



VersaTox

Sensor/Transmitter with
Optional Display & Relay
Output

INSTRUCTION MANUAL

IMPORTANT:

Please read these installation and operating instructions completely and carefully before starting.



TABLE OF CONTENTS

Section Title	Page
1 WARRANTY.....	5
1.1 LIABILITY.....	5
1.2 PRODUCT RETURN	5
1.3 MODIFICATIONS AND SUBSTITUTIONS.....	5
2 PRODUCT INFORMATION.....	6
2.1 SENSOR/TRANSMITTER MODULE	6
2.2 FACTORY CALIBRATION	6
3 PRODUCT DESCRIPTION	7
4 INSTALLATION	11
4.1 LOCATION AND MOUNTING.....	11
4.1.1 CONDUIT MOUNTING	11
4.1.2 120VAC POWER SUPPLY WITH BUZZER.....	12
4.1.3 DUCT MOUNTING (OPTIONAL)	12
4.2 WIRING.....	13
4.2.1 MONITOR AND POWER SUPPLY WIRING.....	13
4.2.1.1 DC Transmitter (1 board) to AMC Monitor	13
4.2.1.2 DC Transmitter (1 board) to BAS.....	14
4.2.1.3 DC Transmitter with Relay to AMC Monitor (Optional).....	15
4.2.1.4 DC Transmitter with Relay to BAS with own Power Supply (Optional)	16
4.2.1.5 DC Transmitter with Relay to BAS without own Power Supply (Optional)	16
4.2.1.6 DC Transmitter with relay to Power Supply only (Optional)	17
4.2.1.7 AC Transmitter with or without Relay to BAS (Optional).....	18
4.2.1.8 AC Transmitter with or without Relay to Transformer only (Optional).....	18
4.2.1.9 120VAC Power Supply with Buzzer (Optional)	19
4.2.2 RELAY WIRING (OPTIONAL).....	20
4.3 CABLE SELECTION	21
4.3.1 2-WIRE 4-20 mA DC POWER LOOP	21
4.3.2 3 AND 4 WIRE DC POWER ONLY (OPTIONAL)	22
4.3.3 4 WIRE AC POWER ONLY (OPTIONAL)	22
5 OPERATION AND CALIBRATION.....	23
5.1 OPERATION	23
5.1.1 TRANSMITTER.....	23
5.1.2 RELAY, POWER BOARD (OPTIONAL).....	23
5.1.3 DISPLAY BOARD (OPTIONAL).....	23
5.2 CALIBRATION	24
5.2.1 ON SITE CALIBRATION EQUIPMENT REQUIRED.....	24
5.2.2 CALIBRATION PROCEDURE	24
5.3 ALARM RELAY TRIP POINT SETTING	26
6 MAINTENANCE	29
6.1 GENERAL.....	29
6.2 SCHEDULED CALIBRATION	29
6.3 SENSOR/TRANSMITTER REPLACEMENT.....	29





1 WARRANTY

The AMC-VersaTox transmitter is warranted against defects in material and workmanship for a period of two years from date of delivery. Maintenance items are not warranted. During the warranty period, *The Armstrong Monitoring Corporation* will repair or replace components that prove to be defective in the opinion of AMC. Any equipment deemed to be defective by the user should be returned to *The Armstrong Monitoring Corporation* for evaluation (see product return below). **Site visits by Armstrong personnel, to evaluate/repair equipment, are not covered by this warranty.** AMC is not liable for auxiliary interfaced equipment, nor for consequential damage. This warranty shall not apply to any product, which has been modified in any way, which has been repaired by any other party other than a qualified technician or authorized AMC representative, or when failure is due to misuse or conditions of use.

Note: extended warranty mail in calibration programs are available (please call 1-800-465-5777).

1.1 LIABILITY

All AMC products must be installed and maintained according to instructions. Only qualified personnel should install and maintain the equipment.

AMC shall have no liability arising from auxiliary interfaced equipment, for consequential damage, or the installation and operation of this equipment. AMC shall have no liability for labour or freight costs, or any other costs or charges in excess of the amount of the invoice for the products.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, AND SPECIFICALLY THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE THEREOF.

WARNING

CHECK TO ASSURE THE WORKING AREA IS FREE FROM HAZARDS DURING INSTALLATION OR WHEN PERFORMING MAINTENANCE, AND USE PROPER PRECAUTIONS.
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1.2 PRODUCT RETURN

All products returned for warranty or service should be shipped by prepaid freight and will be accepted only with RMA or repair number issued by AMC. All products returned to the client will be shipped by freight collect.

1.3 MODIFICATIONS AND SUBSTITUTIONS

Due to an ongoing development program, AMC reserves the right to substitute components and change specifications at any time without incurring any obligations.



2 PRODUCT INFORMATION

2.1 SENSOR/TRANSMITTER MODULE

Sensor/transmitter unit order number. _____

Sensor/transmitter serial number..... _____

Sensor order number..... _____

Sensor serial number..... _____

Power Supply Requirement..... 2 Wire 12 to 24 VDC @ 20 mA
 3 or 4 Wire 12 to 24 VDC/AC @ 90 mA

Sensor Warranty..... _____

Operating Temperature -20° to 50° C
 0° to 40° C (120VAC Plug-in Power Supply)

Operating Pressure 0.9 to 1.1 atm

Relative Humidity 15 to 85% RH, non-condensing

Signal Linearity..... Linear to the concentration of gas

Relay Contacts..... SPST 2A @ 30VDC resistive

2.2 FACTORY CALIBRATION

Gas Type..... _____

Zero Gas, at 4 mA Signal..... _____

Gas Concentration at 20 mA Signal..... _____

Calibration Adapter Part Number..... _____

Note:

All Armstrong Monitoring systems must be installed and maintained according to instructions to assure proper operation. Only qualified technicians should install and maintain the equipment. For re-calibration extended warranty program information please call 1-800-465-5777.

3 PRODUCT DESCRIPTION

The AMC-VersaTox sensor/transmitter unit is designed to provide continuous, reliable surveillance of surrounding air for the target gas listed in the Factory Settings (Section 2.2). This unit is powered by either AC or DC power source and provides a 4-20 mA, variable current signal, which is proportional to the gas concentration detected. Optional gas concentration digital display is available as well as a built-in alarm relay contacts. An optional 120VAC plug in power supply is also available with a relay controlled buzzer. Each sensor/transmitter unit is factory calibrated, and is ready for field installation and operation.

Each sensor module features alarm indicators, adjustment trimmers and connection terminal blocks, as listed and described below.

Overview:

- 1. HOUSING: ABS plastic
- 2. TRANSMITTER BOARD: 4-20 mA transmitter with integral sensor
- 3. RELAY, POWER BOARD (OPTIONAL): Optional, Relay contact and/or isolated power supply; AC or DC
- 4. DISPLAY BOARD (OPTIONAL): Optional, Digital display output
- 5. 120VAC POWER SUPPLY WITH BUZZER (OPTIONAL): Optional, 120VAC plug in power supply with relay controlled buzzer

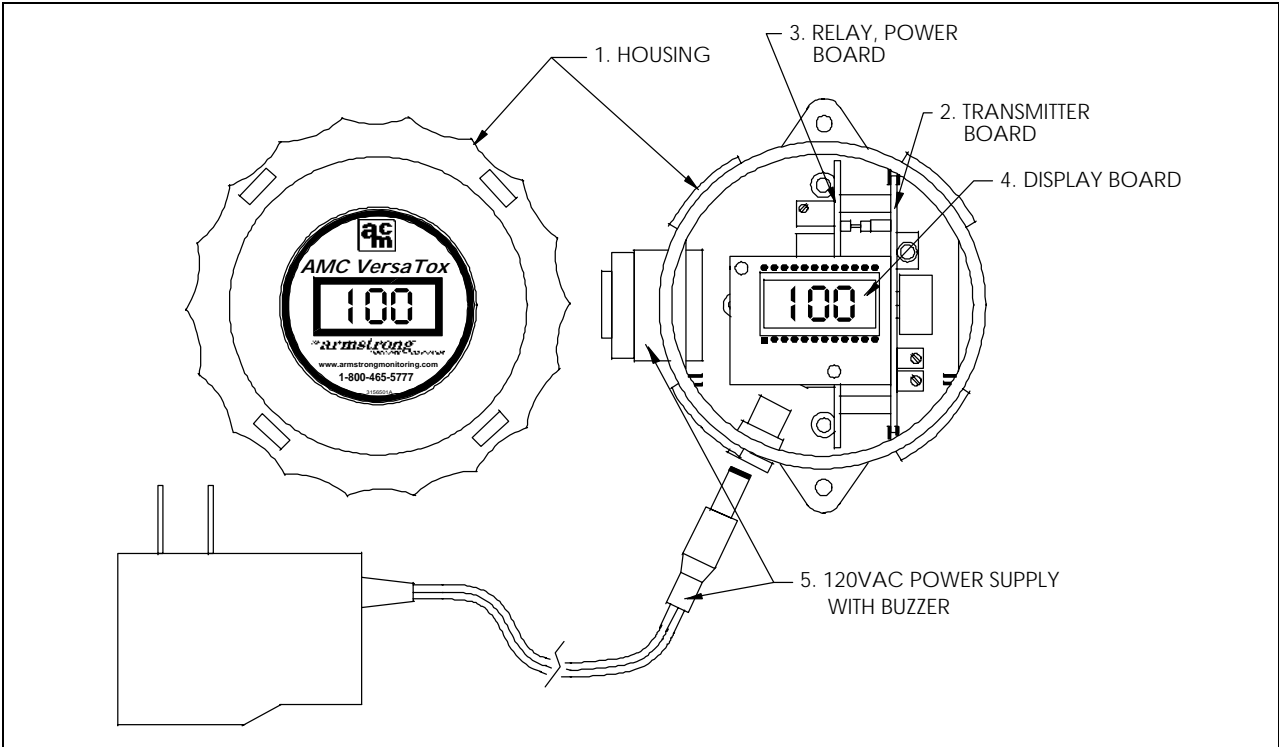


Figure 3-1 AMC-VersaTox Feature Overview

TRANSMITTER BOARD:

- 6. GAS SENSOR: Electrochemical cell, factory calibrated
- 7. SPAN ADJUST TRIMMER: Span signal output adjustment
- 8. ZERO ADJUST TRIMMER: Zero signal output adjustment
- 9. COMMON TEST POINT: Reference point to measure signal
- 10. SIGNAL TEST POINT: Measurement point for the output signal from the sensor
- 11. CAL JACK: Used during calibration to connect Remote Calibration Lead
- 12. 2-WIRE 4-20mA TERMINAL BLOCK: (2-WIRE VERSION ONLY) Connection point for wiring to the monitor, 2-wire transmitter only

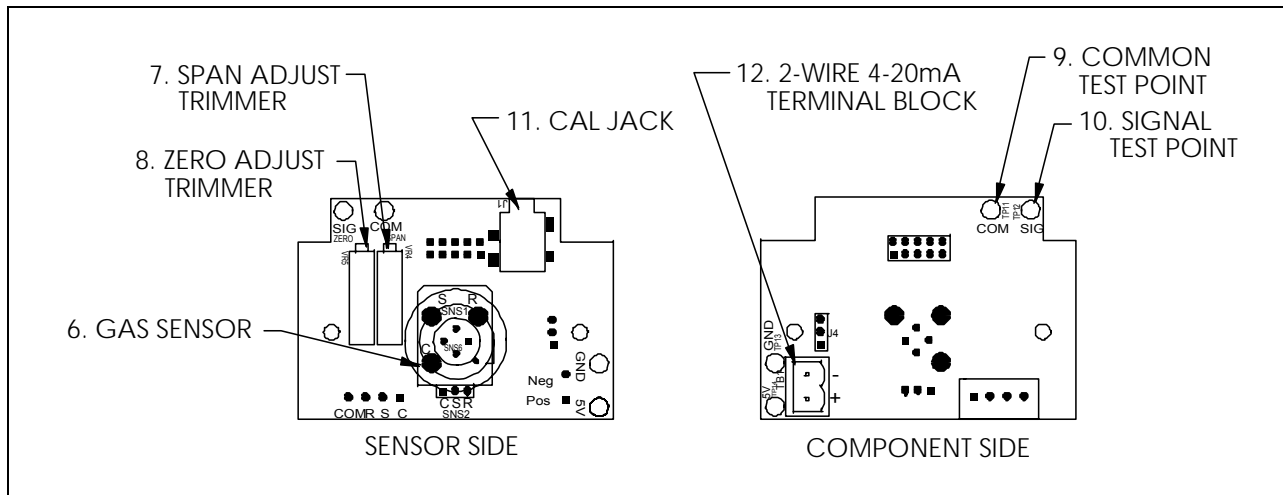


Figure 3-2 AMC-VersaTox Feature Transmitter Board

RELAY, POWER BOARD (OPTIONAL):

