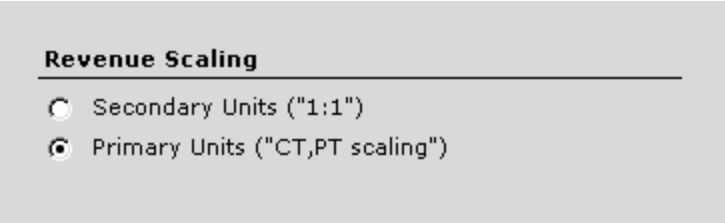
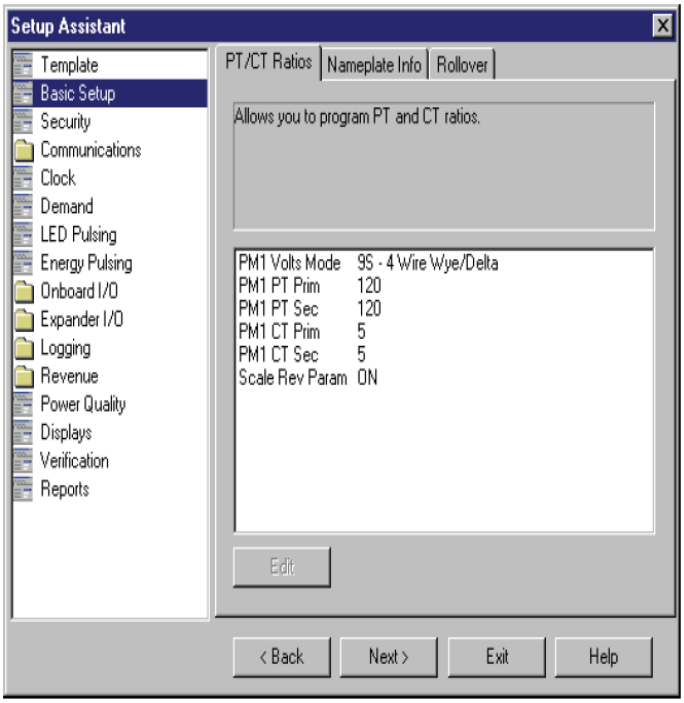
To check whether the displayed and recorded meter data is scaled (PT/CT correction applied) or not, one should start from a register value in 'Scaled' arithmetic module. It is an input register of the module named 'Scaled Rev Param'. By default, Scaled Rev Param is set ON and PT/CT corrections are applied.

To view it in Vista, please go to Setup/Diagnostic tab and select 'General' icon from the right. If the scaling is on, this is how it will look like:



In ION Setup, please refer to 'Scaled Rev Param' register under Basic Setup of Setup Assistant.



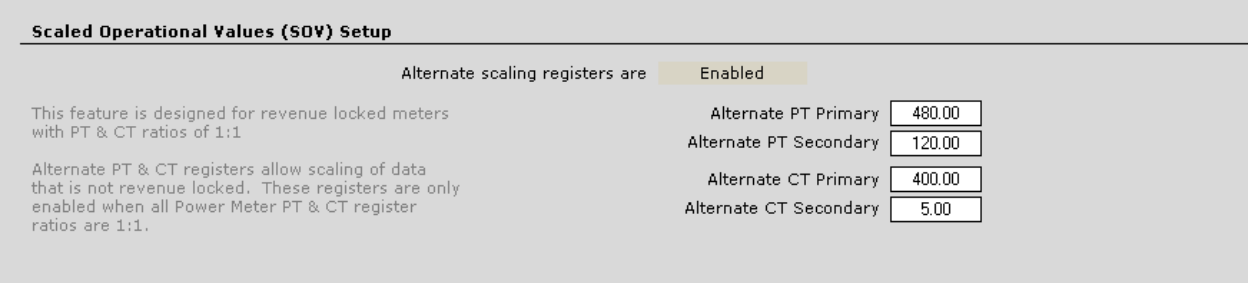
The scaled operational values (SOV) feature is intended for hardware-locked meters where the Power Meter module's PT and CT ratios are 1:1.

The Power Meter module's PT and CT primary and secondary values are compared against the Factory module's alternate values by a series of Arithmetic modules. The Arithmetic modules determine if the SOV feature is enabled (the Power Meter module's scaling ratios are all 1:1).

