



Webinar –Issues and resolution of problems with static electricity meters caused by conducted interference.

Date: 21st April 2021 at 8h UTC (10h CEST, 9h BST)

Duration: 2.5 hours

Join for free via Teams: Please contact paul.wright@npl.co.uk for an invitation and link

Purpose:

The workshop will present challenges and results from EU project on the EMI effects on static electricity revenue meters. The project was set-up in response of the findings by the University of Twente which reported some serious (>500%) meter errors induced by fast current changes.

The workshop will discuss these effects and present results of further testing of meters carried out using waveforms captured from mass market electrical products as well as waveforms recorded on-site at meter connection points; examples of captured waveforms and associated meter errors will be presented.

The characteristics of the current waveforms that cause errors will be presented together with a tool box of techniques that can be used to specify waveforms that can be used to test meters to check whether a particular design of meter give high errors.

These waveforms will be applied using testbeds used in testing labs and the challenges and progress of developing/retro-fitting suitable laboratory apparatus to test meters will be presented.

The project findings are expected to influence future normative standards and testing procedures and the outlook for future standardisation will be given.

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This project 17NRM02 MeterEMI has received funding from the EMPIR programme co-financed by the Participating States and from the European Union's Horizon 2020 research and innovation programme.



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Agenda:

1. Background to the project and the problem with static meter errors when exposed to fast switching currents.
Paul Wright NPL. (10 mins)
2. Discussion. (10 mins)
3. On-site capture of critical waveforms at meter connection points in The Netherland, Spain and Norway.
Waveform representation and effect on meter errors.
Bas Tenhave, UTwente (10 mins)
4. Compact representation of type-testing waveforms using wavelets.
Stefano NPL (10 mins)
5. The representation of interference waveforms future testing using a piece-wise method.
Marc Pous UPC (10 mins)
6. Discussion (15 mins)
7. Break (15 mins)
8. An arbitrary waveform based rig for meter testing.
Ronald van Leeuwen, VSL / Peter Davis, NPL (10 mins)
9. A test bed based the IEC61000-4-19 immunity apparatus
Jonathan Braun, METAS / Karel Pitas CMI (10 mins)
10. The results from testing a sample of European static meter types
Helko Van Den Brom, VSL (15 mins)
11. Discussion (5 mins)
12. A benchmark meter for settling customer complaints.
Zander Marais ,VSL (10 mins)
13. Next steps in standardisation. (10 mins)
Paul Wright, NPL
14. Discussion and close (10 mins)

Speakers:

Paul Wright, Stefano Lodetti, Peter Davis, National Physical Laboratory, UK.
Helko Van Den Brom, Ronald Leeuwen, Zander Marais, VSL, The Netherlands,
Bas Tenhave, University of Twente, The Netherlands,
Marc Pous, UPC
Jonathan Braun, METAS
Karel Pitas, CMI.