







## MODEL 2024 ELECTRONIC ALTERNATOR

... Provides a reliable, flexible system of starting, stopping, sequencing of pumps, blowers, & other devices.

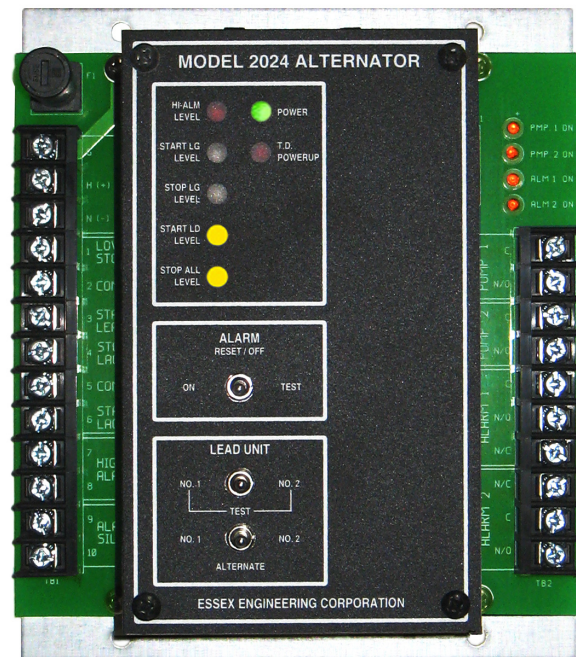
### FEATURES

- Modular Construction . . . Control/Display Circuit board is easily replaced
- Alarm Silence circuitry for Audible Alarms
- All functions provided with momentary test switches
- Built in time delay prevents simultaneous lead/lag unit operation on power-up
- Lead/lag unit preference easily switch selected
- Level signals are indicated by L.E.D. lamps

### DESCRIPTION

The Essex Engineering Model 2024 Electronic Alternator is a versatile, reliable system for use in starting, stopping and sequencing pumps, blowers, or other equipment to be cycled. For instance, as the level in a basin or other container changes, the level sensing switches monitor these changes and transmit a signal to the electronic alternator. The alternator, upon receiving the proper signal, will either start or stop the pumps in proper sequence.

There are separate turn-on and turn-off points for control, and for high level alarm. Isolated output contacts are provided for pump operation and alarms. The standard unit will operate from a 4 or 5 level point system, and has lock-in or non-lock-in sequence for lag level which can be field modified.



High level alarm point can be field set for lock-in, manual reset, or automatic reset. Relay K4 can follow K3 for DPDT switch operation, or be used as an audible device relay, dropping out when Alarm Silence pushbutton is added.

The electronic alternator also has a six second time delay to prevent the lag pump from starting simultaneously with the lead pump after a power failure, thus protecting an emergency generator from high inrush starting current requirements.

