



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.

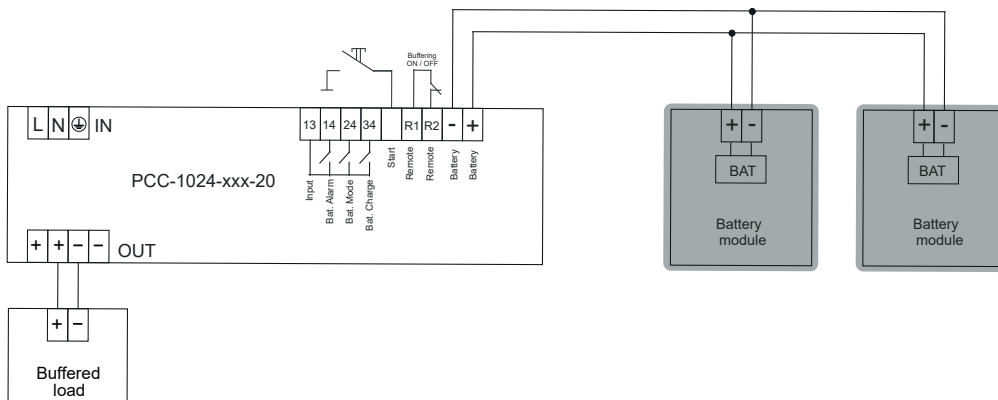
Features

- 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	



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Specifications		
Input Specifications	<u>PCC-1024-050-20</u>	<u>PCC-1024-100-20</u>
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	

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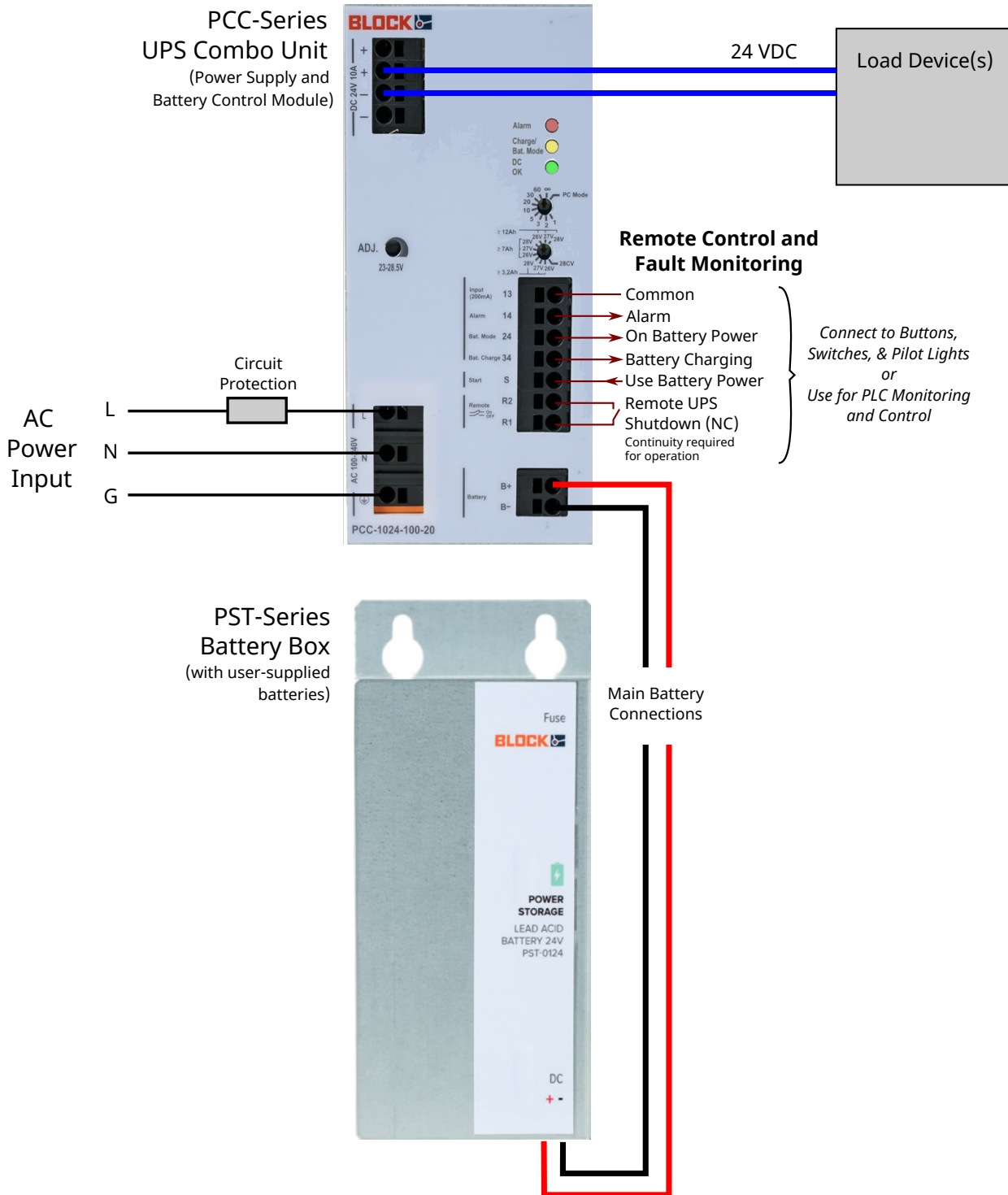
Specifications		
Part Numbers	<u>PCC-1024-050-20</u>	<u>PCC-1024-100-20</u>
Signaling		
Status Display	LED Green/Yellow/Red	
Potential-free Summation Input (Short Circuit Proof Summation Current for Signal-outputs: Alarm / Bat. Mode / Bat. Charge)	30V/200 mA max.	
Signal Output Alarm Relay-contact Opens: 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

