



ultra-flow



Autolube

SINGLE LINE SYSTEM SETUP

manual setup for single line systems

single line system using a pressure switch



autolube specifications

The AUTOLUBE is a universal lubrication system controller capable of handling all common lubrication systems from the simplest run - pause timer through progressive, single and dual line systems. Innovative algorithms also give new flexibility and greater control over traditional single line systems.

The practical layout gives clear indication of exactly what is happening at any time and the advantaged diagnostics will help to pinpoint any faults quickly. Although highly flexible, it remains simple to operate and program by using Ultra-Flow's proprietary **Lube-Logic**® setup procedure. By specifying what type of system is being used, **Lube-Logic**® asks the user only relevant information in a clear step by step manner and the operator need only concern himself with the particular system he is using.

The built in Real Time Clock allows the unit to log a history of operations and faults conditions. Serial communications allows the operation / history and setup to be modified / altered via a PC. By using the GSM option available, all conditions can be monitored remotely using GSM cellular network and the unit can even be programmed to report any fault conditions to a remote PC located elsewhere in the country or in a different country.

FEATURES:

- ! Runs progressive, single line and dual line lubrication systems.
- ! Real time clock logs date and time of faults (80 critical records).
- ! RS232 serial port allows connection to PC.
- ! Option to connect to GSM modem allowing remote monitoring via GSM networks.
- ! Optional Dongle available for remote downloading of data without the need of a Laptop.
- ! Timing intervals from 5 seconds to 24 hours.
- ! Cycle Counting.
- ! 10Vdc to 30Vdc operation.
- ! Short circuit/open circuit detection with audible warning.
- ! External fault lamp drive (Flash or steady output)
- ! Low level reservoir monitoring.
- ! Two sensor switch inputs.
- ! Visual & audible fault indication.
- ! Non-volatile memory.
- ! Built in "blown fuse" indicator.
- ! 3 digit LED display indicates exact status of system.
- ! Simple "**Lube Logic**" setup procedure.
- ! Test mode allows testing of all the circuits connected to the Autolube for verifying.
- ! Practical attractive housing with mounting bracket.

SPECIFICATIONS:

VOLTAGE:	10VDC TO 30VDC
CURRENT DRAIN:	150ma MAX (no load) 70ma nominal
PUMP OUTPUT:	7Arms.MAX
LAMP OUTPUT:	3A MAX
SWITCHING:	Solid state short circuit protected
FUSE:	8 Amp fast blow 20mm glass
CONNECTION:	14 way MOLEX MINIFIT - JR
COMMUNICATIONS:	RS232 Type
DIMENSIONS:	70mm X 145mm X 38mm (including mounting bracket)
WEIGHT:	300g
PROTECTION:	IP54
TEMPERATURE RANGE:	-25C to 80C

general precautions

The user manual is intended to familiarize the user with the autolube controller and its designated use. The operating instructions contain important information on how to operate the autolube controller safely, properly and efficiently. Observing these instructions will help reduce confusion and actual damage to the autolube controller. This manual must be read and applied by any person in charge of carrying out any form of setting up or work on the autolube controller.

Operational Precautions:

Includes the total understanding of the autolube specifications. Never connect to any other voltage supply other than that specified in the manuals contained within.

The owner/user must ensure at all times that installation or inspections are executed by authorized and qualified personnel who have thoroughly read the operating instruction manual.

Any setting up or work on the autolube controller must be done while the machine is off. The machine must be in such a position that it will not cause harm to any person should the machine be switched on for the setting up of the autolube controller.

In the event that the machine needs to be on for the setting up of the autolube controller it must be on condition that the operator or personnel working on the machine are advised.

Never switch the machine on without the prior knowledge of the operator/owner or somebody that has full knowledge of the machines operation.

Warnings:

Never weld on a machine while the main switch of the machine is on. Insure that the machines main switch is off and correctly tagged. Welding on a machine can cause serious damage to the autolube controller.

Do not alter or modify any part of the autolube controller.

Insure that the autolube controller is mounted in a suitable area.

Do not mount the autolube controller near excessive heat areas.

Always use the right specified fuse rating for the autolube controller.

Never exceed the voltage rating of the autolube controller.

Never expose the autolube controller to direct sunlight.

