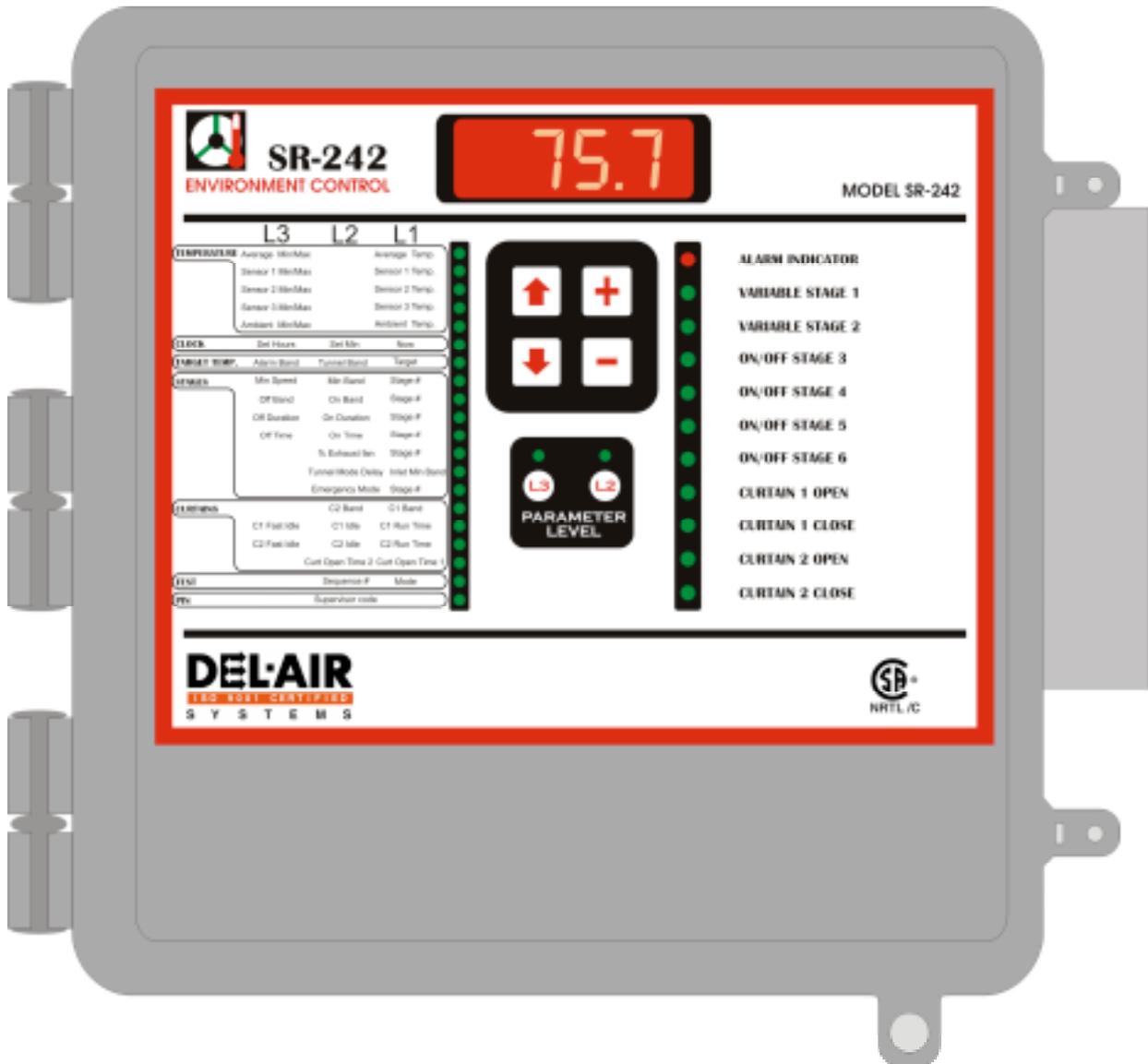


Installation Guide

SR-242



SR-242 INSTALLATION GUIDE

Although the manufacturer has made every effort to ensure the accuracy of the information contained herein, this document is subject to change without notice due to ongoing product development.

