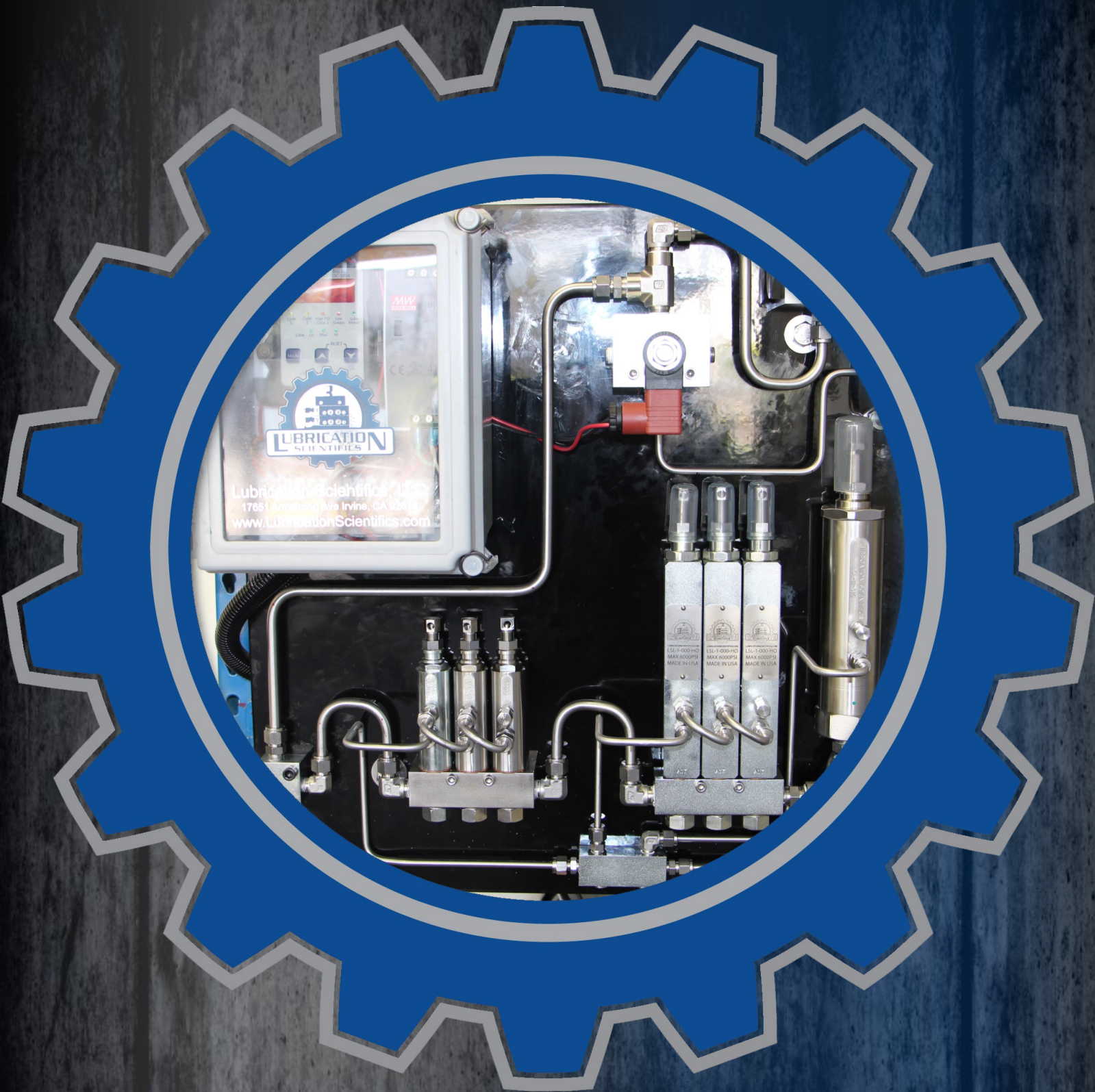


LUBRICATION SCIENTIFICS, LLC

THE RIGHT PRODUCTS. THE RIGHT VALUES. THE RIGHT CHOICE.



**FULL FEATURED LUBRICATION SYSTEM CONTROLLER
MULTI-ZONE—SOLID STATE—BOX UNITS**



LUBRICATION SYSTEM CONTROLLER

PRODUCT DESCRIPTION

FULL FEATURED, SOLID STATE, MULTI ZONE LUBRICATION SYSTEM CONTROLLER

UP TO SIX INPUTS FROM SYSTEM SENSORS & TWO OUTPUTS

PROGRAMMABLE ALARM INPUTS INCLUDE LOW RESERVOIR LEVEL, HIGH PRESSURE DETECTION, ZONE CYCLE VERIFICATION, MOTOR LOW/HIGH CURRENT LEVELS

