GENSET CONTROL MODULE

M121B / M241B

Features:

- Models for both 12V and 24V systems.
- 3-alarm lights, and system normal light outputs with lamp-test provisions.
- Special logic permits restarting of hot engine.

General Description:

The Genset Control Module is an electronic control system which provides automatic engine fault protection to a generator set which has been manually started and checked for normal operation. Fuel solenoid and/or ignition control are via heavy duty industrial type relay contacts. Engine temperature and oil pressure monitoring are obtained from engine mounted sensor contacts. Adjustable overspeed shutdown is provided internally via a frequency monitoring input terminal. This input signal may be obtained from any frequency source related to engine speed: distributor ignition pulses, magnetic pick-up, A.C. tachometer generator, alternator tachometer terminal, etc.

M121B Specifications

Input Voltage: Model M121B: 12VDC nominal, 16VDC max; transient and reverse polarity protected. (Typical: Pickup at 10VDC, Dropout at 6VDC.)
Model M241B: 24VDC nominal, 32VDC max; transient and reverse polarity protected. (Typical: Pickup at 14VDC, Dropout at 9VDC.)

Supply Current: 100mA maximum plus alarm light burden.

Relay Load Contact: FS: 10A at 28VDC, inductive

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

Shutdown Contact Inputs: 2 (See operating instructions for start-up override times.)

Frequency Input: M121B6: 140V RMS max. (See note 1.)
All other models: 80V RMS max.
Overspeed trip point is adjustable from;
M121B6 / M241B6: 31-90Hz. (Main Generator Frequency (120VAC))
M121B9 / M241B9: 85-250Hz. (Ignition)
M121B8 / M241B8: 150-325Hz. (Ignition)
M121B0 / M241B0: 235 to 690Hz. (Alternator)
M121B3 / M241B3: 550 to 1100Hz (Alternator / Magnetic Pick-up)
M121B2 / M241B2: 1750 to 5000Hz (Magnetic Pick-up)

Shielding: Internal EMI shielding provided.

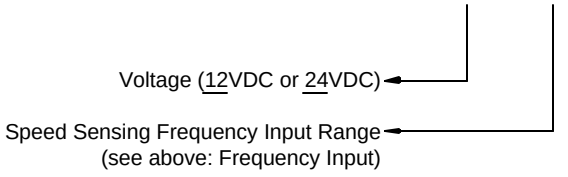
Ambient Temperature: -25° F to +140° F

Finish: PC Board: Protected with moisture/fungus proof varnish.
Chassis: Zinc plated / yellow dichromate.

Terminal Blocks: Industrial screw-terminal type.