WARNINGS AND PRECAUTIONS

Defective equipment, probe failure, blown fuses and/or tripped breakers may prove harmful to the contents of the building. Therefore, it is strongly recommended to install backup devices and alarm or warning devices. Spare equipment should also be available at the site. The control equipment is protected against normal line surges. Large surges caused by thunderstorms or power supply equipment may damage this equipment. For added security against line voltage surges, it is recommended that surge and noise suppression devices be installed at the electrical distribution panel. Use of shielded cables for sensors is recommended for protection against lightning.

RECOMMENDATIONS

The manufacturer recommends that all installation procedures described herein be performed by a qualified electrician or installation technician. Furthermore, the manufacturer recommends the testing of all the functions and equipment connected to the SR-242, including the alarm system and backup devices, after installation, after changes to the installation and every month after that.

Fuse verification and replacement, as well as the proper setting of control values shall be the responsibility of the owner of this equipment.

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The purpose of this guide is to fully inform the installer on proper wiring and installation procedures for the SR-242. Full conformity of the Installation and User's Guide will lead to a successful installation and proper functioning of the SR-242 control.

The manufacturer recommends that the following installation instructions be followed as closely as possible and all work be performed by a certified electrician. Failure to do so may void the warranty.

1. Unpacking

Unpack the SR-242 and inspect contents for damage. Should the contents appear to be damaged, contact your local distributor to arrange for the return of the damaged material.

The package should contain the following items:

- 1 SR-242 control
- 2 spare fuses
- 4 Temperature sensors
- 1 User's Guide

2. Mounting Hardware Required

This is the list of the mounting hardware needed, which is not included with the product:

- Shielded two-wire cable, AWG #18 (to extend sensors)
- Shielded two-wire low capacitance cable, AWG #18 to #22 (used for communication)
- 4 screws: 1 #8 X 1", 2 #6 X 1" (to mount the control onto the wall)
- Screwdrivers
- Hammer (to punch out the knock outs)
- Soldering iron kit or approved sealed connectors

3. General Installation Guidelines

3.1 SR-242 Control

- It is recommended to install the unit in a hallway to limit the SR-242's exposure to noxious gases.
- In order to avoid condensation problems inside the controller, it is recommended to install the SR-242 on an inside wall. If it is not possible, use spacers to create an air gap between the wall and the SR-242.
- It is required to install the SR-242 face up with the cable entry holes facing down (see figure 1).
- The enclosure is watertight, but not splash proof or immersion proof. **DO NOT SPRAY WATER ON THE CONTROL.** Cover the control carefully with plastic when cleaning the room.
- The SR-242 should be installed in easy access location but away from damaging elements (heat, cold, water, direct sunlight, etc).
- Do not drill the face, the side the top or the back of the control.
- Do not install the SR-242 control near high voltage equipment, power supply, or transformer.

3.2 Electrical Cables

- All electrical cables must be installed according to local wiring codes.
- All cable shields must be connected to the SR-242 power ground only, except for the cable connected to the optional PC interface). The shield is needed to protect the SR-242 and the modules against any electromagnetic interference generated by lightning or nearby operating machinery.
- Never use the shield as a conductor.
- Connect only one end of the shield to the ground of the SR-242.
- Use separate conduit for the low voltage cables (communication and probes) and the high voltage cables. There must be at least 1 foot (30 cm) between low voltage and high voltage conduits.

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- If a low voltage cable has to cross over a high voltage cable, make this crossing at 90°.
- All cable connections must be soldered or made with sealed connectors.
- Temperature sensor cables must be 500' (150m) or less.
- Communication cables must be 750' (250m) or less.
- It is prohibited to use overhead cables outside the building.

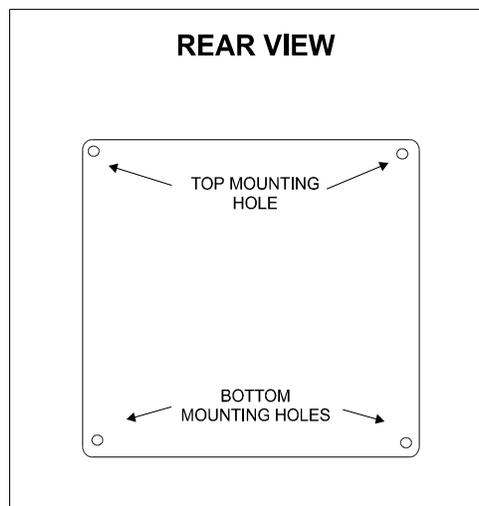
3.3 Electrical Power

- Protection from electrical surges should be included in the planning of each installation.
- Every module should have a separate breaker to avoid serious consequences.
- Modules require the same phase and same voltage as the SR-242 to operate.
- It is strongly recommended to install a backup thermostat to a sufficient fan and heating system parallel to the SR-242 module output (see figure 4).
- Backup systems and alarms must be thoroughly tested and verified as working properly before using the ventilation system.

