

DKG-110

ENGINE PROTECTION UNIT



DESCRIPTION

The DATAKOM model DKG-110 is a low cost, microprocessor controlled engine protection unit intended for use in manual generating sets as a safety shutdown device.

The unit is mounted on a standard DIN rail inside the generator control panel.

The unit offers the basic protection features for a genset as Engine High Temperature, Engine Low Oil Pressure and Generator Overspeed/Underspeed.

The limits for the correct generator frequency are 30 to 57 Hz. A 3 second delay is provided to enable high current startups.

The Safety On signal is picked up from the AC Generator voltage input. The protections are activated 4 seconds after the AC voltage is established.

The unit is normally powered up via the start/stop key of the control panel. It feeds the fuel solenoid of the engine. On power-up the power led is steadily on. When the protections are active, the led will be flashing.

Each alarm led has a separate semiconductor output, enabling the use of distant visual warning lights.

An alarm signal will cause the related alarm led to turn on, the related output to be active, the fuel output to be deenergized and the alarm output to be energized. To reset the alarms, turn off power for 5 seconds.

The unit has Energize to Stop and 60Hz options selected at the manufacture stage.

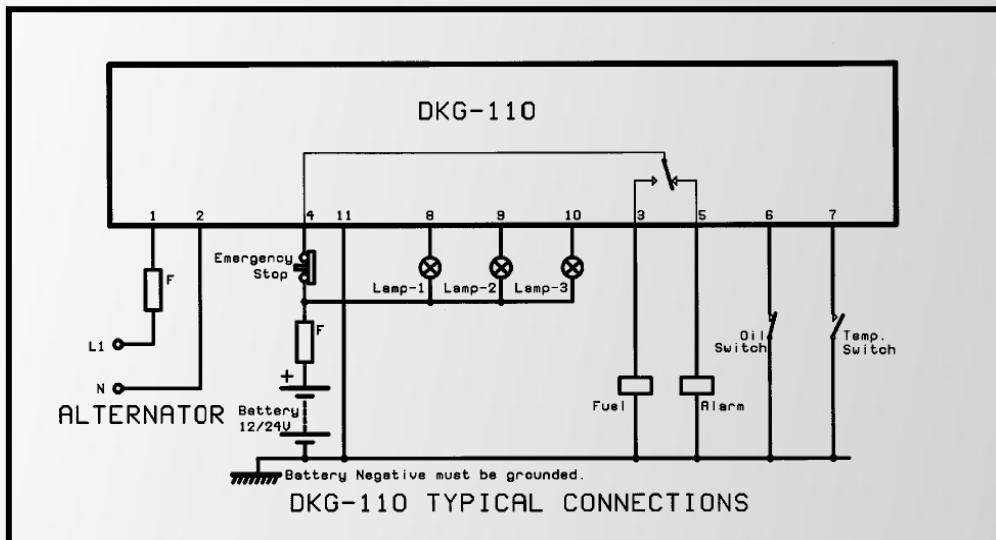
The unit uses two part connectors for easy replacement.

The unit is available in a DIN rail mount package with standard dimensions of 36x116x60mm.

The unit has different models for 12 and 24 volt plants.

FEATURES

***DIN rail mounted,
Low cost,
Fuel and alarm relay outputs,
3 semiconductor lamp outputs,
Generator voltage input,
Survives cranking dropouts,
Standard dimensions, 36mm width,
Plug-in connection system for easy replacement***



OPERATION

In its initial state, the unit monitors the Safety On signal. In this state the Power On led is steadily on.

The safety on signal is picked up from the AC generator voltage input.

When the Safety On signal arrives, the unit enables alarm inputs after Safety On Timer (4 seconds) has elapsed. In this state the power on led flashes. The alarm inputs will be enabled 45 seconds after the unit is energized, even if the safety on signal is not provided.

If an alarm occurs when the alarms are active, the corresponding led and alarm output will turn on, the fuel relay will be deenergized and the alarm output will be energized. The relay outputs supply the battery positive voltage.

To reset the alarm condition turn off power for 5 seconds.

INPUTS AND OUTPUTS

BAT(+)/BAT(-) : Plant battery voltage inputs.

GENERATOR AC VOLTAGE INPUT:

G/ N: generator phase and neutral. Use these inputs as Safety On signal in generator applications.

FAULT INPUTS: Oil Pressure and High Temperature inputs. Normally open, negative switching contacts are acceptable.

FAULT OUTPUTS:

The outputs are 'open collector' type semiconductor outputs. The output will be at negative supply level and sinks current when active. It is similar to an electronic relay contact to the negative supply.

RELAY OUTPUTS:

FUEL: Positive output relay activated at power on. (10 amps @28V-DC)

ALARM: Positive output relay activated by any alarm condition. (10 amps @28V-DC)

TECHNICAL SPECIFICATIONS

Step control: 8 bit microcontroller.

Generator voltage: 50 to 277VAC (Ph-N)

Generator frequency: 20 to 100Hz.

DC Supply Range:

9 to 18 V-DC (12V models)

18 to 33 V-DC (24V models)

Current consumption:

80 mA-DC typical (no alarm)

120 mA-DC max. (outputs open)

Total DC Current Output Rating: 10A-DC.

Max. Current for each relay output: 10A.

Max. Current for each alarm output: 250mA.

Operating temp.: -10°C (14°F) to 60 °C (140°F).

Storage temp.: -20°C (-4°F) to 80 °C (176°F).

Maximum humidity: 95% non-condensing.

Dimensions: 36 x 116 x 60mm (WxHxD)

Weight: 90 g (approx.)

Conformity (EU directives)

-73/23/EEC and 93/68/EEC (low voltage)

-89/336/EEC, 92/31/EEC and 93/68/EEC (electro-magnetic compatibility)

Norms of reference:

EN 61010 (safety requirements)

EN 50081-2 (EMC requirements)

EN 50082-2 (EMC requirements)