OUTPUT CONTROLS INCLUDE ENERGIZING PUMP TO INITIATE LUBE EVENT AND ENERGIZE ALARM CIRCUIT FOR SYSTEM FAULT NOTIFICATIONS

BENEFITS & FEATURES

MONITORS LUBE SYSTEM IN ITS ENTIRETY

FAULT MONITORING

MULTI-MONITORING OF LUBRICATION MONITORS, LUBRICATION PUMPS, HIGH PRESSURE SWITCHES, & LUBRICATION LEVELS

CONTROLS AIR SOLENOIDS FOR SPRAY SYSTEMS

CONTROL OF LUBRICATION AND MACHINE SHUTOFF TIMES

PROGRAMMABLE CONSTRAINTS TO DICTATE HOW THE CONTROLLER PERCEIVES AND ACTS UPON ALARMS

AVAILABLE SUPPLY RANGES POWER OF 24VDC-580VAC

READY FOR IMMEDIATE SHIPMENT

MADE IN

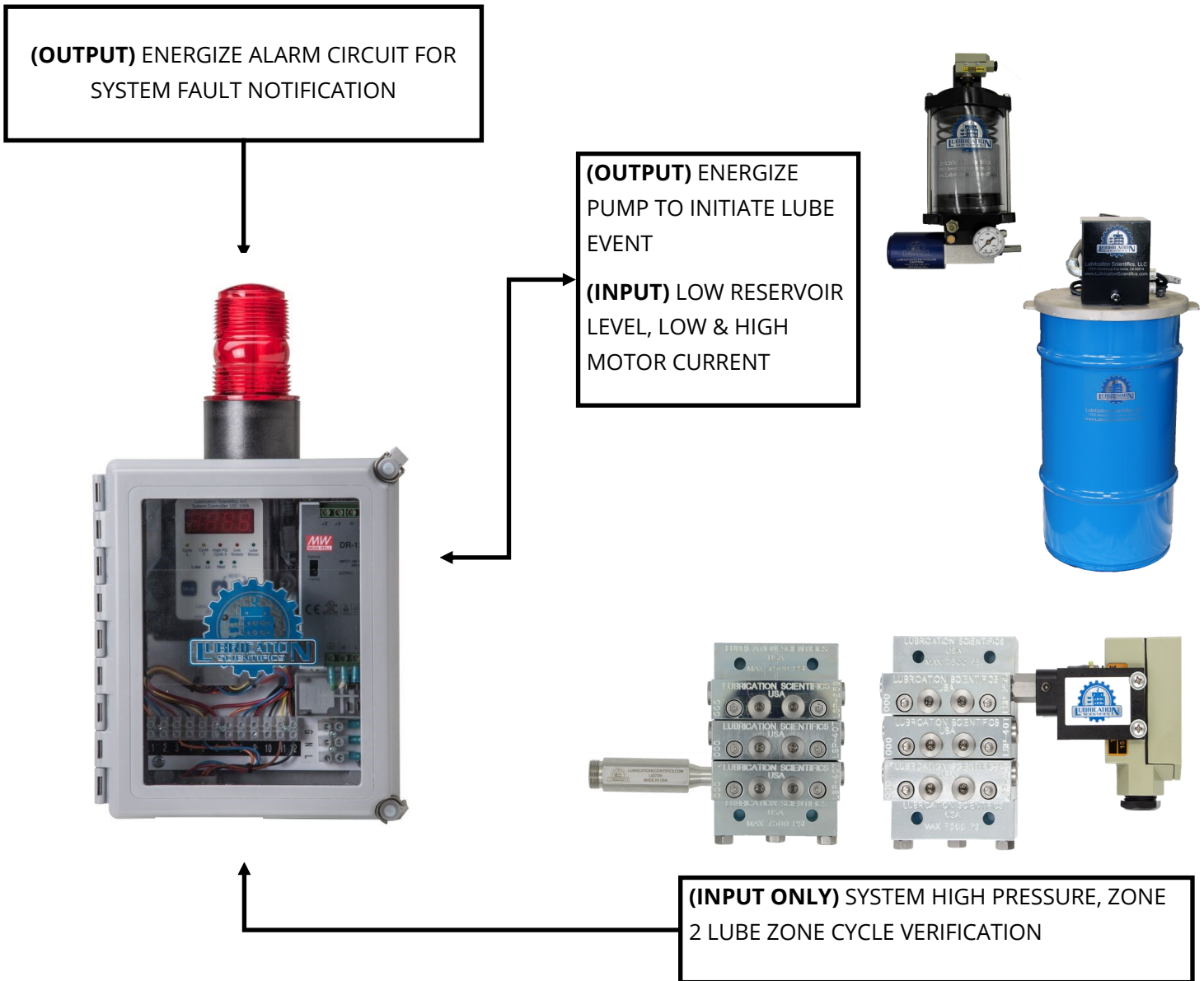


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ORDERING INFORMATION & PART NUMBERS

FULL FEATURED, SOLID STATE, MULTI-ZONE LUBRICATION SYSTEM CONTROLLER WITH UP TO SIX INPUTS FROM SYSTEM SENSORS AND TWO OUTPUTS.

DESIGNED TO POWER 24VDC, 115 VAC, & 240 VAC PUMPS



PRODUCT DESCRIPTION	PART NUMBER
UNIVERSAL COMPLETE SYSTEM CONTROLLER BOX SETUP 115 VAC	LSC-100A-AC-U115
UNIVERSAL COMPLETE SYSTEM CONTROLLER BOX SETUP 240 VAC	LSC-100AC-U240

LSC-100A



- USE WITH 12 VDC /24 VDC POWER SUPPLY FROM VEHICLE OR OTHER POWER SOURCE.
- USE WITH LS CABLE FOR DIRECT CONNECT TO PUMPING UNIT

LSC-100A-AC-LS



- USE WITH 115 VAC / 230 VAC POWER SUPPLY FROM PLANT POWER SOURCE, OR OTHER POWER SOURCE.
- USE WITH LS CABLE FOR DIRECT CONNECT TO PUMPING UNIT

LSC-100A-AC-U115



- USE WITH 115 VAC / 230 VAC POWER SUPPLY FROM PLANT POWER SOURCE.
- NO LS CABLE REQUIRED
- CONNECT I/O USING CONTROLLER TERMINAL STRIP

LSC-100A-AC-U140



- USE WITH 240 VAC / 480 VAC SINGLE PHASE FROM PLANT POWER SOURCE.
- NO LS CABLE REQUIRED
- CONNECT I/O USING CONTROLLER TERMINAL STRIP

ORDERING INFORMATION & PART NUMBERS



LSC-100A-AC-LS COMPLETE SETUP



LSC-100A STAND ALONE CONTROLLER

COMPATIBLE PUMP STYLES



PRODUCT DESCRIPTION	PART NUMBER
STAND ALONE SYSTEM CONTROLLER	LSC-100A
WIRE LOOM KIT FOR LSC-100A 24 V FOR 3 POSITION CONTROLLER	LSC-100A-LKW3P
WIRE LOOM KIT FOR LSC-100A 24 V FOR 6 POSITION CONTROLLER	LSC-100A-LKW6P

The LSC-100A-AC-LS IS FOR USE WITH 12 & 24 VOLT BARREL & MOUNTABLE PUMPS. SEE BULLETIN LSM018 FOR INFORMATION ON PUMPS.

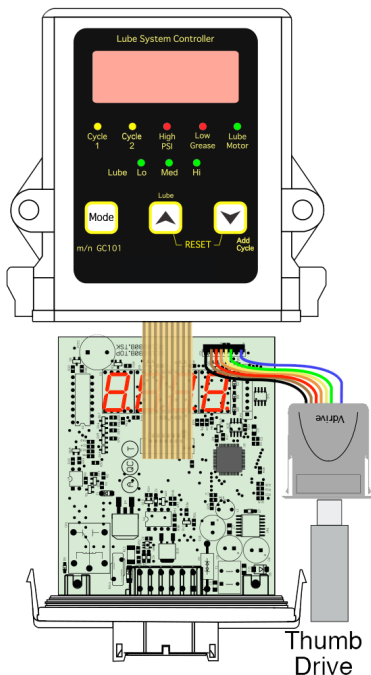
PRODUCT DESCRIPTION	PART NUMBER
COMPLETE SYSTEM CONTROLLER BOX SETUP	LSC-100A-AC-LS

**LSC-100A-TEST
CONTROLLER TEST BOX**

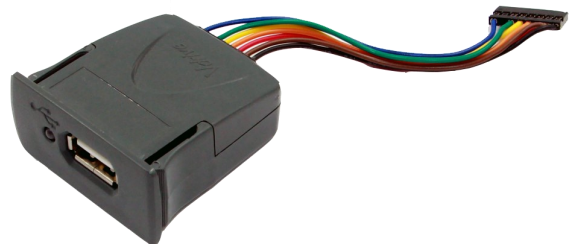


- USE TO SIMULATE ALL POSSIBLE CONDITIONS AND ENVIRONMENTS
- ALLOWS FOR CONTROLLER PROGRAMMING AND TESTING OFF-SITE

**LSC-100A-USB
V-DRIVE CONTROLLER UPDATE DEVICE**



- ENABLES CUSTOMER/DISTRIBUTOR TO UPDATE CONTROLLER SOFTWARE ON EXISTING INSTALLED UNITS
- ENSURES ALL CONTROLLERS HAVE THE LATEST SOFTWARE UPDATE WITH CURRENT FEATURES AND FIXES



PROGRAMMING INSTRUCTIONS

KEYS: **MODE: SHIFT KEY** **INC: UP ARROW KEY** **DEC: DOWN ARROW KEY**

MENU NUMBERS:

There are (33) different menus, (the full menu list is shown on the next page).
For purposes of this manual, the following will be used, when referring to a specific menu number.