4. Mounting

With a screwdriver remove the faceplate's screws. Then, open the box' front cover (like a door). Use four screws to secure the SR-242 in place, directly on the wall.

FIGURE NO. 1 Mounting Position and Devices



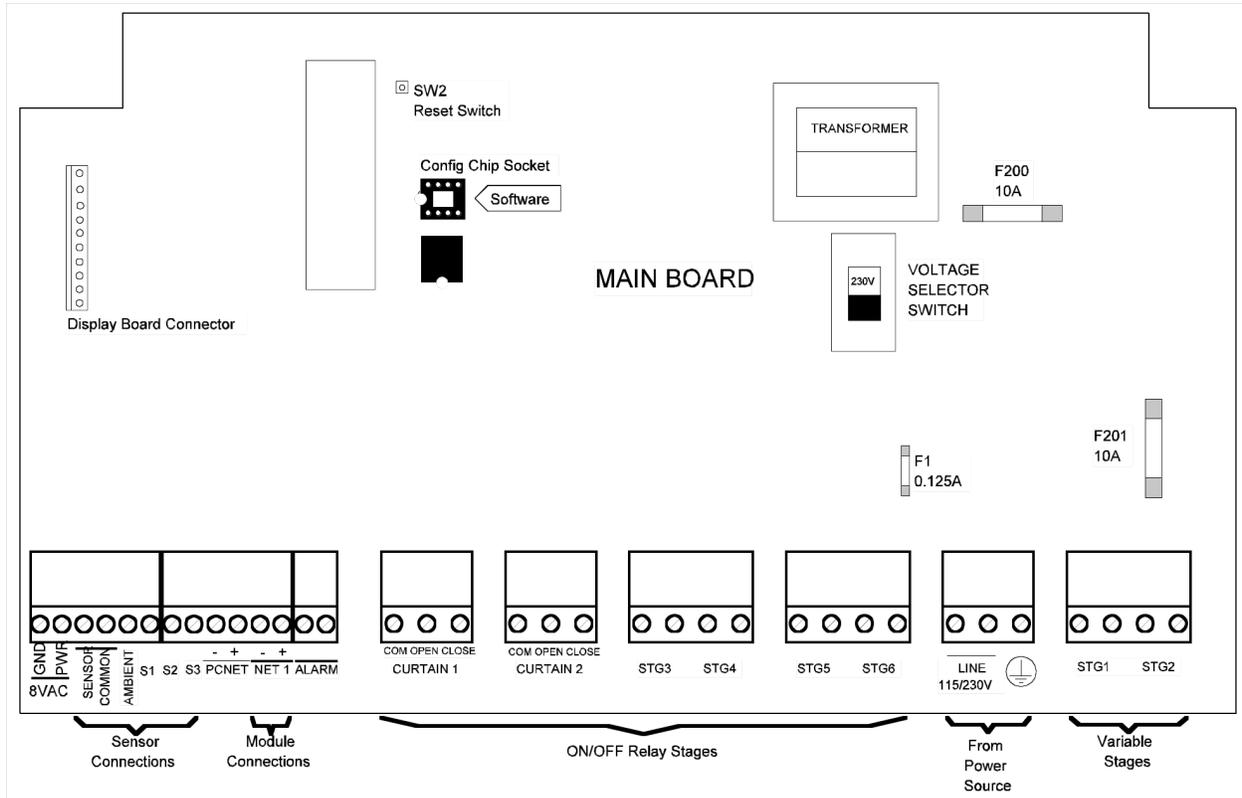
Screw Sizes:

4 Mounting holes: #8 X 1"

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5. Control Description

FIGURE NO. 2 SR-242 Main Board



6. Connection Procedure

6.1 General Wiring Diagram

Since the SR-242 is a configurable control, the specific wiring diagram comes with the User's Guide particular to this installation.

