



ultra-flow



Autolube

PROGRESSIVE LINE SYSTEM SETUP

manual setup for dual line systems

progressive line system setup procedures



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.

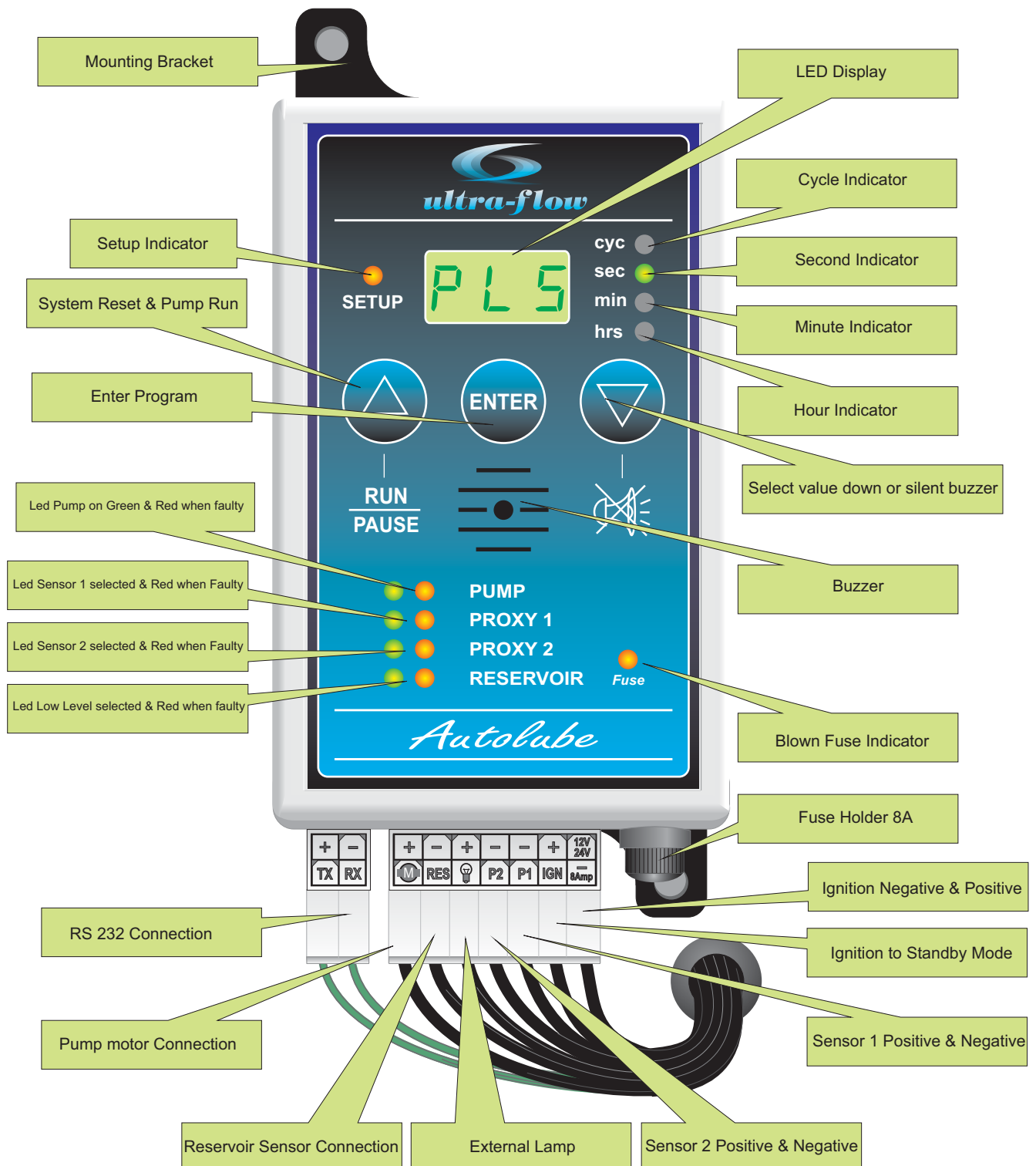
MANUFACTURER:

Ultra-Flow SA

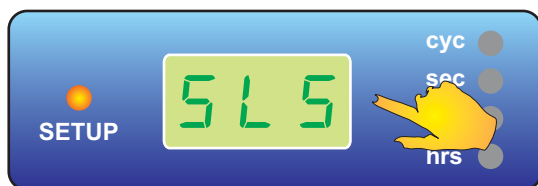
Email technical inquiries - leon@ultra-flow.com



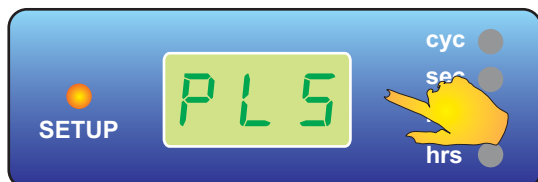
autolube key pad layout



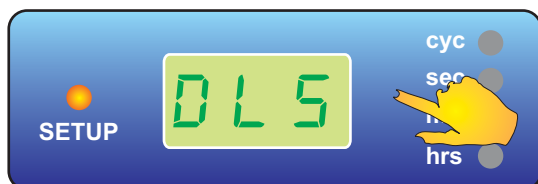
panel description



SLS = Single Line Systems



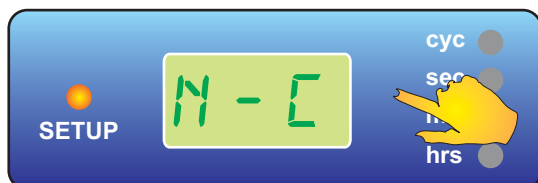
PLS = Progressive Line Systems



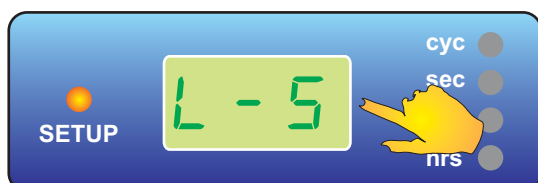
DLS = Dual Line Systems



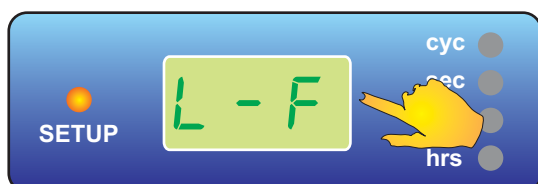
N-O = Normally Open (Sensors)



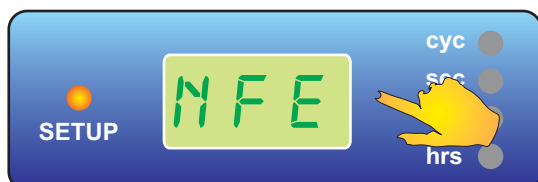
N-C = Normally Closed (Sensors)



L-S = External Lamp Steady (Continues supply)