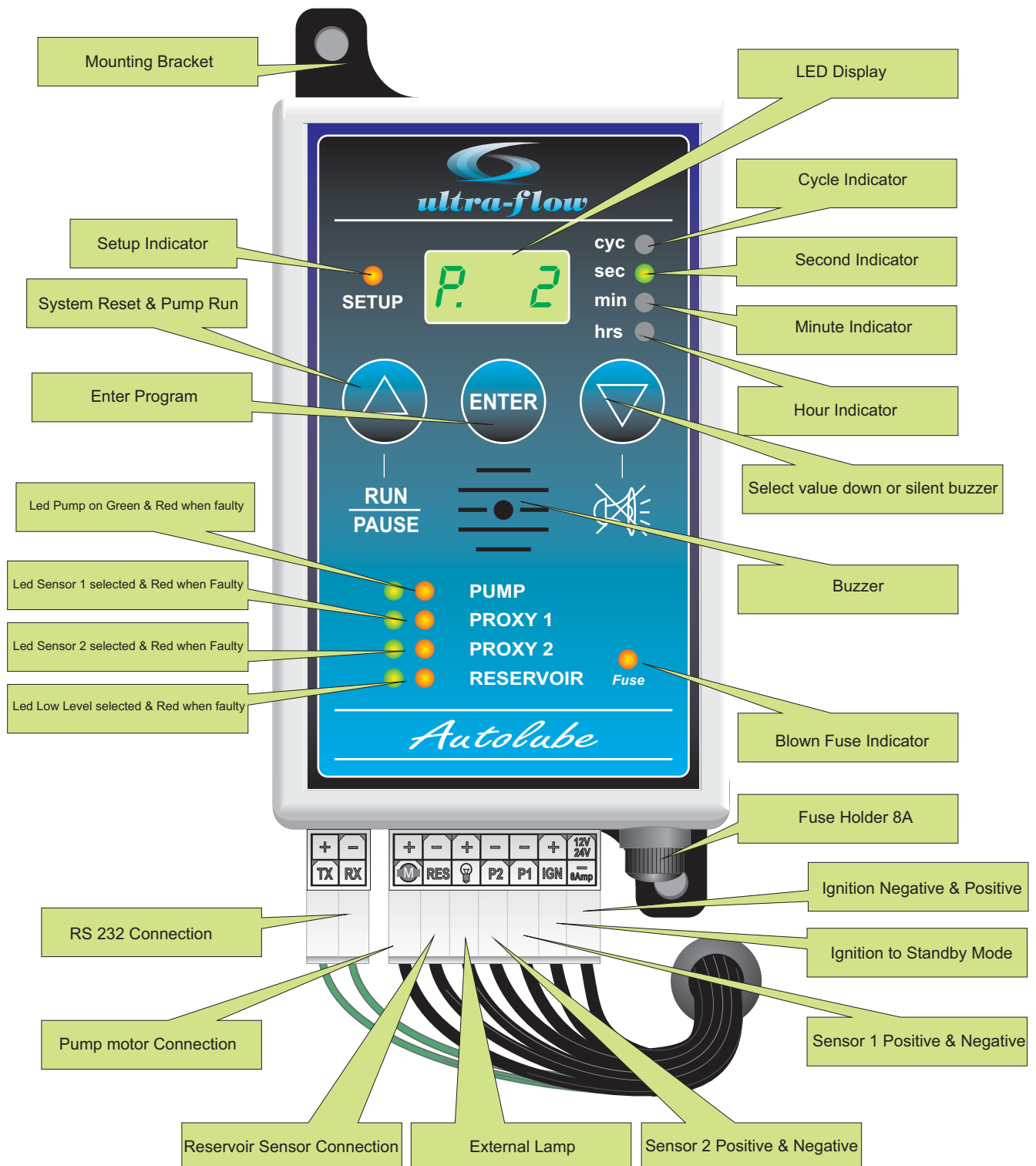
Never expose the autolube controller to water or other substances.

MANUFACTURER:

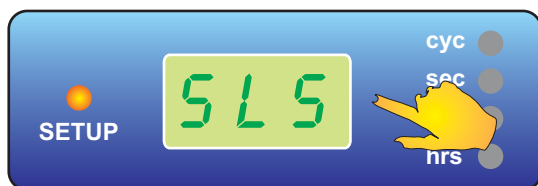
Ultra-Flow Lubrication Systems c.c.
Email technical inquiries - leon@ultra-flow.com



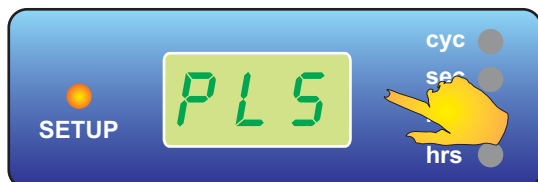
autolube key pad layout



panel description



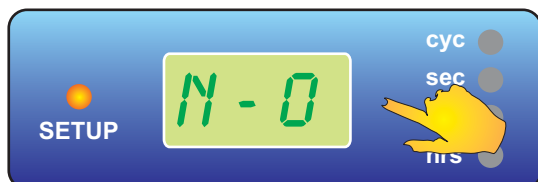
SLS = Single Line Systems



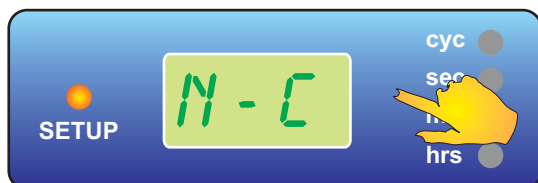
PLS = Progressive Line Systems



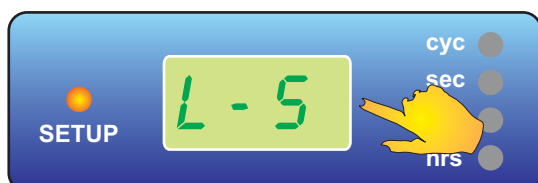
DLS = Dual Line Systems



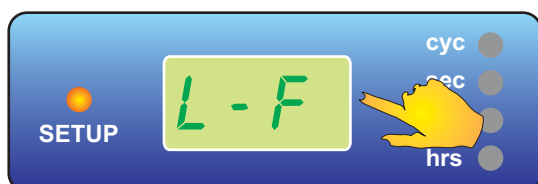
N-O = Normally Open (Sensors)



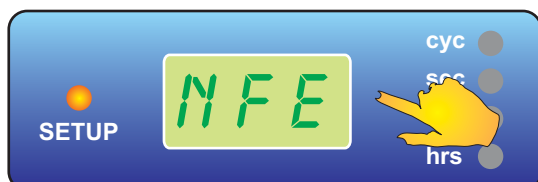
N-C = Normally Closed (Sensors)



L-S = External Lamp Steady (Continues supply)

