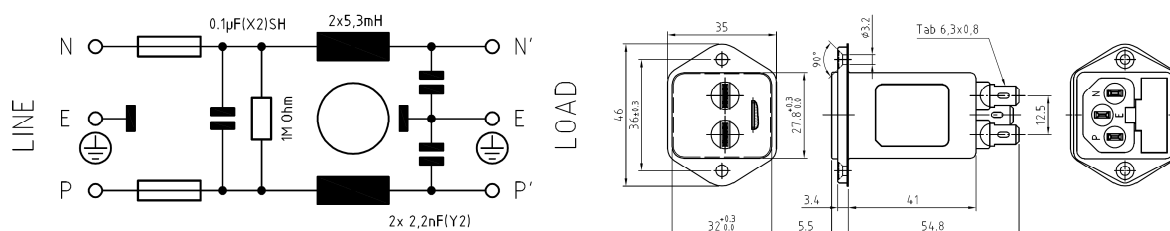


CTL DECISION SHEET (DSH)

Standard(s) (incl. year)	Subclause(s)	Tracking No.	Year
IEC 60939-3:2015-08, Edition 1.0	4.20	PDSH 2044	2016
Category			
CAP			
Subject	Keywords	Developed by	Approved at
Temperature rise test	Temperature rise test, filter with appliance inlet	ETF 4	2017 CTL Plenary Meeting

Question

In the standard it is not defined for the performance of the temperature rise test how to connect a filter that contains an IEC-inlet according to IEC 60320-1 with integrated fuse holder according to IEC 60127-6 and occasionally an additional switch according to IEC 61058.



In the new filter standard also the measurement of the temperature of the terminals and pins of appliance inlets ($T_{\max} = 70 \text{ °C}$ according to table 18) is required. However a detailed description of the test-setup is missing.

Depending on the used cord connector and the way how the filter is connected, the measurement results for the temperature on the pins may differ widely.

Different standards for such applications require various temperature measurements, but the method of connection as well as the location for the short-circuit (input/line side or output/load side) are not defined.

- IEC 60939-3 – Passive filter units:
Max. allowed pin temperature is 70 °C (table 18). No further definitions are made.
- IEC 60320-1 – Appliance couplers:
Max. allowed pin temperature for appliance couplers for cold conditions is 70 °C (subclause 7.1). No further definitions are made.
NOTE: According to IEC 60320-1 the performance of the temperature rise test is not required for appliance couplers for cold conditions.
- IEC 60127-6 – Fuse-holders for miniature fuse-links (e.g. used for IEC-Inlets with integrated fuse holders):
Dummy fuse-links are defined for the temperature rise test on the fuse-holder, and gauges for the contact resistance measurement. No definition for combinations of inlet and fuse holder is given.

What is to be considered the correct test-setup for the temperature rise test on filters with appliance inlet?

Decision

The preferred method for the temperature rise test on filters with appliance inlet is the resistance method.

NOTE: The resistance method indicates the average temperature of the conductor (winding) between the measuring points. The application of the thermocouple method for the temperature rise test on filters may lead to different results depending on construction of the filter and the application place of the thermocouple. The repeatability of measurements is improved with the resistance method.

The power supply is connected to one side of the filter, and a short-circuit is made on the other side of the filter using soldered wires of appropriate cross-section.

NOTE: Thereby the contact resistance is minimized and it is ensured that external influencing factors are negligible.

In case of filters with fuse-holder and/or switch, filter samples with short-circuited fuse-holders and/or switches are requested for the testing in order to avoid any influence caused by contact resistances.

Explanatory notes

This topic was brought up during the meeting of IEC TC 40 held in November 2015 in Beijing. The question was discussed whether the test-setup for the temperature rise test on filters should be described more detailed in the standard.

It was decided that at present a test-setup description in the standard is not intended. Instead such information should be documented in a CTL Decision.