- 13. POWER TERMINAL BLOCK: Connection point for wiring to the monitoring device and/or power source, AC or DC
- 14. SIGNAL TEST POINT: Measurement point for the output signal of transmitter board
- 15. GROUND TEST POINT: Reference point to measure signal and alarm
- 16. ALARM TEST POINT: Measurement point for setting the alarm relay
- 17. ALARM ADJUST TRIMMER: Alarm relay set point adjustment
- 18. ALARM RELAY TERMINAL BLOCK: Connection point for wiring relay contacts

19. ALARM RELAY SELECTOR: Allows selection between NO and NC alarm relay contacts

20. ALARM RELAY: Relay that is activated when the alarm set point has been achieved

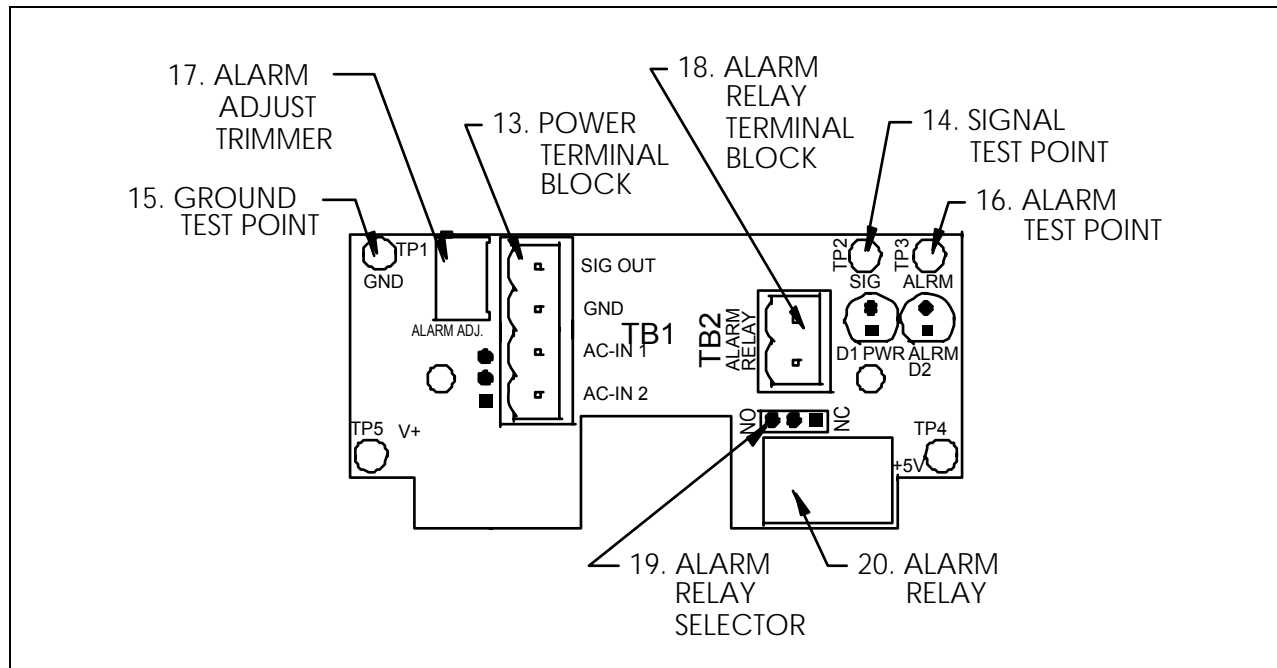


Figure 3-3 AMC-VersaTox Feature Relay, Power Board

DISPLAY (OPTIONAL):

21. LCD DISPLAY: Gas concentration 3 digit display

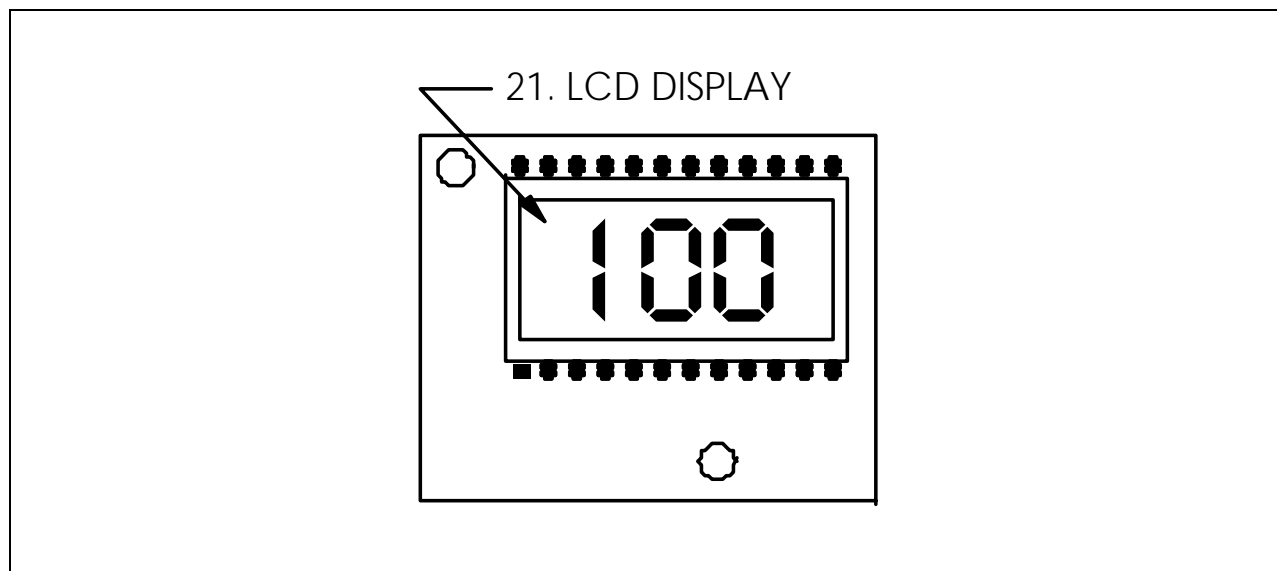


Figure 3-4 AMC-VersaTox Feature Display Board

120VAC POWER SUPPLY WITH BUZZER (OPTIONAL):

- 22. 120VAC PLUG IN ADAPTER: Plug in power supply with 120VAC primary and low voltage DC secondary
- 23. BUZZER: Piezo buzzer controlled by the alarm relay
- 24. JACK: Connects the plug in power supply to the AMC-VersaTox

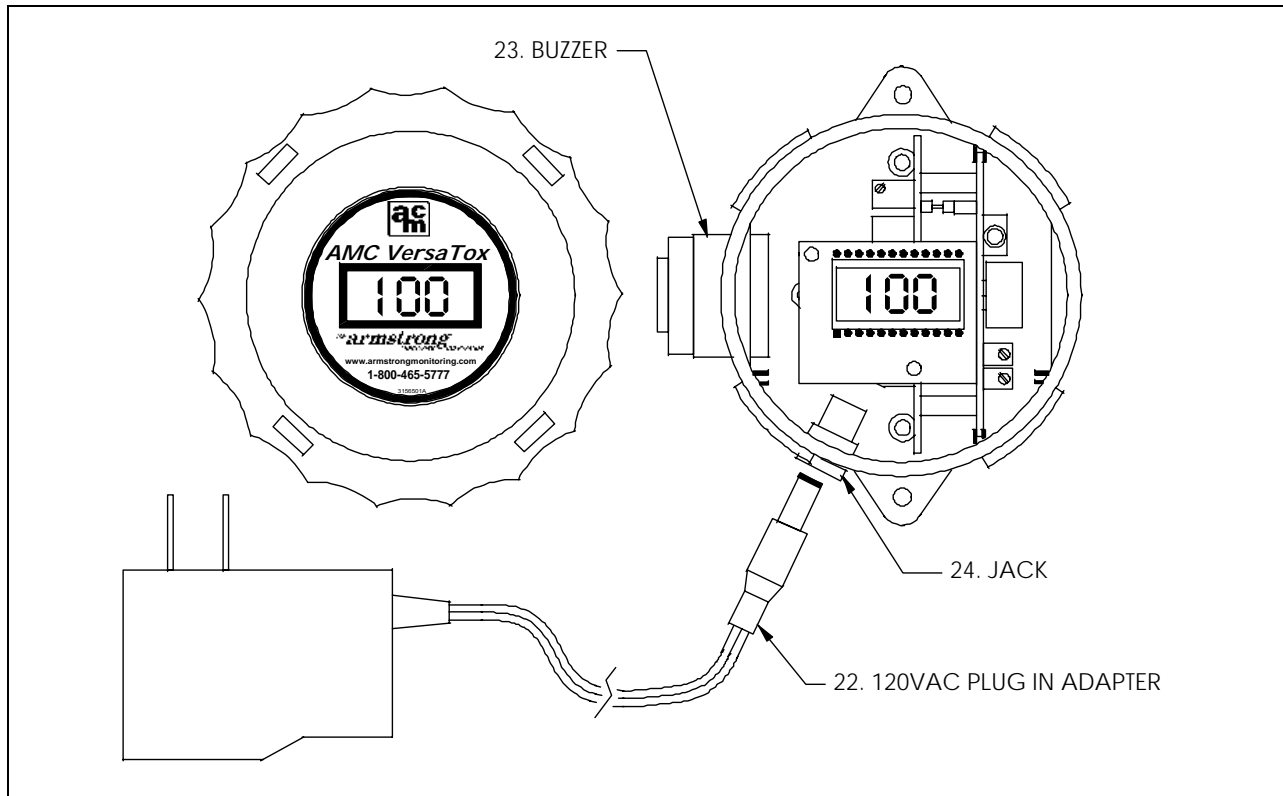


Figure 3-5 AMC-VersaTox Feature 120VAC Power Supply with Buzzer

4 INSTALLATION

The installation of the AMC-VersaTox is very important as the operational quality is a direct result of the quality of the installation. The following sections provide guidelines for installation; location and mounting, wiring, and cable selection.

4.1 LOCATION AND MOUNTING

Mount the AMC-VersaTox sensor/transmitter on a solid, non-vibrating surface or structure in an area where the ambient concentration of gas is not directly affected by the presence of clean air supply, ventilation systems, or blockage by surrounding articles and sources of interference gases. Please, refer to local codes for sensor/transmitter installation information. The installer is required to provide any mounting hardware that may be required. The AMC-VersaTox sensor/transmitter circuit board(s) with sensor is removable from the enclosure for ease of installation.

Notes:

Mount enclosure with the sensor located as shown in Figure 4-1 and Figure 4-2. This will ensure correct orientation. Where possible it is recommended to turn off supply power before removing or replacing the transmitter or sensor.

