IEEE 1159 and IEC 61000 Standards: A brief comparison





For IEEE T&D meeting, 23 April 2008, Chicago

Similarity: Both IEEE 1159 and the IEC 61000 series of standards cover power quality.

Source: Bob Dettore

Source: Mhd Fuad Faisal

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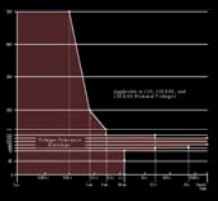
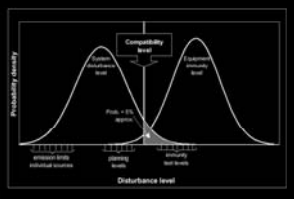
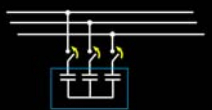
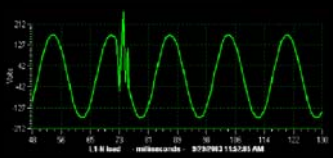
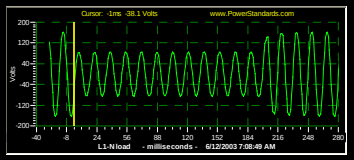
Similarity: Both IEEE 1159 and IEC 61000 series of standards are used by engineers with sensitive loads.






Similarity: Both IEEE 1159 and IEC 61000 series of standards agree on the basic concepts and terminology.

(mostly...)

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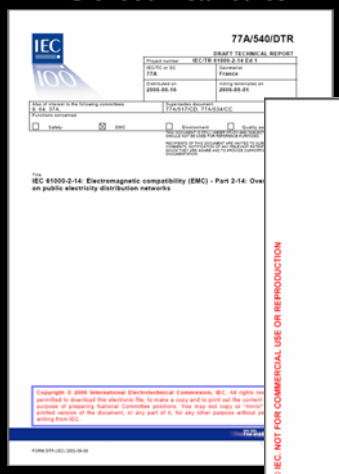
What, exactly, are the IEC 61000 series of standards?

IEC 61000-2 standards



What it is

IEC 61000-3 standards

What the limits are –
Emissions and susceptibility

IEC 61000-4 standards

How to measure

Differences between IEEE 1159 and IEC standards #1

IEEE 1159 – informative, tutorial, instructive

IEC 61000 series – “Thou shalt…”

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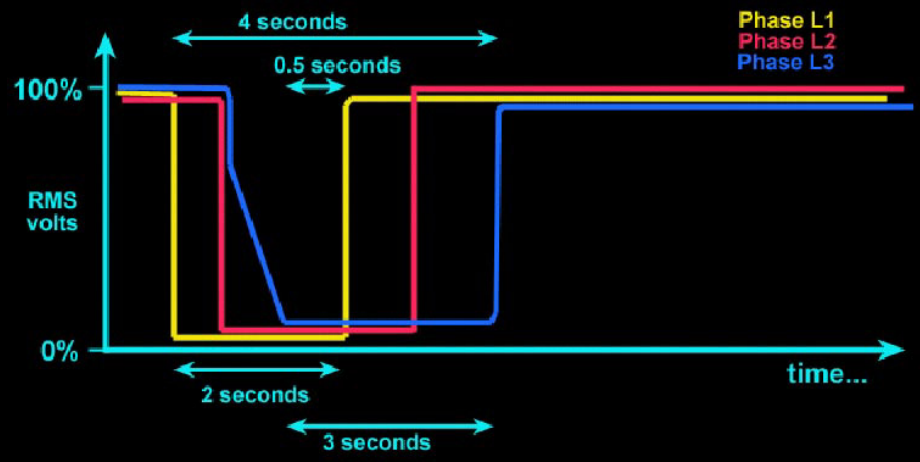
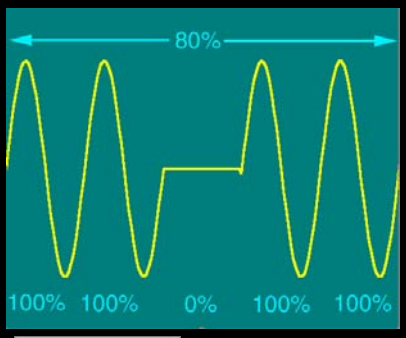
Differences between IEEE 1159 and IEC standards #1



Example from 61000-4-30 “Power quality measurement methods”

Differences between IEEE 1159 and IEC standards #1



Example from 61000-4-30 “Power quality measurement methods”

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Differences between IEEE 1159 and IEC standards #2

IEEE 1159 – Developed by volunteers.

IEC 61000 series – Developed by assigned national "experts"

Differences between IEEE 1159 and IEC standards #3

IEEE 1159 – Approved by consensus.

IEC 61000 series – Approved by nation voting.

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Differences between IEEE 1159 and IEC standards #4

IEEE 1159 – Not enforced – just informative.

IEC 61000 series – Adopted and enforced as national standards – force of law. Very careful drafting!

Summary – IEEE 1159 and IEC 61000 series

Similarities

- Cover power quality
- Agree on compatibility
- Agree on basic concepts
- Agree on terminology

Differences

- Tutorial vs "thou shalt"
- Volunteer vs appointed experts
- Consensus vs national voting
- Informative vs enforced

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Thanks

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