



## M420 Di-Axial Level Sensor



CERT. #112109

### Application:

The Model 420 Di-axial Level Sensor provides a signal to indicate an out-of-level condition of dissimilar magnitude along the “X” and “Y” axes of the base upon which it is mounted. It is typically used on manlifts, cranes, scissor lifts and mobile platforms.

### Features:

The Model 420 has three adjustments, independently adjustable trip angles for the “X” & “Y” axes and an adjustable electronic time delay. Trip angles can be set from 2 to 5 degrees, and the time delay from .5 to 5 seconds. Both parameters can be factory set to your specifications.

The sensing mechanism is a gimbal-mounted pendulum which is inductively coupled to the position-sensing electronics. The pendulum is viscously damped with a silicone fluid to prevent erratic oscillation due to vibration or momentary inertial forces.

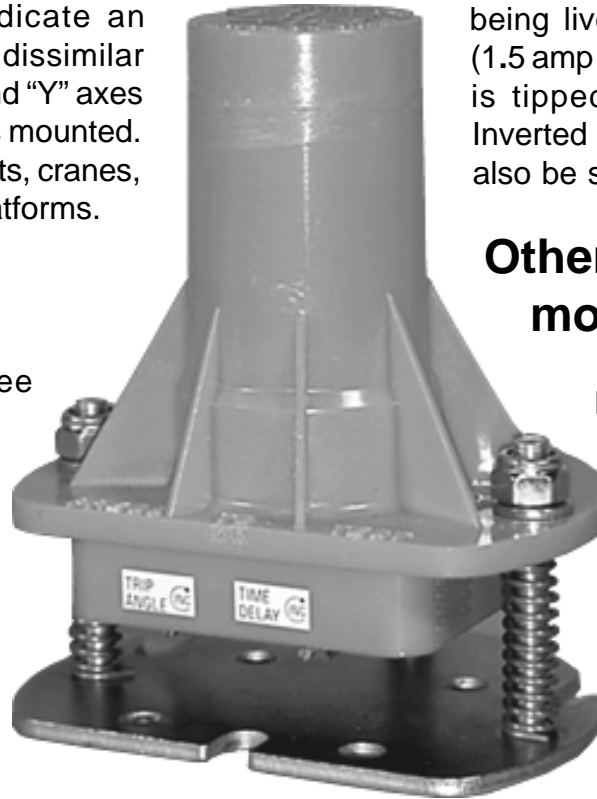
Indicator lamps are provided adjacent to each axis angle adjustment to give an “on” signal whenever the trip angle is reached or exceeded. These lamps (LED’s) are undamped and assist in system connection and checkout.

The self-contained electronics are protected against reverse polarity and short circuiting of

the output. The output is “fail-safe”, being live at supply voltage level (1.5 amp maximum) until the sensor is tipped beyond its trip angle. Inverted output, “off” until trip, can also be supplied.

### Other available models:

For applications requiring a trip angle common to all radians, consider the Omni-directional Level Sensor (Data Sheet 106). The Platform Leveler (Data Sheet 108) can be used to level a platform. Model 425(Data Sheet 114) provides proportional “X” and “Y” axis output.

