



## CURRENT AND VOLTAGE TRANSFORMER SELECTION, DIMENSIONING AND SIMULATION

# CTDim Online Workshops

### At a glance

CTDim is a tool for current transformer (CT) and voltage / potential transformer (VT / PT) selection and dimensioning. By optimizing the selection of CT or VT data with respect to technical requirements of power system protection and/or metering, the engineering and production costs can be substantially reduced while maintaining technical excellence.

In online workshops, PTI consultants provide insights into the technical background of instrument transformers and the practical application of the CTDIm tool. The workshops are typically held via Microsoft Teams in English or in German for groups of a maximum of ten participants and can be booked and scheduled on demand.

### Objectives

Participants gain an overview or deep dive into CTDIm basic or extended features and enhance their instrument transformer knowledge.

### Target Group

Engineers from utilities, industry and power plants who are involved in the planning and/or commissioning of protective/metering devices.

### Prerequisites

Participants should have some instrument transformer background. The workshops are suitable for new and experienced users of CTDIm as the scope can be adapted to the level of knowledge and required capabilities.

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## What you get

- Introduction or update to the subject of CT/VT sizing
- Get to know the features of CTDim
- Focus on practical applications
- Best practice sharing, detailed discussions, and Q&A
- Further topics can be defined according to your needs
- Follow-up workshops to consolidate learning experience and address any questions arising when applying CTDim in your projects
- Flexible selection of workshop date

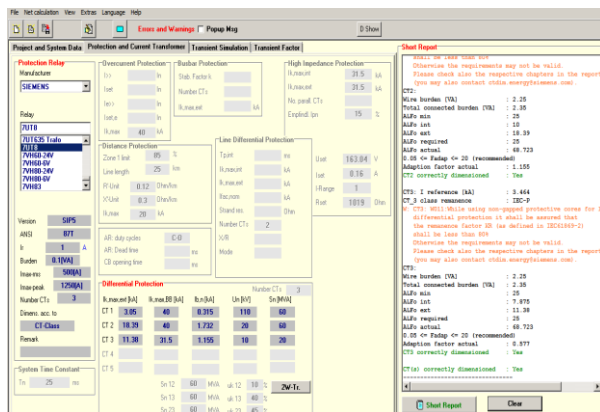


Figure 1: CTDim input data

## Scope

The actual scope of any CTDim workshop can be defined during the booking process. The following is a selection of typical topics that can be addressed. Please note that the duration of the workshop will limit the number of topics that can be covered.

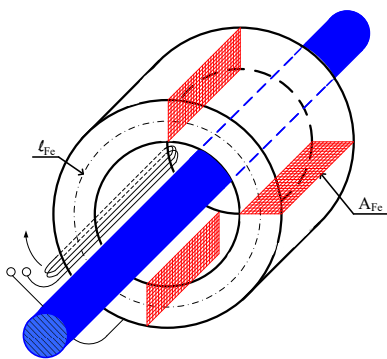


Figure 2: Physical design of a typical CT

- **Physical background** and introduction to CT physics: the challenge behind selection of instrument transformers
- **Standardization** worldwide (IEC, BS, ANSI); details regarding the new IEC 61869 and ANSI C.57-13 standards
- **CT nameplate**: What does it tell you?
- **Selection and dimensioning** of the CTs for protection purposes

- **CT transient and steady-state performance**, sizing criteria, e.g., for overcurrent, distance, and differential protection
- **High impedance** differential protection and CTs
- **CTs for measuring** and billing purposes
- **VT nameplate** understanding and VT parameter selection
- **Correct burdening** of CTs and VTs. Influence of under-burdening and over-burdening
- **Reading and creating** CT and VT specifications: practical hints
- **Selection** of CT nameplate parameters in practice, features of CTDim, handling of the tool based on examples
- **Hands-on exercises**: implementation of the relay demands on current transformers with CTDim, optimization of current transformer data
- **Transient simulation** of CT behavior: comparison 5P vs PX, 5P vs 5PR or TPY vs. TPZ, COMTRADE-export, etc.
- **Practical examples**, discussions, questions and answers, wrap-up

Any other topics can be included upon request.

## Formats

The table below provides an overview of the typical goals that can be achieved during the workshops depending on their duration. This may serve as a guidance for selecting the right format for your needs.

Duration	Scope
0.5 day 4 hours	<ul style="list-style-type: none"> <li>• New users get short overview of the CTDim features in practice</li> <li>• Advanced users explore or refresh the latest tool features</li> </ul>
1 day 7 hours	<ul style="list-style-type: none"> <li>• Explore or refresh instrument transformer knowledge</li> <li>• Practical usage of the basic features of CTDim</li> </ul>
2 days 7+7 hours	<ul style="list-style-type: none"> <li>• Explore or refresh instrument transformer knowledge</li> <li>• Practical usage of the major features of CTDim</li> <li>• Detailed discussions and/or Q&amp;A on practical examples</li> </ul>
1.5 days 7+4 hours within next 4 weeks	<ul style="list-style-type: none"> <li>• Comparable to 1-day workshop</li> <li>• Wrap-up, exchange and deepen the practical experience using CTDim in projects</li> </ul>
2.5 days 7+7 hours +4 hours within next 4 weeks	<ul style="list-style-type: none"> <li>• Comparable to 2-day workshop</li> <li>• Wrap-up, exchange and deepen the practical experience using CTDim in projects</li> </ul>

Table 1: Examples of possible workshop formats

## Book your individual CTDim workshop now!

Contact us for an offer or easily book your workshop via the [Siemens Industry Mall](#). The exact date and time as well as the contents to be covered during the workshop will be defined upon booking.

## Contact

In case of further questions, do not hesitate to contact us via our contact form: [siemens.com/contact-pti](https://siemens.com/contact-pti) or directly at [ctdim.energy@siemens.com](mailto:ctdim.energy@siemens.com).

The CTDim team is looking forward to seeing you in our CTDim workshops.

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