Guardian Airflow Monitor

Models 49850-00, 49850-01, 49850-02,
49850-03, 49850-05

INSTRUCTION MANUAL

Form 49841 Revision C - ECO 8826
Printed in U.S.A.

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Components Shipped

Carefully check the contents of the carton for damage that might have occurred in transit. Do not discard the carton or packaging material until all components have been checked against the following component list and the equipment has been installed and tested:

As shipped, the carton should contain the following:

Model 49850-00 - Protector Bypass/Auxiliary Air Models

Qty.	Part Number	Description
1	49839	Junction Box Assy.
1	49815	Base, Junction Box Assy.
1	49830	Printed Circuit Board Assy.
1	49571-03	Blower Harness
1	49822	Nameplate
1	49841	Instruction Manual
1 pkg.		Misc. mounting hardware

Model 49850-01 - Protector Integral Blower Models

Qty.	Part Number	Description
1	49839	Junction Box Assy.
1	49835	Support, Junction Box Assy.
1	49830	Printed Circuit Board Assy.
1	49571-03	Blower Harness
1	49822	Nameplate
1	49841	Instruction Manual
1 pkg.		Misc. mounting hardware

Components Shipped (Con't)

Model 49850-02 - Model 28

Qty.	Part Number	Description
1	49839	Junction Box Assy.
1	49838	Bracket
1	49836	Control Panel Assy.
1	49841	Instruction Manual
1 pkg.		Misc. mounting hardware

Model 49850-03 - Model 28 with Integral Blower

Qty.	Part Number	Description
1	49839	Junction Box Assy.
1	49571-03	Blower Harness
1	49836	Control Panel Assy.
1	49840	Support, Junction Box Assy.
1	49841	Instruction Manual
1 pkg.		Misc. mounting hardware

Model 49850-05 - Basic 47 & 70

Qty.	Part Number	Description
1	49839	Junction Box Assy.
1	49815	Base, Junction Box Assy.
1	49571-03	Blower Harness
1	49836	Control Panel Assy.
1	49841	Instruction Manual
1		Misc. mounting hardware

General Description

The Guardian Airflow Monitor has been designed to alert the fume hood operator of either low or high airflow conditions existing in their fume hood.

The monitor with optional relay kit, can also be used as a safety interlock device when installed on a Protector Auxiliary Air style hood to insure that potentially hazardous fumes are not forced from the hood in the event that the exhaust blower should fail and the supply blower continues to function.

With the optional relay kit, the monitor can also provide output data that can feed directly to your building systems or remote alarm location.

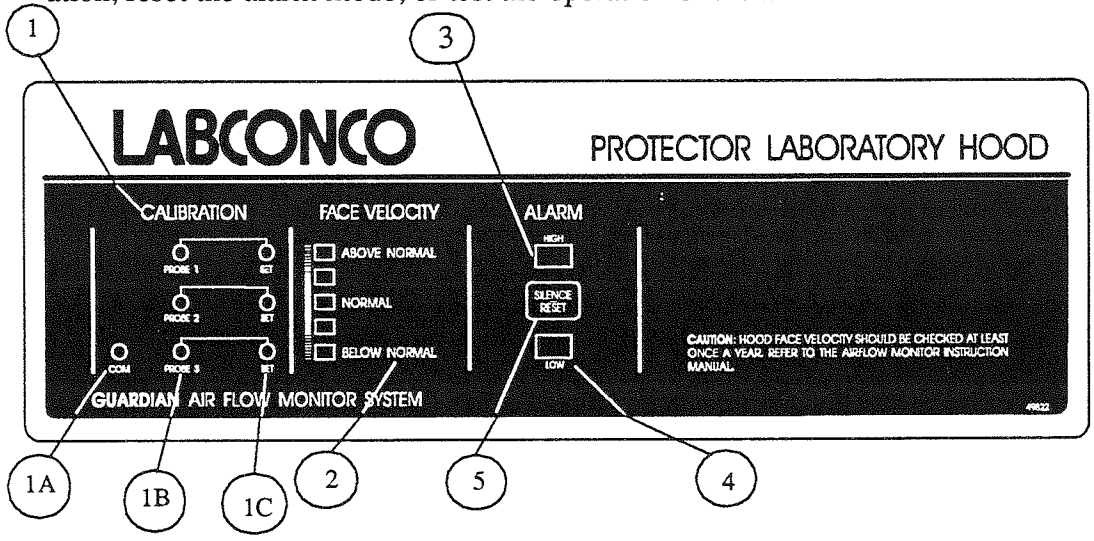
Performance

The Guardian Airflow Monitor is designed for operation of all new non-explosion proof Remote blower, Integral blower, Auxiliary Air and Specialty Protector Fume Hoods. Basic 47's and Model 28 hoods are also capable of using this alarm system. The monitor is available both as a field installed kit or a factory installed option.

Component Identification

Control Panel

1. **Calibration Area.** Portion of the alarm where the multimeter jacks are inserted to verify the alarm setting and the adjustment screw locations for changing the alarm setting on the monitor.
   - 1A. COM - Insert point for common lead on multimeter.
   - 1B. Probe 1, Probe 2, Probe 3 - Insert point for the multimeter probe to read voltage of that specific setpoint.
   - 1C. Location of adjustment pot for each of the specific setpoints. Use a small screwdriver to adjust the pot as you monitor by the multimeter for each location.
2. **Face Velocity Indicators.** Illuminated indication of the face velocity that is being monitored through the fume hood.
3. **Alarm Light (High).** Indicator light that will flash to alert the user of a potentially unsafe condition in the fume hood, due to above normal airflow.
4. **Alarm Light (Low).** Indicator light that will flash to alert the user of a potentially safe condition in the fume hood, due to below normal airflow.
5. **Silence/Reset Switch.** Switch used to silence the audible portion of an alarm situation, reset the alarm mode, or test the operation of the audible alarm.



Junction Box Assy

1. **Velocity Sensor.** Sensor that measures the rate of exhaust flow leaving the fume hood.
2. **Terminal Block.** Wiring connection location for the monitor, optional interlock relay and optional output relay devices.

Field Installation

Disconnect your fume hood from its electrical service prior to beginning the installation of your monitor.

The installation of your monitor is separated into two segments. The control panel assembly and the junction box (w/probe) assembly. The junction box assembly should be installed first on your fume hood and then the control panel assembly.

Select the correct installation procedure based upon your fume hood from the following options and proceed as directed.

(1)	Protector Hood Models Remote and Auxiliary Air (See Page 8)	48801 48804 48807 48810	60801 60804 60807 60810	72801 72804 72807 72810	96830 96840 96810 60825	72825 96825 48705 72705	48707 60707 72707
(2)	Protector Hood Models Integral Blower (See Page 9)	48800 48803	60800 60803	72800 72803	48806 48825		
(3)	Protector Hood Models Specialty Applications (See Page 10)	48821 48822	48823 48824	60821 60822	72821 72822	72823 72824	

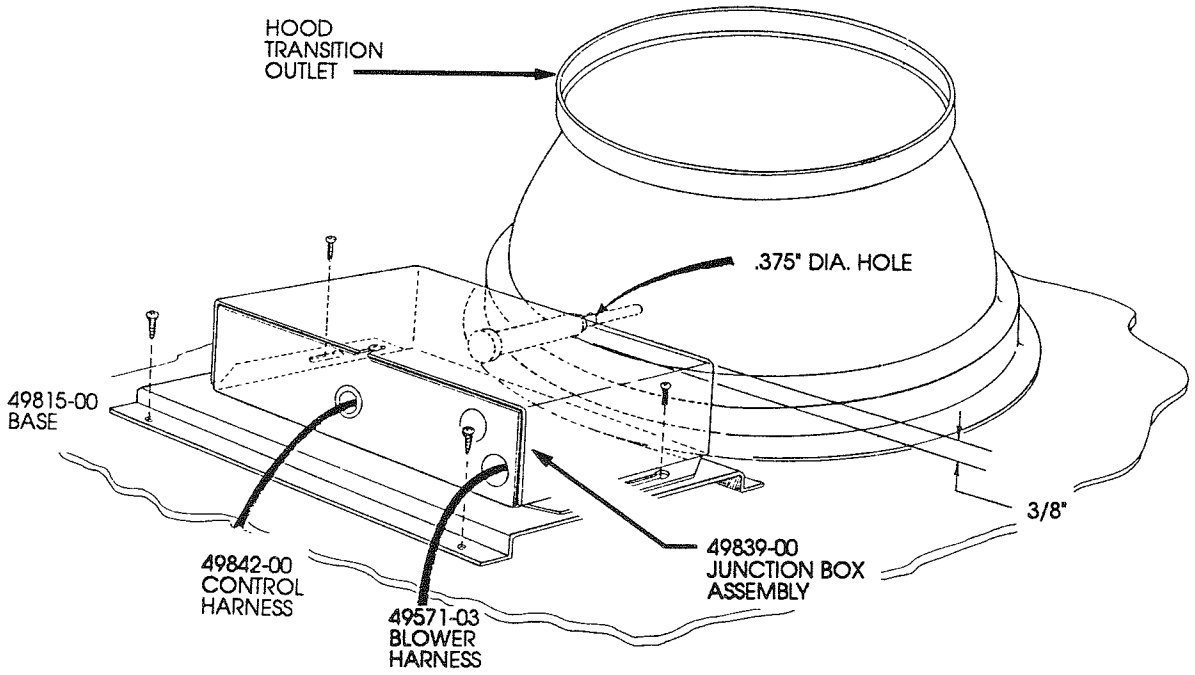
(4) 28 Hood Models (28044)
Integral Blower
(See Page 11)

(5) 28 & Hood Model (28046)
Remote Blower
(See Page 12)

(6) Basic Hood Model (22474 - 22464)
(See Page 13)

Refer to the electrical diagram on Pages 31 - 35 for proper electrical connections and power requirements.

