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IntelliGate

PV System Control Unit

The Solarnative IntelliGate is the brain of the Solarnative Smart Energy Home system. It controls all devices in the system and acts as interface to the Solarnative cloud server via LTE.

Key Features

Flexible system design
Access point for a 1-phase string of PowerStick micro-inverters
Combine PV modules with different orientations in one string
Connect various IntelliGates in master-slave configuration

No data cables
Power-line communication with inverters
Robust wireless LoRa communication with all other system components

Easy installation
Tool-free installation and cable connection
Plug & Play
Automatic device detection
Automatic mapping
Remote over-the-air commissioning

Robust network connection
No connection to local Ethernet or WiFi required
Approx. 10-year LTE data package included (upgradable)

Inherent safety
No high DC voltages during installation and operation (no risk of fire)
Self-limiting string design (20 A / 4,6 kW)

System Setup

Each Solarnative IntelliGate acts as access point to a 20 A / 4.6 kW string of PV modules with Solarnative PowerStick micro-inverters. The IntelliGate automatically detects and integrates all devices in the system. It comes with a termination cap to close the output AC connector of the last inverter in the string.

For larger systems, several Solarnative IntelliGates can be combined in a master-slave configuration. In this setup, the master IntelliGate communicates with the cloud via LTE, whilst the slave IntelliGates send their data to the master IntelliGate using LoRa.

Technical Data

Connections	IntelliGate
Inverters	Solarnative AC connector for Connection Cable
Max. current	20 A, self-regulated system
Grid connection	3 x 0.2-10 mm² cable clamp (tool-free), standard installation cable
Nominal grid voltage / Grid frequency	230 V / 50 Hz
Overvoltage Class	II
Overcurrent protection	Max. 20 A
Mounting	Mounting on mounting rail for PV modules, e.g. with weather-resistant cable ties

Communication	IntelliGate
Inverter	Power-line communication
Cloud Server	LTE (4G) incl. data package for approx. 10 years of use in normal operation (upgradable)
Other system devices	LoRa ready
GPS	Included

General Data	IntelliGate
Dimensions (length x width x height)	142 mm x 56.4 mm x 37.5 mm
Weight	100 g (3.5 oz)
Protection degree	IP67
Noise emission	< 40 dB

Compliance	IntelliGate
Certifications (pending)	CE, EN IEC 62368-1:2020 + A11:2020

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Solarnative PV System Architecture
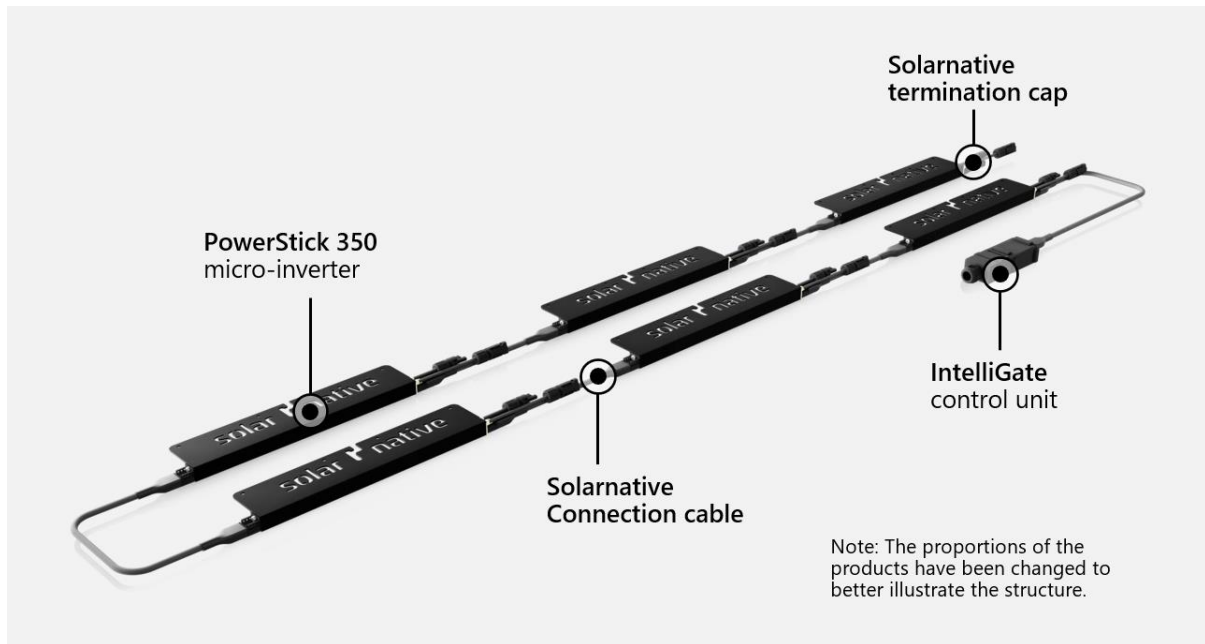
Illustration: Example setup with six PV modules

System	Solarnative PV System
Maximum current per string	20 A
Number of inverters per string	40. Self-regulated system. No minimum number of inverters.
Recommended maximum number of inverters per string	South orientation: up to 13 modules. East-West orientation: up to 20 modules facing east + up to 20 modules facing west
System components	PowerStick, Connection Cable, Termination Cap, IntelliGate (optional: PowerMeter)
Connectivity	IntelliGate to PowerStick: Power-line communication. IntelliGate to Cloud Server: LTE (4G). IntelliGate to other system components: LoRa ready