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DKG-116 MANUAL AND REMOTE START UNIT

DESCRIPTION

The DKG-116 is a low cost gasoline/diesel genset control unit designed to start and stop a genset both manually and remotely.

The manual control is made using **RUN** and **STOP** pushbuttons on the front panel. The remote control is made via **REMOTE START** input signal.

When **RUN** button is pressed or a **Remote Start** signal arrives, the engine will be cranked up to 3 times. When it runs, the crank relay will be immediately deactivated and after **Holdoff timer** delay, fault checking will be enabled. When the engine is running, if a fault condition is detected then the engine is shutdown immediately and the unit indicates the source of the failure through related alarm led.

If **STOP** button is pressed or the **Remote Start** signal disappears, the genset will continue to run during cooldown period. At the end of the period the engine will stop.

The **MENU** button selects display parameter scroll and allows program mode entry and lamp test functions.

The total engine run hours is kept in a tamper-proof non-erasable memory which is not affected by power failures.

MEASUREMENTS

Generator Volts: L1-N, L2-N, L3-N
 Generator Volts: L1-L2, L2-L3, L3-L1
 Generator Frequency
 Battery Voltage

OPTIONS

Auxiliary output (negative pulling).



FEATURES

- Both Manual and remote control**
- Generator protection**
- Built in alarms and warnings**
- Remote Start operation available**
- True RMS measurements**
- Tamper-proof engine hours display**
- Field adjustable parameters**
- High current Fuel and Crank outputs**
- Protected semiconductor auxiliary output**
- Digital inputs: 4**
- Survives cranking dropouts**
- Sealed front panel**
- Standard panel dimensions: 96x48mm**
- Plug-in connection system**

PRECAUTIONS FOR INSTALLATION AND SAFE USE

Failure to follow below instructions will result in death or serious injury.

- Circuit breakers must be connected serially to BAT+, PHASE-L1, PHASE-L2 and PHASE-L3 terminals, in close proximity of the unit.
- Fuses must be of fast type with a maximum rating of 6A.
- Disconnect all power before working on equipment .
- When the genset is running, do not touch terminals.
- Do not try to clean the device with solvent or the like. Only clean with a dried cloth.
- Verify correct terminal connections when wiring.
- Electrical equipment should be serviced only by competent service personnel. No responsibility is assured by the manufacturer or any of its subsidiaries for any consequences arising out of the use of this material.
- Only for front panel mounting.

PROGRAMMING



Both **High Temperature** and **Emergency Stop** inputs must be connected to **Battery negative** prior to enter the programming mode.

The unit offers 8 programmable parameters listed below.

NO	SYMBOL	RANGE	FACTORY SET	DESCRIPTION
1	U-L _o	70-500 V	170 V	Low AC voltage shutdown limit
2	U-H _i	70-500 V	300V	High AC voltage shutdown limit
3	nFr _q	0-1	0	Nominal frequency: 0=50Hz 1=60Hz
4	OIL	0-1	0	Oil input: 0=pressure switch 1=level switch
5	FUEL	0-1	0	Fuel output type 0:Fuel 1:Stop
6	rLY ₃	0-2	0	Relay 3 function 0:Alarm 1:Choke 2:Stop
7	CHOK _t	0-15 sec	0	Choke timer in seconds
8	3-IP	0-1	0	Number of phases: 0=3ph 1=1ph

The program mode is entered by long-pressing the **MENU** button. Each depression of the **MENU** button will switch to the next parameter.

