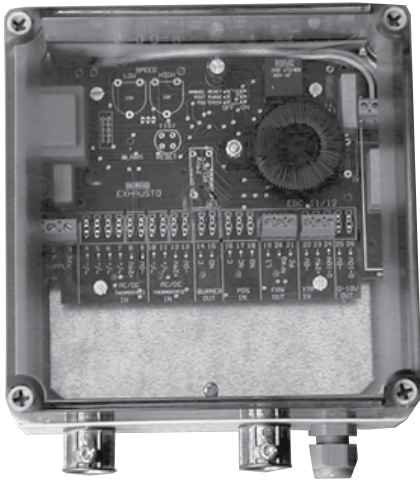







EBC 12x Motor Power Relay

USA

CAN



-  **Product Information Chapter 1 + 2**
-  **Mechanical Installation Chapter 3**
-  **Electrical Installation Chapter 4**
-  **Start Up and Configuration Chapter 5**
-  **Maintenance and Troubleshooting Chapter 6**

Job Name: _____

Installer: _____

Installation Date: _____



READ AND SAVE THESE INSTRUCTIONS!

ENERVEX Inc.
1685 Bluegrass Lakes Pkwy.
Alpharetta, GA 30004

P: 770.587.3238
F: 770.587.4731
T: 800.255.2923
info@energex.com
www.energex.com

EXHAUSTO
VENTING DESIGN SOLUTIONS



1. Product Information
1.1 Function 3
1.2 Shipping 3
1.3 Warranty..... 3

2. Specifications
2.1 Dimensions & Capacities..... 3

3. Mechanical Installation
3.1 Location..... 4
3.2 Mounting of Control 4

4. Electrical Installation
4.1 General 5
4.2 Connecting to an EBC 10, 12, 14 or MEC 18 7
4.3 Connecting to an EBC 30 8
4.4 Connecting Multiple EBC 12x Controls 9

5. Start Up and Configuration
5.1 General 10

6. Maintenance and Troubleshooting
6.1 General 10

Symbol Legend:

The following terms are used throughout this manual to bring attention to the presence of potential hazards or to important information concerning the product.



Danger: Indicates an imminent hazardous situation which, if not avoided, will result in death, serious injury or substantial property damage.



Caution: Indicates an imminent hazardous situation which, if not avoided, may result in personal injury or property damage.



TO REDUCE THE RISK OF FIRE, ELECTRICAL SHOCK OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:

1. Use this unit in the manner intended by the manufacturer. If you have questions, contact the manufacturer at the address or telephone number listed on the front of the manual.
2. Before servicing or cleaning the unit, switch off at service panel and lock service panel to prevent power from being switched on accidentally.
3. Installation work and electrical wiring must be done by a qualified person(s) in accordance with applicable codes and standards.
4. Follow the appliance manufacturer's guidelines and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
5. This unit must be grounded.

How to use this manual

This installation manual does not contain any system design documentation. System design documentation is available from any authorized EXHAUSTO representative.

Accessories, fans and variable frequency drives are not covered by this manual. Please refer to these component's individual manuals.

1. Product Information

1.1 Function

Use The EXHAUSTO EBC 12x Motor Power Relay is used in conjunction with an EXHAUSTO Control Panel to operate multiple single-phase EXHAUSTO intake or exhaust fans. The EXHAUSTO main control will regulate the fan functions while the EBC 12x acts as an external motor speed control. The main control powers each EBC 12x through a 0-10 VDC signal. EXHAUSTO controls compatible with the EBC 12x are the EBC 10, EBC 12, EBC 14, MEC 18 and EBC 30.

The EBC 12x allows the main control to handle multiple single-phase RSV fans by increasing the system's motor load capacity. One RSV fan is connected to the main control while additional fans are connected to one or more EBC 12x's.

The features of the main control panel apply to each EBC 12x connected. The main control will regulate the speed of all fans in use.

The EBC 12x housing is NEMA 1 rated polycarbonate.

All terminals have a LED for fail-safe supervision and easy troubleshooting.

