

GENSET CONTROL MODULE RSS3

Features:

- Designed specifically for 12V electric air-cooled engines.
- Provisions for local and remote start/stop control.
- Single alarm light output for overcrank or generator under-voltage fault shutdowns.
- User selectable starting mode: full cycle-cranking, or single-cycle crank limiter.
- User selectable start delay for remote start applications.



General Description:

The Genset Control Module is a electronic control system which provides complete automatic control of standby air-cooled generator set engines. Fuel solenoid and/or ignition control, cranking control are via heavy duty industrial type relay contacts. Crank termination control is provided internally via a main generator voltage monitoring input terminal. This input also provides under-voltage protection while the engine is running.

RSS3 Specifications

Input Voltage: 12VDC nominal, 16VDC max; transient and reverse polarity protected.
(Typical: Pickup at 10VDC, Dropout at 6VDC.)

Supply Current: In Auto-standby: 50mA

Maximum (running): 160mA maximum plus alarm light burden.

Relay Load Contacts: FS and CS: 20A at 28VDC continuous duty.

MAG: 2A intermittent duty (for low-voltage side of magneto ignition systems.)

Alarm Light Load: 150mA maximum (incandescent inrush is permitted.)

Generator Input Voltage: 160VAC RMS maximum.

Crank Disconnect: RSS3: Internally fixed at 40-50 VAC.

RSS3A: Internally fixed at 2.5-4.0 VAC.

Crank Control: Single-cycle crank limiter: continuous 25-second crank period. *

Cycle-cranking: 45-sec. crank period followed by cycles of 20-sec. rest and
20-sec. crank periods for a total of 3-1/2 min. *

Time Delays: Delay on start from remote signal (If used): 7-seconds. *

Delay on shutdown from remote signal: 80-seconds. *

Ambient Temperature: -25° F to +140° F

Finish: PC Board: Protected with moisture/fungus proof varnish.

Terminal Connections: Power, Alarm Light, Run/Stop/Auto switch:

Customer furnished (1) AMP Universal Mate-N-Lok 9 pin plug,
AMP #1-480706-0 (Digikey #A1458-ND), with (15) socket connectors,
AMP #350550-1 (Digikey #A1441-ND).

All other connections:

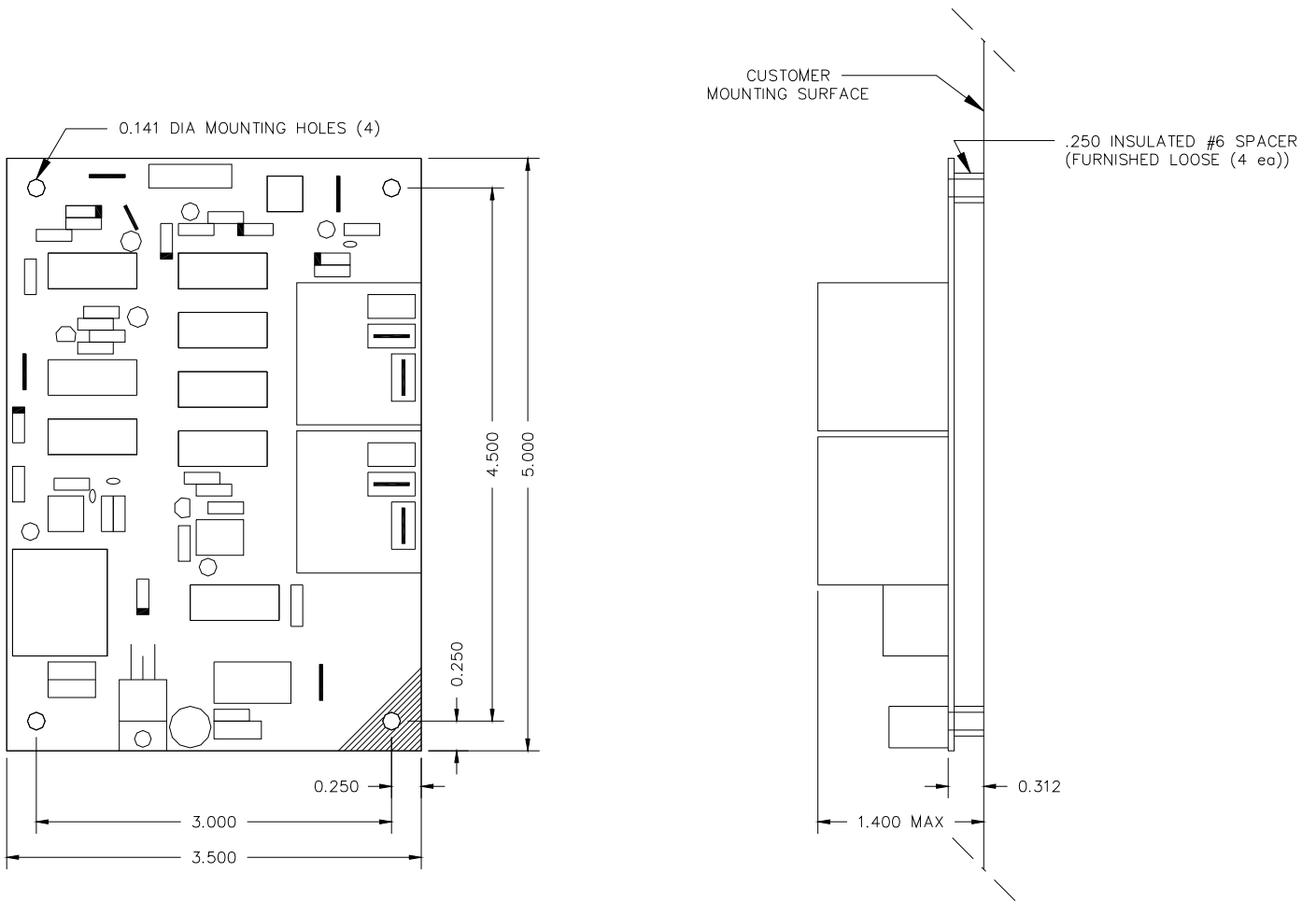
Customer furnished (6) to (8) 1/4" female tab terminals.