Menu no. 7 = M7, Menu no. 24 = M24, etc.

The MENU LIST is grouped, as follows:

M2 thru M9	Programmable Timer settings
M10 thru M19	Programmable operational settings
M20 thru M28	Status and Operational timer displays
M30 thru M32	Test <u>INPUTS & OUTPUTS</u> and <u>CHECKSUM</u>
M99	Pass Code entry

CHECKSUM is the PROGRAM IDENTIFIER

(Note; M29, M33-97, are not assigned)

MOVING THROUGH THE MENUS:

Press and hold the **Mode** key, use the **INC** or **DEC** keys to select a menu number, release the **Mode** key. Briefly the menu Tag name is displayed, then the value of the current setting is displayed for view or edit.

- Pass Code** In order to change settings for any menu item it requires the operator enter a pass code, see M99. Without a valid pass code the operator can only **view** menus and settings. User Pass Code = **181**
- Checksum** The checksum is a program verification process. Each time the LSC-100A is powered up the program's checksum is evaluated and displayed before the unit goes into Run mode.
Note; The Checksum is a 4-digit hexadecimal number. (Examples. 72b9, 6EFd, 7d4B, F9EC, etc.)
- Errors** The LSC-100A can determine (6) different conditions. If any of these occur and Error code is displayed and a beeper sounds. To silence the beeper press both the **INC** and **DEC** keys. Each error has an accumulated timer to record how long an error occurred. Following is a list of errors;
- E1** - Hi Psi switch indication a possible blockage in the lube line
 - E2** - Lube reservoir is low
 - E3** - Too few pulses received on Cycle Switch #1
 - E4** - Too few pulses received on Cycle Switch #2
 - E5** - Motor current is too low, likely there is an open circuit
 - E6** - Motor current is over 9 amps, likely there is a short circuit
- Status LED's** There are (5) status LED's located along the bottom edge of the display window. The first LED (Yellow on the left) indicates each time Cycle Switch#1 transitions. The second LED (Yellow) indicates each time Cycle Switch#2 transitions. The third LED (Red) indicates High PSI input is active. The fourth LED (Red) indicates when the lube reservoir is low. And the fifth LED (Green) indicates when the pump motor is on.
- Lube Modes** There are (3) Lubrication modes of operation. Each has On/Off time settings (see next page). Mode is selected with the **INC** key.
- Extra Cycle** To add an extra Lube Cycle Press and hold the **DEC** key for 2 seconds.

MENU FUNCTION LIST WITH FACTORY SETTINGS

<u>Menu #</u>	<u>Tag</u>	<u>Factory Setting</u>	<u>Function</u>
1	run		RUN MODE: Lube timer is displayed HOURS (hh), MINUTES (mm) & SECONDS, (ss) <u>PUMP ON</u> is shown in MINUTES (mm) & SECONDS (ss) and <u>PUMP OFF</u> is shown in HOURS (hh) and MINUTES (mm).
2	1 on	30 Min	<u>SET PUMP ON TIMER for LOW LUBE SETTING.</u> Set MINUTES (mm) & SECONDS (ss). Range: 0-59 minutes (mm), & 5-59 seconds (ss). Wait 5 seconds, after releasing MODE key, use INC / DEC to change minutes/seconds. Press both INC & DEC <u>together</u> to move cursor between minutes (mm) & seconds (ss).
3	1 of	5 Min	<u>SET PUMP OFF TIMER for LOW LUBE SETTING.</u> If <u>Menu #8</u> = tiE, set HOURS (hh) & MINUTES (mm). Range (0-48 hours & 2-59 minutes). Use INC / DEC to set either HOURS (hh) or MINUTES (mm). Press both INC & DEC together to move cursor between hours (hh) and minutes (mm). If <u>Menu #8</u> = PULS, Use INC / DEC to set OFF pulse set point.
4	2 on	5 Min	<u>SET PUMP ON TIMER for MEDIUM LUBE SETTING.</u> Set MINUTES (mm) & SECONDS (ss). Range: 0-59 minutes (mm), & 5-59 seconds (ss). Wait 5 seconds, after releasing MODE key, use INC / DEC to change minutes/seconds. Press both INC & DEC <u>together</u> to move cursor between minutes (mm) & seconds (ss).
5	2 of	30 Min	<u>SET PUMP OFF TIMER for MEDIUM LUBE SETTING.</u> If <u>Menu #8</u> = tiE, set HOURS (hh) & MINUTES (mm). Range (0-48 hours & 2-59 minutes). Use INC / DEC to set either HOURS (hh) or MINUTES (mm). Press both INC & DEC together to move cursor between hours (hh) and minutes (mm). If <u>Menu #8</u> = PULS, Use INC / DEC to set OFF pulse set point.
6	3 on	5 Min	<u>SET PUMP ON TIMER for HIGH LUBE SETTING.</u> Set MINUTES (mm) & SECONDS (ss). Range: 0-59 minutes (mm), & 5-59 seconds (ss). Wait 5 seconds, after releasing MODE key, use INC / DEC to change minutes/seconds. Press both INC & DEC <u>together</u> to move cursor between minutes (mm) & seconds (ss).
7	3 of	30 Min	<u>SET PUMP OFF TIMER for HIGH LUBE SETTING.</u> If <u>Menu #8</u> = tiE, set HOURS (hh) & MINUTES (mm). Range (0-48 hours & 2-59 minutes). Use INC / DEC to set either HOURS (hh) or MINUTES (mm). Press both INC & DEC together to move cursor between hours (hh) and minutes (mm). If <u>Menu #8</u> = PULS, Use INC / DEC to set OFF pulse set point.

