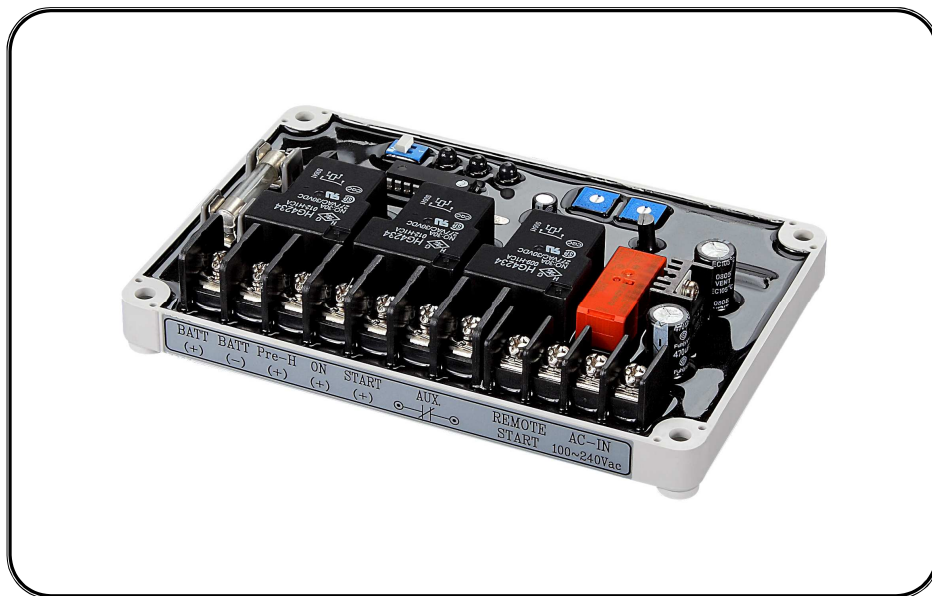


# ECU-05 Ver1.0

## *Control Unit for Key Switch Type Generator*



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## 1. INTRODUCTION

The ECU-05 Generator Auto Start Control, simply changes any manual key start generator to auto-start by automatically mimicking the action taken by someone turning the panel key and starting the generator manually.

The ECU-05 automatic initiation of the generators starting cycle by using the standard two-wire signals from any Automatic Transfer Switch or any standard remote mounted ON / OFF switch.

In case the generator fails to start the first time, the ECU-05 tries two more times, preheating and turning the starter each time. All of this is programmable and adjustable by using the interval timers.

In Addition the ECU-05 can be adapted for use on Gasoline, and Gas powered engines by changing the DIP Switch position on the ECU-05.

## 2. FEATURES

- Inexpensive, small in size, low power consumption and easy to set up.
- Connected by the use of a terminal block, Easy for installation and repairing.

## 4. SPECIFICATIONS

ITEM	DESCRIPTION
DC Supply	12VDC (ECU-05-12V)
	24VDC (ECU-05-24V)
Alternator Input Range	100V ~ 240VAC ; 50/60Hz
Programmed Pre-heat or Engine choke signal output	30Amp @ 12/24VDC
Accessories "ON" Output	30Amp @ 12/24VDC
Starter signal Output	30Amp @ 12/24VDC
Auxiliary Dry contact Output	20Amp @ 12/24VDC
Operating Temperature	-20 to 80 °C
Relative Humidity	< 95%
Weight	380 g
Dimensions	150 (L) x 100 (W) x 31 (H)mm

- Operates with a single chip microprocessor, Epoxy encapsulation makes the ECU-04 dependable and reliable.
- The standard three attempts multi-start function can be factory modified by customer request.

## 3. INSTALLATION

Intended for easy installation on any generator that already has a manual key start, almost all connection to the ECU-05 control board are made directly to the back of the key switch, the ECU-05 automatically mimics the action taken by a person turning the panel key and starting the generator manually. The ECU-05 senses that the generator started by monitoring the output of the generator on terminals "10" and "11".

After installation, remove the key and simply start the generator by shorting terminal "8" and "9" on the ECU-05 board or by the remote start connection of any Automatic Transfer Switch. Any simple ON / OFF switch can also activate the ECU-05. The manual start with the key works the same as before if you need to use it.