PROBE INSTALLATION BYPASS AND AUXILIARY AIR HOODS



(1) Drill one 3/8 (.375) dia. hole in left side of hood transition outlet as shown.

(2) Run two #8-32 x 1/2 screws into the base plate. Do not tighten at this time.

(3) Assemble the junction box assembly on to base leaving it loose for further adjustment.

(4) Insert the monitor probe and junction box assembly into 3/8" dia. drilled hole with probe inserted to the shoulder step position.

(5) Move the base up against drip ring flange.

(6) Drill (4) .150 (#25) dia. holes thru the holes in the flanges of base and attach the base to the hood liner with (4) #8 x 5/8 pan head type AB stainless sheet metal screws provided (18934-10).

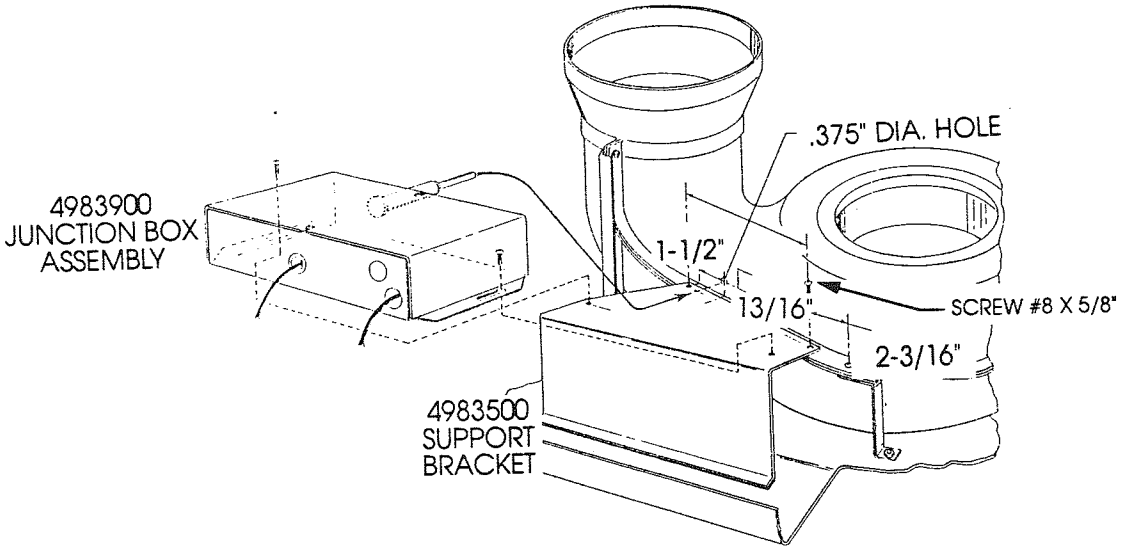
(7) Tighten the junction box to the base by the screws installed in Step #2.

(8) Loosen the screws holding cover on the junction box and remove.

(9) Route the control harness down through the left side of the hood and into the hood header panel through a wiring access hole in the left rear corner.

(10) Replace junction box cover.

PROBE INSTALLATION PROTECTOR INTEGRAL BLOWER HOODS



(1) Place foam tape directly to the bottom of flange of the support bracket.

(2) Position the support bracket on the blower housing of the fume hood as shown.

(3) Mark the mounting holes in the flange of housing from those on the support bracket.

(4) Mark the probe location hole on the side of blower housing and drill one 3/8 dia. hole.

(5) Place the support bracket on the blower housing flange and attach with #8 screws that have been supplied.

(6) Run (2) #8-32 screws part way into the support bracket.

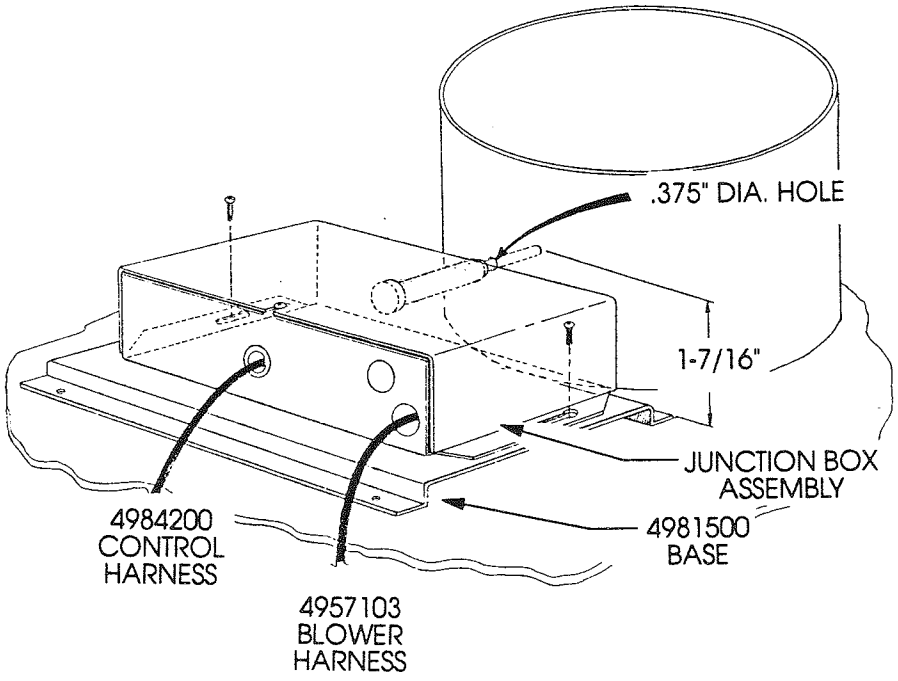
(7) Insert the monitor probe into the 3/8" hole and position the junction box assembly on the support bracket and tighten (2) #8-32 screws to secure the junction box assembly.

(8) Loosen the screws holding junction box cover and remove its cover.

(9) Route the control harness down through the left side of the hood and into the header panel through a wiring access hole in the left rear corner.

(10) Replace junction box cover.

PROBE INSTALLATION SPECIALTY HOODS



(1) Drill one 3/8 (.375) dia hole in left side of hood transition outlet as shown.

(2) Run two #8-32 x l/2 screws into the base plate. Do not tighten at this time.

(3) Assemble the junction box assembly on to base leaving it loose for the adjustment.

(4) Insert the monitor probe and junction box assembly into 3/8" dia. drilled hole with probe inserted to the shoulder position.

(5) Move the base up against drip ring flange.

(6) Drill (4).150 (#25) dia. holes thru the holes in the flanges of base and attach the base to the hood liner with the double sided tape that has been provided.

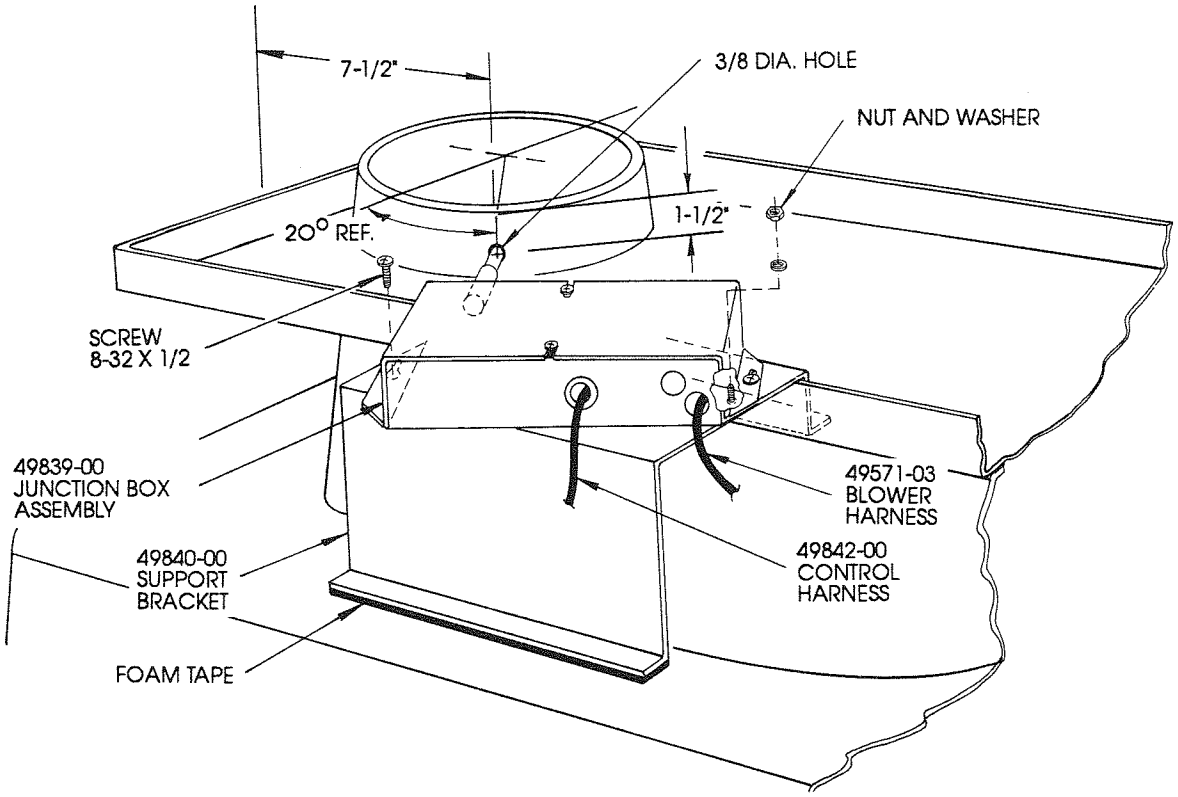
(7) Tighten the junction box to the base by the screws installed in Step #2.

(8) Loosen the screws holding cover on the junction box and remove.

(9) Route the control harness down through the left side of the hood and into the header panel through a wiring access hole in the left rear corner.

(10) Replace junction box cover.

