



DKG-119-J

Manual and Remote Start Unit with J1939 Interface

FEATURES

- ❑ Both manual and remote starting and stopping
- ❑ ECU control and monitoring through J1939 CAN
- ❑ J1939 ECU warnings displayed as text
- ❑ Various engine brands and models available
- ❑ Engine control
- ❑ Gas engine support
- ❑ Engine idle speed control
- ❑ Generator protection
- ❑ Built-in alarms and warnings
- ❑ Remote Start operation
- ❑ Dual genset mutual standby operation
- ❑ Load shedding, dummy load
- ❑ Periodic Maintenance request indicator
- ❑ Event logging with measurement
- ❑ Statistical counters
- ❑ Field adjustable parameters
- ❑ Logic level serial port
- ❑ Firmware downloadable from serial port
- ❑ Free remote monitoring software (Windows-based)
 - monitoring and control
 - download of parameters
 - upload of parameters
- ❑ GSM SMS message sending on fault
- ❑ MODBUS communications
- ❑ Graphic LCD display (128 x 64 pixels)
- ❑ Triple language support
- ❑ Customer logo display capability
- ❑ Protected semiconductor digital output
- ❑ Configurable analog inputs: 3
- ❑ Configurable digital inputs: 5
- ❑ Configurable relay outputs: 2
- ❑ Total relay outputs: 4
- ❑ Survives cranking dropouts
- ❑ Sealed front panel
- ❑ Plug-in connection system for easy replacement



DESCRIPTION

The DKG-119-J is a comprehensive generator control unit designed to start and stop the generating set both manually and remotely. The manual control is made using the pushbuttons on the front panel. The remote control is made via the REMOTE START input signal.

The unit can connect to ECU controlled electronic engines through its standard J1939 CANBUS port providing engine control, protection and instrumentation without extra senders. The ECU alarms are displayed in text.

In AUTOMATIC position, the DKG-119-J monitors the REMOTE START signal and controls the automatic starting, stopping and load transfer of the generating set. Once the generator is running, it monitors internal protections and external fault inputs. If a fault condition occurs, the unit shuts down the engine automatically and indicates the failure source with the corresponding red LED lamp and text.

The operation of the unit is controlled with front panel pushbuttons. The AUTO, OFF and RUN pushbuttons select the operating mode. Other buttons select the display parameter scroll, alarm mute and lamp test functions.

The DKG-119-J provides a comprehensive set of digitally adjustable timers, threshold levels, input and output configurations and operating sequences. The unauthorized access to program parameters is prevented by a 3 level password protection. All programs may be modified via front panel pushbuttons and do not require an external unit.

The fault conditions are considered in 3 categories as Warnings, Loadumps and Shutdown Alarms. Measured values have separate programmable limits for warning and shutdown conditions. The unit is able to send SMS messages in fault conditions.

Last 200 faults are stored in the event log file. The event log includes not only the date-time information, but also a comprehensive list of measured genset parameters at the time that the fault has occurred. The service request warning turns on at the expiration of either engine hours or time limits. It is possible to monitor and control the operation of the system locally or remotely with the WINDOWS based RAIN-BOW program.

The unit supports MODBUS protocol enabling communication with PLCs and building management systems. The MODBUS protocol is also supported through GSM and PSTN modems. The unit is designed for front panel mounting. Connections are made with 2 part plug and socket connectors. The unit offers triple language support. Default languages are English, Turkish and Chinese.



For more information or the latest certifications, please contact:
PC&S, Inc. at +1 (800) 523-9194 or +1 (973) 448-9400
www.pc-s.com



PC&S products are manufactured under a total quality system that provides total engineering integrity. Products have been engineered to satisfy specifications, performance, reliability and life cycle to exacting standards.

PC&S strives to meet customer requirements and exceed expectations. We do this through monitoring and measuring our process and product, customer satisfaction, internal auditing, analysis of production data, continual improvement including corrective and preventative action. Our quality management systems are certified in accordance with ISO 9001:2008 standards.

