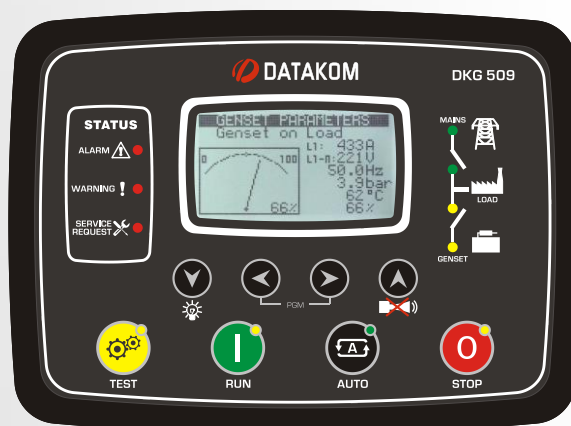


# DKG-509

## AUTOMATIC MAINS FAILURE UNIT

### CANBUS AND MPU VERSIONS



#### DESCRIPTION

The DKG-509 is a comprehensive AMF unit for single genset standby or dual genset mutual standby operations.

The unit is available with MPU or CANBUS versions. The CANBUS version connects to ECU controlled electronic engines providing engine control, protection and instrumentation without extra senders. The ECU alarms are displayed in text.

The unit has an optional internal GSM modem module and is able to initiate modem calls and send SMS messages in fault conditions through either internal or external modems.

The unit provides a comprehensive set of digitally adjustable timers, threshold levels, input and output configurations, operating sequences and engine types. All programs may be modified via front panel pushbuttons, and do not require an external unit.

Last 100 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 WINDOWS based RAINBOW program allows remote monitoring and control.

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 offers multiple language support.

#### MEASUREMENTS

Generator Volts: L1-N, L2-N, L3-N  
Generator Volts: 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  
Mains Volts: L1-N, L2-N, L3-N  
Mains Volts: L1-L2, L2-L3, L3-L1  
Mains Frequency  
Battery Voltage  
Engine Coolant Temperature  
Engine Oil Pressure  
Fuel Level  
Engine Oil Temperature

#### FEATURES

**True RMS measurements**  
**ECU connection through J1939 CAN option**  
**J1939 ECU warnings displayed as text**  
**MPU input option**  
**Internal GSM modem option**  
**Dual genset mutual standby operation**  
**Event logging with time stamp and measurements**  
**Battery backed-up real time clock**  
**Built in daily / weekly / monthly exerciser**  
**Weekly operation schedule programs**  
**Field adjustable parameters**  
**RS-232 serial port**  
**Optional RS-485 serial port**  
**Free MS-Windows Remote monitoring SW**  
**GSM and PSTN modem support**  
**GSM SMS message sending on fault**  
**MODBUS communications**  
**Multiple language support**  
**Customer logo display capability**  
**10ADC relay outputs**  
**Configurable analogue inputs: 4**  
**Configurable digital inputs: 7**  
**Configurable relay outputs: 2**  
**Total relay outputs: 6**  
**I/O expansion capability**  
**Plug-in connection system**



## DIGITAL INPUTS

The unit has 7 configurable digital inputs. Each input is fully configurable with selectable names, alarm type, polling, latching and contact type.

## ANALOG INPUTS

Engine analog inputs are provided for coolant temperature, oil pressure, oil temperature and fuel level. The inputs have programmable sensor characteristics so that they are suitable for any type and brand of sensors.

## RELAY OUTPUTS

The unit provides 6 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 to 22, 16 of them being volt-free contacts.

## EVENT LOGGING

The unit records last 100 events with date-time stamp and a total of 18 measured parameters.

## TELEMETRY AND REMOTE PROGRAMMING

The unit provides the user with large telemetry facilities via its standard RS-232 serial port, connecting either to a PC, PLC or a GSM or PSTN modem. It supports both RAINBOW and MODBUS communication protocols. The standard PC software offers local and modem operation capabilities as well as modem networking feature.

The PC program is used for below purposes:

- parameter upload/download
- remote monitoring and control
- diagnostics and analysis