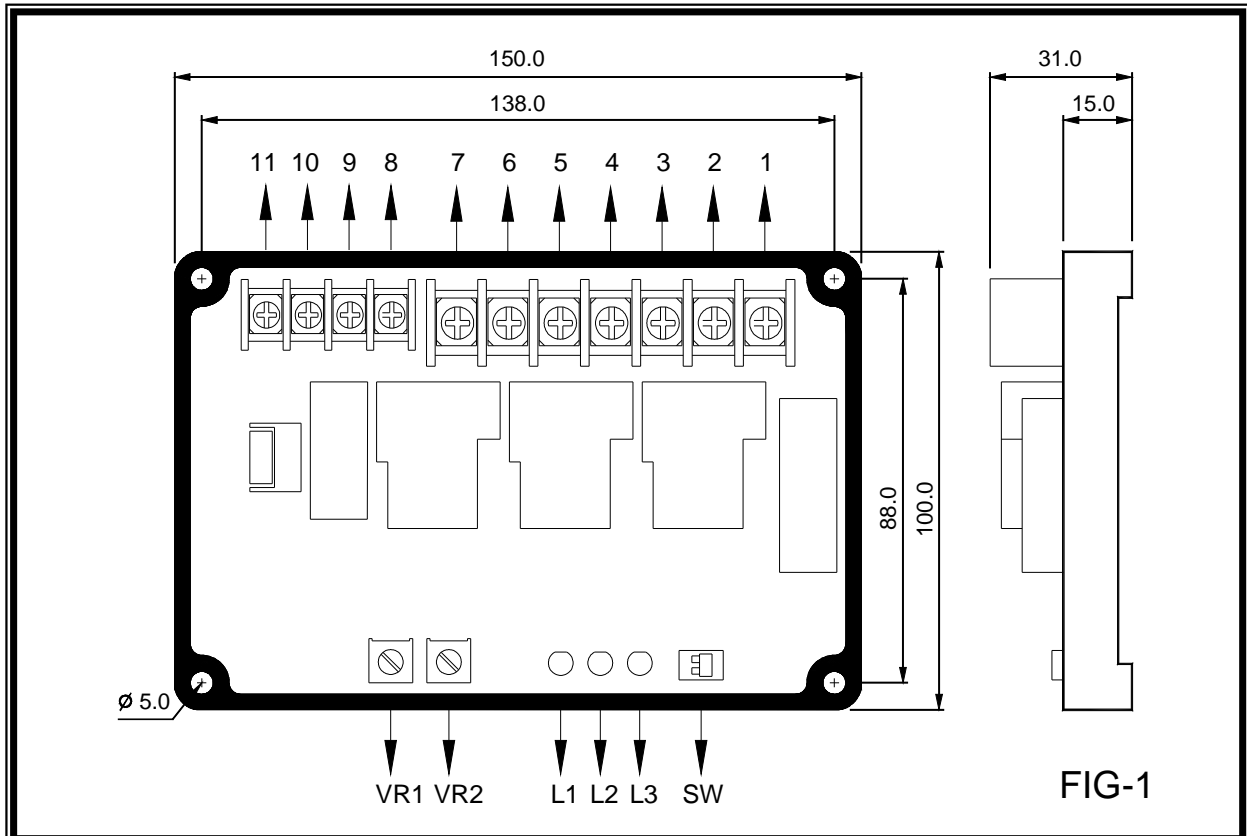
**NOTE** there are 2 methods of stopping the engine "Energize to STOP" and "Energize to START." You have to determine which engine type you have before you install the ECU-05

## 5. TIME DELAY SETTING AND ALARM INDICATORS

- VR1: Pre-heat engine timer adjustment 1~25 seconds range - factory set for 5 seconds (Please refer to FIG-1 below).
- VR2: Starter cranking time adjustment 1~25 seconds range - refer to the generator user's guide 4 to 8 seconds suggested. (Please refer to FIG-1 below).
- L1: Remote start activated indicator LED. (Please refer to FIG-1 below).
- L2: Engine running normal indicator LED. (Please refer to FIG-1 below).
- L3: Start fail indicator LED. (Please refer to FIG-1 below).
- SW: ON for use on Diesel Engine with Pre-Heat, OFF for use on energize to STOP Diesel engines

## 6. ELECTRICAL CONNECTIONS

PIN No.	DESCRIPTION	NOTES
1	DC Plant Supply Input (+v)	System DC positive input (Battery Positive)
2	DC Plant Supply Input (-v)	System DC negative input (Battery Negative)
3	Programmed Pre-heat or Engine choke signal output	Used turn on the internal engine pre-heater Supply (+v) 30 Amp rated (If used)
4	Accessories "ON" Output	Connect to Key switch accessories ON position
5	Starter signal Output	Used to control the Starter Motor Supply (+v). 30 Amp rated
6&7	Auxiliary Dry contact Output	OPEN when engine running CLOSE when engine failure or stop 20 Amp rated
8&9	Remote start Signal input	Connect to A.T.S device or Remote Switch
10&11	Generator AC sensing input	Connect to alternator AC output



## 7. TYPICAL WIRING DIAGRAM

