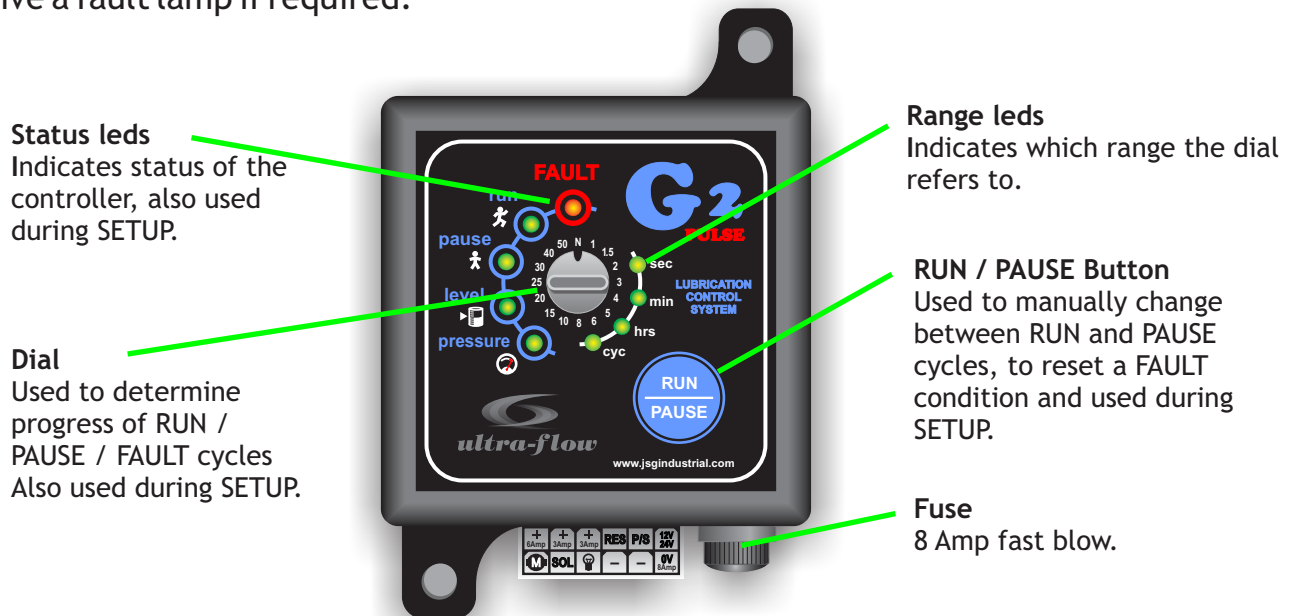


The **G2 Pulse** Lubrication Controller is specifically designed for use on systems incorporating a pump as well as a solenoid valve and pressure switch. The unit can be programmed for pause cycles from 1 second to 50 hours, pump run pressure timeout range of 1 to 50 minutes and solenoid valve cycle times of 1 to 50 seconds.

The systems can run from 10 to 30 volts DC making it suitable for 12 or 24 volt systems. Low level monitoring is also available as well as an additional output to drive a fault lamp if required.



## Setup Mode

To enter **Setup Mode** apply power while holding the button down for 2 seconds. The Fault led will illuminate to indicate that the unit is in Setup Mode.

The first parameter is the **Pause Time**. This can be from 1 second to 50 hours. The range leds will indicate the range of the current setting. To determine the exact setting turn the dial until the range led starts to blink, this indicates that the dial and range leds are pointing to the current setting. To select a different setting turn the dial until the range leds and the dial indicate the desired setting (note that turning the dial past the N position will change the range up or down depending on the direction of rotation (where applicable), N itself is not a valid setting and will not be accepted), press and hold the button for 2 seconds. The range led will now start to blink indicating the new setting has been accepted. This step can be repeated if necessary.

To move to the next parameter simply press the button briefly (less than 2 seconds). Note that the position of the dial is not significant when simply moving to the next parameter.

