BALTIMORE AIRCOIL COMPANY
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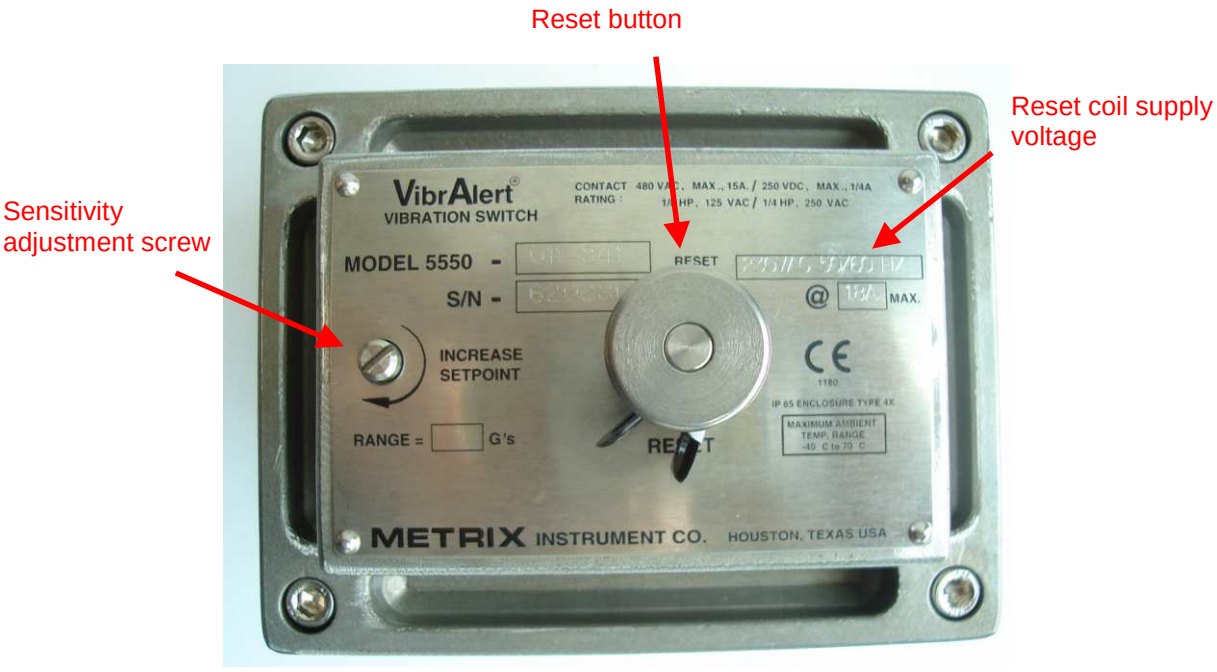
Method statement: Setting the Vibration Cutout Switch

This Method statement is to be followed, in order to correctly set the Vibration Cutout Switch.



1. Shut down the unit. Ensure that the variable frequency drive (VFD) is off and the power to the motor is locked out before you enter the unit.

2. Remove the plastic clip from the reset button of the vibration cutout switch.

3. Increase the setpoint of the Vibration Cutout Switch: slowly rotate the sensitivity adjustment screw clockwise. Near the end (when the screw is almost in the switch) the screw will be more difficult to rotate. Make sure to stop and do not try to force the screw when it's no longer possible as you might damage the tripping device.

4. Reset the switch by pushing the reset button all the way down.

5. Now decrease the setpoint of the Vibration Cutout Switch by slowly rotating the sensitivity adjustment screw counterclockwise until the Vibration Cutout Switch trips (you will notice an audible click). Do not rotate any further. In case the switch does not trip (also check the trouble shooting part below) make sure not to force the screw by rotating it all the way. When it gets more difficult to rotate the screw stop.

6. Get out of the unit, and ensure that the VFD and motor can safely be started.

7. Now try to operate the VFD, which controls the fan motor. The VFD should not operate, because the Vibration Cutout Switch is tripped!
   In case the VFD does operate with the Vibration Cutout Switch tripped (open circuit), coordinate with the VFD contractor or the controls contractor to resolve this issue.

8. Shut down the unit. Ensure that the variable frequency drive (VFD) is off and the power to the motor is locked out before you enter the unit.

9. Increase the setpoint of the Vibration Cutout Switch by ¼ rotation. Then press the reset button of the Vibration Cutout Switch.

