can monitor the mains supply, breaker control and automatically start the engine when the mains is abnormal. Accurately measure various operational parameters and display all values and alarms information on the LCD. In addition, the control module can automatically shut down the engine and indicate the engine failure.



FEATURES

- Microprocessor control, with high stability and credibility
- Monitoring and measuring operational parameters of the mains supply and genset
- Indicating operation status, fault conditions, all parameters and alarms
- Multiple protections; multiple parameters display, like pressure, temp. etc.
- Manual, automatic and remote work mode selectable
- Real time clock for time and date display, overall runtime display, 250 log entries
- Overall power output display
- Integral speed/frequency detecting, telling status of start, rated operation, overspeed etc.
- Communication with PC via RS485 OR RS232 interface, using MODBUS protocol



Control Panel

- a Button (next page)
- b Button (increase value / previous item)
- c Button (accept)
- d Button (previous page)
- e Button (decrease value / next item)
- f Button (transfer the load to the mains supply, when in Manual mode only)
- g Mains supply available LED
- h Stop / Reset button
- i Manual button (Manual control mode)
- j Mains supply on load LED
- k Test button (Test mode)
- l Auto button (Auto mode)
- m Genset on load LED
- n Mute/Lamp test button
- o Start button (Manual)
- p Genset available LED
- q Button (transfer the load to the genset, when in Manual mode only)
- r Alarm LED (4 alarm items)
- s LCD display
- t Control module name

Optional

| Engine | Alternator | Generator Set | Fuel System | Canopy |
|---|---|--|--|--|
| <ul style="list-style-type: none"> • Water Jacket Preheater • Oil Preheater | <ul style="list-style-type: none"> • Winding Temperature Measuring Instrument • Alternator Preheater • PMG • Anti-damp and anti-corrosion treatment • Anti-condensation heater | <ul style="list-style-type: none"> • Tools with the machine | <ul style="list-style-type: none"> • Low fuel level alarm • Automatic fuel feeding system • Fuel T-valves | <ul style="list-style-type: none"> • Trailer |
| Lubricating System | Exhaust System | Cooling System | Control Panel | Voltages |
| <ul style="list-style-type: none"> • Oil with the machine | <ul style="list-style-type: none"> • Protection board from hotness | <ul style="list-style-type: none"> • Front heat protection • Coolant (-30°C) | <ul style="list-style-type: none"> • Remote control panel • PLC-920 • PLC-7420 • ATS | <ul style="list-style-type: none"> • 415/240V • 400/230V • 380/220V • 220/127V • 200-115V |

