FRANKLINWH

FranklinWH RSD Duo

& PV UL 3741 Compliance

Appendix 3:

ADDENDUM | UL3741 Compliance with FranklinWH RSD Duos and aPower S

WARNING: *At least one (1) FranklinWH RSD Duo (RSD Duo) must be placed on each end of the string. Without the appropriate number of units, the RSD Duos may not function as intended which could lead to equipment damage.*

AVERTISSEMENT: *Au moins un (1) RSD Duo doit être placé à chaque extrémité de la chaîne ; sans le nombre approprié de RSD Duo, ceux-ci peuvent ne pas fonctionner comme prévu, ce qui pourrait entraîner des dommages aux équipements.*

WARNING: *To reduce the risk of injury, read and follow all the instructions.*

AVERTISSEMENT: *Pour prévenir les blessures, lire toutes les instructions.*

The installation instructions include a detailed description of the installation in accordance with the National Electrical Code (NEC), NFPA 70 and the Canadian Electrical Code (CE Code), C22.1.

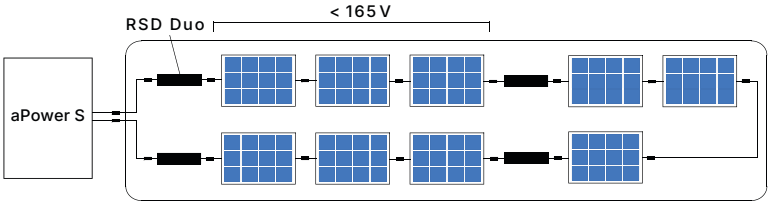
The quantity and placement of RSD Duos necessary to meet Rapid Shutdown requirements in NEC Article 690.12 (B) is governed by the UL 3741 (PV Hazard Control System or PVHCS) listing applicable to various array types. The following table lists the systems that have been certified to UL 3741 when installed with RSD Duos in combination with aPower S.

UL 3741–Certified Systems using RSD Duos in combination with aPower S

PVHCS System	Equipment	Required RSD Duos	PVHCS Datasheet
FranklinWH Systems and Generic PV Arrays	FranklinWH Systems with certified PV modules and mounting systems are covered by FranklinWH's UL 3741 certification if they are in compliance with the PVHCS listing instructions	An RSD Duo is required at both ends of string or sub array, plus 1 RSD Duo every 165 Voc at low design temperature (typically 1 per 3 modules)	See the table at the end of this document
IronRidge Systems	Mounting system and module combinations using IronRidge Aire Flush Mount	An RSD Duo is required only at both positive and negative ends of strings, and at locations where strings span mounting planes	See IronRidge Aire Flush Mount UL 3741 Addendums for detailed requirements
IronRidge Systems	Mounting system and module combinations using IronRidge XR Flush Mount	An RSD Duo is required only at both positive and negative ends of strings, and at locations where strings span mounting planes	See IronRidge XR Flush Mount UL 3741 Addendums for detailed requirements
Pegasus SkipRail Systems	Mounting system and module combinations using Pegasus SkipRail	An RSD Duo is required only at both positive and negative ends of strings, and at locations where strings span mounting planes	See Pegasus SkipRail UL 3741 Addendum for detailed requirements
K2 Systems	Mounting system and module combinations using	An RSD Duo is required only at both positive and negative ends of strings, and at locations where strings span mounting planes	See K2 CrossRail UL 3741 Addendum for detailed requirements
SnapNrack	Mounting system and module combinations using SnapNrack racking system	An RSD Duo is required only at both positive and negative ends of strings, and at locations where strings span mounting planes	See SnapNrack racking system UL 3741 Addendum for detailed requirements

Using RSD Duos for 165V PVHCS Applications

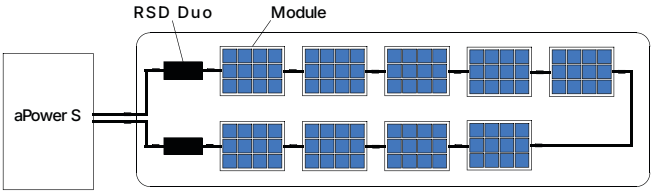
RSD Duos can be used for FranklinWH's commonly applied UL 3741 PVHCS generic 165V inside-the-array listing (also referred to as the "1 RSD Duo per 3 modules" rule of thumb).



