



Heater Product Safety & Product Guide

General

The purpose of this product guide (the "Guide") is for Sonitek Corporation ("Sonitek") to convey certain recommendations, advisories, and requirements regarding your purchase and use of the product(s) described below (the "Product"). This guide is not intended to be an exhaustive list of recommendations, advisories, or requirements for the use of the products. Please visit Sonitek's website (<http://www.sonitek.com/>) or contact Sonitek customer service (1-844-SONITEK) for more information regarding Sonitek's products. To ensure the proper use of the product, each user of the product should carefully review this guide. **FAILURE TO COMPLY WITH THE INFORMATION PROVIDED HEREIN SHALL CAUSE YOU TO ASSUME ALL RISK AND LIABILITY ARISING OUT OF SUCH FAILURE.**

All Heaters sold that are terminated and/or provided with Sonitek installed connectors are designed for use with current models of Sonitek equipment that is equipped with the same style corresponding connector. Any other use voids the warranty and is at the sole risk of the buyer

Product Description

This guide applies to Sonitek heaters. The product can be distinguished via marking on the outer metal sheath and/or a lead wire tag with "SONITEK".

Safety

The following markers utilized throughout this guide shall have the meanings set forth below:



DANGER – *This is a danger statement that is related to the use of this product. Failure to heed these messages will result in serious personal injury or death.*



WARNING – *This is a warning statement that is related to the use of this product. These statements warn of actions that may result in physical injury or death.*



WARNING – Risk of Electric Shock – *This is a warning statement that warns of the presence of electrical voltages, which can cause physical injury or death.*



CAUTION – *This is a caution statement that is related to the use of this product. These statements caution against actions, which may damage the product or associated equipment.*



DANGER – *Care should be taken to read and completely understand this guide before installing and wiring the product. The product is designed to become **hot** while in operational use. The end user must conduct their own risk assessment to identify if there is any residual risk pertaining to direct contact with hot surfaces. There is potential risk of rupture or other malfunction of the product if it is not installed in accordance with this guide or other installation instructions provided by Sonitek. It is the end user's responsibility to ensure that the product is properly selected and installed in accordance with applicable recommendations given within this guide. **Note:** this guide does not cover all foreseeable end-use applications, therefore, consult your local Sonitek representative with any additional questions or concerns.*



WARNING – Risk of Electric Shock – *Any installation and maintenance performed on this product shall be performed by a qualified electrician in accordance with applicable national and local electrical codes. It is the end user's responsibility to ensure that proper precautions are taken to ensure that necessary personal protective equipment is utilized by persons installing and maintaining any equipment.*

1. Protection of heater elements from over temperature

The use of a temperature controller to regulate the heating process and prevent product over temperature is critical to ensure the safe operation. User shall also ensure that the thermal insulating materials used in the process do not come in contact with any portion of the product. It is the user's responsibility to ensure safety of the installation.



WARNING – Always install high temperature control protection in systems where an over temperature fault condition could cause a fire or other hazard. Failure to install temperature control protection where such a hazard exists could result in damage to equipment, property, and/or injury to personnel.

NOTE: It is the responsibility of the user to properly use overtemperature control devices or protection circuits, even if the product has been supplied with thermocouples or thermostats.



CAUTION – Failure of components in a temperature control loop, such as the sensor, heater control relay or main temperature controller, can result in damage to a product in process, a product failure and/or damaging fire. To protect against this possibility, over-temperature protection must be provided to interrupt or remove power from the heater circuit during abnormal conditions. To limit this risk, perform a functional test of all temperature limiting devices on a regular interval.

All temperature limit devices must have appropriate third-party approval and be applied in the classification for which it was tested and approved. The high temperature limiting device(s) should function independently from the process temperature control.

2. Termination/Environment

Do not handle the product by the lead wires or sensor wires!

Handling by the leads can compromise electrical and/or mechanical integrity of the product. Certain wires such as fiberglass jacketed wires may also cause skin irritation or other personal injuries.

In order to maintain termination integrity, the termination area should be kept below 400°F (222°C) or the maximum temperature rating of the lead wire insulation. Keep terminations clean, dry and tight. Do not allow oil, moisture or other possible contaminants to come in contact with the lead wires or the electrical termination end of the product.



CAUTION – Heater orientation is important in order to ensure efficient heat transfer and safe operation. Care should be taken to allow enough room for heater expansion without compromising heat transfer.



WARNING – Electric heaters are capable of developing high temperatures. To minimize the risk of fire or other personal injury or property damage, extreme care should be taken at all times to use and maintain the product in a safe environment. Operating this product in atmospheres containing combustible gases and vapors should be avoided.

This product is not suitable for use in hazardous (classified) locations.