6.2 Detailed Wiring Diagrams

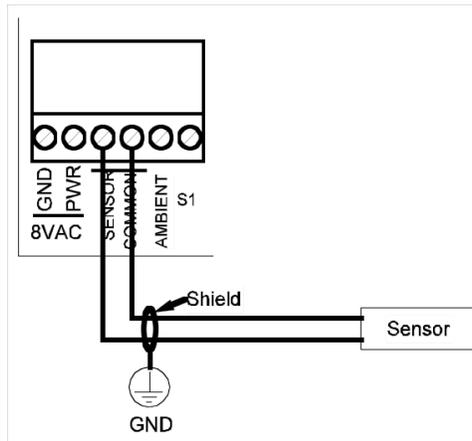
6.2.1 Typical Sensor Wiring

The inside temperature sensors should be located in an area that will give the most accurate temperature readings to achieve optimum ventilation. They must be located in an area protected from operating machinery, animal or personnel manipulation or anything that could damage the sensor. See also "3. General Installation Guidelines".

The Ambient (outside) temperature sensor must be installed in a location which is not influenced by heat generated by the building or direct sunlight.

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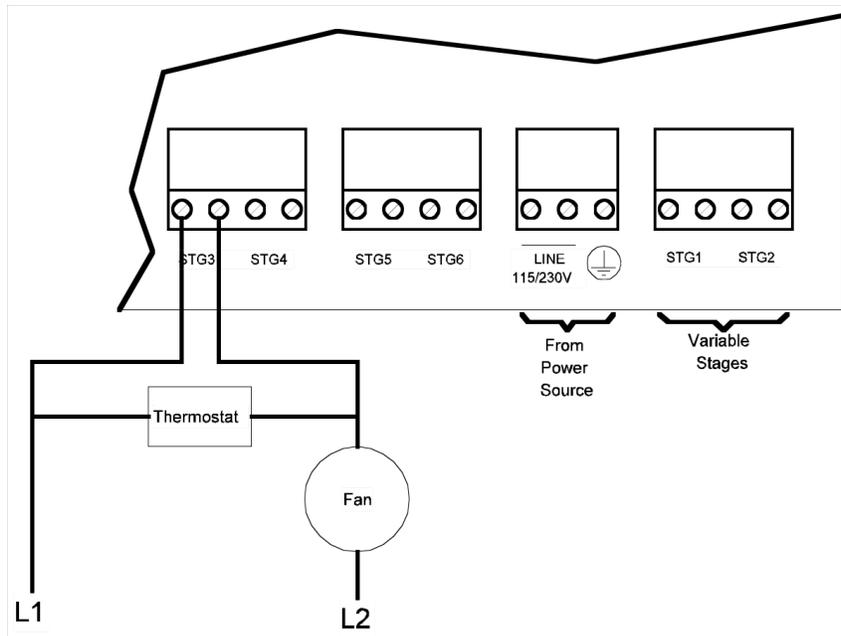
FIGURE NO. 3 Typical Temperature Sensor Wiring



6.2.2 Typical Thermostat Backup Wiring

If the control or a module fails, the backup thermostats will activate the fan or heater as soon as temperature reaches the thermostat's set point. The thermostat must be accessible for adjustment and must be set at 3 to 5 degrees above the fan's relative set point or 3 to 5 degrees under the heater's relative set point.

FIGURE NO. 4 Typical Thermostat Backup Wiring



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6.2.3 Typical Alarm Connection Wiring

The SR-242 provides a normally open relay contact to trigger an alarm (high temperature, low temperature, power failure or control failure,). It is strongly recommended to connect the alarm to an alarm system or an auto-dialer.

FIGURE NO. 5 Typical Siren Wiring.

