



Advanced Anti-Corrosion Potting is Available for *Electra-COOL* TECs

If your finished product will be operating at temperatures near the dew point, or if the equipment will be routinely turned off, condensation from components may become water that may enter the module. Problems related to water are best managed by using an Epoxy perimeter seal.

However, it is well known that ONLY applying a sealing agent like Epoxy or RTV to the outer perimeter of the module may not provide adequate protection against internal corrosion. If the module is likely to be exposed to water vapor from high humidity, high temperature operation or cycling, additional more long term problems related to internal corrosion (electro corrosion) can be addressed by coating the module's internal elements with a varnish like material called "potting."

"As with other electronics, adequate care should always be taken to protect TECs from moisture... with a minimum of an Epoxy edge seal. In applications that require Very High Reliability, select our "potting" option and stop worrying."

Our most demanding customers have taken advantage of this protective coating or "potting" with great success. Each module is dipped into a varnish like material (potting) that coats the inside the module, particularly around the electrical connection points, that otherwise can deteriorate or short. This coating material has passed long term testing in a variety of environments and can be utilized in a wide range of temperatures (-50°C to +150°C).

Potting it is a very thin clear material that exhibits a glossy sheen. Since potted modules must be lapped after the dipping process to remove the material from the ceramic surfaces (interfaces) it is only noticeable within the module. In addition to excellent anti-corrosion protection, the potting method retains about 4% higher efficiency compared with Epoxy or RTV sealing due to the absence of the thermal bridge created by the sealant layer.

Epoxy and most RTV sealants adhere well to the potting material and can be applied as an additional barrier at the factory or by the customer depending on the application.

We offer two levels of protection from moisture. First, a bead of [Epoxy](#) or RTV can be applied to the outside edges of the module and sufficiently far down the leads to prevent wicking. This form of protection is adequate in many situations and costs a dollar or two depending on quantity. When module reliability and performance are critical we recommend both epoxy sealing and potting. The "potting" option will cost an additional \$1 - \$2.50 per module depending on quantity.

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Electra-COOL modules manufactured with anti-corrosion technology "potting" are designated with a "P" suffix (for example: ST-127-1.4-6.0 "P").

Further information and quotations are available by contacting us.

Additional information that may be important to you may include:

- [Module Specifications](#)
- [Module Prices](#)
- [Epoxy Edge Seal](#)
- [Installation Instructions](#)
- [Electra-COOL Reliability](#)