## MODEL 2024 SPECIFICATIONS

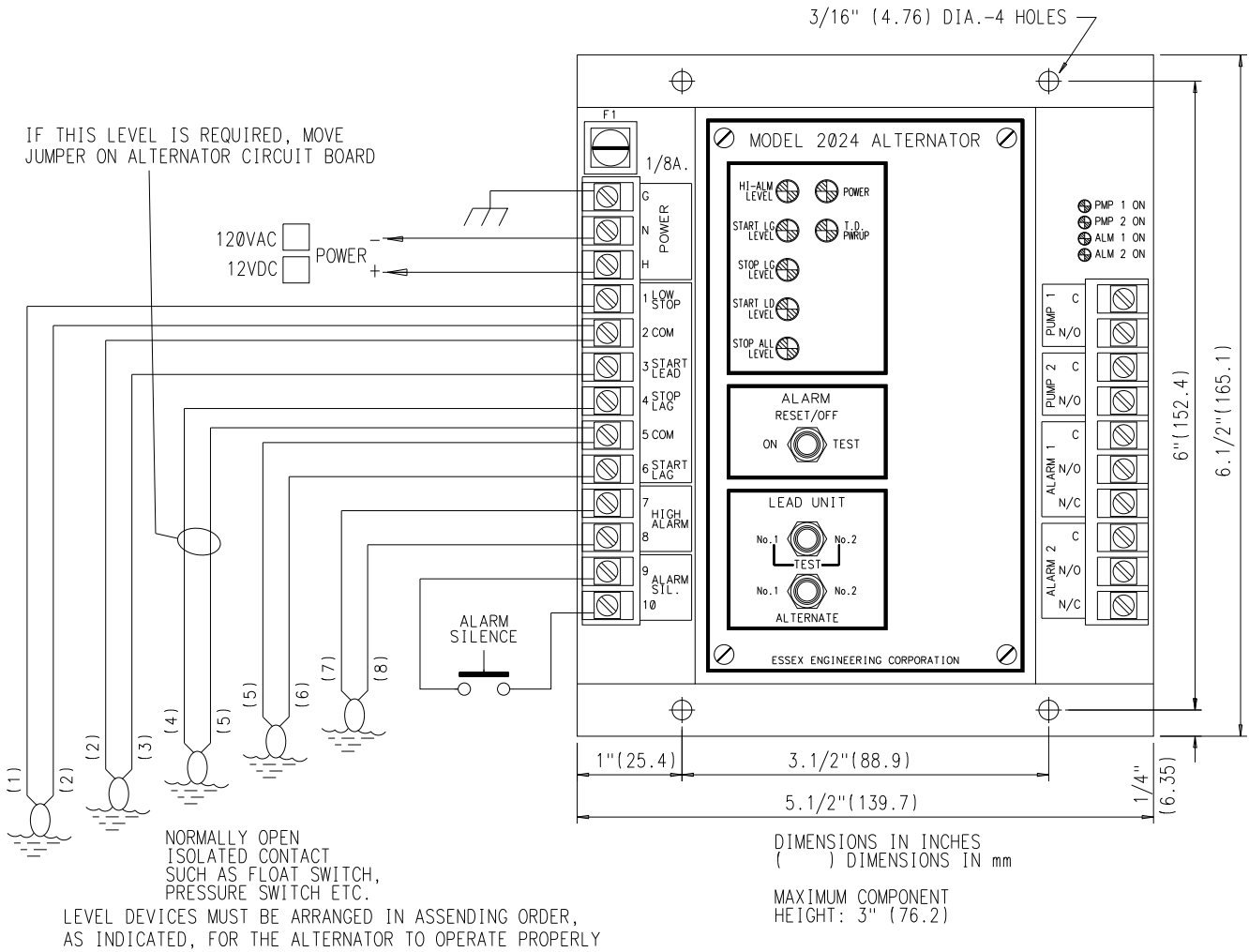
**AMBIENT OPERATING TEMPERATURE RANGE**  
0 to 40 °C

**POWER INPUT**  
120 VAC ± 10% 10W Max.  
12 VDC ± 10% 450 mADC

**CONTACT INPUTS**  
12 VDC @ 10 mA Max.

**CONTACT OUTPUTS**  
10A resistive @ 240 VAC

**TIME DELAYS**  
Approximately 6 seconds



## ELECTRICAL CONNECTIONS - OVERALL DIMENSIONS

REPRESENTED BY



**ESSEX ENGINEERING CORPORATION**

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## MODEL 2402 PUMP STATUS MODULE

... Provides status indication and control of pumps, blowers and other types of motors.

### FEATURES

Bright, long life LED'S give reliable indication of status and monitoring of control functions.

HAND-OFF-AUTOMATIC selector switches provide automatic and manual override capability.

Provides visual indication of actual motor start or stop.

120VAC/24VD/12VDC power source.

Auxiliary output contacts on all front panel switches provide remote monitoring or special "system" interlocks.

### DESCRIPTION

The Essex 2402 Pump Status Module operates in the following manner:

Assuming the pump is in the off condition, the green OFF indicator is lit. If the HAND-OFF-AUTO pushbuttons are indexed to AUTO, and an external contact closure occurs which enables the pump or motor to start, an amber CALL indicator will light. Once the pump starts, an auxiliary contact on the motor starter, pressure switch, flow switch, etc. sends a "report back" signal to the 2402 causing the red RUN light to come on and the green OFF indicator and amber CALL indicator to go out.

If the pump fails to start, or fails to stop within a 0.2 to 60 second field adjustable time, the red FAIL lamp will flash, indicating trouble and an optional external horn will sound. Depressing the ALM/ SIL button will silence the horn and cause the FAIL indicator to light steadily.

