

A2 UNIVERSAL LUBRICATION CONTROLLER



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A2 INDUSTRIES COVERED

Earthmoving Equipment
Transport Vehicles
Construction Equipment
Marine
Plant Equipment
Rail Road Equipment
Light Industry Equipment
Food Industry Equipment
Beverage Industry Equipment



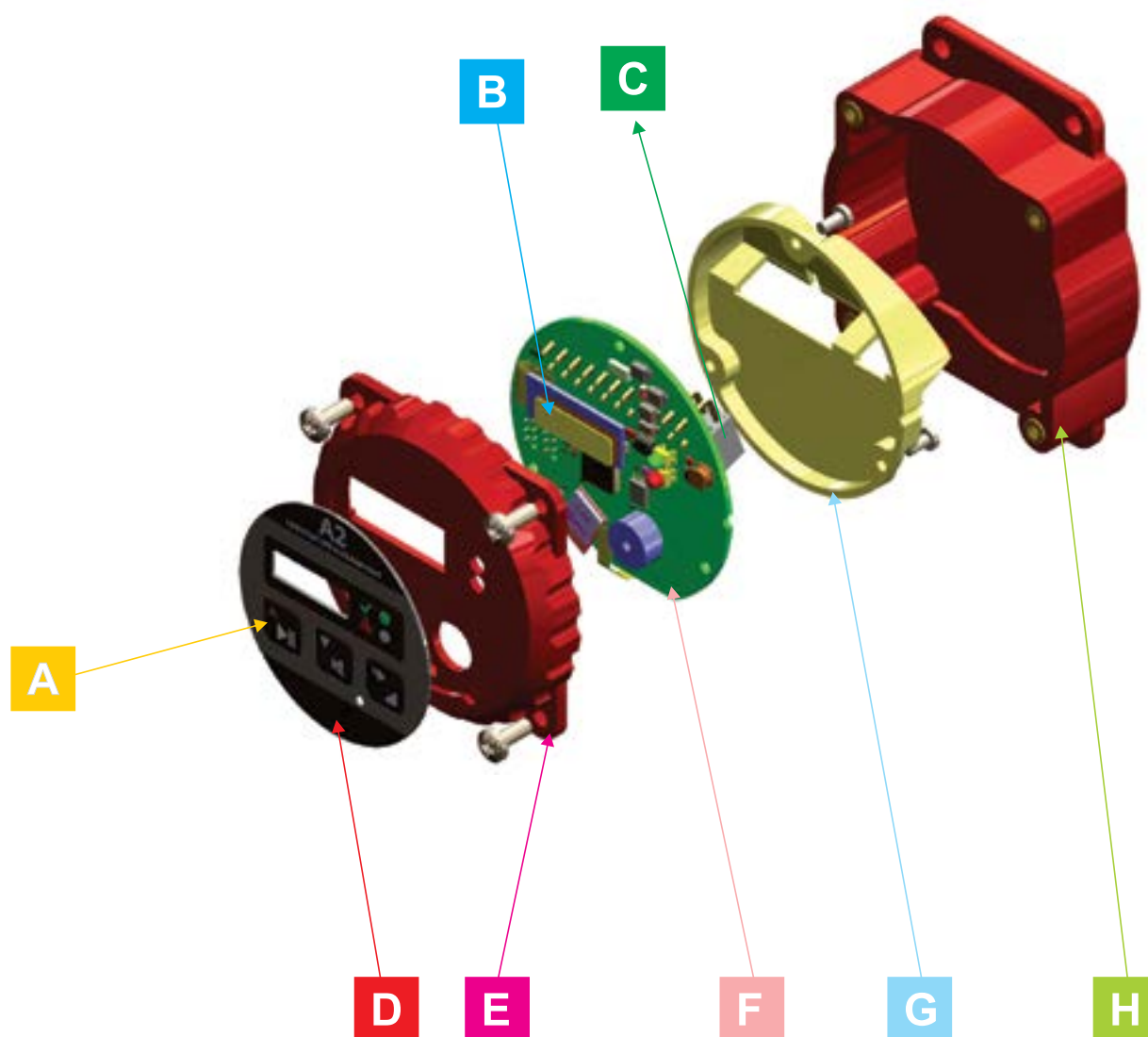
A2 APP



A2 ROAMER



A2 Technical Features

**A****MEMBRANE KEYPAD**

RAISED BUTTONS FOR IMPROVED OPERATIONAL FEEL

B**OLED DISPLAY**

HIGH RESOLUTION GRAPHIC DISPLAY

C**MINI MOLEX 14 WAY CONNECTOR**

ROBUST CONNECTOR FOR EASY REMOVAL WITH SEPARATE 14 WAY MINIFIT JR MOLEX CONNECTOR

D**DURABLE LEXAN DECAL****E****ABS ENGINEERED RESIN**

CAN BE USED FOR DASH BOARD MOUNT OR PANEL MOUNT

F**LEAD FREE PCB**

RoHS COMPLIANT

G**ABS ENGINEERED RESIN**

BOTTOM HOUSING TO KEEP DUST OUT

H**ABS ENGINEERED RESIN**

SURFACE MOUNT HOUSING AND TO PROTECT WIRE HARNESS

A2 Simulator

A2 Link to an interactive app, proceed to link as listed below.

<https://ultra-flow-software.s3.eu-west-2.amazonaws.com/A2-Demo-App/setup.exe>

Should your PC show a screen " unknown publisher ", click <more> then <run anyway>

**A****MAIN SWITCH ON/OFF**

Switch A2 on, button will show green for on
Button will show grey for off

B**IGNITION SWITCH ON/OFF**

Simulates Ignition Circuit. Enables SLEEP
mode with interrupted telematics via
Bluetooth and Data Port.

C**ENTER SETUP MODE**

Press Setup Button to enter the setup mode

D**DISPLAY DIMMER**

Press button to dim display

E**LOW LEVEL FUNCTION**

Push button to simulate low level function

F**PROXIMITY 1 FUNCTION**

Click to simulate Proxy 1 function

G**PROXIMITY 2 FUNCTION**

Push button to simulate Proxy 2 function

* Draft Version only and subject to change

A2 Panel Description



1

Lexan Decal

2

Engineered ABS Resin Enclosure

3

LED indication for Power, Pump Status and Fault

4

Enter button for selection

5

Buzzer on for faults

6

Button to scroll down for selection

7

Button to scroll up for selection/Mute

8

OLED Display

A2 Main Specifications

The A2 controller is a universal lubrication system panel capable of handling all common lubrication systems from the simplest run - pause timer through progressive and single 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 advanced diagnostics will help to pinpoint any faults quickly. Although highly flexible, it remains simple to operate and program by using a 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 cell phone using bluetooth. By using the GSM option available shortly, all conditions can be monitored remotely using the Roamer GSM module, the user has full remote control of the panel via the dedicated web portal.

FEATURES:

- » Runs progressive, single line lubrication systems.
- » Real time clock logs date and time of faults (6000 records).
- » RS232 serial port allows connection to GSM Module.
- » Option to connect to GSM modem allowing remote monitoring via GSM networks.
- » Blue Tooth Connection via the A2 app available on the goggle play store..
- » Timing intervals from 5 seconds to 99 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 sensing.
- » Two proximity/ switch inputs.
- » Inputs can accept all industry standards from simple switch contacts to NPN/ PNP, N/O and N/C sensors.
- » Two sensor switch inputs.
- » Blockage detection.
- » Visual & audible fault indication.
- » Non-volatile memory.
- » Built in E Fuse.
- » OLED display .
- » Simple "**Lube Logic**" setup procedure.
- » Test mode allows testing of all the circuits connected to the A2 Controller for verifying.
- » Practical attractive housing with mounting bracket.

SPECIFICATIONS:

VOLTAGE:

10.5VDC TO 30VDC

CURRENT DRAIN:

15mA MAX (no load) 10mA nominal

PUMP OUTPUT:

12A Continuous, 15A for 15 sec, 20A for 6 Sec

LAMP OUTPUT:

5A MAX

SWITCHING:

Solid state short circuit protected

FUSE:

Electronic Fuse (60A)

CONNECTION:

14 way MOLEX MINIFIT - JR

COMMUNICATIONS:

RS232 Type

BLUE TOOTH:

LE Connection (Low Energy Interface) Range > 20M

DIMENSIONS:

95mm X 78mm X 38mm
(including mounting bracket)

WEIGHT:

120g

INGRESS PROTECTION:

IP54

TEMPERATURE RANGE:

-30 °C to 60 °C

Altitude of use - <2,000m

Pollution Degree - PDII

Wet Location Use - Not Recommended

A2 Technical Specifications

Operating requirements

Recommended operating input voltage range.	10.5V to 30V DC*
Absolute maximum input voltage range (survival only)	-160V to + 160V
Expected current draw, 12V input, outputs off, no proximity sensors active	< 15mA
Expected current draw, 24V input, outputs off, no proximity sensors active	< 10mA
Operating temperature range Operation at temperatures up to +80C for periods of several hours is possible, however maximum current rating of the PUMP and LAMP outputs will be reduced.	-30 to +60C
Humidity	10-90%, non -condensing
Ingress Protection entry	IP54

*Below 10.5V the A2 will enter sleep state automatically. Above 30V DC the unit may self -protect and pump and lamp outputs may turn on to protect the unit.

Electronic fusing

The PUMP and LAMP outputs are monitored electronically to protect them from over -temperature, overload and short circuit conditions. The behaviour of the e -fusing approximates that of a conventional fuse, but does not require replacing when a fault occurs. Instead, the e -fuse resets when the operator retries the run. The PUMP output allows for high peak currents while starting large pumps, while still protecting against damaging short circuits.

PUMP output, maximum continuous current, when terminated with 16AWG wire and correctly crimped, ambient temperature <=60C	12A
PUMP output, virtual fuse trip behaviour	Trips after: 15A for 15 seconds 20A for 6 seconds 30A for 2 seconds
PUMP output, short circuit trip (immediate)	60A

The LAMP output will tolerate the inrush current from a typical cold incandescent globe without tripping. Maximum continuous output current

LAMP output, maximum continuous current	5A
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Fusing of the wiring

While the PUMP and LAMP outputs are protected without needing any additional fuses, standard practice in automotive wiring requires that all power wiring be fused at the source for the maximum current that the wire can carry. This is to prevent fires in the event the wire short circuits.

Therefore, power to the pump, lamp and the A2 itself must be sourced from a safely fused or current limited power source. Fuses and wires should be rated to carry more than the sum of the maximum expected current to the pump and lamp, so that the A2 can trip before the real fuse heats up.

Proximity sensor inputs

Proxy 1, 2 and the reservoir input are designed to operate with both NPN and PNP, 2-wire or 3-wire proxy types. Inputs can be configured as NPN/PNP, normally open/normally closed via the A2 front panel or via the app. Proxy signals are referenced to the protected SENSOR-GND line provided by the A2, rather than vehicle ground.

Thresholds for the inputs depend on whether they are configured as PNP or NPN. If NPN, thresholds are relative to ground, if PNP, they are relative to vehicle positive. Thresholds are 6V above ground for NPN, 6V below supply for PNP.

Type	Threshold, 12V supply	Threshold, 24V supply
NPN	6V	6V
PNP	6V	18V

In addition, signals have a 1V hysteresis: For an NPN to change to a 1 state, it must go above 6V. But due to the hysteresis, for it to change back to a 0 state, it must drop below 5V. Likewise for a PNP, on 24V e.g., it must go below 18V to register a 1, but above 19V to register a 0 again.

When a proxy or reservoir input is configured as NPN or PNP, the A2 sources or sinks a current into the input sufficient to power 2-wire proxies or detect a switch closure.

OLED display

A high-visibility OLED display is provided to indicate unit state and allow menu-driven configuration from the unit. The display is dimmed slightly after 15 minutes, but returns to full brightness when buttons are pressed.

Buzzer

The A2 is equipped with a versatile buzzer to indicate fault conditions or give feedback. When the A2 is in fault mode, the buzzer can deliver > 65dBm.

RS232 serial connection

A serial port is provided for interface to a wifi/GSM module or connection to other devices. The serial port is protected against common wiring errors.

Bluetooth LE connection

Range of the Bluetooth Low Energy interface is limited by various factors. We recommend that the A2 be mounted in a location where line of sight between the A2 and the app is possible. The A2 should be mounted on the supplied plastic bracket when mounting on a metal surface, to avoid reducing the range. If mounted correctly, a range of in excess of 20 meters is easily achievable.

Only one device can connect to the A2 at a time. Should the connection be in use, the A2 will not be visible on other nearby devices. The Bluetooth link can work even if the A2 is in sleep mode.

The app is available from the Google play store. An app activation code is available from your Distributor.

Maximum vehicle battery power cable lengths

Wires that are too thin or cables that are too long can cause voltage drops that interfere with operation of the pump, and, in severe cases, cause power dips at the A2 resulting in faults or unintended shutdown. The maximum allowable length of cable between the vehicle battery and the A2 and/or the pump is a function of the vehicle battery voltage and the thickness or gauge of the cable. The most stringent requirement is on 12V systems fitted with large pumps. Installers should run the pump and measure the voltage at the vehicle battery, and compare it to the voltage across the pump. Total difference should ideally be less than 1.5V for a 12V system and less than 3V for a 24V system. As a general rule however, runs in excess of 40 meters should be discouraged, regardless of the cable in use.

In each case, the maximum allowable total distance of the power cable run is specified below.

12V install

Cable type	Conductor diameter (copper wire)	Maximum cable length, 6A pump load	Maximum cable length, 12A pump load	Comment
0.75mm silicone wire (19 AWG)	0.75mm	4.5m	9m	Not recommended for > 2A
18 AWG	1mm	6m	3m	
16 AWG	1.5	10m	5m	
14 AWG	2.5	15m	7.5m	Join required
12 AWG	4mm	24m	12m	Join required

24V install

Cable type	Conductor diameter (copper wire)	Maximum cable length, 6A pump load	Maximum cable length, 12A pump load	Comment
0.75mm silicone wire (19 AWG)	0.75mm	9m	18m	Not recommended for > 2A
18 AWG	1mm	12m	6m	
16 AWG	1.5	20m	10m	
14 AWG	2.5	30m	15m	Join required
12 AWG	4mm	40m	24m	Join required

The largest wire thickness that can be crimped into an A2 connector is 16AWG (with compatible crimp pins). For wire thicknesses greater than 16AWG a short length of 16 AWG wire will need to be joined to the thicker wire so that it can connect to the A2.

For more information, or for installs requiring higher current or lengths greater than the above, please contact your distributor for recommendations.

Cleaning instructions

To ensure the reliable operation and longevity of the controller, regular cleaning is recommended. Before cleaning,, disconnect the device from all power sources and ensure that no lubrication fluids or contaminants can enter the enclosure. Use a soft, dry cloth or lightly dampened lint-free cloth with mild, non abrasive cleaning agents. Do not use solvents, alcohol-based cleaners, or high pressure water jets, as these may damage the unit or compromise its sealing. Avoid exposing the device to excessive moisture during cleaning. Once cleaned, allow the unit to dry completely before restoring power. Regular inspection and maintenance will help prevent dust accumulation and ensure optimal performance.

General Precautions

The user manual is intended to familiarize the user with the A2 controller and its designated use. The operating instructions contain important information on how to operate the A2 controller safely, properly and efficiently.

Observing these instructions will help reduce confusion and actual damage to the A2 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 A2 controller.

Operational Precautions:

Includes the total understanding of the A2 controller 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 A2 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 A2 controller.

In the event that the machine needs to be on for the setting up of the A2 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 A2 controller.

Do not alter or modify any part of the A2 controller.

Insure that the A2 controller is mounted in a suitable area.

Do not mount the A2 controller near excessive heat area's.

Always use the right specified fuse rating for the A2 controller.

Never exceed the voltage rating of the A2 controller.

Never expose the A2 controller to direct sunlight.




Never expose the A2 controller to water or other substances.

Safe Disposal of Products:

This Product contains a Lithium Coin cell battery. When this product reaches the end of its life, do not dispose of it with household waste. Follow local electronic waste disposal guidelines to ensure responsible recycling. If unsure, consult your local waste management authority for proper disposal instructions.

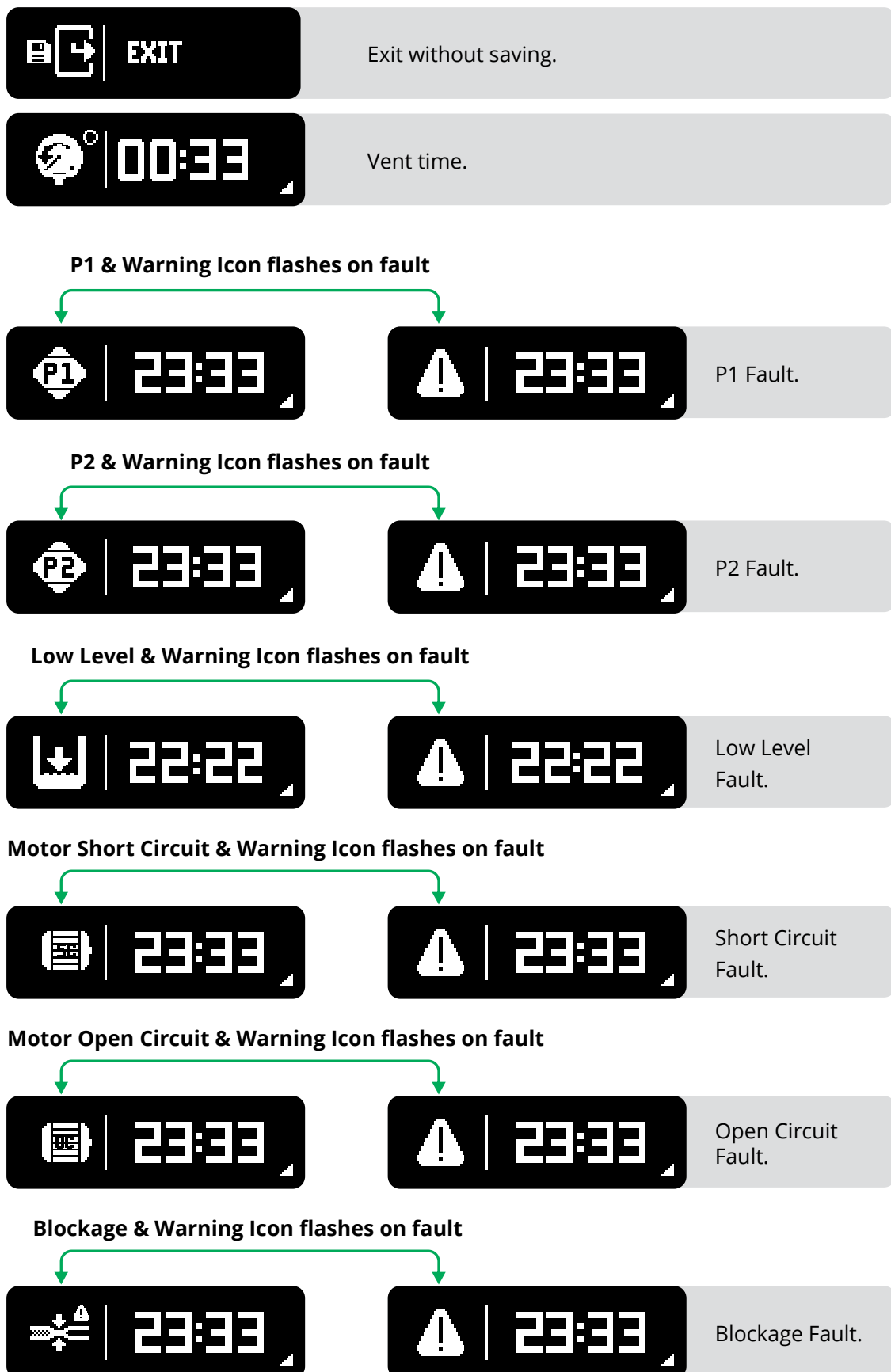
Display Glossary

	Run Mode.
	Pause Mode.
	Setup Mode.
	Display indicates PLS (Progressive line systems).
	Display indicates SLS (Single line systems).
	Setup pause time, Glyph on top right (Setting Mode).
	Setup run time, Glyph on top right (Setting Mode).
	Setup Run Type - Time based.
	Proxy 1 No, Glyph on top right (Setting Mode).
	Proxy 1 Yes, Glyph on top right (Setting Mode).
	Proxy 1 Timeout, Glyph on top left (Menu Mode) Change Glyph to top right to change timeout.
	Proxy 1 NPN Type, Glyph on top right (Setting Mode).
	Proxy 1 PNP Type, Glyph on top left (Menu Mode).

