

A stylized world map is centered on the page, rendered in a light green color. The map is composed of a grid of small dots, with some dots missing to create the outline of continents. The background of the middle and bottom sections is a green gradient with a pattern of thin, white, curved lines that suggest a globe or a network of connections.

The global enabler
of integrated AC modules

Product Catalogue

The SPARQ Advantage

Why SPARQ is better

Powered by advanced digital control software, SPARQ's innovative approach eliminates electrolytic capacitors and optical isolators and uses fewer energy conversion stages. This allows SPARQ to deliver the smallest, most flexible and most reliable microinverter with enhanced energy harvest and with the ability to reduce costs to the lowest of any microinverter.

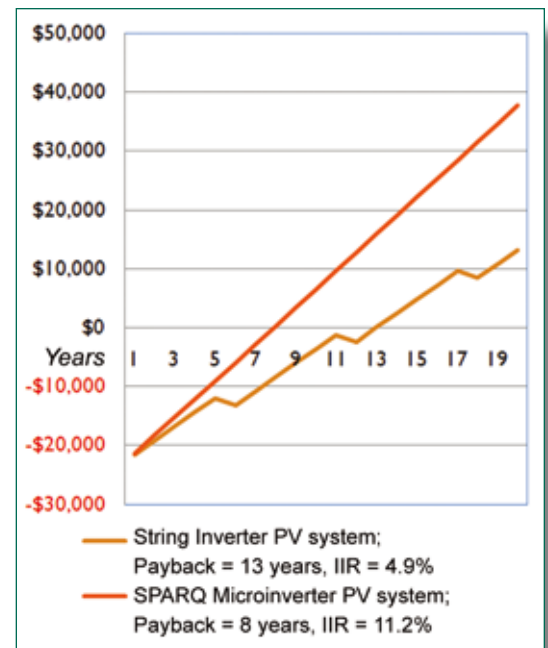


High Return On Investment for grid-connected SPARQ microinverter systems

The table below presents an example of a 3kW residential rooftop grid-connected PV system in Ontario, Canada. A SPARQ microinverter-based PV system requires an investment of \$24,600, which is slightly higher than the \$24,000 required for a traditional string-inverter PV system. However, with an internal rate of return (IRR) of 11.2% and an 8-year payback, SPARQ microinverter-based PV systems deliver dramatically more attractive returns relative to string-based PV systems, which have a 4.9% IRR and a 13-year payback.

Parameter	SPARQ Microinverter PV System	String Inverter PV System
Peak Power	3 kWp	3 kWp
Ontario Feed-in Tariff	80 ¢/kWh	80 ¢/kWh
Total PV System Costs (Installed)	\$24,600	\$24,000
Inverter Price per Watt	60 ¢/kWp	40 ¢/kWp
Installed Costs per Watt	\$8.20 /W	\$8.00 /W
Inverter Life	25 years	6 years
Annual PV Production	1300 kWh/kWp	1000 kWh/kWp
Repairs Labour	\$500	\$2,400
Payback	8 years	13 years
Internal Rate of Return (IRR)	11.2%	4.9%

PV Module Investment Profiles



SPARQ's Competitive Edge

- Highly reliable SPARQ microinverters offer an industry first: a lifetime that matches or exceeds that of the solar module. This is achieved by eliminating all unreliable components such as electrolytic capacitors, enabling SPARQ to offer a 25-year warranty.
- Highly compact and lightweight, SPARQ microinverters facilitate convenient attachment to the panel and easy installation.
- Our patented maximum power point tracking algorithm ensures that optimal energy is harvested from all panels at all times, and is extremely fast, even in the changing shade and lower light conditions of urban installations.
- Higher quality power is generated by SPARQ microinverters over all solar irradiation levels due to a patented digital control technology that produces extremely low Total Harmonic Distortion (THD) in the output current, even at very low illumination levels.
- Safety is enhanced through the use of galvanic isolation between the PV panel and the grid. This feature facilitates compatibility with thin-film PV modules for the European market.
- Plug-and-play adaptability with voltage and frequency standards in North America, Asia or Europe eliminates any need for manual adjustment. SPARQ microinverters comply with all global standards for grid-tied connection.
- Continuous per-module monitoring through power line communications offers the flexibility to check system performance anytime, anywhere.
- Our versatile design meets the needs of module manufacturers, distributors and installers.
- Our microinverter is priced competitively due to a lower component part count and fewer power conversion stages.