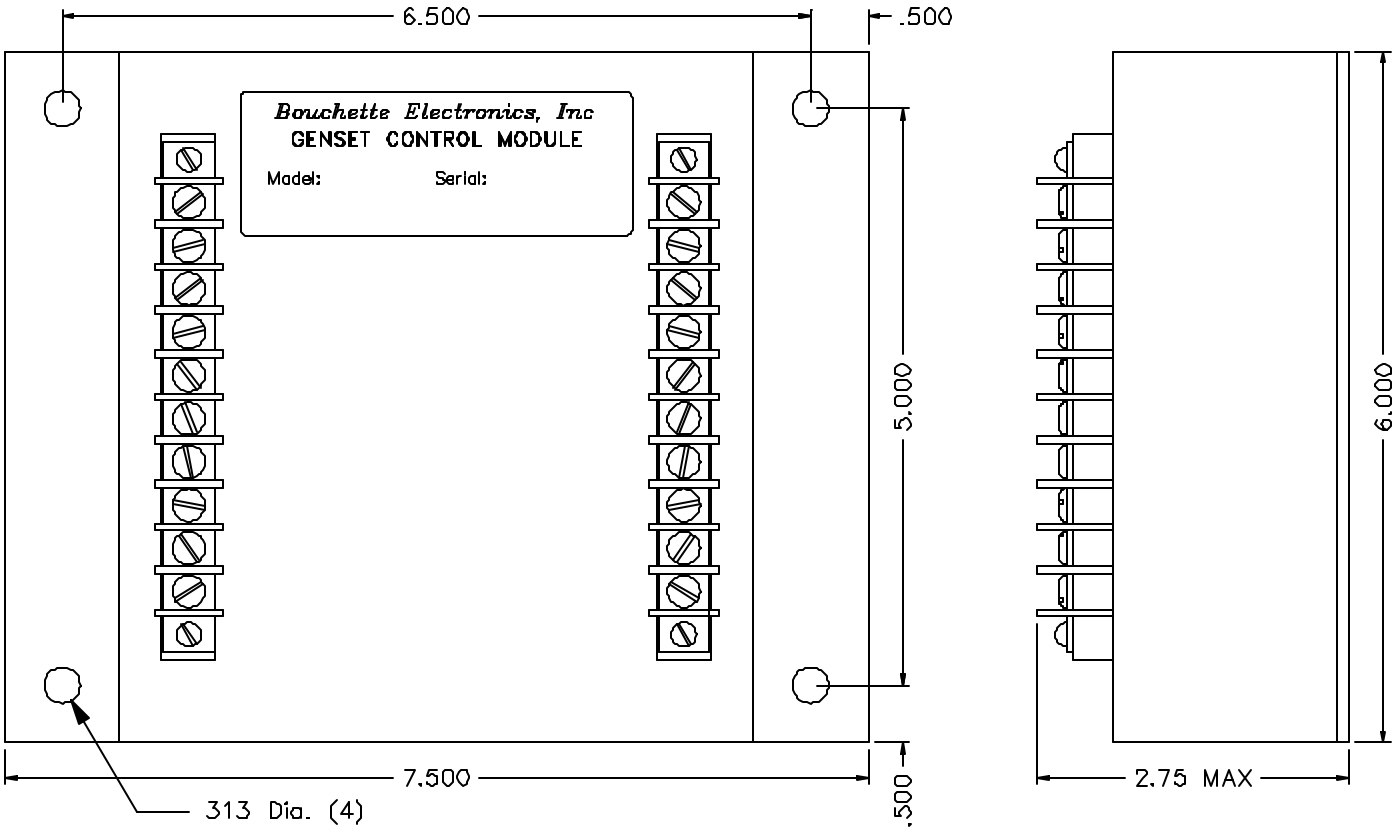
Note 1: Other models available for other frequencies and/or voltages. Consult factory with your specific requirements.

Model Number Designation: M 1 2 1 B 0



Bouchette Electronics, Inc.
N11325 County Highway Y, Clintonville, WI 54929
(715) 823-7770 (715) 823-7771 Fax *www.bouchette.com*

M121B Dimensions



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GENSET CONTROL MODULE

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Control Switch Inputs

The following operator panel controls are wired into the control module through the fronted mounted terminal blocks.

1. Run/Stop Switch

a. “Run” position applies battery power to the control module, which in turn energizes the fuel solenoid (or ignition circuit) via an internal heavy-duty relay contact. This permits the engine to be started by an operator, and run unattended.

b. “Stop” position removes battery power from the control module and prevents the engine from running.

2. Lamp Test Push-Button

Energizes all alarm lights simultaneously. This feature is disabled with the Run/Stop switch in the “Stop” position and has no other effect on unit operation.

Output Control Functions

The master control circuit electrically controls the engine fuel solenoid and/or ignition system to provide engine shut-off in the event of a malfunction.

Safety Inputs

1. Low Oil Pressure (LOP) Shutdown.

Monitoring of oil pressure begins 12-seconds after the unit starts and remains in effect until the unit is shut down. Closure of this contact while engine is running results in engine fault shutdown with alarm light indication. The LOP signal is derived from an oil pressure sensor switch mounted on the engine.

2. High Water Temperature (HWT) Shutdown.
The engine coolant temperature sensor monitoring begins 48-seconds after the start signal and remains in effect until the unit is shut down. Closure of this contact while engine is running results in engine fault shutdown with alarm light indication. The HWT signal is derived from a temperature sensor switch mounted on the engine.

3. Overspeed (OS) Shutdown / Adjustment.
Overspeed shutdown protection is provided by a frequency sensing network within the control module. The trip point of the frequency network is screwdriver adjustable via a rheostat located at the top end of the control module. Clockwise rotation increases the trip frequency and, thereby, raises the shutdown speed. Exceeding this speed will result in engine fault shutdown and alarm light indication. The OS signal can derive from any frequency source related to engine speed: distributor ignition pulses, magnetic pick-up, A.C tachometer generator, alternator tachometer terminal, etc. Please refer to the M121B specifications for correct frequency range model designation.

Status Lights

1. System Normal Light
The System Normal light is energized whenever the engine is actually running and no malfunctions have occurred. This light is controlled by the internal frequency network, which also initiates the timer for the LOP and HWT safety inputs.