4.1.1 CONDUIT MOUNTING

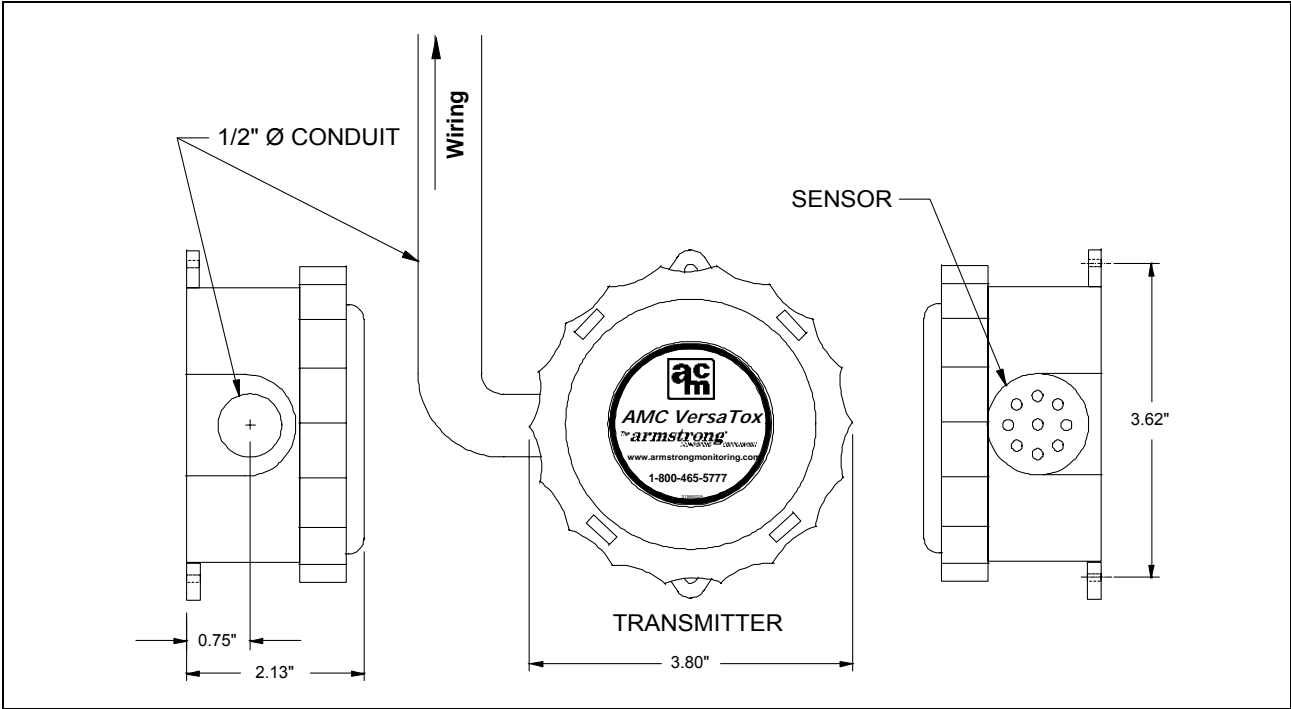


Figure 4-1 Conduit Mounting

4.1.2 120VAC POWER SUPPLY WITH BUZZER

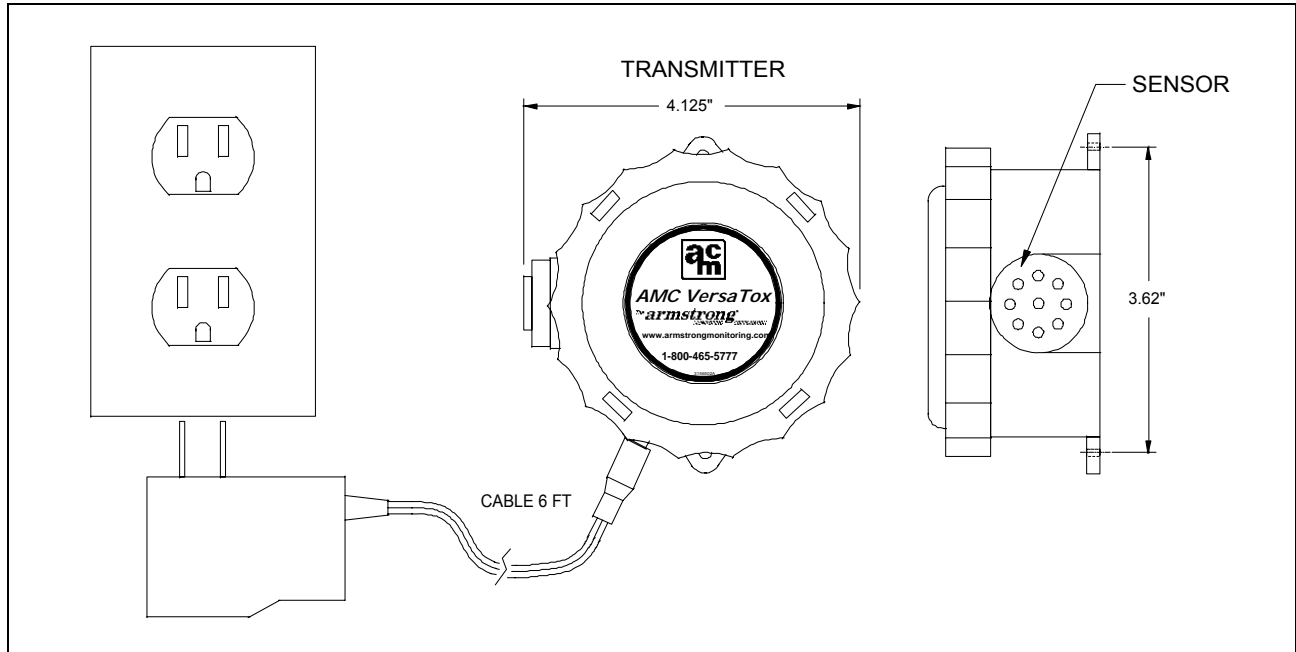


Figure 4-2 120VAC Power Supply with Buzzer Mounting

4.1.3 DUCT MOUNTING (OPTIONAL)

NOTE: The duct mount version is available for CO gas detection only.

The duct mount option is used to divert a portion of the duct airflow through the AMC-VersaTox. The difference between the total pressure in the duct and outside the duct propels the sample stream. The duct mount option can only be used in positive pressure ducts and is designed to be directly mounted to the outside of the duct. The sampling tube is attached to the AMC-VersaTox housing and inserted into the duct. The duct mount is assembled assuming the duct air flow direction from left to right. If the opposite direction is required, remove the duct mounting nut inside the housing, rotate the sampling tube 180° and reinstall the nut. Mount the sensor/transmitter in a straight section of duct where the airflow is unrestricted and does not interfere with any internal duct components. It is necessary to seal the conduit entry with Duceal or with another sealant.

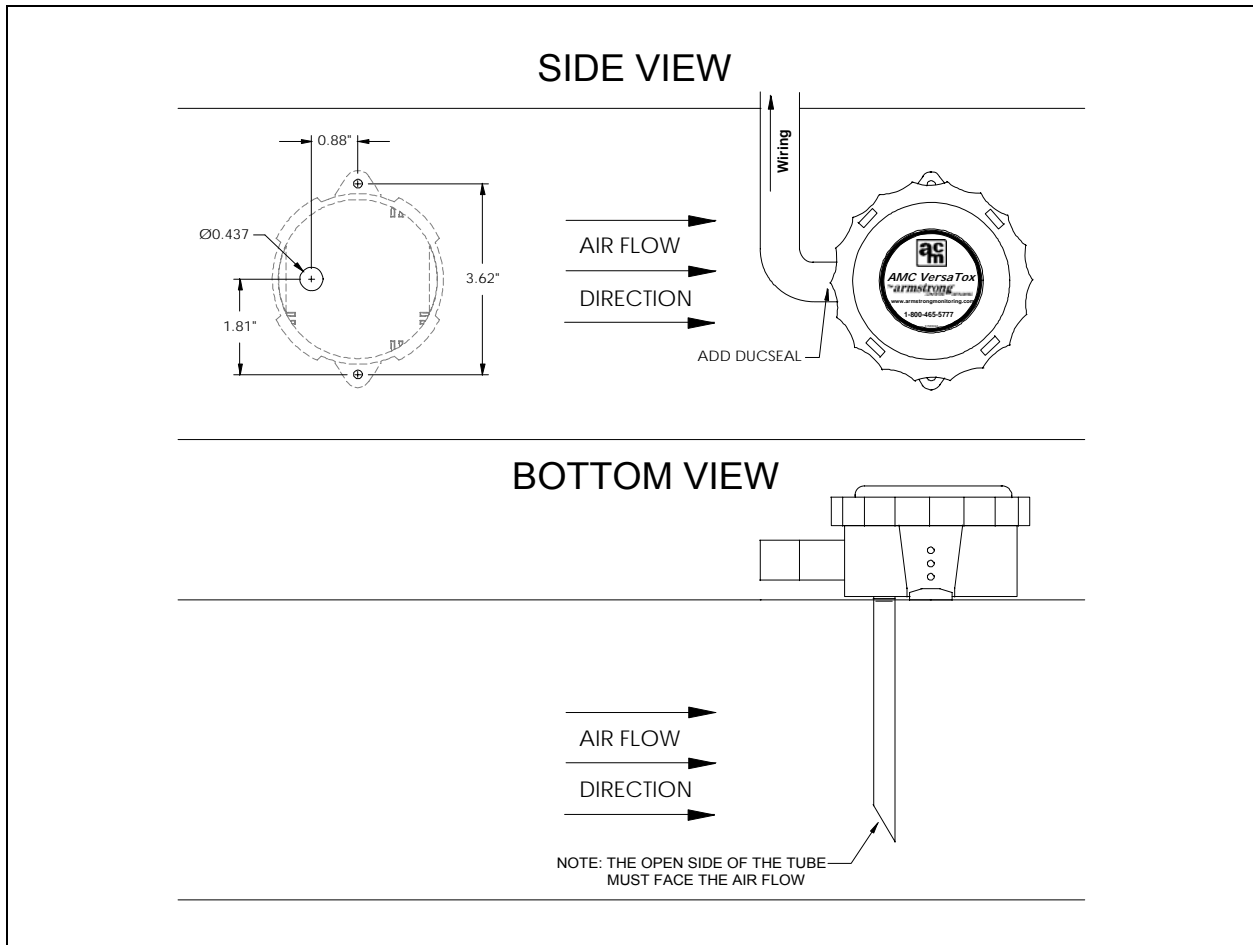


FIGURE 4-3 Duct Mounting Option

4.2 WIRING

The AMC-VersaTox has two main wiring systems: the monitor and power supply wiring and the relay wiring systems.

A two conductor, shielded cable is recommended to transmit the 4-20mA signal from the AMC-VersaTox sensor/transmitter to the monitor. In the 2-wire version, the same wire pair is used for both signal and power due to the low power current loop design of the AMC-VersaTox. For best signal transmission and maximum noise rejection, it is recommended to run the cable through steel conduit (the cable shield must be chassis grounded at the monitor or power supply).

4.2.1 MONITOR AND POWER SUPPLY WIRING

The AMC-VersaTox has different power inputs and in turn has different power and signal wiring schemes. The following sections describe each of these schemes.

4.2.1.1 DC Transmitter (1 board) to AMC Monitor

The simplest version of the AMC-VersaTox is the 2-wire transmitter with optional display. The AMC-VersaTox sensor/transmitter should be connected to an AMC monitor, as shown in the following figure, by a twisted pair shielded cable for the conduction of the 4-20 mA signal.

See the following connections going from the AMC-VersaTox to an AMC monitor:
 AMC-VersaTox Terminal (+) ----- goes to ----- AMC Monitor Channel Terminal (+)
 AMC-VersaTox Terminal (-) ----- goes to ----- AMC Monitor Channel Terminal (SIG)

For wiring selection, see section 4.3.1.