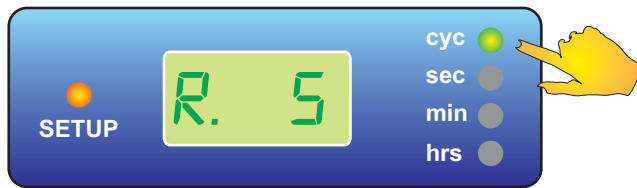


L-F = External lamp Flashing (Pulsed Supply)



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

panel description



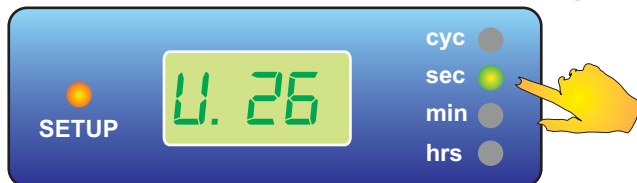
R = Run Time in Cycles



P = Pause Time in Sec, Min or Hrs



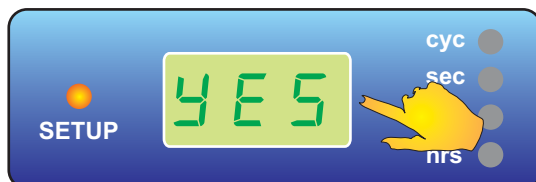
F = Fault Time in Sec, Min or Hrs



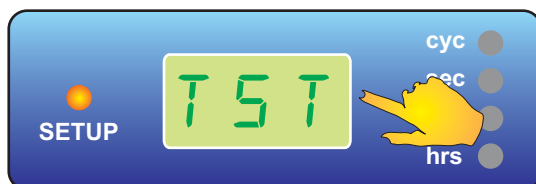
U = Vent Time in Sec, Min or Hrs



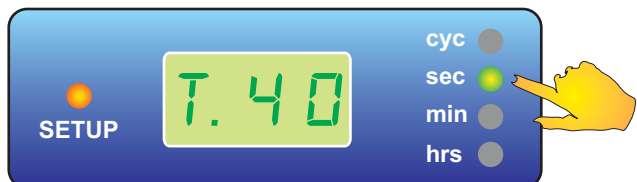
RCC = Run Cycle Counter



YES = Yes for accepting program changes

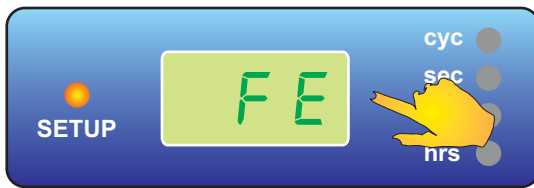


TST = Test Mode for Checking Installed Devices



T = Time out or Dwell Time for Sensors

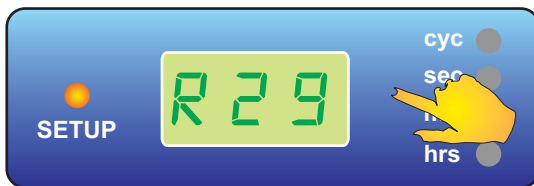
panel description



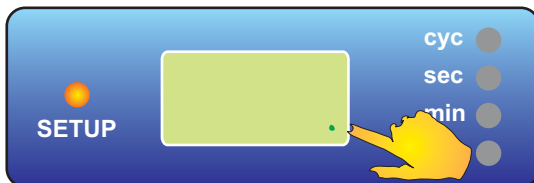
NE = Fatal Error (Pumps Stops on Low Level Fault)



NO = Do Not Select Selection



R = Run Time in Secs, Mins and Hours



. = Standby Mode

manual setup for progressive line systems

progressive line systems with run and pause time only



manual setup for progressive systems

progressive line system with run & pause time only - no monitoring



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 PLS is displayed. This procedure will enter into the Progressive Line Mode.

manual setup for progressive systems

progressive line system with run & pause time only - no monitoring



STEP 3

Press the ENTER button to accept PLS.
By pressing the ENTER button you have confirmed that you want to use Progressive 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 function at when applied.

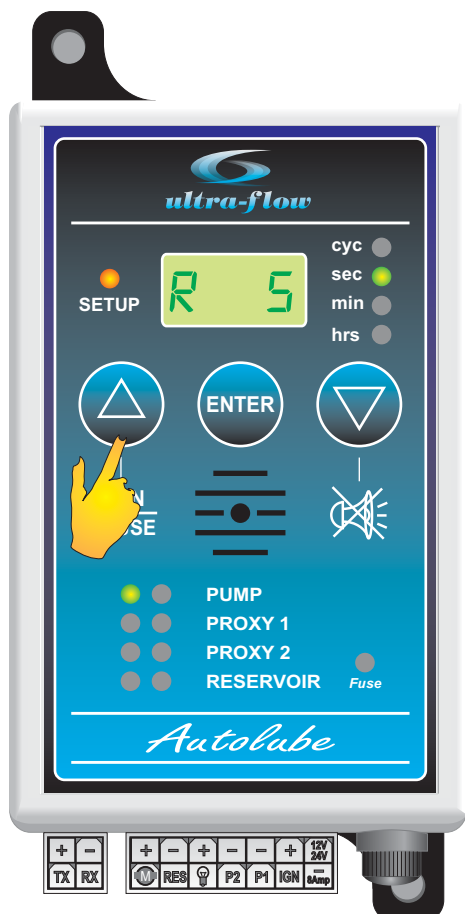
manual setup for progressive systems

progressive line system with run & pause time only - no monitoring



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 per example.



STEP 6

As you press the ENTER button R (Run) 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 Run time will be.

manual setup for progressive systems

progressive line system with run & pause time only - no monitoring



STEP 7

Press the ENTER button to accept the run time. By pressing the ENTER button you have confirmed that you want to use a run time of 30 minutes as per the example.



STEP 8

After you have entered the run time you must now select the up or down button to verify whether you are using a sensor. In this setup procedure we are not using sensors. Press the up or down buttons till no appears in the display. Note that the green LED will be flashing next to PROXY 1. This is an indication that you are now in the Sensor part of the setup procedure.

Press the ENTER button to accept your choice. By pressing the ENTER button you have selected NO and PROXY 1 will not be setup.

manual setup for progressive systems

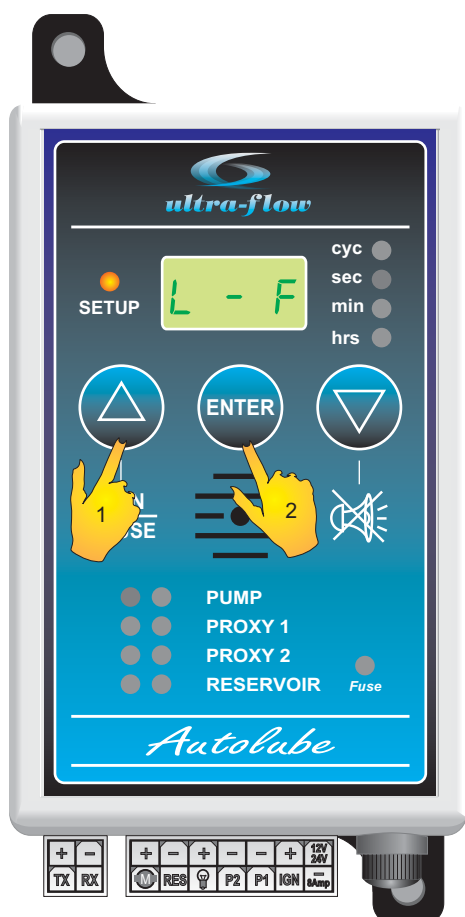
progressive line system with run & pause time only - no monitoring



STEP 9

Press the ENTER button the setup procedure for PROXY2 will be omitted and the green LED on the RESERVOIR will now begin to flash.