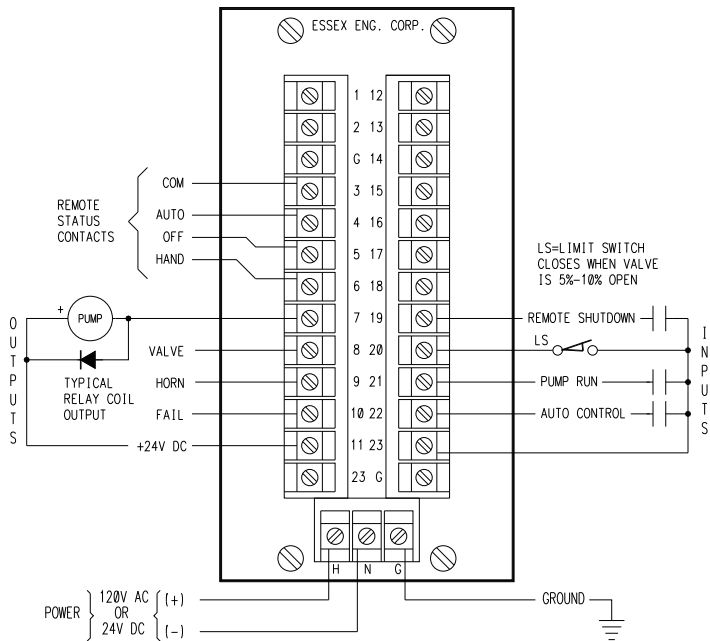
If the HAND-OFF-AUTO pushbuttons are indexed to HAND, an amber CALL indicator will light and the unit will operate as described above.



Auxiliary contacts are included on the HAND-OFF-AUTO pushbuttons to provide remote monitoring of these switches, or to provide the capability for external interlocking. Field selectable power up or control input timing is standard. This provides staggered starting of unit after a power failure or delayed starting each time the unit is activated. All indicators light for approximately 1 second on power up or can be checked at any time using ALM/SIL button.

All of the switches and indicators on the instrument face are sealed for ease of cleaning and the prevention of switch contamination from grease, dirt, etc.. Units are provided with a custom engraved label identifying the use of the Pump Status Module.

## ELECTRICAL CONNECTIONS



## MODEL 2402 SPECIFICATIONS

**AMBIENT OPERATING TEMPERATURE RANGE**  
0 to 40 °C

### POWER INPUT

120 VAC  $\pm$  10% 15W max.  
24 VDC  $\pm$  10% 650 mADC max.  
12 VDC  $\pm$  10% 1200 mADC max.

### CONTROL INPUTS

Contact closure or NPN transistor; 10 mADC max. @ 24 VDC

### CONTROL OUTPUTS

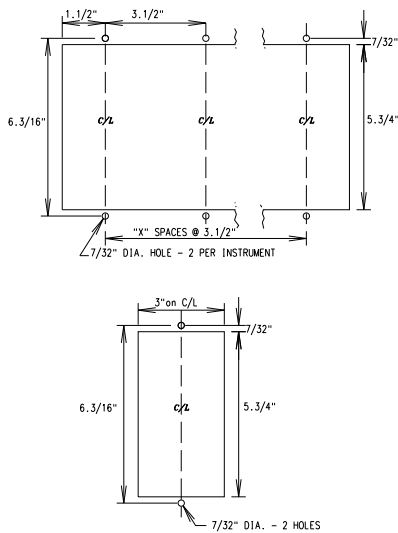
NPN solid state output; 50 VDC @ 60 mADC max. per point; 1 output for each pump starter, valve operator, fail alarm, and horn

### INDICATORS

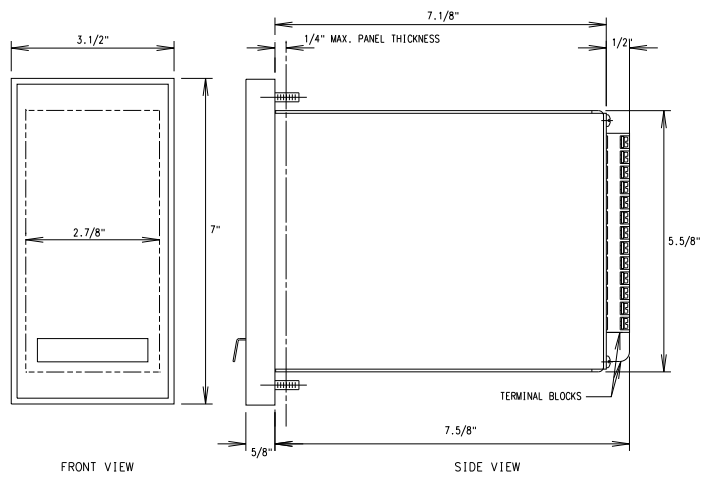
Four front panel LED indicators display status and control functions of unit

