BLOCK Battery Storage Modules

PST-0024-070-10

PST-0024-070-00

Overview

The PST-0024 is an empty battery enclosure designed to work with BLOCK's PCC-1024 and PCC-0524 UPS systems. The battery modules PST-0024 together with the battery control modules and a DC power supply, are used to create an uninterruptible 24 VDC power supply.

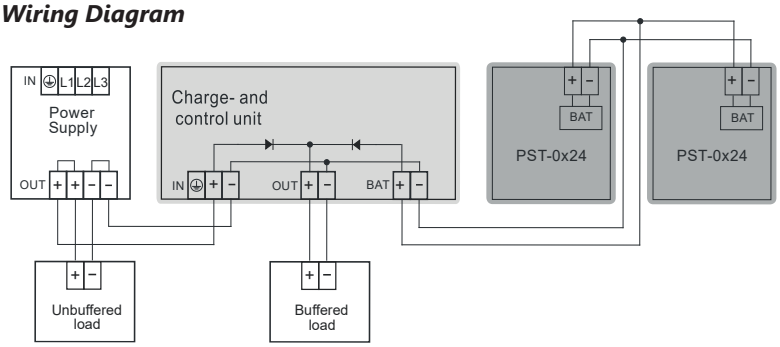
Features

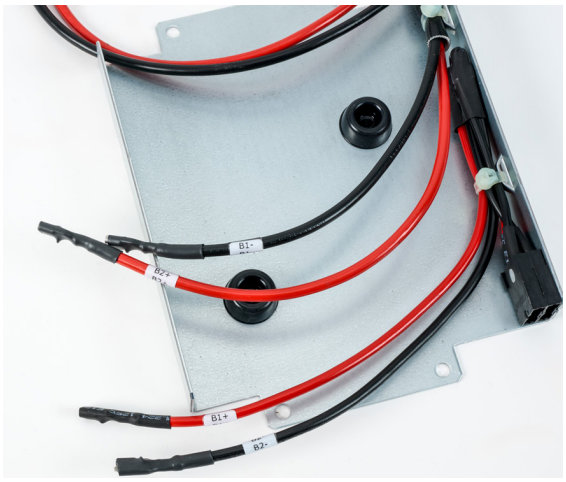
- Several capacity housings and profiles available to fit your installation.
- Prewired and labeled for quick battery and system installation

Battery Storage Modules									
Part Number	*Price*	*Connection*	*Requires*	*Recommended Battery * (or equivalent)*	*Mounting*	*Housing Material*	*Dimensions H x W x D (mm [in])*	*Weight g [lb]*	*Drawing Link*
PST-0024-032-10	$107.00	14 AWG core wire	(2) 12 VDC - 3.2 Ah batteries	YUASA, NP3.2-12	Panel	Hot dip galvanized sheet metal	177.00 x 77.00 x 150.00 [6.90 x 3.03 x 5.90]	3200 [7.05]	PDF
PST-0024-070-00	$138.00	12 AWG core wire	(2) 12 VDC - 7 Ah batteries	YUASA, NP7-12			190.00 x 150.00 x 111.00 [7.48 x 5.90 x 4.37]	5600 [12.34]	PDF
PST-0024-070-10	$138.00	12 AWG core wire	(2) 12 VDC - 7 Ah batteries				193.00 x 111.00 x 159.00 [7.59 x 4.37 x 6.25]	5800 [12.78]	PDF
PST-0024-120-00	$166.00	12 AWG core wire	(2) 12 VDC - 12 Ah batteries	YUASA, NP12-12			190.00 x 216.00 x 111.00 [7.48 x 8.50 x 4.37]	10,000 [22.04]	PDF
PST-0024-120-10	$166.00	12 AWG core wire	(2) 12 VDC - 12 Ah batteries				193.00 x 110.00 x 225.00 [7.59 x 4.33 x 8.85]	9400 [20.72]	PDF

