

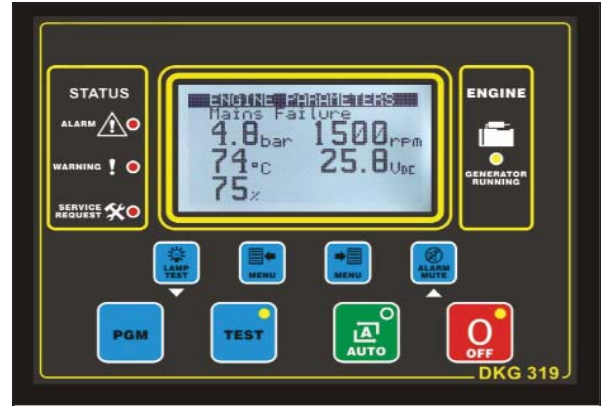


# DKG-319-J

## 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 available
- ❑ Periodic maintenance request indicator
- ❑ Built in daily / weekly / monthly exerciser
- ❑ Event logging and time stamp and measurements
- ❑ Statistical counters
- ❑ Battery backed-up real time clock
- ❑ Weekly operation schedule programs
- ❑ Provision for dual genset operation
- ❑ Load shedding, dummy load
- ❑ Field adjustable parameters
- ❑ RS-232 serial port
- ❑ Software downloadable from serial port
- ❑ Free remote monitoring software (Windows-based)
  - local and modem connection
  - monitoring, download of parameters
  - modem networking
- ❑ GSM and PSTN modem support
- ❑ GSM SMS message sending on fault
- ❑ MODBUS communications
- ❑ Blue color graphic LCD display (128 x 64 pixels)
- ❑ Triple language support
- ❑ Customer logo display capability
- ❑ Protected semiconductor digital outputs
- ❑ Configurable analog inputs: 3
- ❑ Configurable digital inputs: 7
- ❑ Configurable relay outputs: 2
- ❑ Total relay outputs: 4
- ❑ I/O expansion capability
- ❑ Survives cranking dropouts
- ❑ Sealed front panel
- ❑ Plug-in connection system for easy replacement



### DESCRIPTION

The DKG-319-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 unit 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 LOAD TEST, TEST, AUTO, OFF and MANUAL pushbuttons select the operating mode. Other buttons select the display parameter scroll, alarm mute and lamp test functions.

The unit provides a comprehensive set of digitally adjustable timers, threshold levels, input and output configurations, operating sequences and engine types. The unauthorized access to program parameters is prevented by the program lock input. 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 initiate modem calls and sending 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 indicator lamp 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 RAINBOW 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.



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### MEASUREMENTS

- ❑ **Generator Volts:**  
L1-N, L2-N, L3-N, L1-L2, L2-L3, L3-L1
- ❑ **Generator Amps:** L1, L2, L3
- ❑ **Generator KW:** L1, L2, L3, total
- ❑ **Generator pf:** L1, L2, L3, total
- ❑ **Generator Frequency**
- ❑ **Engine RPM**
- ❑ **Battery Voltage**
- ❑ **Engine Coolant Temperature**
- ❑ **Engine Oil Pressure**
- ❑ **Fuel Level**

### EVENT LOGGING

The DKG-319-J records the last 200 events with date and time stamp. A total of 18 parameters can be measured. Recorded events are:

- ❑ **Shutdown alarms, load dumps and warnings**
- ❑ **Periodic records**
- ❑ **Generator status change**

### DIGITAL INPUTS

The unit has 7 configurable digital inputs. Each input has the following programmable parameters:

- ❑ **Alarm type:** Shutdown/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 -

### TELEMETRY AND REMOTE PROGRAMMING

The DKG-319-J module provides the user with many telemetry facilities via its standard RS-232 serial port. The unit can be either connected to a PC, PLC or a GSM or PSTN modem. The unit supports both RAINBOW and MODBUS communication protocols. The standard PC software offers local, Local Area Network (LAN), internet and modem operation capabilities, as well as modem networking features.

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

- ❑ **Parameter upload / download**
- ❑ **Remote monitoring and control**
- ❑ **Diagnostics and analysis**

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

### STATISTICS

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

- ❑ **Engine Hours Run**
- ❑ **Engine Hours to Service**
- ❑ **Time to Service**
- ❑ **Number of Engine Cranks**
- ❑ **Number of Genset Runs**
- ❑ **Total KWh**

### WEEKLY OPERATION SCHEDULE

In AUTO mode only, the unit offers the capability of defining a weekly operation schedule. Programmable parameters allow the genset to operate automatically only in defined time limits of each weekday.