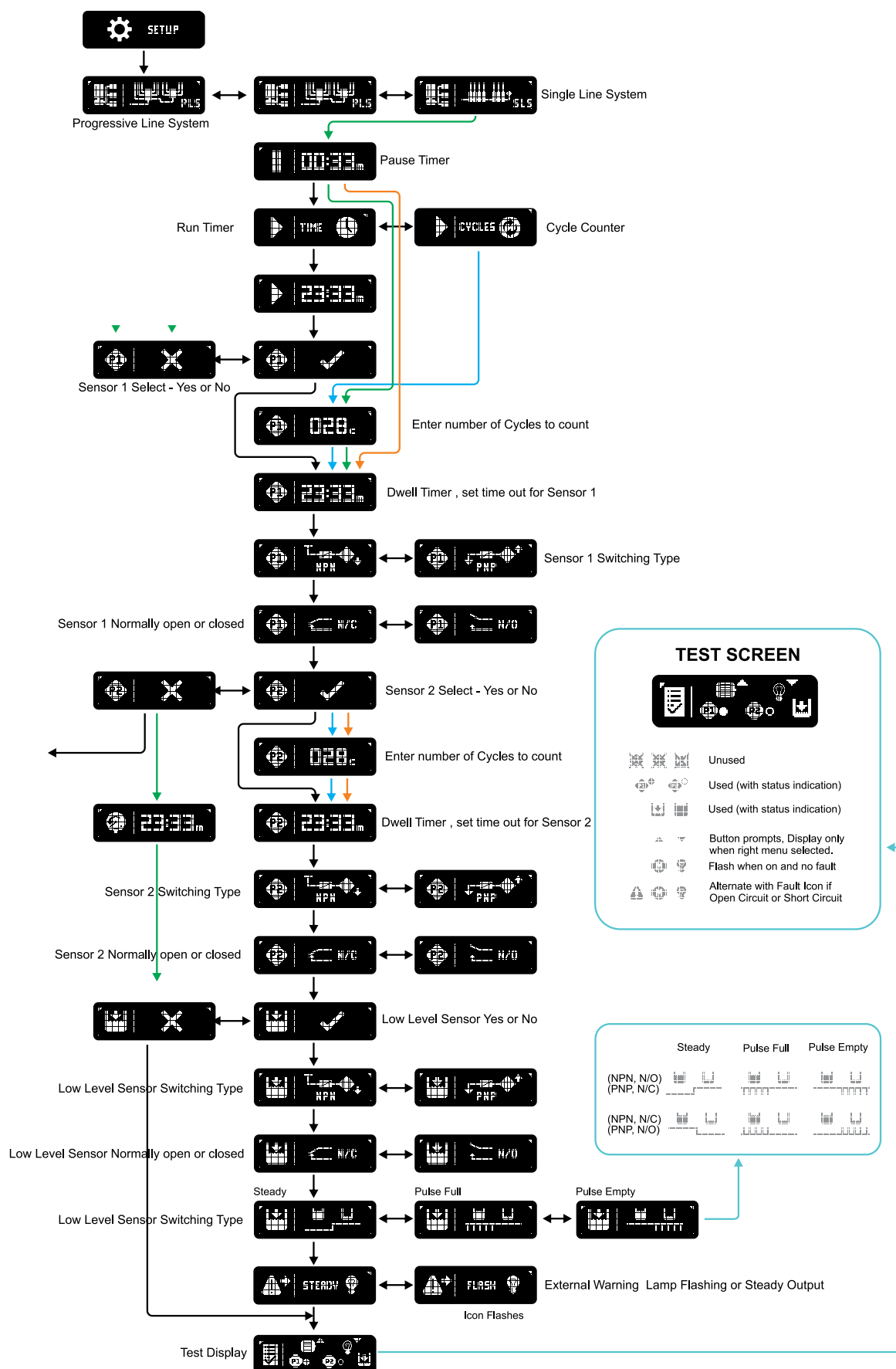
  N/C	Proxy 1 normally closed, Glyph on top right (Setting Mode).
  N/O	Proxy 1 normally open, Glyph on top right (Setting Mode).
 	Proxy 2 not selected, Glyph on top right (Setting Mode).
 	Proxy 2 selected, Glyph on top right (Setting Mode).
 03:20 _m	Proxy 2 timeout, Glyph on top right (Setting Mode).
  NPN	Proxy 2 NPN Type, Glyph on top right (Setting Mode).
  PNP	Proxy 2 PNP Type, Glyph on top left (Menu Mode).
  N/C	Proxy 2 normally closed, Glyph on top right (Setting Mode).
  N/O	Proxy 2 normally open, Glyph on top right (Setting Mode).
 CYCLES 	Setup Run Type - Cycles based.
 008 _c	Setup cycles for cycle counter for either P1 or P2.
 	Select low level "NO" .
 	Select low level "YES" .

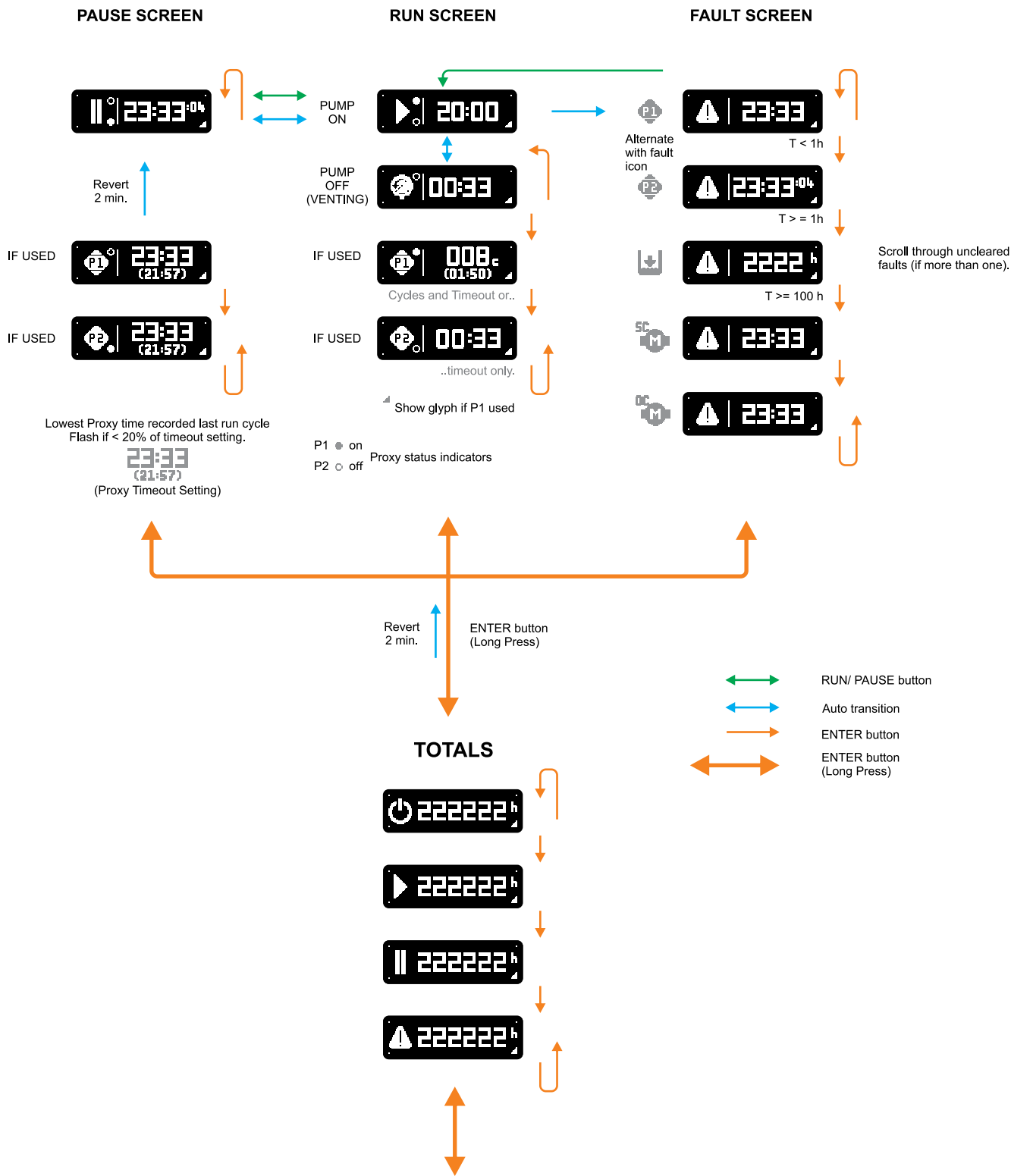
Display Glossary

	Low Level Sensor NPN Type, Glyph on top right (Setting Mode).
	Low Level Sensor PNP Type, Glyph on top left (Menu Mode).
	Low Level sensor normally closed.
	Low Level sensor normally open.
	Low Level sensor type "Steady".
	Low Level sensor type "Pulse on Full".
	Low Level sensor type "Pulse on Empty".
	External Warning Lamp flashing output.
	External Warning Lamp steady output.
	Setup blockage detection measured in Amps.
	Setup TEST Mode.
	Display shows items not selected.
	Exit setup and save all settings.



Setup Screen Flow Diagram





PLS System Setup for Run Time Only

NOTE:

Display shows normal working mode, cursor bottom right more info



NOTE:

Cursor on left will flash Menu Mode



NOTE:

Cursor moves from left to right Setup Mode



GENERAL INFORMATION:

- » The small glyph on the top left indicates Menu mode. In this state the user can scroll up and down through the various settings.
- » The small glyph on the top right indicates Setting mode. In this state the user can change the value of the selected setting.
- » Press the Enter button to change between Menu and Setting Modes
- » The small glyph on the top left indicates Menu mode. In this state the user can scroll up and down through the various settings.
- » The small glyph on the top right indicates Setting mode. In this state the user can change the value of the selected setting.
- » Press the Enter button to change between Menu and Setting Modes

Press the centre button and hold for at least 3 seconds to enter setup mode.

The screen will change briefly displaying setup and will automatically change to a new screen.



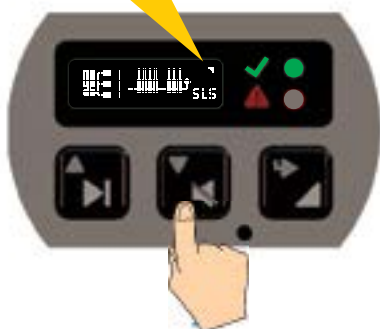
NOTE: By entering the setup mode the A2 will display the last program installed by default.

The screen now displays the type of lubrication system to setup. There are 2 types, Progressive Line Systems (PLS) and Single Line Systems (SLS). It is important to understand the type of system you are about to setup. For this example we will setup (PLS). In order to enter the setup screen we must press the right (Enter) button to move the cursor from the left side to the right side. The cursor will flash/blink while in menu mode or setup mode.

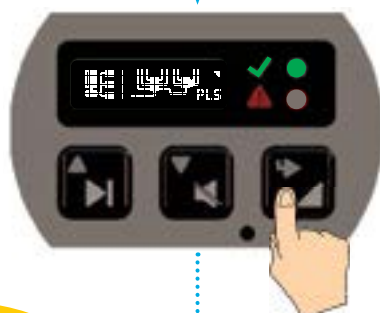
The screen now displays the type of lubrication system to setup. Press the centre button to select either PLS or SLS. Note the flashing cursor on the right. This is an indication that you have entered the setup mode.

NOTE:

Display shows normal working mode, cursor bottom right more info



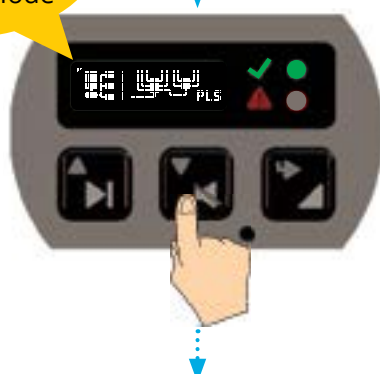
Press the centre button to select from SLS to PLS. Note the flashing cursor on the right. This is an indication that you are still in setup mode.



Press the right button to select PLS.

NOTE:

Cursor on left will flash Menu Mode



Cursor has moved from the right side of display to the left hand side of display. The A2 will now remain in Menu mode. Continue to press the centre button to move to the next setup sequence.

**PAUSE TIME SETUP**

The display will indicate pause time, to make changes press the right button to move cursor from the left side of display to the right side of display. This action will allow you to move from Menu Mode to Setup Mode.

PLS System Setup for Run Time Only

NOTE:

Cursor on left will flash Menu Mode



Exit setup mode and proceed. The next sequence to setup will be Run Timer or Cycles.

NOTE:

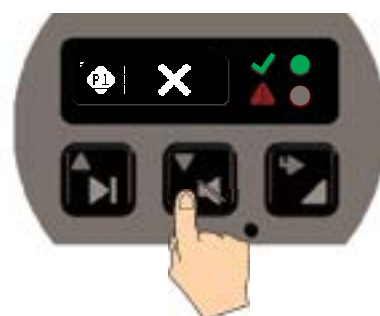
Display shows normal working mode, cursor bottom right more info



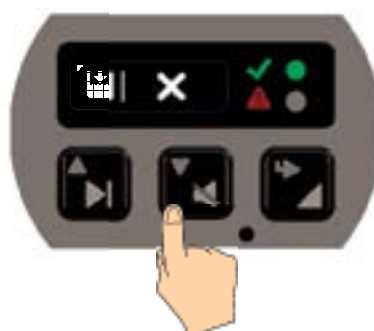
Select Run Timer and push the right button key to enter into run timer setup.



Setup the timer you would like the pump to run for. Push the right button to enter timer and the middle button to proceed to the next screen (P1). Select X (No).

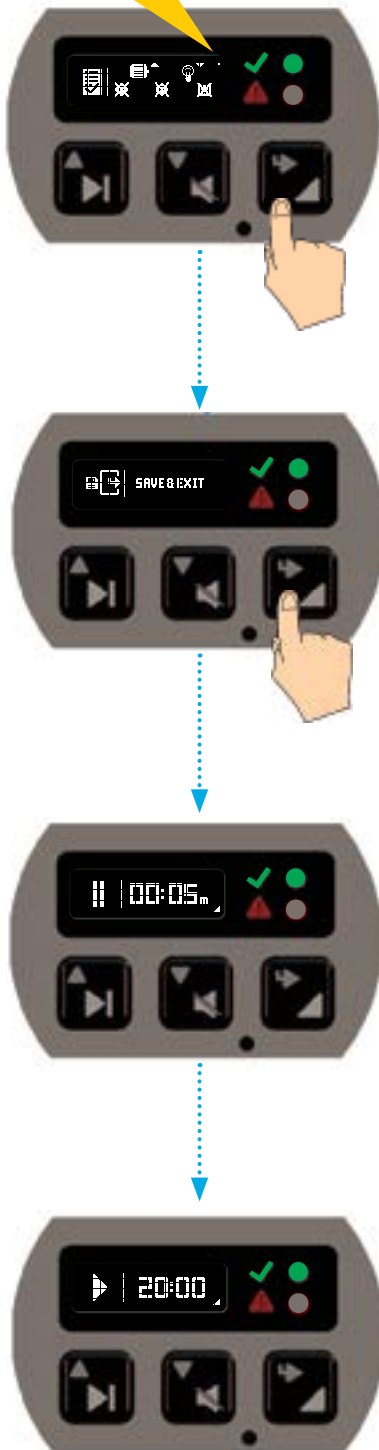


Continue to press the middle button to next display. The next display will indicate external lamp warning setup for a steady output or flashing output. Continue to press middle button with option to setup low level. Lastly display will show screen for blockage detection. Enter setup screen to set current draw for pump to stall.



NOTE:

Display shows normal working mode, cursor bottom right more info



Display indicates selection accepted. Icons with X through are not selected. Push the right button to enter the TEST screen function. While is test mode user can press the middle button to test external warning light for function. Push the left button will switch the pump on. Should you have sensors connected such as proximity or low level the display will show if these are working correctly if activated. By testing the pump function will test proximity or pressure sensors.

Press the right button to accept setting and save.

After exiting setup mode the A2 will default to a 5 second delay before the run times appears.

Run timer will display after the default pause time expires. The left "Play" arrow will flash together with the green LED. This indicates that the pump is running.

Low Level Setup for PLS & SLS

NOTE:

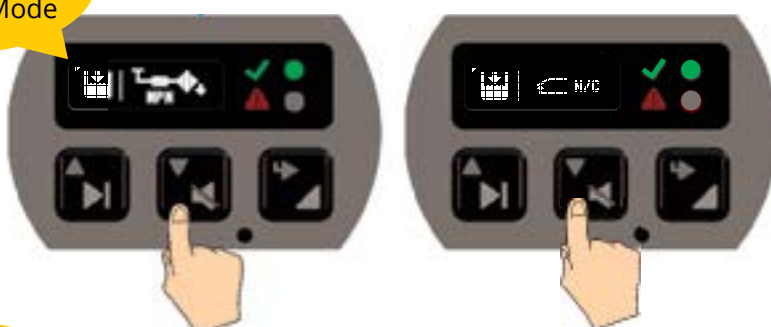
Display shows normal working mode, cursor bottom right more info



Select either X (No) or tick (Yes) to accept Low Level detection. User must be in setup mode to change selection. Push the middle button to select the switch type of sensor.

NOTE:

Cursor on left will flash Menu Mode



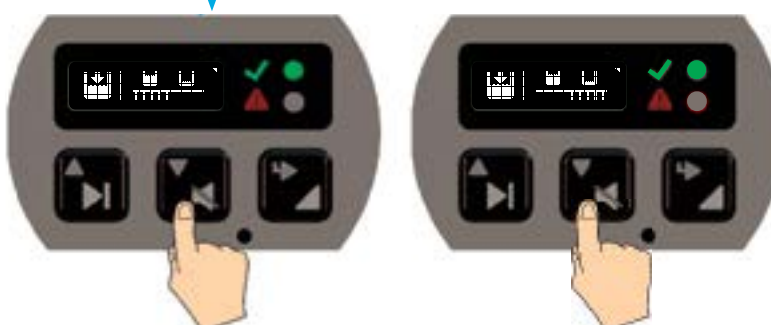
Select the sensor type for NPN or PNP. Push the middle button to change from normally open (N/O) to normally closed (N/C). User must be in setup mode.

NOTE:

Cursor on left will flash Menu Mode

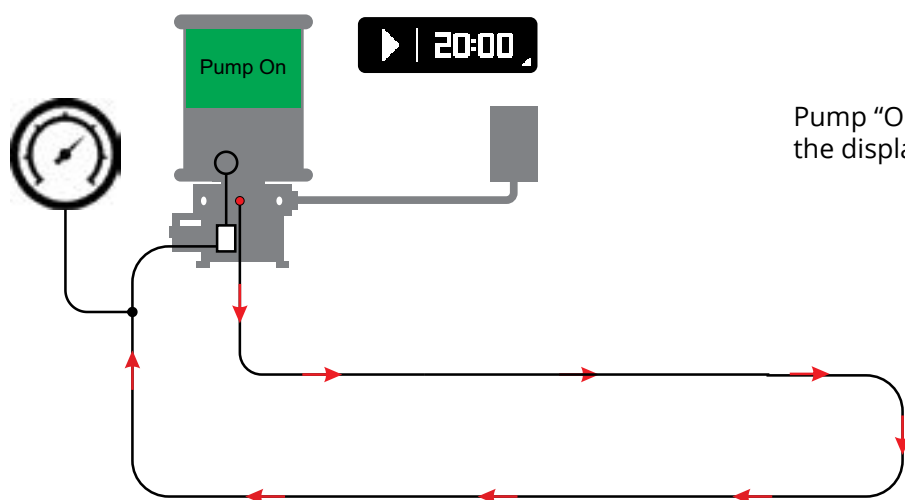


Select the low level configuration of the sensor type that best suits your product. Type as indicated in display is "Steady" Most commonly used.