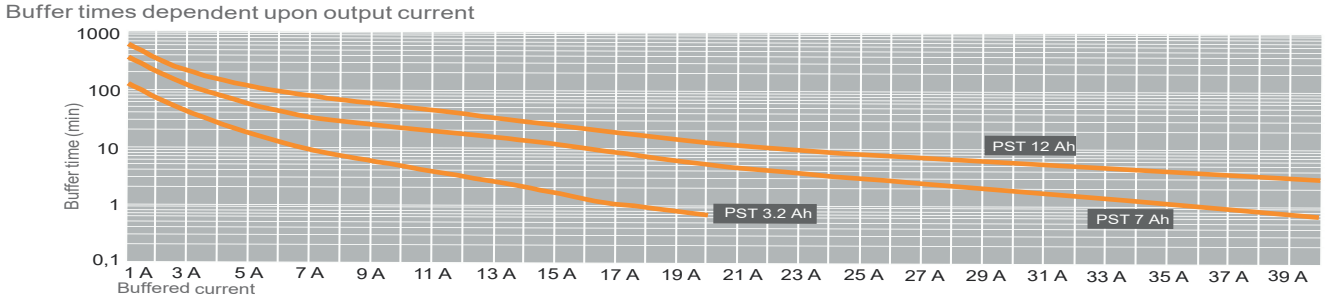
NOTE: * purchase batteries separately, not available from AutomationDirect.com
The PST-0024-xxx-xx variants are empty enclosures without battery modules. The specified values assume customer-side installation of the battery modules listed under Recommended Battery (or equivalent).

Wiring Diagram





Buffer Time



BLOCK Battery Storage Modules

Specifications					
Part Number	***PST-0024-032-10***	***PST-0024-070-00***	***PST-0024-070-10***	***PST-0024-120-00***	***PST-0024-120-10***
Input Specifications					
Nominal Input Voltage	24 VDC				
Nominal Capacity	3.2 Ah	7 Ah		12 Ah	
Recommended Max. Charging Current	0.8A	1.8A		3A	
Recommended End of Charging Voltage (at 25 °C)	27 VDC				
Output Specifications					
Nominal Output Voltage	24 VDC				
Nominal Output Current	20A	40A			
Internal Fuse Type	25 AT	2 x 25 AT			
Connection in Parallel	Yes				
Environment					
Operating Temperature	-15 to +40 °C [+5 to +104 °F]				
Operating Temperature Discharge	-20 to +40 °C [-4 to +104 °F]				
Storage Temperature	-20 to +40 °C [-4 to +104 °F]				
Service Life	5 years at 20 °C, 4 years at 30 °C, 2 years at 40 °C				
Max. Charging Interval	6 months				
Self Discharge	3%/month at 20 °C				
Safety and Protection					
Protection Rating	IP20				
Safety Class	III				
Terminals and Mounting					
Input/Output	Connection cables 2.5 mm^2 [AWG 14]	Connection cables 6 mm^2 [AWG 10]			
Mounting	Panel mount				
Agency Approval	UR E219022, CE				

BLOCK Battery Control Modules

PCC-0524-100-00

Overview

The PCC-0524 charge and control units offer maximum system availability through intelligent battery management and short charging times – even for large battery capacities. Usable in 24 VDC grids, they provide uninterrupted power up to 20A during a power failure. Continuous monitoring of connected batteries enables early warnings when service life is low. Compatible with any 24 VDC power supply, not just Block brand units.