MENU FUNCTION LIST WITH FACTORY SETTINGS

Menu #	Tag	Factory Setting	Function
8	OF t	tiE	Select lube off mode; based on cycle pulses or based on time. PULS = cycle count mode or tiE = timer mode. This setting applies to all 3 modes (Low, medium, and High).
9	OF S	Hr.In	Select Off Time Scale. If Menu #9 = Hr.In, the off time setting will be in Hours & Minutes If Menu #9 = In.Sc, the off time setting will be in Minutes & Seconds
10	SEtr	tiE	Select lube run mode; based on cycle pulses or based on time. PULS = cycle count mode or tiE = timer mode
11	CyC1	0	Set Cycle count set point #1
12	CyC2	0	Set Cycle count set point #2
13	HI-F	45 Sec	High psi set accum. time required to create an error (range 5 - 120 sec, INC once beyond 120 = Off)
14	Lo-F	Off	Low lube set accum. time required to create an error (range is 1 - 10, 10 - 120 sec, INC beyond 120 = Off)
15	Lo-P	POS	Low Lube sensor switch polarity press INC to select POS or NEG
16	L-tP	FL-0	Lamp Type, select the mode for the dash lamp, Press INC to select. FL-0 = flash mode, flash the Error number and no motor status FL-1 = flash mode, flash the Error number and On continuous = motor On Cont = continuous mode, On = Error, Off = no Error, no motor status
17	P-ot	FULL	Pump voltage output. Set pump voltage. If set to FULL the controller will drive the pump to supply voltage. (range is 5.0 - 25.0 INC once beyond 25.0 = FULL)
18	P-tP	nl-C	Pump Type. Normal Current (nL-C), Low Current (Lo-C)
19	Strt	S-ti	Start up mode. Normal timer(S-ti), Always start a cycle at power up (S-on)
20	t-rn		View total motor run time hhhh mm.ss Press no key to view hhhh = hours Hold the INC key to view mm.ss mm = minutes, ss = seconds
21	t-to		View total System ON time hhhh mm.ss Press no key to view hhhh = hours Hold the INC key to view mm.ss mm = minutes, ss = seconds
22	t-rS		Reset run timers and error timers. Hold the INC button for 5 sec to clear.
23	t-E1		View total Over Pressure error time
24	t-E2		View total Low lube error time

MENU FUNCTION LIST WITH FACTORY SETTINGS, (CONT'D)

Menu #Tag	Factory Setting	Function
25	t-E3	View total Cycle switch error time
26	t-E4	View total Loss of revolution error time
27	t-E5	View total Motor error time (short or open)
28	A-Ct OFF	Alarm Override; Allows Controller to continue operation for a specified number of faults. When enabled, a fault count will be displayed until a successful lube event occurs or the counter threshold is reached. Upon a successful lube event, the fault counter is reset. 2-999 = Controller will continue operation during fault condition for the specified number of faults. Off = Controller will not operate during fault conditions.
30	inS	Test (7) inputs, (2) outputs; Press INC = Dash lamp, press DEC = Beeper Vertical bars; Off time cycle Sw, Dash PB, Cycle sw2, Cycle sw1, Low lube, Hi Psi sw
31	P-tS	Motor test, display amps, press INC = Motor On, DEC = Motor Of
32	SErL	View Serial number
98	type PUP	Grease System Type PUP = Standard Pump Type Grease System Spry = Spray Grease System
99	P-Cd	Enter Pass code, use INC or DEC keys until the pass code is displayed. After 4 minutes w/ no key strokes, the controller will revert back to the Run Mode.

Spray Grease System Menus

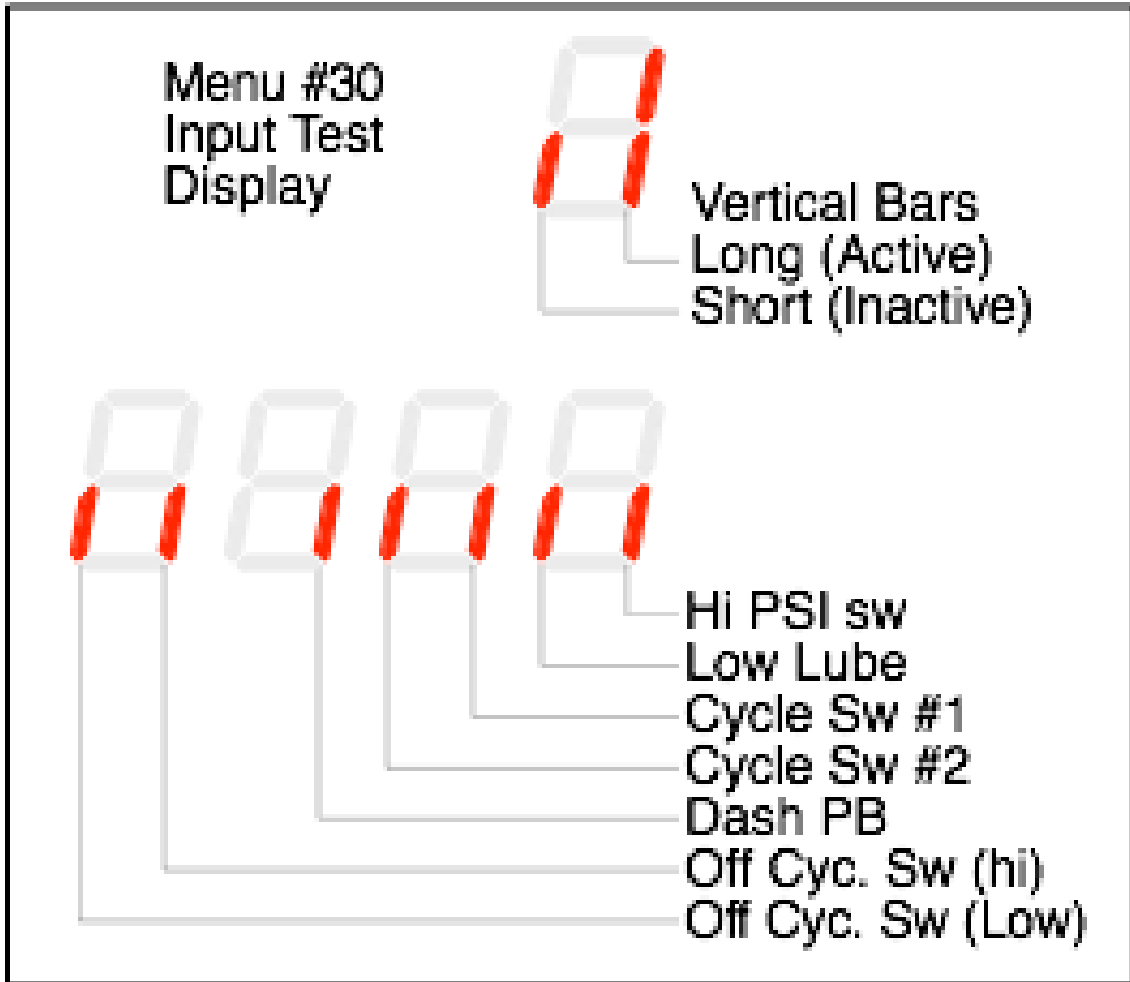
1	run		Run mode, lube timer is displayed (hours hh) (minutes mm) (seconds ss). Pump on is mm ss and Pump off is hh mm
2	t-on	30 Min	Set pump ON timer. Set min/sec mm ss range (0-59 min, 5-59 sec) wait 5 sec after releasing Mode key, use INC / DEC to change min/sec. Press both INC & DEC together to move cursor between mm & ss
3	t-oF	5 Min	Set pump OFF time. If Menu #8 = tiE, set hrs/min hh mm range (0-48 hrs, 2-59 min). Use INC / DEC to set either hrs or min. Press both INC & DEC together to move cursor between hh and mm. If Menu #8 = PULS, Use INC / DEC to set OFF pulse set point.
4	A-on	1 Min	Set Air valve on-time before the pump starts. Set min/sec mm ss range (0-4 min, 5-59 sec) wait 5 sec after releasing Mode key, use INC / DEC to change min/sec. Press both INC & DEC together to move cursor between mm & ss
5	A-oF	1 Min	Set Air valve on-time after the pump stops. Set hrs/min mm ss range (0-4min, 5-59 sec). Use INC / DEC to set either min or sec. Press both INC & DEC together to move cursor between mm and ss.
8	OF t	30 Min	Select lube off mode; based on cycle pulses or based on time. PULS = cycle count mode or tiE = timer mode.
9	OF S	Hr.In	Select Off Time Scale. If Menu #9 = Hr.In, the off time setting will be in Hours & Minutes If Menu #9 = In.Sc, the off time setting will be in Minutes & Seconds
10	SEtr	tiE	Select lube run mode; based on cycle pulses or based on time. PULS = cycle count mode or tiE = timer mode.
11	CyC1	Off	Set Cycle count set point #1 (0 = Off)
12	CyC2	Off	Set Cycle count set point #2 (0 = Off)
13	HI-F	45 Sec	High psi set accum. time required to create an error (range 5 - 120 sec, INC once be-
14	Lo-F	Off	Low lube set accum. time required to create an error (range is 1 - 10, 10 - 120 sec, INC beyond 120 = Off)
15	Lo-P	POS	Low Lube sensor switch polarity press INC to select POS or NEG
17	P-Ot	FULL	Pump voltage output. Set pump voltage. If set to FULL the controller will drive the pump to supply voltage. (range is 5.0 - 25.0 INC once beyond 25.0 = FULL)
18	P-tP	nl-C	Pump Type. Normal Current (nL-C), Low Current (Lo-C)
19	Strt	S-ti	Start up mode. Normal timer(S-ti), Always start a cycle at power up (S-on)
20	t-rn		View total motor run time hhhh mm.ss Press no key to view hhhh = hours Hold the INC key to view mm.ss mm = minutes, ss = seconds