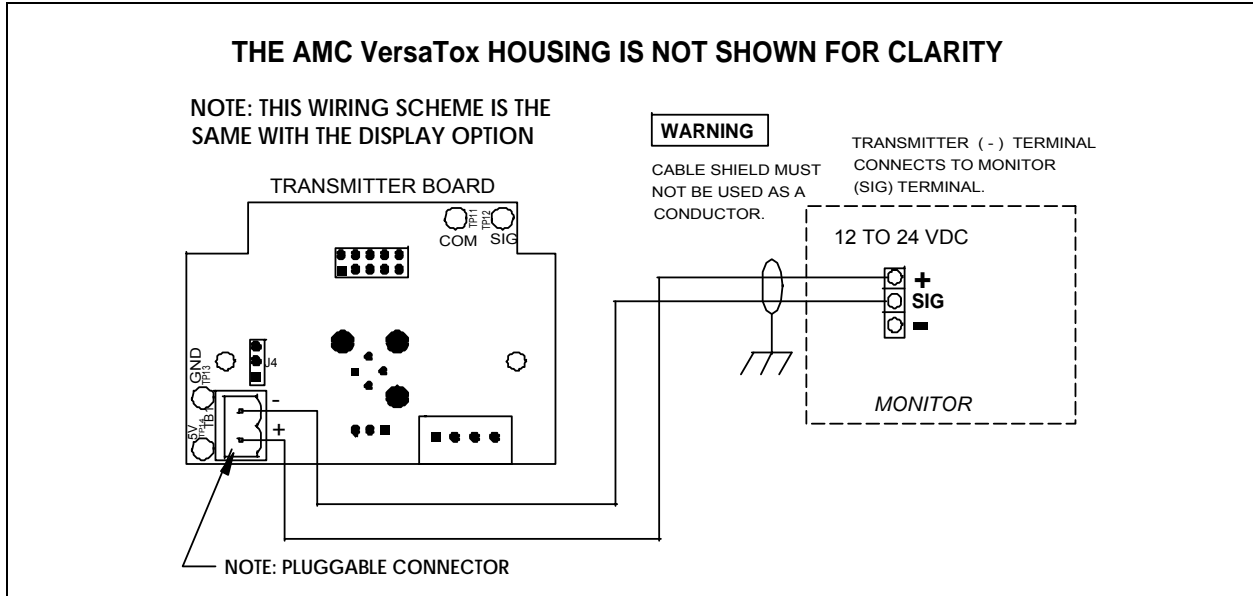


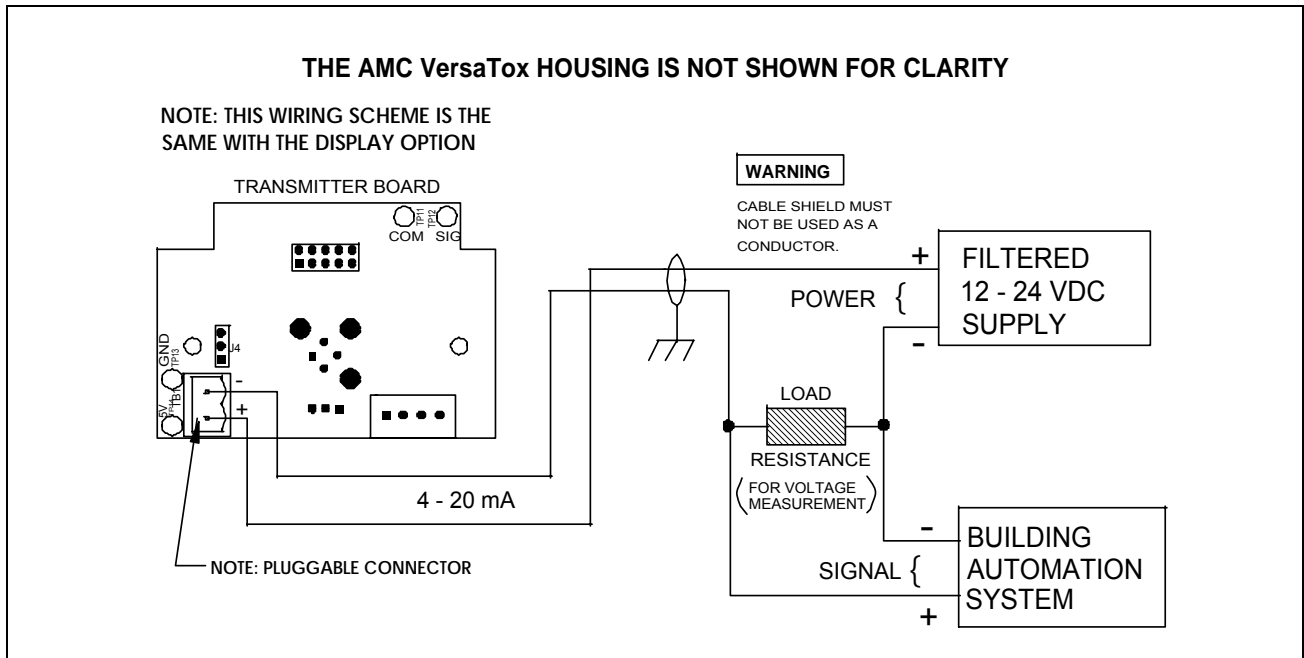
FIGURE 4-4 DC Transmitter (1 board) to AMC Monitor

4.2.1.2 DC Transmitter (1 board) to BAS

The signal output of the AMC-VersaTox sensor/transmitter is a 4-20 mA DC current, therefore it can be connected to BAS (building automation system) equipped with an analog-to-digital converter if required.

In many cases a load resistor is required to convert the 4-20 mA current signal to a voltage signal, as shown in the following figure. Please refer to your BAS for instructions on how to connect a 4-20 mA loop transmitter.

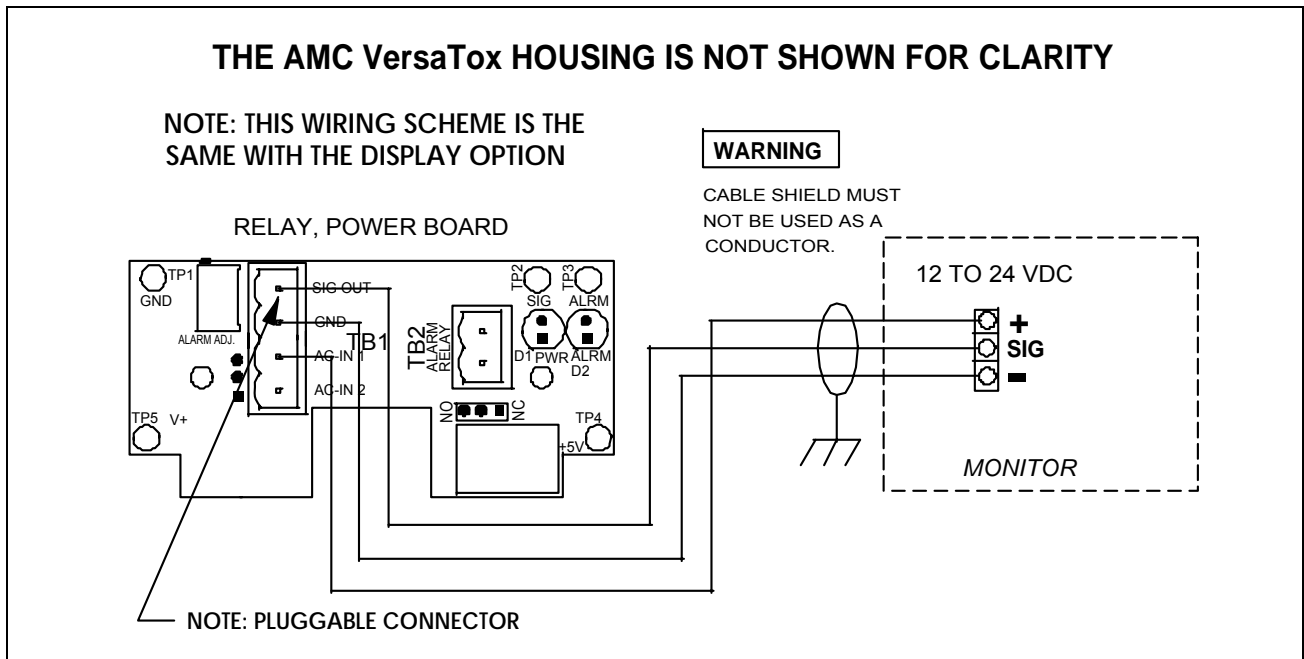
For wiring selection, see section 4.3.1.



4.2.1.3 DC Transmitter with Relay to AMC Monitor (Optional)

The AMC-VersaTox with relay, power board option requires a 3 wire connection when interfacing to an AMC monitor. This additional board also has an optional relay, for relay wiring see section 4.2.2. The AMC-VersaTox with optional display and relay should be connected as shown in the following figure, by three twisted wires in a shielded cable.

For wiring selection, see section 4.3.2.



4.2.1.4 DC Transmitter with Relay to BAS with own Power Supply (Optional)

The AMC-VersaTox with relay, power board option requires a 3 wire connection when interfacing to a BAS. This additional board also has an optional relay, for relay wiring see section 4.2.2. The AMC-VersaTox with optional display and relay should be connected as shown in the following figure, by three twisted wires in a shielded cable.

For wiring selection, see section 4.3.2.

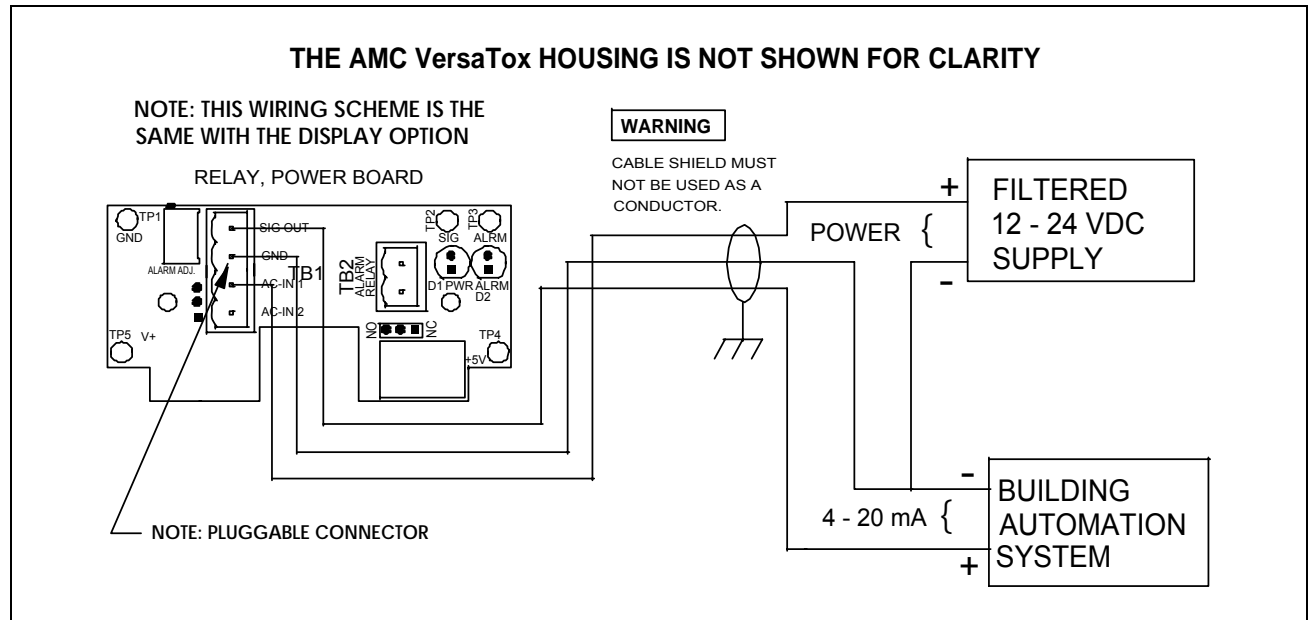


FIGURE 4-7 DC Transmitter with Relay to BAS with own Power Supply

4.2.1.5 DC Transmitter with Relay to BAS without own Power Supply (Optional)

The AMC-VersaTox with relay, power board option requires a 4 wire connection when interfacing to a BAS. This additional board also has an optional relay, for relay wiring see section 4.2.2. The AMC-VersaTox with optional display and relay should be connected as shown in the following figure, by four twisted wires in a shielded cable.

For wiring selection, see section 4.3.2.

