



DKG-107 AUTOMATIC MAINS FAILURE UNIT

DESCRIPTION

The DATAKOM model DKG-107 automatic mains failure unit is a low cost microprocessor based digital unit offering all basic functions needed for the automatic control of a genset including changeover contactors.

The unit fits into a standard 72x72mm panel meter opening and offers a very cost effective and space saving solution for the basic genset control.

In automatic mode, the unit monitors 3 phases of the mains and controls the automatic starting, stopping and load transfer of the generator.

When the engine is running, the unit monitors fault conditions and shuts-down the engine automatically in the occurrence of an alarm. The alarms are identified by a group of LEDs displaying only the first occurring one.

The occurrence of below fault conditions will cause the engine to be stopped immediately:

- Overspeed,
- Underspeed,
- Low generator voltage (speed led flashes),
- High engine temperature,
- Low oil pressure.

DKG-107 provides factory adjusted timers. However it has Oil Level Switch and 60Hz options selected by jumper switches and a potentiometer adjusted low voltage limit situated at the bottom of the unit.

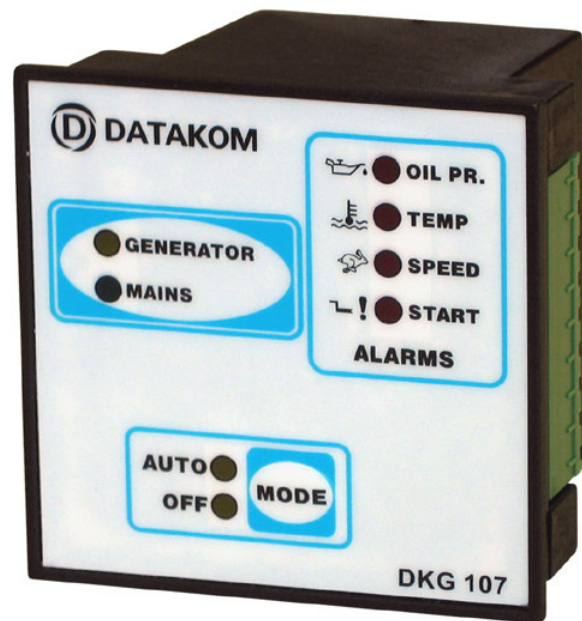
The limits for the correct generator frequency are 30 to 57 Hz for 50Hz operation and, 30 to 68Hz for 60Hz operation.

The lamp testing is enabled by holding the MODE button pressed.

The unit uses high current two part connectors for easy replacement.

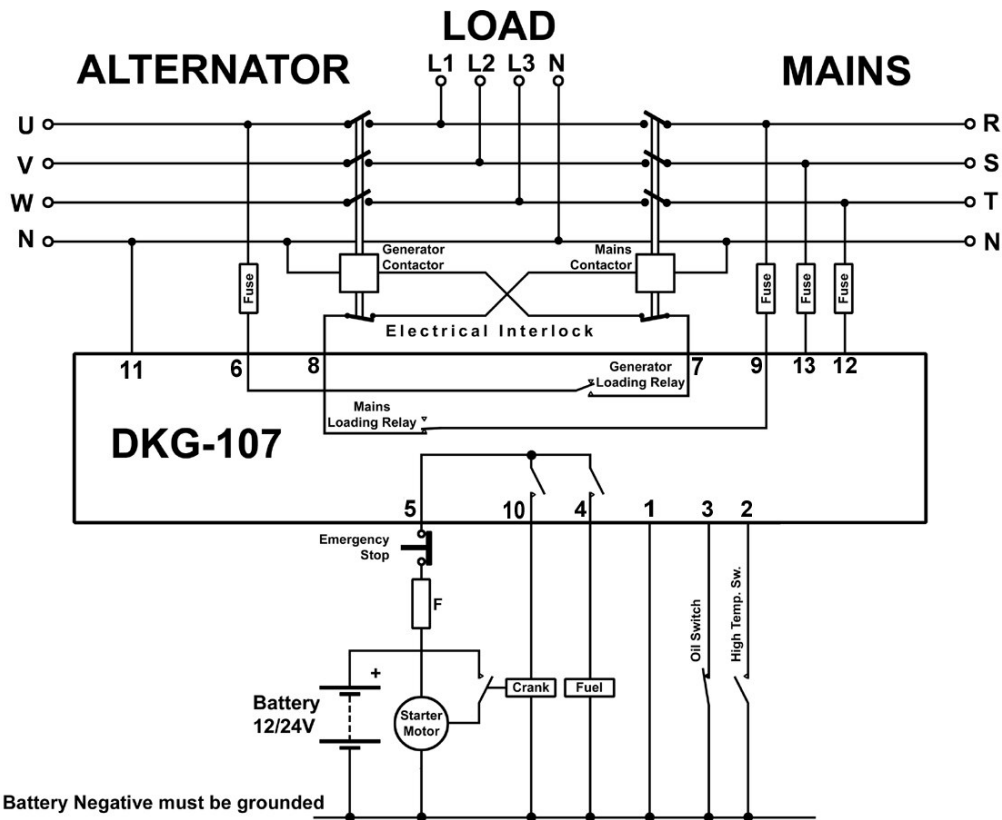
Non-standard operation modes and timers are provided upon request.

