

# POWER PLANT CONTROLLER (PPC)

For Solar, Solar & Storage Hybrid Plants



## PPC PROVIDES THE FOLLOWING CONTROL FEATURES

- ✓ Active Power Controls at POI for both PV and hybrid plants
  - Follows Automated Dispatch (ADS)
  - Ramp Rate Control
  - Primary Frequency Droop Control
  - Prevents Over-Generation
  - Automated Generation Control (AGC)
  - Flexible and Dispatchable Solar
- ✓ Voltage and Reactive Power Controls at POI for both PV and hybrid plants
  - Power Factor Control
  - Voltage Control Mode
  - Reactive Power Control Mode
  - Night VARs
  - Line Drop Compensation (LDC)
- ✓ Works seamlessly with BESS

## HARDWARE AND INTERFACES

- ✓ Uses industry standard platform SEL-3555 RTAC.
- ✓ Works with Central and String Inverters
- ✓ Modbus/OPC-UA Communication with the SCADA
- ✓ Can support multiple protocols with the utility including DNP3



POWER PLANT CONTROLLER CABINET

# SCADA SYSTEM

For Solar, Solar & Storage Hybrid



## THE PLANT SCADA SYSTEM PROVIDES:

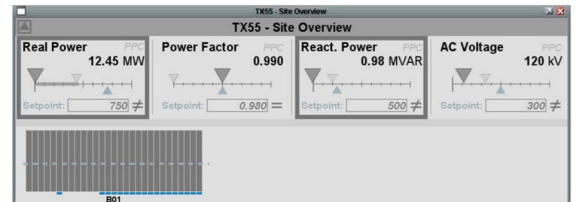
- ✓ Real-time monitoring, alarm management, historical data archiving, and supervisory control capability for the PV and BESS facility.
- ✓ An interface to the PPC and its functions.
- ✓ Support for Operation and maintenance (O&M) and performance monitoring of the plant.

## HARDWARE AND INTERFACES

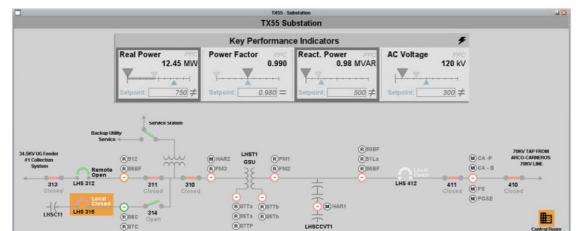
- ✓ Historian Server
  - Onsite data retention capability,
  - One-second data from the BESS, BMS, and PV plant and store this data locally.
  - Accommodate up to 5 years' worth of data storage.

## SOFTWARE FEATURES

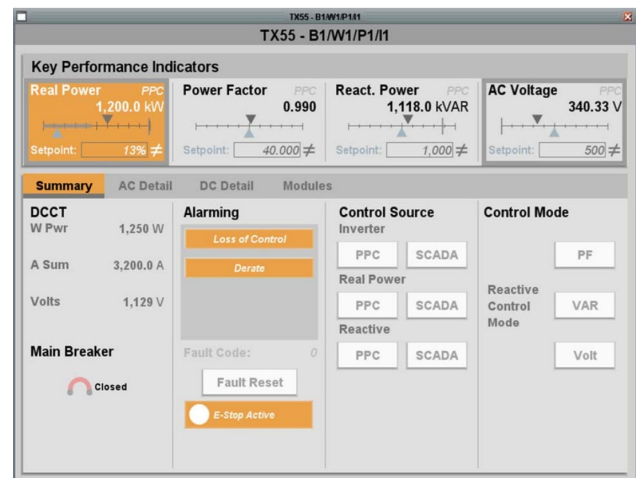
- ✓ Object Polling
- ✓ Alarming
- ✓ Historical Data
- ✓ Graphical User Interface



Sample Overview Display



SITE AND SUBSTATION



PLANT OVERVIEW SCREEN

# Terabase PPC and SCADA



## What is it?

Terabase PPC and SCADA is a real time power plant controller to operate and monitor utility scale solar, solar & storage or hybrid plants. It comes with state of the art control features that meet the most stringent grid requirements of various markets. It is built on an industry standard hardware and software platform to enable easy interoperability and maintainability.

The PPC and SCADA offers the following capabilities:



### Plant Controls

Terabase PPC is known for its most advanced grid integration plant control features with over 10GWs of utility-scale plant controls installed in Americas, MENA and Australia.



### Plant Monitoring

Terabase SCADA monitors key components of the solar plant including inverters, meters, breakers and more. It provides secure remote monitoring and plant data access. It is a solution that works with all plant equipment from various manufacturers.



### Plant Data

Terabase SCADA logs all the plant data with 1 second resolution, providing the operators with an ability to perform effective analysis and reporting.



### Plant Reports

Terabase SCADA includes a suite of standard and ad hoc reports for plant production, plant availability, and detailed analysis for maintenance purposes.

# Terabase PPC and SCADA



## Features & Benefits

### ✓ Comprehensive Offering

- We offer a complete solution including all hardware and software, installation, commissioning, testing and on-going support. PPC grid models and Grid interconnection services like MOD compliance are also provided.

### ✓ Quality Assured

- Every Terabase PPC and SCADA project undergoes a comprehensive QA process for the design, equipment and software, thereby guaranteeing reliable system operation for the plant life-time with routine maintenance.

### ✓ Proven Track Record

- Terabase PPC and SCADA have been reliably operating in over 70 plants globally representing ~10GWs of an installed base for over the past decade.

### ✓ Architecture

- Terabase PPC is built on industry standard SEL RTAC Controls and Ignition SCADA platforms that are easy to maintain over the plant life by a widely available skill set. Custom features and screens can be easily created on the Ignition SCADA

### ✓ Competitive Costs

- Terabase PPC and SCADA is a differentiated stand-alone solution which is available at a competitive prices.

# Terabase PPC and SCADA



## Product Offering

Terabase PPC and SCADA for new and existing PV & PVS Plants

- Site PPC/SCADA Hardware & Software
  - ✓ Works with All Central and String Inverters
  - ✓ Works with AC/DC coupled storage
- Site Installation of PPC/SCADA
  - ✓ Detailed drawings and instructions provided to EPC for easy interfacing to all equipment
  - ✓ Data and Network
- PPC/SCADA Commissioning, Full Verification and Testing
- Project specific PPC Load Flow and dynamic models (PSLF, PSS/e, PSCAD) for interconnections updates
- NERC MOD-25/26/27/32 Compliance Testing and Reports

