



# 40 Amp PWM Electric Motor Driver

## PWM Electric Motor Driver (EMD) Module

### 40 AMP MAXIMUM

The Pump Driver Module (EMD) replaces the servo valve. System flow is controlled by regulating the pump speed via a PWM signal to the EMD.

**NOTE:** This unit will ONLY work with PWM (Pulse Width Modulated) Control drives. Set the PWM frequency of your controller to 150 Hz.

### MODULE INSTALLATION

**NOTE:** The mounting surface must be cleaned so it is free from dirt, moisture and oil residues. Failure to clean the mounting surface may result in the EMD working loose.

Remove the GREEN backing from the Dual-Lock™ fasteners on the bottom of the EMD unit. Position the EMD where wiring will work the best. Extension cables are available. Firmly press the EMD into place. Secure the EMD to the equipment using plastic cable ties to prevent the EMD from coming into contact with moving parts if the Dual-Lock™ fasteners should work loose. If desired, the EMD can be fastened with screws, using the holes in the mounting flanges.

### ELECTRICAL INSTALLATION

This section explains how to hook-up your EMD to a 12-volt power connection, and how to connect your EMD to your controller harness.

The EMD **MUST** be connected to a 12-volt DC negative ground electrical system.

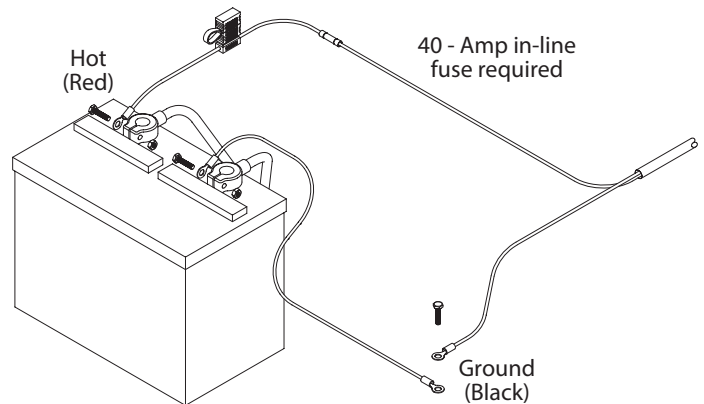
### POWER BATTERY CONNECTION

Locate the power cable, P/N 18419 and route to the battery. In routing cable avoid areas where the cable may be subjected to abrasion or excessive heat. Attach the BLACK wire to ground. See Illustration to the upper right. Be sure there is a good metal-to-metal contact. Connect the RED wire to the positive battery terminal.

Connect the power to the EMD by plugging the 2-Pin M/P 480 Tower on the power cable into the 2-Pin M/P 480 Shroud of the EMD module.

### SIGNAL AND MOTOR CONNECTIONS

**NOTE:** Be sure to route cables away from sharp edges, areas of high heat and moving parts. Secure all cables firmly with plastic cable ties.



Connect the other end of the cable to the mating connector on the controller harness using Adapter Cable P/N 17539 if required.

Locate the pump cable P/N 18420. Plug the 2-pin M/P 480 Shroud into the 2-pin M/P 480 Tower on the EMD module. Connect the other end to the pump. Insure that the pump is running in the correct direction. If not, simply reverse the wires from the pump to the pump cable.

**See Next Page for Applicable Diagram.**

### LED STATUS INDICATOR CODES




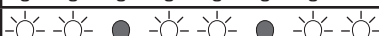



See table on page two for LED status indicator code explanations.

### FUNCTIONS OF SYSTEM STATUS LED

1. Red LED lights when the PWM signal is present.
2. Becomes brighter when the signal is increasing and becomes dimmer when the signal is decreasing.

