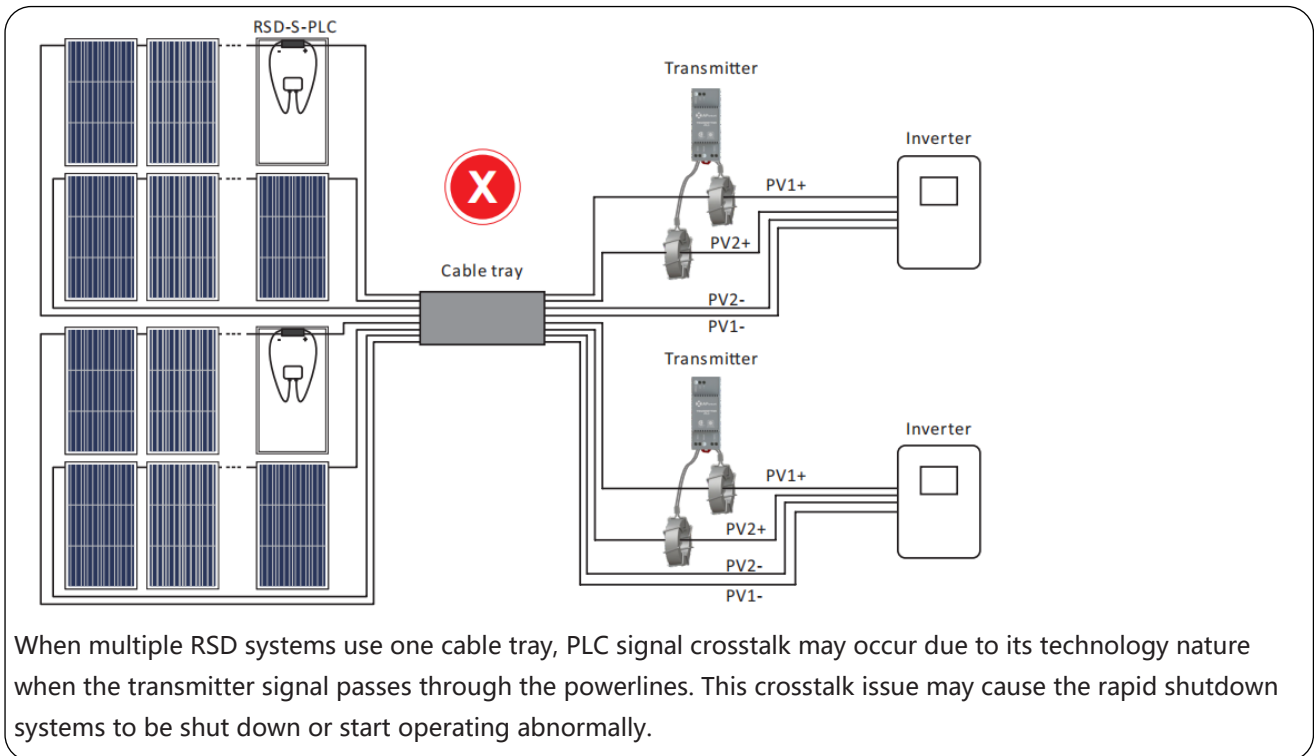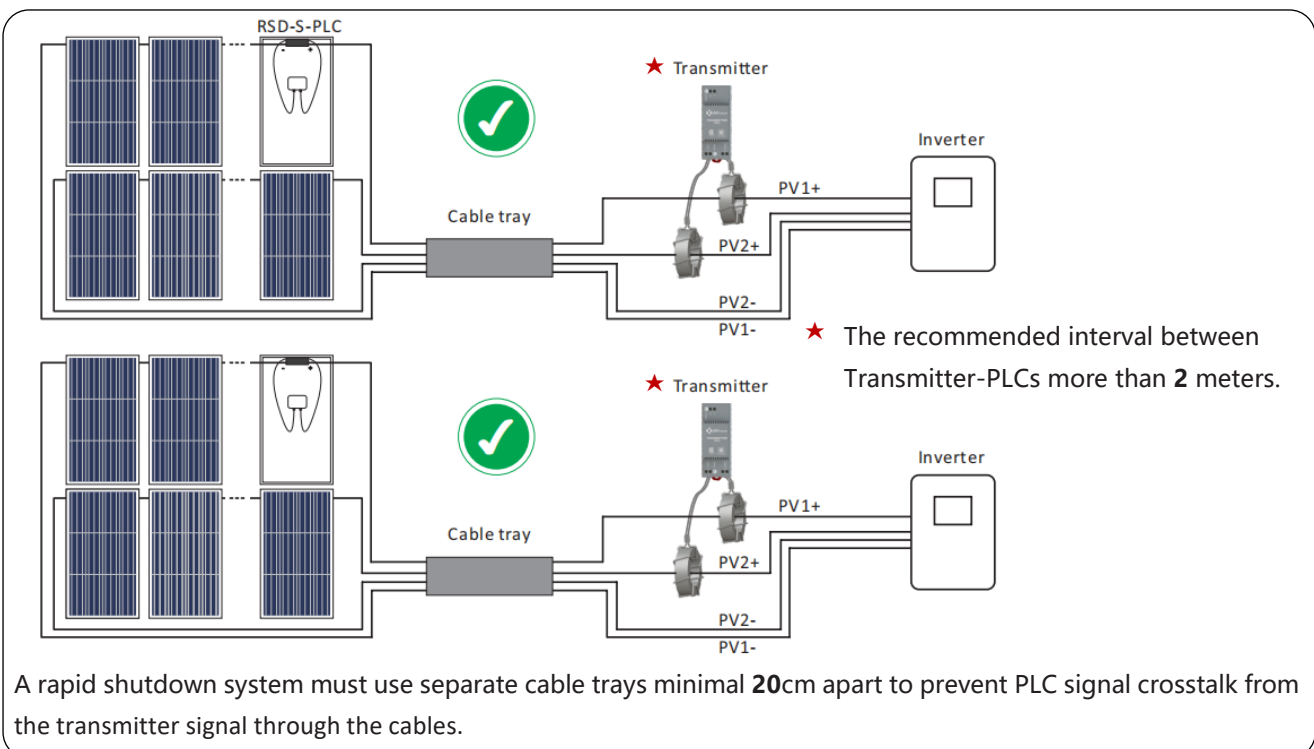# APsmart RSD Installation Best Practices for SunSpec PLC