Listings Listed to UL 508, 16th edition and CSA C22.2 No. 14-95 Standard for Industrial Control Equipment
Manufactured at and ISO9001 certified plant.

1.2 Shipping

Standard Packing List

The EBC 12x contains the following:

- The EBC 12x control box

If other components are shipped, these will appear on the shipment packing list.

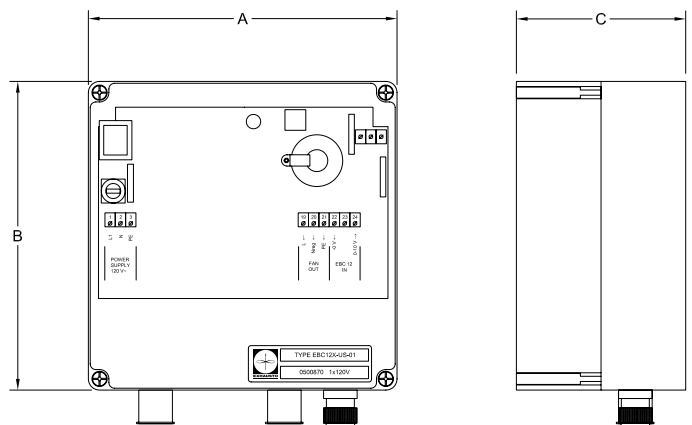
1.3 Warranty

Complete warranty conditions are available from EXHAUSTO, Inc.

2. Specifications

2.1 Dimensions & Capacities

EBC 12x Control		
Power Supply	V	1x120V AC
Amperage	A	6.3
Operating Temperature	°F/°C	-4 to 122/-20 to 50
Dimensions	A in/mm	6.9/175
	B in/mm	6.9/175
	C in/mm	3.8/96
Weight	lbs/kg	2.8/1.3



One or more EXHAUSTO fan(s) can be connected to each EBC 12x in use depending on the current draw of the fan motor. The table below displays the number of each fan that can be connected to a single EBC 12x as well as the current draw of the fan(s).

Fan Model (single phase motor)	RS 0090 RSV 009	RS 012 BESF 146 RSIF 146	RS 014 RSV 012 RSV 200	RSV 014 RSV 250 BESF 160 RSIF 160	RS 016	RSV 016 BESB 250 RSIB 300	RSV 315 BESF 180 RSIF 180
# per EBC 12x	12	5	4	2	1	1	
Amperage Draw per Fan	0.5	1.2	1.4	2.9	3.9	5.8	
Total Amperage Draw	6.0	6.0	5.6	5.8	3.9	5.8	



