



DKG-205 AUTOMATIC MAINS FAILURE UNIT



DESCRIPTION

The DATAKOM model DKG-205 is a microprocessor based digital unit offering all functions needed for the automatic control of a genset.

In AUTO mode, the unit monitors 3 phases of the mains and controls the automatic starting, stopping and load transfer of the generator. Once the generator is running, the device monitors the internal protections and external fault inputs.

DKG-205 provides a full set of digitally adjustable timers and threshold levels. Also the relay configuration is programmable, enabling the control of different types of engines. The programs may be modified by the customer via pushbuttons on the unit, and do not require an external unit.

It is also possible to monitor the unit remotely via the serial port. The remote control program is MS/Windows based.

The parameters displayed on the unit are:

- Mains voltages L1-N, L2-N, L3-N
- Generator voltages L1-N, L2-N, L3-N
- Generator frequency
- Battery voltage

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*
- Test and manual modes*
- Serial data output for telemetry on PC*
- Periodic maintenance request display*
- Survives cranking dropouts*
- Provision for energize to stop, preheat & choke outputs*
- Auto start unit mode available*
- Mains phases voltage limits checking*
- Generator phases voltage limits checking*
- Delayed overspeed and underspeed alarm*
- Battery high voltage alarm*
- Digitally adjustable low & high mains voltage limits*
- Digitally adjustable low & high generator voltage limits*
- Digitally adjustable underspeed & overspeed limits*
- Digitally adjustable delay for speed alarm*
- Digitally adjustable battery high voltage limit*
- Digitally adjustable timers*
- Program locking feature*
- Plug-in connection system for easy replacement*
- Low cost*

MODES OF OPERATION

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

MANUAL: Used to start the generator and transfer the load manually.

AUTOMATIC: The unit monitors the 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.

TEST: The unit will start the generator without a mains failure; the load will not be transferred until a mains failure occurs. (Also called EMERGENCY BACKUP mode)

PROGRAM: Used to program timers and operational limits. Program modifications may be disabled by wiring the program lock input to the negative supply.

INPUTS AND OUTPUTS

MAINS AND GENERATOR INPUTS:

R, S, T, MN: mains phases and neutral,
L1, L2, L3, GN: generator phases and neutral,

FAULT INPUTS:

High engine temperature,
Low oil pressure,
Charge failure,
Low coolant level,
Overload,
Alternator high temperature,
Oil high temperature,
Emergency stop,
Spare-1,
Spare-2,
Spare-3

RELAY OUTPUTS:

FUEL: Positive output relay used to control the fuel solenoid. May also be programmed for **activate to stop** (10 amps @28V-DC)

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

AUXILIARY: Positive output relay activated by any alarm condition. (10 amps @28V-DC) This output can also be configured to control a stop solenoid, or as a preheat or choke output.

GENERATOR CONTACTOR: Outputs the alternator phase voltage to energize the generator contactor. (16 amps @250V-AC)

MAINS CONTACTOR: Outputs the mains phase voltage to energize the mains contactor. (16 amps @250V-AC)

OTHER INPUTS AND OUTPUTS:

Program lock input
Serial data output.

OPTIONAL ACCESSORIES

RS-232 level converter,
DKG-605 alarm annunciator unit, (input extension)

DKG-205R relay extension unit,
Custom designed front panel.

TECHNICAL SPECIFICATIONS

Step control: 8 bit microcontroller.

Mains voltage: 277VAC(Ph-N)

Mains frequency: 50/60Hz.

Power System Type: TN or TT.

Alternator voltage: 277V-AC (Ph-N)

Alternator frequency: 0-100Hz.

Measurement Category: CAT II

DC Supply Range: 9 to 33 V-DC.

4 to 33 V-DC while cranking

Current consumption:

100 mA-DC typical (AUTO mode, mains OK)

250 mA-DC max. (Relay outputs open)

Total DC Current Output Rating: 10A-DC.

Total AC Current Output Rating: 10A-AC.

Max. Current for each Terminal: 10A-RMS.

Data Port: Serial, logic levels (optional RS-232).

Computer Host Program: MS-Windows

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: 144 x 72 x 71mm (WxHxD)

Panel cutout dimensions: 140x68mm minimum.

Weight: 300 g (approx.)

Accuracy:

Phase voltages: 2% + 1v

Battery voltage: 2% + 0.2V

Generator frequency: +/- 0.5 Hz

Case Material: Flame Retardant, High

Temperature ABS (UL94-V0, 110°C)

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)

DATAKOM Electronics Limited

Tel : +90-216-466 84 60

Fax : +90-216-364 65 65

e-mail : datakom@datakom.com.tr

<http://www.datakom.com.tr>