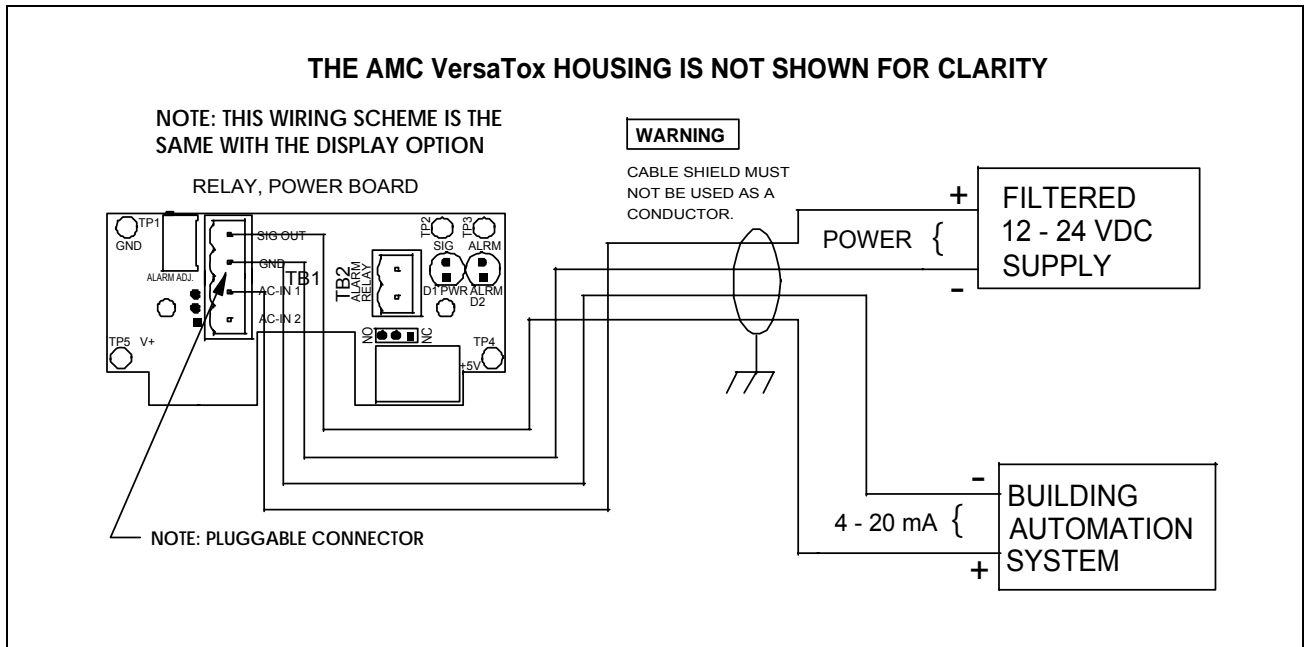


FIGURE 4-8 DC Transmitter with Relay to BAS without own Power Supply

4.2.1.6 DC Transmitter with relay to Power Supply only (Optional)

The AMC-VersaTox with relay, power board option requires a 2 wire connection when interfacing to a DC power supply. This additional board also has an optional relay, for relay wiring see section 4.2.2. The AMC-VersaTox with optional display and relay should be connected as shown in the following figure, by a twisted pair of wires in a shielded cable.

For wiring selection, see section 4.3.2.

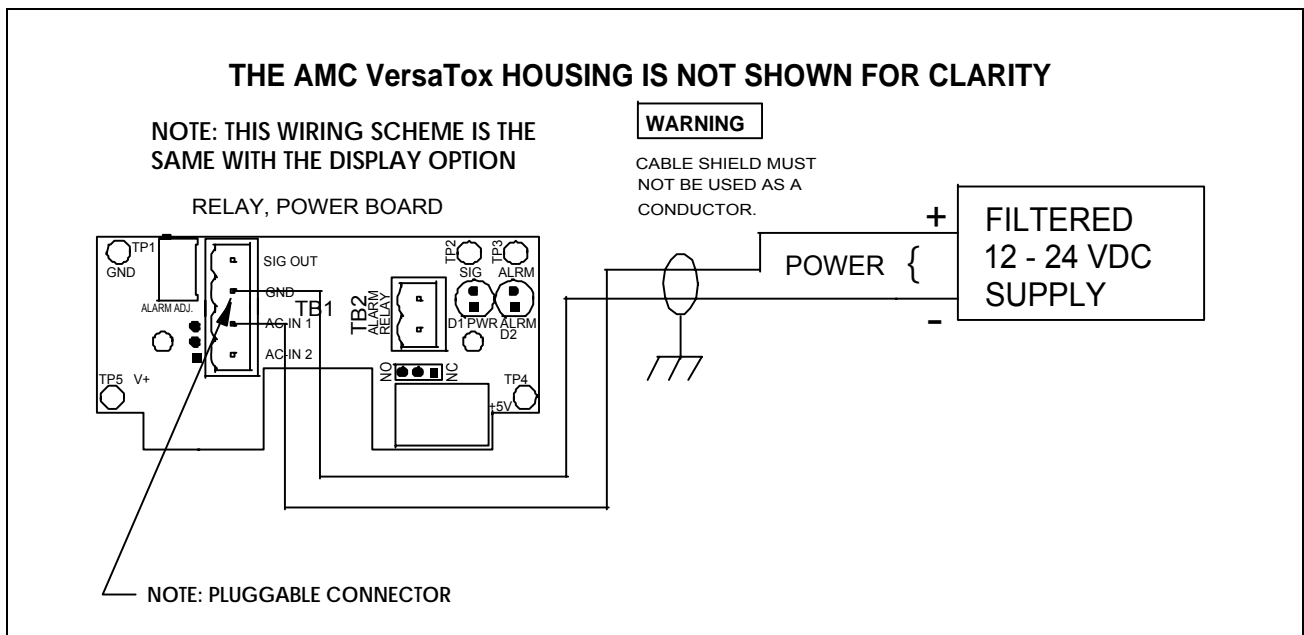


FIGURE 4-9 DC Transmitter with Relay to Power Supply

4.2.1.7 AC Transmitter with or without Relay to BAS (Optional)

The AMC-VersaTox can have a 4 wire connection to a BAS with the addition of the relay, power board. This additional board also has an optional relay, for relay wiring see section 4.2.2. The AMC-VersaTox with optional display and relay should be connected as shown in the following figure, by four twisted wires in a shielded cable.

For wiring selection, see section 4.3.3.

NOTE: A separate transformer must be employed with each AMC-VersaTox.

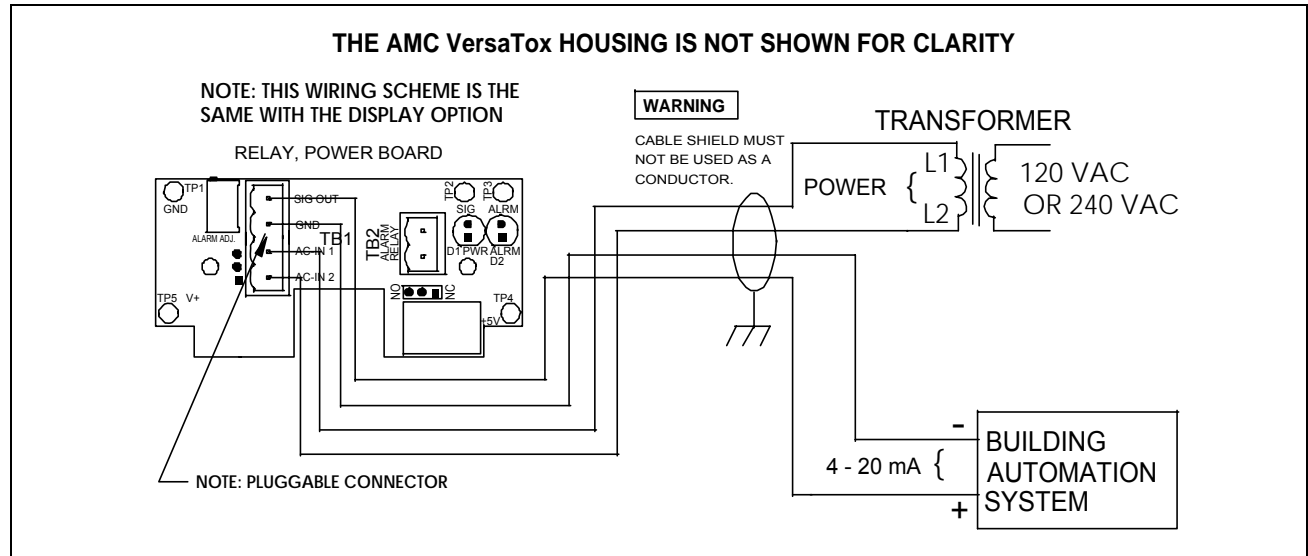


FIGURE 4-10 AC Transmitter with or without Relay to BAS

4.2.1.8 AC Transmitter with or without Relay to Transformer only (Optional)

The AMC-VersaTox can have a 2 wire connection to a transformer with the addition of the relay, power board. This additional board also has an optional relay, for relay wiring see section 4.2.2. The AMC-VersaTox with optional display and relay should be connected as shown in the following figure, by a twisted pair of wires in a shielded cable.

For wiring selection, see section 4.3.3.

NOTE: A separate transformer must be employed with each AMC-VersaTox.

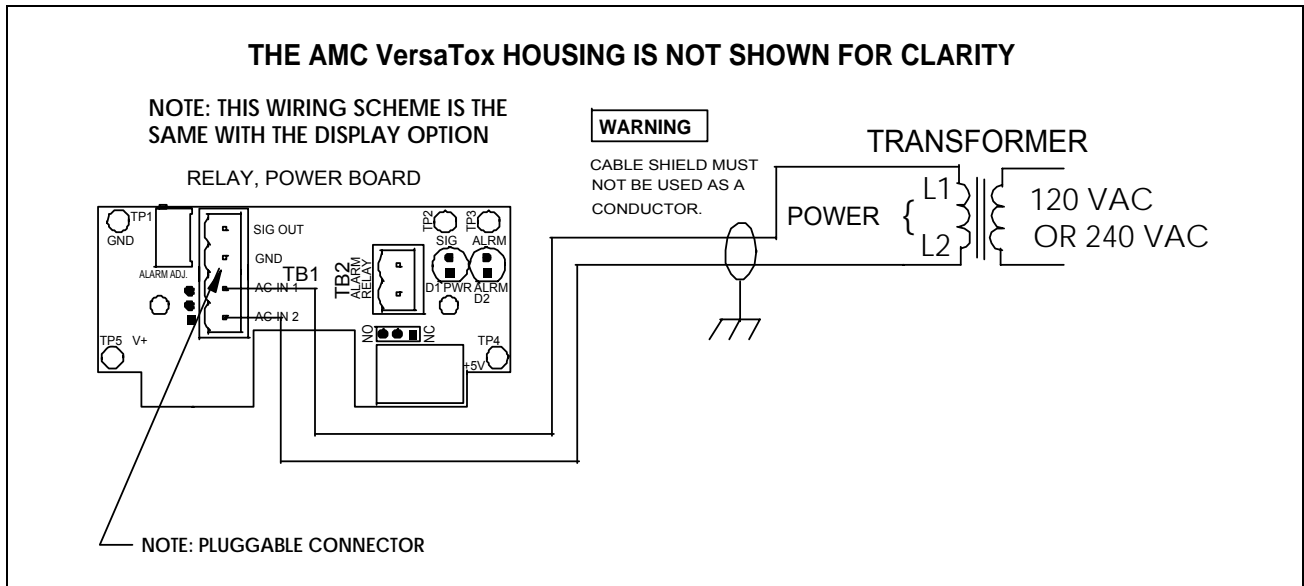


FIGURE 4-11 AC Transmitter with or without Relay to Transformer

4.2.1.9 120VAC Power Supply with Buzzer (Optional)

The AMC-VersaTox with optional display can have a 120VAC plug in power supply. With this power supply, the relay, power board is included and the relay is wired to control the buzzer. The internal wiring is shown in the following figure.

