

DUAL ZONE MONITOR (Zone #1/Zone #2)

MONITORS AND RECORDS OPERATION OF DIVIDER BLOCK LUBRICATION SYSTEMS



LSM-601/602-AC

SPECIFICATIONS

- Enclosure.....Compliant with Class I Division I Groups A, B, C, D
- Power.....120VAC or 24VDC@.040 amps
- Alarm SwitchForm C Contact 120 VAC @ 5 amps N.O. COM. N.C. Alarm Time.....Programmable - 3 sec to 250 seconds
- Temperature Range.....0 to +150 F (-32 to +70C)
- Warranty.....1 Year
- Display.....Cycle Time(Sec), Flow Rate(Pints/Day), Total Strokes, Alarm Status, Total System Run Time(Hours)
- Memory.....100 Cycle times Zone #2, 100 Cycle times Zone #1
- Proximity Switch.....2 included, Class I Div I Grps A, B, C, D

DISPLAY: Automatically scrolls between Pints/Day, Cycle Time, Total Strokes, System Run Time.

Pressing **(INC.)** Will lock display at the present function.

Pressing the **(EXIT)** will release the scroll lock and return to automatic.

DISPLAY FUNCTIONS:

Pints/Day ZONE#1 and ZONE #2

- Z1 XXX.X P/D Pints/Day Zone #1
- Z2 XXX.X P/D Pints/Day Zone #2

Cycle time ZONE#1

- Z1 XXX.X SEC Cycle time in seconds
- PREV. XXX.X Previous Cycle time for Zone#1

Cycle time ZONE #2

- Z2 XXX.X SEC Cycle time in seconds
- PREV. XXX.X Previous Cycle time for Zone#2

Total strokes ZONE#1 and ZONE#2

- Z1 XXXXXX STK Total Strokes Zone#1
- Z2 XXXXXX STK Total Strokes Zone #2

Total run time in hours

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DESCRIPTION

The LSM-602-AC is a microprocessor based dual mode monitor for the display and control of progressive in-line lubrication systems. Proximity switches mounted to the divider block system for Zone #1 and Zone #2 signals the LSM-602-AC each cycle. The time between cycles is displayed on the LCD readout as time into the current cycle as well as the time for the previous cycle. Each 10 seconds the display changes to show the flow rate in pints/day, cycle time, total strokes, and system run time for both Zone #1 and Zone #2. If the time between cycles exceeds the programmed alarm time an alarm signal is activated. The last 100 cycle times for the Zone #1 and Zone #2 lubrication systems are stored in permanent memory and can be read out via local control of program buttons.

MONITOR DISASSEMBLY INSTRUCTIONS

FOR WIRING AND BOARD ACCESS

FOR MODELS: LSM-601/602/701/702 MODELS

TOOLS NEEDED: 1/16" ALLEN WRENCH AND SMALL FLAT HEAD SCREWDRIVER

DISASSEMBLY OF MONITOR FOR WIRING ACCESS

STEP 1: REMOVE SET SCREW ON MONITOR HOUSING.

STEP 2: REMOVE THE EXPLOSION PROOF LID FROM THE MONITOR BODY BY UNSCREWING COUNTERCLOCKWISE. UNSEATING MAY BE DIFFICULT DUE TO O-RING SEAL.

STEP 3: REMOVE THE DIGITAL DISPLAY PANEL FROM THE HOUSING BODY. REMOVE USING THE BLACK HANDLES. PULLING STRAIGHT OUT MAY BE DIFFICULT, PULL FROM ONE SIDE AT A TIME LITTLE BY LITTLE UNTIL THE DISPLAY IS ABLE TO WIGGLE FREE.

ONCE THE DISPLAY IS OFF, YOU WILL NOW HAVE ACCESS TO THE BOARD FOR WIRING. USE THE DIAGRAMS ON THE FOLLOWING PAGES FOR PINOUTS AND WIRING.

REASSEMBLING THE MONITOR

STEP 1: MAKE SURE ALL WIRING IS OUT OF THE WAY OF THE BANANA PLUGS. ENSURE ALL EXPOSED WIRE IS PROTECTED FROM SHORTING .

STEP 2: HOLDING THE BLACK HANDLES, LINE UP THE DISPLAY SO THAT THE HORIZONTAL LINE OF THE SCREEN IS PARALLEL TO THE TOP OF THE MONITOR. SLOWLY PRESS THE DISPLAY EVENLY AND DOWNWARD INTO THE BODY. YOU SHOULD BE ABLE TO **FEEL** THE PLUGS GUIDING INTO THE CORRESPONDING CONNECTORS. IF THE DISPLAY FEELS TO BE PROPERLY ALIGNED, CONTINUE TO PRESS DOWNWARD UNTIL YOU FEEL THE DISPLAY BOTTOM OUT. THE BLACK HANDLES SHOULD SIT JUST ABOVE THE TOP OF THE BODY THREADS.