PROBE INSTALLATION
MODEL 28 WITH BUILT IN BLOWER



(1) Attach the foam tape to the bottom flange of the new support bracket.

(2) Remove the existing nut and washer on the front of the hood support tray.

(3) Install the support bracket over the edge of the support tray and mounting screw. Fasten together with the nut and washer that were removed in Step #2.

(4) Locate and mark the probe entrance hole on the side of the hood exhaust stack as shown in the diagram. Drill one 3/8 (.375) dia. hole.

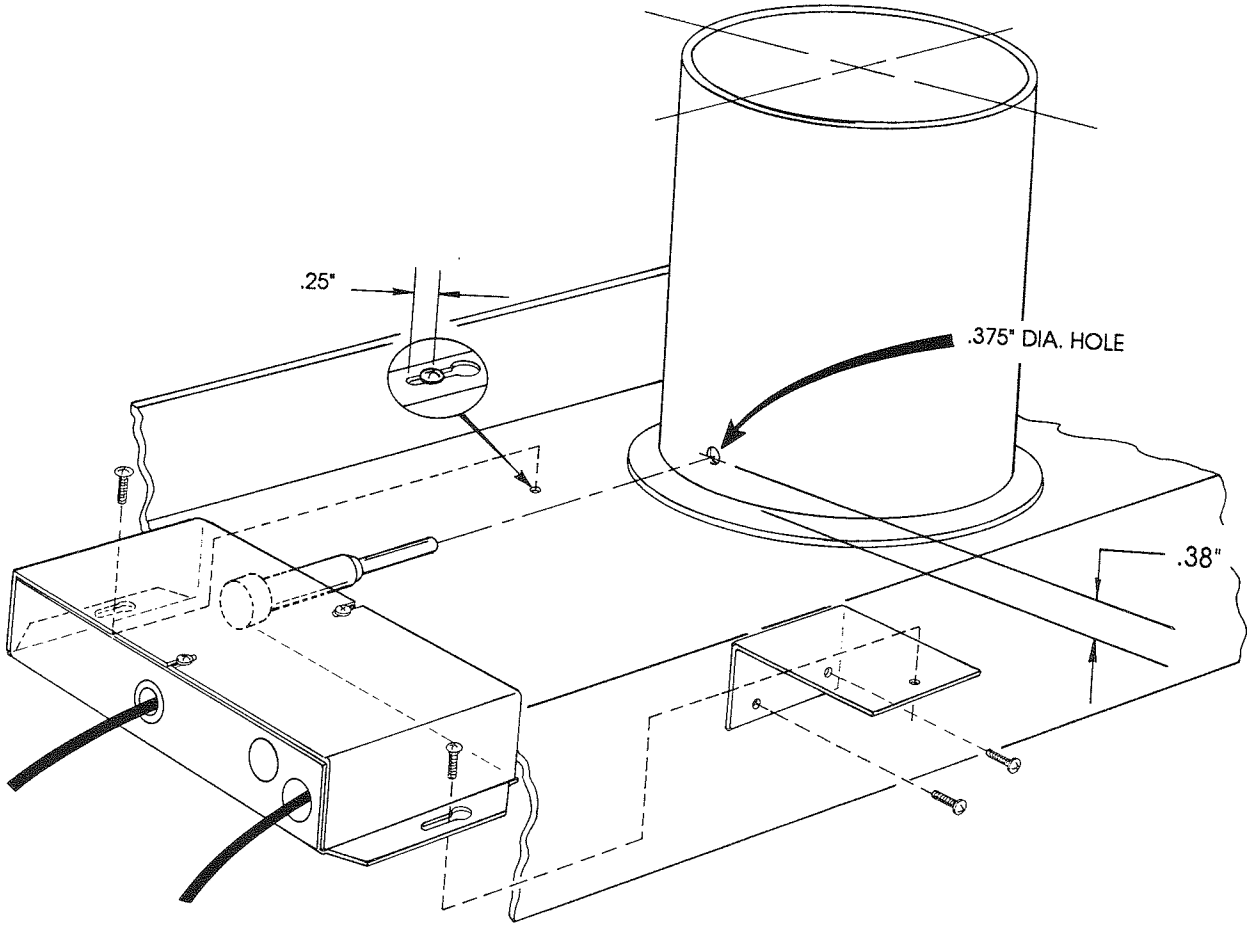
(5) Insert the probe into the 3/8 dia. hole and position the junction box assembly on the support bracket and assemble with the (2) #8-32 x l/2 screws that are provided.

(6) Loosen the screws that are holding the cover panel and remove the cover.

(7) Route the control panel wiring harness down from the junction box assembly in the top of the hood through the light switch hole on the right side panel and then over and through the 3/4" hole in the header panel.

(8) Replace junction box cover.

PROBE INSTALLATION - 28 REMOTE



(1) Drill one 3/8" dia. hole in left side of exhaust duct of the hood as shown.

(2) Insert the monitor probe into duct, and locate at the shoulder position.

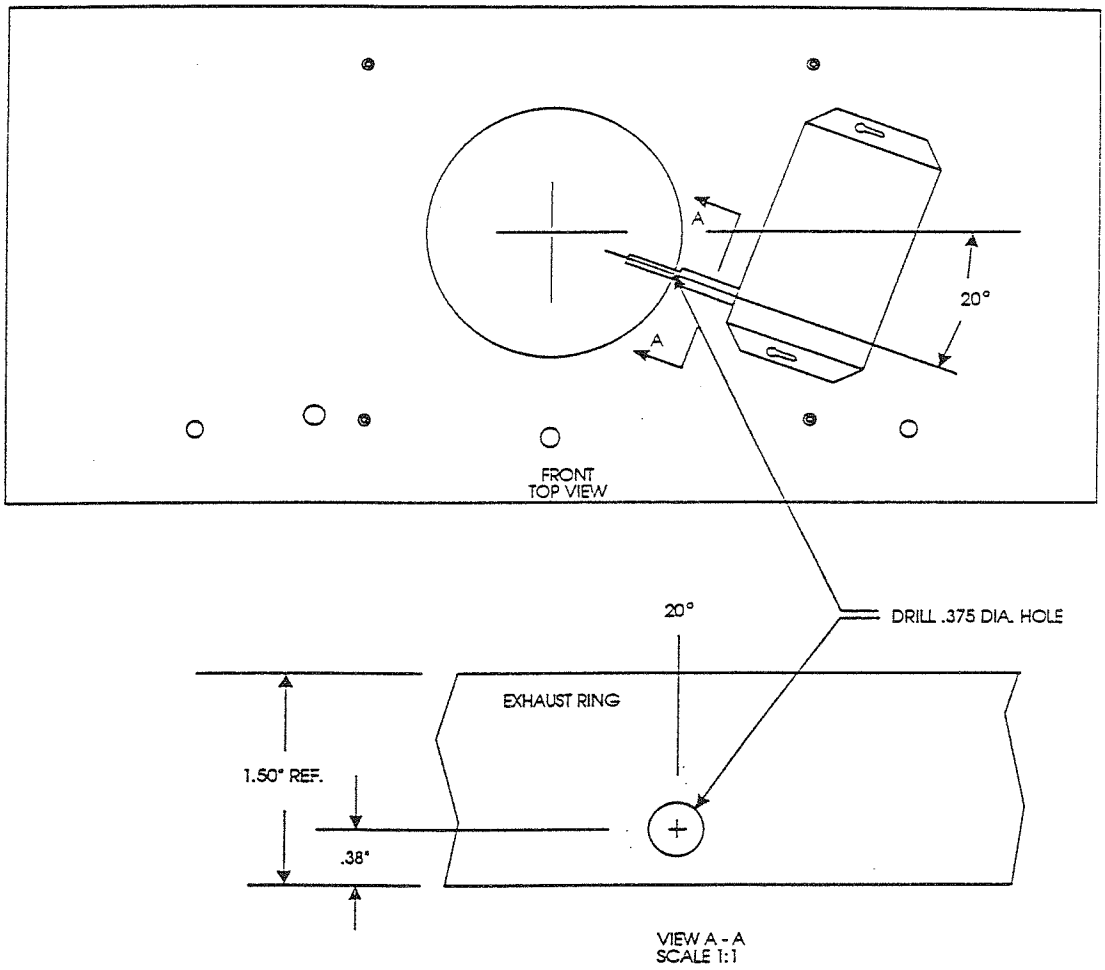
(3) Drill one hole in top of cabinet, and with bracket centered on junction box, drill (2) holes in front of cabinet.

(4) Attach the junction box with #8-32 x 1/2 screws.

(5) Route the control panel wiring harness down from the junction box assembly in the top of the hood, through the light switch hole in the right side panel and then over and through the 3/4" hole in the header panel.

(6) Replace junction box cover.

MODEL 47 & 70 BASIC REMOTE



(1) Drill one 3/8 dia. hole in the exhaust collar as shown.

(2) Apply double faced tape to the bottom of the junction box.

(3) Insert the probe into the hood plenum up to the shoulder position.

(4) Mark the outline of support flanges on top of the fume hood liner with the probe in its correct position.

(5) Remove the junction box and support assembly. Apply double face tape to top of fume hood liner on the outside of the flanges and reassemble.

(6) Connect the wiring harnesses from control panel, and blower switch, directly to your power source and other options as required.

(7) Replace junction box cover.

Field Installation

Once the junction box assembly with probe has been completed, proceed with installation of the control panel assembly.

The assembly of the control panel on your hood is different depending on which model of fume hood you are installing it on.

Select the appropriate installation procedure for your fume hood from the following to complete your monitor installation.

1. Protector Hoods - including Remote Blower, Auxiliary Air, Integral Blower, Perchloric Acid, Radioisotope, and Walkins.