10. Get out of the unit, and ensure that the VFD and motor can safely be started.

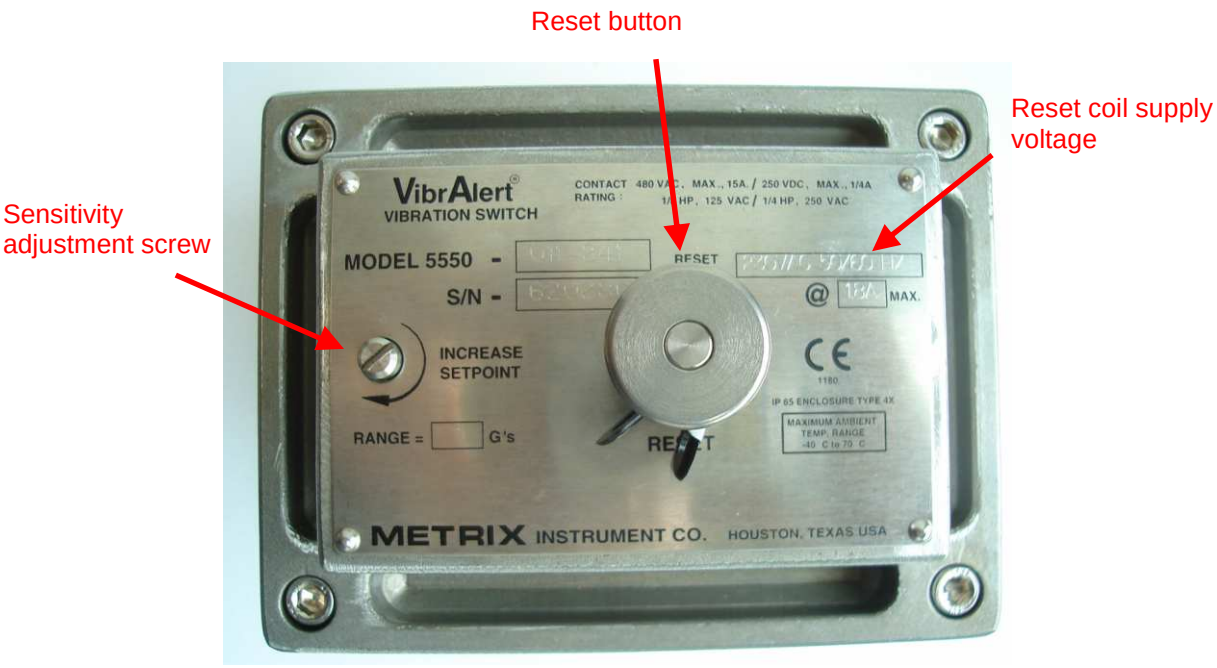
11. Try to operate the VFD, which controls the fan motor. The VFD should start, but the Vibration Cutout Switch may still be too sensitive to allow continuous operation of the unit.
    If the Vibration Cutout Switch trips due to operation of the unit, repeat steps 8 to 11 until the Vibration Cutout Switch does not trip anymore when the unit is in operation.

12. Finally increase the setpoint one more time with ¼ rotation.

Trouble shooting instructions: Metrix VibrAlert Vibration Cutout Switch

In case there is any doubt concerning the correct functioning of the Vibration Cutout Switch, these trouble shooting instructions should be followed to verify the correct operation.

1) General checks:



When having a problem with the Vibration Cutout Switch, the following items should be checked first:

- Verify that the black plastic clip under the reset-button has been removed. It is important that the reset-button is pushed all the way down, in order to be able to reset the Vibration Cutout Switch.
- Verify that all the necessary electrical connections have been made correctly, keeping in mind that the motor and the VFD should be shut down when the Vibration Cutout Switch trips.
- verify that the reset coil supply voltage is according to the indication on the Vibration Cutout Switch.