MEASUREMENTS

- Generator Volts: L1-N
- Generator Amps: L1
- Generator KW: L1
- Generator pf: L1
- Generator Frequency
- Engine RPM
- Battery Voltage
- Engine Coolant Temperature
- Engine Oil Pressure
- Fuel Level

EVENT LOGGING

The DKG-119-J records the last 200 events with a total of 14 measured parameters. Recorded events are:

- Shutdown alarms, load dumps and warnings
- Periodic records

DIGITAL INPUTS

The unit has 5 configurable digital inputs. Each input has the following programmable parameters:

- Alarm type: Shutdown / Load Dump / Warning / No Alarm
- Alarm polling: On engine running / Always / On Mains OK
- Latching / Non-latching operation
- Contact type: N/O; N/C
- Switching: BAT + / BAT -

STATISTICS

The following incremental counters provide statistics about past performance of the generating set:

- Engine Hours Run
- Total KW-h
- Engine Hours to Service
- Time to Service
- Number of Engine Cranks
- Number of Genset Runs

ANALOG INPUTS

Engine analog inputs are provided for coolant temperature, oil pressure and fuel level. Analog inputs connect to resistive sender units to provide precise and adjustable protection. The inputs have programmable sensor characteristics so that they are suitable for any type and any brand of sensors.

DIGITAL OUTPUTS

The unit provides 4 relay outputs and 2 of them have programmable functions, selectable from a list. Any function or alarm condition may be output as a relay output.

PC&S offers a complete line of generator controls including automatic mains failure units, manual and remote start units, multi genset paralleling units, manual synchronization and governor controllers.

TELEMETRY AND REMOTE PROGRAMMING

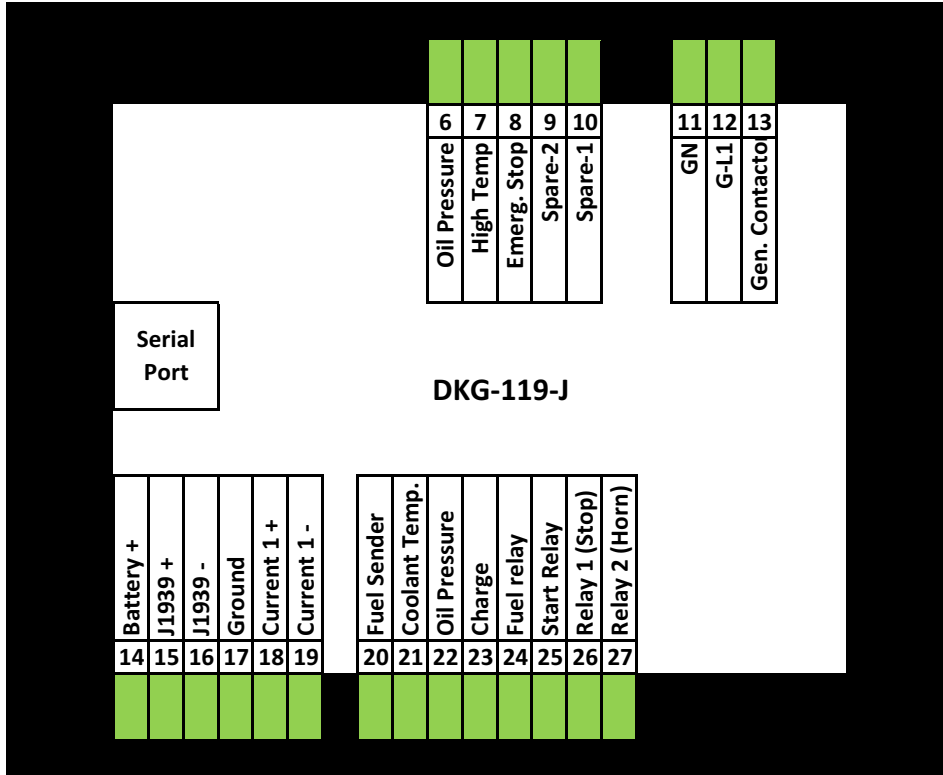
The unit provides the user with large telemetry facilities via its logic level serial port, connecting either to a PC or PLC (external adapter required.). It supports both RAINBOW and MODBUS communication protocols.

The Windows-compatible, PC program is used for the following purposes:

- Parameter upload / download
- Remote monitoring
- Diagnostics and analysis

The MODBUS interface allows the unit to be integrated in building management systems.

TERMINAL CONNECTIONS



1	(not in use)
2	(not in use)
3	(not in use)
4	(not in use)
5	(not in use)

6	Oil Pressure
7	High Temperature
8	Emergency Stop
9	Spare-2
10	Spare-1

11	Generator Neutral
12	Gen L-1
13	Generator Contactor

14	Battery +
15	J1939 +
16	J1939 -
17	Ground
18	Current 1+
19	Current 1-

20	Fuel Sender
21	Coolant Temp. Sender
22	Oil Pressure
23	Charge
24	Fuel Relay
25	Start Relay
26	Relay 1 (Stop)
27	Relay 2 (Horn)