3. Mechanical Installation

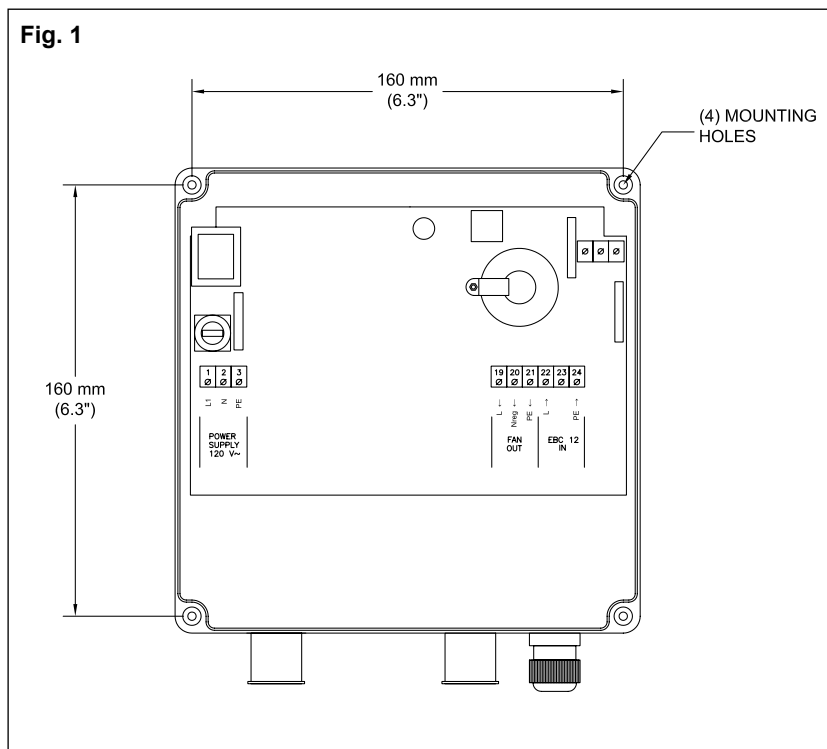
3.1 Location

The control must be installed inside, preferably in the boiler room. The control does not need to be installed in an enclosure. For ease of installation, it should be installed close to the EBC 12 control.

3.2 Mounting of Control

The control can be mounted directly on a wall or similar. Remove the clear cover. The mounting holes are located under the plastic screws that hold the cover in place.

See Figure below for mounting hole-pattern.