Microinverter Primer



S215NA2240 – Daisy-chained microinverter

A microinverter is a miniaturized voltage converter attached to the back of solar panels. It converts direct current (DC) power, generated by the solar panel, into alternating current (AC) power that is compatible with the utility grid.

Microinverters are game-changers in the solar industry. They simplify setup and power conversion in solar photovoltaic systems and make them more efficient, reliable and safe.

Thanks to microinverters, solar power is now a realistic, convenient, and cost-effective green energy alternative for homeowners and small businesses.

How do microinverters work?

In conventional solar photovoltaic (PV) systems, panels are strung together in a series, all linked to one centralized power inverter. However, like dominoes, if one panel fails, they all fail.

Microinverters enable panels to operate independently, greatly increasing system performance. They eliminate the need for additional wiring, complex parts, and for large, noisy, heat-producing centralized inverters.

What are the benefits?

- More energy is harvested because microinverters optimize the energy output of each panel individually, eliminating the domino effect.
- No DC wiring is required, reducing installation and maintenance costs while increasing the safety of your system.
- No cooling fan and no noise means efficient and worry-free operation.

SPARQ's Microinverters

Our 190W Models:
S190NA2240 / S190NA2240T
S190NA3250 / S190NA3250T

Our 215W Models:
S215NA2240 / S215NA2240T
S215NA3250 / S215NA3250T



S215NA2240T – Tapped microinverter

SPARQ microinverters offer unique features and capabilities that enable a high return on investment in grid-connected PV systems. The SPARQ microinverter is a light, compact unit with high power density. It is designed for a long lifetime matching that of a PV module, and results in high-quality power generation and high system availability.

PV systems using SPARQ microinverters enable maximum energy harvest, and are safe and easy to install. They also demonstrate optimal performance in snow, dust, and shade conditions. In addition, they allow per-module monitoring via power line communication. SPARQ's flexible 'plug-and-play' microinverter installation, enhanced system performance, and 25-year warranty offer users best-in-class returns on investment.

Features

- Long lifetime – compatible with module warranties
- Suitable for integrated AC modules
- High return on investment
- High quality power generation
- Improved safety
- Simple installation – 'plug-and-play'
- Optimal performance under snow, dust and shade
- No single point failure
- High system availability
- Maximum energy harvest
- Continuous per-module monitoring
- Compact and lightweight

190-Watt Microinverter: Technical Specifications

Model	S190NA3250 / S190NA3250T	S190NA2240 / S190NA2240T
Input Data (DC)		
Maximum power drawn from PV	205W	205W
Maximum input DC voltage	65V	50V
Maximum input DC current	10A	12A
Maximum power tracking voltage range	32V-50V	22V-40V
Minimum start-up voltage	33V	23V
Output Data (AC)		
Maximum output power	190W	190W
Nominal output voltage	240V	240V
Output voltage range	211V-264V	211V-264V
Maximum output current	0.8A	0.8A
Nominal output frequency	60Hz	60Hz
Output frequency range	59.3-60.5 Hz	59.3-60.5 Hz
Power factor	> 0.99	> 0.99
Output current THD	< 2%	< 2%
Maximum units per branch		
- S190NA3250 / S190NA2240	15	15
- S190NA3250T / S190NA2240T	Determined by bus cable gauge	Determined by bus cable gauge
Efficiency		
Peak efficiency	95%	94.5%
CEC efficiency	93.4%	92.9%
Nighttime power consumption	26mW	26mW
Mechanical Data		
Operating temperature range	-40°C to +65°C	-40°C to +65°C
Enclosure rating	NEMA 6 - outdoor	NEMA 6 - outdoor
Dimensions (L X W X H)	7.5" X 5" X 1.2"	7.5" X 5" X 1.2"
Weight		
- S190NA3250 / S190NA2240	4.3 lbs	4.3 lbs
- S190NA3250T / S190NA2240T	3.2 lbs	3.2 lbs
Cooling	Natural convection	Natural convection
Features		
Communication	Power line	Power line
Warranty	25 years	25 years
Regulatory	UL1741 IEEE 1547 CSA C22.2 NO. 107.1 FCC part 15, class B	UL1741 IEEE 1547 CSA C22.2 NO. 107.1 FCC part 15, class B

