

Feature Focus: Product Dewpoint Control

Preventing condensation from forming on a product under test is one of the biggest problems encountered during environmental temperature and humidity chamber testing. Condensation on a product can impair or even destroy it – not what you want when testing prototypes that are both expensive and time consuming to make. To overcome this, it is essential to maintain a chamber air dewpoint below the product temperature, which can be difficult to do if chamber temperatures are ramping from cold to hot.



Prevent condensation on the product under test by using Product Dewpoint Control, which keeps the product warmer than the surrounding air.

Thermotron developed Product Dewpoint Control (PDC) to overcome this problem. PDC enables products under test to stay warmer than the chamber dewpoint, preventing condensation from forming and potentially ruining the product. PDC uses algorithms programmed in the 8800 Controller to maintain the product to be warmer than the surrounding air, automatically adjusting the chamber's heat and humidity systems to maintain a lower chamber air dewpoint than the product being tested.

The feature is simple and easy to use; users enter the desired Dewpoint Offset Value in the System Setup Screen. The 8800 controller then uses this offset to limit the dew point of the chamber to the monitored product temperature(s) minus this offset. After attaching the thermocouple(s) to the product to be monitored, the system is ready for testing.

The feature is an option available to customers to add to their humidity chamber, and can be retrofitted to existing test chambers as well.

Industries ranging from defense, electronics, aerospace, automotive, and telecommunications could use this feature to prevent expensive testing equipment from being ruined from water damage due to condensation. It is important to note that the amount of water in the chamber at the start of the transition will influence the rise in the dewpoint as the chamber temperature rises.