The internal battery backed-up real-time clock allows precise switching times.

### 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.

### RELAY 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. Using two Relay Expansion Modules, the number of relays may be increased up to 20 with 16 of them being volt-free contacts.



## TECHNICAL SPECIFICATIONS

<b>Alternator Voltage</b>	0 - 300V,AC (L-N)	<b>Serial Port</b>	RS-232, 2400 bauds, no parity, 1 bit stop
<b>Alternator Frequency</b>	0 - 100Hz	<b>Operating Temperature</b>	-4°F to +158°F (-20°C to +70°C)
<b>DC Supply Range</b>	9.0 to 30.0V,DC	<b>Storage Temperature</b>	-22°F to +176°F (-30°C to +80°C)
<b>Cranking Dropouts</b>	Survives 0V for 100ms	<b>Maximum Humidity</b>	95% non-condensing
<b>Typical Operating Current</b>	100mA,DC	<b>IP Protection</b>	IP65 from front panel. IP30 from rear
<b>DC Outputs</b>	1A @ 28V,DC	<b>Dimensions</b>	6.50" W x 4.92" H x 1.89" D
<b>Charge Excitation Current</b>	min. 150mA @ 10 to 30V,DC	<b>Panel Cut-out Dimensions</b>	5.94" W x 4.37" H minimum
<b>Current Inputs</b>	from CTs .../5A Max load 0.7VA per phase	<b>Weight</b>	0.55 lbs. (250 g. approx.)
<b>Analog Input Range</b>	0-5000 ohms	<b>Case Material</b>	High-temperature, self-extinguishing ABS/PC (UL94-V0, 100°C / 230°F)

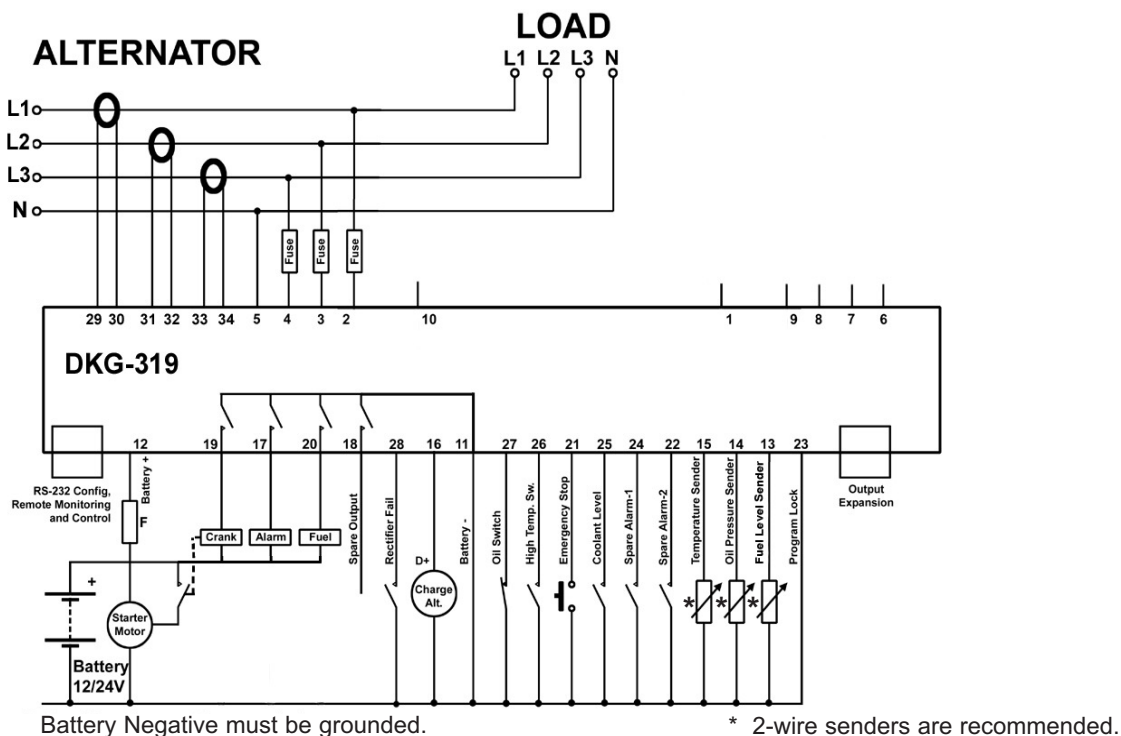
## COMPATIBILITY / CONFORMITY

**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



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