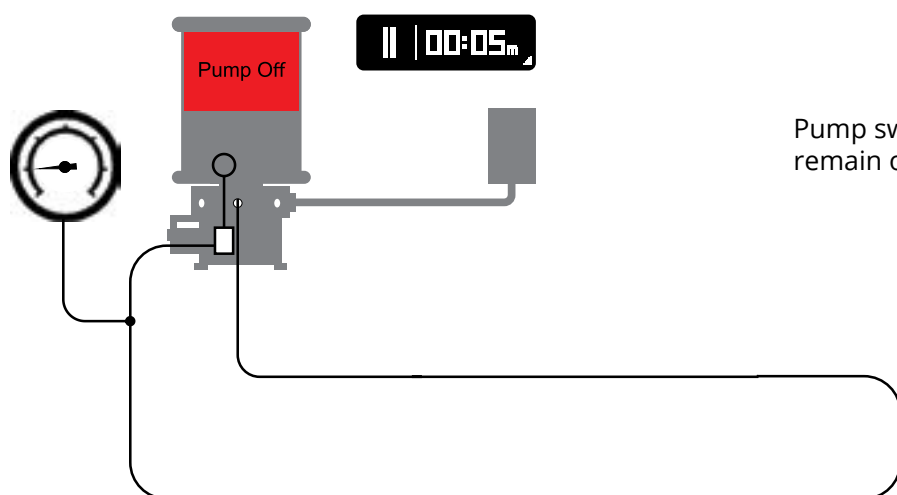


Select the low level configuration of the sensor type that best suits your product. Type as indicated in display are "Pulse on full" and "Pulse on empty".

PLS System - Run Only Time Based

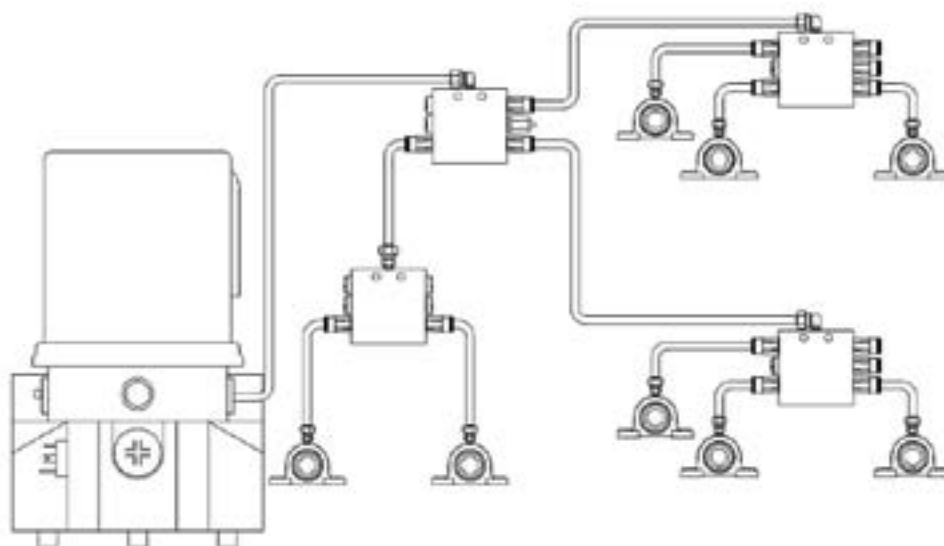


Pump "On" Timer will run for 20 minutes as per the display.



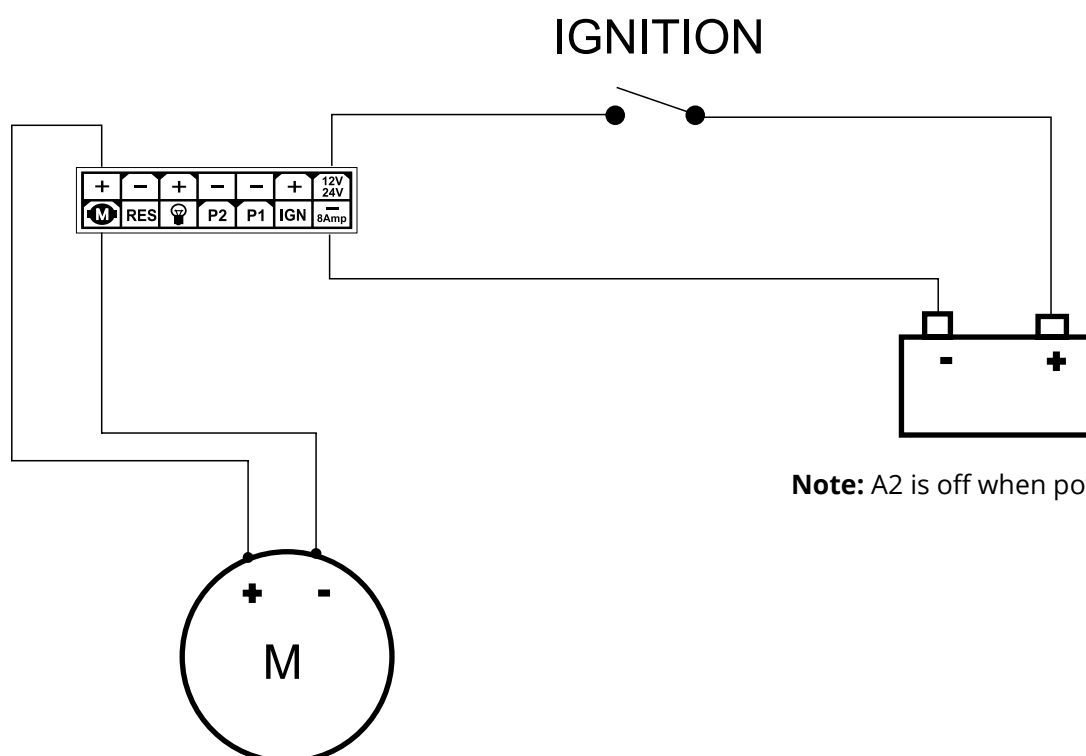
Pump switches off. The complete system will remain off till the pause time expires.

Progressive Line System

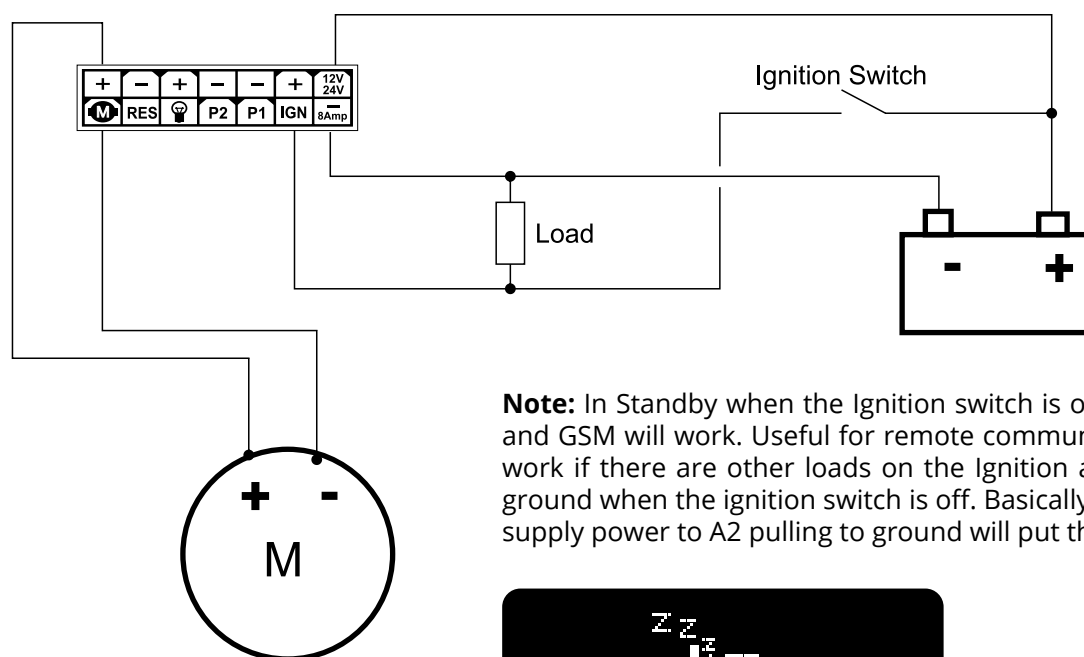


Manual Setup for Progressive Systems

Progressive Line System wiring diagram - no sensors



Connected to Ignition Switch



Note: Connect through vehicle fuse box to 15Amp fuse for standard equipment. High current equipment to rate fuse and wire up accordingly.

PLS System Setup for Cycle Run

NOTE:

Display shows normal working mode, cursor bottom right more info



NOTE: The cursor to the right bottom of display indicates more information available. Press the right button key to access the stored information. Information stored shows Hours worked, total hours paused and all accessories connected hours performed.

Press the centre button and hold for at least 3 seconds to enter setup mode.



The screen will change briefly displaying setup and will automatically change to a new screen.

NOTE:

Cursor on left will flash Menu Mode



NOTE: By entering the setup mode the A2 will display the last program installed by default.

The screen now displays the type of lubrication system to setup. There are 2 types, Progressive Line Systems (PLS) and Single Line Systems (SLS). It is important to understand the type of system you are about to setup. For this example we will setup (PLS). In order to enter the setup screen (Mode) we must press the right button to move the cursor from the left side to the right side. The cursor will flash/blink while in menu mode or setup mode.

NOTE:

Cursor moves from left to right Setup Mode



The screen now displays the type of lubrication system to setup. Press the centre button to select either PLS or SLS. Note the flashing cursor on the right. This is an indication that you have entered the setup mode.

PLS System Setup for Cycle Run

NOTE:

Cursor on left will flash Menu Mode



Exit setup mode and proceed. The next sequence to setup will be Run Timer or Cycles.

NOTE:

Display shows normal working mode, cursor bottom right more info



Select cycle counter and push the right button key to enter into cycle counter setup.

Setup the number of cycles required for example 3. Push the right button to enter cycles and the middle button to proceed to the next screen. Note when selecting cycles P1 will automatically be selected.



NOTE:

Cursor on left will flash Menu Mode



NOTE:

Cursor moves from left to right Setup Mode



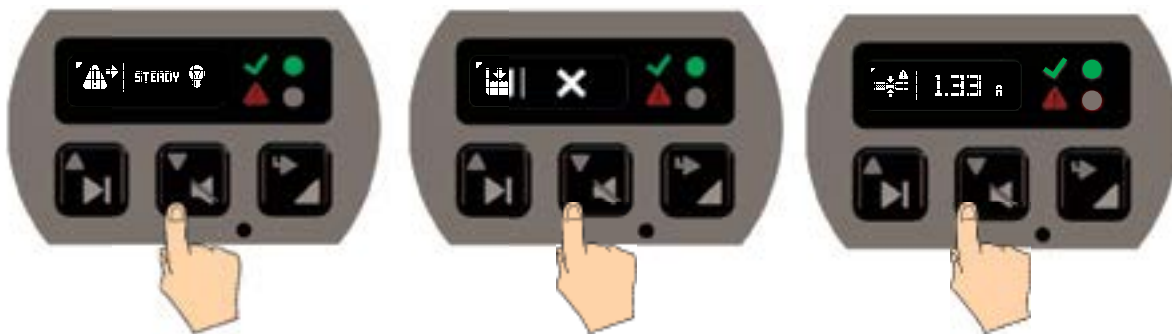
The next screen will display P1 timeout. This is the time take it will take to cycle a distributor once. The timeout is normally set to a time higher than the actual time it takes to do one cycle.



PLS System Setup for Cycle Run



Enter the setup mode to set P1 switching type. NPN or PNP normally closed or open are options to consider and depending on the sensor type installed. To change setting the cursor must be changed from menu mode to setup mode. Enter X (No) for P2.



Continue to press the middle button to the next display. The next display will indicate external lamp warning. Setup for a steady output or flashing output. Continue to press middle button with option to setup low level. The next display will show blockage detection. Enter setup mode to set current draw for pump to stall.

Low Level Setup for PLS & SLS

NOTE:

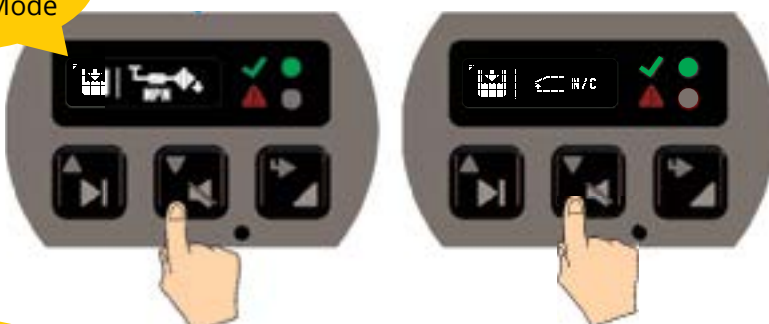
Display shows normal working mode, cursor bottom right more info



Select either X (No) or tick (Yes) to accept Low Level detection. User must be in setup mode to change selection. Push the middle button to select the switch type of sensor.

NOTE:

Cursor on left will flash Menu Mode



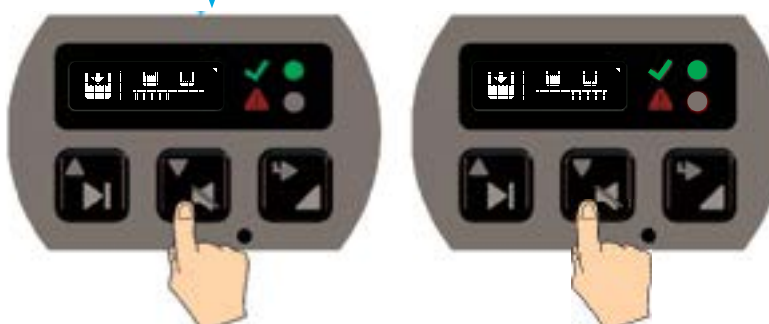
Select the sensor type for NPN or PNP. Push the middle button to change from normally open (N/O) to normally closed (N/C). User must be in setup mode.

NOTE:

Cursor on left will flash Menu Mode



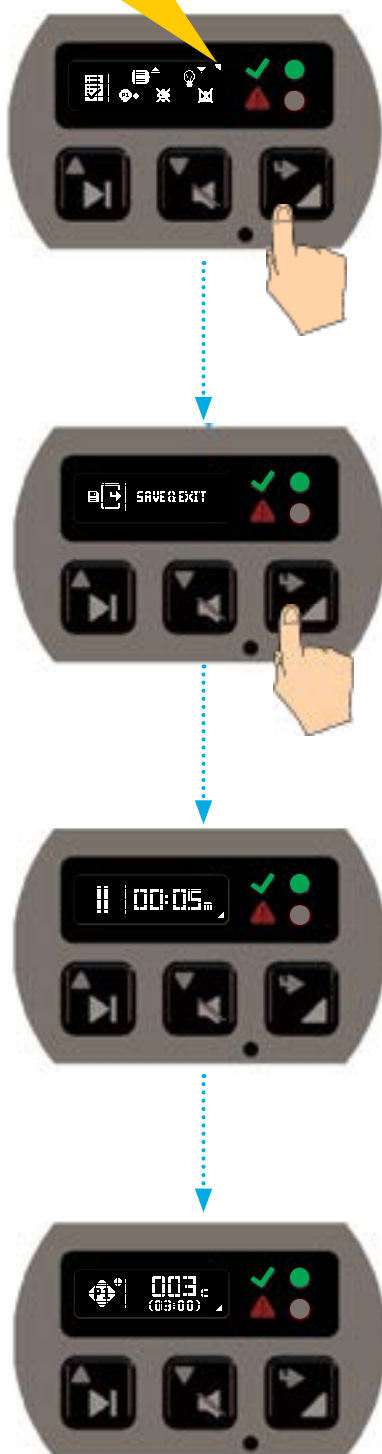
Select the low level configuration of the sensor type that best suits your product. Type as indicated in display is "Steady" Most commonly used.



Select the low level configuration of the sensor type that best suits your product. Type as indicated in display are "Pulse on full" and "Pulse on empty".

NOTE:

Display shows normal working mode, cursor bottom right more info



Display indicates selection accepted. Icons with X through are not selected. Push the right button to enter the TEST screen function. While in test mode user can press the middle button to test external warning light for function. Push the left button will switch the pump on. Should you have sensors connected such as proximity or low level the display will show if these are working correctly if activated. By testing the pump function will test proximity or pressure sensors.

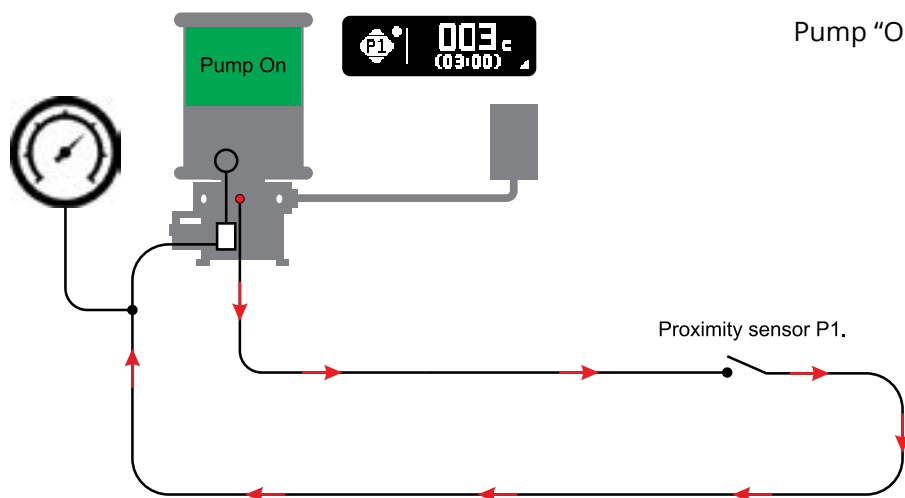
Press the right button to accept setting and save.

After exiting setup mode the A2 will default to a 5 second delay before the run times appears.

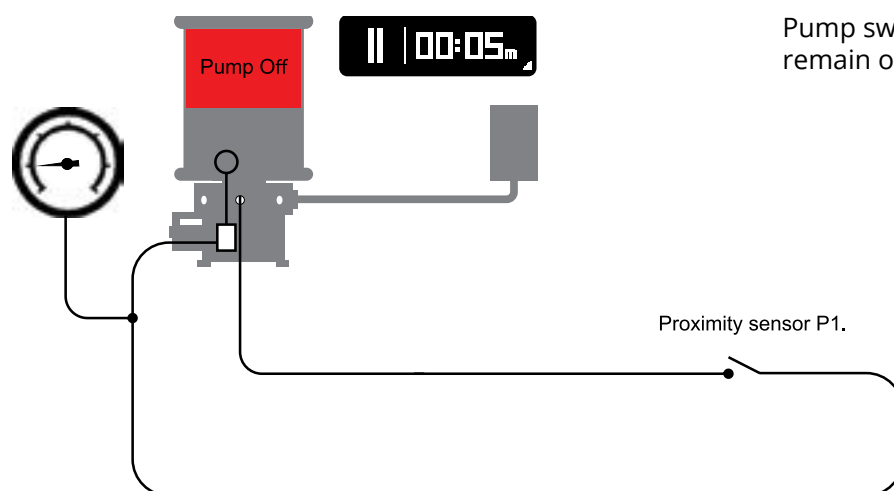
Run timer will display after the default pause time expires. The left "Play" arrow will flash together with the green LED. This indicates that the pump is running. The pump will continue to count the cycles down from 3 cycles to zero cycles. The time shown in brackets is the proximity timeout and as shown for 3 minutes.

PLS System Setup for Cycle Run

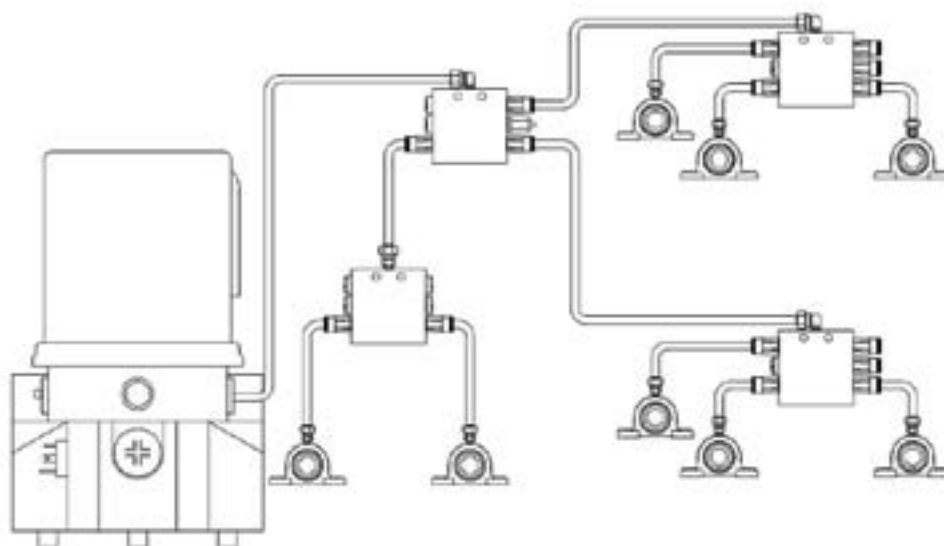
Pump "On" Cycles will count down from 3 to 0.