Warning: **An absence of this light while the engine is running indicates the engine has no overspeed protection, and may not have any safety protection at all.**

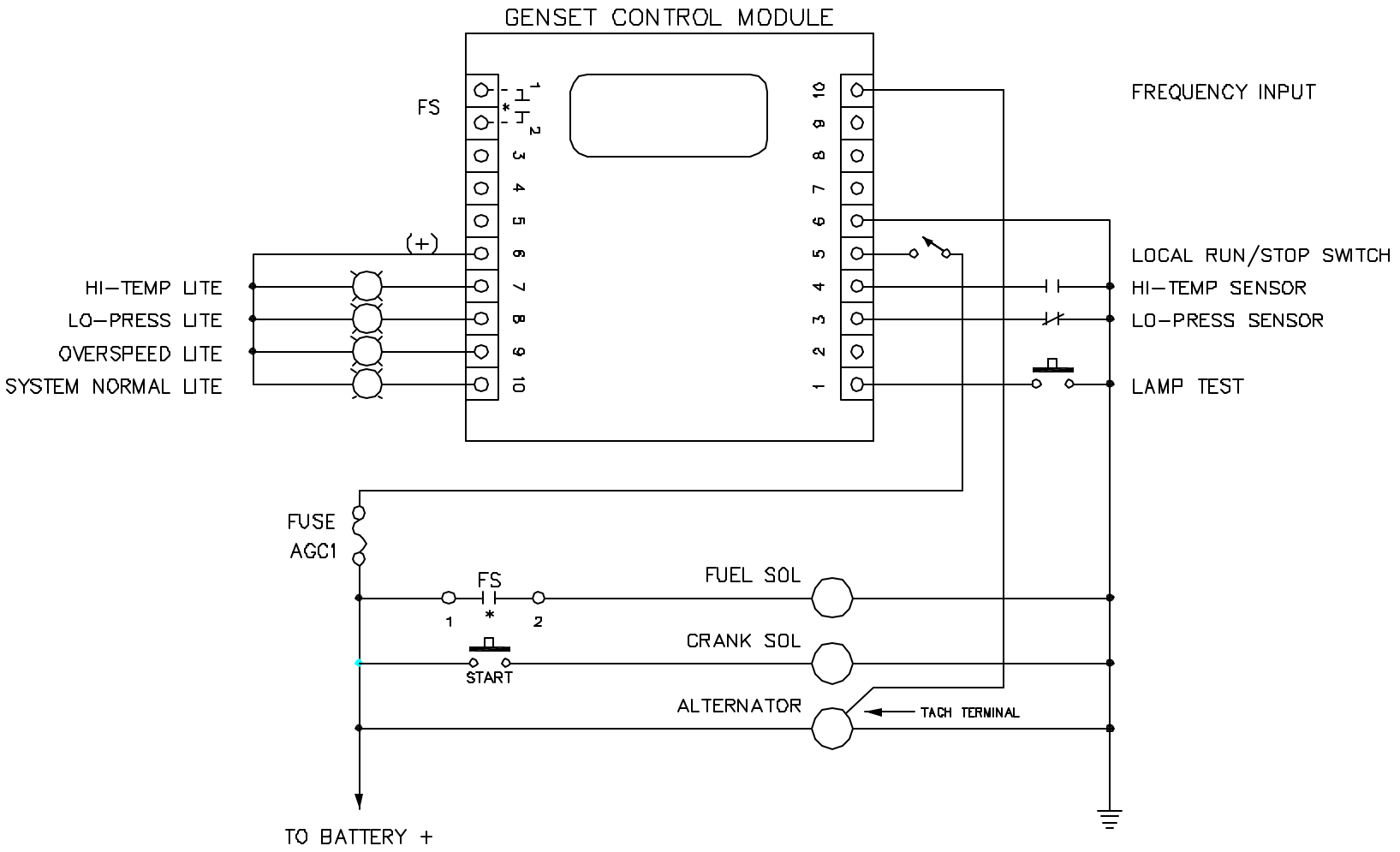
2. Overspeed Light
Indicates that the engine was automatically shutdown due to an overspeed condition.

3. High Water Temperature Light
Indicates that the engine was automatically shutdown due to excessive engine coolant temperature.

4. Low Oil Pressure Light
Indicates that the engine was automatically shutdown due to low engine oil pressure.

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 selector switch on the operator control panel must be momentarily placed in the "Stop" position to reset these functions.