4. Electrical Installation

4.1 General

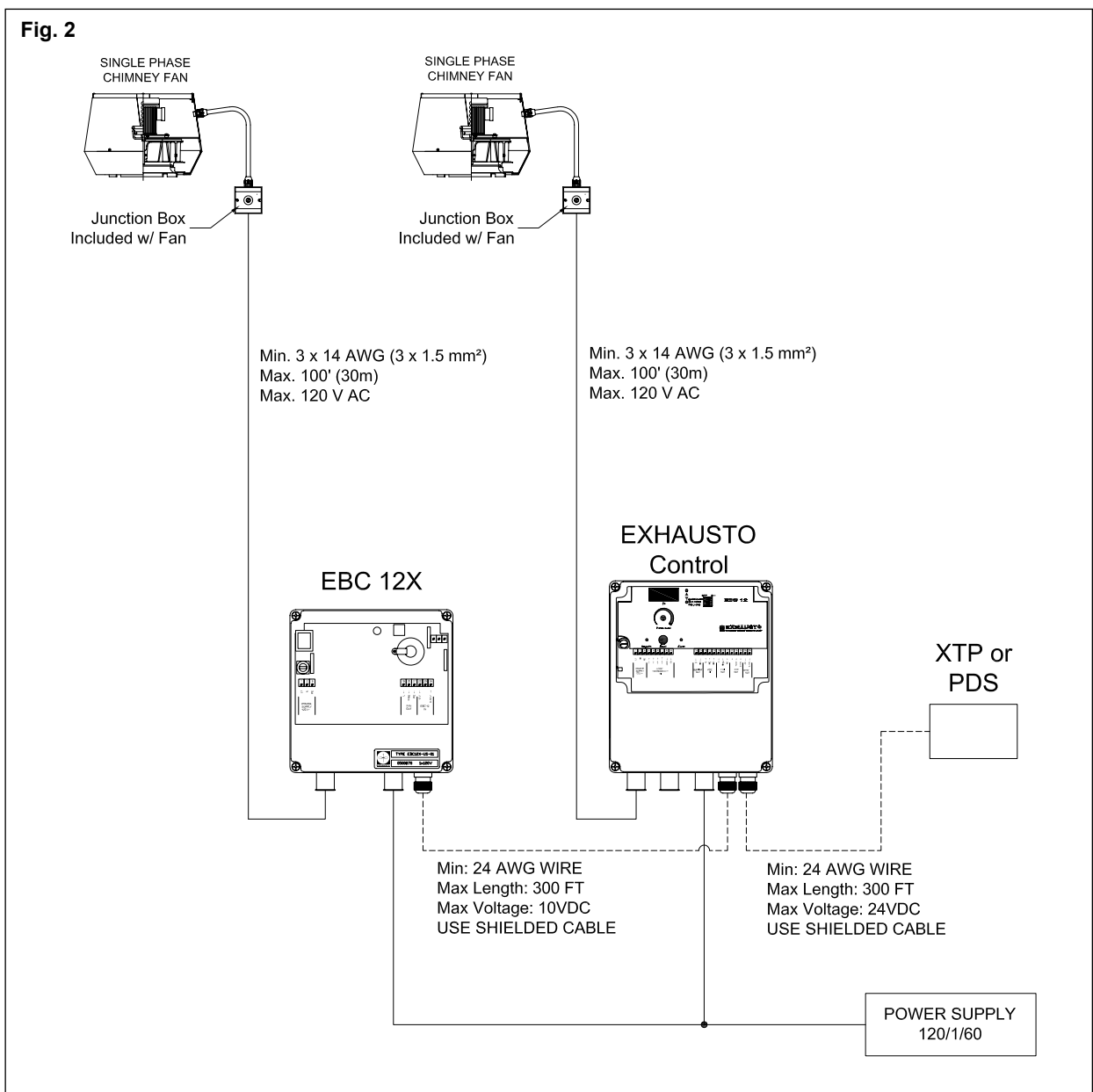


Danger: Turn off electrical power before servicing. Contact with live electric components can cause shock or death.

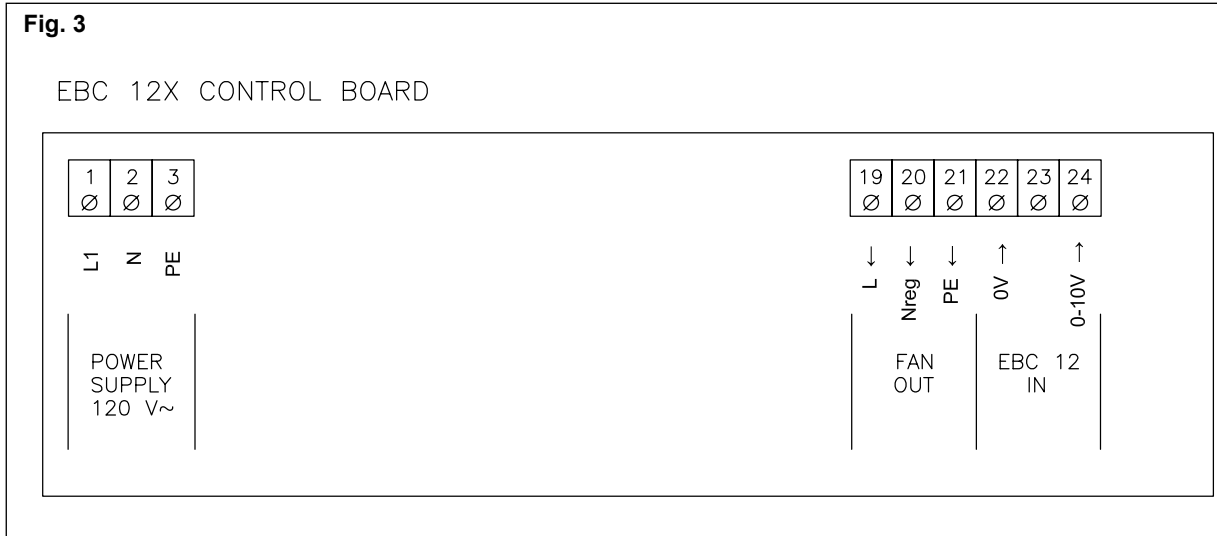


EBC 12x is designed for 1x120V AC power supply only.

The figure below shows a general connection diagram. The EBC 12 shown in the diagram is representative of any compatible EXHAUSTO control.



The designations for each terminal on the control board are shown below.