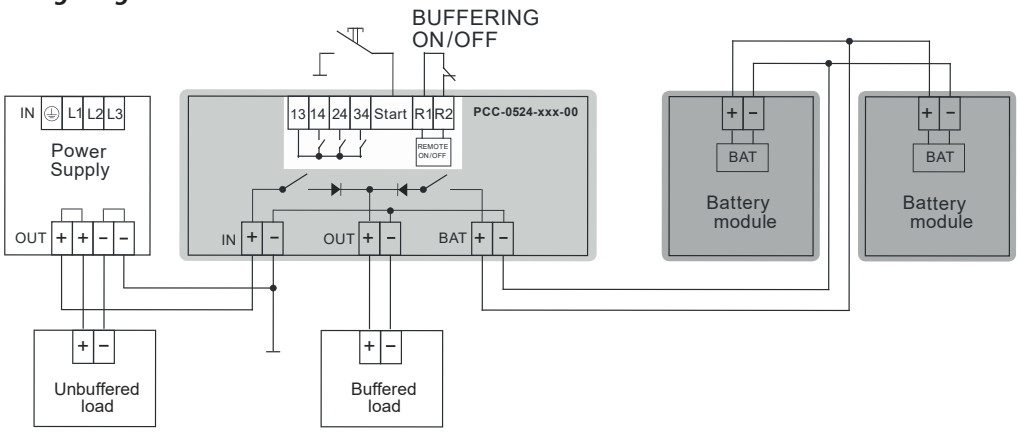
Features

- Up to 20A output current
- Up to 3A charging current for fast charging times
- Universal for all types of 24 VDC power supplies
- Start from battery
- Three potential-free signal contacts
- Decoupled output
- Reliable early warning signal for battery replacement
- Long battery life due to optimal charging management
- Safe supply of industrial PCs with the BLOCK IPC mode
- **Requires:** 24 VDC power supply, battery storage module, batteries

Battery Control Modules									
Part Number	*Price*	*Input Voltage Range*	*Output Voltage Range*	*Number of Inputs*	*Amperage Rating*	*Connector Type*	*Housing Material*	*Dimensions H x W x D (mm [in])*	*Drawing Link*
PCC-0524-100-00	$150.00	18–30 VDC	18–30 VDC	1	10A	Push terminals	Metal	127.00 x 30.00 x 117.00 [5.00 x 1.18 x 4.60]	PDF
PCC-0524-200-00	$166.00				20A			127.00 x 32.50 x 126.00 [5.00 x 1.28 x 4.96]	PDF

NOTE: Requires 24 VDC power supply, battery storage module, batteries.

Wiring Diagram



Additional Data		
Part Number	PCC-0524-100-00	PCC-0524-200-00
Weight g [oz]	360 [12.69]	405 [14.28]
Terminal Type	Push-in	
Bare Wire (Input/Output)	0.20–4 mm^2 [AWG 24–12]	0.20–10 mm^2 [AWG 24–8]
With Ferrule (Input/Output)	0.20–2.5 mm^2 [AWG 24–14]	0.20–6 mm^2 [AWG 24–10]
Stripping Length (Input/Output)	10mm	15mm
Bare Wire (Signaling)	0.14–1.5 mm^2 [AWG 26–16]	
With Ferrule (Signaling)	0.25–1.5 mm^2 [AWG 24–16]	
Stripping Length (Signaling)	8–9mm	