215-Watt Microinverter: Technical Specifications

Model	S215NA3250 / S215NA3250T	S215NA2240 / S215NA2240T
Input Data (DC)		
Maximum power drawn from PV	230W	230W
Maximum input DC voltage	65V	50V
Maximum input DC current	10A	12A
Maximum power tracking voltage range	32V-50V	22V-40V
Minimum start-up voltage	33V	23V
Output Data (AC)		
Maximum output power	215W	215W
Nominal output voltage	240V	240V
Output voltage range	211V-264V	211V-264V
Maximum output current	0.9A	0.9A
Nominal output frequency	60Hz	60Hz
Output frequency range	59.3-60.5 Hz	59.3-60.5 Hz
Power factor	> 0.99	> 0.99
Output current THD	< 2%	< 2%
Maximum units per branch		
- S215NA3250 / S215NA2240	13	13
- S215NA3250T / S215NA2240T	Determined by bus cable gauge	Determined by bus cable gauge
Efficiency		
Peak efficiency	95%	94.5%
CEC efficiency	93.6%	93.1%
Nighttime power consumption	25mW	25mW
Mechanical Data		
Operating temperature range	-40°C to +65°C	-40°C to +65°C
Enclosure rating	NEMA 6 - outdoor	NEMA 6 - outdoor
Dimensions (L X W X H)	7.5" X 5" X 1.2"	7.5" X 5" X 1.2"
Weight		
- S215NA3250 / S215NA2240	4.3 lbs	4.3 lbs
- S215NA3250T / S215NA2240T	3.2 lbs	3.2 lbs
Cooling	Natural convection	Natural convection
Features		
Communication	Power line	Power line
Warranty	25 years	25 years
Regulatory	UL1741 IEEE 1547 CSA C22.2 NO. 107.1 FCC part 15, class B	UL1741 IEEE 1547 CSA C22.2 NO. 107.1 FCC part 15, class B

Innovative. Efficient. Reliable.



SPARQ Microinverters

- **Best-in-class reliability:** innovative design that eliminates all unreliable components and is backed by an exceptional warranty.
- **Efficient:** advanced control technologies that enable higher overall power output and increased efficiency under low light conditions.
- **Competitively priced:** cost-effective design with lower component part count and fewer power conversion stages.
- **Versatile:** meets the needs of module manufacturers, distributors and installers.



SPARQ Monitoring Solutions

- **Informative:** view performance data in real time, at home, in the office, or on the go.
- **Comprehensive:** maximize your rate of return with complete analysis and graphing.
- **Archival:** see online data backup for 25 years of your system's performance history.
- **Enlightening:** enable informed decision-making based on your power consumption, reducing your environmental footprint.

SPARQ's Monitoring Solutions

SPARQ's innovative microinverter products increase the efficiency and reliability of solar photovoltaic systems, lower the cost of ownership and simplify installation and use.

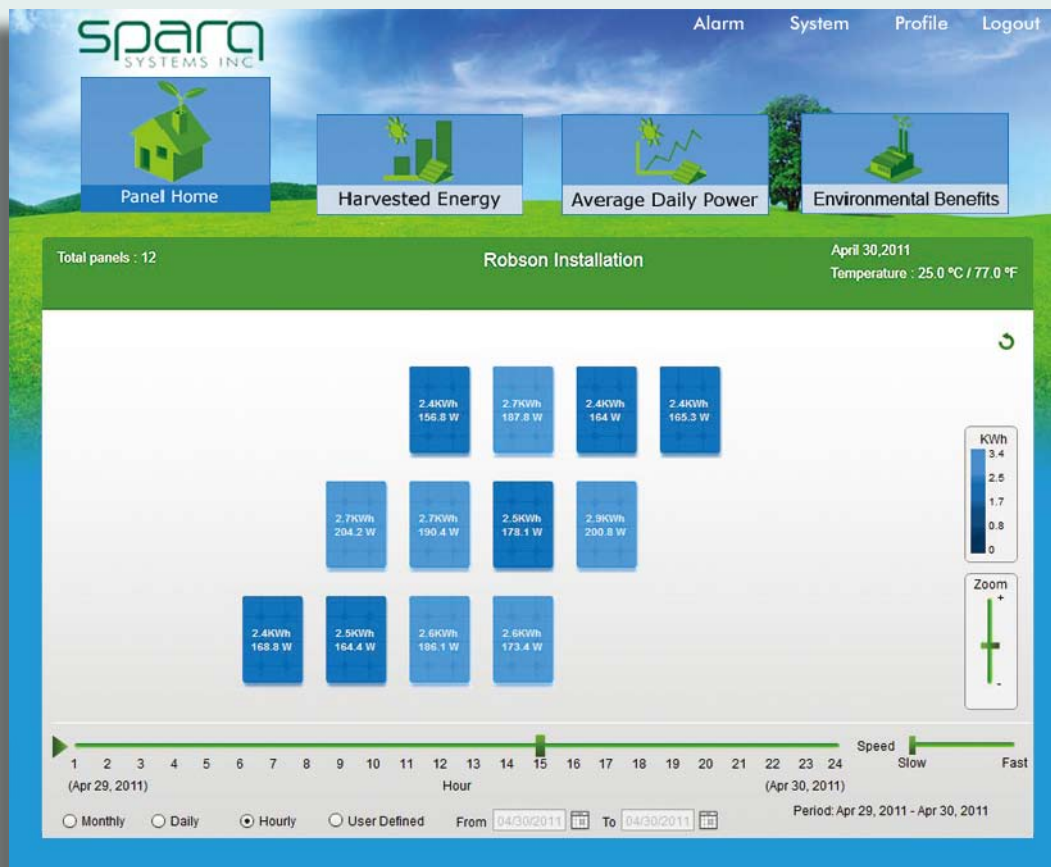
SPARQ provides user-friendly monitoring. Using our onsite Communication Hub, we collect data from your microinverters using power line communication. This data is stored locally as a personal backup but is also sent to our central servers for analysis and use in the online portal.