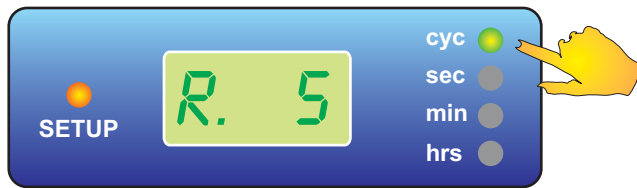


L-F = External lamp Flashing (Pulsed Supply)

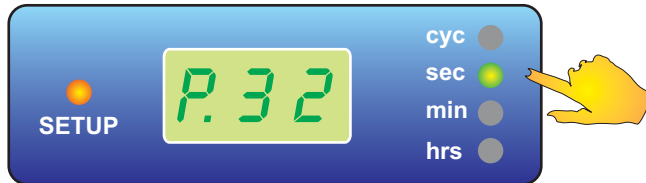


NFE = Non Fatal Error (Pump Continues on Low Level Fault)

panel description



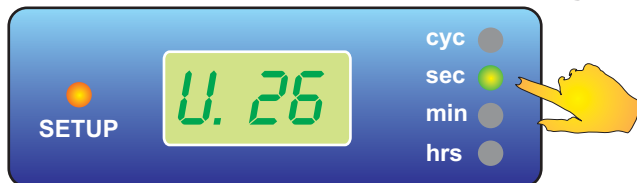
R = Run Time in Cycles



P = Pause Time in Sec, Min or Hrs



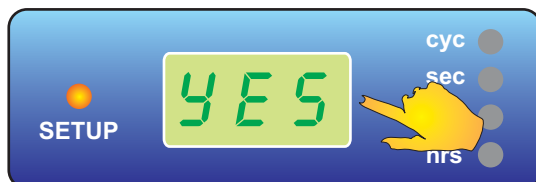
F = Fault Time in Sec, Min or Hrs



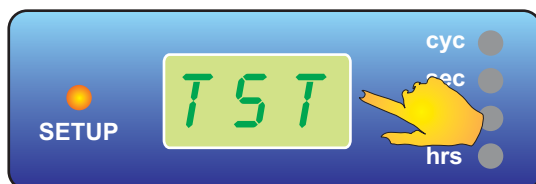
U = Vent Time in Sec, Min or Hrs



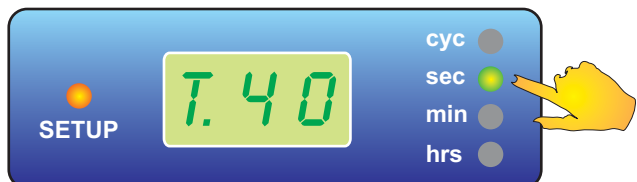
RCC = Run Cycle Counter



YES = Yes for accepting program changes

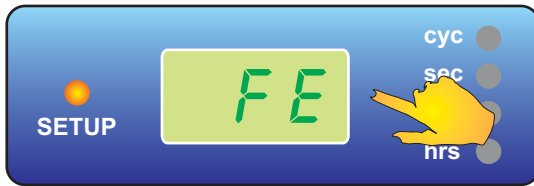


TST = Test Mode for Checking Installed Devices



T = Time out or Dwell Time for Sensors

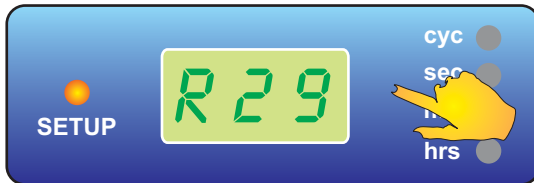
panel description



NE = Fatal Error (Pumps Stops on Low Level Fault)



NO = Do Not Select Selection



R = Run Time in Secs, Mins and Hours



. = Standby Mode

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single line system using a pressure switch



STEP 1

To enter the setup mode of the autolube controller press the ENTER button, hold and keep depressed while switching on the ignition switch or any other power source to the controller. Let go the ENTER button and the red LED (Setup) should now be illuminated. The green LED on the description PUMP will be flashing. PLS (Progressive Line Systems) should also appear in the display.



STEP 2

To select what type of system you require press the RUN/PAUSE (up) button and this will change the type of system required. By pressing the UP button the next system displayed will be SLS (Single Line Systems), the next system displayed after that would be DLS (Dual Line Systems). Continue to press the UP button till SLS is displayed. This procedure will enter into the Single Line Mode.

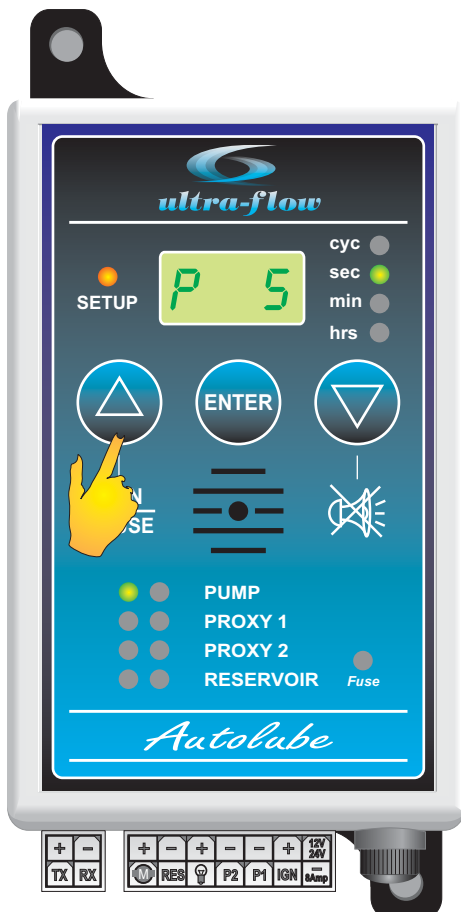
manual setup for single line systems

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STEP 3

Press the ENTER button to accept SLS.
By pressing the ENTER button you have confirmed that you want to use Single Line Systems.



