

Specification: Day Tank Control System 2000PLUS™ ECM



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General

This section covers the electrical description and installation of the standard TRAMONT electrical control module (ECM). Installation of the "SYSTEM 2000" should be performed by a qualified electrician. These specifications describe the standard "SYSTEM 2000" ECM as the most full featured UL508 listed fuel transfer system in the industry.

Description

The heart of the "SYSTEM 2000" ECM is an electrical analog float gauge sends a signal to the ECM for: fuel level indication, pump control, high fuel level warning, low fuel level warning, low fuel level shut off, fuel in rupture basin warning, low fuel in remote tank warning and an ECM function signal. All signals and warnings are provided with N.O. and N.C. contacts for remote annunciation. The ECM can be manually controlled by ON, OFF, and TEST push buttons. In addition, an internal test button allows for a periodic test of all warning LEDs and remote annunciation relays.

Functions

The purpose of the ECM is to maintain the fuel level of the day tank by controlling the pump/motor. The pump is off at the normal fuel level and is activated at 87% full. A "pump running" indicator LED is on when the pump is activated. A motor control relay is prewired to pump motor.

WARNING: When ECM "OFF" push button is engaged the unit is disabled, however, 120 VAC power is still present within the ECM indicated by the "power on" LED.

Options

Standard - UL 508 listed control module

1920 - Duplex pumping system. Adds 2nd pump and motor for safety redundancy. Control alternates lead pump.

1930 - Controls are available for 12 VDC operation. Single or duplex. Please consult factory for specifications.

1935 - Controls are available for 24 VDC operation. Single or duplex. Please consult factory for specifications.

3240 - Pump running contacts for remote annunciation.

3250 - Critical high shutdown. Separate float switch senses high fuel level, disengaging motor and closing N.C. solenoid valve. Warning relay supplied for remote annunciation.

Incoming Power

The ECM is powered by a customer-supplied 120 VAC line. Power terminals are accessible by removing four cover screws on the ECM and removing the ECM cover exposing the terminal strip. Wires should be run through knockout provided.

Level Sensor

The day tank's level is determined by an electrical analog float gauge located beneath the ECM. The sensor sends a 0-90ohm signal to the ECM, which converts this signal into a precise fuel level. Fuel level is indicated by nine incremental LEDs on the ECM from EMPTY to FULL.

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Alarms

The ECM has five standard alarm conditions. Each alarm is indicated locally by an LED and remotely by wiring to supplied relays. A normally open and normally closed contact is provided for customer connections. Contacts are rated at 1 amp tungsten, 120 VAC or 24 VDC.

A. High fuel - activates at 106% of normal fuel level with a two second change of state time delay.

B. Low fuel - activates at 62% of normal fuel level. This enables the customer time to react to a potential problem before low fuel shutdown occurs.

C. Low fuel shutdown - activates at 6% of normal fuel level. This enables customer to shut down engine generator before fuel runs out, preventing loss of prime or engine damage.

D. Fuel in rupture basin - with a rupture basin float switch, (option #2930) the ECM will signal if fuel is in the rupture (containment) basin.

E. ECM functional - the ECM performs many internal checks (including float sensor signal verification) to ensure proper operation. If a fault occurs, this LED will go out (or flash if an erratic signal is present) and de-energize the relay. It is suggested that the customer wire to the normally closed contact thereby providing a signal if a fault does occur.

Mode

There are four modes of operation on the ECM:

A. Off - This pushbutton disables the ECM for routine maintenance to the tank system without disrupting the ECM. **Caution:** ECM functional de-energizes, which can activate a customer alarm wired to this relay.

B. On - This pushbutton activates the ECM after the Off pushbutton has been depressed. On any initial power up condition, after a power outage, the ECM will automatically turn on.

C. Test - This pushbutton will test all front panel LEDs for three seconds and activate pump/motor for as long as the button is depressed. All alarm relays will not activate but will maintain their original state.