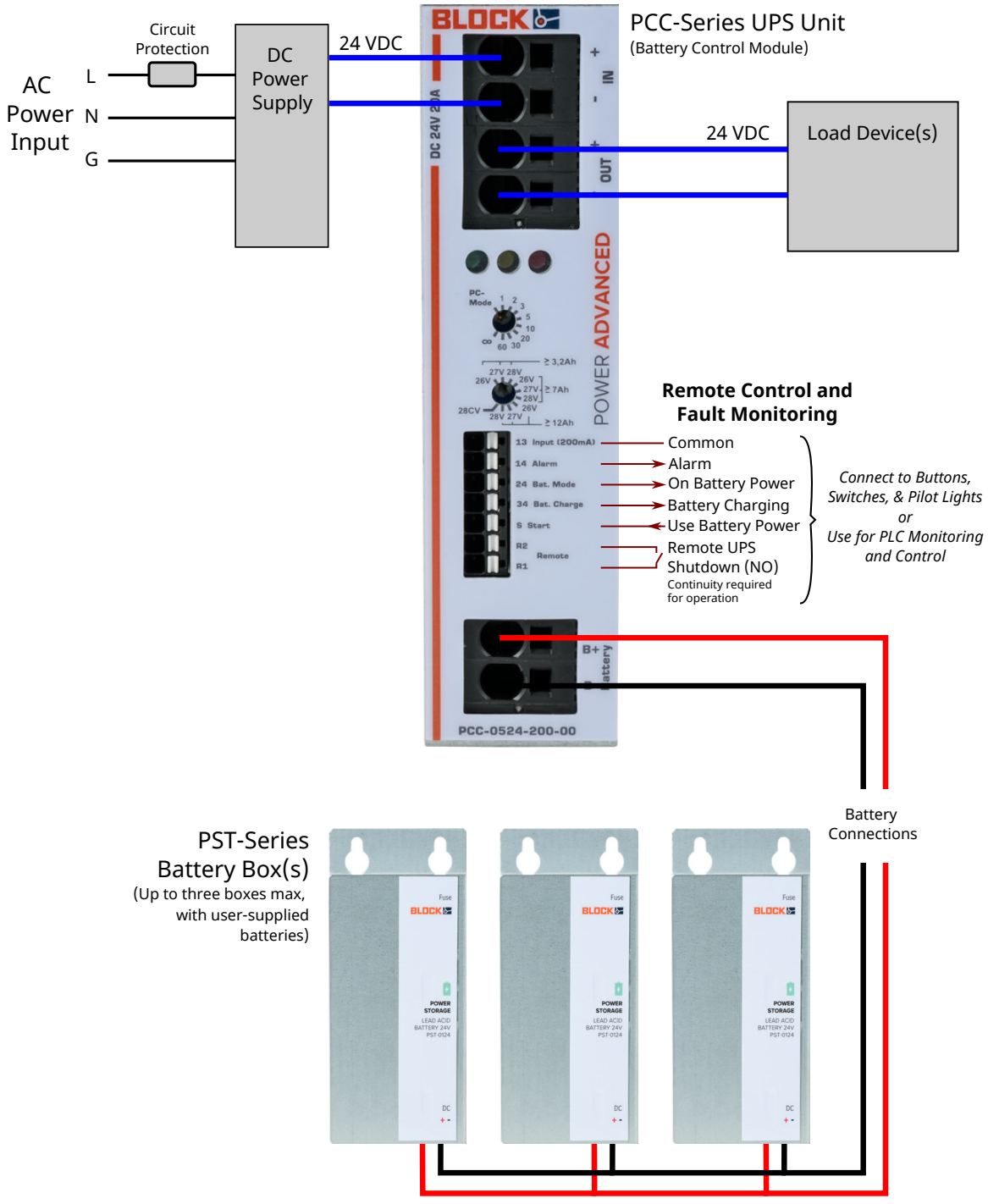
*** Use 90°C rated copper conductors only.**

BLOCK Battery Control Modules

Specifications		
Input Specifications	***PCC-0524-100-00***	***PCC-0524-200-00***
Nominal Input Voltage	24 VDC	
Output Through Connection	≤23V	
Input Current at 24 VDC (Stand-by/Charging Process/Max.)	0.1A/3A/14A	0.1A/3A/25.8A
Output Specifications		
Nominal Output Voltage	24 VDC	
Operating Output Voltage (Normal Operation - Typical)	Uin - 0.25 VDC (Decoupling via MosFet)	
Operating Output Voltage (Buffer Operation - Typical)	Battery voltage - 0.25 VDC	
Operating Output Current	10A 11A boost continuous	20A 22A boost continuous
Overcurrent Protection with Hiccup Mode	15A/5s, 25A/55 ms	30A/5s, 50A/55 ms
Remote Power Off (Buffer Operation)	Yes	
Efficiency (Typical)	99%	
Max. Power Loss (Idling/Normal Load)	2W/12W	
Feedback Voltage (Max.)	35 VDC	
Storage Medium		
Rated Voltage	24 VDC	
Charging Voltage Upper Level	26–28 VDC (adjustable)	
Charging Current	0.8A/1.8A/3A (adjustable)	
Recommended Battery Storage Module	PST-0024-032-10, PST-0024-070-x0, PST-0024-120-x0	
Signaling		
LED	Green/Yellow/Red	
Potential Free Signal Contact (Configurable)	30 VDC / 0.1A	
Environment		
Operating Temperature	-25 to +70 °C [-13 to +158 °F]	
Storage Temperature	-25 to +85 °C [-13 to +185 °F]	
Cooling	Natural convection	
Humidity	5 to 96 % relative humidity with no dew	
Pollution Degree	2	
Operating Altitude	4,000m	
Mounting	35mm DIN rail - Vertical only	
Safety and Protection		
HV Test Voltage (Terminals and Enclosures)	500 VDC	
Construction	Enclosed for installation in switching cabinets	
Protection Rating	IP20 (EN 60529)	
Safety Extra-low Voltage (SELV/PELV)	EN 61140	
Safety Class	III	
Reverse Connection Protection	Yes	
Parallel Operation (Battery Module)	Yes, max. 3 to increase the buffer time	
Safety	EN 61010-1	
EMC	EN 61000-6-2, EN 61000-6-3	
Agency Approval	UL 61010-1, UL 61010-201, UL File E219022, CE	