2. Model 28 Hoods - including models 28044 and 28046.

3. Basic Hoods - including model 22474 & 22464.

CONTROL PANEL INSTALLATION - BYPASS, AUXILIARY AIR AND INTEGRAL BLOWER HOODS

#1 - Protector Hood Models

48800	48807	60803	72800	72807	96840	48821	60821	72823	72705
48801	48810	60804	72801	72810	96825	48822	60822	72824	48707
48803	60800	60807	72803	96810	60825	48823	72821	48705	60707
48805	60801	60810	72804	96830	72825	48824	72822	60705	72707

(1) On both the remote blower and integral blower protector hood models, you would first lift off and remove the hood front panel, and set aside.

(2) On the auxiliary air protector hood models, lift off and remove the hood bonnet assembly and set aside. Next remove the auxiliary air louvers and set aside.

(3) Remove the header cover panel and set aside.

(4) Lift out the fluorescent light assembly and secure for the time being.

(5) Remove the left hand fluorescent light bracket assembly and set aside.

(6) Remove the standard nameplate label from the header panel and discard.

(7) Attach the new blower wiring harness directly to the remaining blower switch terminals inside of the header on the right hand side. Route the remaining wiring harness out through hole in the left rear of the header panel and up into the hood junction box assembly located at the left top corner of the hood corner post.

(8) Attach the control board assembly to the header as shown with the screws, spacers, and nuts provided, being careful not to damage the electrical components.

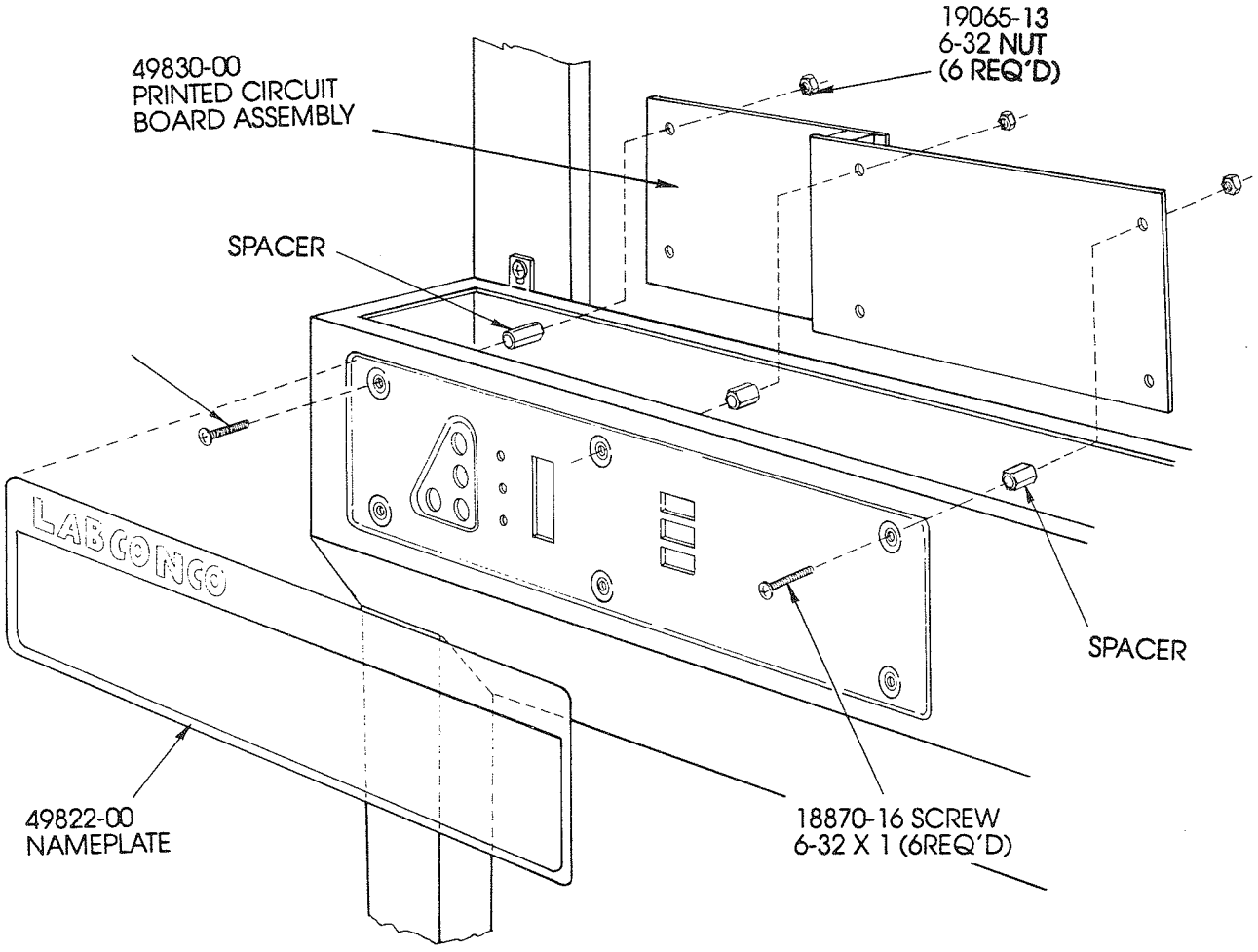
(9) Connect the control board wiring harness to the control board assembly.

(10) Install the new monitor nameplate on the hood header panel being careful to locate the label windows and openings for the jacks, over the corresponding components in the header panel.

(11) Reinstall the components removed in Steps #1 thru #5.

(12) Route the fume hood power supply cable and optional auxiliary air and output circuit to the junction box assembly located in the top of the fume hood. See Pages 8, 9, and 10 for additional details and the wiring diagrams on Pages 30-34 to complete installation.

MODELS 49850-00 AND 49850-01
CONTROL PANEL INSTALLATION - BYPASS, AUXILIARY AIR AND INTEGRAL BLOWER PROTECTOR HOODS DIAGRAM



#2 - Model 28 Hoods
(28044, 28046)

(1) Remove the hood front panel.

(2) Drill the mounting holes in the header panel as shown in the diagram.

(3) Remove the two mounting screws holding on the header panel and then lift up and remove it. Let the header panel be suspended by the switch wiring harness.

(4) On the 28 Hood Model 28044 with built in blower, route the blower switch harness with 1/4" terminals down from the top of the hood thru the left side panel and out thru the blower switch wiring hole. Connect the harness to the blower switch. (See wiring diagram) Model 28046 does not incorporate a blower switch or blower switch harness and will need to be wired directly at the junction box assembly.

(5) Reinstall the header panel removed in Step #3.

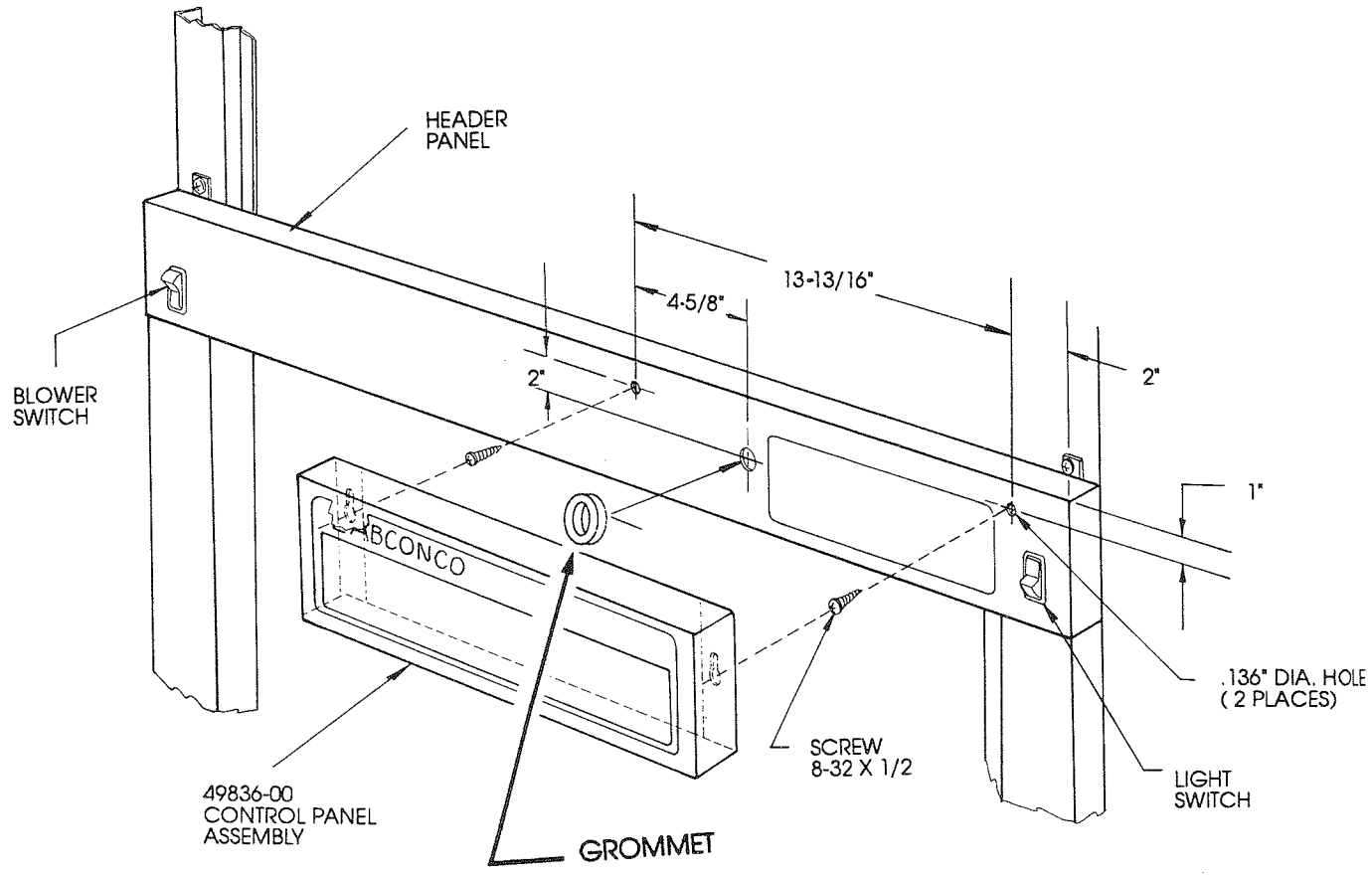
(6) Install two #8-32 screws in the header panel leaving enough space under the screw heads so that the control panel assembly can slip on snugly.