* RELAY FS IS INSIDE THE GENSET CONTROL.

FREQUENCY SENSING FROM ALTERNATOR TACH. TERMINAL

Bouchette Electronics, Inc.
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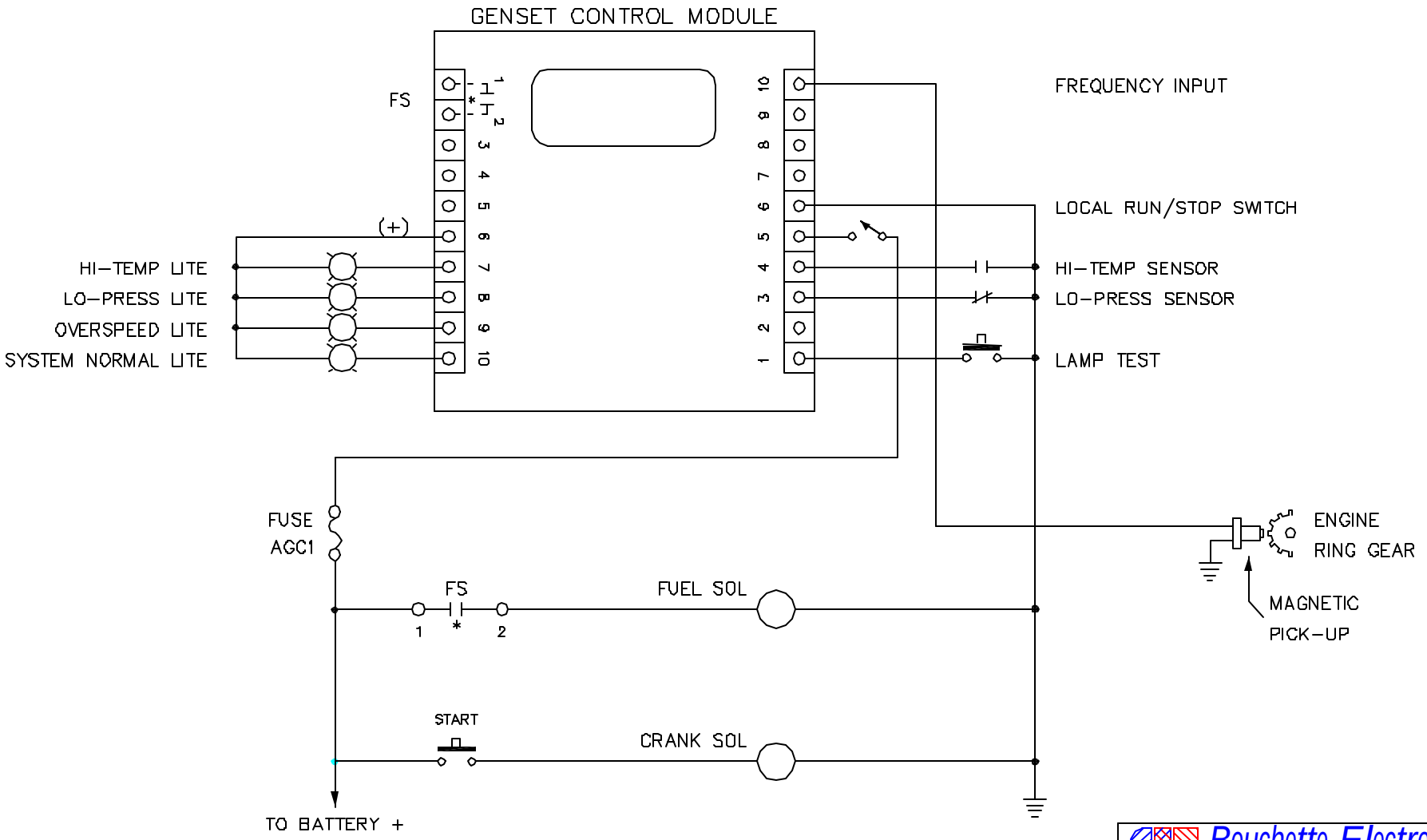
TITLE			
CONNECTION DIAGRAM M121B/M241B CONTROL			
DATE	DWN BY	CHK	SCALE
08-29-89	DSB	TJB	NONE
P/N	CAD REF	DWG NO	
			E120-2



* RELAY FS IS INSIDE THE GENSET CONTROL.