TECHNICAL SPECIFICATIONS

Alternator Voltage	0 - 300V,AC (L-N)	Serial Port	logic levels, 9600 bauds, no parity, 1 bit stop
Alternator Frequency	0 - 100Hz	Operating Temperature	-4°F to +158°F (-20°C to +70°C)
DC Supply Range	9.0 to 30.0V,DC	Storage Temperature	-22°F to +176°F (-30°C to +80°C)
Cranking Dropouts	Survives 0V for 100ms	Maximum Humidity	95% non-condensing
Typical Standby Current	100mA,DC	IP Protection	IP65 from front panel. IP30 from rear
Maximum Operating Current	130mA,DC (relay outputs open)	Dimensions	3.77" W x 3.77" H x 2.08" D
Digital Outputs	1A @ 28V	Panel Cut-out Dimensions	3.62" W x 3.62" H minimum
Charge Excitation Current	min 150mA @ 10 to 30V,DC	Weight	0.33 lbs. (150 g. approx.)
Current Inputs	from CTs: .../5A; max load 0.7VA per phase	Case Material	High-temperature, self-extinguishing ABS/PC (UL94-V0, 100°C / 230°F)
Magnetic Pickup Input	1 - 30V,AC		
Magnetic Input Frequency	10KHz max		
Analog Input Range	0 - 5000 ohms		

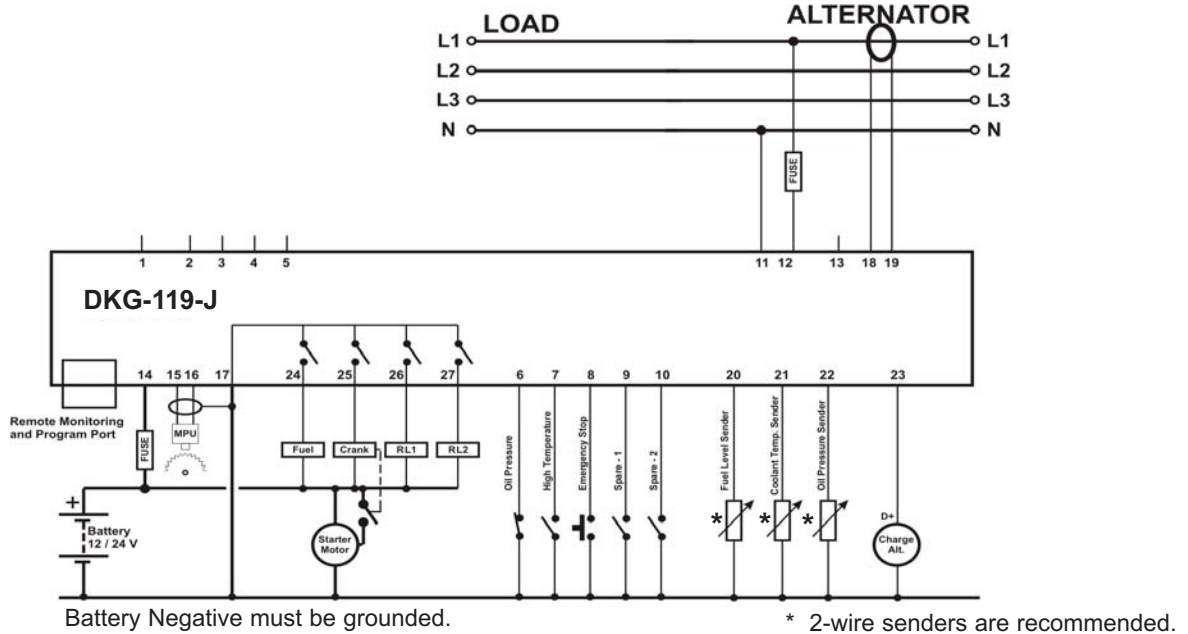
COMPATIBILITY / CONFORMITY

EU Directives Conformity
2006 / 95 / EC (low voltage)
2004 / 108 / EC (electro-magnetic compatibility)

Norms of Reference:
EN 61010 (safety requirements)
EN 61326 (EMC requirements)



TYPICAL CONNECTIONS



PANEL COMPONENTS & SYSTEMS, INC.
MAIN OFFICE: Tel.: (973) 448-9400 Fax: (973) 448-1674
149 Main Street, Stanhope, NJ 07874 USA

Or, please contact:

Additional Offices:
 South East: Charlotte, NC Phone: (704) 535-3357
 South Central: Tulsa, OK Phone: (862) 258-6974
 Canada: Edmonton, AB Phone: (877) 962-0557

+1 (800) 523-9194 ● www.pc-s.com