(7) Connect the control wiring harness to the control panel assembly and install on the hood header panel. Secure the harness to inside of header panel with the wire tie that has been provided.

(8) Route any additional length in the control panel assembly wiring harnesses up into the upper area of the hood. Make sure this wiring does not interfere with the normal operation of the hood and sash.

(9) Route the fume power supply cable and optional output circuit to the junction box assembly located in the top of the fume hood. See Pages 11 and 12 for additional details.

MODELS 49850-02 AND 49850-03
CONTROL PANEL INSTALLATION DIAGRAM



#3 - Basic Model
(22474 & 22464)

(1) Locate and drill the mounting holes in the hood front panel and the right hand end panel as shown in the diagram.

(2) Remove the hood front panel and set aside.

(3) Route the control panel wiring harness down through the right hand end panel. Bring it out through the 3/4" dia. hole in the header panel that was drilled in Step #1.

(4) Route the blower switch wiring harness down through the right hand end panel and connect to the blower switch terminals.

(5) Reinstall the front panel that was removed in Step #2.

(6) Install (2) #8-32 x 1/2 screws in the front panel and the right hand end panel leaving enough room under the screw heads so that the control panel assembly can slip on securely.

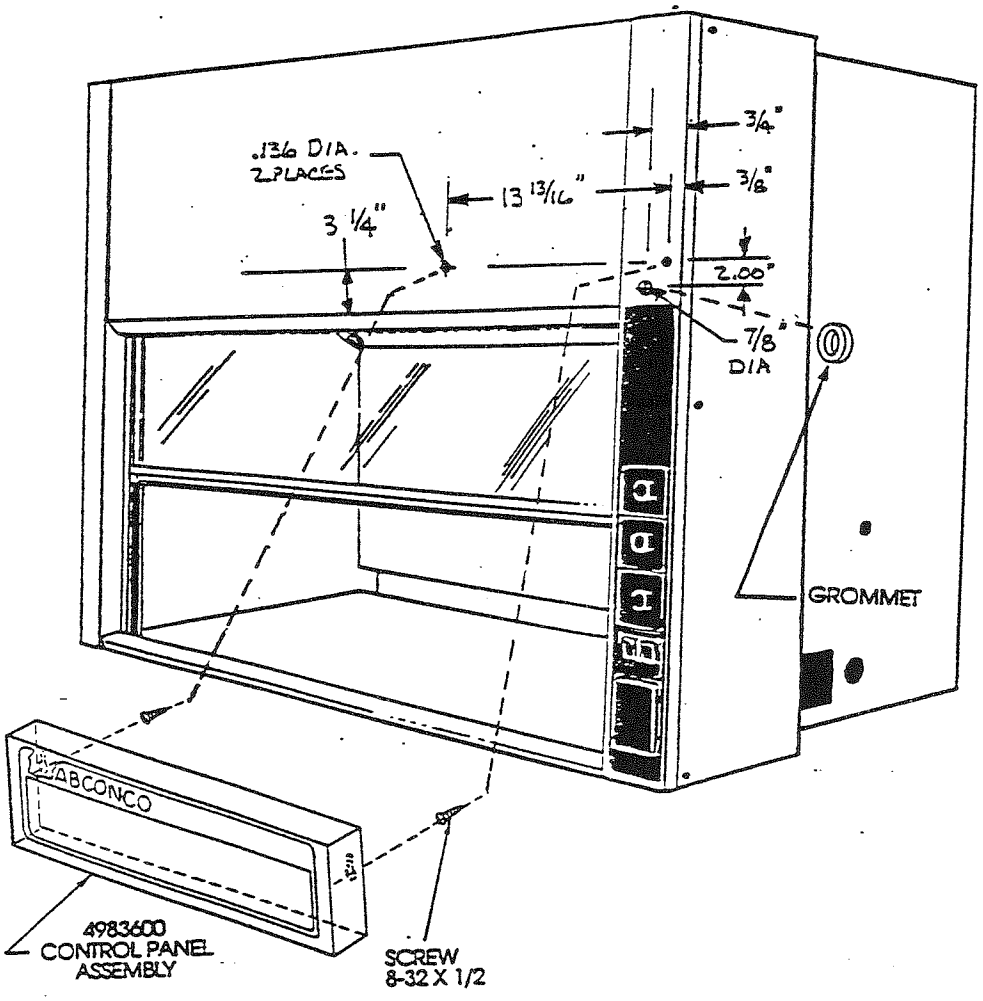
(7) Connect the control panel wiring harness to the control panel assembly.

(8) Position the additional length slack in the wiring harness in the top plenum of the hood so that it will not interfere with the operation of the hood and sash assembly.

(9) Reinstall the control panel assembly on the front of the hood.

(10) Route the fume hood power supply cable and optional output circuit to the junction box assembly located in the top of the fume hood. See Pages 19 and 20 for additional details.

MODELS 49850-05
BASIC 47 & 70 CONTROL PANEL INSTALLATION



The Guardian Airflow Monitor should be calibrated during initial installation and before the actual usage of the hood. Although the monitor itself has been factory calibrated for a face velocity of approximately 100 feet per minute, it should be recalibrated to your own unique hood installation characteristics.

WARNING: The sensor used to measure the airflow velocity through your laboratory fume hood is very sensitive and its voltage readings may vary slightly do to differences in the power supply to the hood, probe location and multimeter calibration.

The voltage settings in this manual on Pages 26-28 should only be used as approximate settings. Exact airflow settings should be accomplished by measuring the airflow at the face of the hood with a thermal anemometer.

WARNING: The Airflow monitor is <u>not</u> intended for use on explosion proof models of laboratory fume hoods.

Ensure that the alarm assembly is connected to its electrical service in accordance with local and national electrical codes. Failure to do so may result in a fire or electrical hazard. Do not attempt to install or secure this monitor system without first disconnecting the fume hood and alarm from its electrical service supply.

The sensor voltage charts in the back of this manual should be used for approximate face velocity settings on your fume hood. The actual face velocity on your hood should then be checked with a thermal aneometer to insure accuracy.

The Guardian Airflow Monitor allows you the flexibility to independently set the normal, above normal and below normal set points on this monitor.

This allows you the ability to customize the alarm settings based upon the face velocity required for the procedures that you are performing inside the hood.

When wired properly in conjunction with the fume hood, the monitor will begin to function as soon as the exhaust blower switch is activated.

Should the airflow remain within the parameters (high and low) that you have established for this hood, the unit will give you a continuous indication of your face velocity on the control panel display. Should the airflow drop to, or below your established units or below normal for a period of 20 seconds or greater, the unit will then go into both an audio and visual alarm. The same is true if the airflow with the hood increases to or above established above normal setting on the monitor.

The below normal alarm will also activate upon initial start-up for your hood, should it take over 20 seconds for the hood exhaust signals to come up to a level above the below normal settings.

In either case of alarm, the audio alarm will sound for a period of approximately 2-1/2 to 3 minutes and then automatically be silenced.

The appropriate indicator light, either (HIGH ALARM) or (LOW ALARM) will continue to flash even if the audio alarm has been silenced until the airflow has been brought back within the airflow limits that you established for the monitor.

The following is a quick reference guide on the function of your monitor.

GUARDIAN AIR MONITOR OPERATION

MODE	DISPLAY	ACTION
Unit Normal	Will vary from above normal to below normal without alarm.	None
Unit above normal continual 20 ± 5 seconds.	High alarm light will flash. Audible alarm will sound for a period of 2-1/2 to 3 minutes.	Press SILENCE-RESET switch will silence alarm. High alarm light will continue to flash.
Unit below normal continual 20± 5 seconds.	Low alarm light will flash. Audible alarm will sound for a period of 2-1/2 to 3 minutes.	Pressing SILENCE-RESET switch will silence alarm. Low alarm light will continue to flash.
Unit returns to normal	Alarm light continues to flash indicating a failure occurred.	Pressing SILENCE-RESET switch will turn off alarm. This will also reset optional add air relay tied to low alarm. For add air blower and also optional relay for HI-LOW contacts for remote.
Unit Test		Holding SILENCE-RESET switch for a period of 10 seconds will sound and check alarm at any time.
Initial Start-Up	Flashing low and high alarm lights. Alarm sounds if blower is not up to speed in approximately 20 seconds.	Push SILENCE-RESET switch to stop flashing alarm lights and alarm sounds if activated.

Initial Alarm Adjustment Set-Up

In order to make the initial adjustments to the Airflow Monitor, you will need to have the fume hood functioning with the desired face velocity for your specific work procedures. Once this airflow has been established, you can proceed with adjusting the set points on you monitor to accurately display your face velocity value.

Normal Airflow Set Point

Place the hood in normal operation and raise the sash to its full open position. Depending on the face velocity through the hood, one of the face velocity indicator lights on the control panel will be illuminated. If your face velocity is correct for your application and the illuminated light is not the normal light, proceed as follows:

Connect a standard volt meter to the front of the monitor through both the COM jack opening hole and the Probe 2 location. Use a screwdriver in the set port opening directly across from the Probe 2 location and adjust the voltage reading shown on your multimeter to the number found in the airflow charts for your hood and required airflow. This will then establish the normal airflow set point for the hood at that specific setpoint.

You can also use the Sensor Voltage Chart located on pages 27-29 for your specific hood and face velocity requirements to approximately set the face velocity values for your fume hood alarm positions.