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

## TECHNICAL SPECIFICATIONS

**Alternator voltage:** 0 to 300 V-AC (Ph-N)

**Alternator frequency:** 0-100 Hz.

**Mains voltage:** 0 to 300 V-AC (Ph-N)

**Mains frequency:** 0-100 Hz.

**DC Supply Range:** 9.0 to 33.0 V-DC

**Cranking dropouts:** survives 0 V for 100ms.

**Typical Standby Current:** 100 mA-DC

**Maximum Operating Current:** 200 mA-DC (Relay outputs open)

**Generator/Mains Contactor Relay Outputs:** 16 A / 250V

**DC Outputs:** 10A @ 28V

**Charge excitation:** min 2 Watts

**Magnetic pickup input:** 0.5 – 30 V-AC.

**Magnetic pickup frequency:** 10 KHz max.

**Current inputs:** from CTs, .../5A. Max load 0.7VA per phase.

**Analog input range:** 0-5000 ohms.

**Serial port:** RS-232, 9600 bauds, no parity, 1 bit stop

**Operating temp.:** -20°C (-4°F) to 70 °C (158°F).

**Storage temp.:** -40°C (-40°F) to 80 °C (176°F).

**Maximum humidity:** 95% non-condensing.

**Dimensions:** 200 x 148 x 46 mm (WxHxD)

**Panel Cut-out Dimensions:** 176x121 mm minimum.

**Weight:** 450 g (approx.)

**Case Material:** High Temperature ABS/PC (UL94-V0)

**IP Protection:** IP65 from front panel, IP30 from the rear

**Installation:** Flat surface mounting on a Type 1 Enclosure. Rear retaining plastic brackets.

**CE Conformity reference standards:**

EN 61010 (safety requirements)

EN 61326 (EMC requirements)

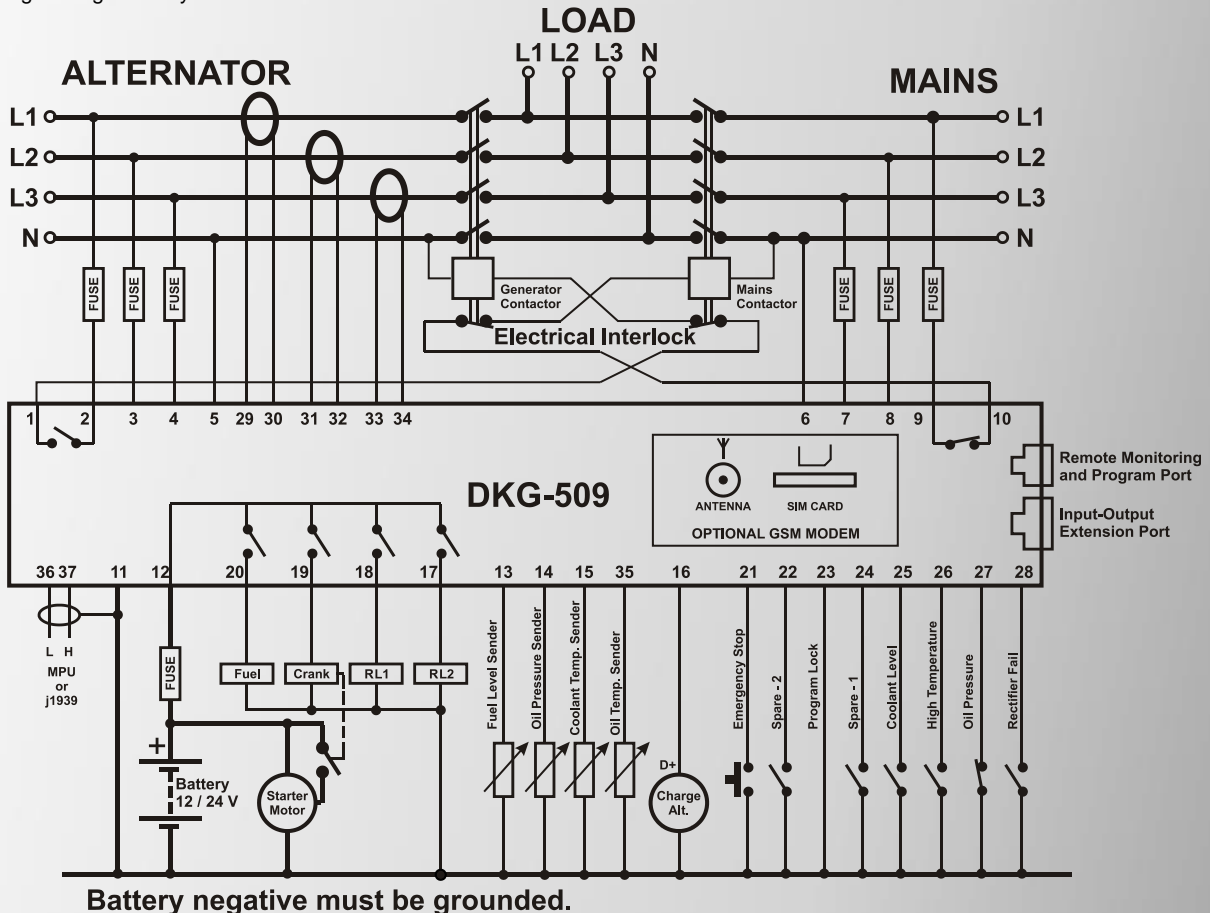
**UL / CSA Conformity:** certificate # 20110527-E314374

UL 508, Edition 17

UL 2200, 1st Edition.

UL 840 Edition 3

CSA C22.2 NO. 14 - Edition 10



Battery negative must be grounded.