Spray Grease System Menus

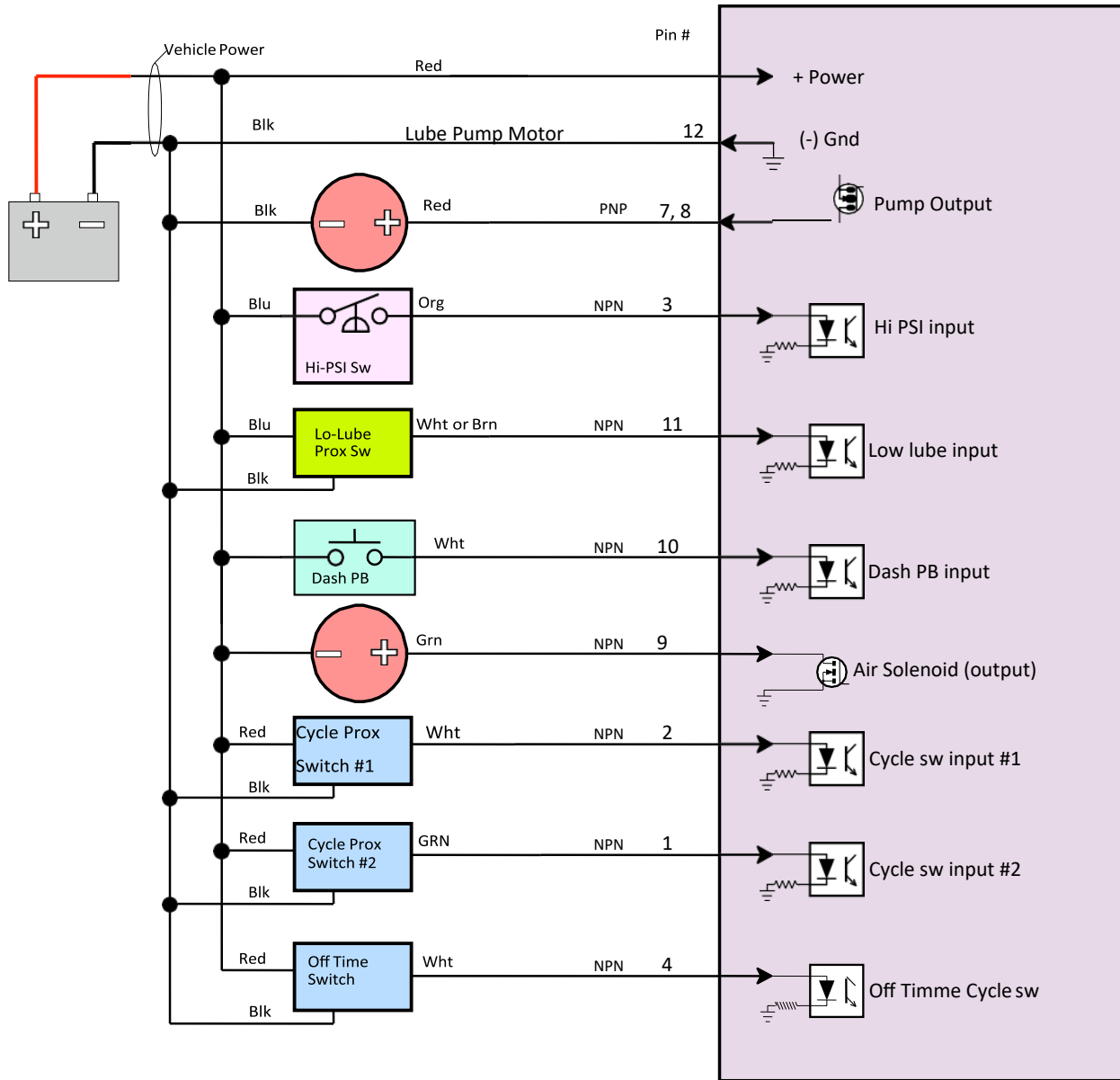
- 21 **t-to** View total System ON time hhhh mm.ss Press no key to view hhhh = hours
Hold the INC key to view mm.ss mm = minutes, ss = seconds
- 22 **t-rS** Reset run timers and error timers. Hold the INC button for 5
sec to clear.
- 23 **t-E1** View total Over Pressure error time
- 24 **t-E2** View total Low lube error time
- 25 **t-E3** View total Cycle Switch #1 error time
- 26 **t-E4** View total Cycle Switch #2 error time
- 27 **t-E5** View total Motor error time (short or open)
- 30 **inS** Test (7) inputs, (2) outputs; Press
INC = Air Valve Press DEC =

Vertical bars; Off time cycle Sw, Dash PB, Cy-
cle sw2, Cycle sw1, Low lube, Hi Psi sw
- 31 **P-tS** Motor test, display amps, press INC = Motor On, DEC = Motor Off
- 32 **SErL** View Serial number
- 98 **tyPE** PUP Grease System Type
PUP = Standard Pump type grease system
SPry = Spray grease system
- 99 **P-Cd** Enter Pass code, use INC or DEC keys until the pass code is displayed.
After 4 minutes w/ no key strokes, the GC101 will revert back to the
Run mode.