The next parameter is the **Solenoid Reciprocation Rate**. This is a single, symmetrical time parameter in seconds of the solenoid's on and off cycles (e.g. if this is set to 2 seconds the solenoid will switch at a rate of 2 seconds on and 2 seconds off) . This setting can be from 1 second to 50 seconds and can be changed as with the Pause Time.

To move to the next parameter again press the button briefly.

The last parameter is the **Pump Run Pressure Timeout**. This is the maximum time the system can take to build up pressure. If the pressure switch does not close within this time the unit will assume there is a fault and go into Fault Mode. Valid range for this setting is from 1 minute to 50 minutes. Change as per Pause Time. This value must be suitably longer than the maximum possible pressurizing time of the system to ensure no false alarms.

To move past this parameter press the button briefly

The last stage of Setup Mode is a **Test Mode**, this is indicated by the Fault led flashing. The level and pressure leds will indicate if the level or pressure switches are closed. Holding the button down will drive the solenoid and pump, **CAUTION**, note that this will continue for as long as the button is pressed, regardless of whether the pressure switch is closed or not.

## Operating Mode

- **RUN**

During a run cycle the pump is on continuously while the solenoid cycles at the rate specified in Setup. The dial and range leds can be used to determine how much time has elapsed. Once the pressure switch contact closes the unit will enter a Pause cycle. If however, the pressure switch contact has not closed before the Pressure Timeout expires, the unit will enter a Fault mode. Pressing the button at any point will terminate the Run cycle and initiate a Pause cycle

- **PAUSE**

During a pause cycle the pump and solenoid are off and the unit counts down to zero starting from the Pause Time specified in Setup. The dial and Range leds can be used to determine how much pause time remains. Once the time counts to zero the unit will attempt to start a new Run cycle. If the pressure contact is still closed , however, the unit will enter a Fault mode instead. Pressing the button will terminate the Pause cycle and start a Run cycle only if

the pressure switch contact is open. If the pressure switch contact is still closed pressing the button will have no effect. The Pressure led will remain lit so long as the pressure switch contact is closed.

- **FAULT**

There are three possible fault conditions

1. **Reservoir Low Level** indicated by the Level led being on. This occurs if the Level Switch contact is closed at any point during a Run cycle after the initial four seconds have elapsed.
2. **Cycle Timeout** indicated by the Pressure led being on. This occurs if the Pressure Switch contact does not close within the period specified by the Pressure Timeout in Setup
3. **Pressure Fault** indicated by the pressure led blinking. This occurs if the Pressure Switch contact has not opened before the end of a Pause cycle