STEP 4

As you press the ENTER button P (Pause) will now appear in the display. By pressing the UP button you can change the time from any amount in seconds to minutes then to hours. Note that the Led will change from seconds then to minutes and finally hours. The amount in the display will indicate what the pause time will be.

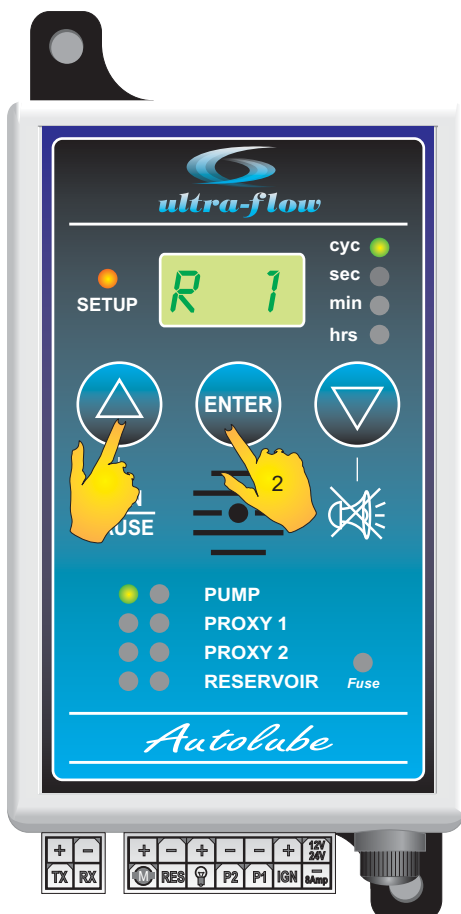
manual setup for single line systems

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STEP 5

Press the ENTER button to accept the pause time.
By pressing the ENTER button you have confirmed that you want to use a pause time of 4 hours as indicated.



STEP 6

Note that when using Single line Systems the RUN time will default to that of cycles. In the display it would either show 99 cycles or what ever cycles was setup before. In this example we are going to setup 1 cycle. The unit will only look for 1 signal from the pressure switch before going into VENT time. Press the ENTER button to accept and proceed to the next setup procedure.

manual setup for single line systems

single line system using a pressure switch



STEP 7

In the display the pressure switch timeout will now be displayed. Press the up button to increase the duration of the timeout required. Note on larger systems it may take longer to pressurize the complete system. It is important that the system is tested to establish its timeout. Add around 50% more to the actual timeout for the system to operate effectively without timing out before it has reached its pressure status.

Press the ENTER button to accept your settings.



STEP 8

After you have pressed the ENTER button N - O (Normally open) will appear in the display. This is an indication whether your pressure switch is normally open or normally closed. Press the up button to choose between N-O or N-C. Press the ENTER button to accept your choice.

manual setup for single line systems

single line system using a pressure switch



STEP 9

After pressing the ENTER button NO (NO) will appear in the display. Note that the green LED on proxy2 is now illuminated. Should you want to use a 2nd proxy then proceed by pushing the up button, press enter to accept and proceed the setup as you would have for proxy1. Normally we use only 1 pressure switch, press the up button till NO appears in the display. Press the ENTER button to accept your choice.



STEP 10 (VENT TIME)

After you have pressed the ENTER button U (VENT) will appear in the display. This is an indication of what the time in seconds, minutes of the actual time it takes for the system to VENT before proceeding into its next cycle or pause time.

It is possible now to setup SLS with multiple cycles. For example, if you setup your cycles to 2 then the unit will operate for 1 cycle then go into a VENT time of 1 minute as indicated in the display. After that minute has elapsed then the pump would turn back on and proceed with the next cycle. As soon as the second cycle has been reached then the VENT time (U) would appear in the display and time itself out for the time that it has been setup for.

After it has completed the 2 cycles and its VENT time then only will the unit proceed into its pause time.

For this example we are only using 1 cycle and therefore only require a short VENT time as no further cycles are required before reaching its pause sequence.

Press the ENTER button to accept the VENT time and proceed to the next part of the setup procedure.

manual setup for single line systems

single line system using a pressure switch



STEP 11

After you have pressed the ENTER button NO will appear in the display. Note that the green LED on reservoir will now be illuminated. In this setup procedure you have the choice of selecting low level detection or not. Should you not require low level detection then push the up button and select NO. Press the ENTER button to accept. In this example we are going to select the low level option. Press the up button till YES appears in the display. Press the ENTER button to accept your choice.

PLEASE NOTE THAT WHEN USING THE LOW LEVEL SENSOR, A 10 SECOND DELAY ON STARTUP WILL TAKE PLACE. THIS IS TO ENSURE THAT THE PADDLE ASSEMBLY IS IN THE RIGHT POSITION TO THE SENSOR AFTER 10 SECONDS OF RUNNING THE SENSOR WILL IMMEDIATELY ACTIVATE ON LOW LEVEL. THE LOW LEVEL WARNING WILL BE DISPLAYED WHEN THE UNIT REACHES ITS PAUSE STATUS. THE UNIT WILL NOT DISPLAY A LOW LEVEL WARNING WHILE IN RUN MODE.