FREQUENCY SENSING FROM MAGNETIC PICK-UP

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TITLE			
CONNECTION DIAGRAM M121B/M241B CONTROL			
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P/N	CAD REF	DWG NO	
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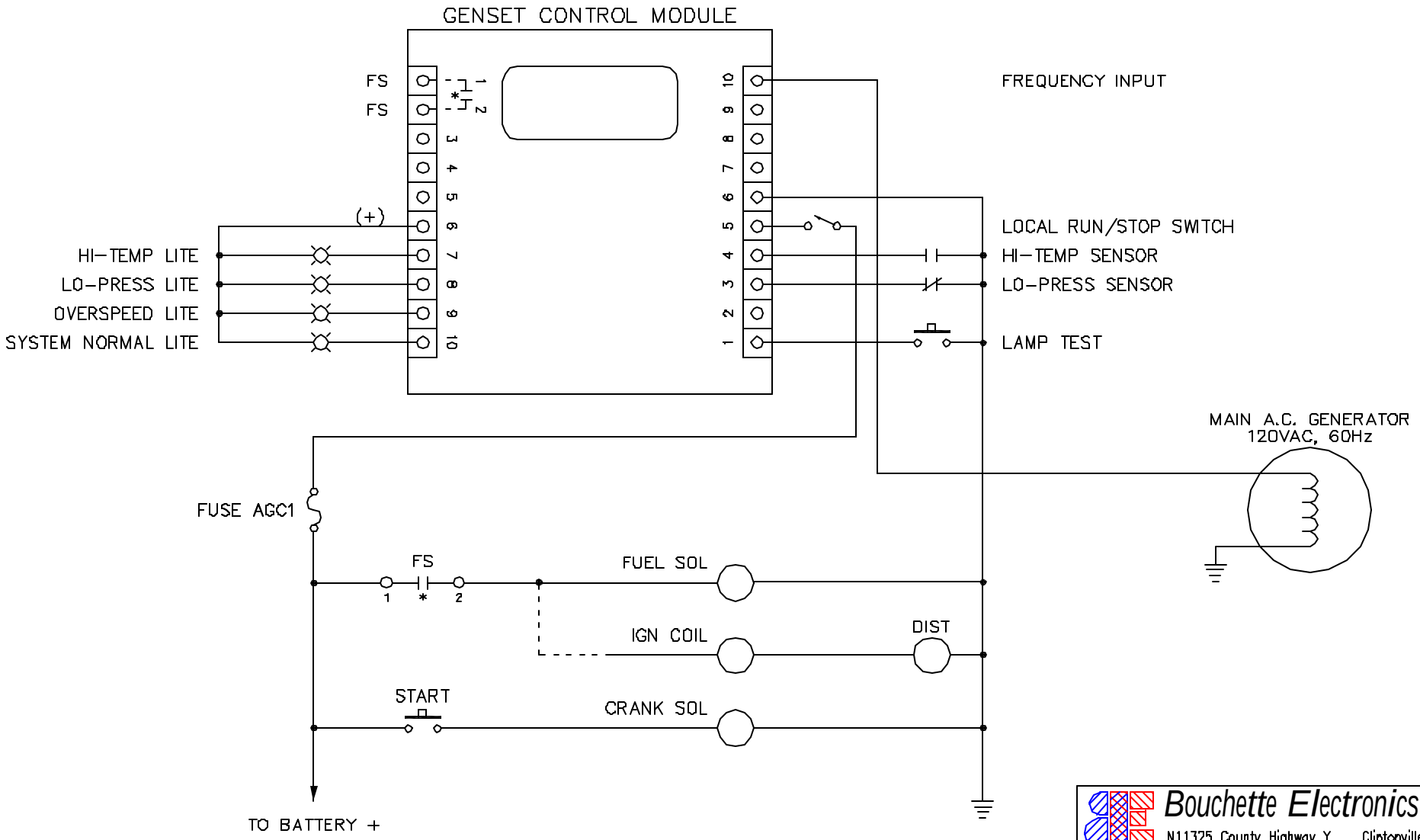

* RELAY FS
IS INSIDE THE
GENSET CONTROL.

FREQUENCY SENSING FROM MAIN A.C. GENERATOR

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TITLE			
CONNECTION DIAGRAM M121B6 CONTROL			
DATE	DWN BY	CHK	SCALE
02/26/93	DSB	TJB	NONE
P/N	CAD REF	DWG NO	
		E120-10	