Battery Control Modules

Battery Control Module Wiring Diagram - Sample



Combination Switching Power Supply and Battery Control Modules - Power Advanced Series

PCC-1024-050-20

Overview

The combined uninterruptible power supplies of the PCC-1024 series include an economical 24 VDC, 5A or 10A switched mode power supply, as well as a charge and control unit for optimal battery management. The combined UPS manages and monitors the battery module. The PCC-1024 provides reliable, maintenance-free power protection for critical 24 VDC systems, ensuring your equipment stays operational even during power disruptions.

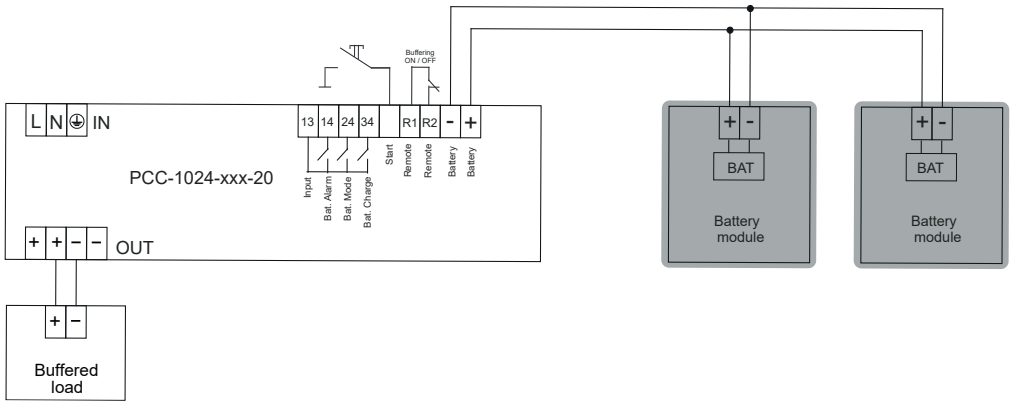
Features

- Combined power supply with charge and control unit
- Extended life expectancy through temperature controlled battery management
- Reliable supply of industrial PCs
- 35mm DIN rail mounting
- **Requires:** battery storage module and batteries

Combination Switching Power Supply and Battery Control Modules - Power Advanced Series									
Part Number	***Price***	***Input Voltage Range***	***Output***	***Output Voltage Range***	***Efficiency***	***Connector Type***	***Housing Material***	***Dimensions H x W x D (mm [in])***	***Drawing Link***
PCC-1024-050-20	$255.00	90–264 VAC	24 VDC @ 5A/120W (adjustable)	23–28.5 VDC	89% @ 115 VAC	Push terminals	Metal	127.00 x 55.00 x 126.00 [5.00 x 2.16 x 4.96]	PDF
PCC-1024-100-20	$293.00		24 VDC @ 10A/240W (adjustable)		93% @ 115 VAC			127.00 x 63.00 x 136.00 [5.00 x 2.48 x 5.35]	PDF

NOTE: Requires battery storage module and batteries.