D. Internal test - This pushbutton, located inside the ECM, will test each LED and remote annunciation relay in sequential order - High fuel to ECM functional.

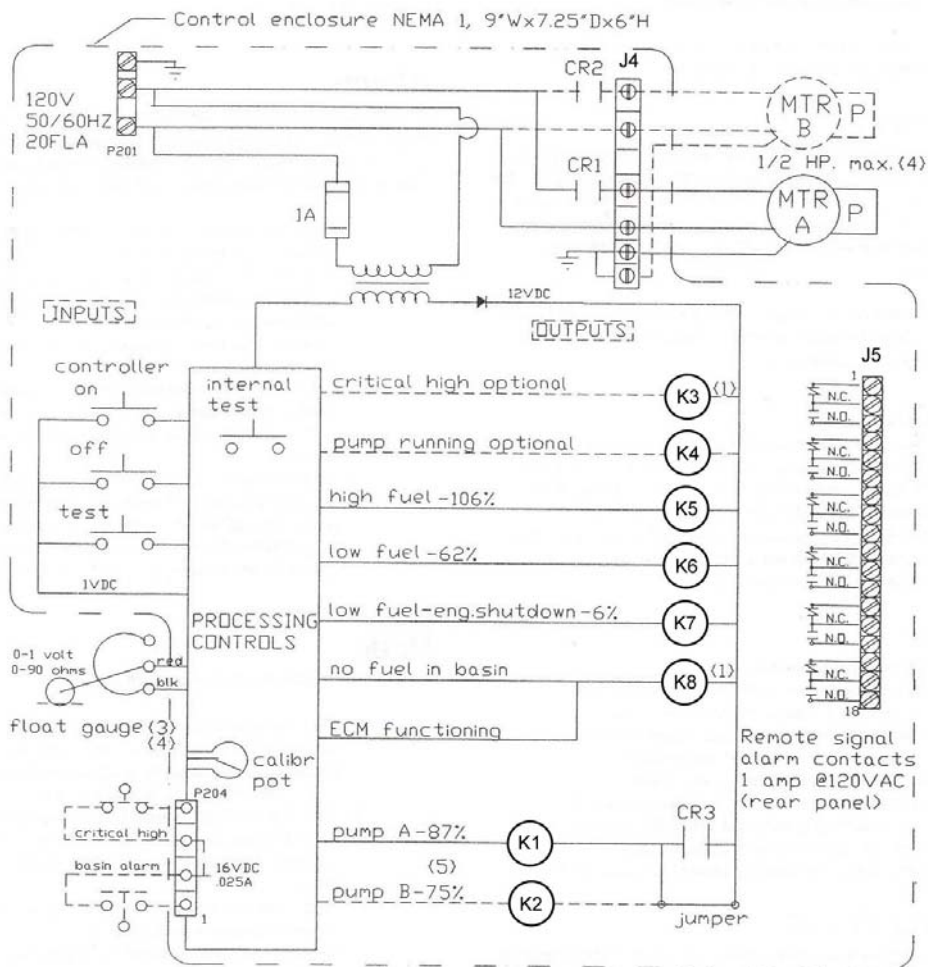
Note: It is recommended that both the external and internal test switch be activated as part of a periodic maintenance program to ensure reliable operation of the day tank.

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This ECM has been designed to supply the customer with all necessary options in a standard package. By following these installation guidelines a qualified electrician should be able to wire this unit into a generator control system providing the customer with complete monitoring and control over the day tank fuel transfer system.



NOTES:

1. Relay is energized during normal operation.
2. Dashed line indicates optional controls.
3. The controller is normally mounted above the gauge, sitting on the day tank. However, the controller can be mounted up to 50' away from the tank and gauge using #16 gauge shielded twisted wire.
4. Motor starters are required above 1/2 HP.
5. Pump A and B alternate lead positions.
6. Warning: An inlet fuel strainer is highly recommended (#2230) to prevent fuel contamination, maintain fuel gauge integrity, and prolong the life of the pump.