Pump switches off. The complete system will remain off till the pause time expires.

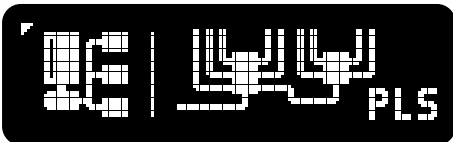
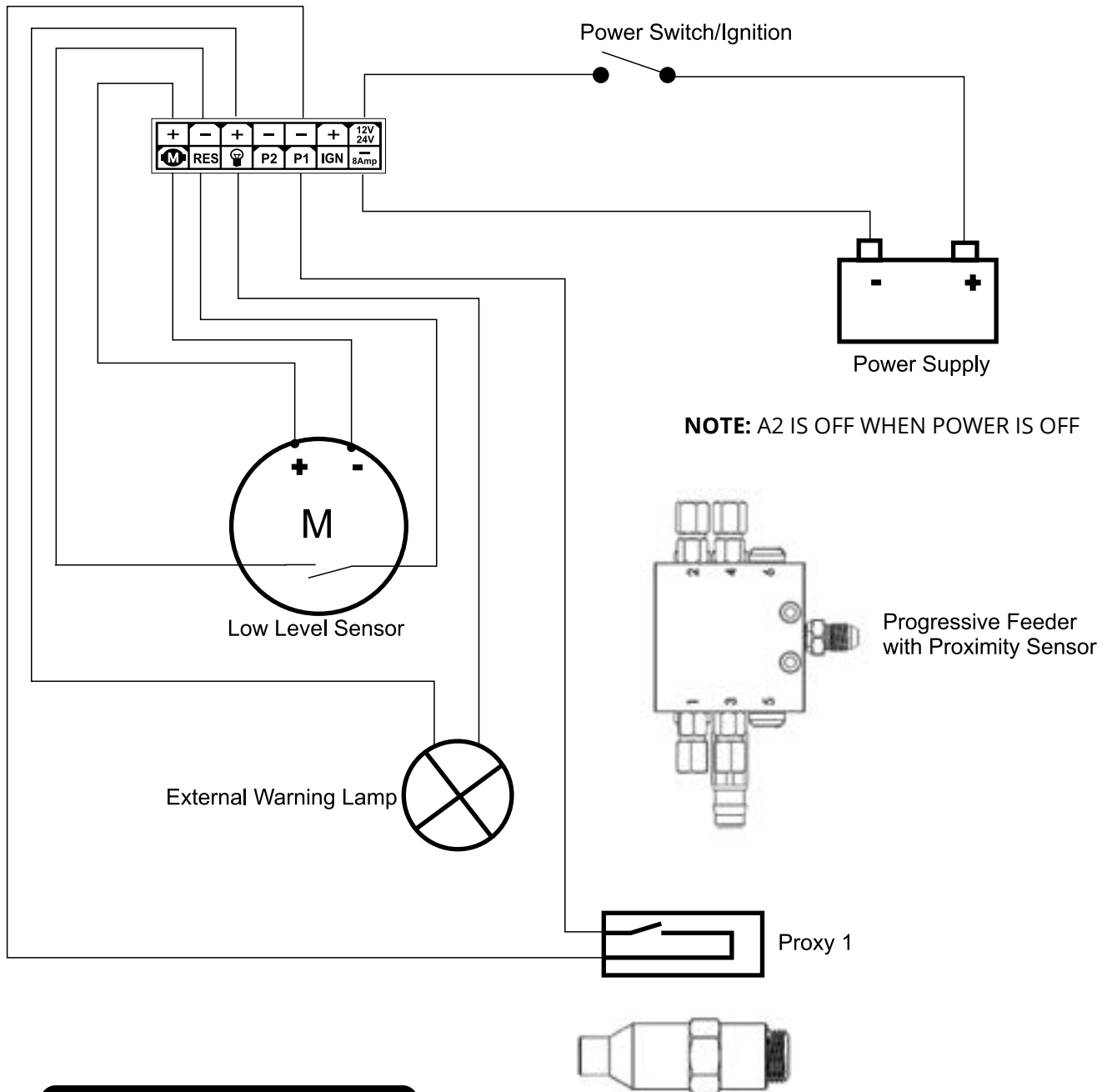


Progressive Line System



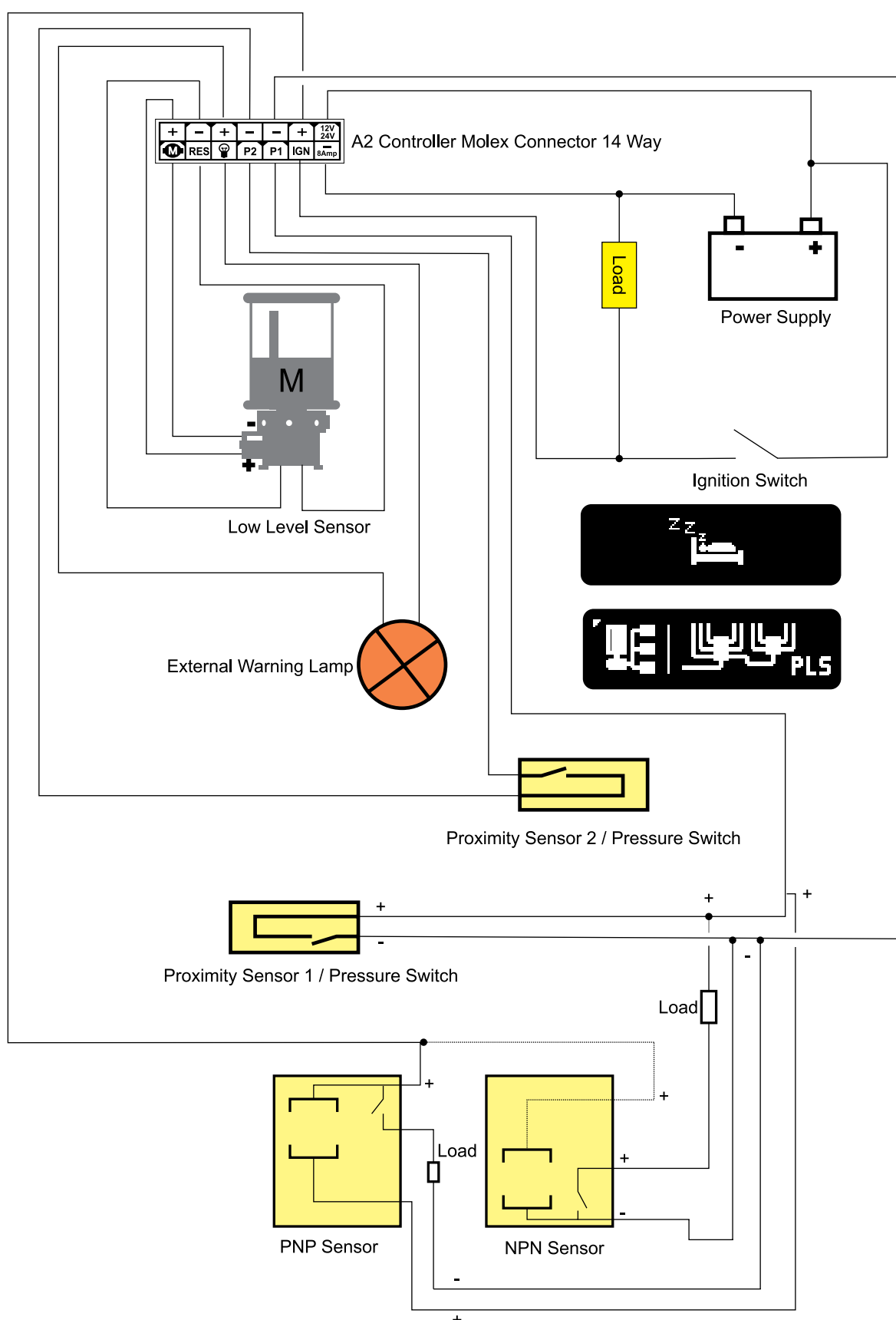
Manual setup for Progressive Systems

Progressive Line System wiring diagram with sensors



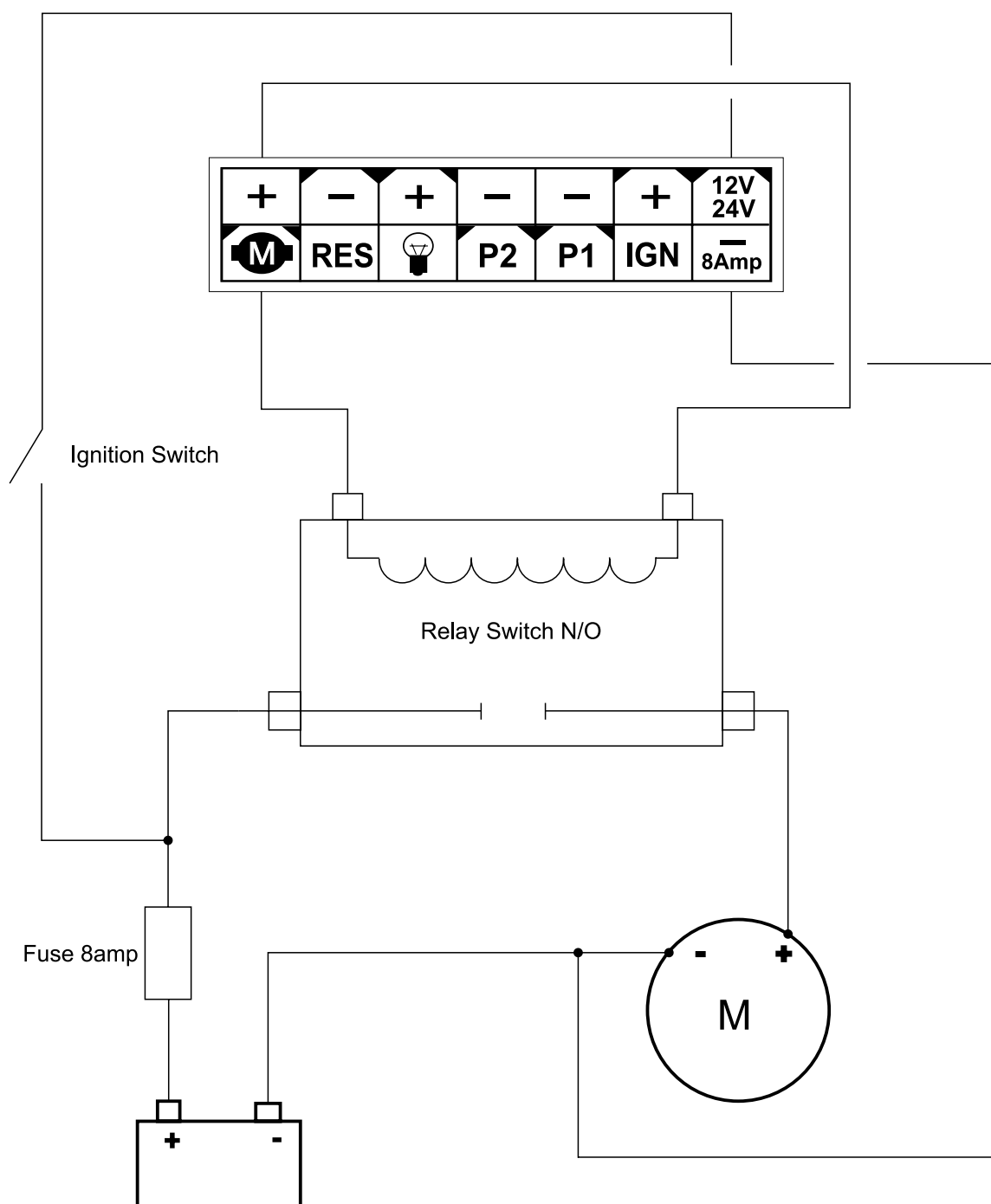
NOTE: Connect through vehicle fuse box to 15Amp fuse for standard equipment. High current equipment to rate fuse and wire up accordingly.

A2 General Wiring Diagram with Low Level Sensor, 2 wire proximity and 3 wire proximity



A2 General Wiring Diagram connecting through a relay to drive pump motor

NOTE: A2 IS OFF WITH POWER IS OFF

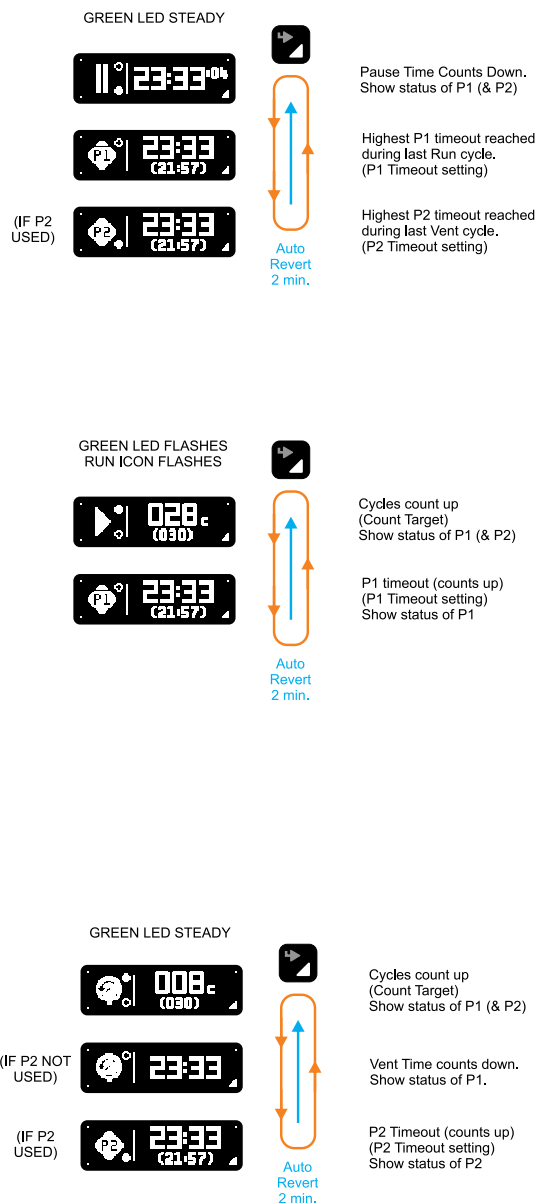
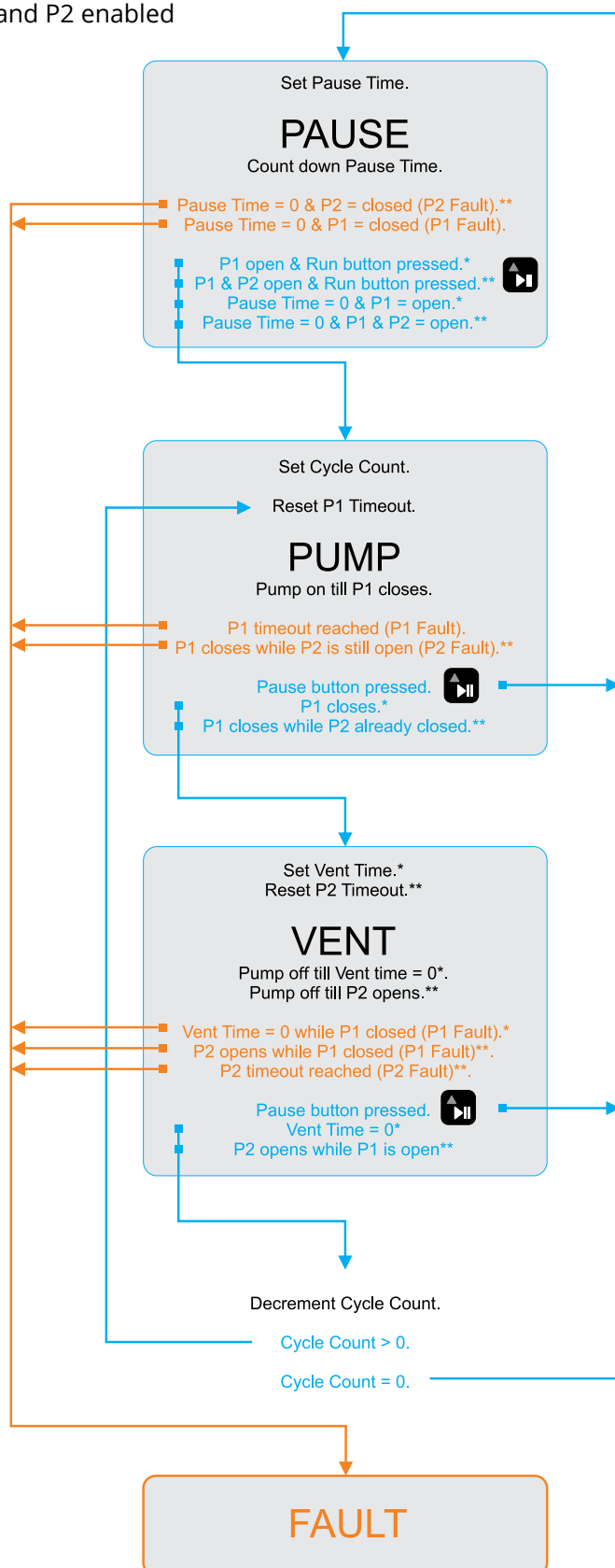


NOTE: Connect through vehicle fuse box to 15Amp fuse for standard equipment.
High current equipment to rate fuse and wire up accordingly

SLS System Setup

* Only P1 enabled

** P1 and P2 enabled



Brief: SLS system pumps until the injectors are charged with grease and the line pressure then rises until the charge pressure is reached and P1 closes. The system then stops pumping while the injectors dispense their dose of grease and the line pressure drops. When only one proxy is used the system vents for a specified Vent time before starting the next charge cycle. When proxy 2 is fitted, the system vents until the pressure drops below the vent pressure and P2 opens. System faults are detected if P1 fails to reach pressure within a specific time or if P1 and / or P2 fail to open during vent within a specific time. The cycle repeats for the required number.



NOTE: Description is for Normally Open Proxy types. Adjust accordingly for Normally Closed types.

SLS System with 2 Pressure Switches

NOTE:

Display shows normal working mode, cursor bottom right more info



NOTE: The cursor to the right bottom of display indicates more information available. Press the right button key to access the stored information. Information stored shows Hours worked, total hours paused and all accessories connected hours performed.

Press the centre button and hold for at least 3 seconds to enter setup mode.



The screen will change briefly displaying setup and will automatically change to a new screen.



NOTE: By entering the setup mode the A2 will display the last program installed by default.

NOTE:

Cursor on left will flash Menu Mode



The screen now displays the type of lubrication system to setup. There are 2 types, Progressive Line Systems (PLS) and Single Line Systems (SLS). It is important to understand the type of system you are about to setup. For this example we will setup (SLS). In order to enter the setup screen (Mode) we must press the right button to move the cursor from the left side to the right side. The cursor will flash/blink while in menu mode or setup mode.

NOTE:

Cursor moves from left to right Setup Mode



The screen now displays the type of lubrication system to setup. Press the centre button to select either PLS or SLS. Note the flashing cursor on the right. This is an indication that you have entered the setup mode.

SLS System with 2 Pressure Switches

NOTE:

Cursor moves from left to right Setup Mode



Press the right button to select SLS.

NOTE:

Cursor on left will flash Menu Mode



NOTE: Cursor has moved from the right side of display to the left hand side of display. The A2 will now remain in Menu mode. Continue to press the centre button to move to the next setup sequence.

NOTE:

Cursor on left will flash Menu Mode



PAUSE TIME SETUP

The display will indicate pause time, to make changes press the right button to move cursor from the left side of display to the right side of display. This action will allow you to move from Menu Mode to Setup Mode.

