



# FLEXware ICS Plus

Integrated Combiner Solution for PV Rapid Shutdown and AFCI



FWPV6-FH600-SDA



Rapid Shutdown Initiator (RSI)



BKR-CTRL-DC



PNL-75-DC-RT

- End-to-end solution listed to UL1741 with photovoltaic rapid shutdown systems (PVRSS)
- Arc fault circuit interrupter (AFCI) listed to UL1699B with local and remote indication
- Type 3R enclosures rated for indoor or outdoor installation
- Flexible design—install the combiner box vertically or horizontally and mount to racking or under an array
- Interoperable with compatible third-party PV rapid shutdown devices (PVRSE with dry contact)
- Three complete packages simplifies the design and ordering process

## ICSPLUS-1 Package for Battery-Based PV Systems

**OutBack provides a fully-compliant PV rapid shutdown system (PVRSS) combiner solution with the FLEXware ICS Plus. The FLEXware ICS Plus meets the following 2014 National Electric Code (NEC) requirements:**

**NEC 690.11**—Arc fault protection (protects against arc faults due to loose connections, damaged wires or other DC component failures)

**NEC 690.12**—Rapid shutdown (provides a means for first responders to safely de-energize controlled conductors)


**NEC 690.15**—DC combiner disconnect (opens all ungrounded circuit conductors from all sources of power)


The FLEXware ICS Plus is rated to 600VDC for integration in a wide range of systems and designed for ease of service and clean wire management. Packaged systems include easy-to-order, complete solutions for battery-

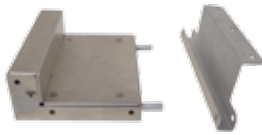
based systems requiring one, two or four combiner boxes, while individual components can be ordered for alternative system needs, including use with grid-direct PV inverters.


When used with OutBack power conversion and energy storage components, the system will represent the only single-brand UL and NEC-compliant solution from rooftop to battery.

Packages	ICSPLUS-1	ICSPLUS-2	ICSPLUS-4
<b>Description</b>	FLEXware ICS Plus package for battery-based PV systems	FLEXware ICS Plus package for battery-based PV systems	FLEXware ICS Plus package for battery-based PV systems
<b>Compatibility</b>	Six PV strings (one charge controller)	Twelve PV strings (two charge controllers)	Twenty-four PV strings (four charge controllers)
<b>Combiner Box</b>	(1) FWPV6-FH600-SDA	(2) FWPV6-FH600-SDA	(4) FWPV6-FH600-SDA
<b>RSI</b>	1	1	1
<b>BKR-CTRL-DC</b>	1	1	1
<b>Relay-Trip Breaker</b>	PNL-75-DC-RT	PNL-75D-DC-RT	PNL-75Q-DC-RT
<b>Rapid Shutdown</b>	Yes	Yes	Yes
<b>External Disconnect</b>	Yes	Yes	Yes
<b>PV AFCI</b>	Yes	Yes	Yes

Combiner Box	FWPV6-FH600-SDA	Product Image
<b>Description</b>	FLEXware ICS Plus DC combiner box with PV rapid shutdown, AFCI and disconnecting means compatible with up to 6 PV strings, opens up controlled conductors within 10ft of PV array	
<b>Enclosure</b>	<b>Material:</b> Powder-coated aluminum <b>Rating:</b> Outdoor rainproof, UL type 3R <b>Security:</b> Lockable	
<b>Mounting Options</b>	Vertical to horizontal, external feet provided for mounting	
<b>Number of String Inputs</b>	6	
<b>Total Maximum Current</b>	96A	
<b>Voltage Rating</b>	600VDC	
<b>Output Terminals</b>	#14 - 2/0	
<b>Input Terminals</b>	Cable glands #14 to 8 AWG (2.08 to 7.7mm <sup>2</sup> )	
<b>Operating Temperature</b>	-25 to 60°C	
<b>Overcurrent Protection</b>	Includes (6) 600VDC DIN rail fuse holders (fuses sold separately)	
<b>Switch</b>	Can be locked in off position	
<b>Accessories</b>	<b>FUSE-15-600VDC:</b> Box of ten, 15A fuses <b>FUSE-20-600VDC:</b> Box of ten, 15A fuses <b>FH-30-1000VDC-DIN:</b> 30A, 1000VDC fuse holder <b>LBL-PVRSS</b>	
<b>Dimensions H x W x D (in/cm)</b>	15.5 x 19.5 x 4.5 / 39.4 x 49.5 x 11.4	
<b>Weight (lb/kg)</b>	~12 / 5.4	
<b>Certifications</b>	UL1741 with PVRSS, UL 1699/1699B, CSA 22.2 107.1-01 with PVRSS, FCC Part 15 Class B	

Rapid Shutdown Initiator	RSI	Product Image
<b>Description</b>	FLEXware ICS Plus RSI initiates a PV rapid shutdown event and provides indication for solar status and AFCI	
<b>Enclosure</b>	<b>Material:</b> Powder-coated aluminum <b>Rating:</b> Outdoor rainproof, UL type 3R	
<b>Mounting Options</b>	Vertical	
<b>Input Terminals</b>	24-16 AWG (.20 to 1.31mm <sup>2</sup> )	
<b>Compatibility</b>	Can control up to 6 FWPV6-FH600-SDA combiners and 2 relay-trip breakers	
<b>Operating Temperature</b>	-25 to 60°C	
<b>Switch</b>	Can be locked in off position	
<b>LED Indication</b>	Solar on, solar off, AFCI	
<b>Dimensions H x W x D (in/cm)</b>	14.1 x 7.3 x 3.75 / 35.8 x 18.5 x 9.5	
<b>Weight (lb/kg)</b>	~4 / 1.8	
<b>Certifications</b>	UL1741 with PVRSS, UL 1699/1699B, CSA 22.2 107.1-01 with PVRSS, FCC Part 15 Class B	

DC Breaker Control & Power Supply	BKR-CTRL-DC	Product Image
<b>Description</b>	FLEXware ICS Plus DC breaker control and power supply, provides isolated 24VDC from battery bank	
<b>Compatibility</b>	Powers up to 2 relay-trip breakers and 6 FLEXware ICS Plus combiner boxes	
<b>Nominal Battery Bank Voltages</b>	24, 32, 36, 48VDC	
<b>Operating Temperature</b>	-25 to 60°C	
<b>Width Dimension (in/cm)</b>	Varies from .75-2.0 / 1.9-5.1 (1 panel-mount space)	
<b>Certifications</b>	UL1741 with PVRSS, UL 1699/1699B, CSA 22.2 107.1-01 with PVRSS, FCC Part 15 Class B	

Relay-Trip Breakers	PNL-75-DC-RT	PNL-75D-DC-RT	PNL-75Q-DC-RT	Product Images
<b>Description</b>	75A, 300VDC relay-trip breakers that open up controlled conductors at or near the charge controller or inverter in a rapid shutdown event			
<b>Number of Poles</b>	1	2	4	
<b>Terminals</b>	1/4" stud	1/4" stud	1/4" stud	
<b>Width Dimension (in/cm)</b>	1.5 / 3.9 (2 panel-mount spaces)	2.2 / 5.7 (3 panel-mount spaces)	3.8 / 9.6 (5 panel-mount spaces)	

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