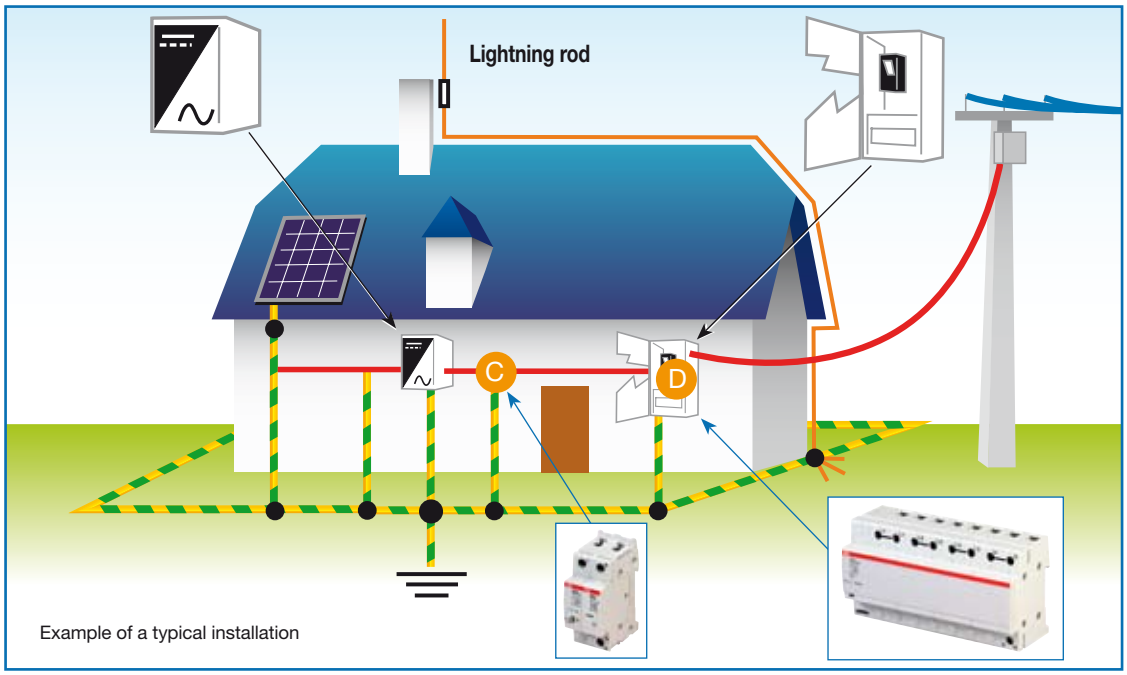
Photovoltaic application – Surge Protection
Protection of the inverter & MDB AC side

2CTC 432 027 L0201

Application notes



Example of a typical installation

Application principle:

When we speak about photovoltaic application, it's possible to have on grid or off grid connection. For on grid connection, it's necessary to protect your inverter and your installation against surge. The lightning group of ABB has developed a complete range of Din Rail products to protect AC side of inverter and the installation, as all AC sensitive equipments classed category I (according to the IEC 60664-1) against surge in power plant or residential application. As an inverter is an expensive and essential equipment in a Photovoltaic system, and as the unavailability of the inverter can degrade the yield of your investment, it's important to design a reliable protection.

Detailed description

An adapted solution with coordinated SPDs will save your inverter when surge will occur in you system. The coordination of robust technology (electronic triggering spark gap) with a sensitive and well known technology by metal oxyd varistor (MOV) will insure a high capacity to limit peaks of voltage and currents, and an adapted clamping of surge to be withstanded easily by all your equipments.

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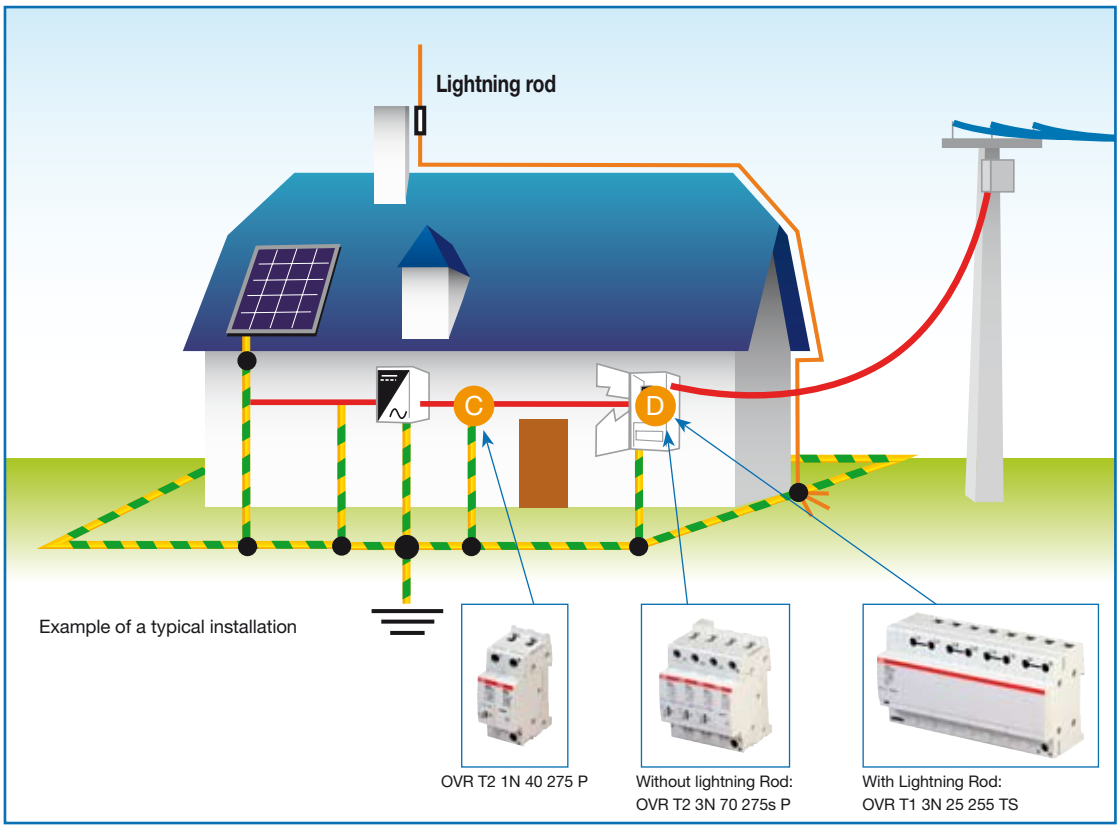

Depending if there is a lightning rod or no, the selection of the SPD in the Main Panel Board could be a Type 1 or Type 2 surge arrester.

Configuration of surge arresters on the installation

Surge arrester location	Role	Options	Comment
C	Protection of the inverter output on the AC side	Routine installation	Connection to the earthing bar and to the ground of the inverter on the AC side should be as short and rectilinear as possible.
D	AC head protection at the entrance of the building	Routine installation	Connection to the earthing bar should be as short and rectilinear as possible.

To see also protection of cells & inverter DC side

ABB France
Automation Products Division
Lightning Protection Group
22, rue du 8 Mai 1945
F-95340 Persan / France
Tel. : +33 (0)1 30 28 60 88
Fax : +33 (0)1 30 28 60 79