NOTE:

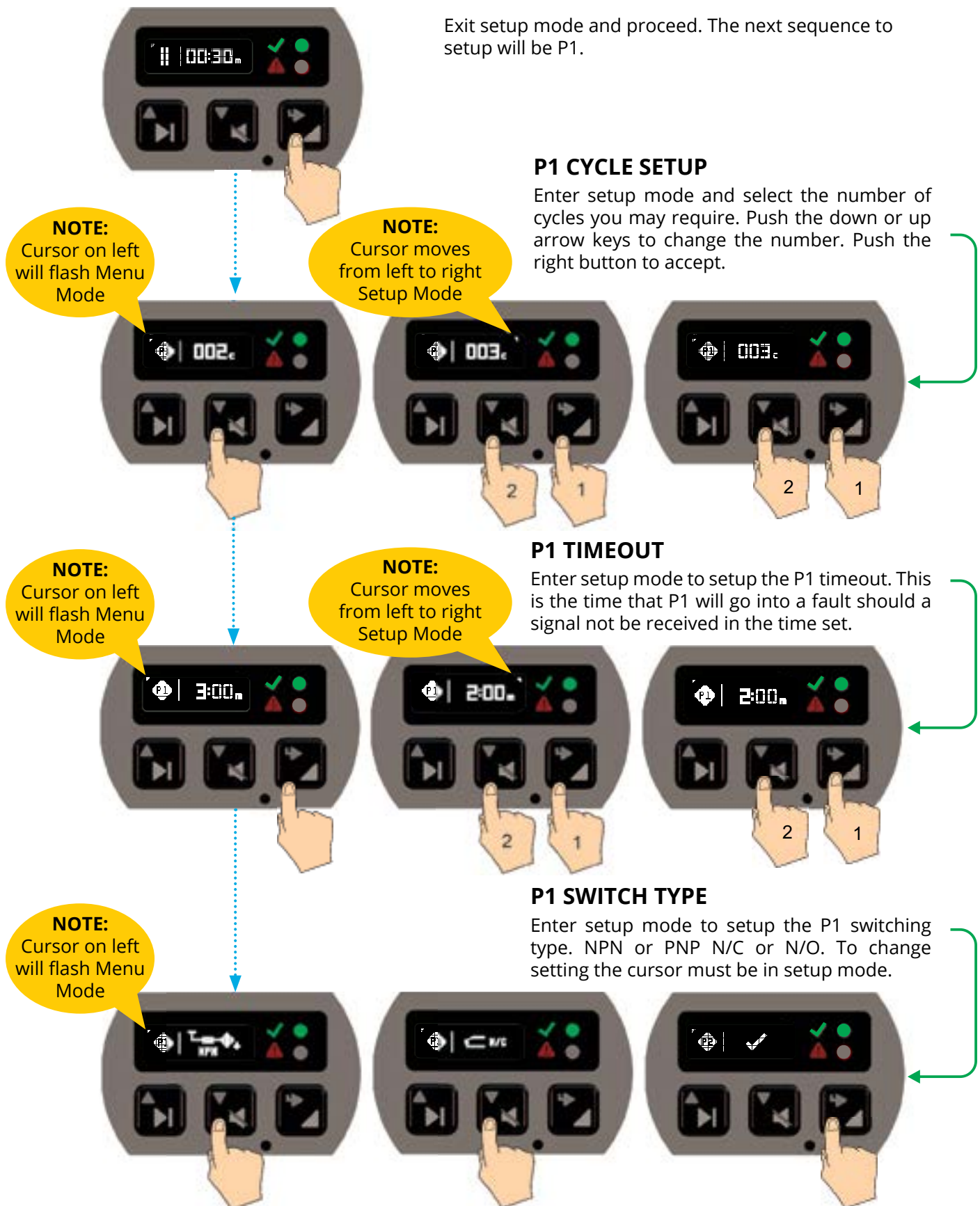
Cursor moves from left to right Setup Mode



PAUSE TIME SETUP

The display will indicate pause time, to make changes press the middle button to change the time required. For this example change pause time from 33 seconds to 30 seconds. Push the middle button to decrease time.

SLS System with 2 Pressure Switches



NOTE: For SLS using 2 pressure switches user must accept P2 as part of setup. Should P2 indicate X then enter setup mode and change to accept P2.

SLS System With 2 Pressure Switches

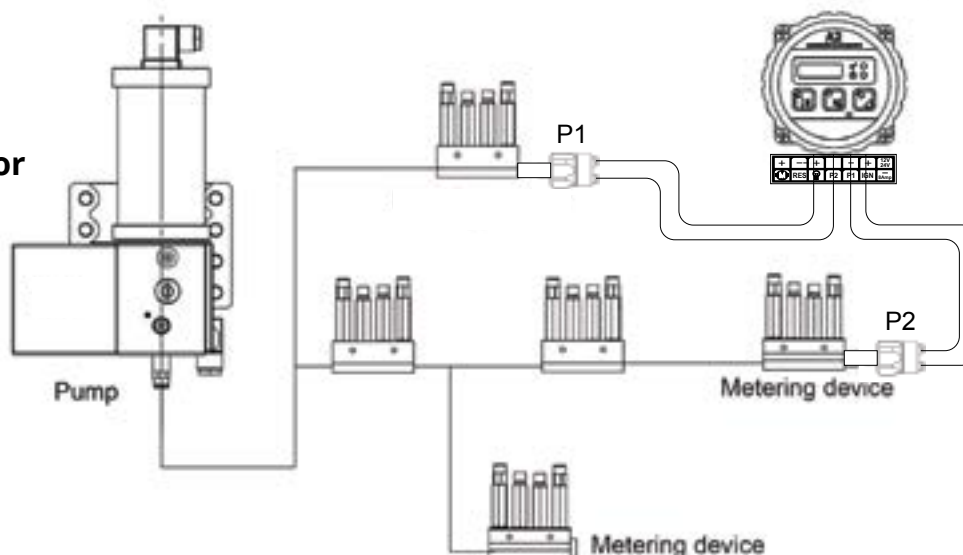
NOTE:

Cursor on left
will flash Menu
Mode

P2 TIMEOUT
P2 SWITCH TYPE

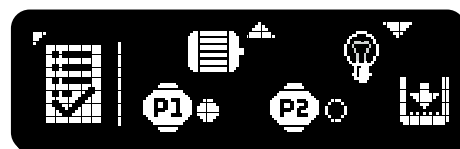

NOTE: P2 timeout and normally represents the low pressure sensor will by default close first. The timeout for P2 can be set at the same time as P2. Should a signal not be received within 2 mins for P1 or P2 the system will go into a fault. P2 Switch type should be setup as P1 or in the case where P2 sensor type is different. User will need to have knowledge of the type of sensor used.

Single Line Injector with Pressure Sensor



SLS Operation With 2 Pressure Sensors

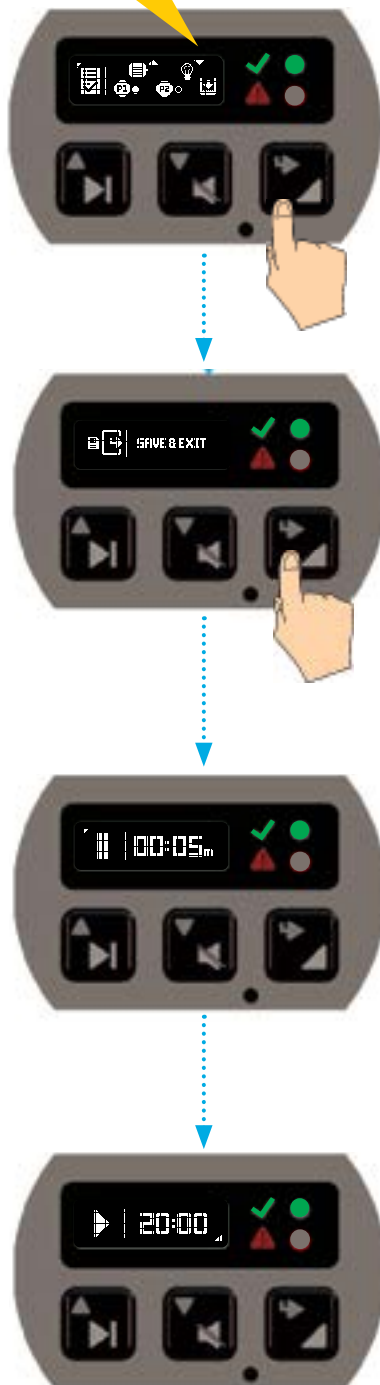
Single Line Systems use injector type dispenses to deliver lubrication to the lubrication point. The pump would prime the lubrication line and as it builds up pressure would activate the low pressure sensor first (P2). The A2 would receive the signal and start the timeout of the P2 sensor. As the pump continues to prime the lubrication line and pressure builds up would then activate sensor (P1). At this point while pressure is rising the injectors would release lubrication to the lubrication point simultaneously. The amount of lubrication to each point is controlled by the injector top dosing cap which vary in size and allowing the user to control the amount of lubrication to each point. As the pump reaches full pressure and closes P1 the pump switches off and engages a vent valve in the pump to allow the pressure in the lubrication line to vent back to the reservoir. As the pressure drops in the lubrication line both P1 and P2 will open so that the A2 records as a completed cycle and hence allowing the pump to switch on again to complete the balance of cycles setup. Once the cycles are completed the pump will switch off and proceed to the pause time it was set to. It should be also noted that there are many different types of injector types ranging from low pressure to high pressure. Some injectors deliver lubrication on the pressure rise and some only inject when the pump has stopped and in the vent cycle. SLS systems cannot detect if a single lubrication point is blocked but will continue to supply lubrication to the balance of points supplied.



SLS System with 2 Pressure Switches

NOTE:

Display shows normal working mode, cursor bottom right more info



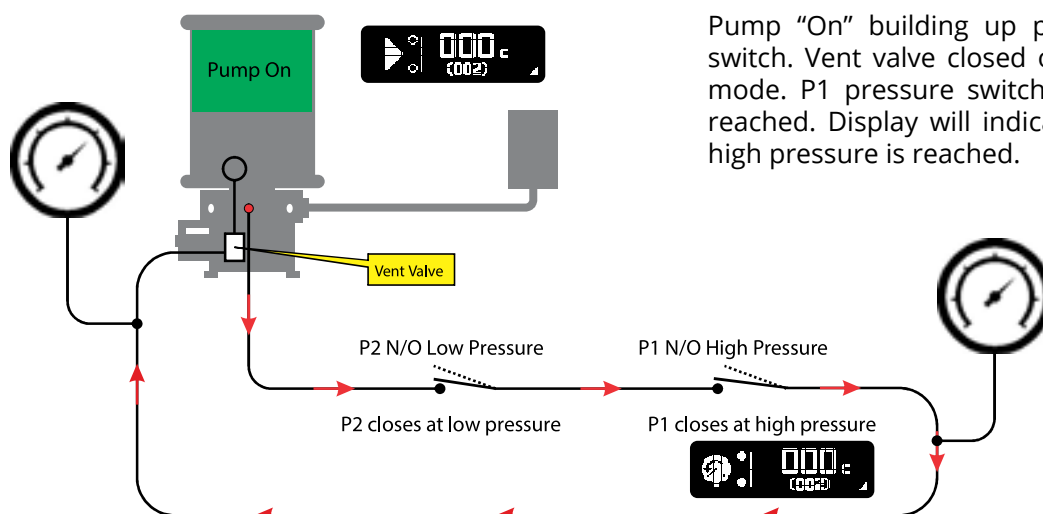
Display indicates selection accepted. Icons with X through are not selected. Push the right button to enter the TEST screen function. While in test mode user can press the middle button to test external warning light for function. Push the left button will switch the pump on. Should you have sensors connected such as proximity or low level the display will show if these are working correctly if activated. By testing the pump function will test proximity or pressure sensors.

Press the right button to accept setting and save.

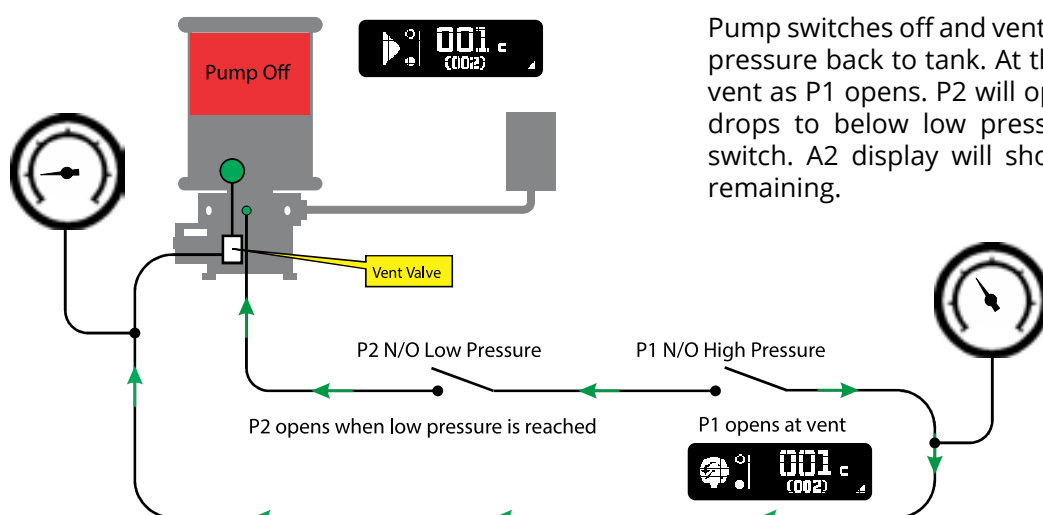
After exiting setup mode the A2 will default to a 5 second delay before the run times appears.

Run timer will display after the default pause time expires. The left "Play" arrow will flash together with the green LED. This indicates that the pump is running.

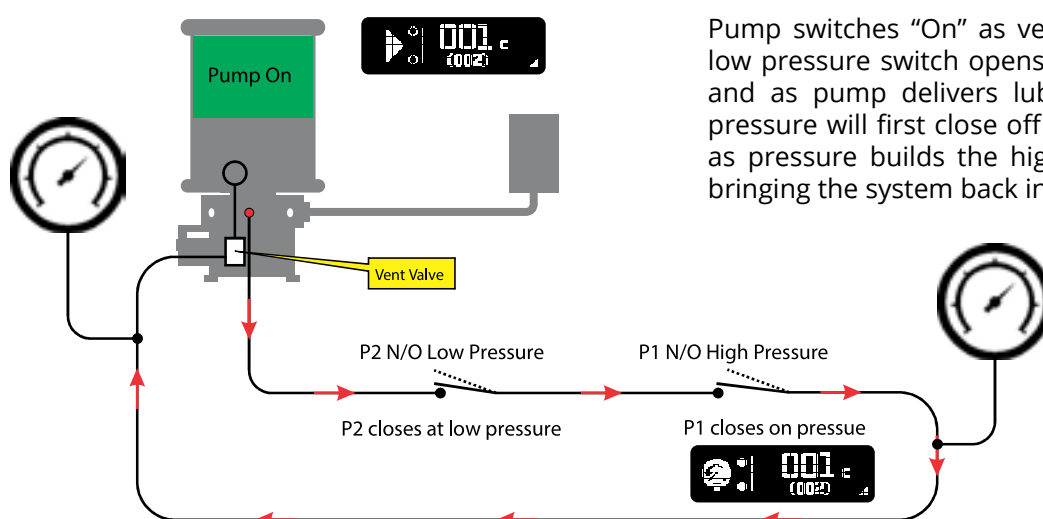
SLS System with 2 Pressure Switches



Pump "On" building up pressure closes P2 pressure switch. Vent valve closed on pump while pump in run mode. P1 pressure switch closes when high pressure reached. Display will indicate system in Vent Mode as high pressure is reached.

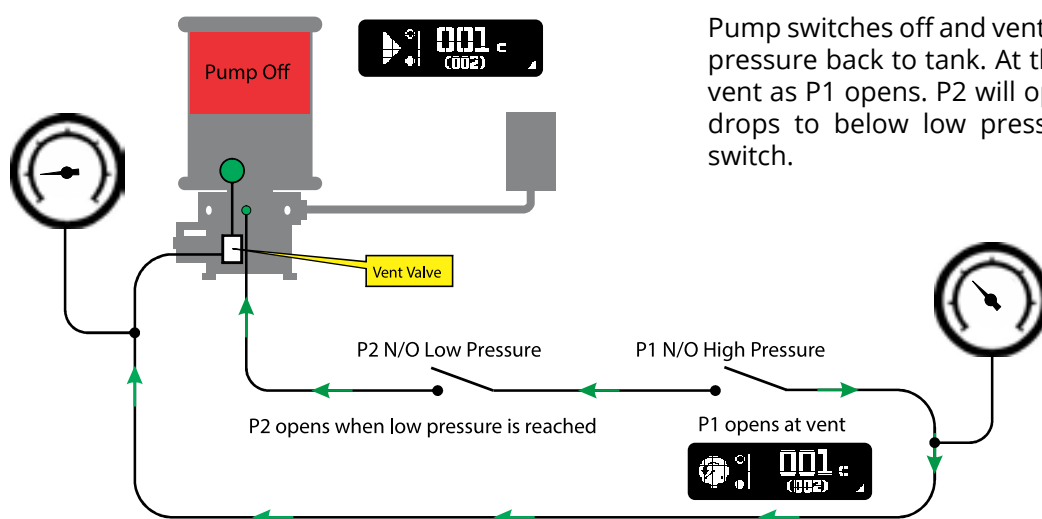


Pump switches off and vent valve engages returning high pressure back to tank. At this point A2 display will show vent as P1 opens. P2 will open when the pressure inline drops to below low pressure setting of the pressure switch. A2 display will show 1 cycle completed and 1 remaining.

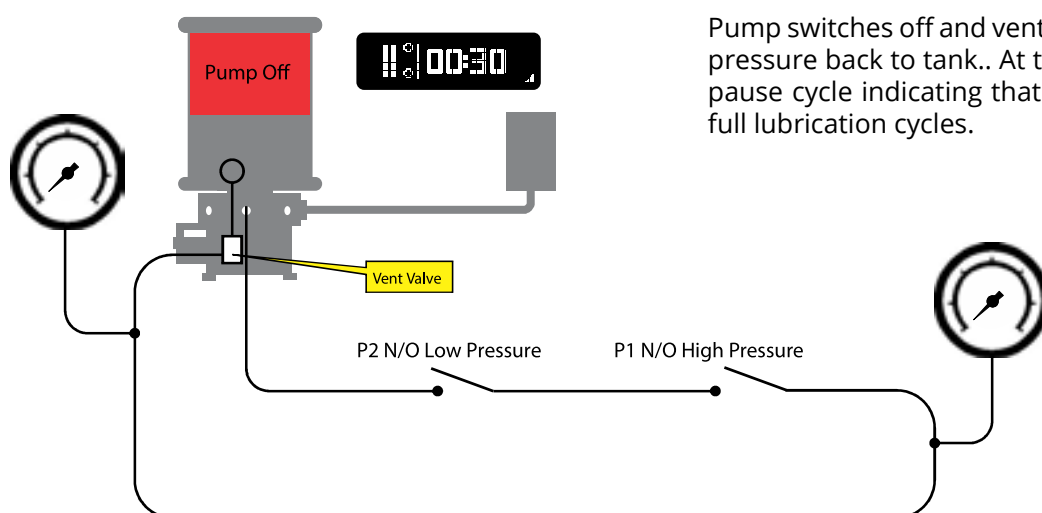


Pump switches "On" as vent pressure is obtained and low pressure switch opens. The 2nd cycle will presume and as pump delivers lubrication to line to increase pressure will first close off the low pressure switch and as pressure builds the high pressure switch will close bringing the system back into a 2nd vent cycle.

SLS System with 2 Pressure Switches



Pump switches off and vent valve engages returning high pressure back to tank. At this point A2 display will show vent as P1 opens. P2 will open when the pressure inline drops to below low pressure setting of the pressure switch.