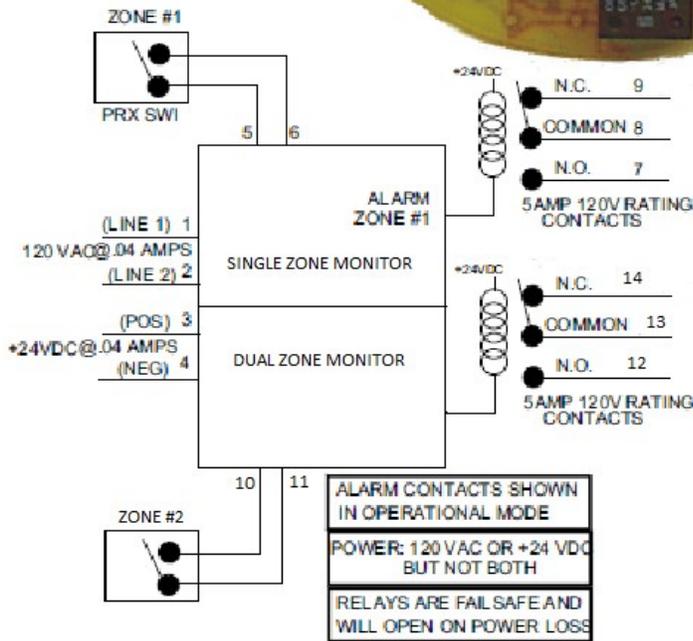
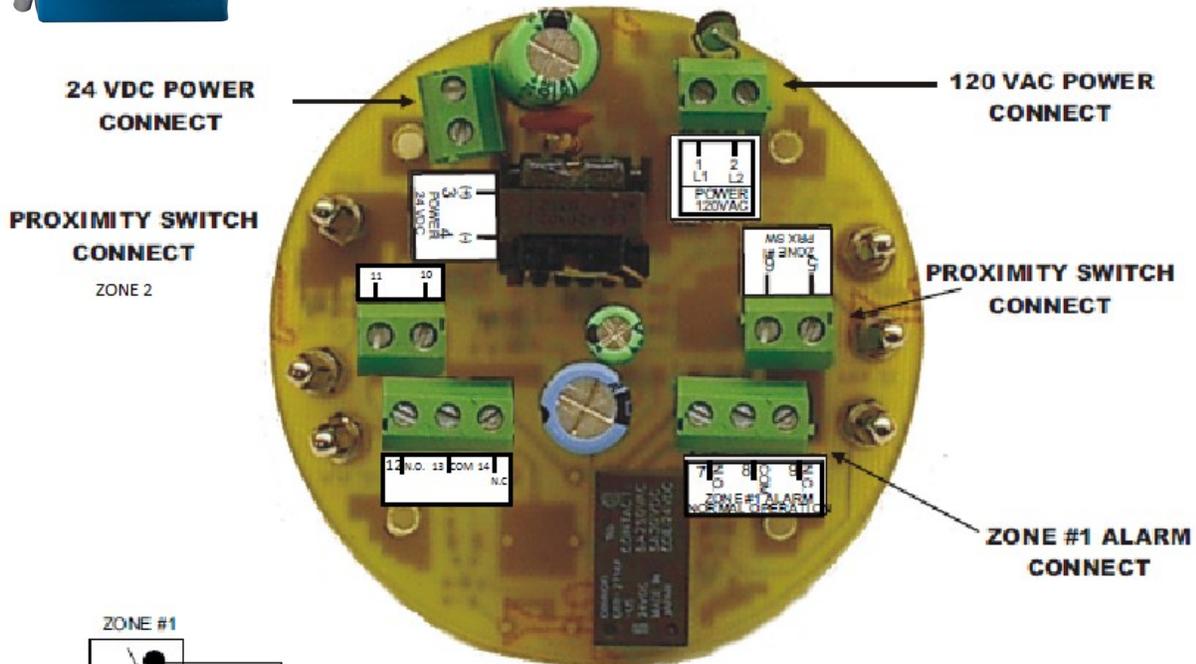
STEP 3: SCREW THE LID ON UNTIL THE LID IS FLUSH WITH THE BODY. SCREW IN THE SET SCREW TO SECURE.