Above Normal Set Point - You should now proceed with setting both the above normal and below normal parameters for the monitor. This can be done by establishing the approximate face velocity you want the hood to go into alarm at those positions, and then select the approximate voltage reading for that face velocity from the charts on Pages 27-29 of this manual.

Once these approximate values have been selected, you would proceed as follows:

Above Normal Set Point - Connect your multimeter to the COM port and Probe 1 port on the front of the monitor control panel. Insert a screwdriver and adjust the voltage from this position by turning the screw located in the set port position for Probe 1 until the correct voltage reading is shown on the multimeter.

Below Normal Set Point - This same procedure would then be used in setting the below normal set point by using the COM port and Probe 3 port and set port on the front of the monitor control panel. As used in the above normal set point.

Once the initial set points for the monitor have been set, they should not need to be reset unless your face velocity parameters change.

Auxiliary-Air Interlock

With optional Kit #49851 you can interlock the exhaust and auxiliary air blower together on your Protector Auxiliary Air Hoods. This safety feature will then shutdown the auxiliary air system to the hood in the event that the exhaust blower should fail. Consult pages 34 for the correct wiring information on this option.

Output Signal

With optional Kit #49851 you can provide either a voltage signal, remote alarm contacts, or both for your specific installation requirements. Consult page 34 for the correct wiring information on this option.

PROTECTOR

SIZE WIDTH	TYPE		FACE VELOCITY - FEET PER MINUTE					
	BYPASS	AUX. AIR	80	90	100	110	120	125
4 Ft.	48705 48801 48804	48707 48807 48810	10.35	10.43	10.52	10.62	10.73	10.79
5 Ft.	60705 60801 60804	60707 60807 60810	10.54	10.65	10.74	10.83	10.93	10.96
6 Ft.	72705 72801 72804	72707 72807 72810	10.70	10.80	10.88	10.98	11.08	11.13
8 Ft.	96735 96830 96850	96737 96840	10.61	10.72	10.82	10.93	11.03	11.08

PROTECTOR

SIZE WIDTH	TYPE	FACE VELOCITY - FEET PER MINUTE SASH 50% OPEN					
	WALKIN	80	90	100	110	120	125
5 Ft.	60825	10.44	10.56	10.66	10.73	10.82	10.90
6 Ft.	72825	10.69	10.79	10.89	11.00	11.09	11.15
8 Ft.	96825	10.57	10.67	10.77	10.86	10.96	11.00

PROTECTOR

SIZE WIDTH	TYPE	FACE VELOCITY - FEET PER MINUTE SASH 50% OPEN					
	WALKIN	80	90	100	110	120	125
4 Ft.	48821	10.59	10.66	10.73	10.82	10.92	10.96
5 Ft.	60821	10.73	10.85	10.95	11.05	11.14	11.18
6 Ft.	72821	10.92	11.03	11.14	11.28	11.41	11.45

PROTECTOR

SIZE WIDTH	TYPE		FACE VELOCITY - FEET PER MINUTE					
	PVC PERCHLORIC	PVC ACID DIG	80	90	100	110	120	125
4 Ft.	48823	48824	10.56	10.67	10.76	10.88	11.00	11.03
6 Ft.	72823	72824	10.60	10.70	10.80	10.87	10.93	11.02

PROTECTOR

SIZE WIDTH	TYPE	FACE VELOCITY - FEET PER MINUTE					
	RADIOISOTOPE	80	90	100	110	120	125
4 Ft.	48822	10.57	10.67	10.76	10.88	10.99	11.03
5 Ft.	60822	10.70	10.83	10.94	11.05	11.16	11.22
6 Ft.	72822	10.91	11.00	11.09	11.23	11.36	11.40

PROTECTOR

SIZE WIDTH	TYPE		FACE VELOCITY - FEET PER MINUTE					
	28 FIBERGLASS W/O BLOWER	47 BASIC W/O BLOWER	80	90	100	110	120	125
28	28046	-----	10.40	10.52	10.63	10.72	10.83	10.87

PROTECTOR

SIZE WIDTH	TYPE		FACE VELOCITY - FEET PER MINUTE					
	A-STYLE	HORIZ. SASH	80	90	100	110	120	125
4 Ft.	SPECIAL	SPECIAL	10.13	10.22	10.30	10.38	10.46	10.49
5 Ft.	SPECIAL	SPECIAL	10.12	10.21	10.30	10.39	10.46	10.49
6 Ft.	SPECIAL	SPECIAL	10.28	10.38	10.46	10.56	10.65	10.68
8 Ft.	----------	96810	10.14	10.25	10.35	10.45	10.54	10.58

PROTECTOR

SIZE WIDTH	TYPE	FACE VELOCITY - FEET PER MINUTE					
	INTEGRAL BLOWER	80	90	100			
4 Ft.	48800, 48803, 48806, 48825	-----	-----	10.55			
5 Ft.	68000, 60803	-----	-----	10.71			
6 Ft.	72800, 72803	-----	-----	10.83			

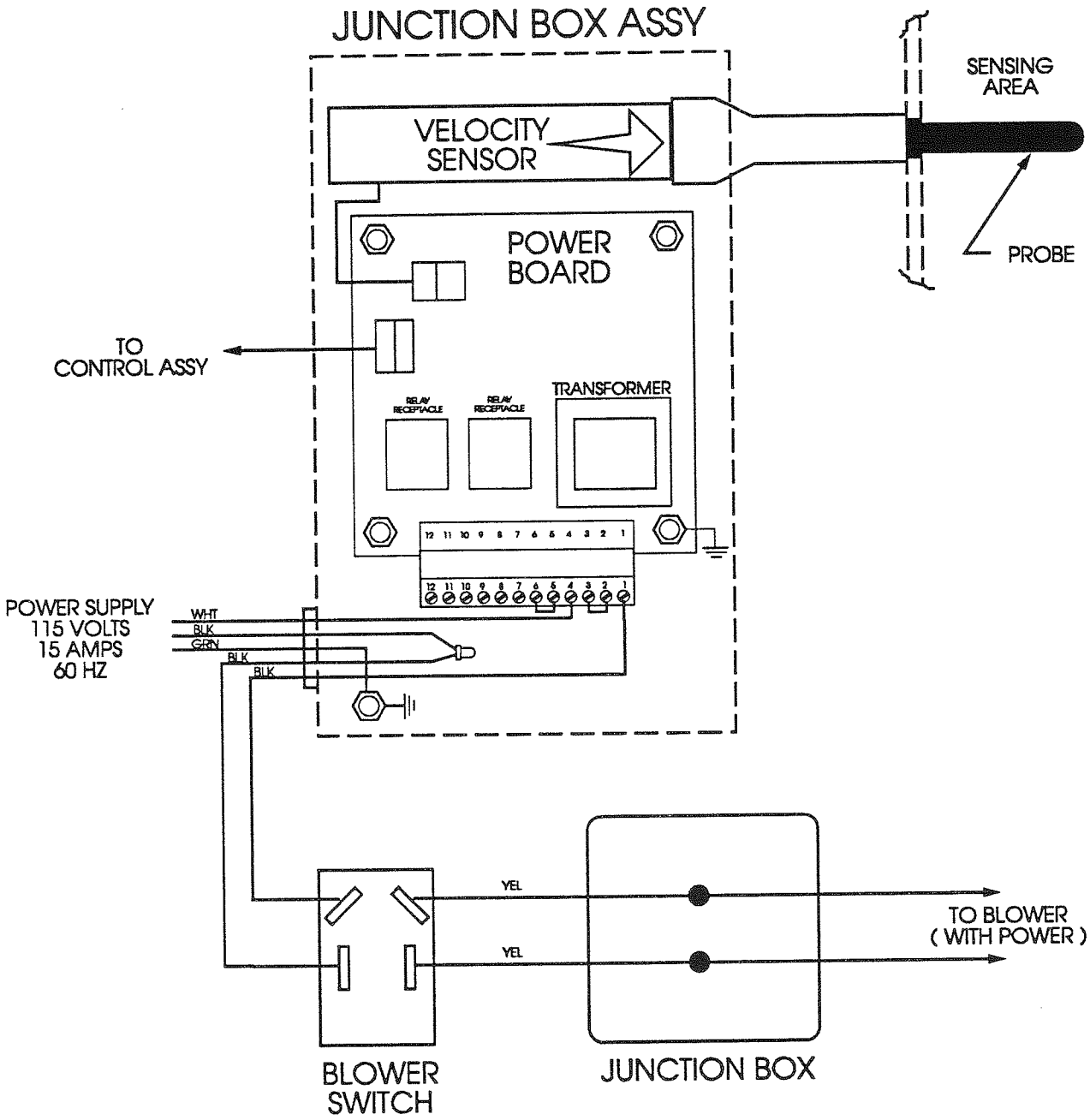
PROTECTOR

SIZE WIDTH	TYPE		FACE VELOCITY - FEET PER MINUTE					
	28 FIBERGLASS W.BLOWER	47 BASIC W. BLOWER	80	90	100			
28	28044	-----	-----	-----	10.66			

The monitor set points should be checked at least once a year to make sure they have not been misadjusted. The actual audio portion of the alarm should also be checked once a week, by way of the reset button on the face of the monitor.

The voltage sensor should be checked once a year to make sure that dust and dirt particles have not collected inside the sensor tube. The accumulation of dirt and dust in the sensor tube could possibly effect the accuracy of the sensor and should be cleaned out with clean air, being careful not to damage the sensor.