3. Wiring

⚠ WARNING – Risk of Electric Shock – The installation and wiring of this product shall only be done by a qualified electrician, in accordance with applicable national and local electrical codes. It is the end user's responsibility to ensure that proper precautions are taken in reference to applicable personal safety equipment needed by those installing and maintaining equipment.

Never interrupt the protective earth circuit/ground. Any interruption or disconnection of the protective earth circuit used by this product will create a dangerous situation and could result in an electric shock that in some situations could lead to serious personal injury or property damage. It is the user's responsibility to properly size the ground wire for the protective earth circuit/ground and to ensure that the impedance of such wire is low enough to avoid dangerous conditions.

In some equipment or installations a GFI style breaker or circuit should be installed to ensure the safe operation of the product. Determining if this is a requirement is the responsibility of the user.

The mains/line voltage applied to the product must always be equal to or less than the voltage rating marked on the product's name plate/label.

Thermostats should not be used as an "OFF" or disconnect device. The use of a disconnect switch or circuit breaker is highly recommended and will allow the isolation of the product when maintenance is required

⚠ WARNING – It is the user's responsibility to properly size and install the feeder wires to the product. Feeder wire should be properly selected based on amperage, electrical power rating, ambient temperature, and type of environment.

It is the user's responsibility to ensure that the bending radius of the products and/or any conductors/cables and coverings (even if supplied by Sonitek) are large enough to prevent any damage.

For components that do not already have insulated supply leads provided, user must take suitable action to either add suitable insulating sleeving or equivalent (with appropriate temperature and environmental rating) to suitably cover any exposed conductive surface.

Start Up

The following sets forth instructions and requirements relating to the initial startup of the product:

⚠ CAUTION – Before energizing the product, the following items should be checked with the main/line voltage disconnected. Failure to do so could result in damage to the product, equipment and/or operator injury when it is energized.

1. Electrical terminations are tight and wiring is per wiring diagram supplied (if applicable).
2. Proper disconnecting means and fusing have been installed.
3. The voltage rating of the product is the same as that being applied.
4. Proper temperature controls and safety limiting devices are in place with proper set point(s).
5. The product is properly grounded.

WARNING – After applying power to the product, make sure that the system is being controlled properly before leaving it to run unattended. Failure to do this could result in the product overheating in a "run away" condition that could lead to damage to equipment, fire or personal injury.

Preventative Maintenance



WARNING – Risk of Electric Shock – High voltage is present when the product is energized and hence preventative maintenance of this product shall only be done by qualified personnel.

Turn all power off to the product and “lock out/tag out” the power disconnect switch(es) for the product before performing any preventative maintenance.

It is the end user's responsibility to ensure that proper precautions are taken in reference to applicable personal safety equipment needed by those installing and maintaining equipment.



WARNING – The product, vessel and system can remain hot for a long period of time after the power has been removed, so make sure the equipment has cooled down to a safe temperature before performing any preventative maintenance.

Thermal cycling, corrosion and vibration can cause degradation of the thermal system and electrical interfaces. Follow system designer's guidelines for periodic checking of the condition of the installed product and the electrical connections.

Replacement Parts

When ordering replacement parts from a Sonitek representative, please reference the part number(s) indicated on the Sonitek product(s).

If your Sonitek representative is not known, please visit our website <https://www.sonitek.com> and use our contact form to find a Sonitek representative for ordering replacement parts.

Disposal and Recycling

This product is classified under the RoHS and W.E.E.E. directives as electronic components with respect to disposal, and as such, must be recycled as per the requirements of the national regulations of the end user.



Terms and Conditions and Product Returns

Unless otherwise expressly agreed to in writing by Sonitek, Sonitek's standard terms and conditions shall apply to your purchase and use of the product in all respects. Such terms and conditions include, but are not limited to, applicable warranty obligations and payment terms. The terms and conditions may be found attached to any order acceptance or bid prepared by Sonitek. For a copy of such terms and conditions, please contact Sonitek's customer service department or visit our website <http://www.sonitek.com>.

In the event that you desire to make a warranty claim against any product because it does not comply with the warranty provisions provided under the applicable terms and conditions, please contact Sonitek customer service to obtain a Return Material Authorization (RMA) number before returning any item for repair or replacement. The following information is needed to process a returned product:

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|------------------------------------------------------------------------|---------------------------|
| • Customer name | • Customer account number |
| • Contact name | • Phone number |
| • Part number | • Email address |
| • Quantity | • P.O. number |
| • Reason for return | • Application information |
| • MSDS sheet of material(s) that came in contact with product, if used | |

Prior approval and an RMA number are required when returning any unused product for credit. Make sure the RMA number is on the outside of the carton, and on all paperwork. Return all material on a freight prepaid basis.