If you have low level detection sensors then you may push the up button to select YES. For this example we do not have any low level monitoring. Push the ENTER button to accept NO for Low level monitoring.



STEP 10

After pressing the ENTER button L - F (Lamp Flashing) will appear in the display. This option is for an external warning lamp to be installed. 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.

Because we are not using any monitoring press the ENTER button to move onto the next part of the programming.

manual setup for progressive systems

progressive line system with run & pause time only - no monitoring

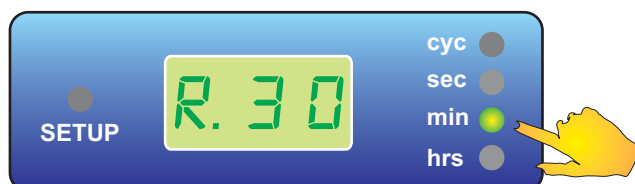


STEP 11

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.

If all is correct you may turn off 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.



Running System.(Pump run)

When the controller is switched on the run time will appear in the display as it was setup for. The time will appear from the actual time set and count down to zero. The green LED will indicate that you are in minutes. 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 run time 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 run time. Note that the green LED will be steady on the pump section of the decal. This is a indication that the pump is there by not turning while in the pause mode.

manual setup for progressive systems

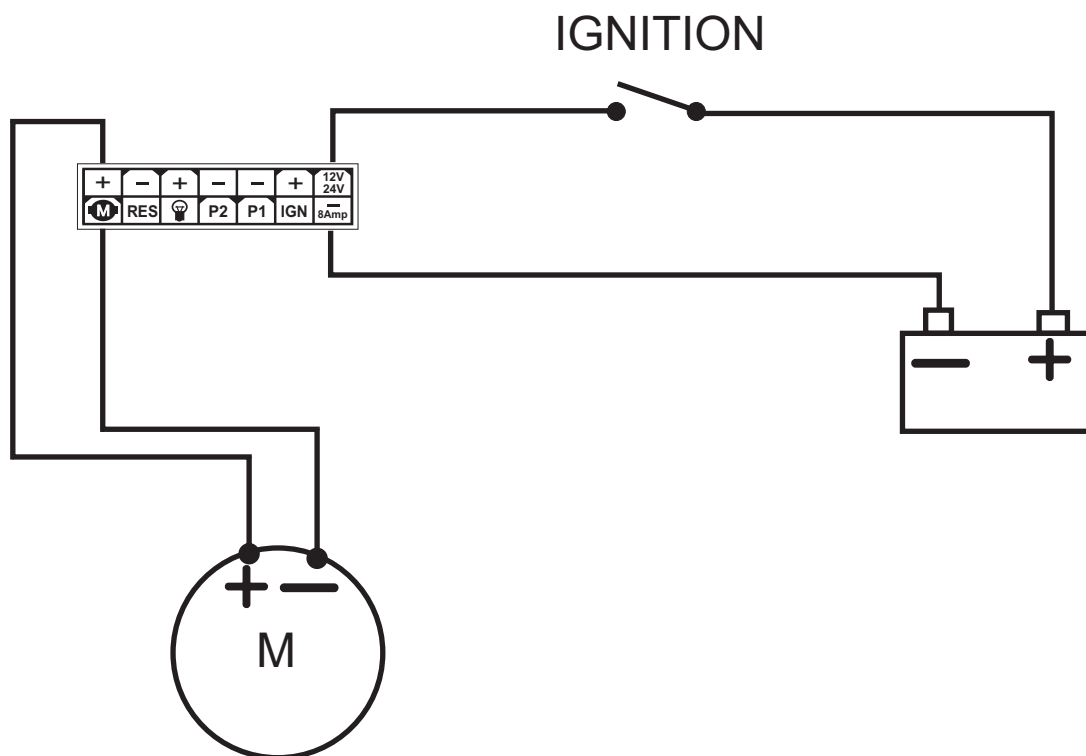
progressive line system fault indications



NOTE: IN ORDER FOR A FAULT TO BE TOTALLY RESET THE UNIT MUST PERFORM 1 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 1 COMPLETE CYCLE.

manual setup for progressive systems

progressive line system wiring diagram - no sensors



manual setup for progressive systems

progressive line system with monitoring



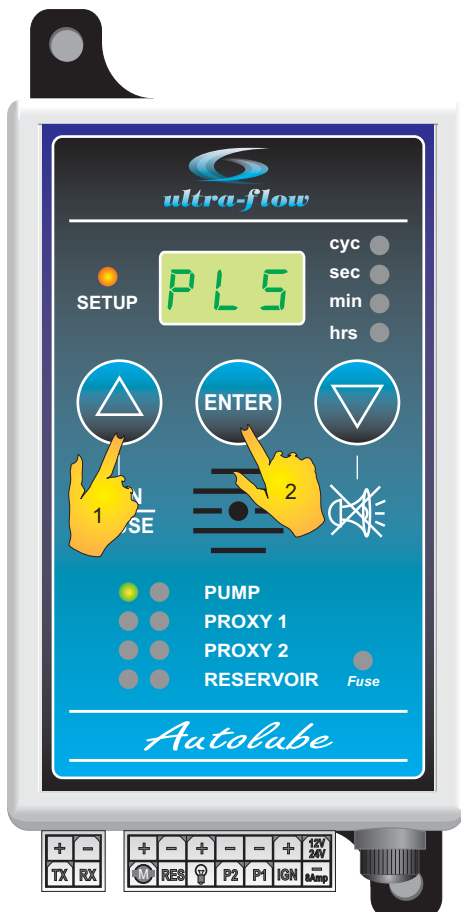
manual setup for progressive systems

progressive line system with run & pause time only - with monitoring



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 PLS is displayed. This procedure will enter into the Progressive Line Mode.

manual setup for progressive systems

progressive line system with run & pause time only - with monitoring



STEP 3

Press the ENTER button to accept PLS.

By pressing the ENTER button you have confirmed that you want to use Progressive 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.