MENU FUNCTION LIST WITH FACTORY SETTINGS, (CONT'D)



GREASE SPRAY SYSTEM

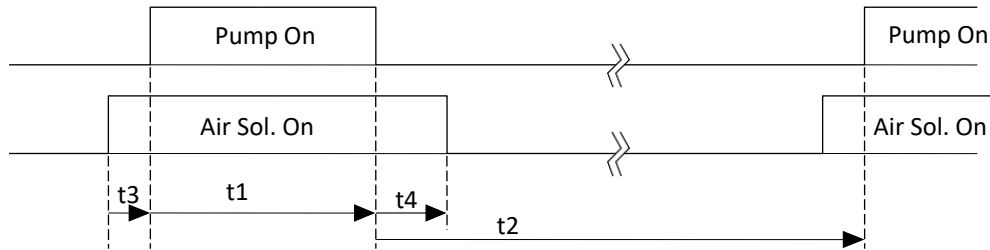


GREASE SPRAY SYSTEM

When setup as a grease spray system, this LED indicates the air solenoid status



When the air valve is on before the pump starts (t3 in diagram below) this LED will be on.



t1 (Menu #2) = Pump On time (Lube Motor & Lube Low LEDs = on)

t2 (Menu #3) = Pump OFF time

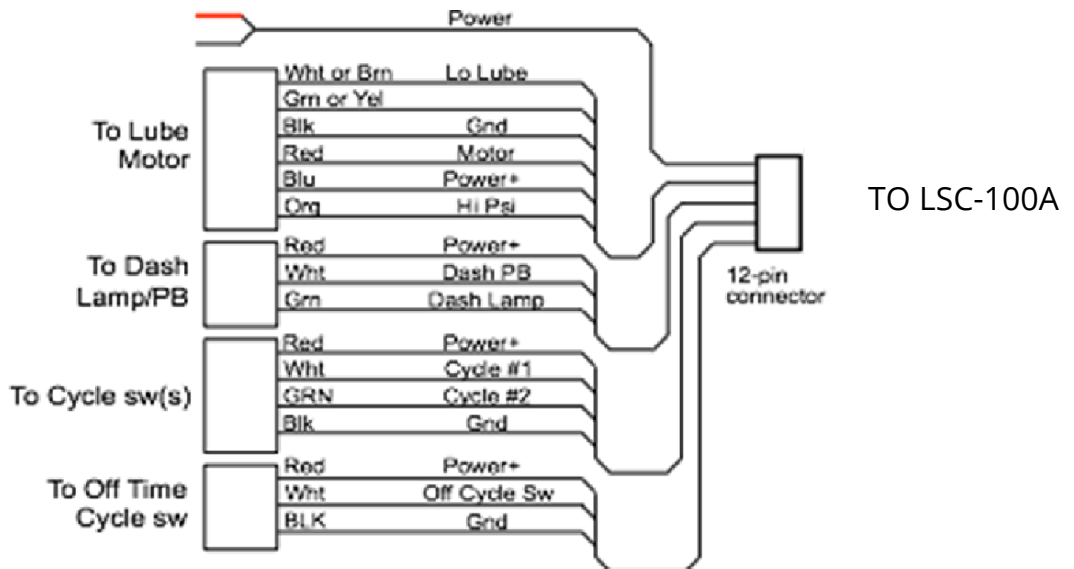
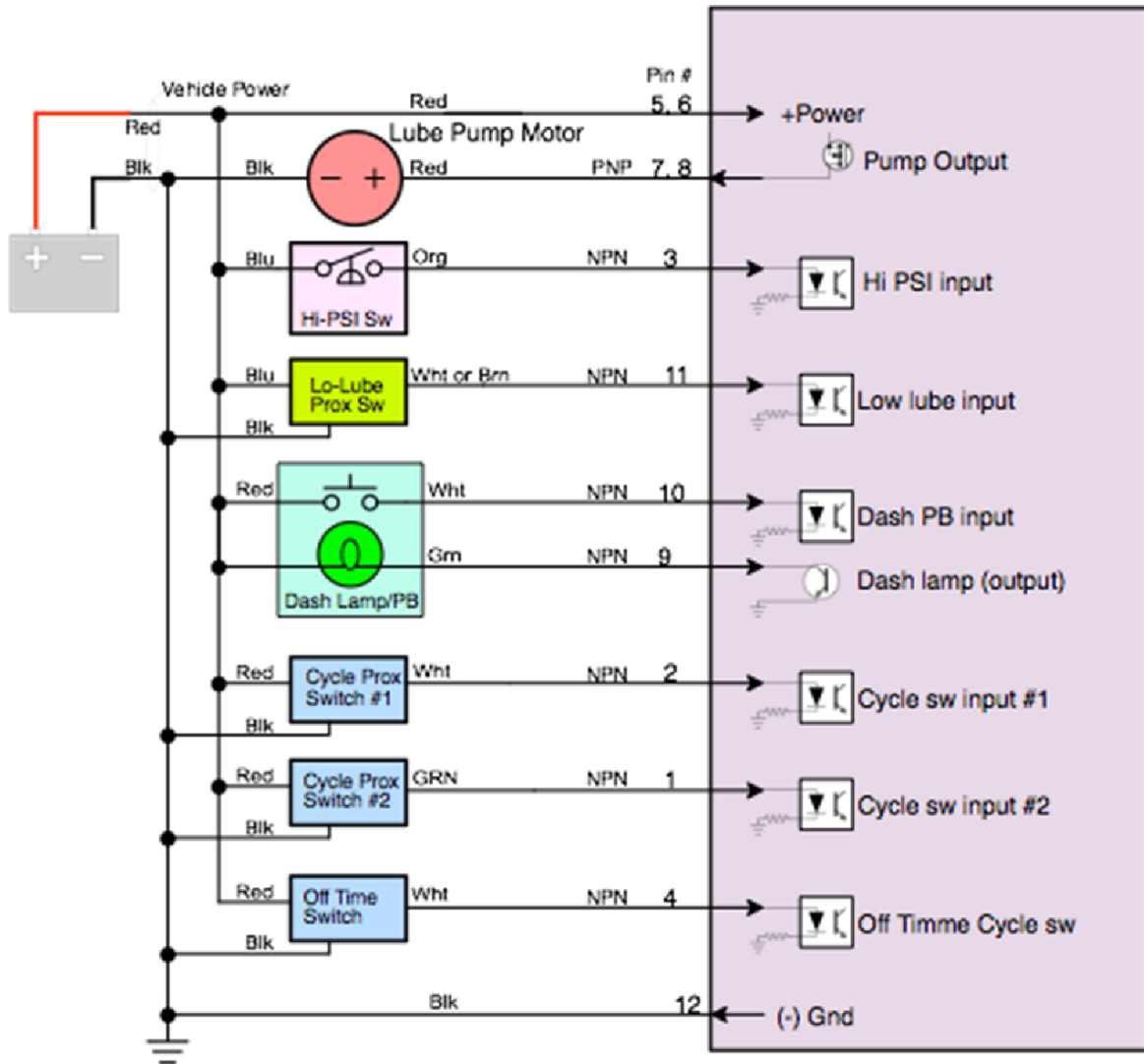
t3 (Menu #4) = Air valve on-time before the pump starts (Lube Low & Med = on)

t4 (Menu #5) = Air valve on-time after the pump stops (Lube Low = on)