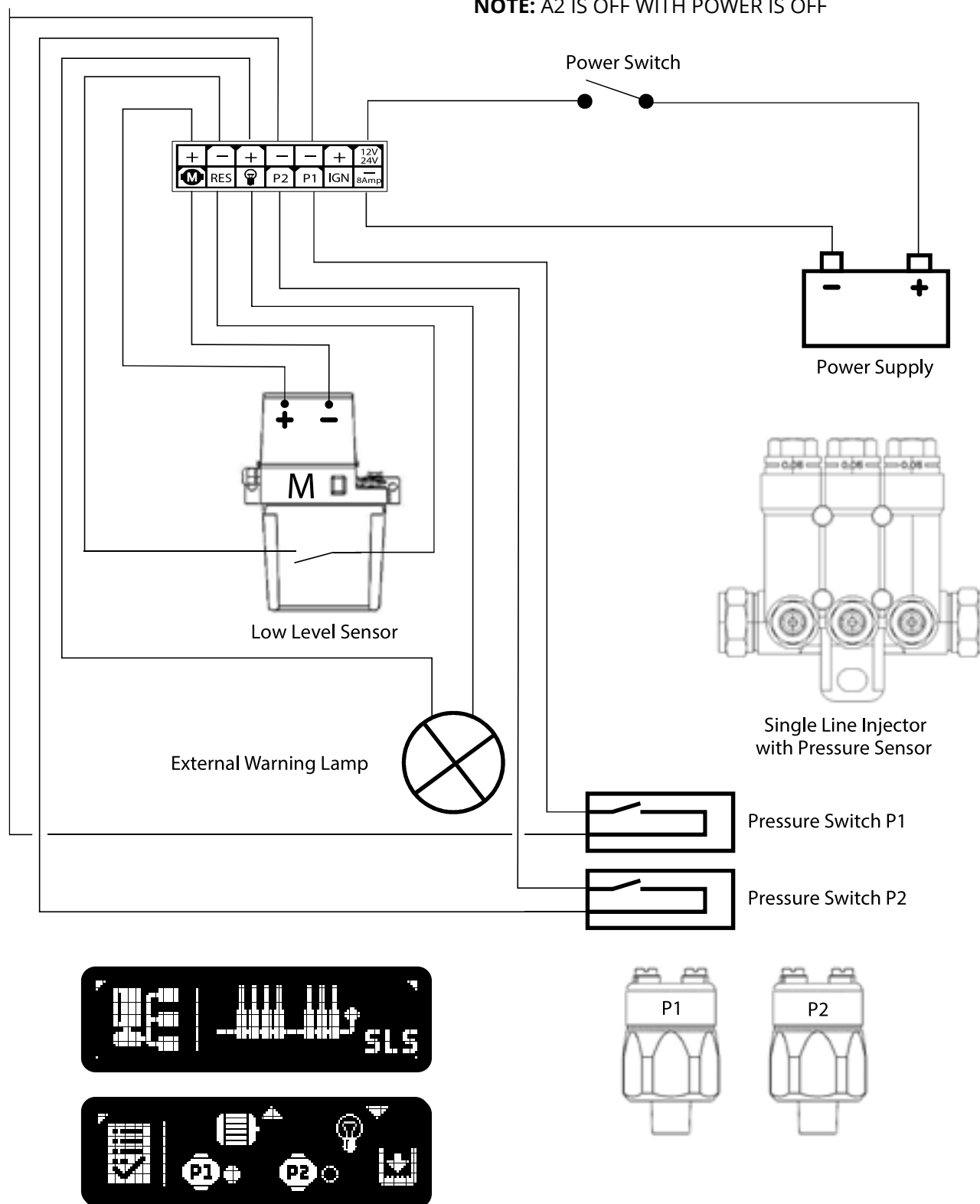
Pump switches off and vent valve engages returning high pressure back to tank.. At this point A2 display will show pause cycle indicating that the system has completed 2 full lubrication cycles.

The SLS (Single Line System) when selected and choosing 2 pressure switches to monitor both high pressure cycles and vent cycles can be advantageous for to check for faulty vent valves. The incorporation of 2 pressure switches will immediately switch the pump of to engage a vent cycle via the low pressure sensor. Sensor timeout can still be set to actual vent time X2 for safety reasons. The high pressure sensor would also be monitored by the same timeout set incase a high pressure signal cannot be reached due to a broken main line supply or faulty pump element. Multiple cycles can be setup for SLS systems.

Wiring diagram for Single Line Systems

Single Line System wiring diagram with 2 pressure switch

NOTE: A2 IS OFF WITH POWER IS OFF



Note: Connect through vehicle fuse box to 15Amp fuse for standard equipment. High current equipment to rate fuse and wire up accordingly.

SLS System with 1 Pressure Switch

NOTE:

Display shows normal working mode, cursor bottom right more info

NOTE: The cursor to the right bottom of display indicates more information available. Press the right button key to access the stored information. Information stored shows Hours worked, total hours paused and all accessories connected hours performed.

Press the centre button and hold for at least 3 seconds to enter setup mode.

The screen will change briefly displaying setup and will automatically change to a new screen.



NOTE: By entering the setup mode the A2 will display the last program installed by default.

The screen now displays the type of lubrication system to setup. There are 2 types, Progressive Line Systems (PLS) and Single Line Systems (SLS). It is important to understand the type of system you are about to setup. For this example we will setup (SLS). In order to enter the setup screen (Mode) we must press the right button to move the cursor from the left side to the right side. The cursor will flash/blink while in menu mode or setup mode.

The screen now displays the type of lubrication system to setup. Press the centre button to select either PLS or SLS. Note the flashing cursor on the right. This is an indication that you have entered the setup mode.

NOTE:

Cursor on left will flash Menu Mode

NOTE:

Cursor moves from left to right Setup Mode

SLS System with 1 Pressure Switch

NOTE:

Cursor moves from left to right Setup Mode



Press the right button to select SLS.

NOTE:

Cursor on left will flash Menu Mode



NOTE: Cursor has moved from the right side of display to the left hand side of display. The A2 will now remain in Menu mode. Continue to press the centre button to move to the next setup sequence.



PAUSE TIME SETUP

The display will indicate pause time, to make changes press the right button to move cursor from the left side of display to the right side of display. This action will allow you to move from Menu Mode to Setup Mode.

NOTE:

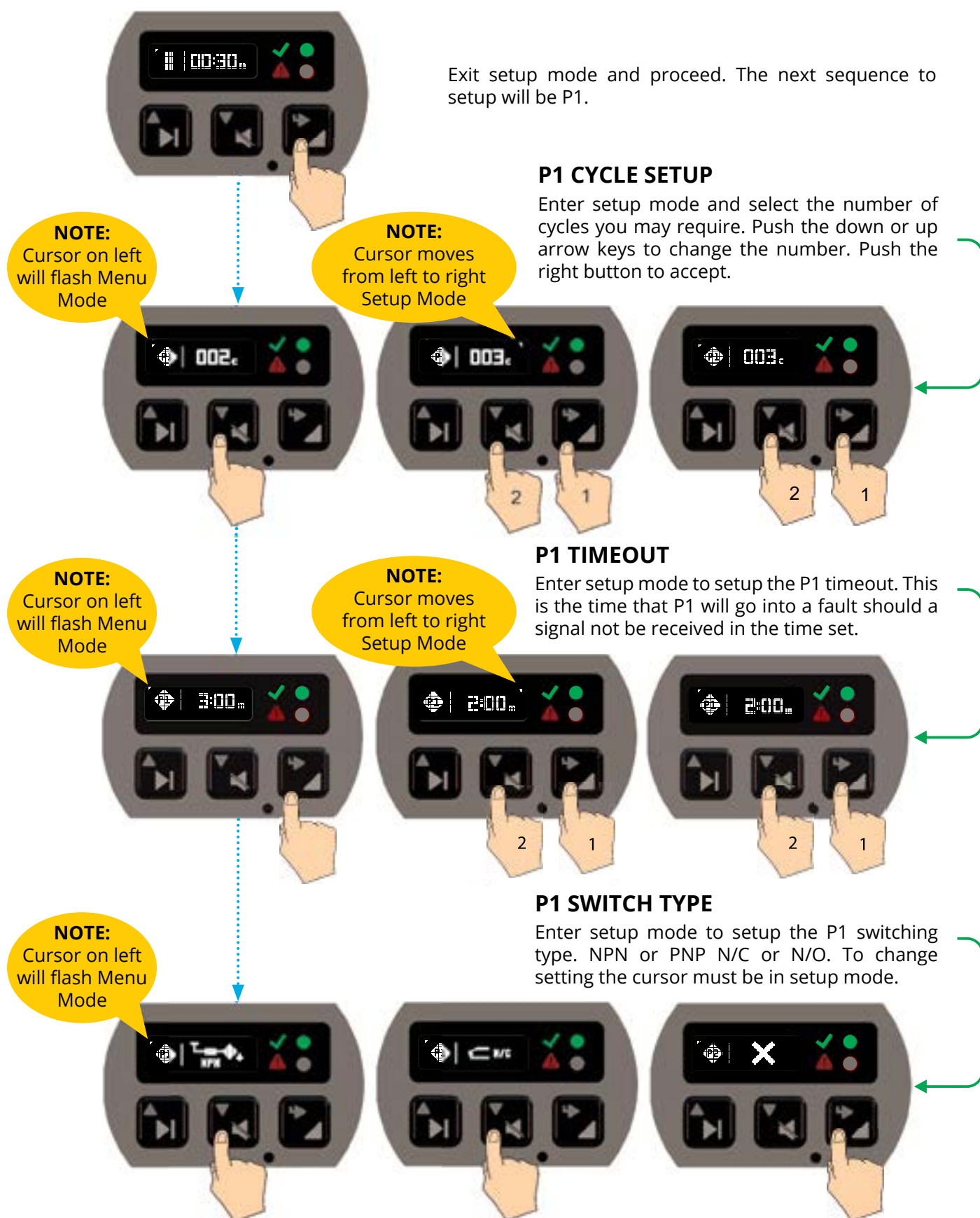
Cursor moves from left to right Setup Mode



PAUSE TIME SETUP

The display will indicate pause time, to make changes press the middle button to change the time required. For this example change pause time from 33 seconds to 30 seconds. Push the middle button to decrease time.

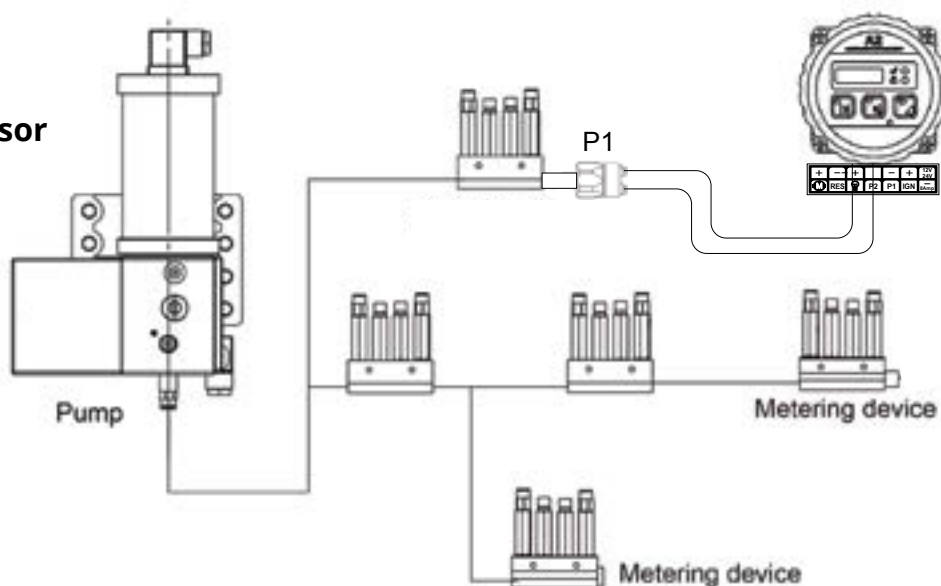
SLS System with 1 Pressure Switch



NOTE: For SLS using 1 pressure switch user must decline P2 as part of setup. P2 must indicate X.

SLS System With 2 Pressure Switches

Single Line
Injector with
Pressure Sensor



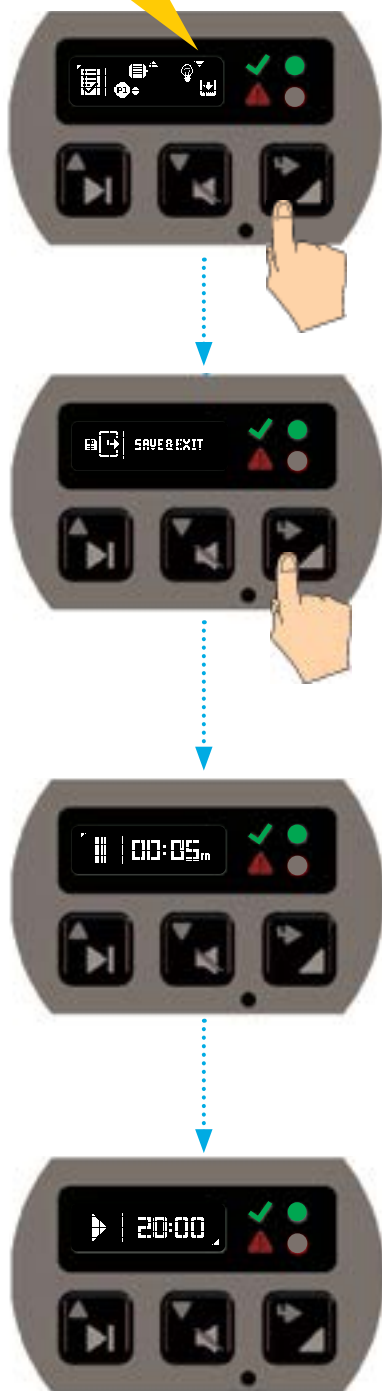
SLS Operation With 2 Pressure Sensors

Single Line Systems use injector type dispenses to deliver lubrication to the lubrication point. The pump would prime the lubrication line and as it builds up pressure would activate the low pressure sensor first (P2). The A2 would receive the signal and start the timeout of the P2 sensor. As the pump continues to prime the lubrication line and pressure builds up would then activate sensor (P1). At this point while pressure is rising the injectors would release lubrication to the lubrication point simultaneously. The amount of lubrication to each point is controlled by the injector top dosing cap which vary in size and allowing the user to control the amount of lubrication to each point. As the pump reaches full pressure and closes P1 the pump switches off and engages a vent valve in the pump to allow the pressure in the lubrication line to vent back to the reservoir. As the pressure drops in the lubrication line both P1 and P2 will open so that the A2 records as a completed cycle and hence allowing the pump to switch on again to complete the balance of cycles setup. Once the cycles are completed the pump will switch off and proceed to the pause time it was set to. It should be also noted that there are many different types of injector types ranging from low pressure to high pressure. Some injectors deliver lubrication on the pressure rise and some only inject when the pump has stopped and in the vent cycle. SLS systems cannot detect if a single lubrication point is blocked but will continue to supply lubrication to the balance of points supplied.

SLS System with 1 Pressure Switch

NOTE:

Display shows normal working mode, cursor bottom right more info



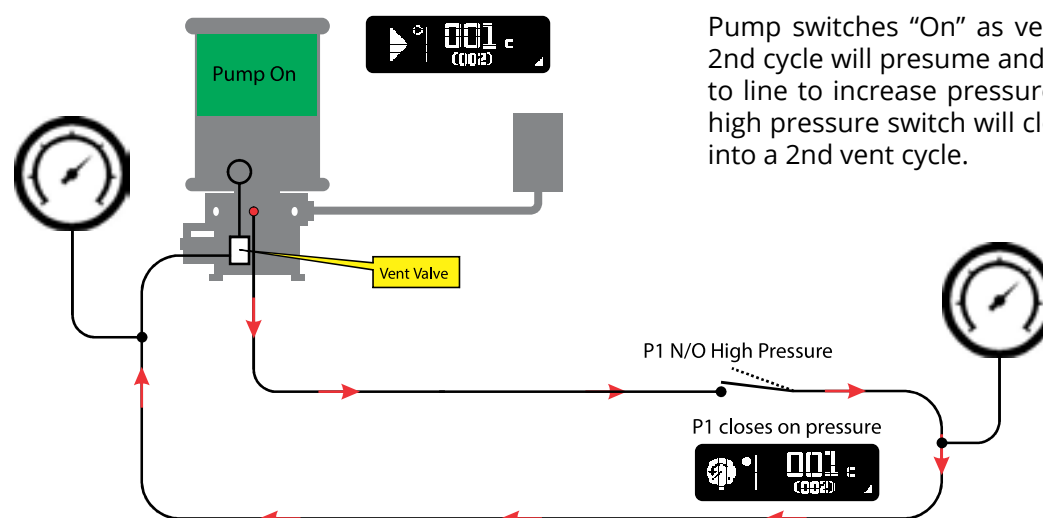
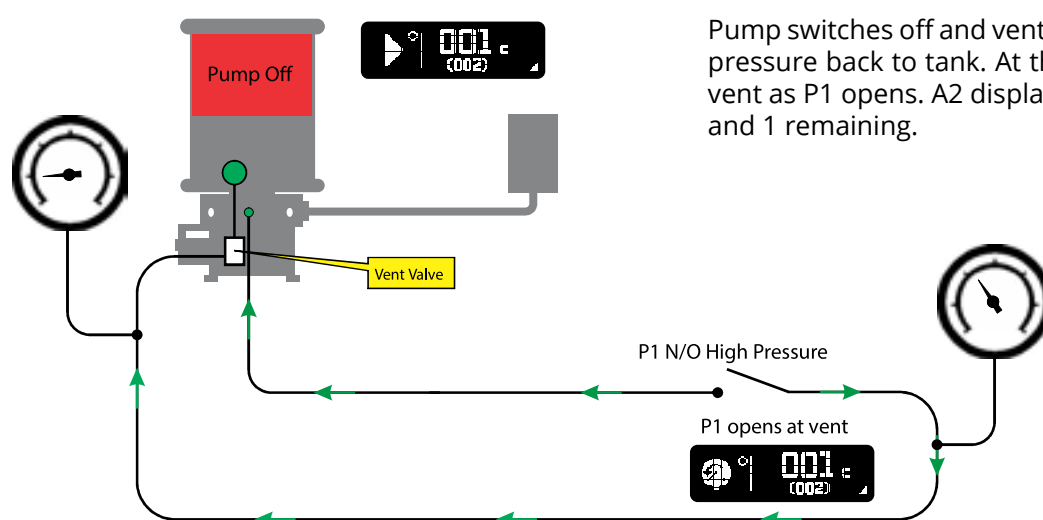
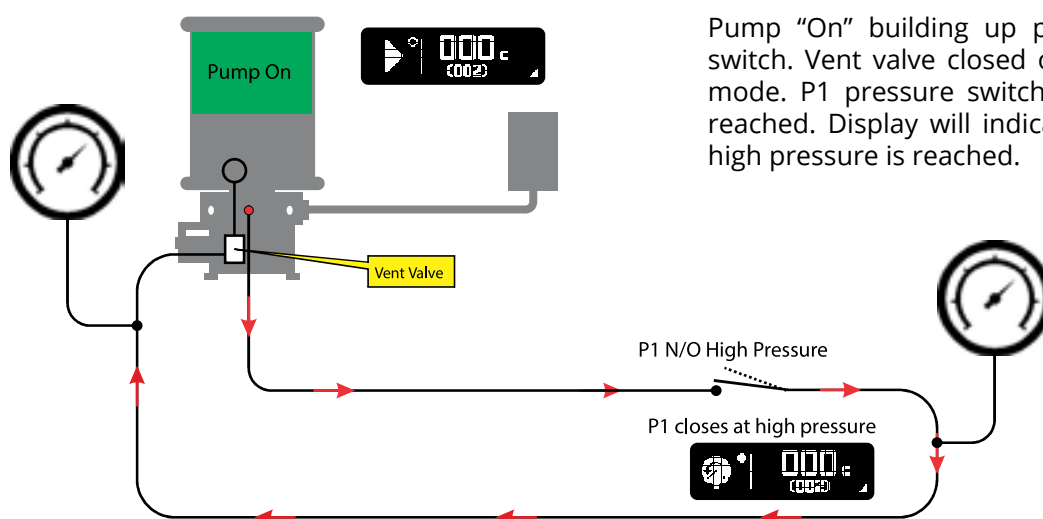
Display indicates selection accepted. Icons with X through are not selected. Push the right button to enter the TEST screen function. While in test mode user can press the middle button to test external warning light for function. Push the left button will switch the pump on. Should you have sensors connected such as proximity or low level the display will show if these are working correctly if activated. By testing the pump function will test proximity or pressure sensors.

Press the right button to accept setting and save.