Wiring Diagram



Additional Data		
Part Number	***PCC-1024-050-20***	***PCC-1024-100-20***
Weight g [lb]	750 [1.65]	950 [2.09]
Terminal Type	Push-in	
Bare Wire (Input/Output)	0.08–2.5 mm^2 [AWG 28–14]	
With Ferrule (Input/Output)	0.08–2.5 mm^2 [AWG 28–14]	
Stripping Length	8–9mm	

Combination Switching Power Supply and Battery Control Modules - Power Advanced Series

Specifications		
Input Specifications	***PCC-1024-050-20***	***PCC-1024-100-20***
Frequency Range	47–63 Hz	
Input Current (at Nominal Load and Battery is Charged/Max.)	2.00A (100 VAC) / 0.95A (230 VAC)	2.60A (100 VAC) / 1.30A (230 VAC)
Input Current (at Nominal Load and Battery is Being Charged/Max.)	2.60A (100 VAC) / 1.20A (230 VAC)	2.90A (100 VAC) / 1.40A (230 VAC)
Inrush Current Limitation	<30A, NTC	
Input Fuse, Internal (Device Protection)	6.3A	
Required Back-up Fuse, Circuit Breaker (Characteristic)	6A, 10A, 16A (B,C)	
Transient Surge Voltage Protection	Yes	
Output Specifications		
Boost Output Current at 5s	7.5A	15A
Output Current Boost (Continuous Up to 45 °C 100–264 VAC/120–372 VDC)	5.5A	11A
Tripping of Standard Circuit Breaker (Max.)	"B" Curve 4A Circuit Breaker	
Parallel Connection to Gain a Higher System Reliability	Yes, only with additional redundancy module for decoupling max.10A output current	
Ripple/Noise (Typical)	50 mVss	
Resistance to Reverse Feed (Max.)	35 VDC	
Over-voltage Protection (Typical)	38 VDC	
Output Specifications in Mains Operation		
Nominal Output Voltage	24 VDC ± 1%	
Output Voltage Range	23–28.5 VDC	
Output Current Limitation (Constant Current Typical)	6.5A	13A
Power Losses (Nominal Load, Battery Charged)	21W/15W	24.7W/17W
Efficiency (Nominal Load, Battery Charged - Typical)	89%	93%
Maximum Power Losses (Battery is Charging)	30W (90 VAC)	
Output Specifications in Battery Operation		
Nominal Output Voltage (Depends on Battery Voltage)	24 VDC	
Output Voltage Range	UBAT - 0.5V (27.5–19 VDC)	
Output Current Limitation (Typical)	5.5A	11A
Maximum Power Losses (Stand-by/Nominal Load)	3.2W	5.2W
Remote Shut-down	Yes	
Connection of Capacitive Loads (Max.)	10,000 µF	
Adjustable Buffer Time	1, 2, 3, 5, 10, 15, 20, 30, 60 min, ∞	
Battery Management		
Reverse Connection Protection (Fuse of Battery Module Will Be Tripped)	Yes	
Charging Characteristic	IU	
Charging Current	0.2–2.0A	0.8–3.0A
End of Charge Voltage (Temperature Compensated)	26–28V	
Battery Presence Check/Time Interval (60s)	Yes	
Protection Against Total Discharge	19V	
Battery Voltage Very Low Alarm Signaling Threshold	20.4V	
Recommended Battery Modules	0.8–7 Ah	1.2–12 Ah
Parallel Connection of Batteries (Max. 3 to Increase Buffer Time)	Yes	
Leakage Current	<0.1 mA	

Continued on next page.