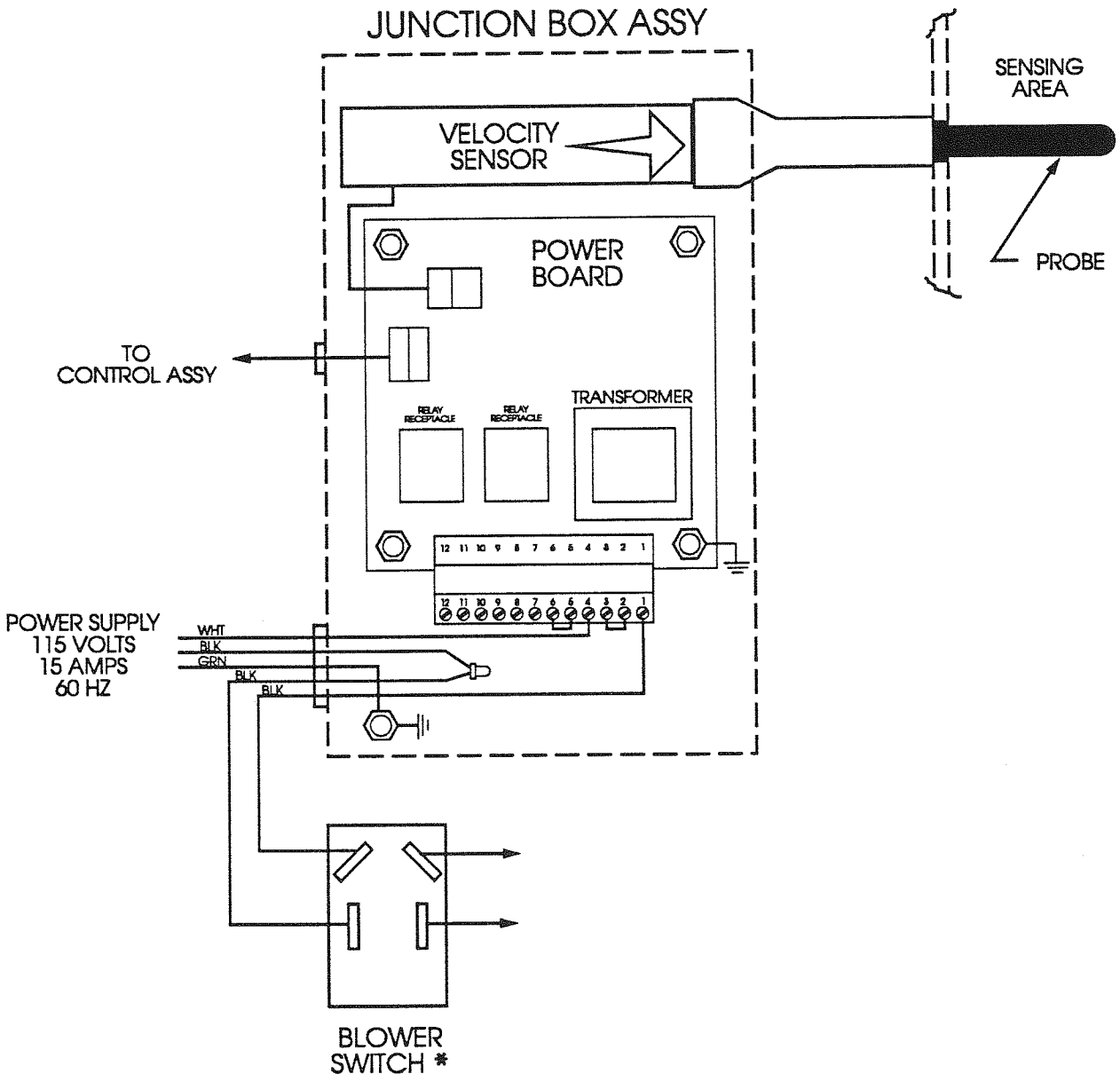
The sensor assembly should not require any other periodic maintenance.



PROTECTOR HOOD MODELS

48800	60803	72807	48821	72823
48801	60804	72810	48822	72824
48803	60807	96810	48823	48705
48804	60810	96830	48824	60705
48807	72800	96840	60821	72705
48810	72801	60825	60822	48707
60800	72803	72825	72821	60707
60801	72804	96825	72822	72707
				48806

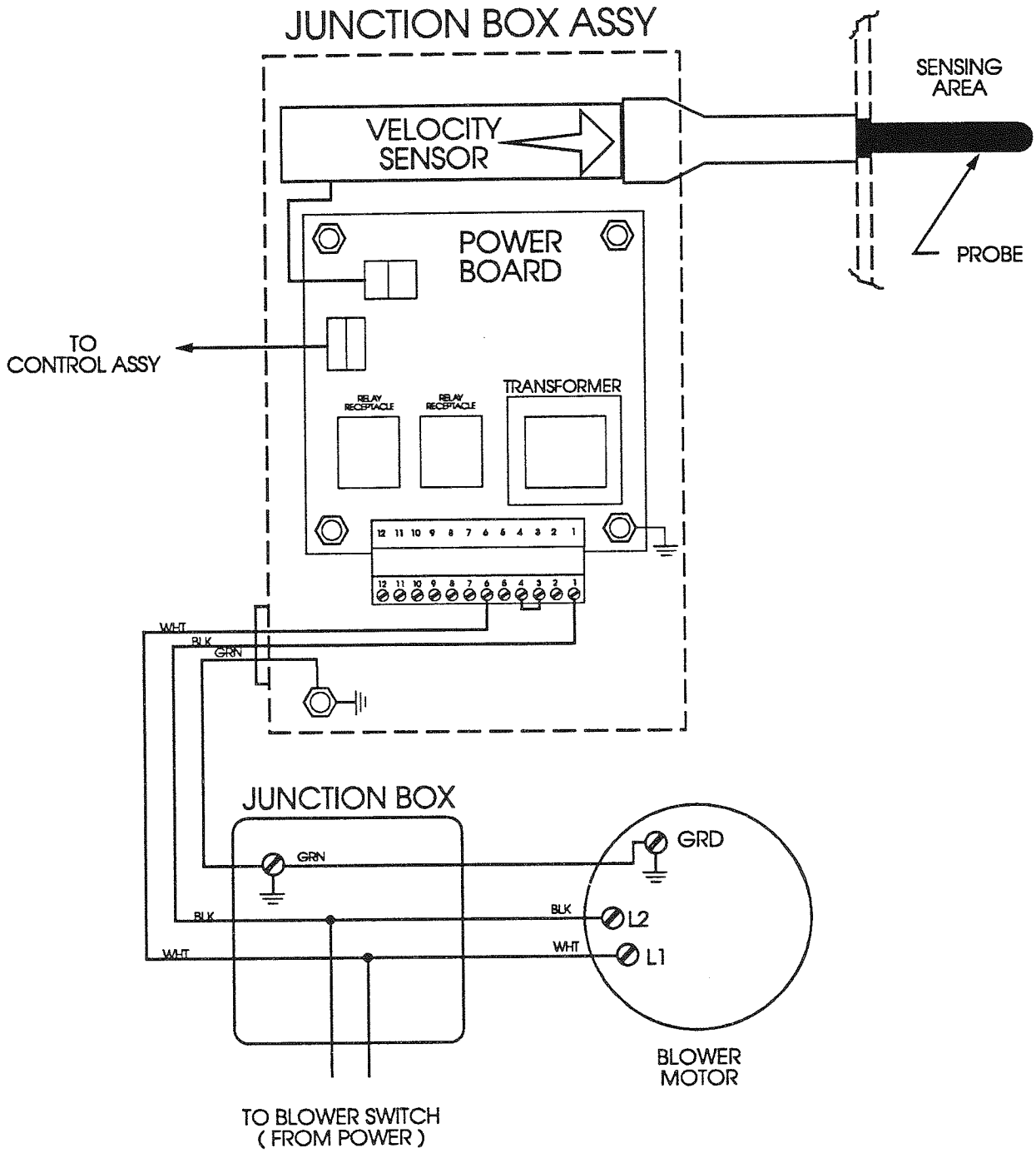
SEE THE INSTRUCTION MANUAL FOR YOUR SPECIFIC HOOD FOR ADDITIONAL WIRING DIAGRAMS



MODELS 28044, 28046, 22464, 22474

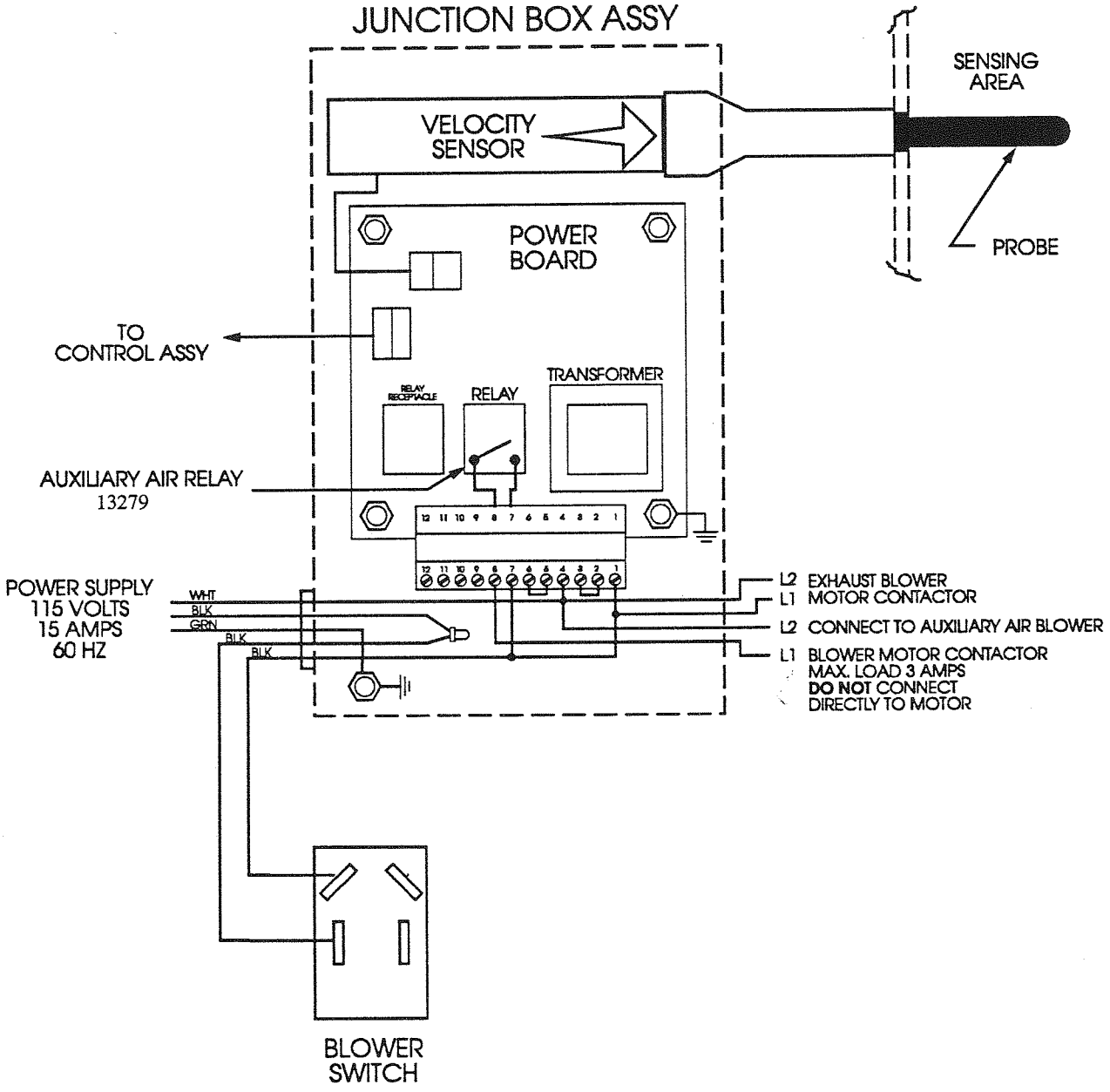
SEE THE INSTRUCTION MANUAL FOR YOUR SPECIFIC HOOD FOR ADDITIONAL WIRING DIAGRAMS