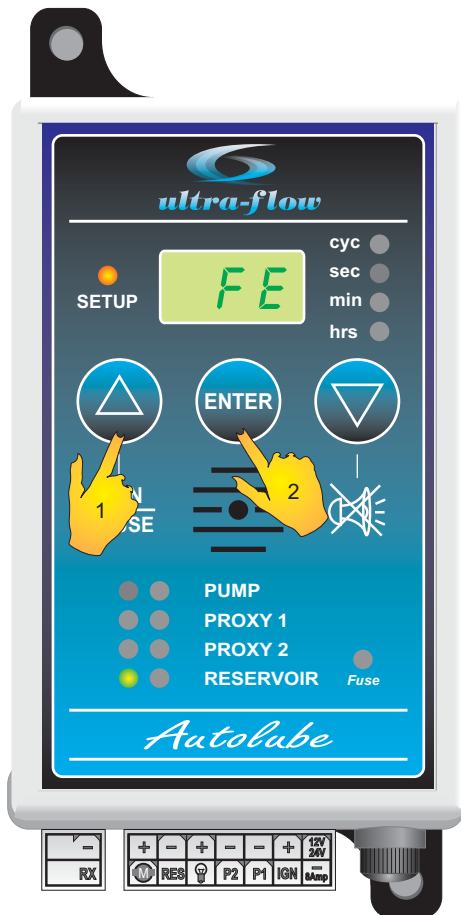


STEP 12

After you have pressed the ENTER button N - O (Normally open) will appear in the display. This is an indication whether your sensor is normally open or normally closed. Press the up button to choose between N-O or N-C. Press the ENTER button to accept your choice.

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STEP 13

After you have pressed the ENTER button either FE (Fatal Error) or NFE (Non Fatal Error) will appear in the display. The option of using FE (Fatal Error) is for the pump to stop on a low level warning. This is mostly used on pumps with reservoir capacities of 1L to 10L. It is preferred to stop the pump at low level in order to maintain a layer of grease above the pump element area. This would help by not allowing an air pocket to form around the pump element when filling up the reservoir.

In the case of NFE (Non Fatal Error) it is mostly used on larger pump reservoirs whereby the distance of the pump tube to the bottom of the reservoir is substantial. Select your choice and press the ENTER button.



STEP 14

After pressing the ENTER button L - F (Lamp Flashing) will appear in the display. This option is for an external warning lamp to be fitted. Normally if you have any sort of monitoring installed then this function will be used.

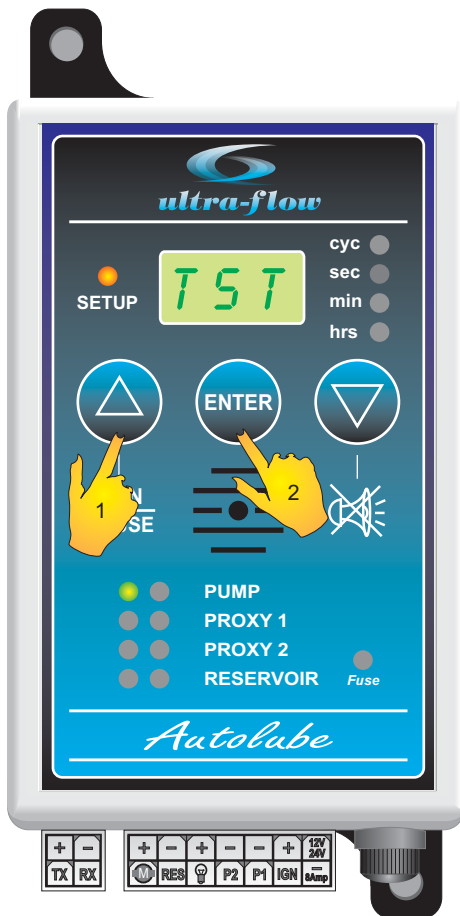
By pressing the up button the status will change from L - F (Lamp flashing) to L - S (Lamp static).

L - F is a pulsed output supply and L -S is a constant output supply.

Press the ENTER button to move onto the next part of the programming.

manual setup for single line systems

single line system using a pressure switch



STEP 15

After pressing the ENTER button TST will appear in the display. This indicates that you are now in the test mode of your setup procedure. By pressing the up button you will note that your pump will now start turning. Should the pump turn in the wrong direction it is now possible to correct by changing the polarity of your wiring. It is possible to check all other sensors as well by energizing them manually and watching if the green LED illuminates in that process. If the LED does not illuminate then there is a problem either with the wiring or setup procedure.

If all is correct you may turn of the power supply to the autolube controller.

PLEASE NOTE THAT TST MUST APPEAR IN THE DISPLAY BEFORE SWITCHING OFF THE POWER TO THE UNIT. SHOULD YOU SWITCH OFF POWER TO THE UNIT WHILE IT IS IN ANY PART OF THE PROGRAMMING THE SYSTEM WILL NOT SAVE YOUR CHANGES. TST MUST APPEAR IN THE DISPLAY IN ORDER FOR THE CHANGES TO BE ACCEPTED.