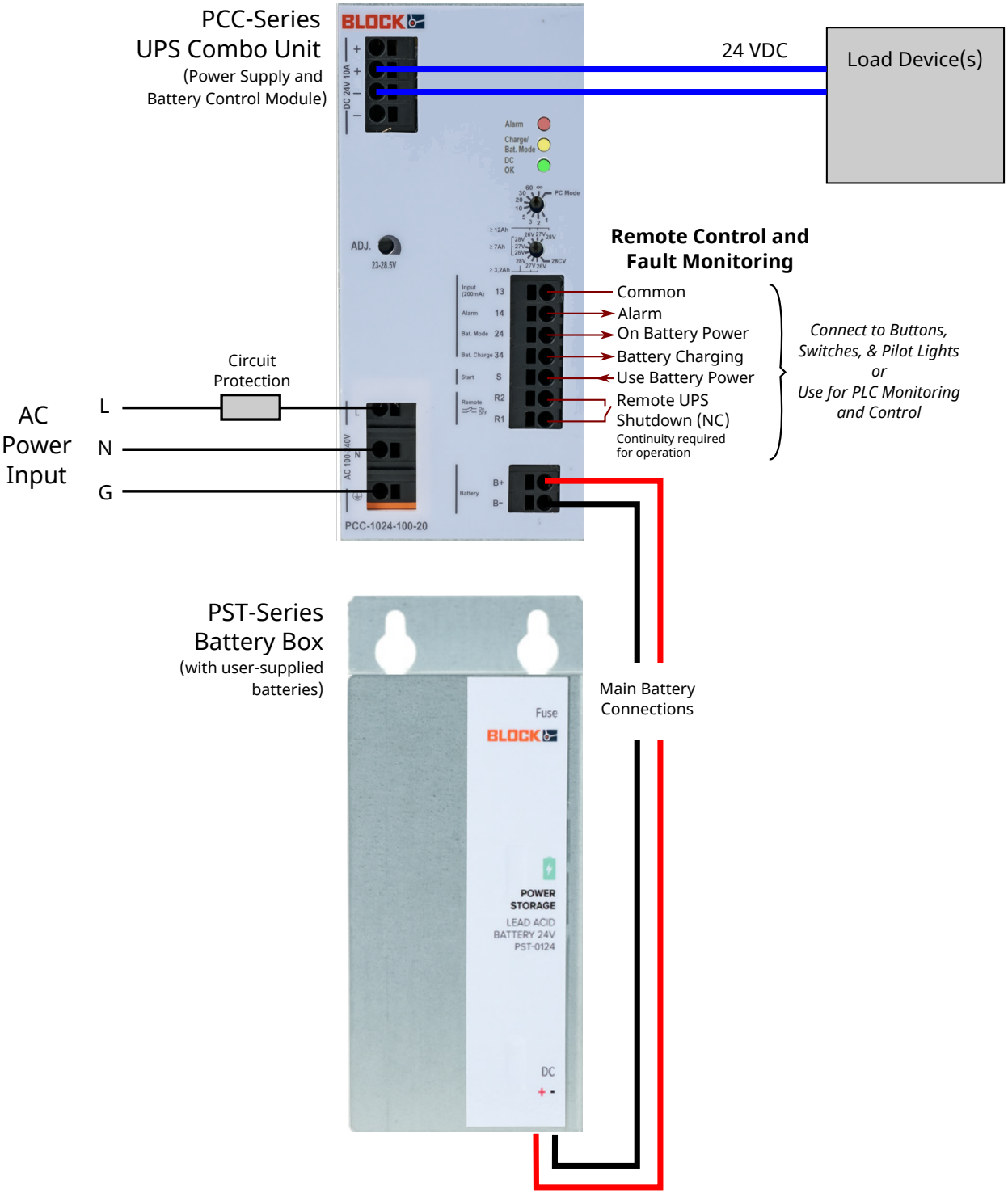
Combination Switching Power Supply and Battery Control Modules - Power Advanced Series