When installed in accordance with proper installation method, the maximum internal array voltage after the activation of RSD Duos is 165 Vdc.

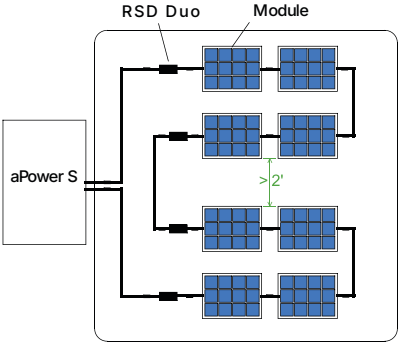
Using RSD Duos for Other Typical Application of UL 3741 Insulated Mounts Listing

Where one or more PV strings are connected within a single contiguous array as shown in the figure, RSD Duos shall be installed at both the positive and negative ends of each string between the last module and the homerun to the PCS.

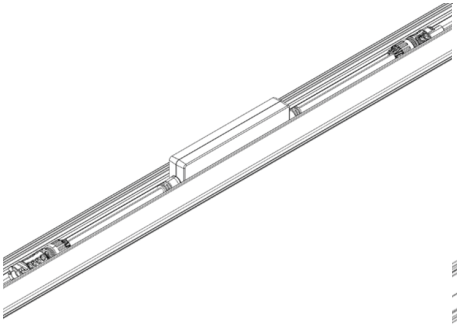


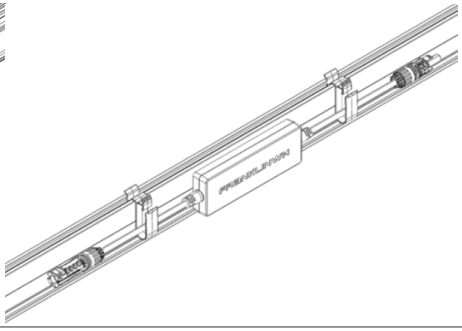
Where any string is connected across noncontiguous sub-arrays separated by more than 2 ft. (see below example figure), RSD Duos shall be installed as follows:

1. At the positive end of the string between the last module and the PCS homerun.
2. At the negative end of the string between the last module and the PCS homerun.
3. At both ends of the connection between sub-arrays.



NOTE: When installing RSD Duo, insert directly into the Rail channel or Use Wire Clips to install RSD Duo on the side of the Rail. (see example figure)





System Components List (BOM)

Item no.	Name	Manufacturer	Type
1	PVRSE Mid Circuit Interrupter (RSD Duo)	FranklinWH Energy Storage Inc.	RSDV1
2	Transmitter device	FranklinWH Energy Storage Inc.	No. SP-APR S20-INTERNAL TRANSMITTER-US RSD Transmitter-1
3	Inverter	FranklinWH Energy Storage Inc.	aPower S
4	PV Module	The PVHC PV modules shall be certified by a Nationally Recognized Testing Laboratory (NRTL) in accordance with UL 1703 and/or UL 61730-1 and UL 61730-2, excluding Class 0 and Class I modules.	
5	PVHCS Initiator	CANAL ELECTRONIC CO LTD	X7-210F3W-NBBA-1NWC
6	PVHCS Initiator (EPO)	Emergency stop device (NISD) listed as an “Emergency Stop Button,” “Emergency Stop Device,” or “Emergency Stop Unit,” and certified in accordance with UL 508 or UL 60947-1, UL 60947-5-1, and UL 60947-5-5.	
7	PV Connector	Stäubli(E343181)	PV-KST4/6II-UR PV-KST4-EVO 2 (male) PV-KBT4/6II-UR PV-KBT4-EVO 2 (female)

FRANKLINWH

www.franklinwh.com

United States:

info@franklinwh.com +1 888-851-3188

1731 Technology Dr., Suite 530, San Jose, CA 95110

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