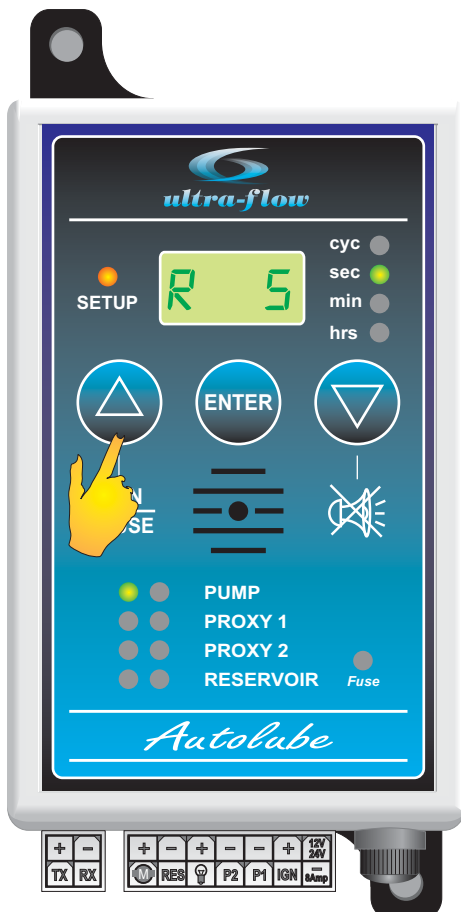
manual setup for progressive systems

progressive line system with run & pause time only - with monitoring



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

As you press the ENTER button R (Run) 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 Run time the pump will run for.

manual setup for progressive systems

progressive line system with run & pause time only - with monitoring



STEP 7

Press the ENTER button to accept the run time.
By pressing the ENTER button you have confirmed that you want to use a run time of 30 minutes as per the example.



STEP 8

After you have entered the run time you must now select the up or down button to verify whether you are using a sensor. In this setup procedure we are using sensors. Press the up or down buttons till YES appears in the display. Note that the green LED will be flashing next to PROXY 1. This is an indication that you are now in the Sensor part of the setup procedure.

Press the ENTER button to accept your choice.
By pressing the ENTER button you have selected YES and PROXY 1 will enter the setup procedure.

manual setup for progressive systems

progressive line system with run & pause time only - with monitoring



STEP 9

After pressing the ENTER button T (Timeout) will appear in the display. This is the timeout function for the sensor. This means that should the sensor not send a signal to the controller within the time that has been set then the alarm will be activated. This function is normally used when a flow proximity sensor is installed on a feeder. Within the feeder a piston will activate the sensor which in turn sends a signal to the controller. The controller will then reset the timeout and start counting down to start the monitoring process. This function will continue to work while in the RUN mode. It is important to set the timeout greater than the cycle time of the specific feeder. This of course would also depend on the type of pump being used. To increase the timeout press the up button to the desired setting and then press the ENTER button to accept.



STEP 10

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.

manual setup for progressive systems

progressive line system with run & pause time only - with monitoring



STEP 11

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 sensor, press the up button till NO appears in the display. Press the ENTER button to accept your choice.



STEP 12

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.

manual setup for progressive systems

progressive line system with run & pause time only - with monitoring



STEP 13

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.



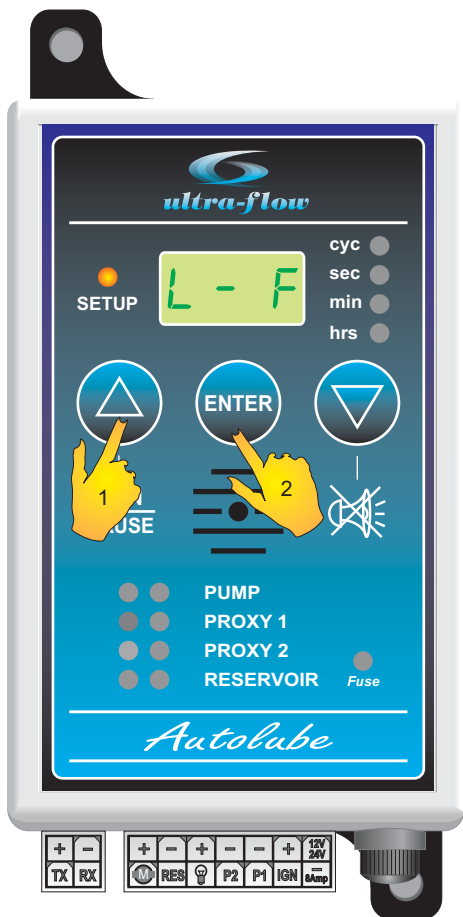
STEP 14

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.

manual setup for progressive systems

progressive line system with run & pause time only - with monitoring



STEP 15

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.



STEP 16

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 off 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.

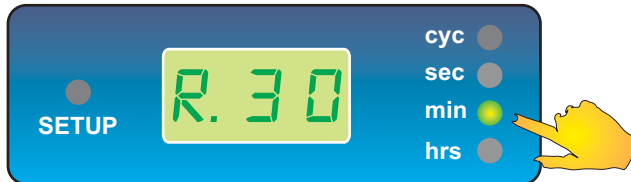
manual setup for progressive systems

progressive line system with run & pause time only - with monitoring



RUN 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.



Running System.(Pump run)