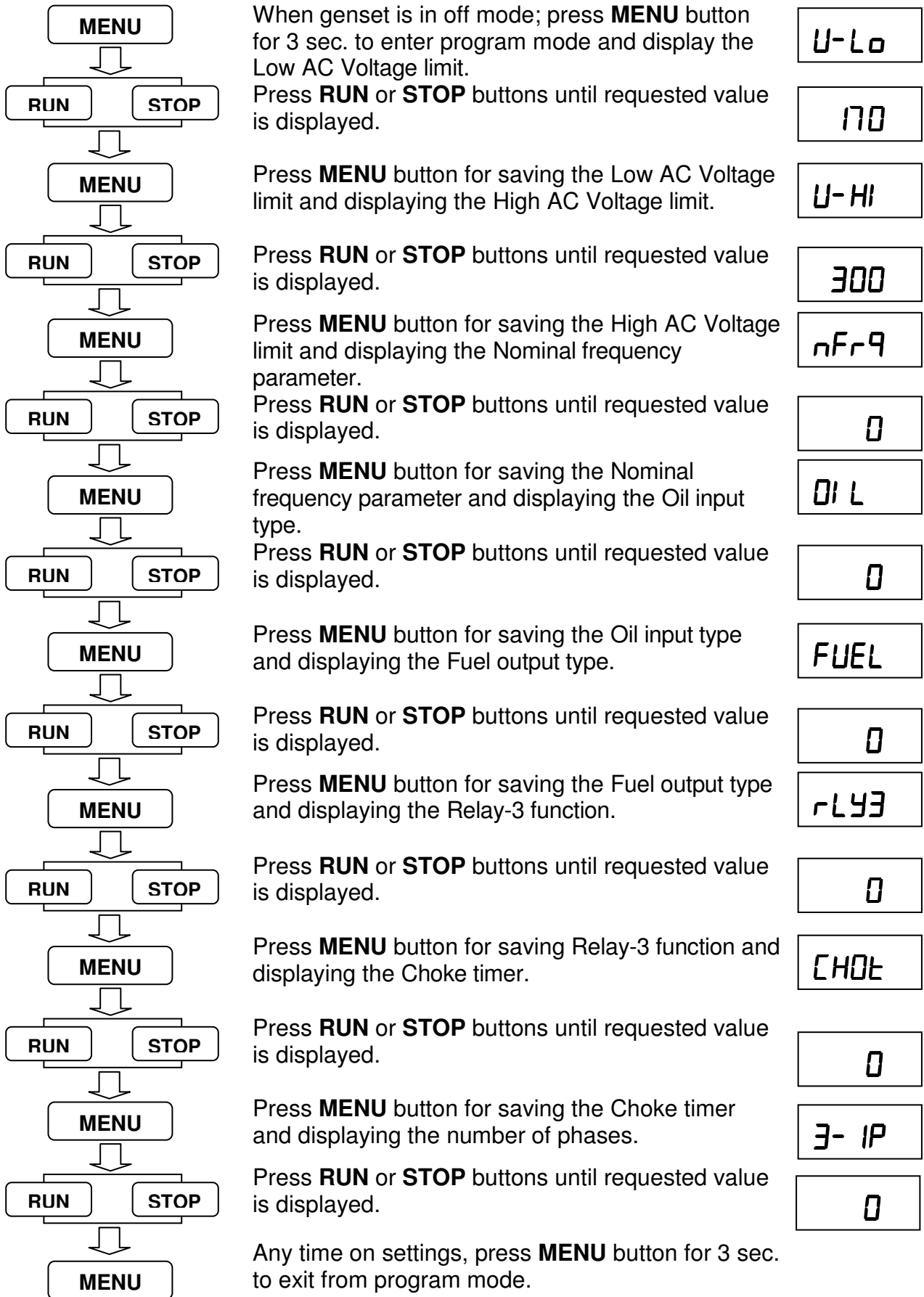
Another long press will enable the lamp test mode. Then any depression of **MENU** button will return the display to normal mode.

If no key is pressed, then the unit will return to normal display mode with a delay.