Our online portal makes performance data available in real time, at home, in the office, or on the go.



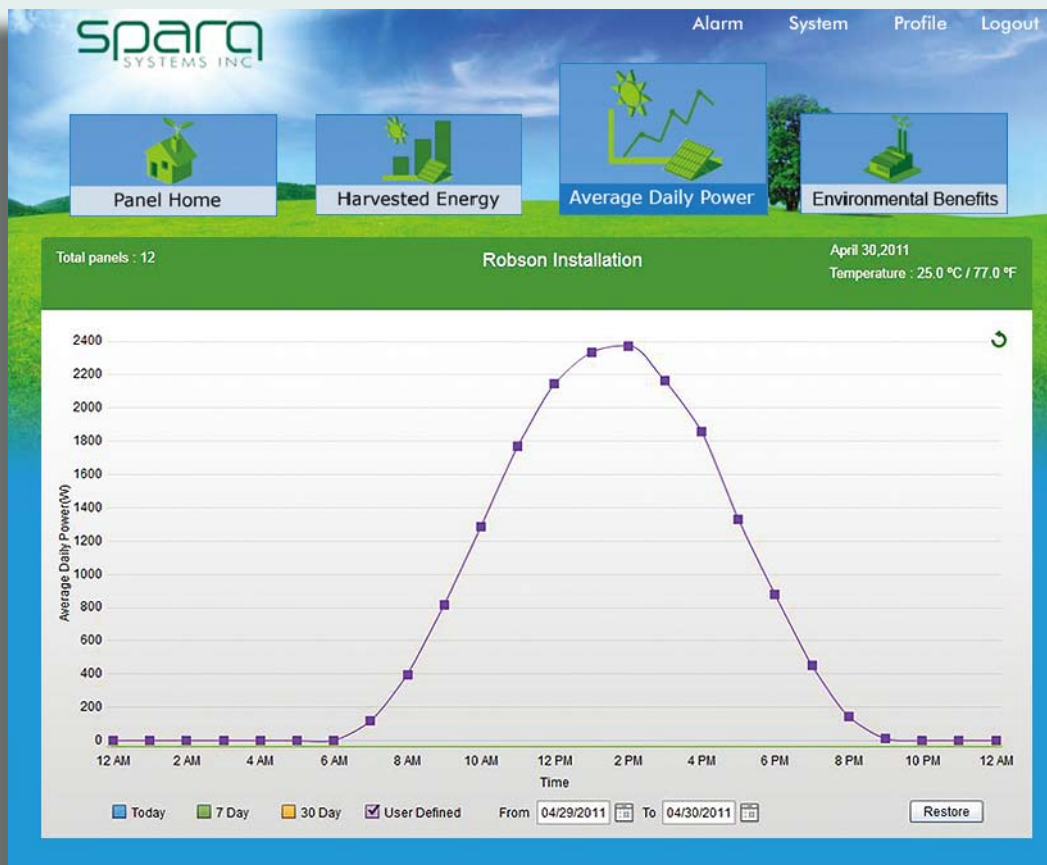
Features

- Quickly review your system's performance
- Panel-by-panel monitoring
- Real-time system status alerts
- 25-year data backup
- Easy to use





Reduce your carbon footprint: Track how you are helping to make the world a better place to live.