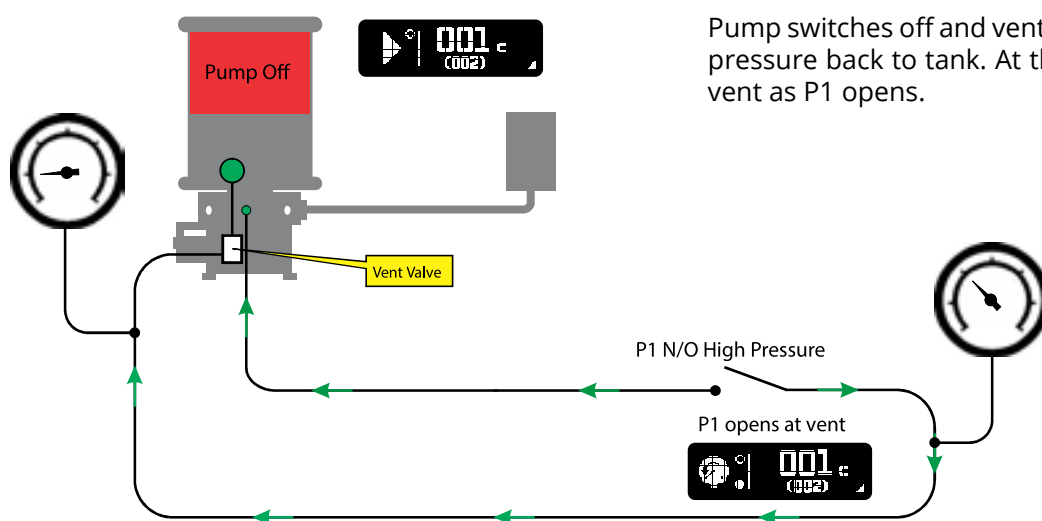
After exiting setup mode the A2 will default to a 5 second delay before the run times appears.

Run timer will display after the default pause time expires. The left "Play" arrow will flash together with the green LED. This indicates that the pump is running.

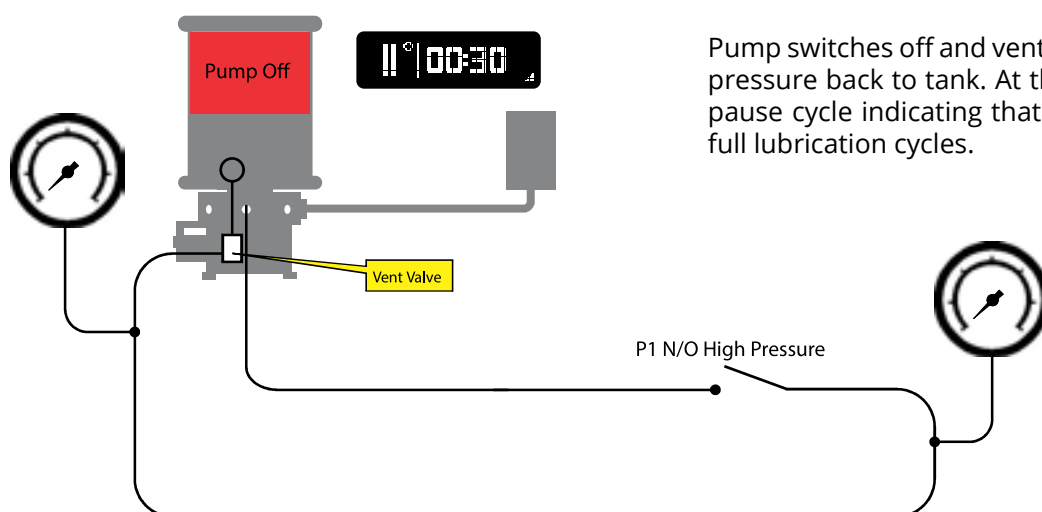
Sl System with 1 Pressure Switch



SLS System with 1 Pressure Switch



Pump switches off and vent valve engages returning high pressure back to tank. At this point A2 display will show vent as P1 opens.



Pump switches off and vent valve engages returning high pressure back to tank. At this point A2 display will show pause cycle indicating that the system has completed 2 full lubrication cycles.

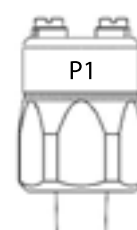
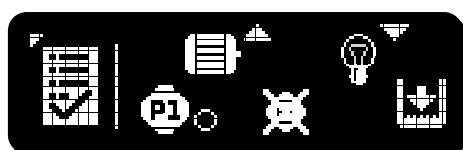
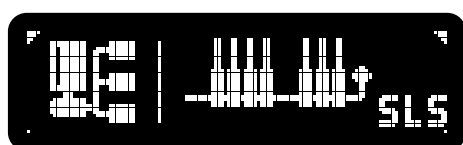
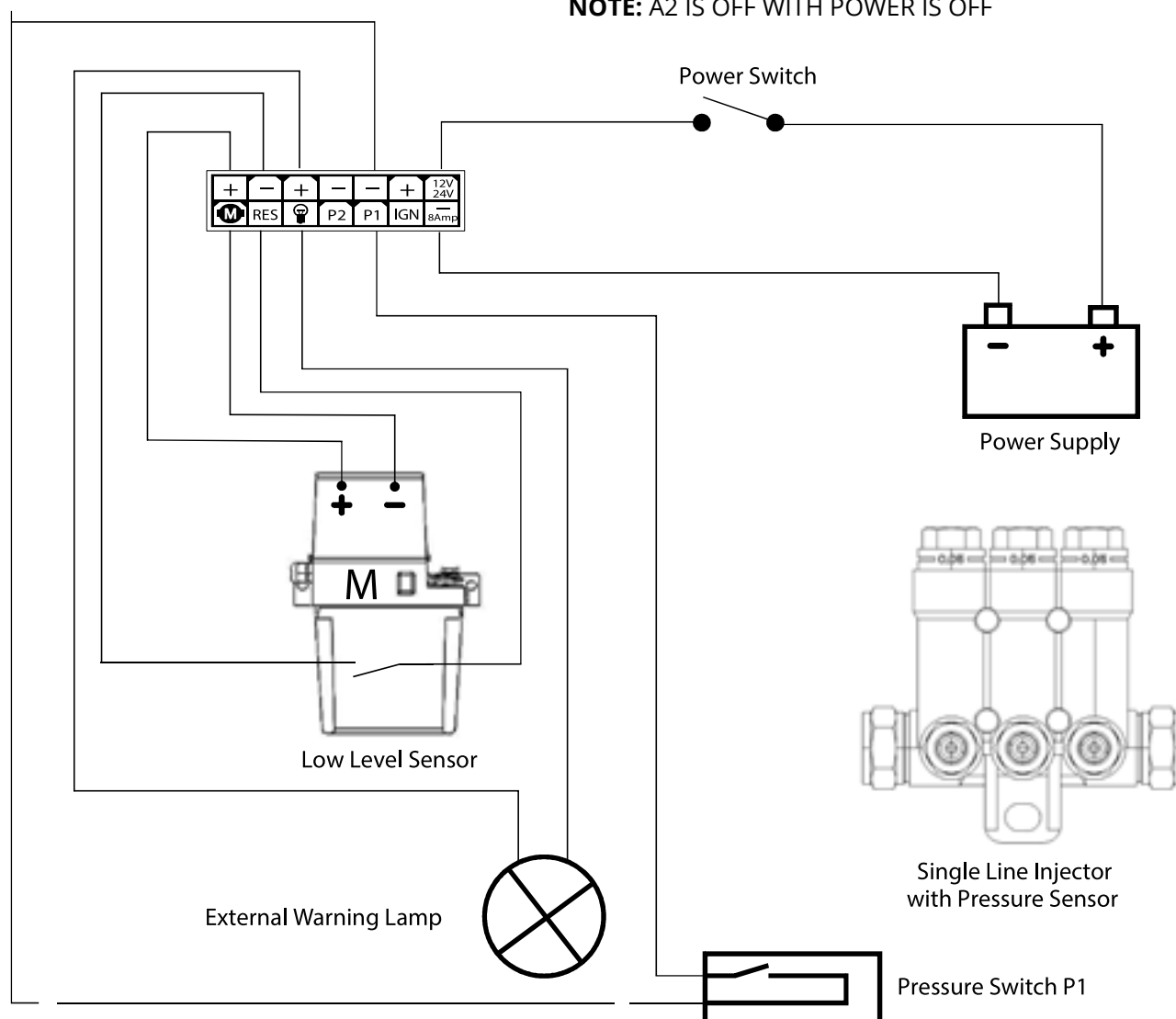
The SLS (Single Line System) when selected and choosing 1 pressure switch to monitor only high pressure cycles. A single pressure switch will stop the pump and allow the vent valve to return line pressure back to tank via the pump vent valve. Using a single pressure switch the user must calculate the actual vent time of the system and normally this is monitored via the pressure gauge. The actual vent time can now be setup as a timeout in P1 plus 50%.



Wiring diagram for Single Line Systems

Single Line System wiring diagram with 1 pressure switch

NOTE: A2 IS OFF WITH POWER IS OFF



Note: Connect through vehicle fuse box to 15Amp fuse for standard equipment. High current equipment to rate fuse and wire up accordingly.



Autolube 2.0

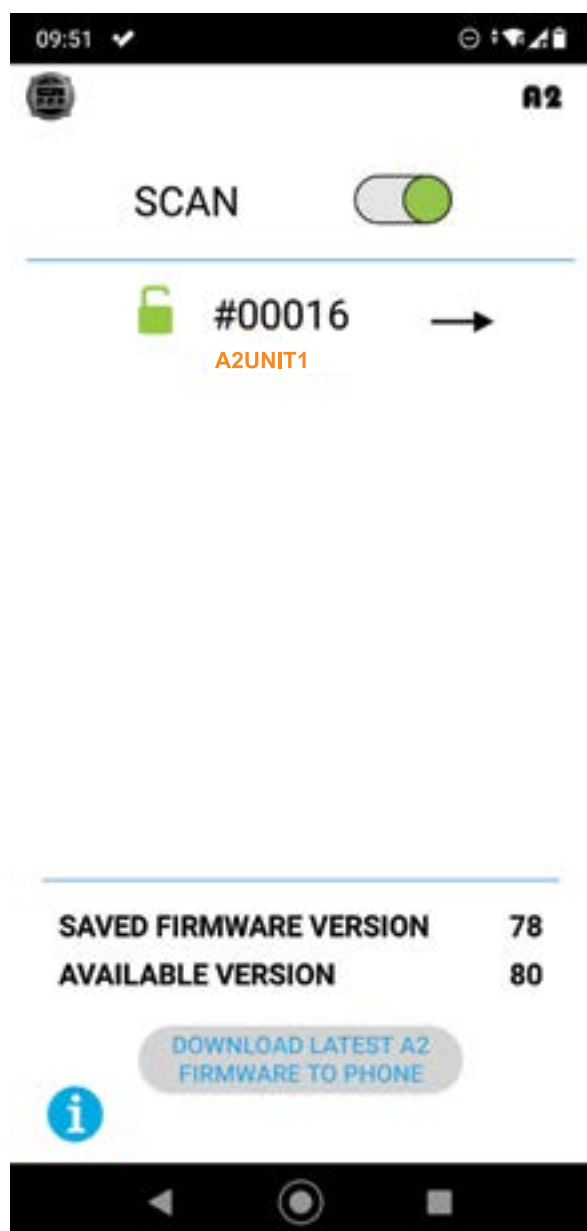
App version: v1.0



A2 Autolube App Introductory Manual August 2021

** Activation codes for the app are available from your A2 Distributor*

Home Screen



Scan Bluetooth

Toggles the Bluetooth ON/OFF.

Occasionally your phones bluetooth may not detect the A2, toggle here to search for A2's.

List of A2's within range

Shows A2 Serial #, Friendly Name and whether the unit is locked and pin available on phone:



Access offline logs

A2's listed in grey are available to view the logs offline.

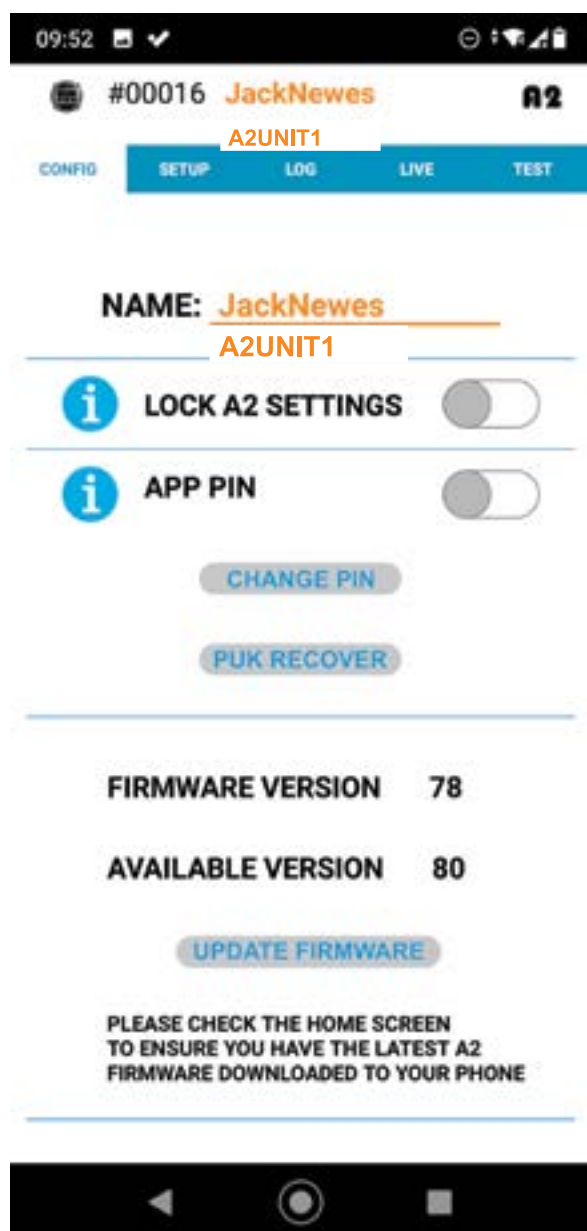
A2 Firmware Version

Firmware updates for the A2 can be saved to your phone in order to update the A2 in the field.

The newest available version is shown here when connected to the internet.

Please download the latest firmware versions to your phone when they become available. This allows you to update your A2 when no internet is available.

Config Screen



Set name

You are able to apply a 9 character name to your A2. This will appear on the Home screen and assist with connecting to your A2. Once applied the A2 will save the name and reboot.

Lock A2 Settings

Locks the A2 so settings cannot be changed manually on the unit. A small padlock will appear on the A2's screen when applied.

App Pin

This sets a pin to the A2 for restricting connection via the app. When the pin is applied it is saved to the A2 and the A2 will reboot. The first time the app connects to a unit with a pin, this pin is saved to the phone to connect easier in the future. Should you forget a pin the unit can be recovered using the PUK which is available from your distributor.

Update A2's firmware

Shows the current firmware version on the A2, as well as the available downloaded version on your phone. It is recommended to always have the latest firmware on your A2. A firmware update takes around 1 minute and your phone will need to stay connected to the A2 to complete this update. Once the Firmware version is successfully updated the A2 will restart. Firmware updates are recorded in the logs.

Setup Screen

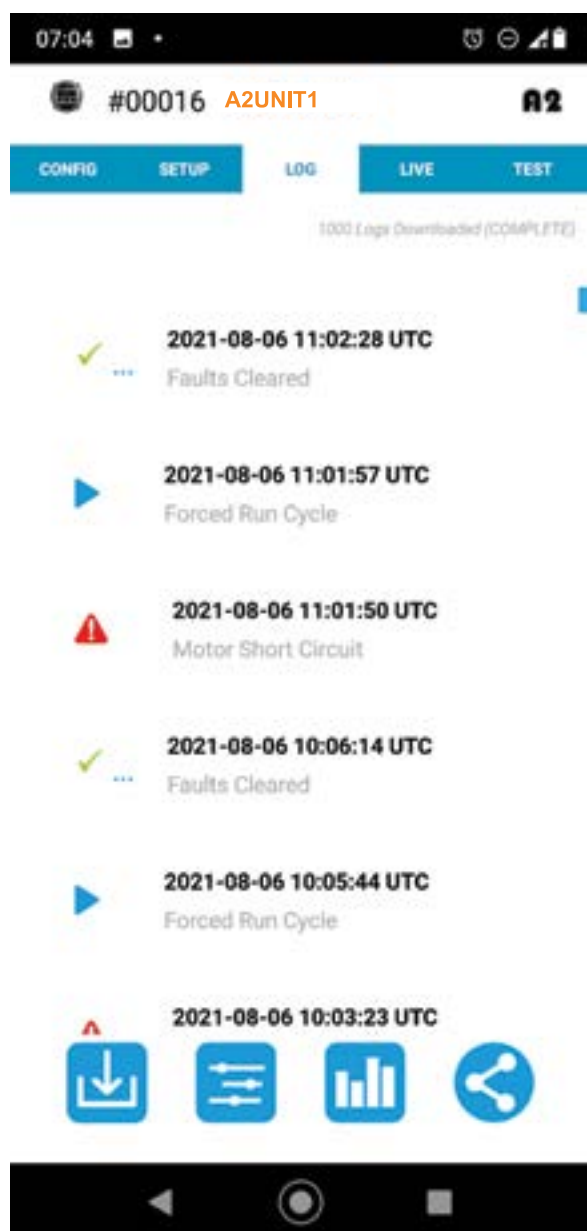


All settings on the A2 can be viewed and changed via the app. When the A2 is first connected the current settings from the A2 will be shown in green. When you make any changes to the settings the text will update to red, however these will only be applied to the A2 when they are specifically sent. This enables users to finalise the required settings before sending them to the A2.

Once ready, click **SEND SETTINGS** and when the settings are applied to the A2 the text changes to green. If at any stage while you are making changes you wish to revert to the current settings, **GET SETTINGS** will retrieve the current settings.


Settings can be saved to the phone as a settings file using **SAVE SETTINGS** and then be loaded using **LOAD SETTINGS**. This makes it easy to apply the same settings to a number of different A2's.

Log Screen



Up to 1,000 logs can be downloaded from the A2 to the app. These include:

- On/off events
- Forced run/pause
- Faults
- Faults cleared
- Settings changes
- Firmware upgrades

On first connecting the app the logs must be downloaded using the 

The latest 1,000 logs will be downloaded which takes up to 5min. At any stage during the downloading the other features of the app can be used, however downloading will only continue when the app returns to the Log screen.

Should new events occur whilst the app is connected, the user will need to manually redownload all logs.

Logs can be shared (via email ect) using the share button which is available once the download has completed.

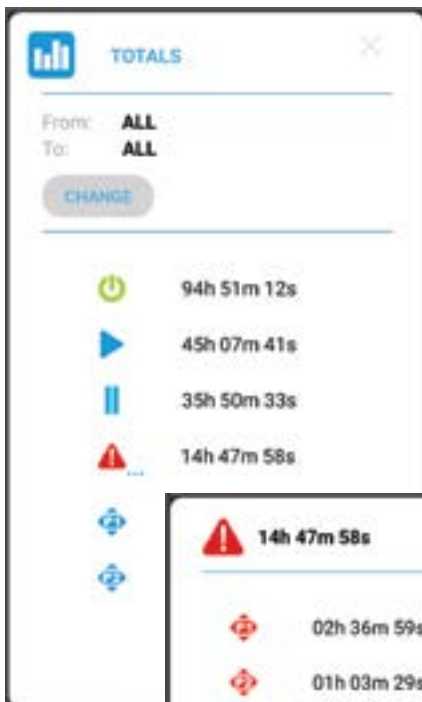
Any event in the logs which have a “...” symbol next to them indicates more information is available. For *Faults Cleared* this will show which faults were cleared. For *Settings Change* it will show the updated settings.

Log Screen



Filter Logs by event type

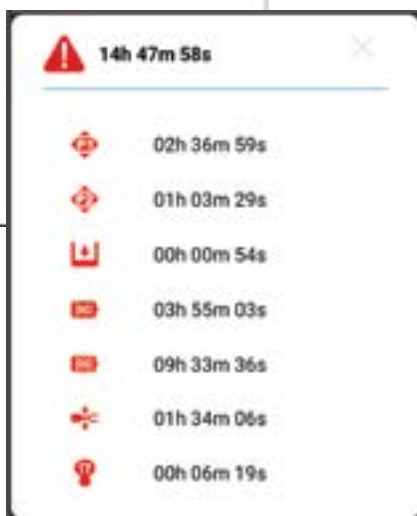
Logs can be filtered by event type using this button.



