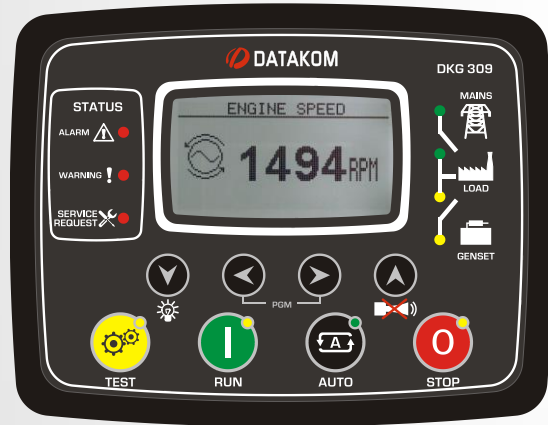


# DKG-309 AUTOMATIC MAINS FAILURE UNIT

## CANBUS AND MPU VERSIONS



### DESCRIPTION

The DKG-309 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 is able to initiate modem calls and send SMS messages in fault conditions through external modem.

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*
- 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*
- 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*
- 16 Amp contactor outputs*
- 1 Amp DC semiconductor outputs*
- Configurable analogue inputs: 4*
- Configurable digital inputs: 7*
- Configurable digital outputs: 2*
- Total digital 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.

## OUTPUTS

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

## 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.

**V-A-cos Accuracy:** 1.0% + 1 digit

**kW-kVA-kVAr Accuracy:** 2.0% + 1 digit

**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:** 1A @ 28V protected semiconductor output

**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:** 172 x 134 x 46 mm (WxHxD)

**Panel Cut-out Dimensions:** 151x111 mm minimum.

**Weight:** 340 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