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

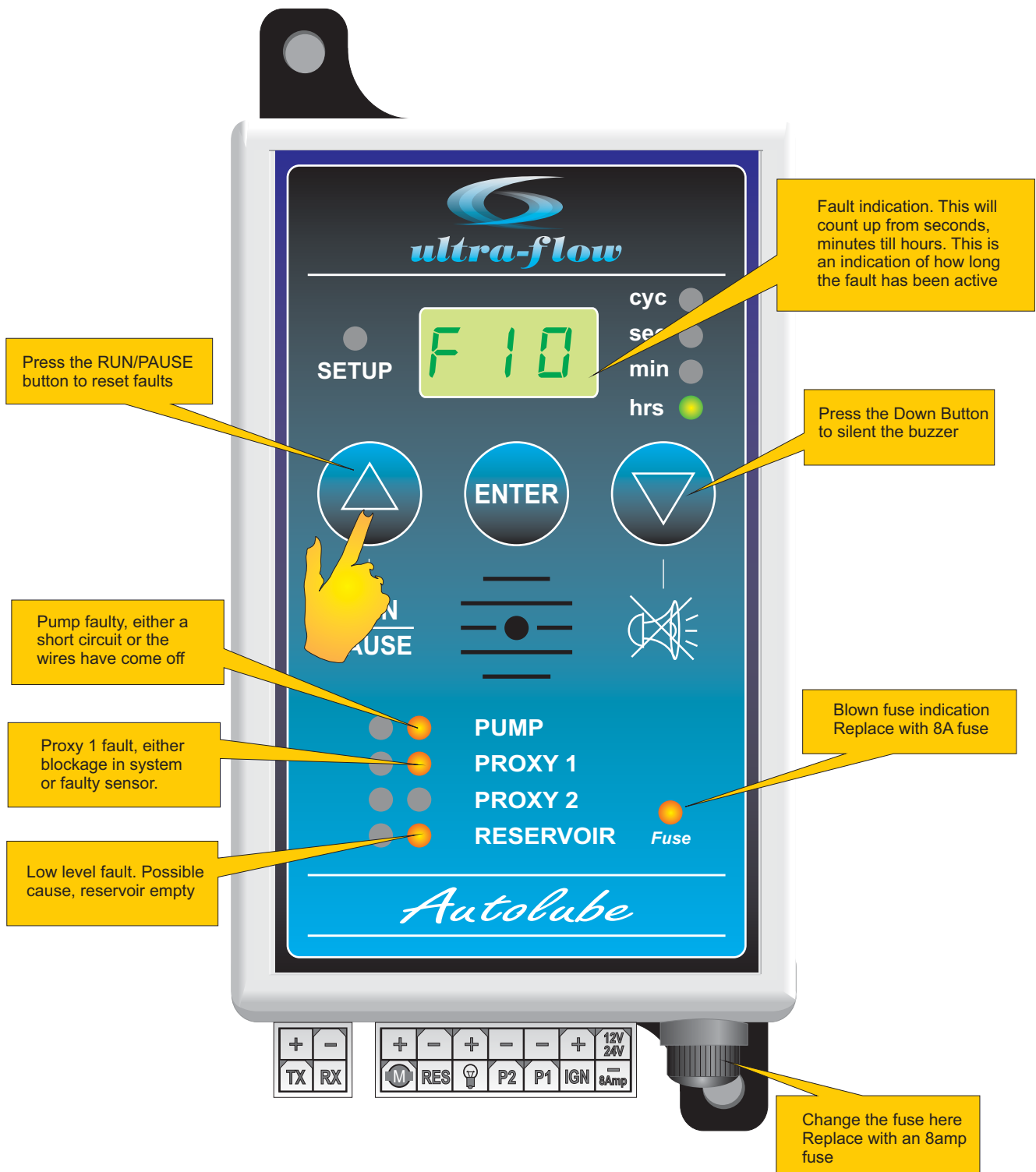


Running System.(Pump pause)

When the controller has reached the required run time 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 run time. Note that the green LED will be steady on the pump section of the decal. This is a indication that the pump is there by not turning while in the pause mode.

manual setup for progressive systems

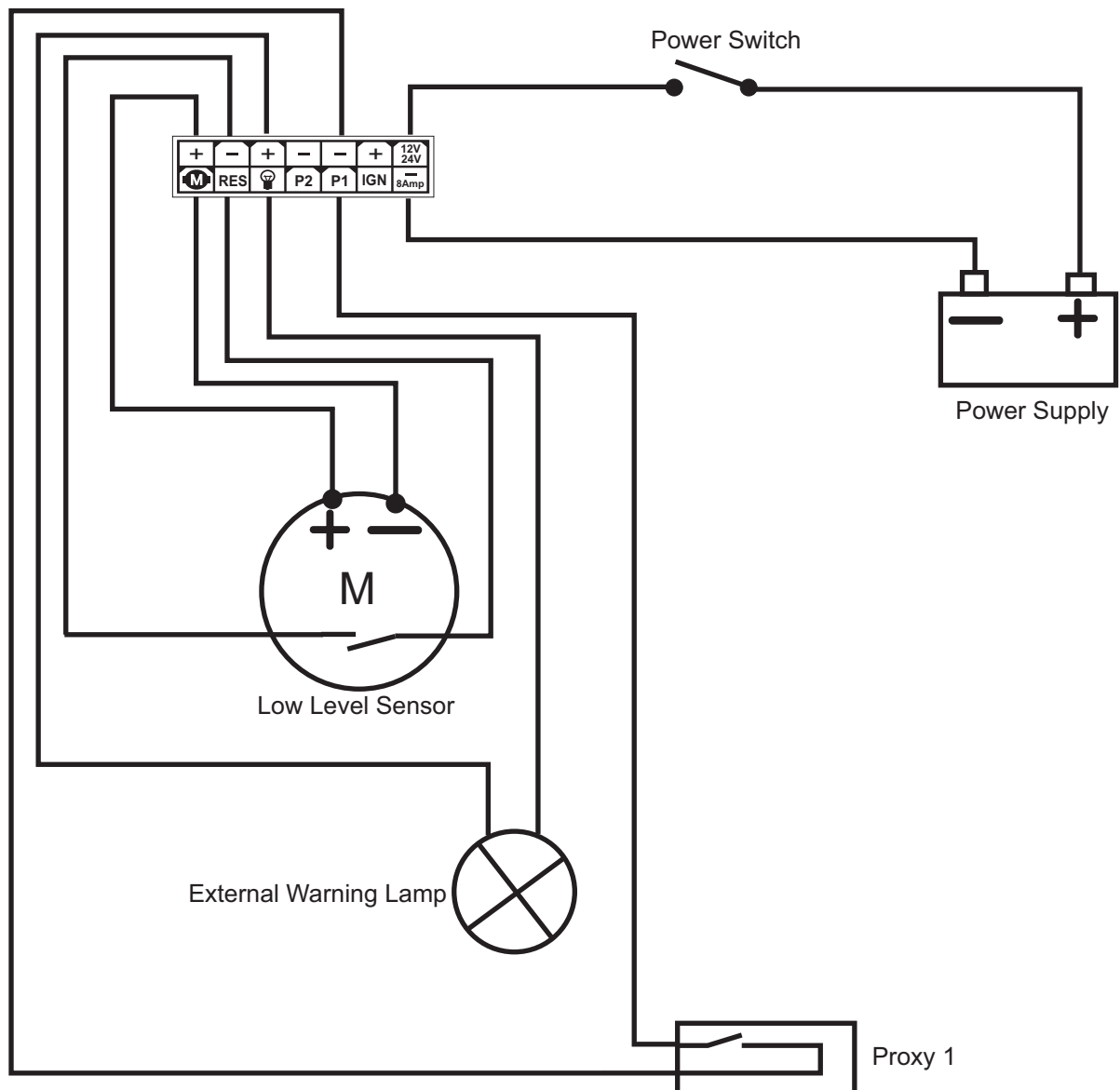
progressive line system fault indications



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.

manual setup for progressive systems

progressive line system wiring diagram with sensors



manual setup for progressive systems

progressive line system using cycle counting with monitoring



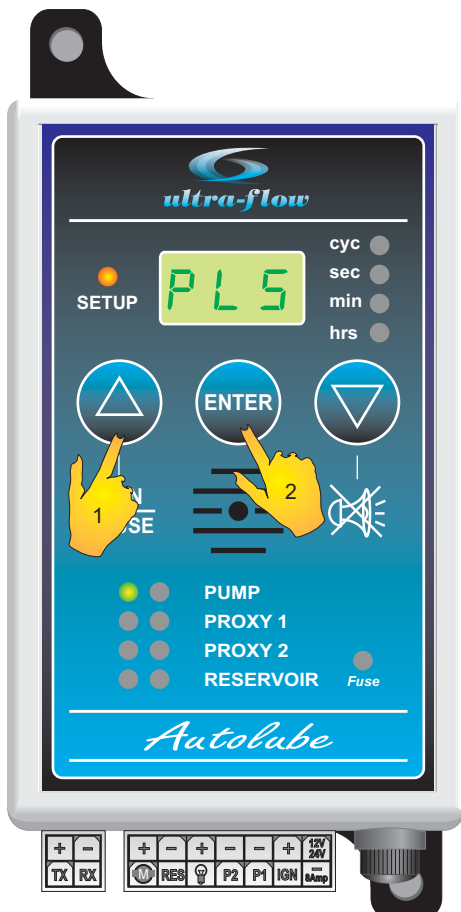
manual setup for progressive systems

progressive line system with run cycle counter & monitoring



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 PLS is displayed. This procedure will enter into the Progressive Line Mode.

manual setup for progressive systems

progressive line system with run cycle counter & monitoring



STEP 3

Press the ENTER button to accept PLS.
By pressing the ENTER button you have confirmed that you want to use Progressive 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 progressive systems

progressive line system with run cycle counter & monitoring



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 (Run Cycle Counting) RCC

Should you want to use the RCC (Run Cycle Counter)
Then select the Down button as indicated in Sep 6.
If you have accidentally pressed the up button do continue to press. RCC will eventually appear in the display.