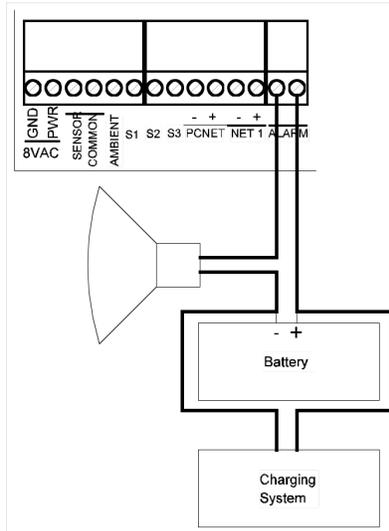
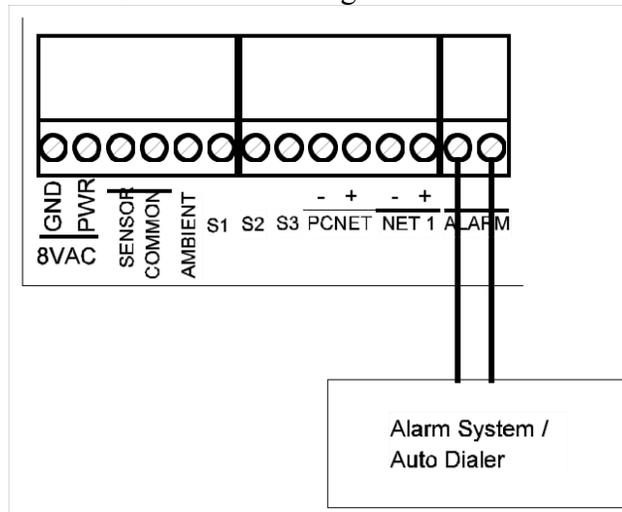


FIGURE NO. 6 Typical Alarm Connection Wiring



6.2.4 Communication Port Connection

Always connect the SR-242 positive communication port terminal block with the module positive communication port terminal block. Do the same with the negative communication port.

Certain modules (VM-2, RM-2, and CI-1/24) require the same phase and same voltage as the SR-242 to operate.

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7. Powering Up Procedure

7.1 Adjust The Voltage Selection Switch

This switch is located on the main board (see figure 2). It adapts the SR-242 to 115 VAC or 230 VAC line voltage.

Set the line voltage switch (115 VAC/230 VAC) inside the SR-242 to the correct value before powering up the control.

7.2 Verify all Connections

Once the SR-242 is properly mounted on the wall and all modules and sensors are connected to the terminal blocks, perform the following steps:

- 1) Ensure the flat cable between the bottom electronic board and the faceplate electronic board is properly connected.
- 2) Seal all cable entry holes.

7.3 Downloading the Program (if necessary)

When upgrading your system with a new download chip, you will have to download the program.

- a) Remove the faceplate screws and lift up the cover.
- b) Insert the Config Chip into the socket of the main board (see figure 2). Make sure the arrow of the download chip is pointing in the same direction as illustrated on the main board.
- c) Press on the reset switch situated on the main board (see figure 2). The display on the front panel should indicate *dnld* for approximately 5 seconds. If *dnld* is not displayed, try one more time. If *dnld* is still not displayed, remove and replace the Config Chip. Make sure the arrow of the download chip is pointing the same direction as on the main board.
- d) When the downloading procedure is complete, remove the Config Chip and place it in a safe location.

If the Config Chip is not removed after the downloading procedure, the control will reload the factory set values each time it is reset, or each time the power is turned off and back on, erasing the values entered by the customer.

7.4 Configuration Issues

- If an incompatible configuration is downloaded, bAdCt will appear on the display for two seconds and it will restart during the download. This will not change or affect the existing configuration.
- If a configuration uses functions that are programmed in a more recent processor version, OLdCt will appear on the LED for two seconds and it will restart during the download. This will not affect the existing configuration.
- If the control needs a more recent configuration, OLdCF will appear on the display during the downloading. This will not affect the existing configuration. During the download process, the control makes sure that the configuration being downloaded is compatible with the processor's version.
- If the control needs a more recent configuration, OLdCF will appear on the display for 2 seconds then the control will restart.
- If the configuration is corrupted, the ERR will appear for two seconds on the display, then it will restart.

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7.5 Upload

The upload function allows the user to save the parameters adjusted by the user in the Config Chip. This feature is very helpful when multiple controls are using the same configuration.

After adjusting the desired parameters, place the Config Chip in the main board's socket, then press F2 and F3 simultaneously for 2 seconds and UPLd should appear on the display during the uploading of the control's configuration towards the Config Chip. The control will return to normal once the upload function is complete.

Possible Error Messages:

1. ErrCS: Indicates that either the Config Chip is absent or is incorrectly inserted into its socket (in the wrong direction, or not all the prongs are in the socket) or the Config Chip is defective. The control will reset, if during the control's configuration upload to the Config Chip, the control can no longer communicate.