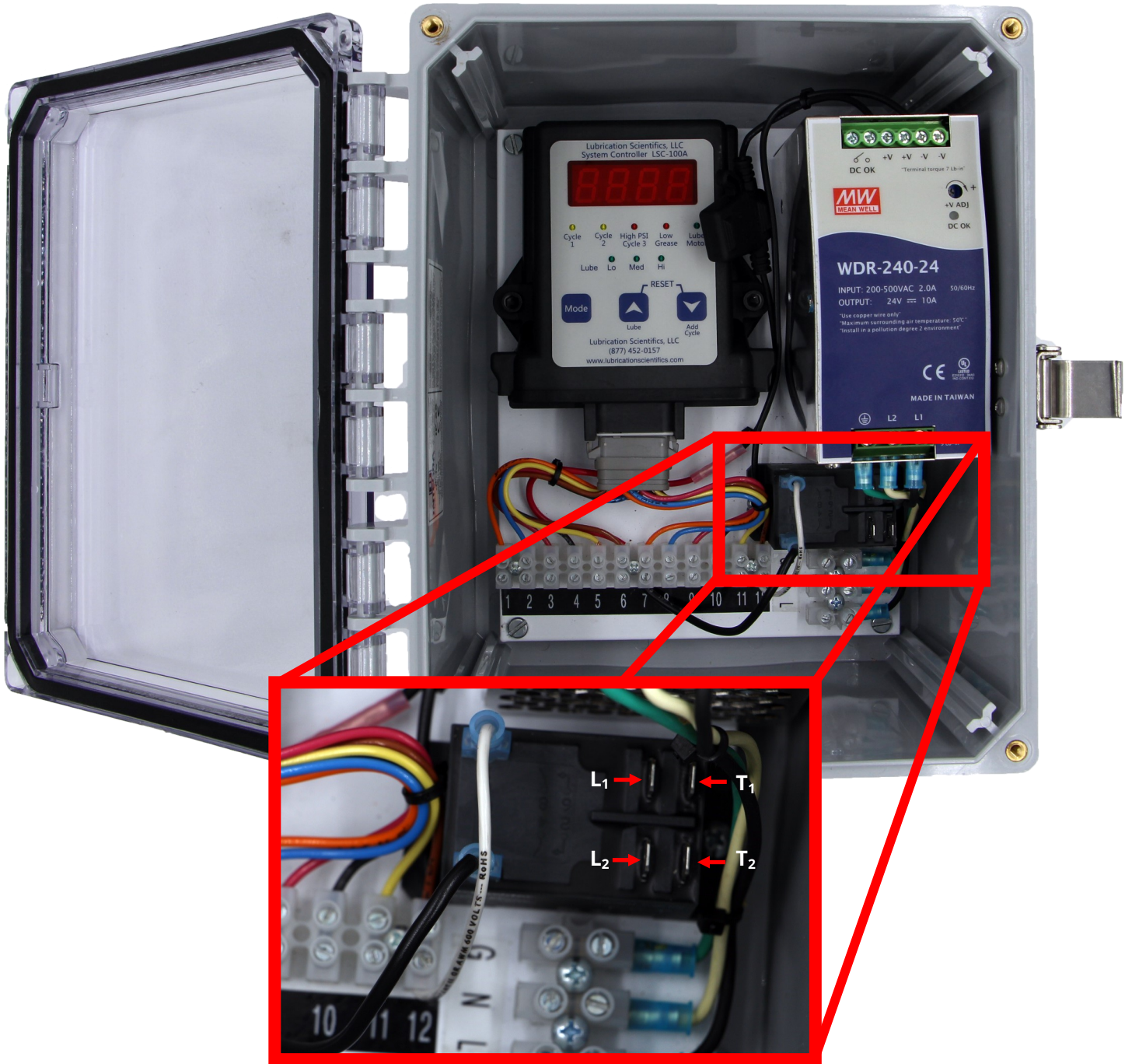
User pass code = **181** used to only edit menu # 2 - 18