***THIS SWITCH IS PROVIDED ON MODELS WITH BLOWERS**



INTEGRAL BLOWER HOODS
220 VOLTS 50 HZ
MODEL 48825

SEE THE INSTRUCTION MANUAL FOR YOUR SPECIFIC HOOD FOR ADDITIONAL WIRING DIAGRAMS

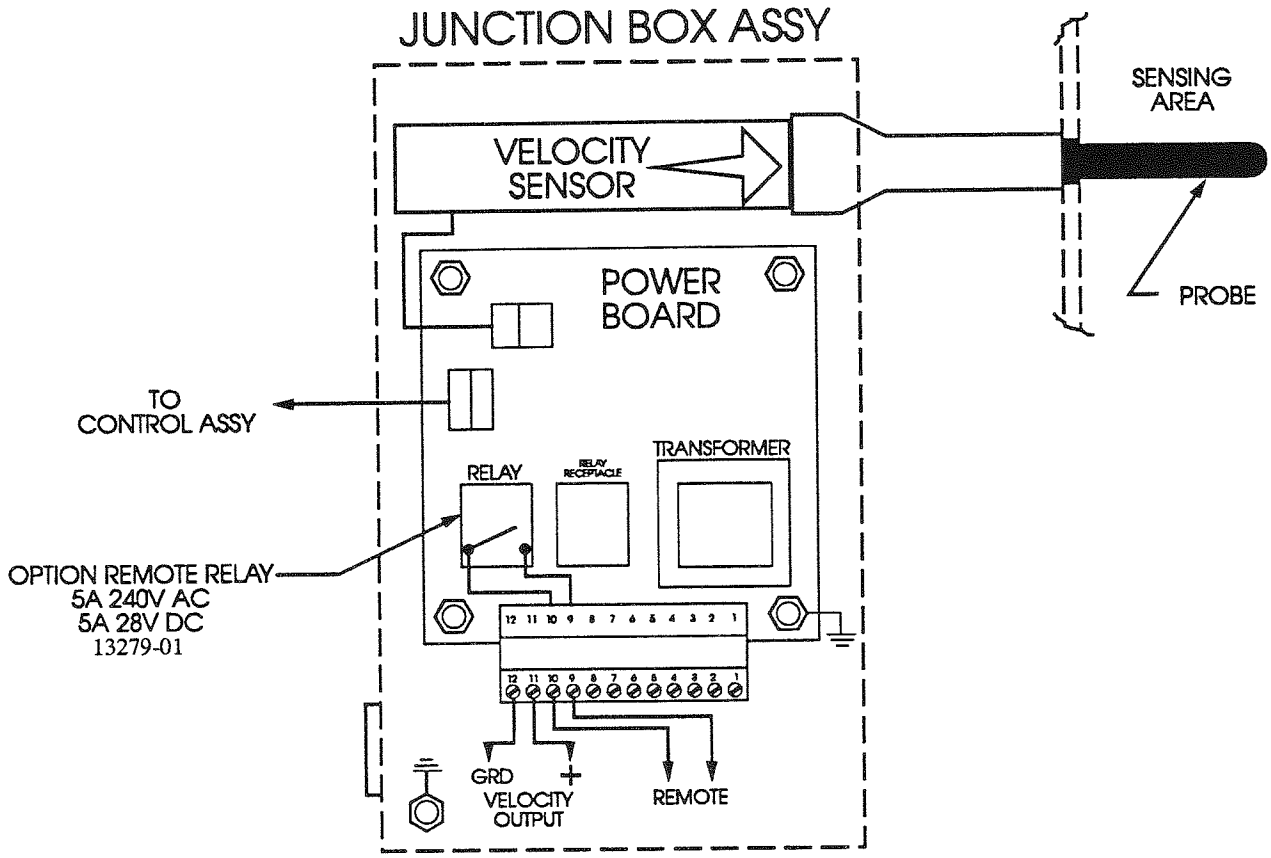


OPTIONAL WIRING DIAGRAM

PROTECTOR AUXILIARY AIR HOODS WITH OPTIONAL AUXILIARY AIR INTERLOCK

MODELS 48807, 48810, 96840, 60807, 60810, 72807, 72810

SEE THE INSTRUCTION MANUAL FOR YOUR SPECIFIC HOOD FOR ADDITIONAL WIRING DIAGRAMS



PROTECTOR HOOD WITH OPTIONAL OUTPUT SIGNAL

1. A VOLTAGE SIGNAL PROPORTIONAL TO VELOCITY PAST THE SENSOR IS AVAILABLE BY CONNECTING TO TERMINALS 11 AND 12.

2. REMOTE ALARM CONTACTS ARE PROVIDED BY CONNECTING TO TERMINALS 9 AND 10 WHICH WILL CLOSE ON HIGH OR LOW ALARM.

SEE THE INSTRUCTION MANUAL FOR YOUR SPECIFIC HOOD FOR ADDITIONAL WIRING DIAGRAMS

If the monitor fails to operate once the blower switch has been activated, check the main power supply connections between the blower switch and the alarm.

If the monitor fails to operate after holding down on the reset switch for a minimum of 10 seconds, check all of the electrical connections for proper connection.

If the monitor is constantly cycling back and forth into alarm, check both the operation of your exhaust blowers and whether you have set your alarm set points to close to your normal set point.

If problems persist with the Guardian Airflow Monitor, contact Labconco Product Service Department directly at 1-800-821-5525 for assistance.

We are committed to providing our customers with quality equipment and service after the sale. Part of this objective involves keeping you informed of changes and new product additions. We therefore request that you take a moment to fill out the product registration card so we may know your location as well as some of the reasons that prompted you to purchase our products.

Labconco Corporation warrants products of its manufacture for one year, from receipt of the equipment by the purchaser, against defects in materials and workmanship. This limited warranty covers parts and labor but not transportation and insurance charges. In the event of a warranty claim contact the dealer who sold you the product. If the cause is determined to be a manufacturing fault, the dealer or Labconco Corporation will repair or replace all defective parts to restore the unit to operation. **Under no circumstances shall Labconco Corporation be liable for indirect, consequential or special damages of any kind.** This statement of warranty may be altered by a specific published amendment. No individuals has authorization to alter the provisions of this warranty policy or its amendments. Lamps and expendable items such as filters are not covered by this warranty. Damage due to corrosion or accidental breakage are also not covered.

WARNING: The disposal and/or emission of substances used in connection with this equipment may be governed by various federal, state or local regulations. All users of this equipment are urged to become familiar with any regulations that apply in the user's area concerning the dumping of waste materials in or upon water, land or air and to comply with such regulations.

If a shipment is received in visibly damaged condition, be certain to make a notation on the delivering carrier's receipt and have his agent confirm the damage on your receipt. Otherwise, the damage claim may be refused.

If concealed damage or pilferage is discovered, notify the carrier immediately and retain the entire shipment intact for inspection. Interstate Commerce Commission rules require that the claim be filed with the carrier within 15 days after delivery.

NOTE: **Do not return goods.** Goods returned without prior authorization will not be accepted. Labconco Corporation and its dealers are not responsible for shipping damage. Claims must be filed directly with the freight carrier by the recipient. If authorization has been received to return this product, by accepting this approval, the user assumes all responsibility and liability for biological and chemical decontamination and cleansing. Labconco reserves the right to refuse delivery of any products which do not appear to have been properly cleaned and/or decontaminated prior to return.

ACCESSORY PART NUMBER	DESCRIPTION
49851	**Auxiliary Air/Output Data Kit** Contains one relay that can be used to provide either the Auxiliary Air Interlock or Output Data function in conjunction with the standard 49850 Guardian Airflow Monitor

If you have any questions that are not addressed in this manual, or if you need technical assistance, please contact Labconco's Customer Service Department at either (800) 821-5525, or (816) 333-8811, between the hours of 8:00 a.m. and 6:00 p.m. Central Standard Time.

Visit Labconco through the Internet at:

http://www.labconco.com

or

email:labconco@labconco.com

NOTES