Reduce maintenance costs: Ensure your system is operating at peak efficiency through real-time monitoring.

SPARQ's Smartphone Apps

The SPARQ App allows you to view your system's performance anytime, anywhere. Easy-to-read displays allow you to track your environmental and financial benefits.

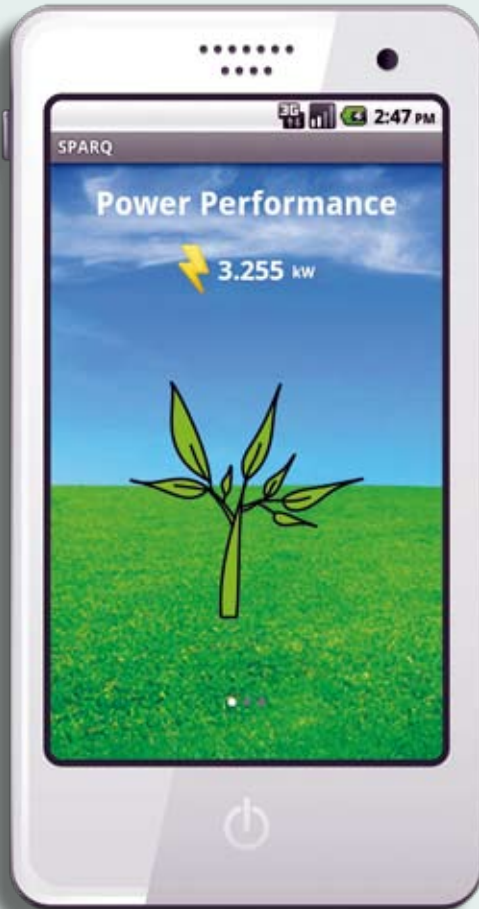


Features

- Monitor real-time performance on the road
- Compatible with Android and iOS-based smartphones and tablets
- View your environmental benefits
- Track your return on investment
- Fast and secure
- Intuitive & easy-to-read displays
- Interface with SPARQ's web-based monitoring system

Stay Informed

Conveniently and quickly view a summary of your system's performance. At a glance, you can view the energy generated by the system, the power generated, your current return on investment, and even the health of your system.



Performance

Easily view your system's power output by using SPARQ's Smart Gauge. Obtain a detailed history of the system's power output and energy produced over different time periods.

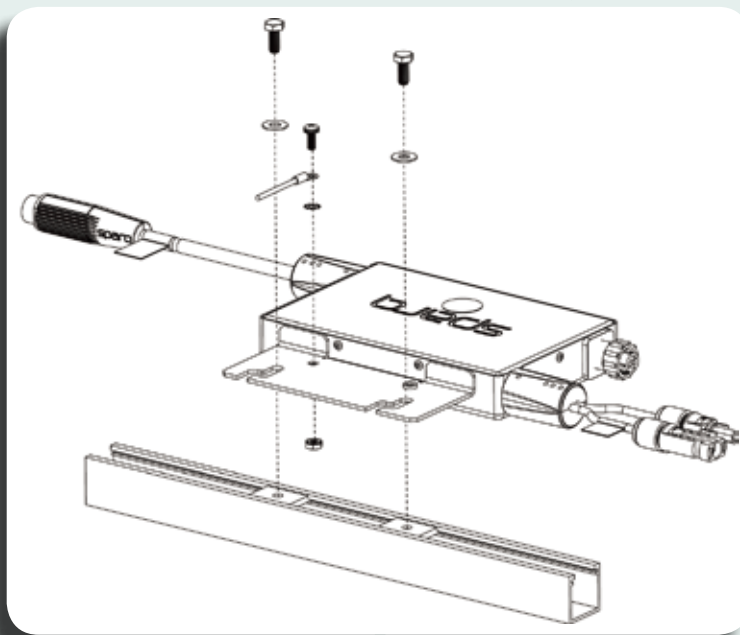
Awareness

Make informed decisions based on your power consumption, and reduce your environmental footprint. Convert carbon offset to equivalent environmental benefits. Determine your return on investment from your photovoltaic performance.