* All timing periods are approximate only, and are non-adjustable.

Bouchette Electronics, Inc.

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RSS3 Dimensions



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Control Switch Inputs

The following operator panel controls are wired into the control module through the 9-pin plug.

1. Run/Stop/Auto Switch

- a. “Run” position causes the engine to start and run immediately.
- b. “Auto” position allows the unit to be controlled via any remote single-pole dry-type contact (transfer switch, remote start switch, etc.). Contact closure causes the unit to start and run, while contact opening causes the unit to shut down. *Also see Delay-On-Start Select and Delay-On-Shutdown for time delay options.*
- c. “Stop” position de-energizes the engine control for immediate shutdown.

Relay Functions

1. Master Control Relay (FS)

Operates fuel solenoid and/or ignition control.

2. Cranking Control Relay (CS)

Controls engine cranking.

3. Magneto Relay (MAG)

Grounds low-voltage side of magneto ignition systems on shutdown. (If Used.)

Safety Inputs

Loss of Generator Voltage

The control module will detect the sudden loss of main-generator voltage while the unit is running. A sustained signal loss of 9-seconds* will result in engine fault shutdown and alarm light indication.

Cranking Control

1. Overcrank Protection (OC)

Two different cranking cycles are available on the control module:

a. Fixed Single Cycle Cranking

Provides a single non-adjustable crank period of 25-seconds*. Failure of the engine to start within that time results in engine fault shutdown and alarm light indication.

b. Cycle Cranking

The controller may be field converted to the "cycle cranking" feature by cutting the clip wires "A" and "B" on the control module. This feature provides a series of four to five cranking cycles, beginning with a 40-second* crank period, followed by 20-second* rest and 20-second* crank periods. Failure of the engine to start after a total elapsed time of 3-1/2 minutes* results in engine fault shutdown and alarm light indication. Refer to the RSS3 Connection Diagram for clip wire location.

Caution: *Do not allow ends of clip wire to come in contact with other components. Completely remove clip wire, or cut in the middle and separate ends about 1/8".*

2. Cranking Disconnect

The cranking termination speed is obtained from the main generator voltage. The control module automatically sets the cranking termination at 40 to 50VAC.

Delay-On-Start Select

The controller may be field converted to include this feature by cutting the "C" clip wire on the control module. This feature prevents unnecessary starting of the engine due to momentary power outages by delaying the start-up of the engine for 7-seconds* after the Customer Remote Run/Stop Contact is closed. This timing feature can be made active only in the "Auto" switch position, and still permits instantaneous manual starting in the "Run" position. Refer to the RSS3 Connection Diagram for clip wire location.

Caution: *Do not allow ends of clip wire to come in contact with other components. Completely remove clip wire, or cut in the middle and separate ends about 1/8".*

Delay-On-Shutdown

This feature provides a cool-down period for the engine by delaying the shutdown of the engine for 80-seconds* after the Customer Remote Run/Stop Contact is opened. This timing feature can be made active only in the "Auto" switch position, and still permits instantaneous manual shut-downs "Stop" position.

Resetting a Fault Shutdown

A shutdown with alarm, due to any fault condition, will prevent any subsequent operation of the generator set. The Run/Stop/Auto Switch on the operator control panel must be momentarily placed in the "Stop" position to reset this function.