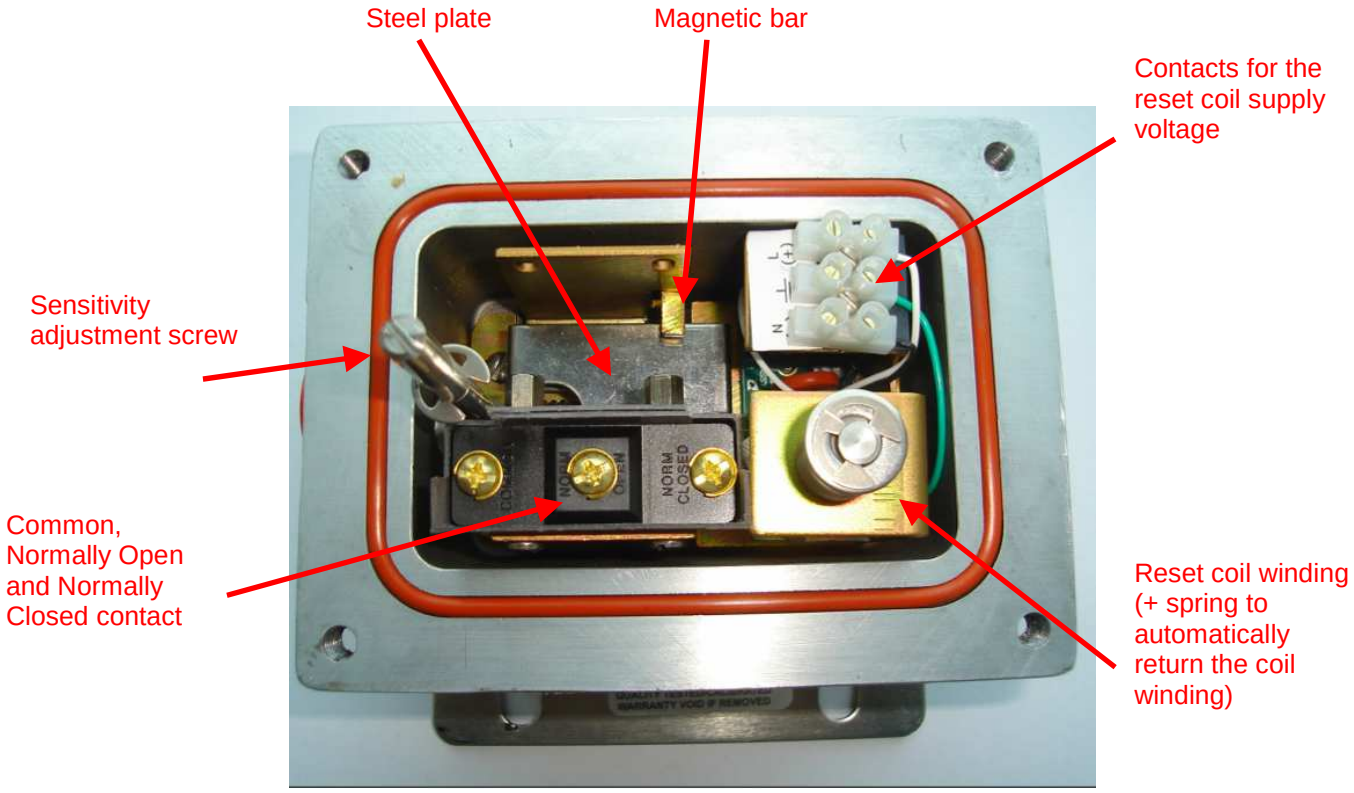
2) Mechanical testing of the Vibration Cutout Switch:

a. Opening of the Vibration Cutout Switch:

First you need to remove the four hexagon screws. Then you can gently remove the cover of the Vibration Cutout Switch.
Remark: when closing the Vibration Cutout Switch, make sure that the red rubber gasket is correctly placed before re-installing the cover! Water entry can cause damage to the Vibration Cutout Switch.

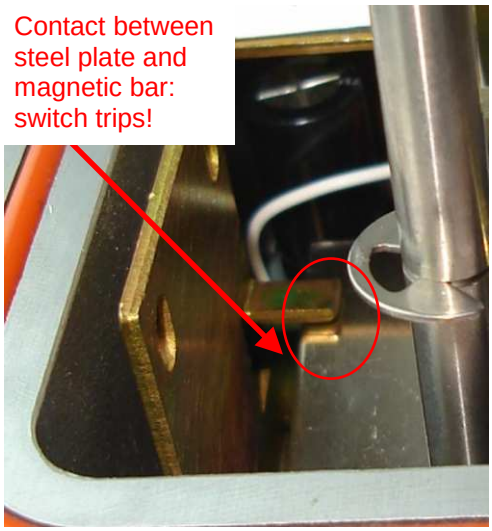
b. Checking the switching mechanism of the Vibration Cutout Switch:

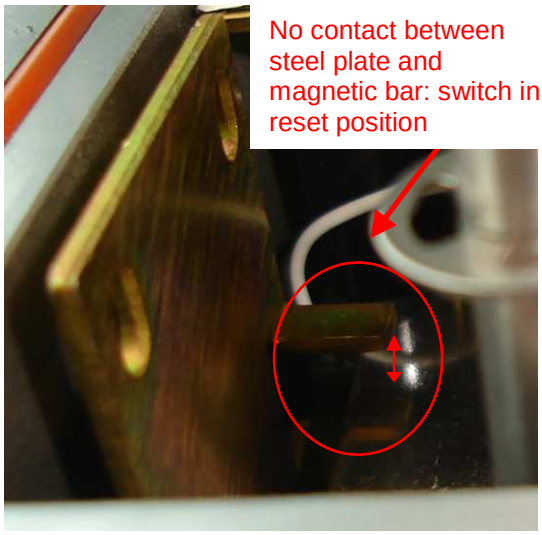
When you have opened the Vibration Cutout Switch, you can see the switching mechanism. This switching mechanism consists of a steel plate that makes contact with a magnetic bar when the vibration level is higher then the setpoint.



Check the switching mechanism as follows:

1. Rotate the sensitivity adjustment screw clockwise. Near the end (when the screw is almost in the switch) the screw will be more difficult to rotate. Make sure to stop and do not try to force the screw when it's no longer possible as you might damage the tripping device.
2. Push the spring of the reset coil winding down, in order to make sure that the Vibration Cutout Switch has been reset
3. You can now see that the steel plate is in the lower position. There is no contact between the steel plate and the magnetic bar.
4. Now decrease the setpoint of the Vibration Cutout Switch by slowly rotating the sensitivity adjustment screw counterclockwise until the Vibration Cutout Switch trips. You will notice an audible click.
5. You can now see that the steel plate is in the higher position. There is contact between the steel plate and the magnetic bar.





The left picture shows the steel plate in the higher position (switch trips), the right picture shows the steel plate in the lower position (reset).

3) Electrical testing of the Vibration Cutout Switch:

a. Testing the Vibration Cutout Switch's switching contacts:

Check the contacts as follows:

1. Reset the Vibration Cutout Switch by rotating the sensitivity adjustment screw clockwise, near the end (when the screw is almost in the switch) the screw will be more difficult to rotate. Make sure to stop and do not try to force the screw when it's no longer possible as you might damage the tripping device. Then push down the reset coil winding.
2. Use an Ohmmeter to measure the resistance between the contacts. When the Vibration Cutout Switch is in reset position, you should get the following results:
   - Measured between "COMMON" and "NORM OPEN": open circuit
   - Measured between "COMMON" and "NORM CLOSED": closed circuit (= 0 Ohm)
3. Now decrease the setpoint of the Vibration Cutout Switch by slowly rotating the sensitivity adjustment screw counterclockwise until the Vibration Cutout Switch trips. You will notice an audible click. There is contact between the steel plate and the magnetic bar.
4. Use an Ohmmeter to measure the resistance between the contacts. When the Vibration Cutout Switch is in alarm position, you should get the following results:
   - Measured between "COMMON" and "NORM OPEN": closed circuit (= 0 Ohm)
   - Measured between "COMMON" and "NORM CLOSED": open circuit

If the measured values are the same as mentioned above, then the switching contacts of the Vibration Cutout Switch are OK.

a. Testing the Vibration Cutout Switch's reset coil winding:

Check the reset coil winding as follows:

1. Make the Vibration Cutout Switch trip by rotating the sensitivity adjustment screw in counterclockwise direction. Near the end the screw will be more difficult to rotate. Make sure to stop and do not try to force the screw when it's no longer possible as you might damage the tripping device.
   (You can see that the Vibration Cutout Switch has tripped, by checking the position of the steel plate. The steel plate should be in contact with the magnetic bar.)
2. Connect a 230 Volts power supply to the clamps L (+) and N (-), as shown in the picture below.
3. When the 230 Volts power supply is switched on, the reset coil winding will reset the Vibration Cutout Switch, by moving the steel plate down.
4. When the 230 Volts power supply is switched off, the steel plate will automatically return to the higher position.

Optional is to measure resistance of the coil (between L and N): when reading shows 3,5 up to 4,5 MΩ the coil is still functioning.