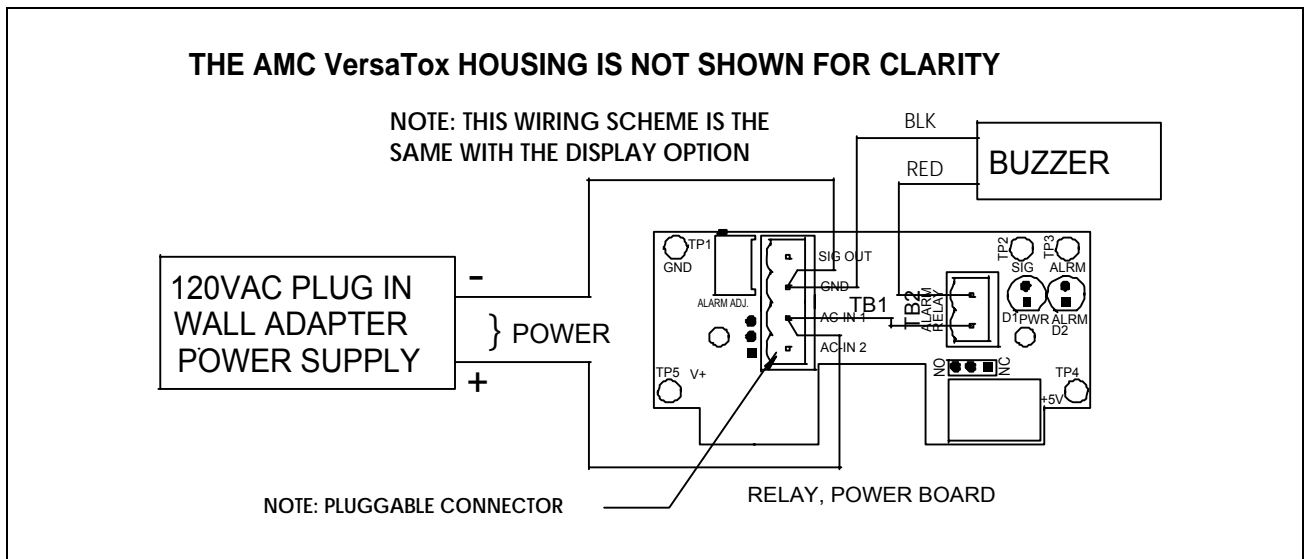


FIGURE 4-12 120VAC Power Supply with Buzzer

The optional BAS interface is shown in the following figure. For wiring selection, see to section 4.3.1 and refer to the curve on the graph that matches the plug in power supply output.

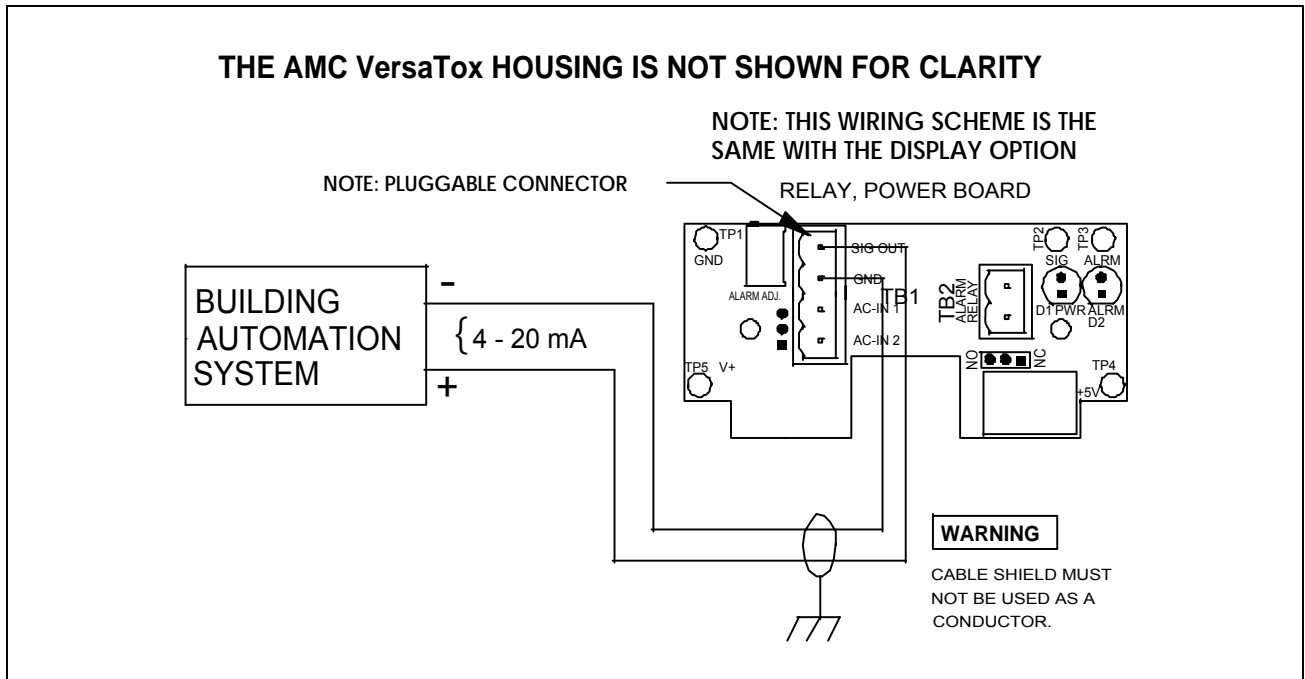


FIGURE 4-13 Optional BAS interface

4.2.2 RELAY WIRING (OPTIONAL)

When the optional Relay, Power board is added to the AMC-VersaTox, an optional SPST relay with a 2A @ 30VDC resistive contact rating is included on the board. The following figure shows the general relay wiring scheme. The contacts may be configured as normally-open (NO) or normally-closed (NC) using the alarm relay selector, see section 3 item 19. The alarm relay selector is a pin header with a moveable strap for selecting the contact configuration. There are two positions on the selector; move the strap to the center of the board for NO and to the edge of the board for NC.

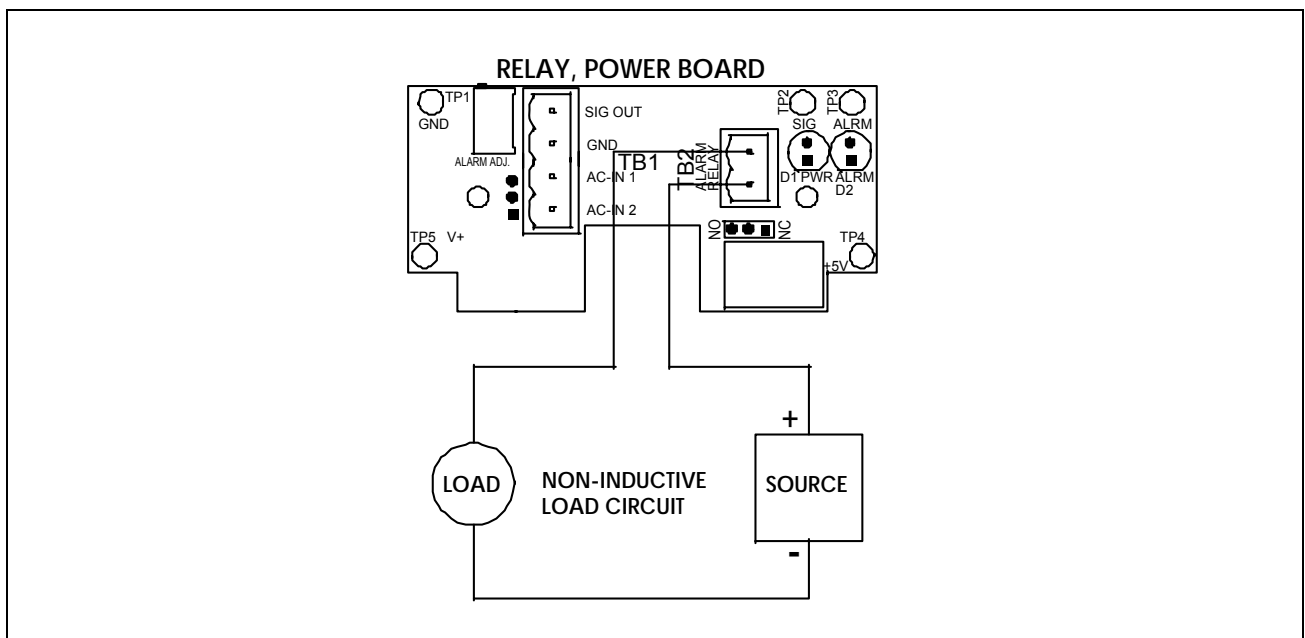


FIGURE 4-14 Relay Wiring

4.3 CABLE SELECTION

There are three occasions when cable selection is needed; they are explained in the following sub-sections.

4.3.1 2-WIRE 4-20 mA DC POWER LOOP

A two conductor, shielded cable is recommended to transmit the 4-20mA signal from the AMC-VersaTox sensor/transmitter to the monitor. The same wire pair is used for both signal and power due to the low power current loop design of the AMC-VersaTox. For best signal transmission and maximum noise rejection, it is recommended to run the cable through steel conduit (the cable shield must be grounded at the monitor or power supply).

The figure below is an aid for wire selection. There are three variables that determine the maximum cable length; wire gauge, power supply voltage, and load resistor. The purpose of the load resistor is to convert the current signal into a voltage signal. Three common load resistors, 100Ω, 250Ω, 500Ω are used in the graph with 12 and 24VDC power supplies and a wire gauge range from 22 to 16 AWG. All the curves include a safety margin of 0.5VDC. The user must take responsibility for the selection of wire gauge, power supply voltage and load resistor used as the values shown may not be suitable for all applications.

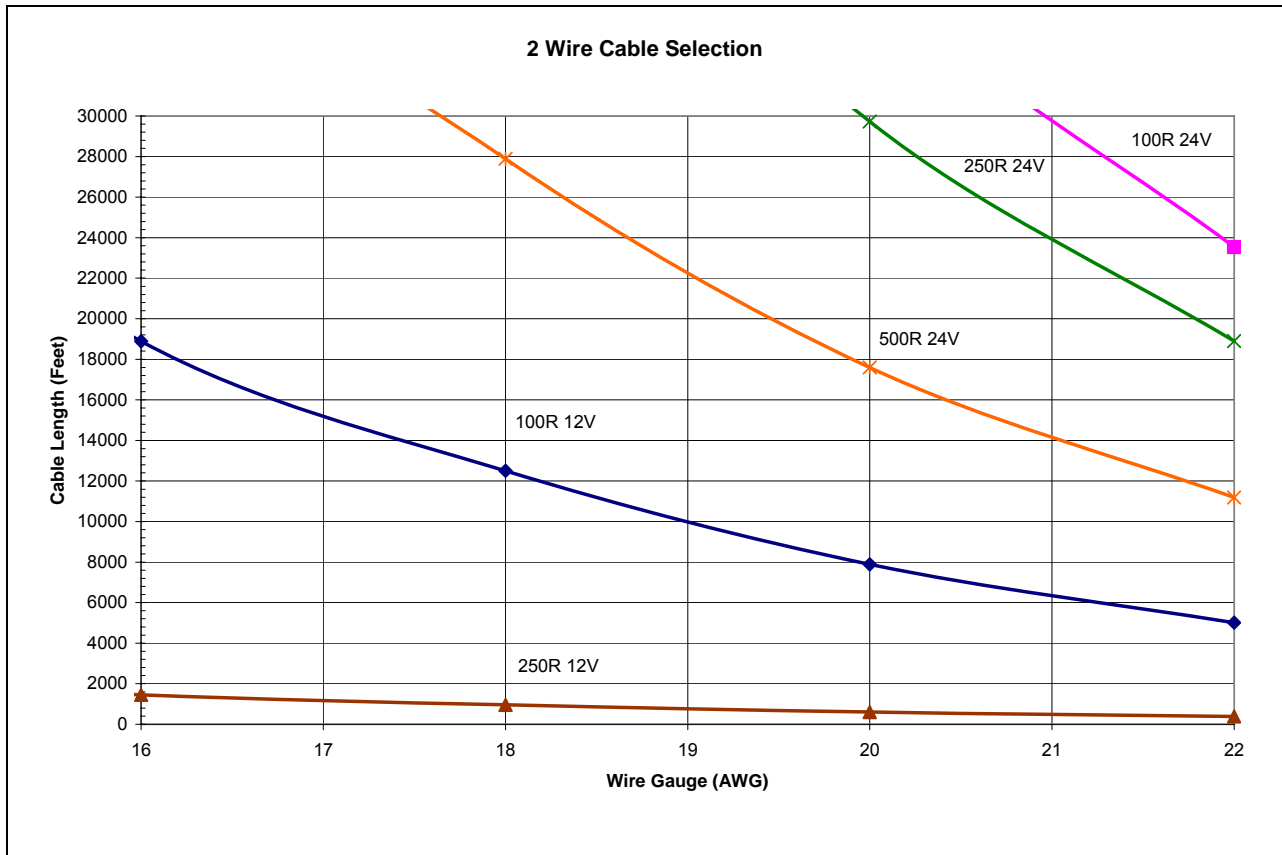


Figure 4-15 2-Wire Cable Selection Graph (Based & $V_{SM} = .5 V$)

4.3.2 3 AND 4 WIRE DC POWER ONLY (OPTIONAL)

The figure below is an aid for wire selection. There are two variables that determine the maximum cable length; wire gauge and power supply voltage. The graph contains 12 and 24VDC power supplies and a wire gauge range from 22 to 16 AWG. All the curves include a safety margin of 0.5VDC. The user must take responsibility for the selection of wire gauge and power supply voltage used as the values shown may not be suitable for all applications.