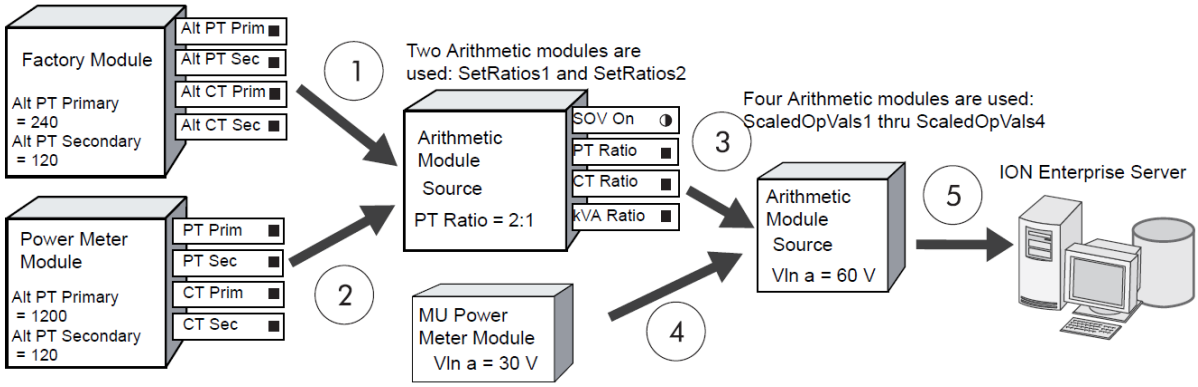
- If the SOV feature is disabled, the Arithmetic modules output the Power Meter module's PT, CT, and kVA ratios.
- If the SOV feature is enabled, the Arithmetic modules output the alternate PT, CT, and kVA ratios. These ratios are applied to the outputs of the MU (Metering Units) Power Meter module

to generate scaled operational values. The scaled operational values can be viewed and analyzed using the Vista and Web Reporter components of ION Enterprise.

To check whether the SOV is on or not, in Vista, go to the Setup/Diagnostic tab and select the 'Power Quality' icon. If the SOV is on, this is how it will look like:



The following diagram shows the working of the SOV values:



The following parameters are affected by scaling:

Vln a	Vln b	Vln c	Vln avg	Vll ab
Vll bc	Vll ca	Vll avg	I a	I b
I c	I avg	kW a	kW b	kW c
kW total	kVAR a	kVAR b	kVAR c	kVAR total
kVA a	kVA b	kVA c	kVA total	

The following parameters are derived from scaled operational data values:

- Maximum/Minimum
- Historic high/low/mean
- Waveforms

The following chart describes how the parameters in above table are scaled and the name of the arithmetic modules they belong to:

Scaled Parameters	Scaling Operation	Arithmetic Module
Vln a scaled	MU Vln a*PT ratio from Power Meter (PM) module	ScaledOpVals1
Vln b scaled	MU Vln b*PT ratio from PM	ScaledOpVals1
Vln c scaled	MU Vln c*PT ratio from PM	ScaledOpVals1
Vln avg scaled	MU Vln avg*PT ratio from PM	ScaledOpVals1
Vll ab scaled	MU Vll ab* PT ratio from PM	ScaledOpVals1
Vll bc scaled	MU Vll bc* PT ratio from PM	ScaledOpVals1
Vll ca scaled	MU Vll ca* PT ratio from PM	ScaledOpVals1
Vll avg scaled	MU Vll avg* PT ratio from PM	ScaledOpVals2
I a scaled	MU I a* CT ratio from PM	ScaledOpVals2
I b scaled	MU I b* CT ratio from PM	ScaledOpVals2
I c scaled	MU I c* CT ratio from PM	ScaledOpVals2
I avg scaled	MU I avg* CT ratio from PM	ScaledOpVals2
kW a scaled	MU kW a* kVA ratio (PT ratio from PM*CT ratio from PM)**	ScaledOpVals3
kW b scaled	MU kW b* kVA ratio(PT ratio from PM*CT ratio from PM)	ScaledOpVals3
kW c scaled	MU kW c* kVA ratio(PT ratio from PM*CT ratio from PM)	ScaledOpVals3
kW tot scaled	MU kW tot* kVA ratio(PT ratio from PM*CT ratio from PM)	ScaledOpVals3
kVAR a scaled	MU kVAR * kVA ratio(PT ratio from PM*CT ratio from PM)	ScaledOpVals3
kVAR b scaled	MU kVAR b* kVA ratio(PT ratio from PM*CT ratio from PM)	ScaledOpVals3
kVAR c scaled	MU kVAR c* kVA ratio(PT ratio from PM*CT ratio from PM)	ScaledOpVals3
kVAR tot scaled	MU kVAR tot* kVA ratio(PT ratio from PM*CT ratio from PM)	ScaledOpVals4
kVA a scaled	MU kVA a* kVA ratio(PT ratio from PM*CT ratio from PM)	ScaledOpVals4
kVA b scaled	MU kVA b* kVA ratio(PT ratio from PM*CT ratio from PM)	ScaledOpVals4
kVA c scaled	MU kVA c* kVA ratio(PT ratio from PM*CT ratio from PM)	ScaledOpVals4
kVA tot scaled	MU kVA tot* kVA ratio(PT ratio from PM*CT ratio from PM)	ScaledOpVals4

Notes:

**kVA ratio (PT ratio from PM*CT ratio from PM) comes from an arithmetic module named ‘SetRatios2’. With the help of another arithmetic module ‘SetRatios1’, it checks whether the PT/CT ratios are 1:1 in Power Meter Module (PM) or not. If it is 1:1, Alt PT/CT ratios from Factory module is used otherwise PT/CT ratios from PM module is used.