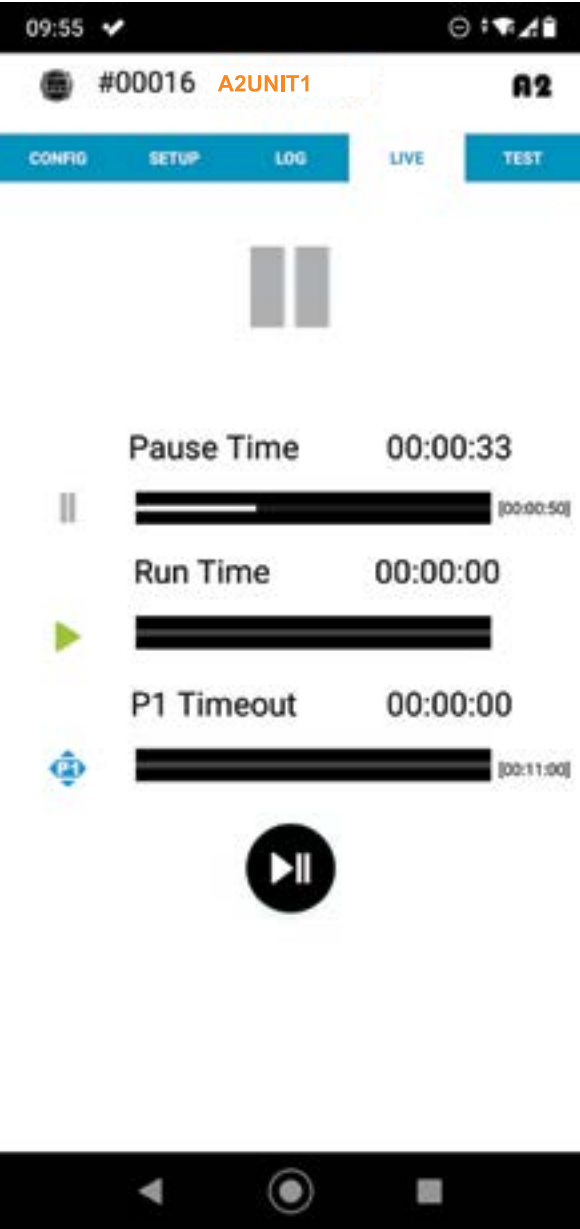
Log Totals

Totals for the A2 can be viewed here. This will show the total time the unit has been in each state since the unit was first turned on. By clicking the "..." next to the fault icon the total time for each fault is also shown.

It is also possible to filter the totals between two events by clicking CHANGE and selecting the first and last event which you wish to filter between.



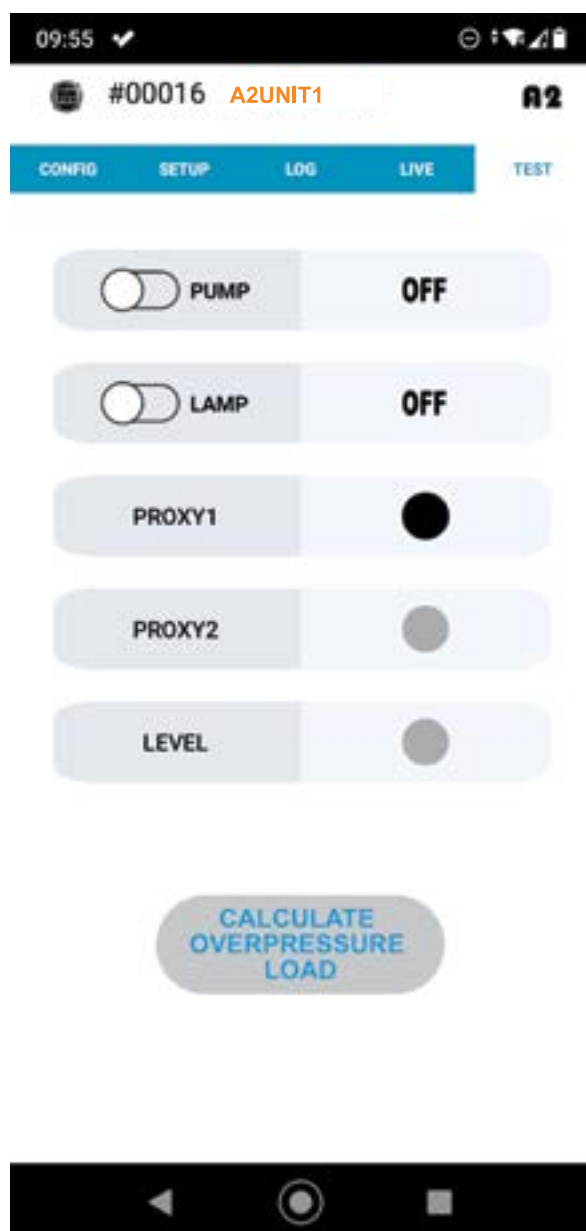
Live Screen



Shows the current status of the A2 (Run, Paused, Fault ect) as well as the limits on each of the settings.

A RUN/PAUSE cycle can be forced by pressing the Run/ Pause button at the bottom of the screen.

Test Screen



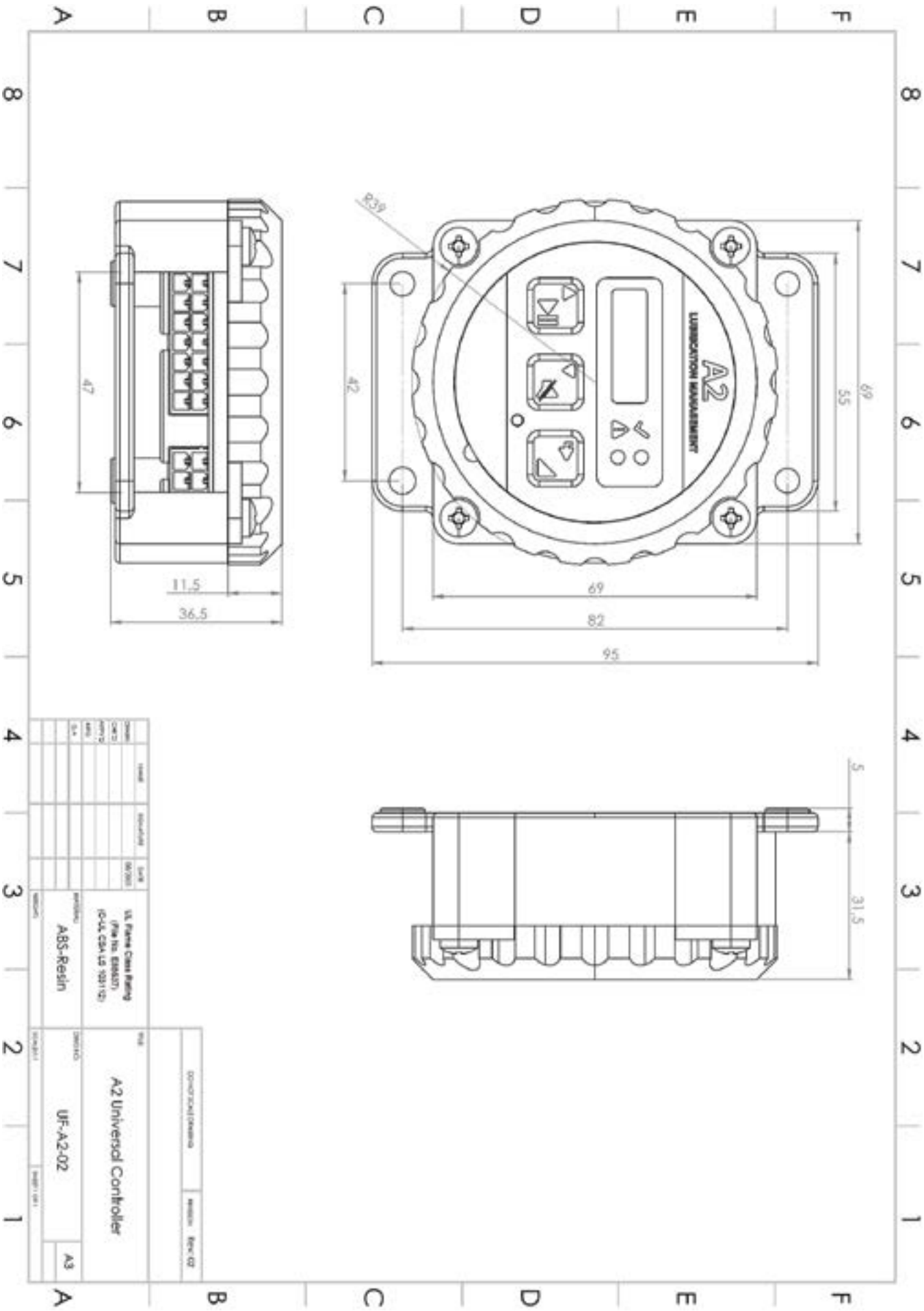
Used to test the system. When the app enters Test Mode, the A2 will also enter Test Mode and show this on its screen. The pump can be turned on and off, and when running will show the pump current draw (which can be used to calculate overpressure limits). The lamp can also be turned on and off. Proxy's and other settings are also shown.

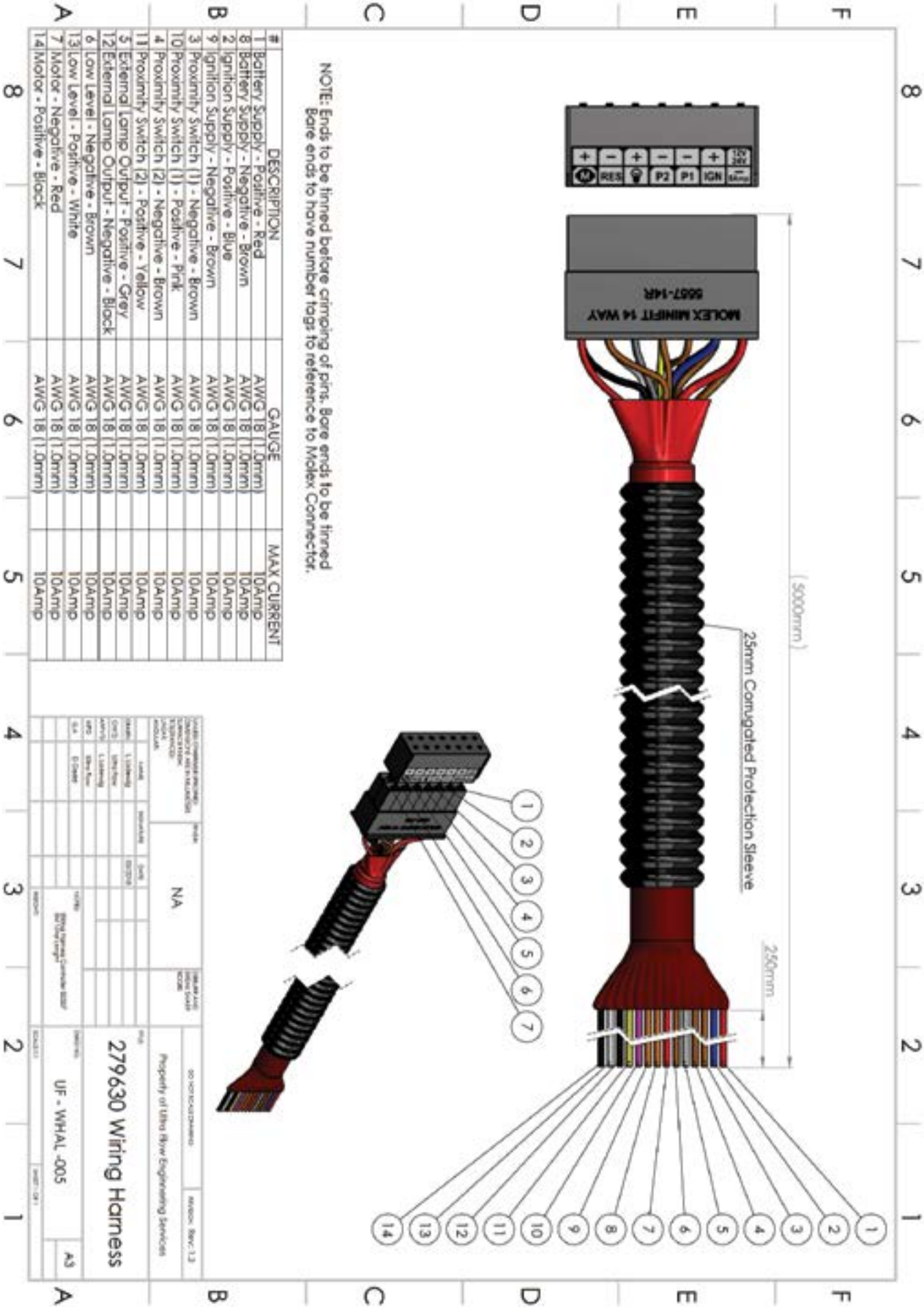
Calculate Overpressure Load

The A2 measures the current draw of the pump when it is running. This is a good indicator of how hard the pump is working and particularly important when there is a blockage in the system. As such an overpressure load can be defined at which point the A2 will alarm and stop the pump.

This can be calculated by running the pump for at least 10 seconds in a normal cycle and then a 20% margin is added to the maximum current as a limiting overpressure current. This setting is then saved to the A2 and becomes the point at which the A2 will shutdown and alarm Blockage Fault.







General Warranty Terms and Conditions

Product Warranty

Ultra-Flow SA ("Ultra-Flow SA") warrants that products are free of material and workmanship defects for the first 12 (twelve Months) months from date of purchase by the distributor/end user provided the correct match of products are installed in terms of type, capacity and normal use and service conditions in accordance with **Ultra Flow SA** application guide and original manufacturer's specification are selected and properly installed and maintained and as per the conditions stipulated in the Term and Conditions below.

Definitions

- I. "Ultra-Flow SA"** shall mean a Company duly registered and incorporated in terms of the laws of the Republic of South Africa with Registration Number 2007/060608/23 and having its place of business at Unit 15, Montague Park, Stella Road, Montague Gardens, South Africa, a manufacturer and supplier of Manufactured components/ parts and related products and services.
- 1B. "Products"** Shall mean Machined Products consisting out of steel or plastic.
- II. "Authorised Dealer"** shall mean an Approved dealer authorized to sell manufactured components or other product offerings under the Ultra-Flow's SA terms and conditions as per this agreement and the Ultra-Flow's SA General Conditions of Sales.
- III. "Manufacturer"** shall mean an entity that makes a good through a process involving raw materials, components, or assemblies, usually on a large scale with different operations divided among different workers. Commonly used interchangeably with producer.
- IV. "Distributor"** shall mean an entity that buys noncompeting products or product lines, warehouses them, and resells them to retailers or direct to the end users or customers. They usually also provide a range of services (such as product information, estimates, technical support, after-sales services, credit) to their customers.

Warranty Claim Terms and Conditions

In the event that the product becomes defective, malfunctions or fails during the warranty period, **Ultra-Flow** undertakes at its sole discretion to repair or replace the product subject to the following terms and conditions:

1. The end user may return product within 30 days of purchase back to **Ultra Flow SA** or its distributor for full refund provided that the product is not tampered with or damaged.
2. The warranty is for material and workmanship defects of the product only and any consequential or transport costs are excluded, unless otherwise agreed between the parties.
3. For South Africa, the warranty undertakings given by **Ultra Flow SA** are in addition to the terms of the Consumer Protection Act 68 of 2008 ("CPA"). If the CPA is applicable to the purchase, it will only be to the original end user and only for the duration of the warrantee and subject to proof of purchase of the product subject to the prior registration and proof of purchase as per clause 1 and 2 above. Any remedy provided for the end user under the CPA is still subject to the validity of the product warranty claim under the terms and conditions of this product warranty.
4. Should a warranty claim be accepted and the product is replaced, the new product will only carry a warranty for the remaining period of the original proof of purchase as per the claim's procedure
5. A potential warranty claim must be lodged by the end user as soon as the end user becomes aware of the alleged defect in the product. The end user must follow the **Ultra-Flow's SA** claims procedure, available at any authorised dealer who sells **Ultra-Flow's SA** products, or at www.ultra-flow.com, and take the product to an authorised dealer for inspection and return of the alleged defect product together with the original claim documentation.
6. Once the product has been returned to any of the **Ultra Flow's SA** dealers, a representative of **Ultra-Flow SA** will inspect the product, claim documentation and dealer inspection results and collect the product in order to determine whether the product is in fact defective and has in fact malfunctioned or failed and/or send it for laboratory inspection.
7. Based on the product inspection results, **Ultra-Flow SA** in its sole discretion will determine the validity of the warranty claim and inform the end user if it is a valid claim or not. If **Ultra- Flow SA** considers it a valid claim, **Ultra-Flow SA** may repair or replace it with a new product. Should the product be replaced, the remainder of the original warranty period will be applicable to the new replaced product.

10. ***Any warranty claim will be null and void if any one of the following conditions were/are applicable:***
- a) The product was not used for its intended purpose in which it was installed, incorrect installation, and/or the workmanship are not to the original manufacturer's specification and/or modifications and/or non -standard electrical components/products that were not approved by the **Ultra-Flow SA** branch or authorised dealer upon installation of the product.
 - b) The product failure or non -conformance was due to abuse or neglect, improper and/or incorrect maintenance and/or failure to keep the product properly maintained, and/or damage resulting from external events such as collisions, fire and Acts of God.
 - c) The product was used for non-approved applications, or applications for which it was not intended for.
 - d) The product can be tested and returned to service.
 - e) Proof of purchase cannot be provided, and/or the product was not registered with **Ultra-Flow SA** for warranty purposes and/or false information was provided.
 - f) The product information is incorrect and does not match **Ultra-Flow's SA** manufacturing records and/or the product information was tampered with and/or **Ultra-Flow's SA** original markings and labels are not on the product and/or the product is not an authentic **Ultra-Flow's SA** supply.
 - g) The product is out of the warranty period and is thus not a valid claim.
 - h) Return of goods for cash refund exceeding 30 days from date of invoice
 - 1) If the product has any other visible external abuse
 - 1. Damaged Housings
 - 2. Damaged Parts
 - 3. Tampered Date Codes
 - 4. Forced removal of sealed cover

Claims Procedure for Damages

The following procedure must be followed in respect of claims arising from any defect, malfunction, failure or hazardous characteristic of a product and must be read with the applicable product warranty.

1. The Claimant must complete the official **Ultra Flow SA** claim form. Accompanied by a proof of purchase. The procedure will be adjusted from time to time to allow improvements.
2. If it appears that any person or property has been harmed or damaged because of the defect, malfunction, failure or hazardous characteristic of the product, all documents which show the extent and cost of the harm or damage (such as quotations or invoices for repair services) must be attached to the **Ultra Flow's SA** claim form. Information about steps that may have been taken to stop or limit any damage resulting from the defect, malfunction, failure or hazardous characteristic of the product must also be provided.
3. The product must be returned to **Ultra Flow SA** branches together with the claim form and supporting documents.
4. The above steps must be done within 30 days of the Claimant becoming aware of the defect, malfunction, failure or hazardous characteristic.
5. Once the product has been returned to any of the **Ultra Flow SA** branches a representative of Ultra-Flow SA, will inspect or collect the product in order to determine whether the product is in fact defective or hazardous or has in fact malfunctioned or failed and if so, whether the defect, malfunction, failure or hazardous characteristic caused harm to a person or damage to property.
6. Once the product, claim form and supporting documents have been inspected, **Ultra-Flow SA**, will determine whether in fact the product is defective or hazardous or has in fact malfunctioned or failed and if so, will offer to remedy the defect, malfunction or failure and, where applicable, harm suffered by way of the various options available.
7. These options could include, for example, the replacement or repair of the product and will always include remedies given to consumers under the Consumer Protection Act where these remedies are applicable to the facts of the case and where the time for such remedies set out in the Consumer Protection Act, has not run out.
8. In the event that the conclusion of the representative of **Ultra Flow SA**, is disputed, the Claimant may appoint an independent person (at his cost) to assess the claim. If this is done and the independent assessor comes to a conclusion different to that of **Ultra Flow SA**, representative, the **Ultra Flow SA**, representative will re-consider his conclusion and advise whether or not the original conclusion is changed.
9. Claimants will always be entitled to pursue claims in respect of sub-standard, unfit, failed, hazardous, unsafe or defective products as contemplated in the Consumer Protection Act, using the specific mechanisms set out in chapter 3 of the Consumer Protection Act.
10. In order to finalise any resolution or settlement of a claim relating to a defect, malfunction, failure or hazardous characteristic and, where applicable, any resulting harm, the Claimant will be asked to sign a discharge.

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