The reasons for using Run Cycle Counts are far more effective to that of simple run timing. The controller is looking for a signal from the proximity sensor that is normally fitted to your feeder system. This is a very accurate method of ensuring that the complete machine is lubricated adequately.

Please note that some calculation is necessary in order to calculate the cycles required through the specific feeder system that is used.

manual setup for progressive systems

progressive line system with run cycle counter & monitoring



STEP 9

After pressing the ENTER button T (Timeout) will appear in the display. This is the timeout function for the sensor. This means that should the sensor not send a signal to the controller within the time that has been set then the alarm will be activated. This function is normally used when a flow proximity sensor is installed on a feeder. Within the feeder a piston will activate the sensor which in turn sends a signal to the controller. The controller will then reset the timeout and start counting down to start the monitoring process. This function will continue to work while in the RUN CYCLE mode. It is important to set the timeout greater than the cycle time of the specific feeder. This of course would also depend on the type of pump being used. To increase the timeout press the up button to the desired setting and then press the ENTER button to accept.

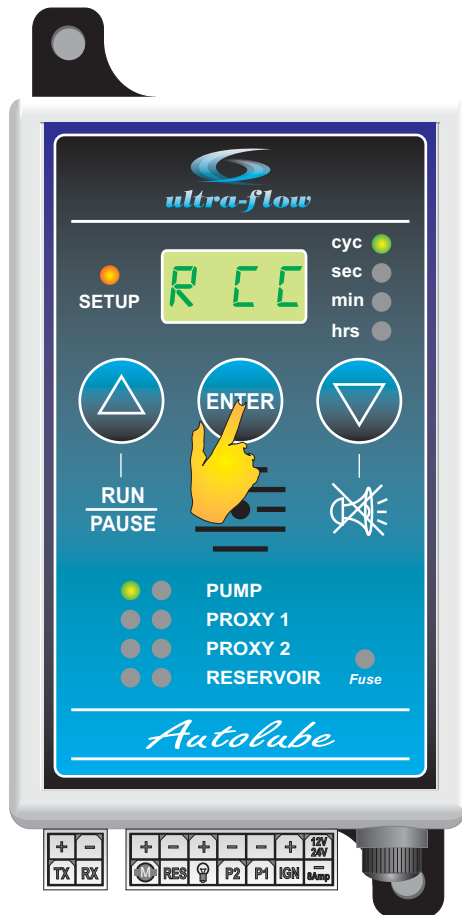


STEP 10

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 7

Press the ENTER button to accept the run cycle counter. By pressing the ENTER button you have confirmed that you want to use the run cycle counter.



STEP 8

Once you have entered the Run cycle counter mode then by pressing the up button you can increase the number of cycles required.

Remember that 1 cycle represents the complete cycle of a feeder for example. Should a 6 port feeder be used then 1 cycle will be indicated after that feeder has lubricated all 6 points.

Please note that 1 cycle is not equal to 1 minute run time. The larger the feeder the longer it would take to reach 1 cycle.

After selecting the amount of cycles press the ENTER button to accept.

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STEP 11

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 sensor, press the up button till NO appears in the display. Press the ENTER button to accept your choice.



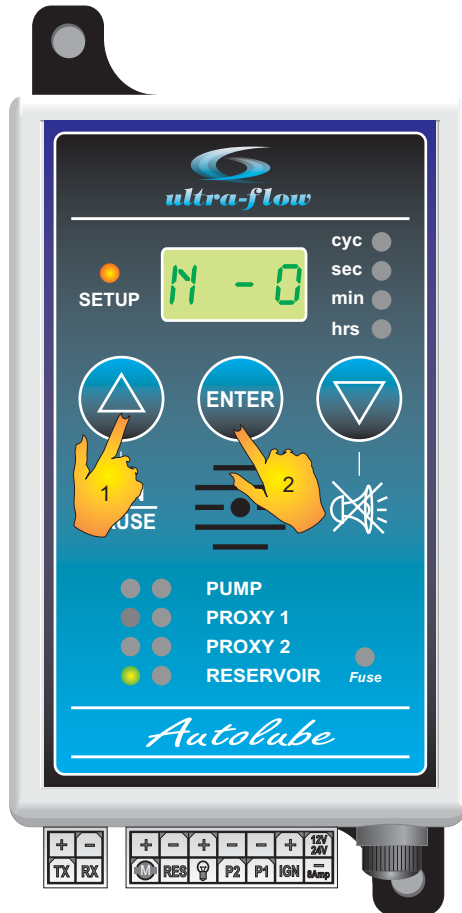
STEP 12

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.

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STEP 13

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.



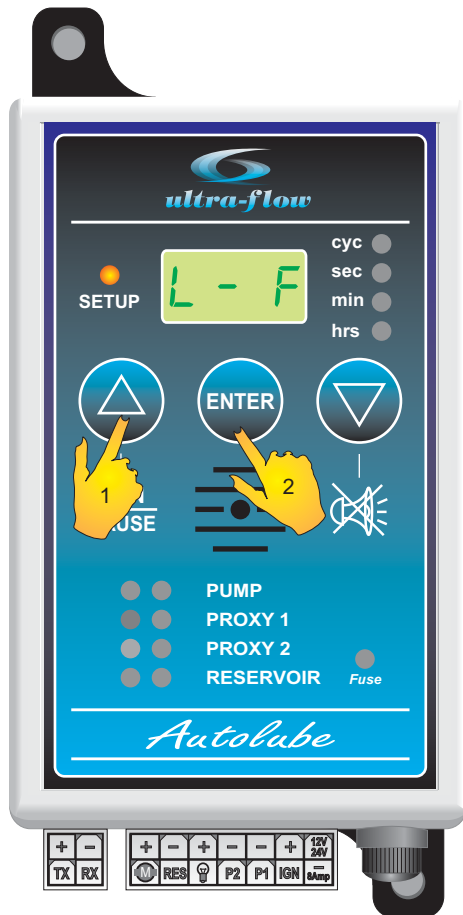
STEP 14

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.

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STEP 15

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.



STEP 16

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 off 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.

