## Trivolt Industries EXTH TRIFLEX Data Sheet



Trivolt Industries EXTH TRIFLEX silicon carbide heating element is a non-metal and high temperature electric heating element. It is manufactured with green silicone carbide which is compressed into a solid blank under high temperature and re-crystallized.

The element is characterized by high-applied temperature, anti-oxidization, anti-corrosion, long service with very little deformation, easy installation, and maintenance.

EXTH TRIFLEX heater is commonly used for high temperature applications such as electric furnaces, metal and magnet industries, ceramic powder, glass, and any other applications that require extreme temperatures.



EXTH TRIFLEX heaters are manufactured in a wide range of shapes. Below is a chart with our configurations. Combined with our sheet metal department, Trivolt can manufacture complete assemblies for easy installation.

- » Outside diameter (OD)
- » Length of hot zone (HZ)
- » Length of cold zone (CZ)
- » Length of overall (OL)
- » Center distance (A)
- » Resistance (1050°C +/- 50°C)

#### Style EXTH(A)



Style EXTH(G)



Style EXTH(H)



#### EXTH(SA) Spiral



Style EXTH(LU) Extended cold zonesfor 3-phase



Style EXTH(U) Heated risers



#### Style EXTH(DSA) Double spiral



Style EXTH(W) Commonly used for 3-phase



Style EXTH(U) Heated risers





- 1. At room temperature, the TRIFLEX EXHT element is brittle like ceramic. Caution is required when installing and handling. The heater is not recommended for applications where the heater will be exposed to vibration.
- 2. The nominal resistance value written on the cold end should be inspected before installation. If it is not clearly identified, a new test is needed. All elements are tested at 1050°C in open air.
- 3. Digital temperature control is very important because the higher temperature can impact the element's life. Startups are important so the surface temperature of the heater does not overheat or ramp up. Depending how often the units are used, current verification when in use is always recommended.
- Frequent observation of a loose clamp is also recommended. If the cold end is black because of oxidation, then the connection may have been loose. The heater should have a uniform red color during use.
- 5. A soft start is recommended every time you start up the oven. It is recommended to operate the heater at 25% of the voltage for 30 minutes, 50% at 30 minutes and 100% at 60 minutes. NEVER EXCEED full-load voltage.
- 6. If the oven has been shut down for a long period of time and the environment is not controlled, a secondary heating is required before start-up to remove any or all moisture in the oven.

#### The schematic diagram is as follows:



#### Specifications

- » The element will start to oxidize at 800°C in air.
- » A sio2 protect film will be generated on the surface of the hot zone at 1000-1300°C.
- » Cristobalite will crystallize at 1300°C.
- » The protective film will attain thickness at 1500°C which will slow down the oxidation of the heater.
- » The film will be damaged at temperatures over 1600°C and shorten the life of the heater.

#### Surface temperature chart

Media	Celsius	Fahrenheit
AIR	1800	3272
Nitrogen	1700	3092
Hydrogen	1100	2012
Argon Helium	1600	2925
N2/H295//5%	1100	2012

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### **Ceramic block connection**



## Connecting jumpers and clamps





## Heating elements



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