



# AIT SMART GRID CONVERTER

## INDUSTRY'S FIRST FOUR PHASE FOUR WIRE CONVERTER

The AIT Smart Grid Converter is designed for today's Smart Grid and emerging Low Inertia Micro Grid applications. With seamless transition between grid forming, off-grid and grid supporting modes, its highly reliable cooling concept designed to ensure long life time, broad range of connectivity options: IEC61850, ModBus TCP, SunSpec, and modular and stackable concept of increased power handling capability, the AIT Smart Grid Converter presents a perfect Smart Grid fit.

- Superb handling of arbitrarily unbalanced grid current, voltage and load conditions
- Grid forming modes: Droop, Virtual Synchronous Machine with Virtual Inertia
- Grid Support modes: PV, BESS, Battery simulator, Grid Currents balancer, Active Front End, Back-2-Back
- Off-grid
- Full four quadrant operation
- Active/Reactive power: full circular capability
- Immediate control: P, Q, PF
- Grid functions: Frequency-Watt/P(f), Volt-Var/Q(U), Volt-Watt/P(U)
- Anti-islanding
- Low/High Voltage ride through with Fast Reactive Current Response
- Grid code and safety standards compliance

The AIT CENTER FOR ENERGY develops solutions for the sustainable energy supply of tomorrow. Many years of experience and scientific excellence, high-quality laboratory infrastructure and worldwide networking offer companies innovative and applied research services and thus a clear competitive advantage in future markets. The Center for Energy's portfolio focuses on three central topics: energy infrastructure, industrial energy systems as well as cities and the built environment.

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**DC side**

DC max. input voltage	1000 V
DC full power MPPT/BATT voltage range (PF=1)	570 - 850 V
DC operating voltage range at nominal AC voltage	570 - 950 V
DC start voltage at nominal AC voltage	570 V
DC max. array short circuit current	75 A
DC max. PV/BATT operating current	60 A
Number of MPPT / max. number of inputs	1 / 2
DC terminal	Screw clamp terminal, AL or CU type cable

**AC side**

AC max. output power IEC/NA	34.5 / 41.5 kW
AC max. continuous apparent power (at nominal AC voltage) IEC/NA	34.5 / 41.5 kVA
AC nominal output voltage / AC operating voltage range	3~NPE 380V / 220V or 3~NPE 400V / 230V or 3~NPE 480V/277V +/-20%
AC nominal frequency / Frequency rang	50 Hz and 60 Hz / 45-55 Hz and 55-65 Hz
AC max. continuous output current	50 A
AC output current surge capability	105 A / 60 sec
Power factor range	0 to 1.0 over/under excited
THD at max. power	< 3%
AC terminal	3 Phase & Neutral 4 Wire, 4-pos. + PE, Socket mating Plug included
AC disconnect	Not Included
AC connection	4 wire grounded WYE

**General data**

Peak efficiency / Weighted efficiency EU/CEC	98. 7% / 98. 2%
Enclosure type protection class (electronics/mags)	IP54 / IP 20
Weight	45 kg./ 99 lbs.
Dimension (H x W x D)	800 x 600 x 250 cm/ 31.5 x 23.6 x 9.8 in
Ambient air temperature for operation	-25°C to 60°C / -13°F to 140°F
Max. operating altitude	2000 m / 13123 ft
Relative humidity %	0...100% non-condensing
Audible noise	35 dBA +/- 3 dBA

**User interface and communications**

User interface	CLI / Widgets based custom UI
Communications	ModBus TCP, IEC61850, SunSpec

**Regulatory approvals**

Safety & EMC	IEC 62477-1, IEC 62109, IEC 61000-6-2, IEC 61000-6-3
Grid code compliance	VDE-AR-N4110, VDE-AR-N4105, IEEE1547-2018