NUVO ENERGY AFRICA

GENERATOR INTEGRATION KIT-100

DATASHEET Rev 1.0

1 Table of Contents

1 Overview

1.1 NE-GIK-100

The NE-GIK-100 is a PV-plant control and monitoring system that can be used in conjunction with backup generators. The kit is preassembled and wired with all the needed parts to enable control on any standard PV plant installation.

The system is compatible with all popular inverter brands and supports MODBUS RTU and TCP for controlling/monitoring inverters. The control system can implement grid-feed prevention or grid-export setpoints while connected to grid.

The generator integration is agnostic of generator manufacturer. The system uses an energy meter to measure the generator production and adjusting the PV production to enable the generator to run in an optimal condition. The generator integration enables fuel saving by utilizing the PV power to reduce the generator load.

The NE-GIK-100 kit is easy to install and commission and operates autonomously once commissioned.

1.2 NE-GIK-100S

The NE-GIK-100S is a software variant of the NE-GIK-100 specifically meant for Solis inverter installation. It has additional software features and configuration menus to ease the process of commissioning a Solis solar plant with generator integration.

1.2.1 NE-GIK-100S compatibility

The NE-GIK-100S is compatible with all 4G and 5G Solis grid-tie inverters that have an RS-485 interface available for monitoring and control.

1.2.2 Solis Datalogger

The Solis dataloggers are a known cause of communication interruption as they are internally connected to the same inverter RS-485 communication bus used by the NE-GIK-100S kit. It is recommended to remove these dataloggers before integrating the inverters with the NE-GIK-100S kit.

The NE-GIK-100S kit includes a software implementation of the Solis datalogger which will upload relevant data to the Solis Cloud as long as it has an active internet connection. The datalogger ID needed to add the plant to the Solis Cloud can be found on the internal serial number sticker of the NE-GIK-100S box.

Please note, certain data parameters such as generator on/off conditions can not be uploaded to the Solis Cloud. Other parameters not relevant to this system, which are supported by standard Solis dataloggers, might not be uploaded or available as standard features.

1.2.3 Solis EPM

The NE-GIK-100S kit fulfills the role of export manager for the inverters. It is not possible to connect a Solis EPM as well as the NE-GIK-100S kit to the same inverter, only one can be used.

1.3 DNP3 (Optional)

NE-GIK-XXX products with the D3 extension on the part number have a DNP3 compatible gateway with software capabilities to interface with a DNP3 Master SCADA system.

The DNP3 gateway is preconfigured with a default configuration, however each municipality could have a different DNP3 data requirement which would mean custom configuration of the gateway and software setup. Our team of technicians are available to assist with such a setup.

1.3.1 DNP3 compatibility

The DNP3 configuration is currently compatible with the City of Cape Town Municipality SSEG Plant DNP3 SCADA INTERFACE as defined by the specification of 2020-11-25 by the City of Cape Town Municipality.

Other interfaces will be supported in future when specification are released for relevant municipalities in South Africa.

1.4 Features & Benefits

- Easy to install
- Web based portal accessible from your PC, phone or tablet
- Zero-feed or export capabilities while on grid
- Works with any manufacturer or size generator
- Industry compliant
- Generator fuel saving
- Solar irradiance sensor monitoring
- Check meter monitoring

1.5 Typical applications

- Solar Energy Monitoring
- Grid-Tie inverter performance monitoring
- Generator integration with solar grid-tie inverters
- DNP3 compatibility for solar installations

2 Specification

2.1 Electrical specification

	Characteristic	Value
Electrical	Voltage Input (Load)	3P&N, 100-277 V L-N
	Voltage Input (Genset)	1P&N, 100-277 V L-N
	Frequency	50 / 60 Hz ±10%
	Current Input (CT)	1A or 5A secondary
Cables	RS-485 connection	Shielded twisted pair
	Ethernet connection	RJ45 - 10/100Mbs
	Terminal cable sizes	Max 6mm^2
Comms	RS485	Modbus RTU
	Ethernet 1 (Internet feed)	RJ45 10/100Mbs with DHCP
	Ethernet 2 (Inverter Comms)	Modbus TCP inverters only

2.2 Mechanical specification

	Characteristic	Value
Enclosure	Index Protection (IP)	IP65
	Description	Wall mount sheet metal enclosure
	Colour	RAL2000 (electric orange)
	Dimensions (mm)	(H) 550 x (W) 400 x (D) 220

3 Ordering information

Part number	Description
NE-GIK-100	Standard kit for non-Solis inverters
NE-GIK-100S	Standard kit for Solis inverters
NE-GIK-100-D3	DNP3 compatible kit for non-Solis inverters
NE-GIK-100S-D3	DNP3 compatible kit for Solis inverters