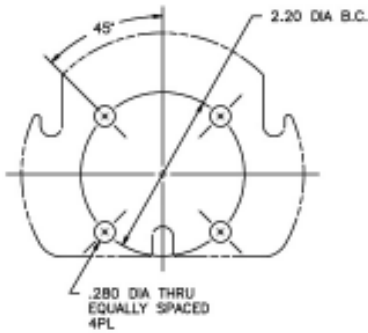


### Specifications:

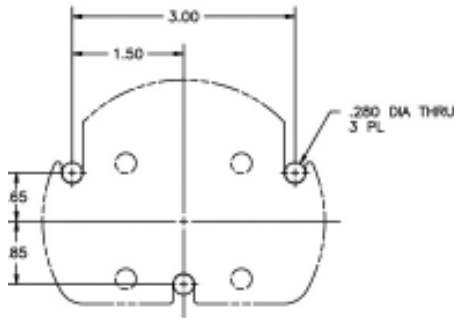
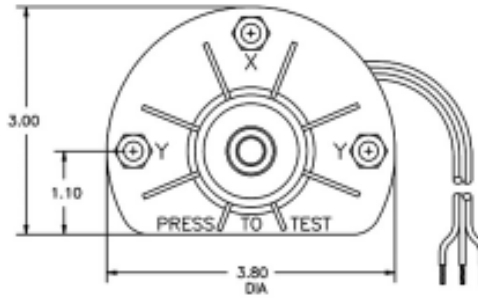
- Supply Voltage: 10 - 30 VDC  
(Specify 12 or 24VDC) Min voltage 8.5 vdc,  
Max voltage 32 vdc
- Output: VS @ 1.5 amp continuous
- Trip Angle: 2 - 5 degrees (field adjustable)
- Time Delay: .5 - 5 seconds (field adjustable)
- Accuracy: .2 degree
- Hysteresis: .3°
- Repeatability +/- .1 degree
- Idle Current Draw: 25 mA @ 12 V  
35 mA @ 24 V
- Operating Temperature: -40° C to +70° C



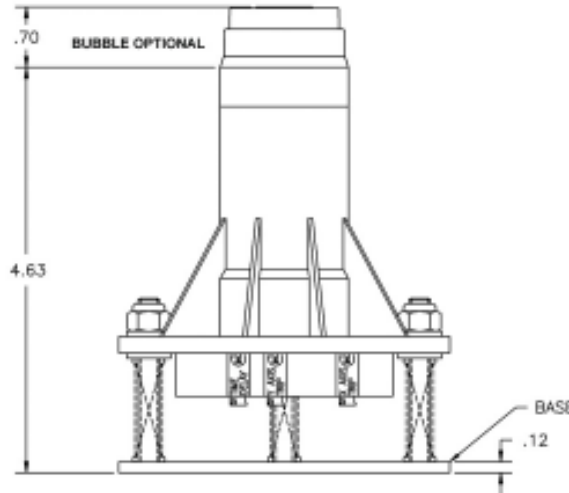
# M420 Dimensions and Installation



**MOUNTING PATTERN**  
 OPTION 1  
 ALSO SUITABLE FOR WELDING  
 TO MACHINE.



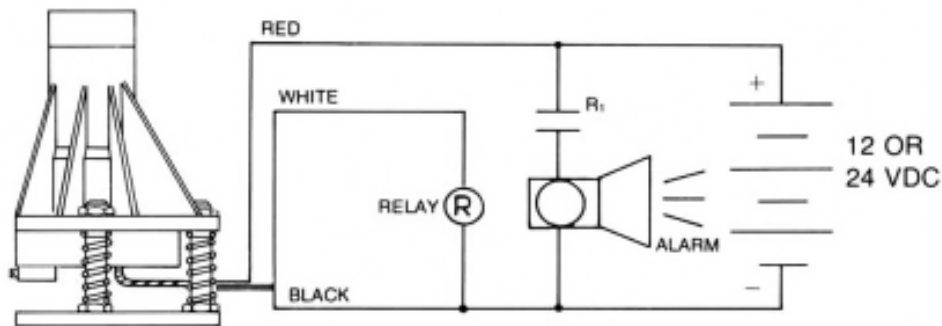
**MOUNTING PATTERN**  
 OPTION 2



420 DI-AXIAL NORMALLY ON (FAILSAFE) OUTPUT  
 421 DI-AXIAL NORMALLY OFF OUTPUT

MODEL 420 - X X - X X - X X - XX

X TRIP ANGLE	Y TRIP ANGLE	TIME DELAY	SUPPLY VOLTAGE
40 - 4°	30 - 3°	10 - 1.0 SEC.	12= 12VDC
45 - 4.5°	35 - 3.5°	20 - 2.0 SEC.	24= 24VDC
50 - 5.0°	40 - 4°	25 - 2.5 SEC.	
etc.	etc.	etc.	



TYPICAL CONNECTION DIAGRAM (FAILSAFE)