Note: The maximum 4-20mA length is much longer than the DC power wire lengths.

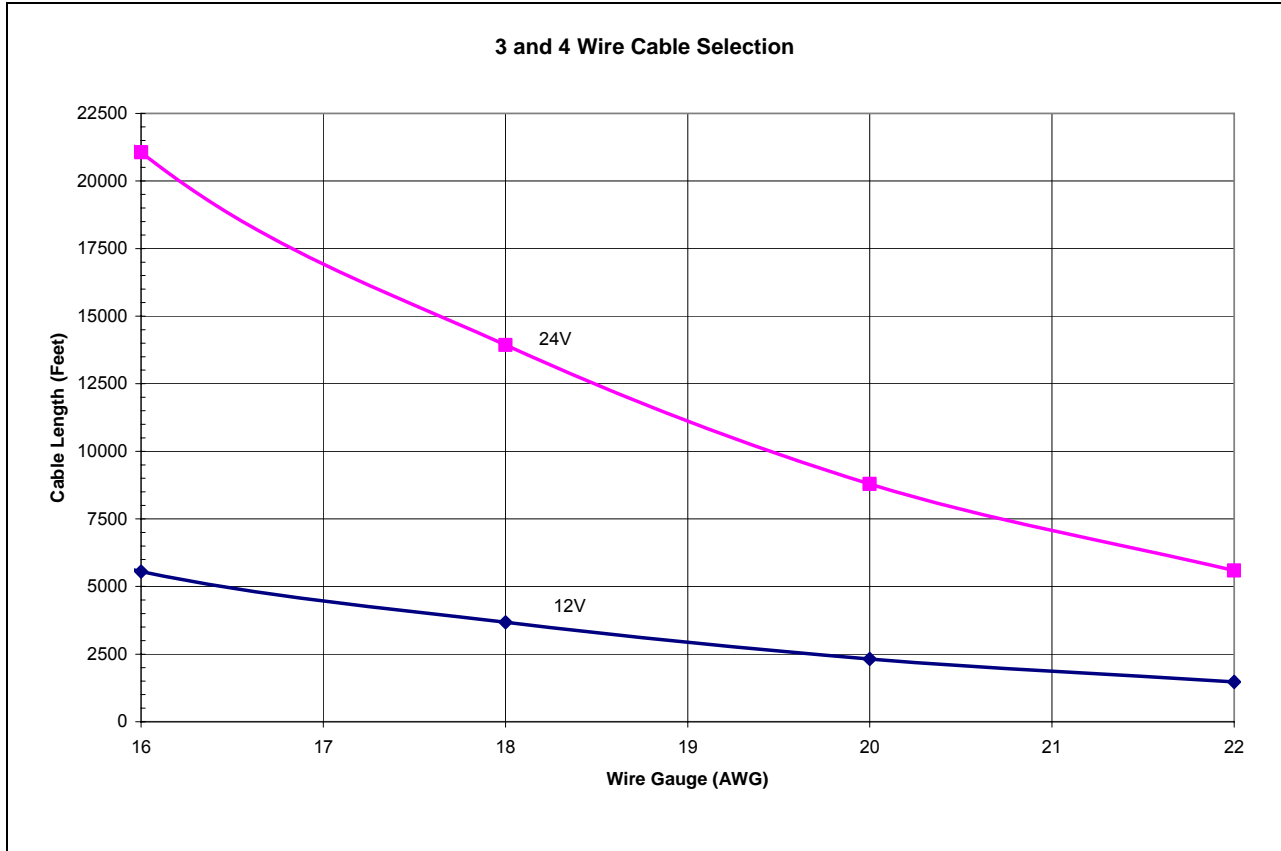


Figure 4-16 3 and 4 Wire Cable Selection Graph (Based & $V_{SM} = .5 V$)

4.3.3 4 WIRE AC POWER ONLY (OPTIONAL)

The AC transformer must be employed with every AMC-VersaTox for proper operation. The maximum wire length for 4-20mA is quite long and is not discussed in this manual.

5 OPERATION AND CALIBRATION

This section describes how the functionalities of the AMC-VersaTox are operated and performed. There are three sections that follow.

5.1 OPERATION

The operation of this product is quite straight forward and user friendly. The operation is divided into three main sections discussed below.

5.1.1 TRANSMITTER

The AMC-VersaTox sensor/transmitter is factory calibrated for the gas listed in the Product Information (Section 2) at the beginning of this manual. The sensor/transmitter should not require re-calibration when first installed and powered up, but a test for correct operation is recommended after a stabilization period of 30 minutes.

In clean air, after the stabilization period, the transmitter should be sending a signal of approximately 4 mA to the monitor or controller (except oxygen). Although the electrochemical sensors are very selective, there are some interference gases, which can cause a response from the sensor. In the case of large signal variations (in a clean air environment), check for an installation problem or the possibility of an interference gas being present.

5.1.2 RELAY, POWER BOARD (OPTIONAL)

In the DC 3 or 4 wire or the AC power interfaces, the relay, power board is required and it also contains the optional relay. The power LED indicates that the board is powered on. The wiring for all the variances are described in sections 4.2.1.3 to 4.2.1.9 and the wiring for the relay is found in section 4.2.2. The relay has a user selectable alarm trip point; see section 5.3 for setup instructions. Once the detected gas concentration goes over the selected alarm trip point, the relay is energized and the alarm LED is illuminated. The relay will only go out of alarm when the gas concentration is below the trip point. The alarm trip point average window size is $\pm 2.5\%$ of the selected trip point. This is done so the relay is not switching on and off when the gas concentration is around the trip point. The version of the AMC-VersaTox with the 120VAC plug in power supply is equipped with a factory installed relay controlled buzzer.

5.1.3 DISPLAY BOARD (OPTIONAL)

The AMC-VersaTox is available with an optional display. The display depicts the gas concentration with a 2 second delay in the assigned engineering units.

At power up, the display runs through the following sequence:

- Indicates the software version
- Performs a segment test by counting from 0 to F for each of the three digits
- Displays the configured range
- Displays the detected level

Again, it is recommended to have a 30 minute stabilization period before a test for correct operation is performed.

Note:

When the gas concentration exceeds the calibrated range then the display will alternate between the reading value and the letters “OFL” for overflow.

5.2 CALIBRATION

This calibration procedure is suitable for all versions of the AMC-VersaTox.

Every AMC-VersaTox sensor/transmitter is factory calibrated, so each unit should be ready for operation after installation and a 30 minute stabilization time.

Subsequent calibration is required as a part of regular maintenance, and when replacing the sensor. See the Maintenance section of this manual for the recommended calibration schedule.

Caution:

**- Only qualified personnel should perform the actual calibration.
- Users new to gas calibration are advised to consult with Armstrong Monitoring**

The Armstrong Monitoring Corporation offers the following calibration plans:

1. Factory pre-calibrated replacement sensor/transmitter units
2. On site installation and calibration by Armstrong Monitoring
3. On site calibration by Armstrong Monitoring
4. Training by Armstrong Monitoring
5. Extended warranty calibration program

5.2.1 ON SITE CALIBRATION EQUIPMENT REQUIRED

For qualified personnel, the following is a recommended list of calibration equipment required.

- A digital multi-meter with ranges of 20.0 mA or more and 200 mV or more.
- A “Remote Calibration Lead” (P/N 2900-01) for the above meter (available from AMC)
- A set of “clip on” type test leads for the above meter
- Miniature screwdriver trimmer adjustment tool
- Calibration adapter, available from AMC
- Zero & Span gases (contact AMC for information)
- Clean, low static cloth or tissue to cover sides of sensor during calibration

5.2.2 CALIBRATION PROCEDURE

The transmitter is equipped with a remote calibration feature allowing for one-man calibration at the transmitter location. The transmitter output is measured using the plug-in type “Remote Calibration Lead”. In most cases it is only Zero and Span adjustments that are made in field calibrations.

Note:

The calibration procedure may cause false alarm and/or signal loss to the monitor. Appropriate precautions may be required.

Refer to Figure 5.1 to perform the following calibration procedure:

- 1) Remove cover from transmitter housing.
- 2) Plug in “clip on” type test leads fully into jacks on multi-meter and clip onto the edge of the transmitter board on the test points COM TP11 and SIG TP12 as shown in figure.
- 3) Switch-ON multi-meter and select DC volts range to read greater than 1.00 VDC.
- 4) Cover the sides of sensor with a clean cloth or similar to prevent a draft on the sensor.
- 5) Apply a Zero gas sample or with the sensor in clean air, with a calibration adapter cup firmly and completely over the sensor opening on side of AMC-VersaTox for 2 minutes with a flow rate of 0.5 to 1 liters per minute.
- 6) After 2 minutes adjust the Zero trimmer for a stabilized zero reading of 0.00 VDC measured at the test points (TP11, TP12.) see Figure 5-1 (except oxygen).
- 7) Unplug test leads and connect “Remote Calibration Lead” to multi-meter. The BLACK lead to negative or common (-) and the RED lead to positive (+)
- 8) Insert plug end of “Remote Calibration Lead” fully into CAL jack on the transmitter.
- 9) Select DC milliamp range on the multi-meter to read greater than 20 mA full scale.
- 10) Apply the Span gas sample, with a calibration adapter cup firmly and completely over the sensor opening on side of AMC-VersaTox for 2 minutes with a flow rate of 0.5 to 1 liters per minute. The span gas sample need not be the full scale concentration but could be a fraction of this. Since the transmitter output range is 4-20 mA, a full scale concentration should register 20 mA after a few moments exposure. A half scale concentration, accordingly, should provide 12 mA and so on.
- 11) After 2 minutes adjust the Span trimmer for the correct Span current reading.

