Application
Photovoltaic
Residential

Life Is On Schneider Electric

Protection for Photovoltaic installation

Earth leakage protection B-SI type

"I want to go green with photovoltaic energy and save money on my electricity bill..."

Acti9 iID B-SI type

An optimum solution to protect photovoltaic installations

Customer story

Mr Johnson decided to install a photovoltaic (PV) system on his house to reduce his consumption from the main electrical network.

It is an investment made of solar panels, inverters, batteries and electrical protections that will enable to consume directly electricity generated from the sun.

Mr Johnson will work with his electrician so that the installation will comply with safety standard.

Even if solar is a very good saving opportunity, people protection need also to be considered.

Proposed solution

IEC 60364-7-712* installation standard require a 300 mA B type residual current protection to be installed on solar photovoltaic (PV) power supply systems.

Acti9 RCCB iID B-SI type is certified for that purpose and is designed to:

- **Protect people** against multifrequency earth leakage current (including pure DC), generated by PV inverter technology that can cause fibrillation and electrocution.
- **Minimize nuisance tripping** thanks to Super Immunized (SI) technology.
- **Simplify operation** thanks to Acti9 VisiSafe and VisiTrip.
- **Monitor and control** the electrical panel with PowerTag and Smartlink auxiliaries.
- **Be installed in coordination** with other upstream and parallel RCD (refer to Schneider Electric Residual Protection Device guide for coordination tables).

Customer benefits

For homeowner

- Peace of mind: protection against indirect contact for your family and for maintenance professionals that may work on the PV installation.
- Save more money reducing nuisance tripping of solar installation that can slow down return on investment.
- Increase house value: given the global trend in photovoltaic, investing to install PV energy production brings value to your house.

For electricians

- Provide protection and a reliable installation to your customers: Acti9 iID B type is compliant with mandatory installation IEC 60364 standard.
- Avoid recalls from dissatisfied customers because of nuisance tripping.
- Improve your business: Acti9 accessories and auxiliaries can help you to provide best-in class solution adapted to your customer needs, with metering and local or remote communication.

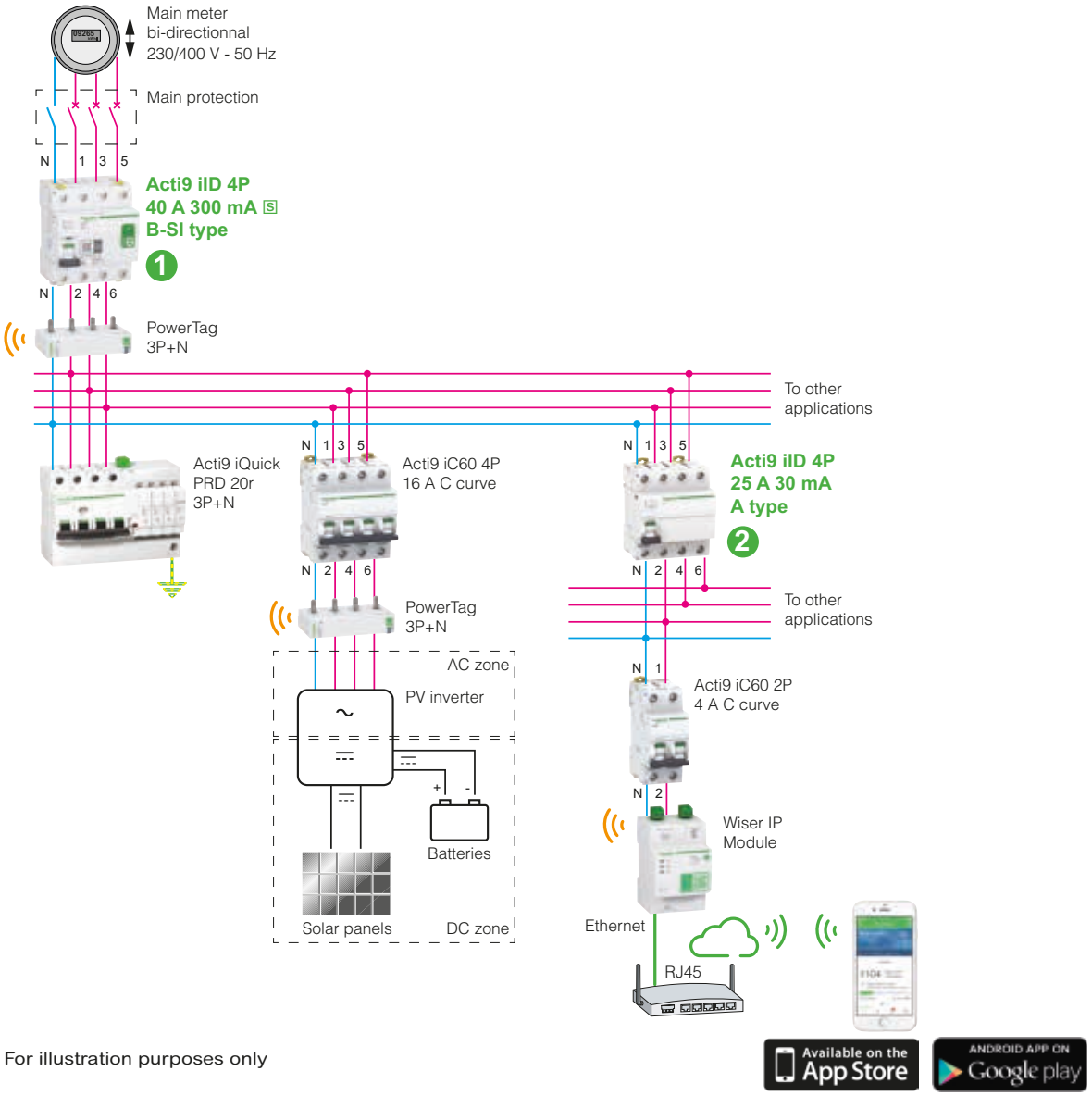
*IEC 60364-7-712 standard (Electrical Installations of Buildings – Requirements for special installations or locations – Solar photovoltaic (PV) power supply systems) require a 300 mA B type protection for PV installation.
French standard XP C 15-712-3 for grid tie PV installation with energy storage capabilities require a 300 mA B type protection.

Applications

- Apartment,
- House.

Ensure people protection and continuity of service with appropriate RCD

Solution diagram



For illustration purposes only

Note: during design phase, it's essential to define protections to avoid upstream and parallel protection disablement (blinding of upstream and parallel protection due to direct current signal presence generated by solar inverter and generated by DC part of the system).
In example above, 1, 2 Residual Current Devices have been defined accordingly and the same should apply to any upstream RCD.

For more information about selectivity and coordination of protections, refer to earth leakage protection guide reference CA908066E and associated coordination tables.

Products used

Product	Function	Quantity	Reference
Acti9 iID 4P 40 A 300 mA S B-SI type	RCCB for PV system	1	A9Z65440
Acti9 iQuick PRD 3P+N	Modular surge arrester (SPD)	1	A9L16297
Acti9 iC60 4P 16 A C curve	MCB for PV system	1	Specific to country
Acti9 iID 4P 25 A 30 mA A type	RCCB for other loads	1	A9R01425
Acti9 iC60 2P 4 A C curve	MCB for other loads	1	Specific to country
1P+N PowerTag energy sensor	Add-on energy sensor	2	A9MEM1542
Wiser IP Module	IP communication module	1	EER31800

35, rue Joseph Monier - CS 30323
F-92506 Rueil-Malmaison - FRANCE

Version : 1.0