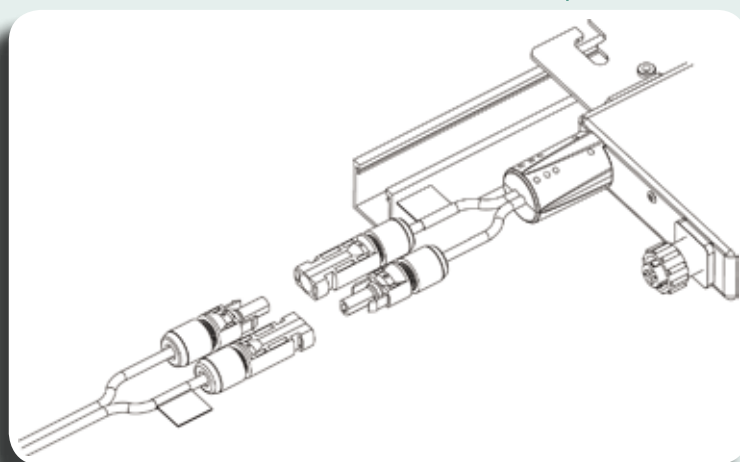
SPARQ's Plug and Play Microinverter

Safe, reliable power,
compatible with all utility grids

1. Mount on racking



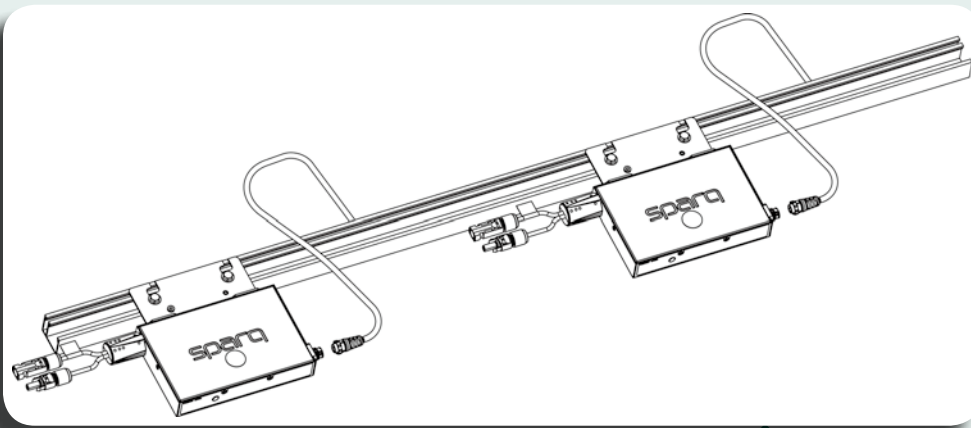
2. Connect DC to input



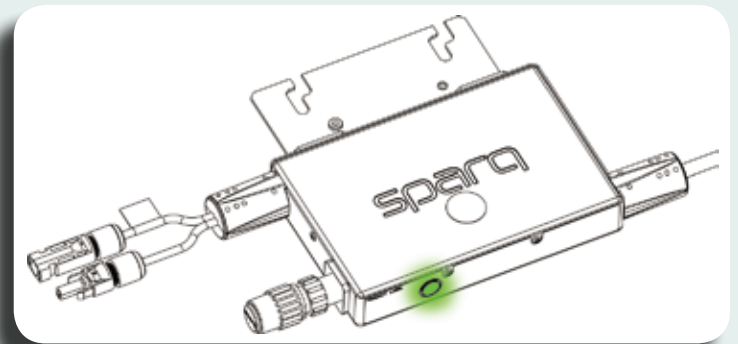
Installation features:

- Single design, usable worldwide
- Reduced installation costs
- Safe, low-voltage interconnection
- Scalable architecture

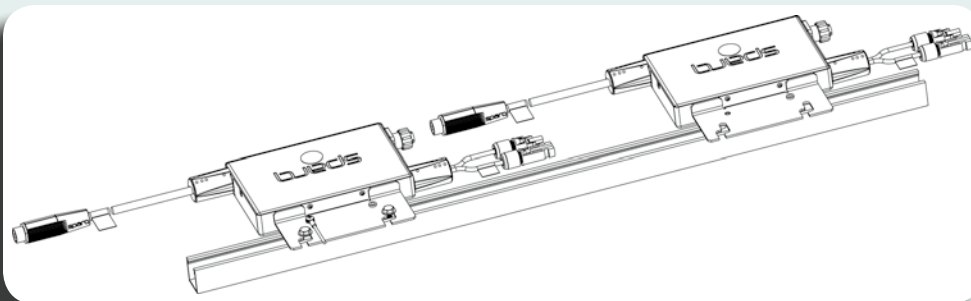
3a. Connect tapped AC



4. Generate power



3b. Connect daisy chain AC





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