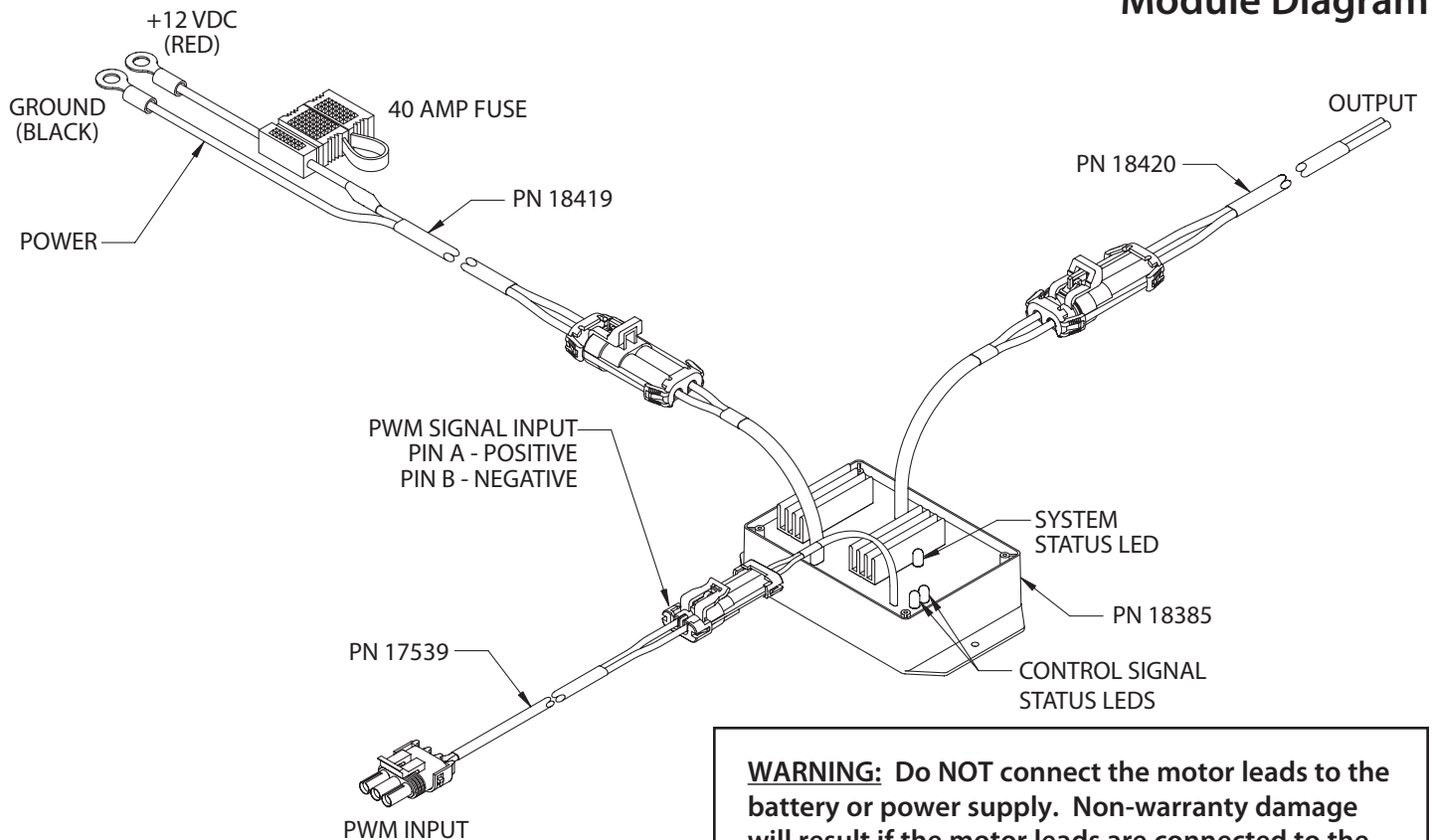
## PWM Electric Motor Driver (EMD) Module Diagram

40 AMP MAXIMUM

| LED STATUS INDICATOR CODES |   |   |
|----------------------------|---|---|
| Light on steady            |  → | Unit is turned on and operating normally                                    |
| Steady Flashing            |    | Unit in HOLD. Check Run/Hold jumper or remote switch for correct operation. |
| 1 Flash/pause              |    | Open circuit detected. Check motor connections for open.                    |
| 2 Flashes/pause            |    | Output short circuit detected. Check motor wiring.                          |
| 3 Flashes/pause            |    | Over-current condition. Check total load.                                   |
| 4 Flashes/pause            |    | Input Power fault. Check input power wiring.                                |
| 5 Flashes/pause            |    | Input frequency out of range.   |

NOTE: Cycle power with the controller ON/OFF switch to clear a fault code

## Module Diagram



**WARNING:** Do NOT connect the motor leads to the battery or power supply. Non-warranty damage will result if the motor leads are connected to the battery or power supply.