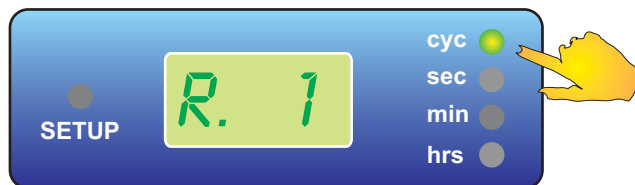
manual setup for single line systems

single line system using a pressure switch



RUN CYCLE MODE

After the power has been terminated on the unit then switched on again the unit will proceed in its run mode. All devices teen selected will now be displayed. Note that after each cycle received the amount will decrease by 1 until all cycles have been reached and the unit will proceed to its pause time.



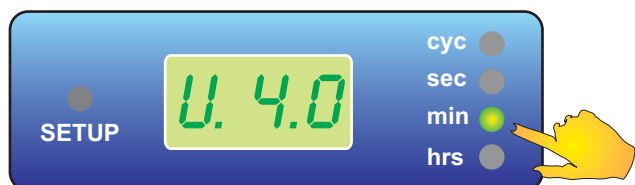
Running System.(Pump run)

When the controller is switched on the run cycle counter will appear in the display as it was setup for. The counter will appear from the actual counts set and count down to zero. The green LED will indicate that you are in run cycle counter. The green LED on the pump function will be flashing indicating that the pump is now turning or pumping.



Running System.(Pump pause)

When the controller has reached the required cycle counts it will go into its pause time that it was setup for. The pause time will count down from what it was setup for to zero and then resume its cycle count. Note that the green LED will be steady on the pump section of the decal. This is a indication that the pump is thereby not turning while it is in the pause mode.

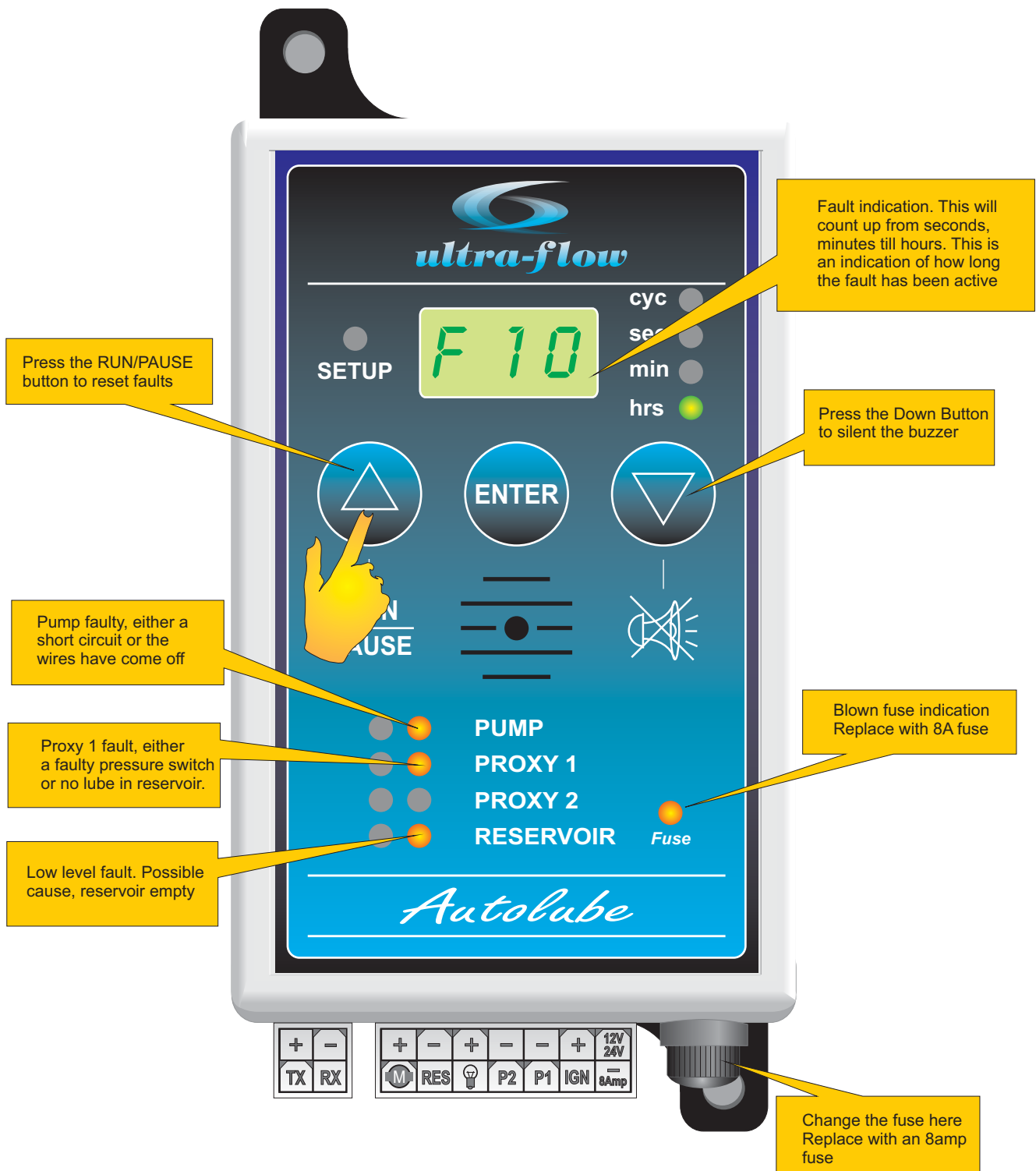


Running System.(Vent time)

When the controller has reached the required cycle counts it will go into its VENT time that it was setup for. The VENT time will count down from what it was setup for to zero and then resume its pause cycle. Note that the green LED will be steady on the pump section of the decal. This is a indication that the pump is thereby not turning while it is in the VENT mode.