The unit works on both 12 Volt and 24 Volt gensets.



FEATURES

- Automatic engine starting and stopping*
- Automatic mains failure monitoring*
- Automatic load transfer*
- Automatic shutdown on fault condition*
- 3 phase mains voltage inputs*
- 1 phase genset voltage input*
- Survives cranking dropouts*
- Mains phases voltage limit checking*
- Generator phase voltage limit checking*
- Delayed overspeed and underspeed alarm*
- Lamp test*
- 50/60Hz operation*
- Selectable Oil pressure/Oil level switch*
- Sealed front panel*
- Plug-in connection system for easy replacement*
- Standard panel dimensions, (72x72mm)*
- Low cost*



MODES OF OPERATION

OFF: Mains contactor will be energized if AC mains are present.

AUTOMATIC: The unit monitors 3 phases of the mains and will start the generator and control the changeover of mains and generator contactors if a mains failure on any phase is detected.

OUTPUTS

FUEL: Positive output relay used to control the fuel solenoid. (10 amps @28V-DC)

START: Positive output relay used to control the engine starter solenoid. (10 amps @28V-DC)

GENERATOR CONTACTOR: Outputs the alternator phase voltage to energize the generator contactor. (10 amps @250V-AC)

MAINS CONTACTOR: Outputs the mains phase voltage to energize the mains contactor. (10 amps @250V-AC)

INPUTS

OIL SWITCH: negative closing switch input for low oil pressure or low oil level protection.

HIGH TEMP SWITCH: negative closing switch input for engine high temperature protection.

DC SUPPLY: 12 or 24 volts DC, (+) and (-) terminals.

R-S-T: 3 phase mains voltages.

G: Generator phase voltage.

NEUTRAL: Mains and generator common neutral terminal.

TECHNICAL SPECIFICATIONS

Step control: 8 bit microcontroller.

Mains voltage: 300 V-AC max (Ph-N)

Mains frequency: 50/60Hz.

Alternator voltage: 15-300-AC (Ph-N)

Alternator frequency: 0-100Hz.

DC Supply Range: 9 to 30 V-DC.

Current consumption: 150 mA-DC max. (Relay outputs open)

Speed fault delay: 2 seconds.

Number of start cycles: 3

Wait between starts: 10 seconds.

Start period: 6 seconds.

Mains stabilization timer: 30 seconds.

Cooldown timer: 120 seconds.

Mains contactor delay: 1 second.

Generator contactor delay: 4 seconds

Protection holdoff timer: 10 seconds.

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

Storage temp.: -30°C (-22°F) to 80 °C (176°F).

Maximum humidity: 95% non-condensing.

Dimensions: 72 x 72 x 52mm (WxHxD)

Panel cutout dimensions: 68 x 68mm minimum.

Weight: 150 g (approx.)

Installation: Front panel mounted. Retaining steel spring provided.

Case Material: Flame Retardant High Temperature ABS (UL94-V0, 110°C)

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