7.6 Hermetically Close the SR-242

Close the front panel and the lower access cover and secure them with the screws previously removed.

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7.7 Troubleshooting

PROBLEM	CAUSE	SOLUTION
Temperature sensor reads <i>LO</i>	<ul style="list-style-type: none"> - Temperature is below -6°F (-21°C). - Sensor is disconnected or defective. 	<ul style="list-style-type: none"> - Check all connections. If the problem persists, and the temperature is within normal range, replace the Sensor.
Temperature sensor reads <i>HI</i>	<ul style="list-style-type: none"> - Temperature is above 168°F (76°C). - Sensor is short circuited or defective. 	<ul style="list-style-type: none"> - Check all connections. If the problem persists, and the temperature is within normal range, replace the Sensor.
Temperature average reads <i>Err</i>	<ul style="list-style-type: none"> - Temperature readings of the sensors used in the average are too different and the control is unable to calculate a proper average. 	<ul style="list-style-type: none"> - Make sure all the sensors are working properly. If so, contact your local distributor.
Display is blank	<ul style="list-style-type: none"> - Voltage selector setting is in the wrong position. - SR-242 is not powered. - The twelve pin flat cable between the main and the top boards of the SR-242 is disconnected. 	<ul style="list-style-type: none"> - Make sure the control is powered. - Make sure the line voltage selector switch is properly set. - Make sure the twelve pin flat cable is connected.
Display reads 8.8.:8.8.8. and <i>Err</i> continuously	<ul style="list-style-type: none"> - Software memory integrity has been compromised. 	<ul style="list-style-type: none"> - Download the software once again (refer to Section 7.3).

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7.8 SR-242 Compatible Sensors

- **Temperature probe 2004-1KLT (blue cap)**
Temperature range of -43 to 165.7 °F (-41.7 to 74.4 °C).

7.9 SR-242 Compatible Modules

VM-2:	Variable Speed Module (max. 2), two variable stages, 6 Amp each (nominal). (0.1 A - 6A)
RM-2:	On/OFF Module, two single speed stages, 10 Amp each (0.3 - 10 A) 1.5 hp @ 220 V
CI-1/24:	24VDC Actuator Module (for cable controlled inlets)
CI-1/AC:	240VAC Actuator Module (for cable controlled inlets)

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8. Specifications

DESCRIPTION	VALUE
Input Power	12 VA max
Power Source	115/230 VAC, -20%, +10% 50/60 Hz
Power Fuse	0.125A, 250V, Slo-Blo
Output (Relays 1 to 8) Curtain Relays 5 and stage 3 to 6	10 A; 250VAC 1 HP @ 250 VAC Minimum load 25mA @ 50/60Hz
Variable Outputs (Stage 1 & 2)	10 A 115/230 V
Alarm Relay	30 VDC, 1 A
Storage temperature	-4°F to 131°F (-20°C to 55°C)
Operating temperature	32°F to 122°F (0°C to 50°C).
Temperature range	-6° to 168°F (-21°C to 76°C)
Weight	5.6 lb (2.5 Kg)
Size	12"X4"X3" (30X11X34 cm)

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9. Limited Warranty

The manufactured equipment and supplied components have gone through rigorous inspection to assure optimal quality of product and reliability. Individual controls are factory tested under load, however the possibility of equipment failure and/or malfunction may still exist.

For service, contact your local retailer or supplier. The warranty period shall be for two years from manufacturing date. Proof of purchase is required for warranty validation.

In all cases, the warranty shall apply only to defects in workmanship and specifically exclude any damage caused by over-voltage, short circuit, misuse, acts of vandalism, lightning, fortuitous events, acts of God, flood, fire, hail or any other natural disaster. Any unauthorized work; modification or repair on this product automatically voids the warranty and disclaims the manufacturer from all responsibility.

The manufacturer assumes only those obligations set forth herein, excluding all other warranties or obligations. This warranty stipulates that in all cases the manufacturer shall be liable only for the supply of replacement parts or goods and shall not be liable for any personal injury, damages, loss of profits, interrupted operations, fines for infringement of the law or damages to the production of the PURCHASER and the PURCHASER shall take up the defense and hold the manufacturer faultless regarding any legal or extra legal proceedings, notice, or claim by the customer or by a third party, and regarding any legal and extra legal expenses and fees brought forward on by such damages.

SR-242 VER:03
February 27, 2002