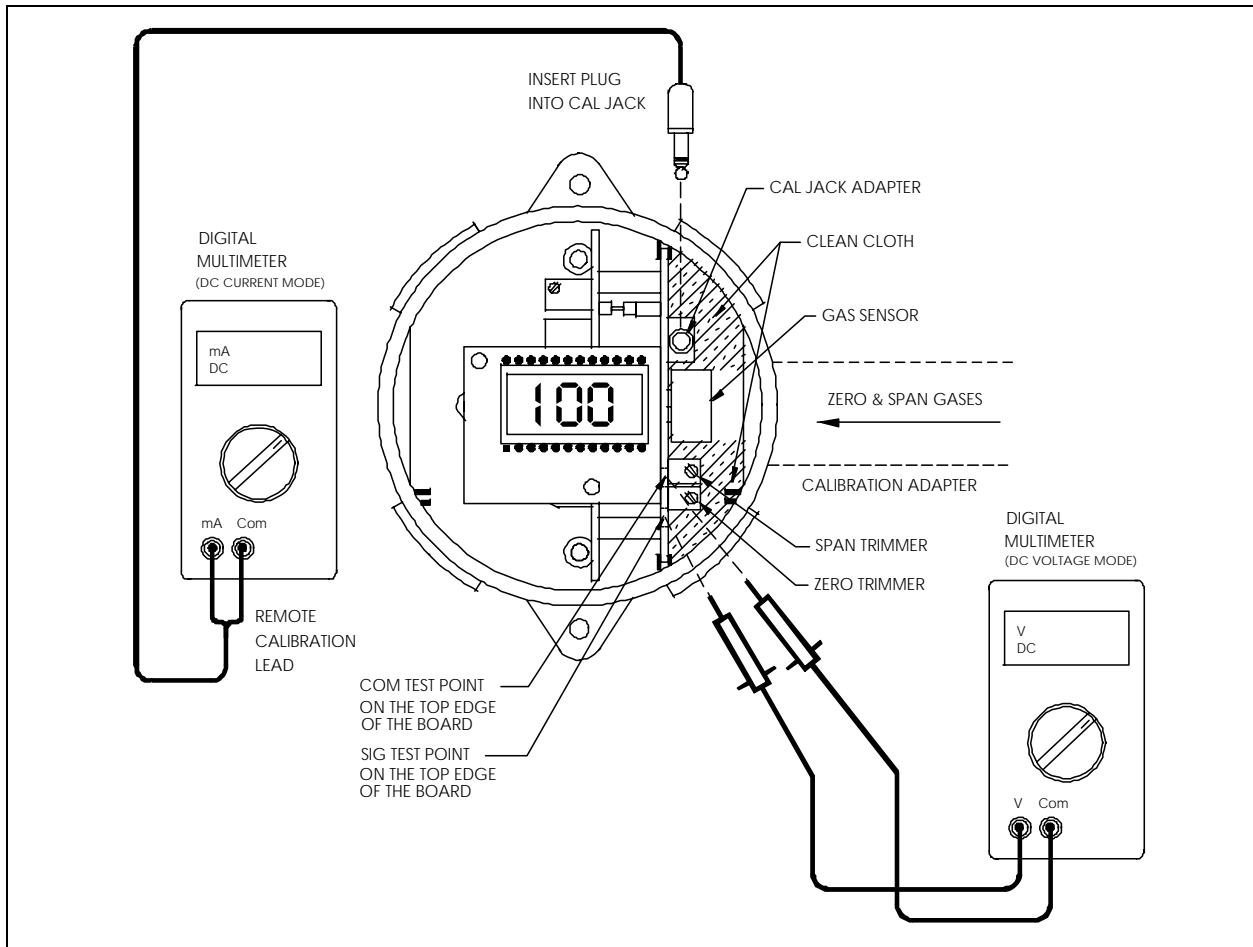


Figure 5-1 Calibration Procedure

5.3 ALARM RELAY TRIP POINT SETTING

The alarm relay trip point is user settable. The trip point is settable within the full range for the sensor. Zero concentration is 0.4 VDC and full scale concentration is 2.0 VDC. If the desired trip point is half scale, the alarm would be set at 1.2 VDC. Below are a table and a graph that depict commonly used PPM ranges.

Alarm Relay Trip Point Procedure

1. Determine the trip point in volts using either the table or graph below.
2. Switch-ON multi-meter and select DC volts range to read greater than 1.00 VDC.
3. Connect multi-meter to relay, power board as shown in Figure 5-3.
4. Adjust the Alarm Adjust trimmer to the desired trip point.

Alarm Relay Trip Point Selection Table

	Volts	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
100% Full Scale	2.0	1	3	10	25	50	100	200	300	400	500	999
75% Full Scale	1.6	0.75	2.25	7.5	18.75	37.5	75	150	225	300	375	749.25
50% Full Scale	1.2	0.5	1.5	5	12.5	25	50	100	150	200	250	499.5
25% Full Scale	0.8	0.25	0.75	2.5	6.25	12.5	25	50	75	100	125	249.75
0% Full Scale	0.4	0	0	0	0	0	0	0	0	0	0	0

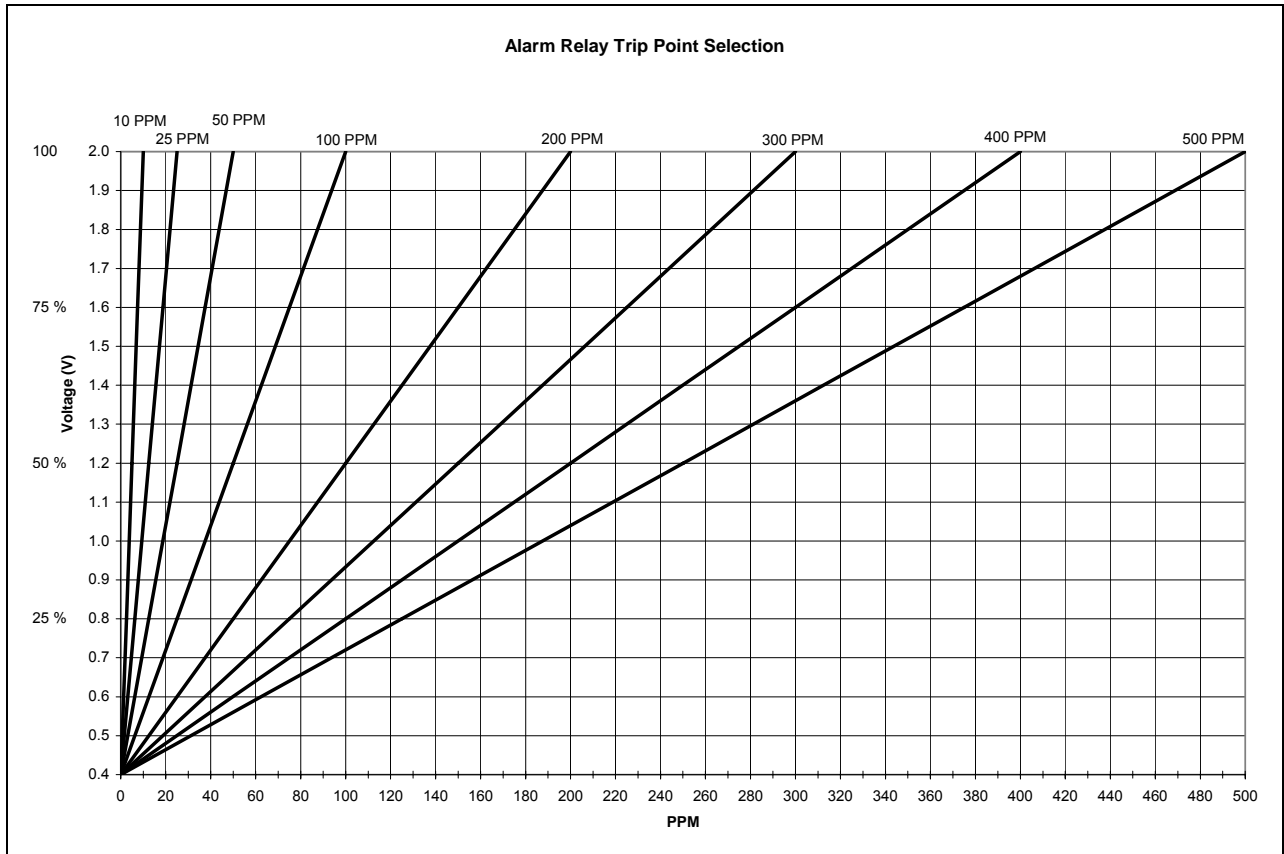


Figure 5-2 Alarm Relay Trip Point Section Graph

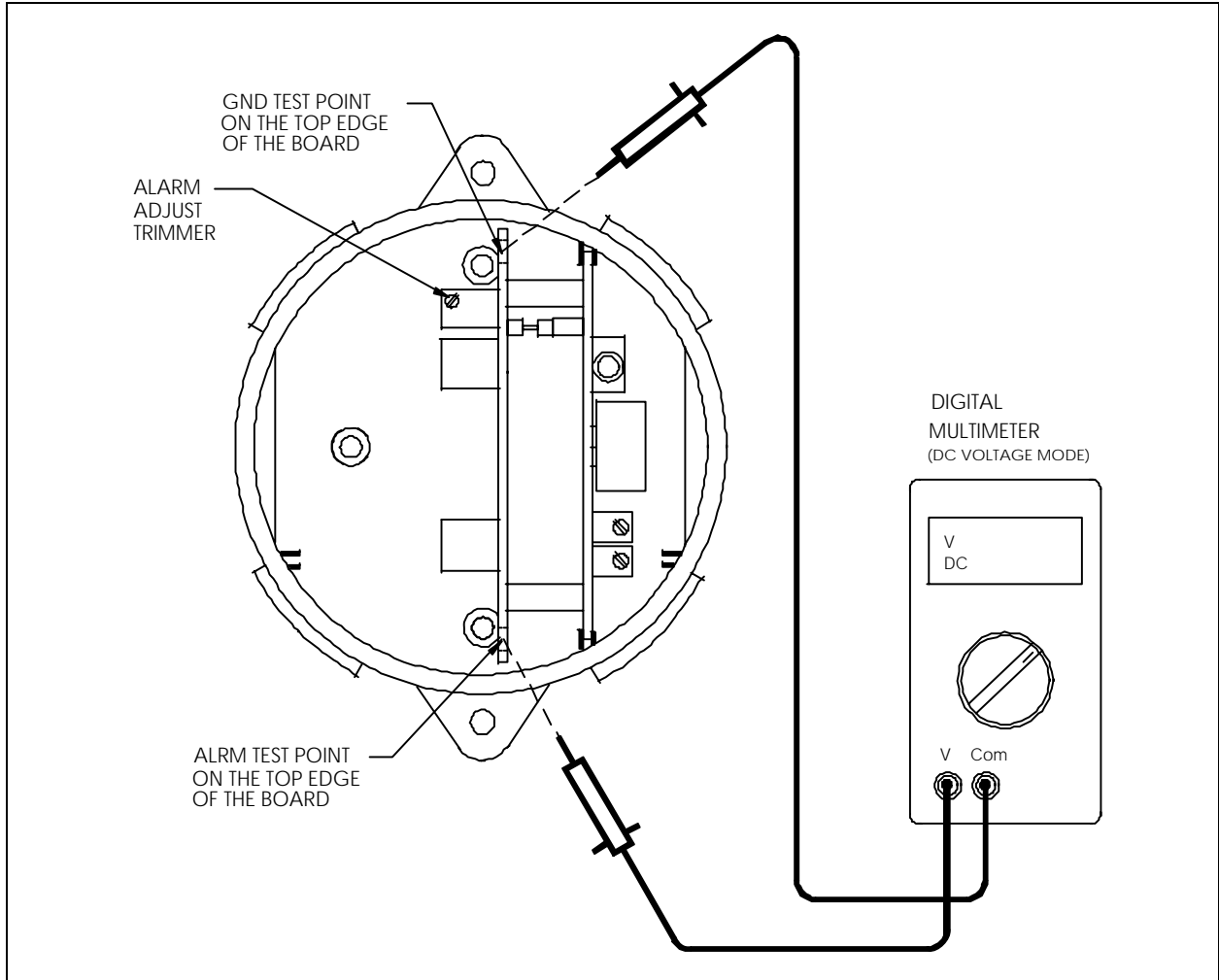


Figure 5-3 Alarm Relay Trip Point Procedure

6 MAINTENANCE

Maintenance is a very important activity that should be done at the proper time intervals, which are discussed below.

6.1 GENERAL

The AMC-VersaTox sensor/transmitter unit should be brushed or wiped as required, depending on the rate of accumulation of any dust or dirt.

To avoid sensor damage, the unit **MUST NOT** be submerged in any liquids. Hosing or splashing of the unit with any liquids must also be avoided.

6.2 SCHEDULED CALIBRATION

Scheduled calibration is critical in maintaining proper function of gas sensor/transmitters.

It is recommended that the AMC-VersaTox be calibrated a minimum of twice a year.

As mentioned, Armstrong Monitoring offers a number of different maintenance plans to suit your requirements see section 5.2.

6.3 SENSOR/TRANSMITTER REPLACEMENT

When its signal is greatly reduced or unstable, the sensor/transmitter replacement is required; see section 2.1 for replacement sensor P/N.

Please note that in some instances the sensor itself is not replaceable. The circuit card with the sensor is replaced, please contact the factory.

Caution:

It is recommended to turn off the power to the sensor/transmitter before replacing the board.

Note:

30 minutes is required for a new sensor to stabilize before calibration.