WIRE DIAGRAMS FOR LSM-602-AC MODEL



**DUAL ZONE MONITOR (ZONE #1/ZONE #2)
WIRING DIAGRAM**



TERMINAL IDENTIFICATION

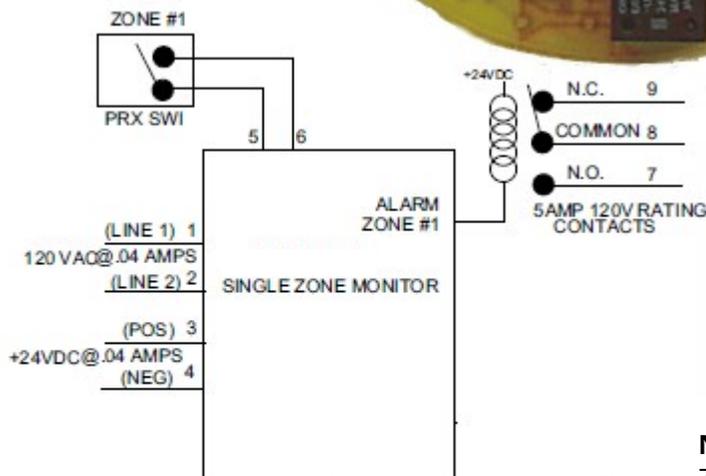
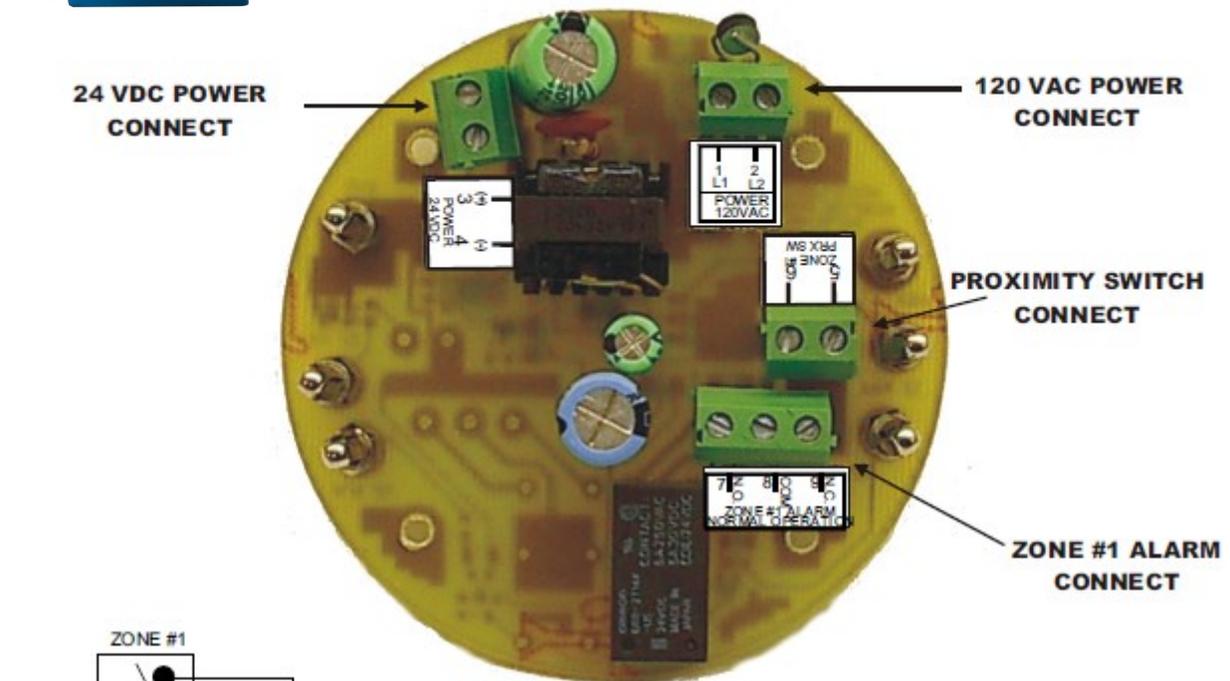
1. LINE 1 (120 VAC)
2. LINE 2 (120 VAC)
3. POSITIVE (24 VDC)
4. NEGATIVE (24 VDC)
5. ZONE #1 PROXIMITY SWITCH
6. ZONE #1 PROXIMITY SWITCH
7. ZONE #1 ALARM NORMALLY OPEN
8. ZONE #1 ALARM COMMON
9. ZONE #1 ALARM NORMALLY CLOSED
10. ZONE #2 PROXIMITY SWITCH
11. ZONE #2 PROXIMITY SWITCH
12. ZONE #2 ALARM NORMALLY OPEN
13. ZONE #2 ALARM COMMON
14. ZONE #2 ALARM NORMALLY CLOSED