### SWITCHES

Sealed contact inputs one each for AUTO, OFF, HAND and ALM/SIL



**CUTOUT DIMENSIONS**



**OVERALL DIMENSIONS**

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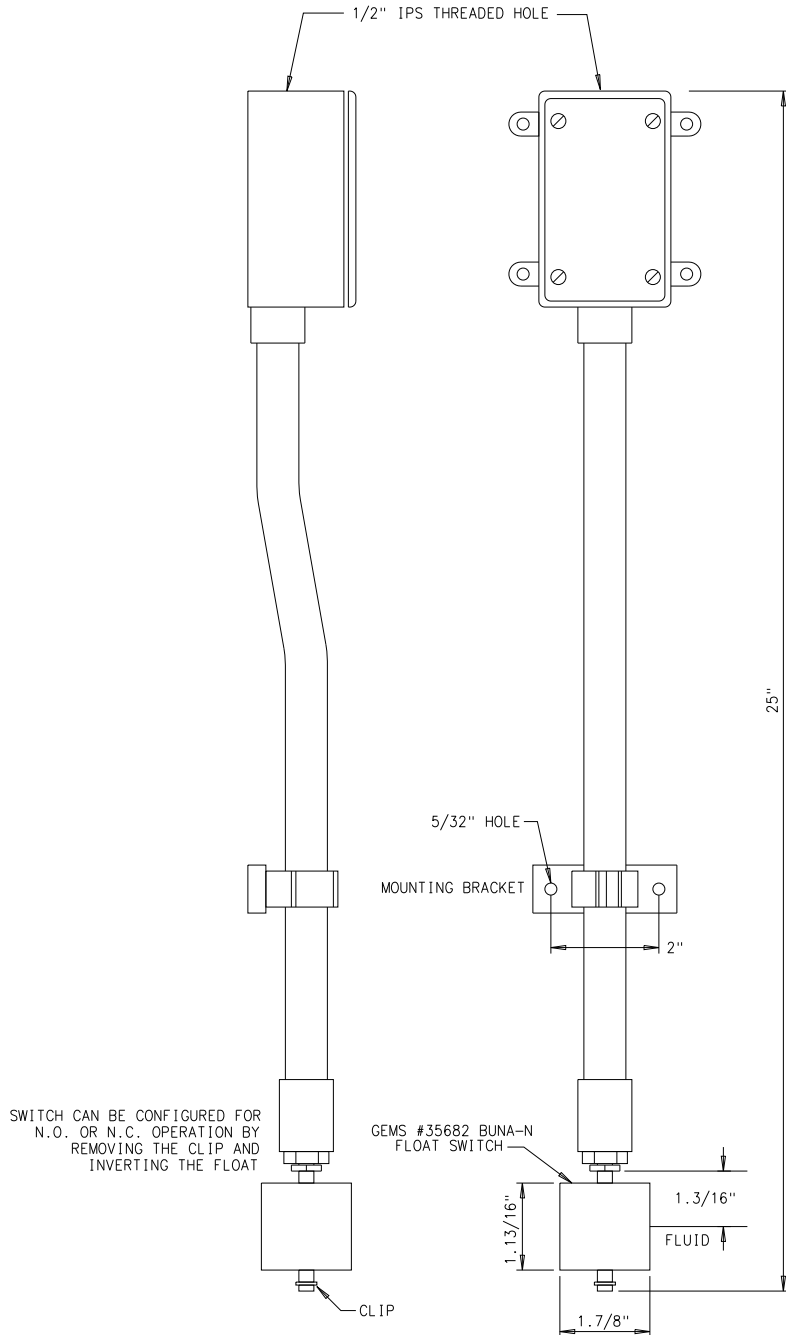












SWITCH ELECTRICAL RATING

VA	VOLTAGE	CURRENT
20	240VAC	.08A
	120VAC	.17A
	24VDC	.30A

ENVIRONMENTAL RATING

WATER: TO 180°F (82.2°C)
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INSTRUMENTATION SYSTEM  
*for*  
 DRY WELL FLOAT SWITCH  
 DWFS-120A

GENERAL NOTES

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