Specifications		
Part Numbers	***PCC-1024-050-20***	***PCC-1024-100-20***
Signaling		
Status Display	LED Green/Yellow/Red	
Potential-free Summation Input (Short Circuit Proof Summation Current for Signal-outputs: Alarm / Bat. Mode / Bat. Charge)	30V/200 mA max.	
Signal Output Alarm Relay-contact Opens: Alarm/Exchange Battery Signal Options are Adjustable via Interface	30V max.	
Signal Output Battery Mode Relay-contact Closed: Buffer Mode Signal Options are Adjustable via Interface	30V max.	
Signal Output Battery Charge Relay-contact Closed: Battery Charging Signal Options are Adjustable via Interface	30V max.	
Environment		
Storage Temperature	-25 to +85 °C [-13 to +185 °F]	
Operating Temperature (Device Start at -40 °C Type-tested)	-25 to +70 °C [-13 to +158 °F]	
Derating	-1.5%/K > +50 °C (90–264 VAC), -1.33%/K > +55 °C (180–264 VAC)	
Convection Cooling	Yes	
Humidity, no Condensation	5–96%	
Required Minimum Spacing (Left/Right)	0mm	
Required Minimum Spacing (Over/Under)	50mm	
General Data		
Protection Rating Acc. to IEC 60529	IP20	
Protection Class Acc. to EN 61140	I	
For Installation in Pollution Degree 2 Environment	Yes	
Use Copper Conductors Only (Rated 75 °C)	Yes	
Overvoltage Category	II	
Safety Standards		
Safety	IEC 61010-1, IEC 61010-2-201, EN 61558-2-16, EN 62368-1, EN 60335-1	
EMC	EN 61204-3	
Safety Extra-low Voltage (SELV/PELV)	EN 61010-1 (SELV), EN 61010-2-201 (PELV)	
CE Acc. to 2014/30/EU	Yes	
Agency Approval	* UL File E219022, CE	

*** UL Note: The boost shall be followed by a recovery time (< nominal load) to prevent the equipment to exceed the max rated output power.**
Maximum continuous overall current 5.5A for PCC-1024-050-20 11A for PCC-1024-100-20
Nominal input voltage: 100–240 VAC

Combination Switching Power Supply and Battery Control Modules - Power Advanced Series

UPS System Wiring Diagram - Sample
(Combination Power Supply and Battery Control Module)



BLOCK 24 VDC UPS Power Systems

Find the Right Solution for Your Application

Brief Backup

- Seconds of protection
- Ride through momentary losses

Recommended Solution

Capacitive UPS System (PC-0424)
This system provides 90–100 seconds of backup using internal capacitor storage.

Recommended Components:
PC-0424-010-00 - Capacitive UPS Mod

24 VDC Power Supply

Key Benefits:
- No battery maintenance required
- Fast recharge (90s)
- Compact installation

Standard Backup

- Minutes of protection
- Controlled shutdown time

Recommended Solution

Battery UPS System (PCC-0524)
This system provides 1–60 minutes of configurable backup time with intelligent battery management.

Recommended Components:
PCC-0524-100-00 - UPS Controller (10A)

24 VDC Power Supply

PST-0024-070-10 - Battery Module (7 Ah)

Key Benefits:
- Configurable backup duration
- Battery health monitoring
- Can parallel up to 3 battery modules

Extended Backup

- Hours of protection
- Continue operations during outages

Recommended Solution

Extended Battery UPS System
Perfect for extended runtime. Use 3 parallel battery modules to triple your backup capacity.

Recommended Components:
PCC-0524-100-00 - UPS Controller (10A)

24 VDC Power Supply

(3) PST-0024-120-10 - Battery Modules (12 Ah each)

Key Benefits:
- Up to several hours of backup
- 36 Ah total battery capacity
- Ideal for critical applications

System Comparison

Feature	*Capacitive UPS PC-0424*	*Battery UPS PCC-0524*	*Combo UPS PCC-1024*
Best For	Brief ride-through	Extended backup	Simplified installation
Backup Duration	90–100s	1–60 min (configurable) *	1–60 min (configurable) *
Requires Battery Module	Built-in capacitor	Yes	Yes
Requires Power Supply	Separate unit	Separate unit	Built-in
Number of Components	2 (PS + UPS)	3 (PS + UPS + Battery)	2 (Combo + Battery)
Setup Complexity	Simple	Moderate	Easy
Output Current	Up to 20A	10A or 20A	5A or 10A
Battery Parallel Capability	N/A	Up to 3 modules	Up to 3 modules

***NOTE: Fixed via selector switch or continuous until the battery discharge protection is reached.**