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Date                    Your reference                    Our reference  
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Subject  
62059-31-1

Dear Mr. Signorini,

Herewith I would like to inform you about the following. Within IEC TC 13 the standard 62059-31-1 has been developed "Electricity metering equipment – Dependability – Part 31-1: Accelerated reliability testing – Elevated temperature and humidity". This document has been published in 2008. It describes various methods to determine the expected lifetime of electricity meters. Especially in Annex G an example is presented how to do that.

However, as discussed recently within IEC TC 13, the methods described in this document are extremely time consuming, very expensive and not very practical.

In total the test needs to be performed with 30 samples for each of the 5 stress conditions, which is equal to 150 samples. This is not very practical. Especially when testing at one of the lower stress conditions (see clause G.5.1) the minimum duration of the test can be extremely long. As a result, a test at one of these lower stress conditions might take a time up to 1 year or even more.

As a result, within IEC TC 13 we're searching for alternative methods. Personally, I'm member of a dedicated task force to come up with solutions. This is still an ongoing, not easy process. I expect it will take at least one year or more before the outcome of this group can be published.

Therefore, I would suggest the following. Within IEC TC 13 also the 62059-32-1 standard has been published. This standard describes requirements for a durability test, at maximum temperature and maximum current, for a duration of 1.000 hours. Afterwards the shift in accuracy of the meters is being observed.

On top of that MTBF calculations for the design can be performed, for instance based on the Siemens model SN29500. This gives good indication about the expected mean time between failures.

The combination of the 62059-32-1 testing together with the MTBF calculations can provide you with a certain good basis about the reliability of the product.

NMi has an ISO 17025 accreditation for the 62059-32-1 standard, which is commonly applied. However, the 62059-31-1 standard is not on our accreditation scope. Personally, I don't know any lab in the world having an ISO 17025 accreditation for this standard.

With kind regards,  
NMi Certin B.V.

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