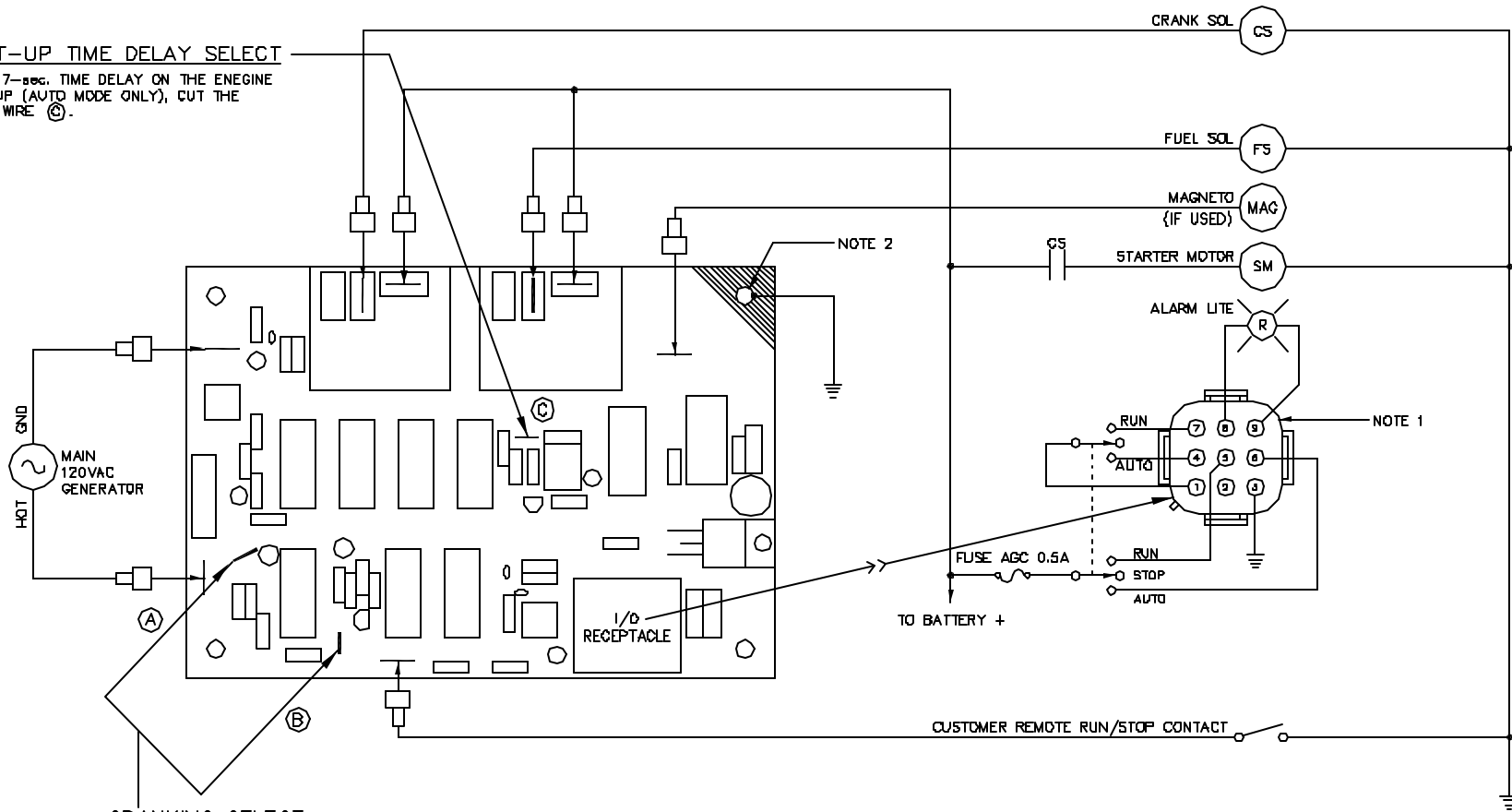
**All timing values are approximate.*

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START-UP TIME DELAY SELECT

TO ADD 7-sec. TIME DELAY ON THE ENGINE START-UP (AUTO MODE ONLY), CUT THE JUMPER WIRE (C).



CRANKING SELECT

THE REMOTE 5/5 BOARD IS SHIPPED CONFIGURED FOR A SINGLE CRANK PERIOD OF APPROX. 25 sec. TO CONVERT TO CYCLE CRANKING, CUT THE JUMPER WIRE AT (A) AND CUT THE JUMPER WIRE AT (B).

NOTES:

- 1.) CUSTOMER TO SUPPLY AMP 1-480706-0 PLUG WITH 350550-1 SOCKET CONNECTORS. VIEW SHOWN FROM BACK (WIRING END) OF PLUG.
- 2.) MAGNETO GROUND PATH THRU MOUNTING SCREW.
- 3.) FUEL SOL CURRENT DRAW MUST NOT EXCEED 20 AMPS.
- 4.) CRANK SOL CURRENT DRAW MUST NOT EXCEED 20 AMPS.

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**TITLE CONNECTION DIAGRAM
 REMOTE START/STOP CONTROL**

DATE	DWN BY	CHK	SCALE
11-21-01	DSB	TJB	NONE
P/N	QTY	PCB128	DWG NO
			E128-3

Q	06/24/04	FUSE VALUE WAS AGC-1.4A	DSB
B	06/08/01	TIMING VALUES CORRECTED	DSB
A	03-06-95	CRANKING SELECT WAS 60sec.	DSB
REV	DATE	DESCRIPTION	DWN BY