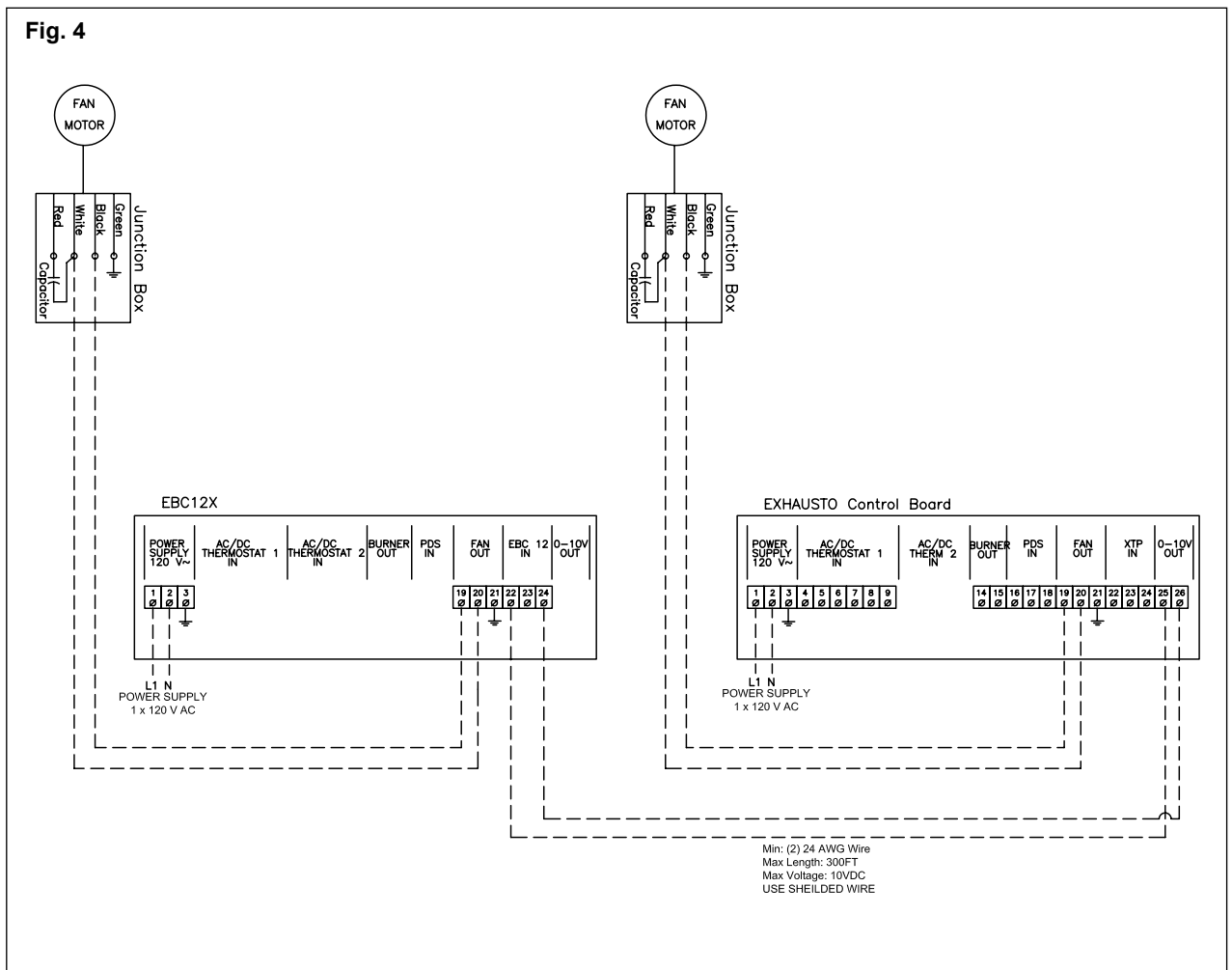
Terminal	Use
1	Power Supply - L1
2	Power Supply - N
3	Power Supply - Ground
19	Chimney Fan - L
20	Chimney Fan - N
21	Chimney Fan - Ground
22	Control Signal for EXHAUSTO main control (0 VDC)
24	Control Signal for EXHAUSTO main control (10 VDC)

4.2 Connecting to an EBC 10, 12, 14 or MEC 18

Below is the wiring diagram connecting an EBC 12x to EBC 10, 12 or 14.

To wire the main control to an EBC 12x, shielded wire should be connected to terminals 25 and 26 of the main control and run to terminals 22 and 24, respectively, on the EBC 12x.

NOTE: Terminal 19 on the circuit boards is always hot (120 VAC).
Terminal 20 (neutral) regulates the fan speed.