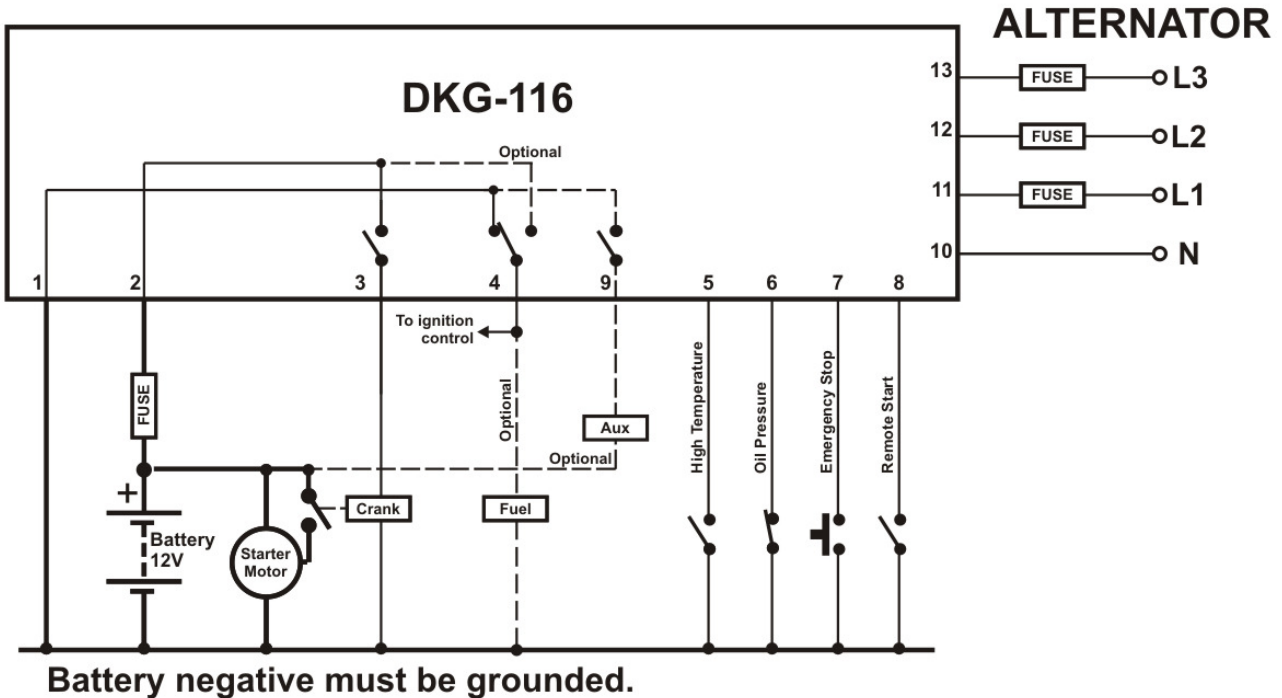
DIESEL ENGINE OPTION SELECTION



In order to control diesel engines, solder a conductive wire to JP1 terminals situated next to terminal 1, as shown in the picture.



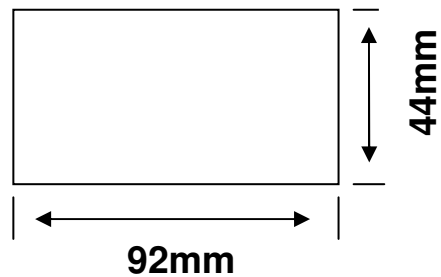
CONNECTION DIAGRAM



TECHNICAL SPECIFICATIONS

- Alternator voltage:** 15 to 300 V-AC (Ph-N)
- Alternator frequency:** 50 or 60 Hz nominal
- Measurement Accuracy:** 0.5% + 1 digit
- Overspeed:** nominal frequency + 14% (+24% overshoot)
- Underspeed:** 30 Hz
- Crank time:** 10 sec.
- Crank rest:** 10 sec.
- Crank attempts:** 3
- Stop timer:** 10 sec.
- Cooldown timer:** 30 sec.
- Holdoff timer:** 10 sec.
- DC Supply Range:** 9.0 to 16.0 V-DC
- Cranking dropouts:** survives 0 V for 100ms.
- Typical Standby Current:** 12mA-DC (display off)
- Maximum Operating Current:** 130 mA-DC
- Fuel and Crank outputs:** 10A @ 12V-DC
- Auxiliary Output:** 1A @ 12V-DC (negative pulling protected semiconductor output)
- Operating temp.:** -40°C (-40°F) to 80 °C (176°F).
- Maximum humidity:** 95% non-condensing.
- Dimensions:** 102 x 55 x 40 mm (WxHxD)
- Packed weight:** 140 g
- Case Material:** High Temp. ABS/PC (UL94-V0)
- IP Protection:** IP65 (front panel), IP30 (rear)
- Conformity (EU directives)**
 - 2006/95/EC (low voltage)
 - 2004/108/EC (EMC)
- Norms of reference:**
 - EN 61010 (safety requirements)
 - EN 61326 (EMC requirements)

PANEL CUTOUT DIMENSIONS



PACKAGING INFORMATION

- Pieces per Package:** 24
- Package Size:** 280 x 170 x 215mm (LxWxH)
- Package Weight:** 3.6 kg

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