Master pass code = **1322**

LSC-100A WIRING DIAGRAM

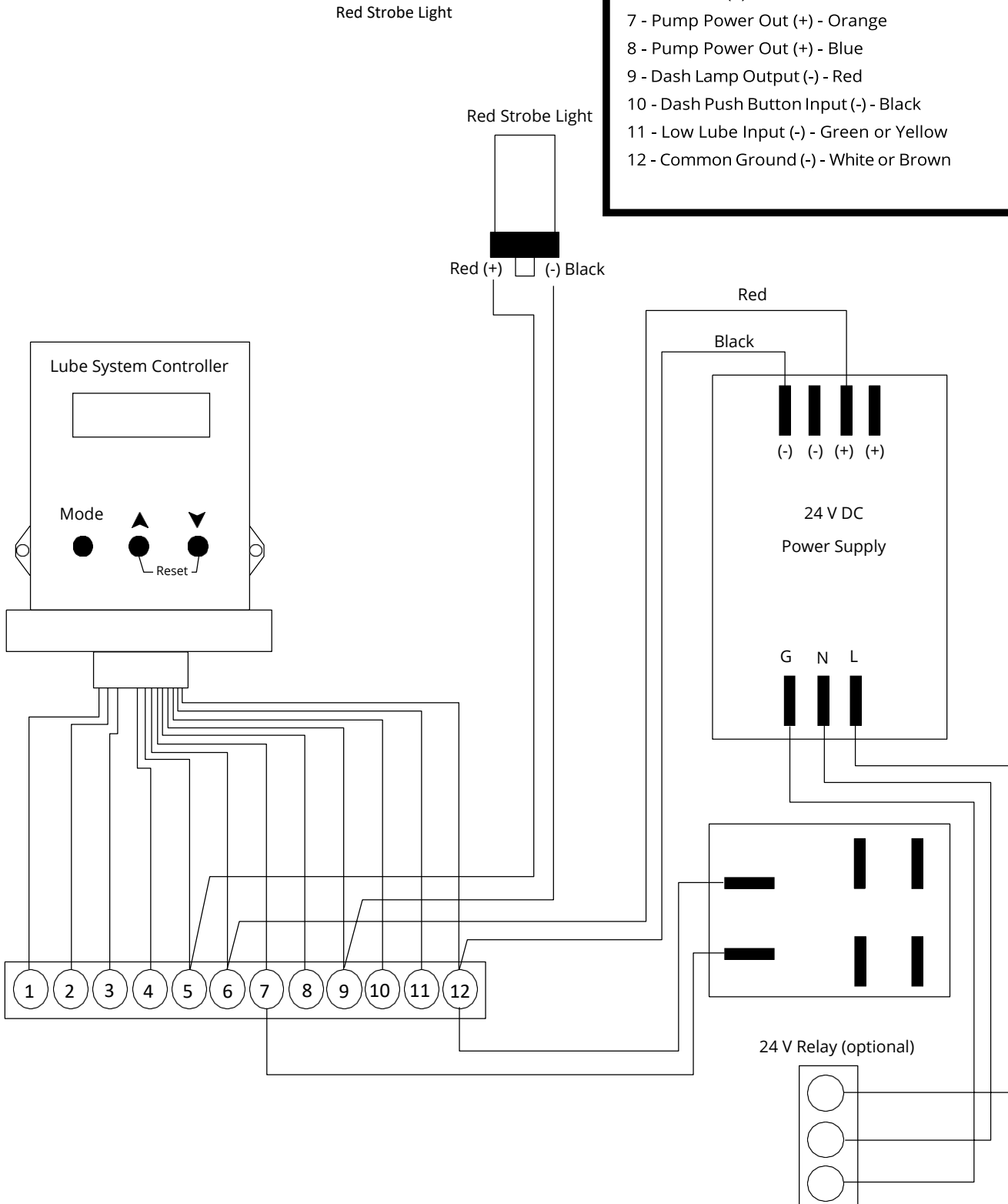


LSC-100A WIRING DIAGRAM



24 VDC—30 Amp Relay
Max Switching Voltage
250 DC Conforming to IEC
250 VAC conforming to IEC

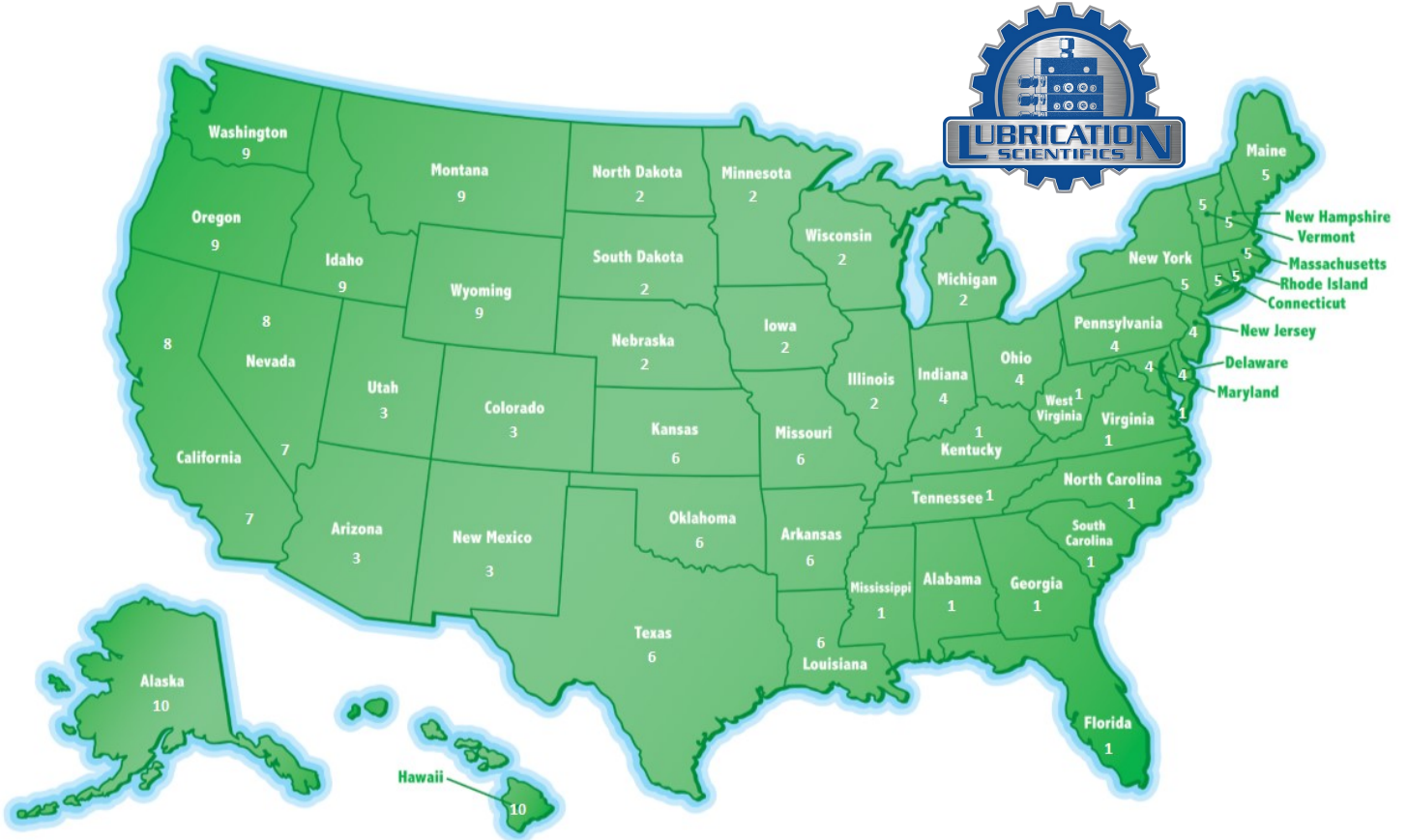
- 1 - RPM Input (-) - Orange
- 2 - Cycle Switch Input (-) - Blue
- 3 - Pressure Switch Input (-) - Red
- 4 - Spare Input - Black
- 5 - Power In (+) - Green or Yellow
- 6 - Power In (+) - White or Brown
- 7 - Pump Power Out (+) - Orange
- 8 - Pump Power Out (+) - Blue
- 9 - Dash Lamp Output (-) - Red
- 10 - Dash Push Button Input (-) - Black
- 11 - Low Lube Input (-) - Green or Yellow
- 12 - Common Ground (-) - White or Brown



NOTES

CONTACT US

IN THE USA, FIND YOUR STATE IN THE MAP BELOW, LOOK FOR THE REGION ID NUMBER AND FIND THAT NUMBER IN THE CONTACT INFORMATION CHART.



CONTACT INFORMATION CHART

1	Call Factory Direct - 877-452-0157	Outside of the United States	Call Factory Direct - 877-452-0157
2	David Donahue Cell: 414-507-9513 Email: d.donahue@lubricationscientifics.com		
3	Bernie Sauve + El Paso Texas Cell: 210-702-9930 Email: bernie@lubricationscientifics.com	7	Richard Hanley - California - Santa Barbara, Ventura, Los Angeles, Orange, San Bernardino, Riverside, San Diego and Imperial Counties. Nevada - Clark County. Cell: 714-625-5539 Email: rth@lubricationscientifics.com
4	Andy Kromer Cell: 440-364-4721 Email: akclub@lubricationscientifics.com	8	California - All Counties not covered by Richard. Nevada - All Counties except Clark County. Call Factory Direct - 877-452-0157
5	Call Factory Direct - 877-452-0157	9	Call Factory Direct - 877-452-0157
6	Cory Walker Cell: 832-585-7065 Email: c.walker@lubricationscientifics.com	10	Call Factory Direct - 877-452-0157

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- ◆ Distributer Information
- ◆ Place orders and check current pricing
- ◆ Product Pricing



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