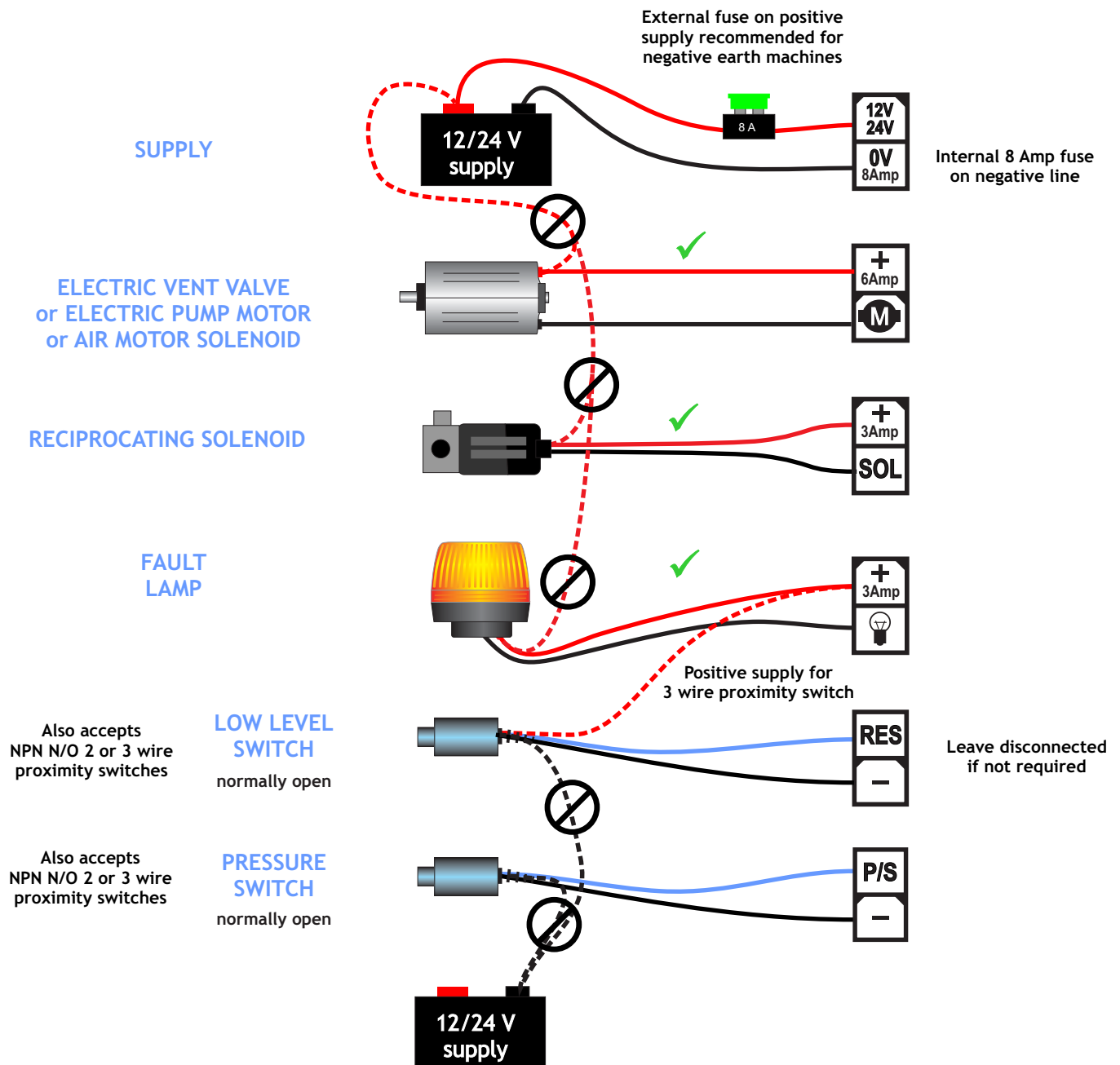
In Fault mode the dial and range led's can be used to determine how long the fault has existed (up to 50 hours max). Note that pressing the button will terminate the Fault mode and start a Pause cycle. The unit must go through a complete Run and Pause cycle first before the fault time will be reset to zero. If another fault occurs first, the fault time will continue counting from where it left off.

## G2 Pulse Wiring

The G2 incorporates a fuse on the negative supply line. This has been done deliberately as most applications are automotive and the majority of vehicles are positive earthed. This configuration ensures that any wiring shorts to earth will draw current through the fuse and thus protect the system. Note that on negative earth systems it is possible to have a short circuit that bypasses the fuse and may cause damage to the unit. It is recommended to incorporate an external 8 Amp fuse on the positive supply line on installations on negative earth machines. Also be sure to use the return wiring points provided and do not introduce negative or positive circuits from other points to attempt to simplify the wiring, doing so would create alternate paths that can bypass the fuse in event of short circuits.

The low level switch and the pressure switch circuits will work off normally open contacts as well as NPN N/O two and three wire proximity switches. If a three wire proximity switch is used take the proximity switch positive supply from the fault lamp positive terminal. If low level monitoring is not needed simply leave unconnected.

## G2 Pulse wiring diagram



**NOTE:** All connections must be brought back to the plugs.

**NB** This unit incorporates MOSFET transistors to drive the pump, solenoid and lamp. Excessive short circuits on these drives could destroy the MOSFETs before the fuse blows. Take extra precaution to avoid the possibility of short circuits. Damage to the MOSFETs from short circuits is not covered by warranty.