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Quick guide

Validation mode guide

Applications for accuracy validation in lab temperature and humidity chamber with high-speed air flow

Basic description

In normal operation, to make sure the test accuracy, interference of self-heating is fully considered during design. However, in other operating environments, e.g. environment with air flow, self-heating lost caused by air flow leads output deviation.

In the case of user requesting certification in standard lab, high-speed air-flow chamber may be used for validation. Therefore, adjustment is needed to adapt such environment before testing. Two types of chambers are normally used:

- Standard temperature and humidity chamber (hereinafter referred to as standard chamber) based on the wet and dry bulb method (including high-speed air flow mixture)
- Precise humidity generator based on two temperature and two pressure method (including light air flow and small volume)

With low-cost and bigger volume, standard chamber can improve test efficiency. It is normally used for accuracy validation of temperature and humidity sensor.

Standard chamber needs high-speed air flow to generate controlled humidity environment. It is also used for mixing inner humidity quickly. Therefore, when QFA20xx is placed in such chamber for validation, self-heating lost leads output deviation.

The guide is used to fix such issues.

¹⁾ Normal operation means product is installed on thermally insulated wall without air flow, via flush-mounted conduit box.

Jumper setting

In standard chamber, the setting is as follows:



Orientation in standard chamber

Place the device inside high-speed chamber to validate accuracy.

Air inlet locates differently as per chamber types. General placing device rule: Place the device bottom towards air let and keep a certain distance from it (recommended distance L of 100...300 mm).

The following examples shows device orientation in standard chambers with two different air inlets:



Standard chamber and device orientation example I



Standard chamber and device orientation example II

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