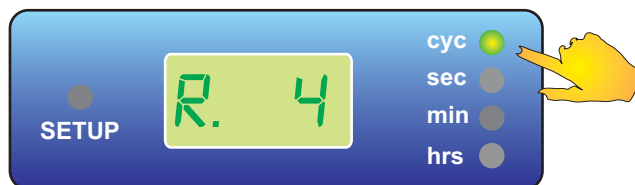
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RUN CYCLE MODE

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.

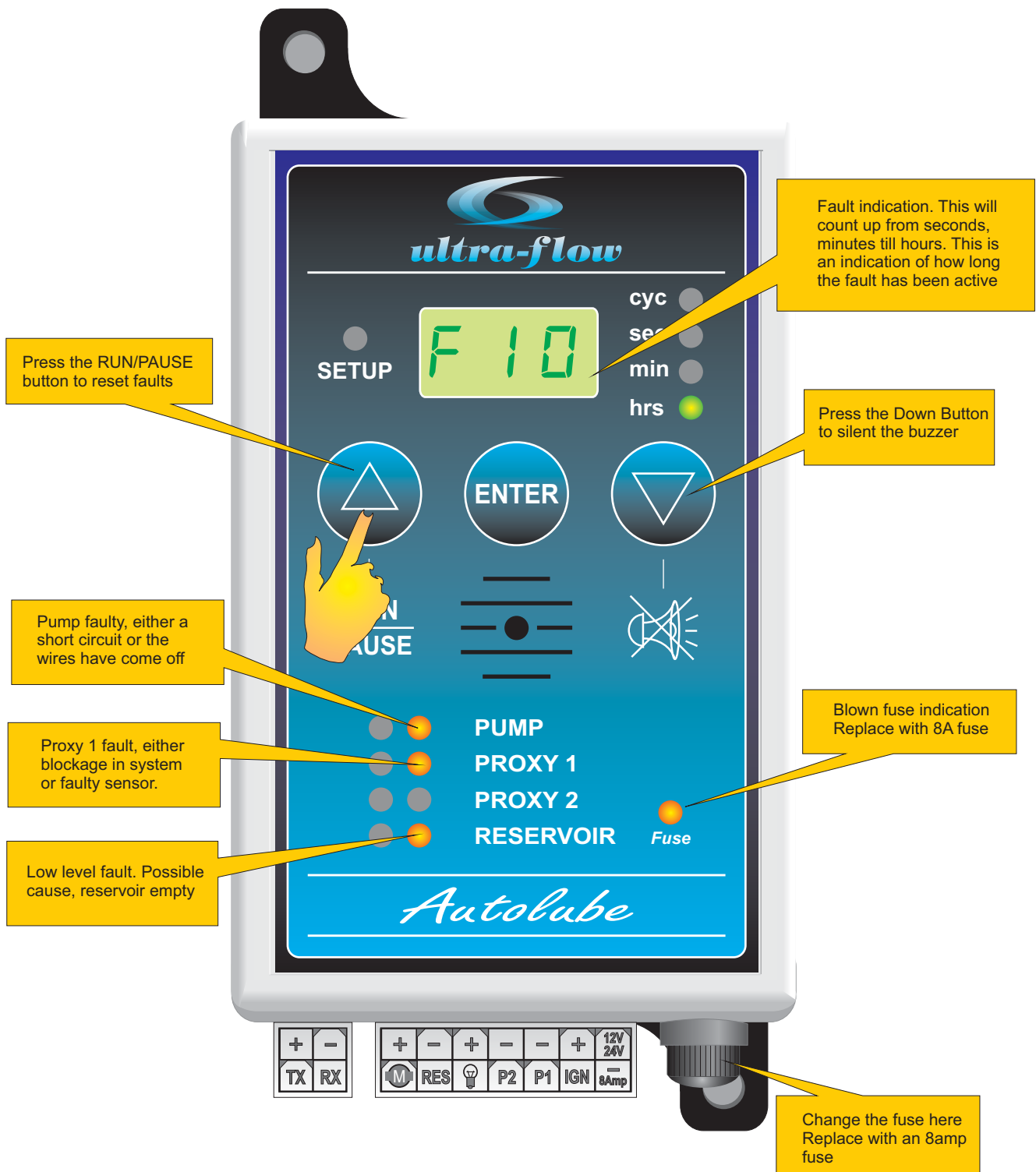


Running System.(Pump pause)

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 there by not turning while in the pause mode.

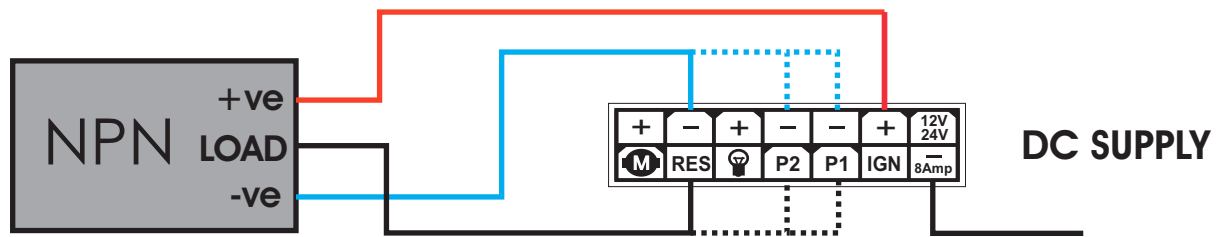
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progressive line system fault indications



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.