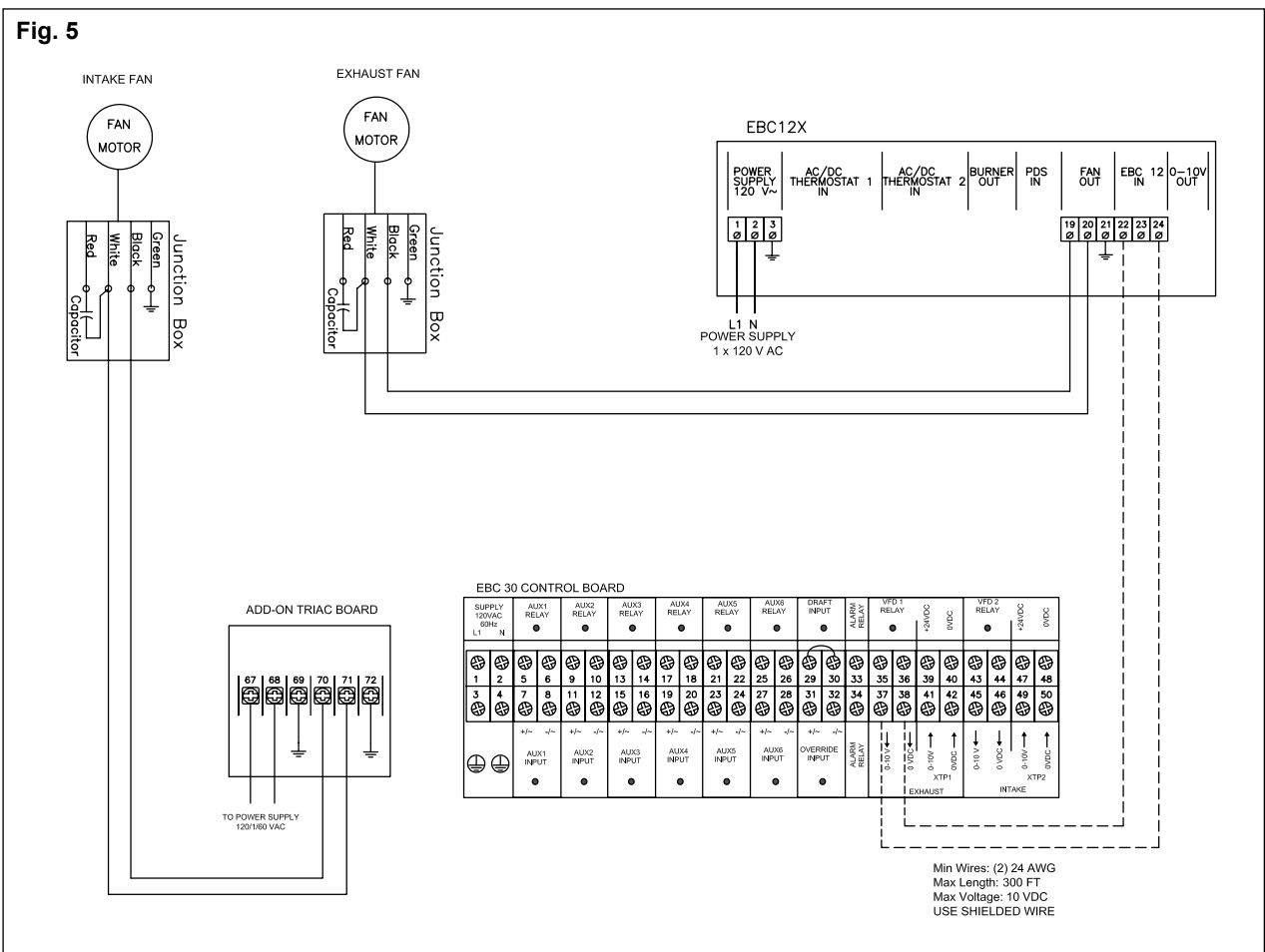


4.3 Connecting to an EBC 30

The terminal connections of the EBC 30 and EBC 12x depend on the function of the fans connected to the EBC 12x.

