
# AIT SMART GRID CONVERTER (SGC) CONTROLLER WITH SCALABLE PER UNIT AND SUNSPEC SUPPORT

Overcome the challenges of smart grid and micro grid integration with the flexible and reconfigurable AIT HIL control platform.

- Perform grid integration studies and research within a HIL environment on your desktop
- Test and validate custom power system and microgrid applications
- All-in-one Controller-Hardware-in-the-loop (C-HIL) solution for applications in industry, utilities, national laboratories, and academia supports SunSpec Four Quadrant Inverter, ModBus and IEC61850 protocols
- Supports SunSpec System Validation Platform (SVP) tool set and python test script methodology
- Supports other SCADA protocols including ModBus TCP and IEC 61850
- Per-Unit concept allows for custom power rating from a few kWs up to MWs
- Settable grid configuration for worldwide application support
- Suitable for a wide range of Smart Grid applications such as: Grid connected PV and Energy Storage Systems converters and FACTS
- Compatible with Typhoon HIL 400 & 600 series
- Open design allows for future upgrades

powered by klima+ energie fonds

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Project: SPONGE – Smart rapid Prototyping Of New applications for Grid Enforcement

Project Number: 848915

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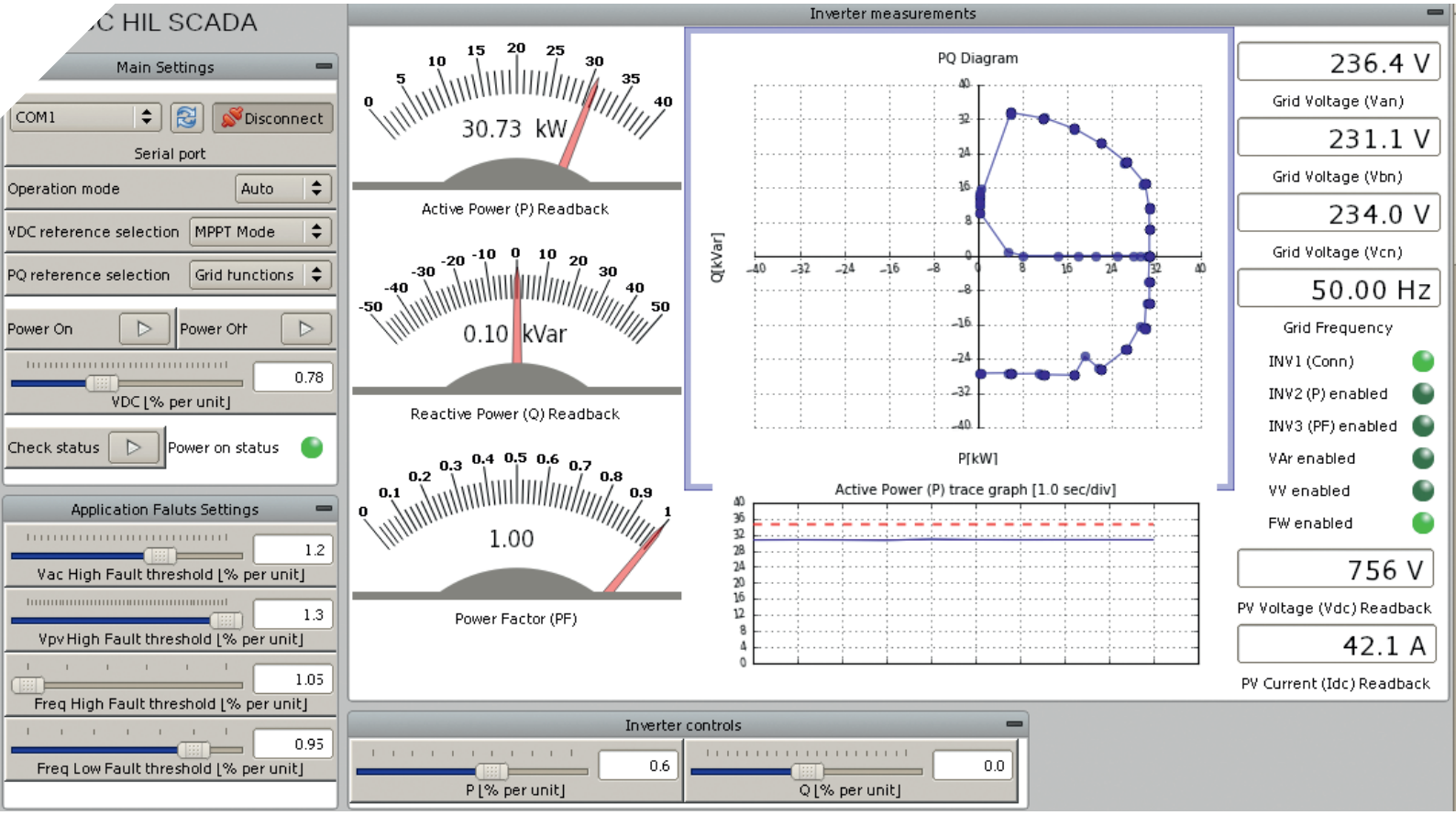


# AIT Smart Grid Converter (SGC) Controller with SunSpec Inverter Protocol Support

## MEETING NEEDS OF DIFFERENT USERS

### Utilities, power system planners and system integrators

- Grid integration studies and research
- Microgrid and power system studies

### Equipment Manufacturers

- Add SunSpec protocol support to existing products or use as reference design for new products

### Test laboratories and universities

- Reference design of a SunSpec compliant grid converter
- Validate power system control strategies
- Development of test procedures

### Features

- Full four quadrant (bidirectional operation)
- Active and reactive power control
- Advanced functions: Watt-PF/cos φ (P), Volt-var/Q(U), VoltWatt/P(U), Frequency-Watt/P(f)
- Voltage ride through (LVRT&HVRT)

| Supported SunSpec Models | |
|---|---|
| 001 | SunSpec Common Model |
| 103 | SunSpec Inverter (Three Phase) Model |
| 120 | SunSpec Nameplate Model |
| 121 | Inverter Controls Basic Settings |
| 122 | Inverter Controls Extended Measurements and Status |
| 123 | Immediate Inverter Controls |
| 126 | Inverter Controls Static Volt-VAR Arrays |
| 134 | Inverter Controls Frequency-Watt Controls |

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