Quasar

Delivering Intelligent Data

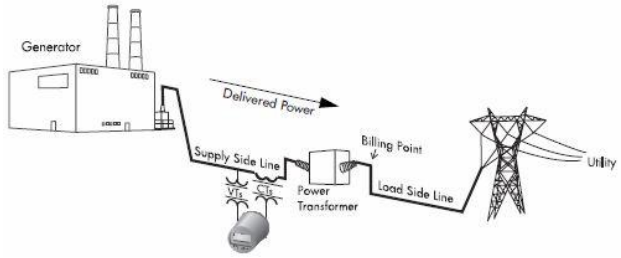
Quasar 3 Winding Transformer Loss Compensation

Quasar's Unique Solution

Transformer Loss Compensation is used when a meter's actual location is different from the electrical location where a change of ownership occurs; for example, where meters are connected on the low-voltage side of power transformers when the ownership change occurs on the high-side of the transformer. This physical separation between meter and actual billing or reconciliation point results in measurable losses. Meters are usually installed on the low-voltage side of a transformer because it is more cost-effective.

Compensating for this loss - Loss Compensation - is the means of correcting this meter reading automatically within the meter, on-the-fly. Losses may be added to or subtracted from the meter registration.

The most common implementation of this technology is in relation to 2 winding transformers.



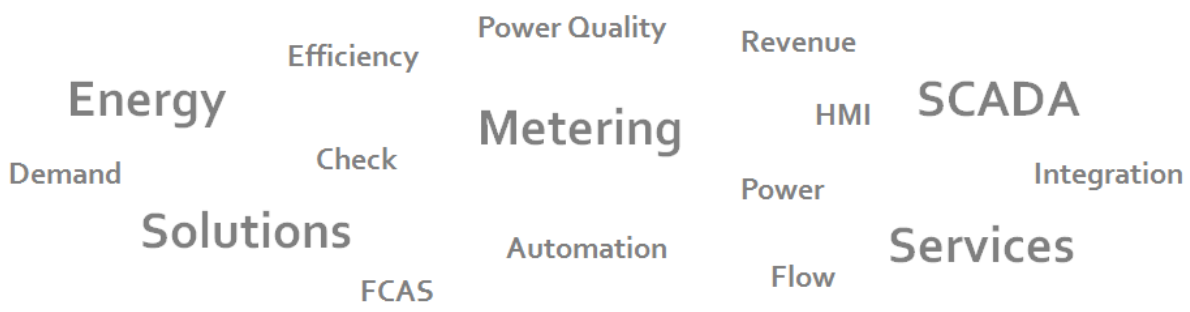
Causes of Transformer Loss

Loss Compensation is used when a meter's actual location is different from the electrical location where change of ownership occurs; for example, where meters are connected on the low-voltage side of power transformers when the ownership change occurs on the high-side of the transformer. This physical separation between meter and actual billing point results in measurable losses. Compensating for this loss - Loss Compensation - is the means of correcting this meter reading. Losses may be added to or subtracted from the meter registration.
Meters are usually installed on the low-voltage side of a transformer because it is more cost-effective.

3 Winding Transformer Loss

Providing a solution for 3 winding transformers is a considerably more complex scenario as the delivered power may flow in more than one direction. Quasar's solution was developed and proven using ION 8800, ION8600, and ION7650 meters and ION Enterprise™ software.

ION7650 ION8600A ION8800A



Meter Framework

The implementation of Quasar's 3 Winding Transformer Loss Compensation comprises a custom 'framework' which is applied to the meter, and then a range of settings are applied which 'characterise' the computation to the transformer in question.

The losses are then calculated within the meter and software based on the dynamic measured electrical parameters, which includes;

- Rated power transformer voltage (VLL on metered-side of Power Transformer)
- Rated power transformer kVA
- Power transformer ratio
- No-load iron test loss watts
- Full-load copper test loss watts
- Percent exciting current
- Percent impedance
- Instrument transformer ratios (VTR, CTR)
- Information about the location of the meter with regards to the power transformer, supply-side line and load-side line

When compensation is enabled, the meter calculates transformer and line loss based the input parameters. Compensation can be enabled using the Vista component of ION Enterprise™.

These parameters determine whether the meter adds or subtracts the losses from the measured power, and by how much.

ION Enterprise™

ION Enterprise™ web-enabled software is an energy information management solution for the operations end of your business. It offers control capabilities, comprehensive power quality and reliability analysis and can help you reduce energy related costs. ION Enterprise allows you to manage intelligent ION metering and control devices, analyse data, and decide on new courses of action.

Client Support

Quasar views client support as a vitally important activity. Recognisable through the day-to-day technical relationships we share with our clients, Quasar's commitment to support is best exemplified through the **MSS Managed System Support** program.

This offers a high level of proactive system support to client's who rely on us maintaining their systems, allowing them to concentrate on running their business and infrastructure operations.

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