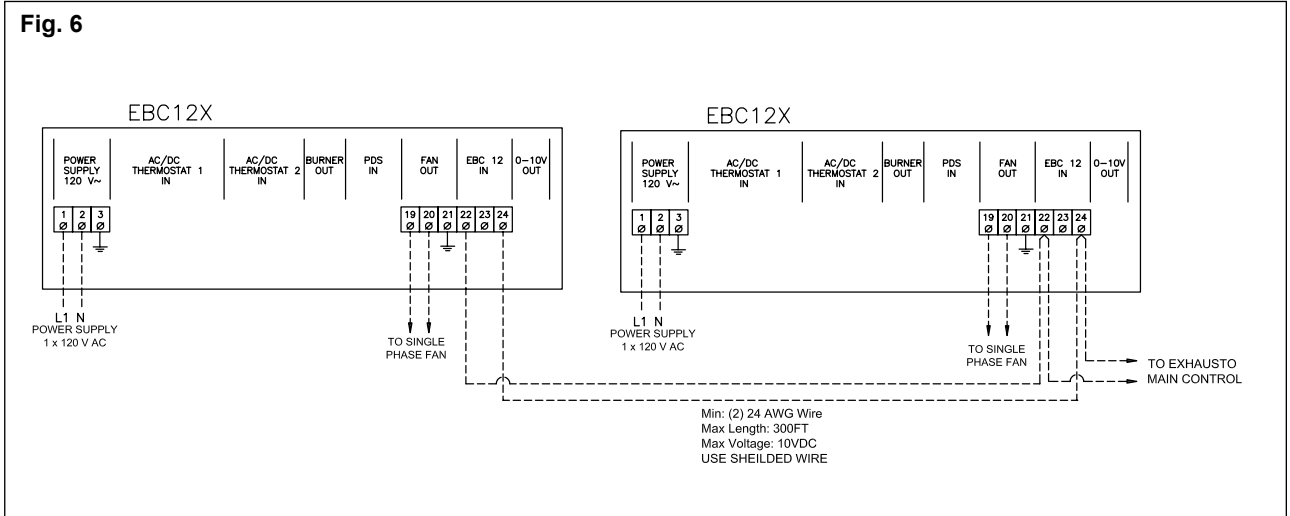
For exhaust fans, connect terminals 38 and 37 of the EBC 30 to terminals 22 and 24, respectively, to the EBC 12x. For intake fans, use shielded wire to connect terminals 46 and 45 of the EBC 30 to terminals 22 and 24, respectively, to the EBC 12x.

The diagram below shows the connection of an exhaust fan to an EBC 12x. A similar set-up can be used for applications requiring the intake fan to be connected to the EBC 12x. When controlling both intake and exhaust fans with the EBC 30, a Triac Board Add-On is used. See the EBC 30 Manual for further information.



4.4 Connecting Multiple EBC 12x Controls

More than one (1) EBC 12X can be used in a system. To connect multiple EBC 12x's, wire the main control to the first EBC 12X as shown in Sections 4.2 and 4.3. Next, run shielded wire from terminal 22 of the first EBC 12x to terminal 22 of the next one. The same should be done with wire running from terminal 24.



5. Start Up and Configuration

5.1 General

The dip switch settings used on the main control (EBC 10, 12, 14, 30 or MEC 18) will apply to each EBC 12x in operation. For additional reference on setting the dip switches, refer to manual of the main control.

Set the draft set point on the main control in accordance with the operation manual. Once this is set, all fans connected to the control system will run at the same speed.

6. Maintenance and Troubleshooting

6.1 General

For additional troubleshooting, refer to the manual of the main control (EBC 10, EBC 12, EBC 14 or EBC 30).

Observation	Problem	Solution
Fan(s) connected to the EBC 12x('s) do not increase speed.	Wiring of terminals 22 & 24 on EBC 12x.	Make sure wires are connected properly to correct terminals.
One or more LED's on EBC 12x('s) are not lit.	1. Faulty wiring. 2. Bad power supply.	1. Check wiring between control & EBC 12x('s). 2. Check power supply.