manual setup for single line systems

single line system fault indications

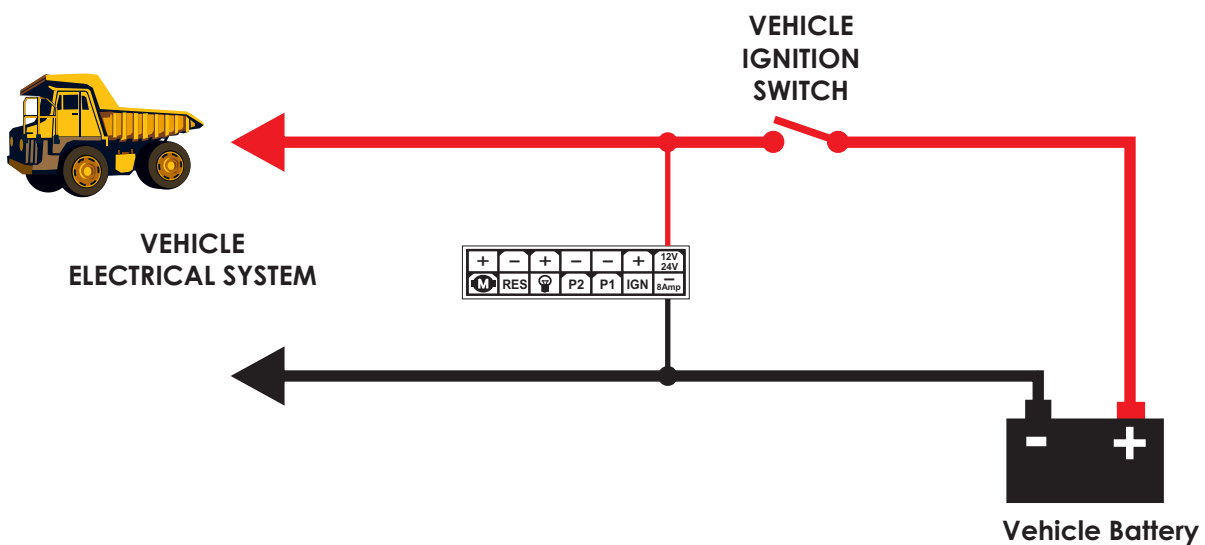


NOTE: IN ORDER FOR A FAULT TO BE TOTALLY RESET THE UNIT MUST PERFORM A COMPLETE CYCLE OF RUN AND PAUSE TO CANCEL AN EXISTING FAULT OUT OF MEMORY. THE UNIT IS DESIGNED TO MEMORIZE THE TOTAL TIME OF ANY SPECIFIC FAULT. THE ONLY WAY THE UNIT CAN FUNCTION CORRECTLY WITHOUT THE SAME FAULT OCCURRING IS FOR IT TO RUN A COMPLETE CYCLE.

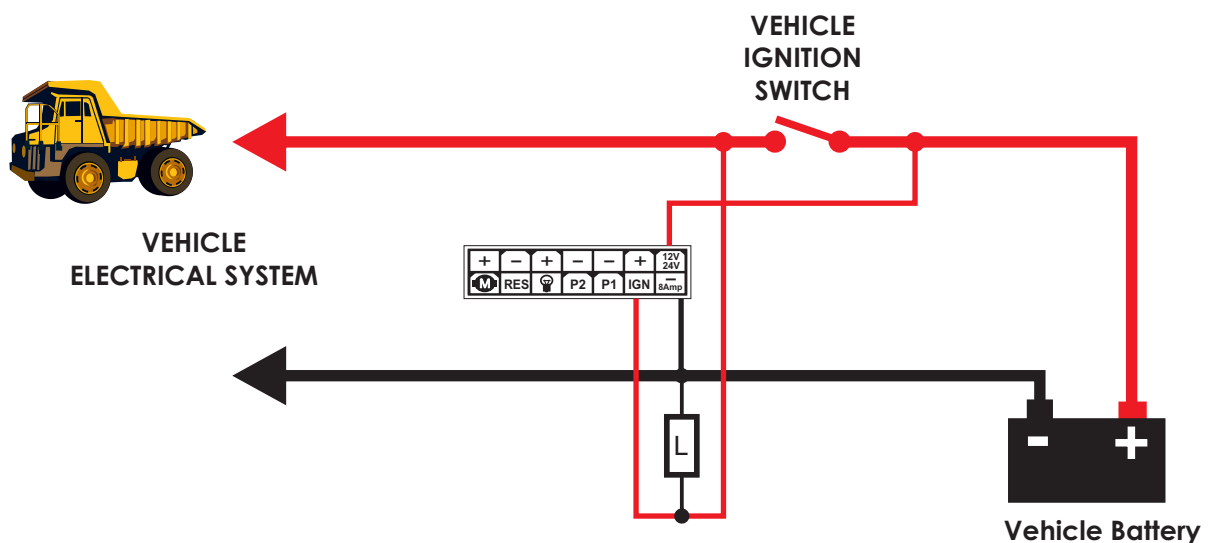
Ignition wiring options for Autolube

The Autolube can be placed in a standby state by pulling the Ignition pin (IGN) to negative while leaving the supply connected. This is functionally the same as disconnecting the power except the display remains on and indicates standby mode with the message Stb. The purpose is to allow data communications through the DATA PORT while the machine is off for telemetry purposes.

This pin can be left unconnected if the function is not required.