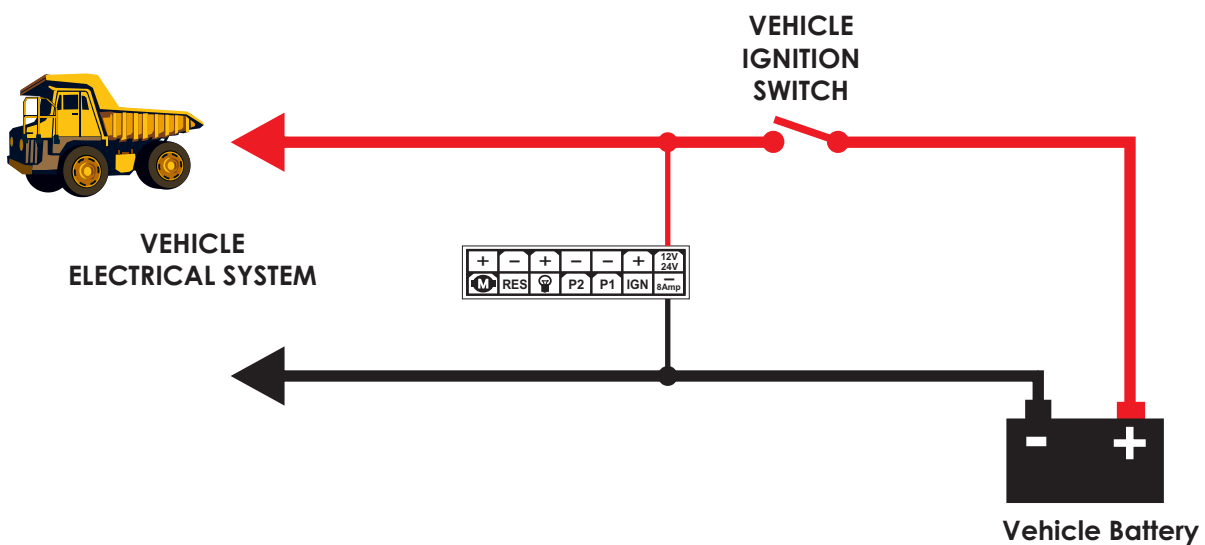
3 wire NPN proxy to Autolube RES/P1/P2



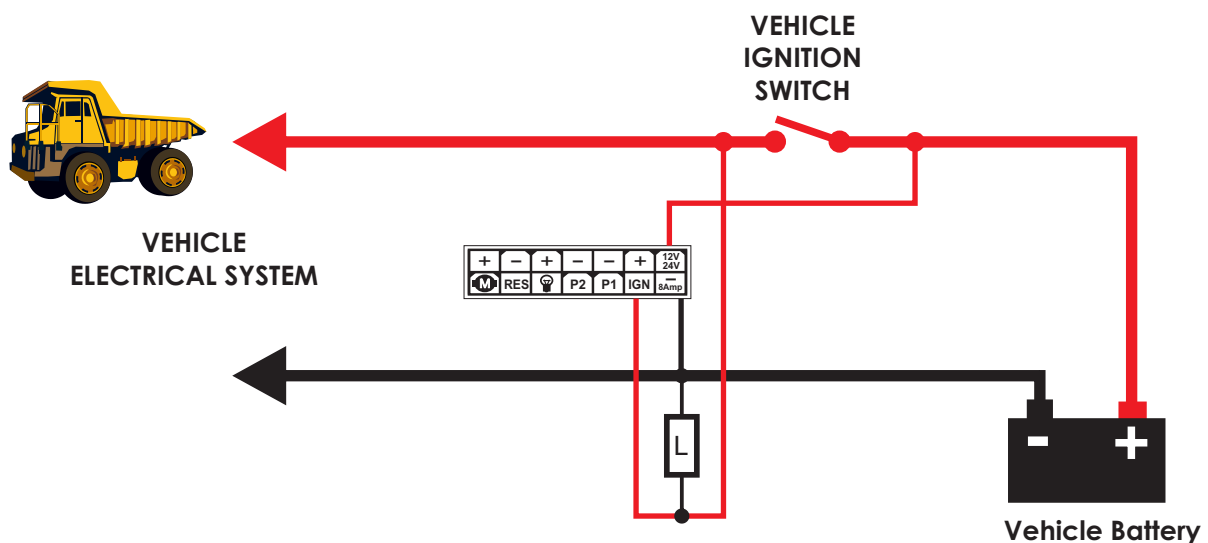
Ignition wiring options for Autolube

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.



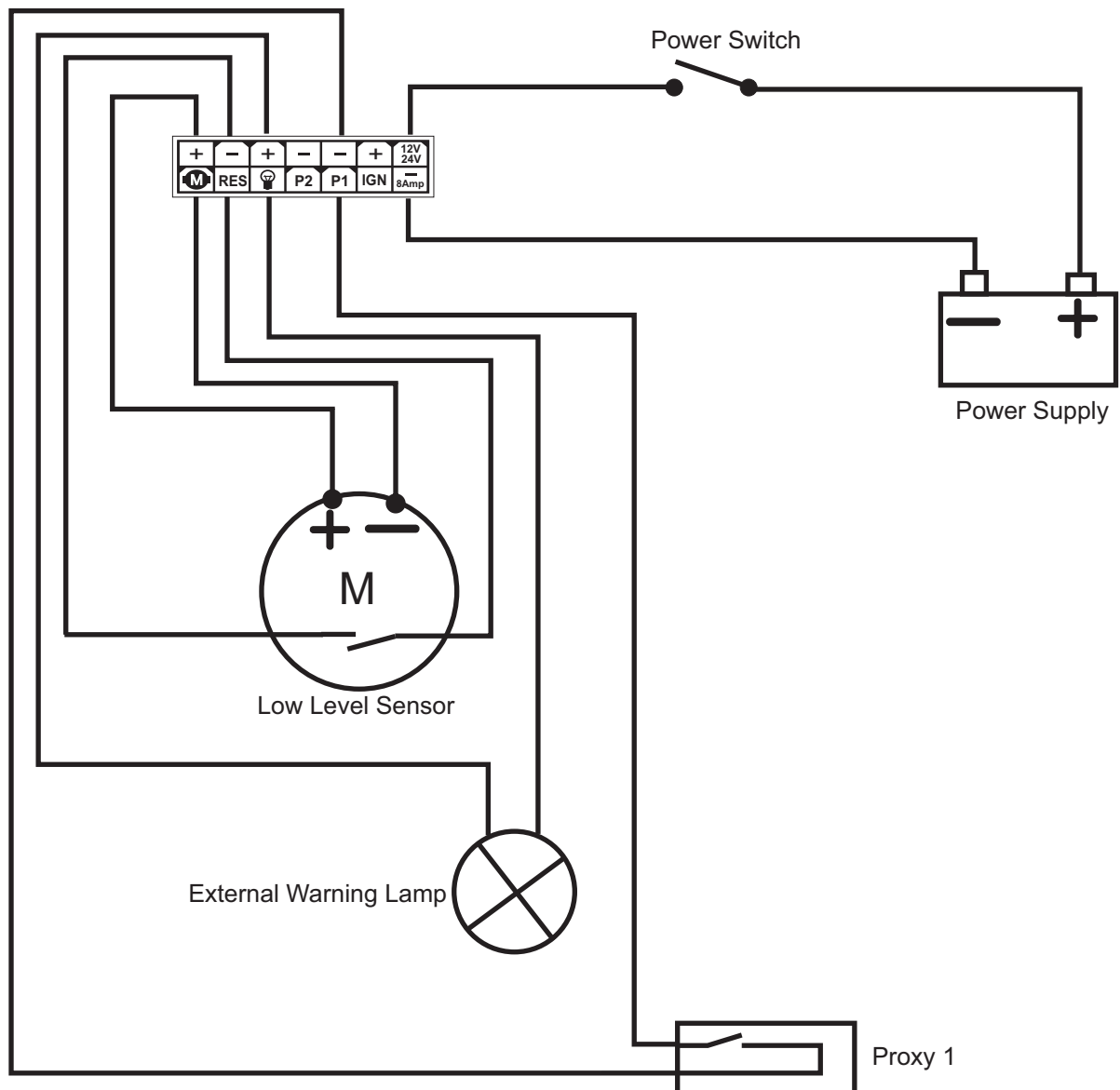
1. Unit is off when ignition is off



2. Unit is in standby when ignition is off

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progressive line system wiring diagram with sensors



optional equipment autolube controller

remote data shuttle



The autolube controller has the capacity to store all critical faults up to 80 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.