ALARM CONTACTS SHOWN
IN OPERATIONAL MODE
POWER: 120 VAC OR +24 VDC
BUT NOT BOTH
RELAYS ARE FAILSAFE AND
WILL OPEN ON POWER LOSS

WIRE DIAGRAMS FOR LSM-601-AC MODEL



**SINGLE ZONE MONITOR (Zone #1)
WIRING**



Terminal Identification	
1.	LINE 1 (120 VAC)
2.	LINE 2 (120 VAC)
3.	POSITIVE (24 VDC)
4.	NEGATIVE (24 VDC)
5.	ZONE #1 PROXIMITY SWITCH
6.	ZONE #1 PROXIMITY SWITCH
7.	ZONE #1 ALARM NORMALLY OPEN
8.	ZONE #1 ALARM COMMON
9.	ZONE #1 ALARM NORMALLY CLOSED

NOTE: On the LSM-601AC, the functions for Zone #2 as they appear on the board, they do not function. Zone #2 functions and readings do not apply.

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POWER: 120 VAC OR +24 VDC
BUT NOT BOTH
RELAYS ARE FAILSAFE AND
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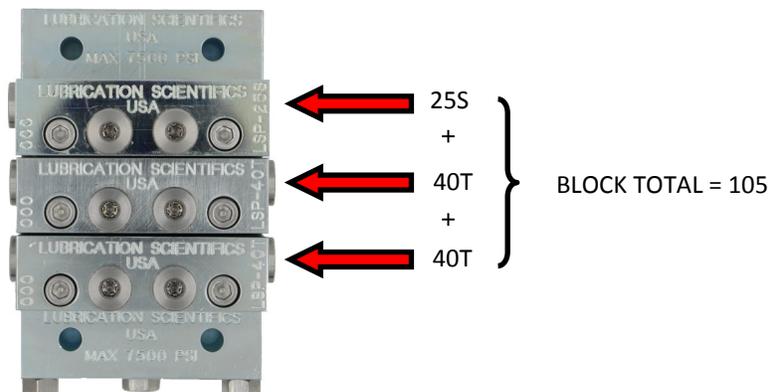
PROGRAMING INSTRUCTIONS FOR LSM-602-AC MODEL

TO SCROLL BETWEEN FUNCTIONS: PRESS AND HOLD "PRG" USE THE INC OR DEC BUTTONS TO SCROLL BETWEEN FUNCTIONS.

PRESSING THE "EXIT" BUTTON WILL RETURN TO THE NORMAL SCAN.

FIRST STEP WILL BE TO ENTER THE BLOCK TOTALS FOR EACH ZONE (BLK TOTL). ADD UP THE VALUES STAMPED ON THE FACE OF EACH DIVIDER BLOCK FOR THAT ZONE.

EX. IF YOU HAVE 3 VALVES VALUED AT 25S, 40T, & 40T. THE TOTAL BLOCK VALUE WOULD BE 95. SEE BELOW.



FUNCTION SELECTION	PROGRAMMABLE PARAMETERS	USE BUTTONS TO
ZONE #1 BLOCK TOTAL	18-144 BLK TOTL	INC OR DEC
ZONE #2 BLOCK TOTAL	18-144 BLK TOTL	INC OR DEC
ZONE #1 ALARM	3-250 SECONDS	INC OR DEC
ZONE #2 ALARM	3-250 SECONDS	INC OR DEC
ZONE #1 CYCLE TIME MEMORY	TO VIEW LAST 100 CYCLE TIMES	INC OR DEC
ZONE #2 CYCLE TIME MEMORY	TO VIEW LAST 100 CYCLE TIMES	INC OR DEC

DISPLAY

AUTOMATICALLY SCROLLS BETWEEN: PINTS/DAY, CYCLE TIME, TOTAL STROKES, AND SYSTEM RUN TIME.

PRESSING "INC" WILL LOCK THE DISPLAY AT THE PRESENT FUNCTION.

PRESSING "EXIT" WILL RELEASE THE SCROLL LOCK AND RETURN TO AUTOMATIC SCROLL

THE FOUR BUTTONS ARE USED TO CHANGE THE SETUP PARAMETERS

PROGRAM MENU ITEMS ARE ASSESSED BY PRESSING THE "PRG" BUTTON

PRESSING THE "PRG" + "EXT" OR "PRG" + "INC" AT THE SAME TIME WILL ACCESS THE OTHER MENU ITEMS.

HOLDING THE "PRG" AND "EXT" BUTTONS WILL SCROLL SLOWLY THEN RAPIDLY IF HELD DOWN

THE "EXIT" BUTTON WILL RETURN TO THE DISPLAY PRG IF PRESSED AT ANYTIME