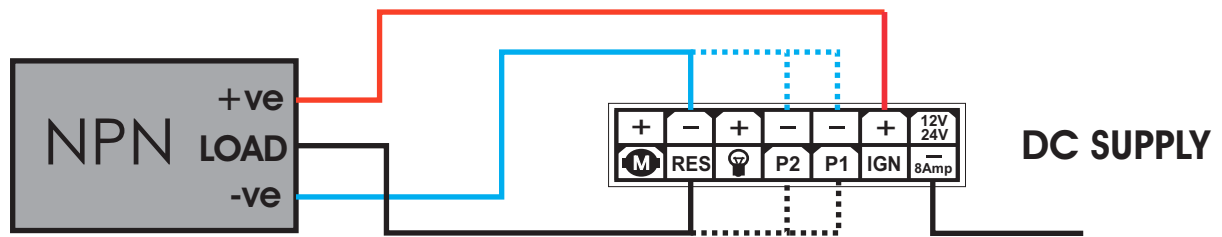


1. Unit is off when ignition is off



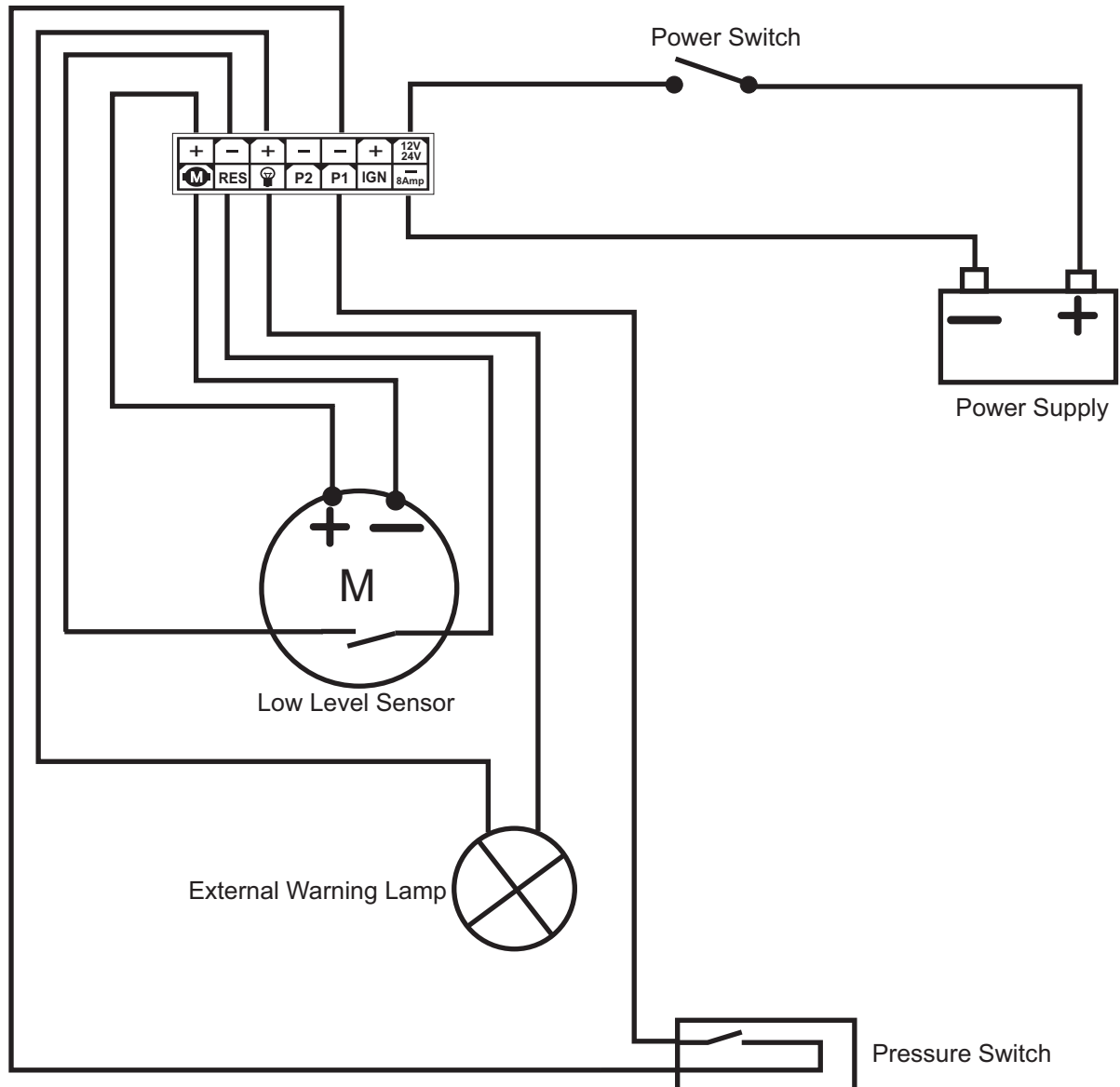
2. Unit is in standby when ignition is off

3 wire NPN proxy to Autolube RES/P1/P2



manual setup for single line systems

single line system wiring diagram with pressure switch



optional equipment autolube controller

remote data shuttle



The autolube controller has the capacity to store all critical faults up to 256 records. The Data Shuttle is a device that can retrieve this data without the use of a laptop PC. The data shuttle can retrieve information from up to 100 different controllers. This information can be then downloaded from the Data Shuttle to your desktop PC to the autolube program whereby all the relevant faults can be scrutinized. The Data Shuttle has its own battery power and all information downloaded from the autolube controllers will be safely stored without the risk of loss.