If the system uses 2 or more APsmart transmitters-PLCs, the following best practice methods are introduced to ensure a successful installation. This documentation should be ignored if the system is only using single APsmart Transmitter-PLC, or for any inverter suppliers which has solved SunSpec PLC crosstalk issue.
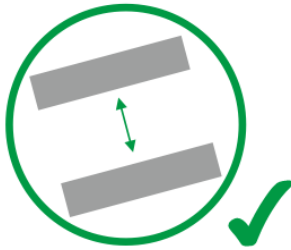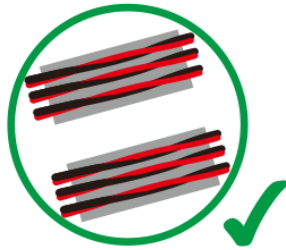
Cable tray installation method 1: Avoided

When multiple RSD systems use one cable tray, PLC signal crosstalk may occur due to its technology nature when the transmitter signal passes through the powerlines. This crosstalk issue may cause the rapid shutdown systems to be shut down or start operating abnormally.

Cable tray installation method 2: Required

★ The recommended interval between Transmitter-PLCs more than **2** meters.

A rapid shutdown system must use separate cable trays minimal **20**cm apart to prevent PLC signal crosstalk from the transmitter signal through the cables.
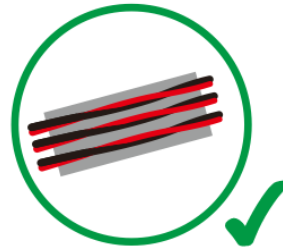
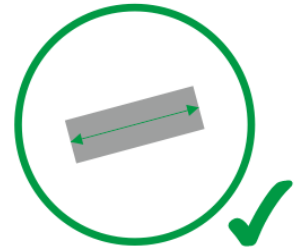REV3.0   2021-9-15

Cable tray installation method 3: Recommend

The cable trays for two different rapid shutdown systems should be installed as far apart as possible

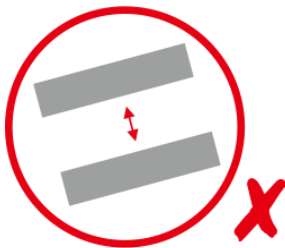PV+&PV- of a string should be placed in the same cable tray

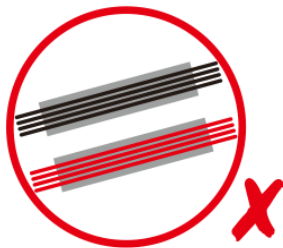The PV +& PV - of the same string should be placed as twisted-pair in a cable tray

If multiple rapid shutdown systems use the same cable tray, the length of the cable tray should be kept as short as possible （less than 3m）
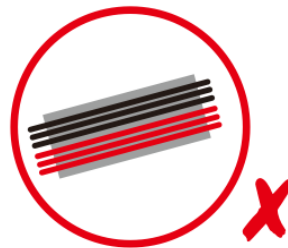
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The cable tray cannot completely isolate the communication crosstalk between the power cables. The closer the two cable trays are, the more likely communication crosstalk is to occur
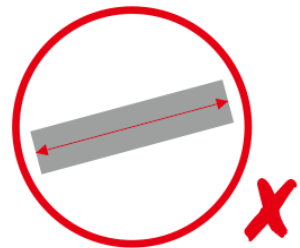
Do not put all the PV+ or all the PV- together in the same cable tray

Do not separate PV + and PV - in a cable tray

The longer the cable tray is, the more likely communication crosstalk is to occur

Note:

1. The "Required" method only applies to the system that installed APsmart Transmitters-PLC.
2. The "Recommend" method only applies to the system that is experiencing SunSpec PLC signals crosstalk issue.
3. It is not necessarily that all SunSpec RSD systems will experience PLC crosstalk issue, due to different design and equipment suppliers, those installation best practices may help to improve or resolve it.

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