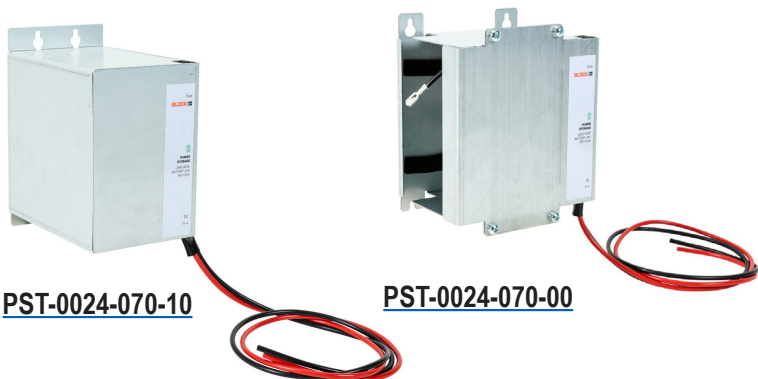


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UPS System Wiring Diagram - Sample (Combination Power Supply and Battery Control Module)



BLOCK Battery Storage Modules



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

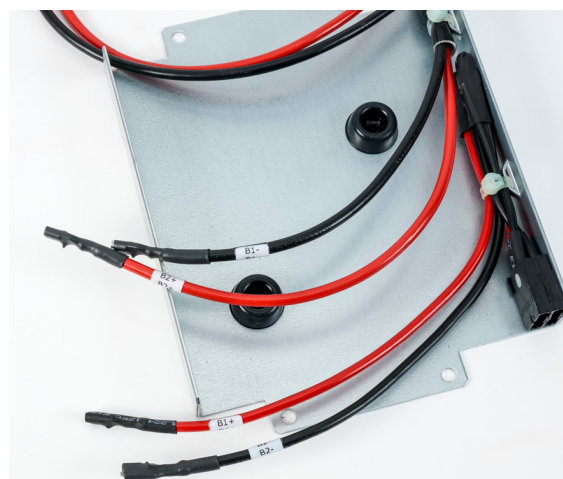
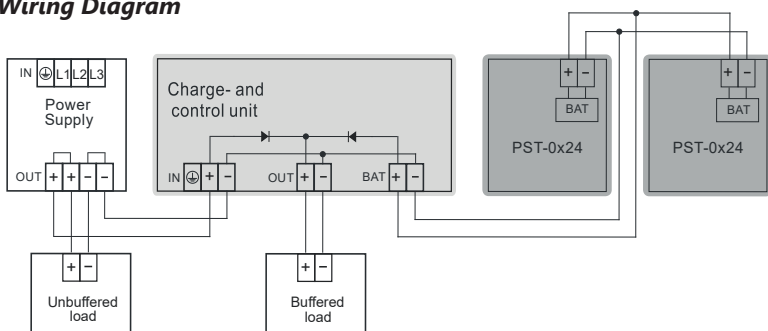
- Several capacity housings and profiles available to fit your installation.
- Prewired and labeled for quick battery and system installation

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	YUASA, NP7-12			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	YUASA, NP12-12			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

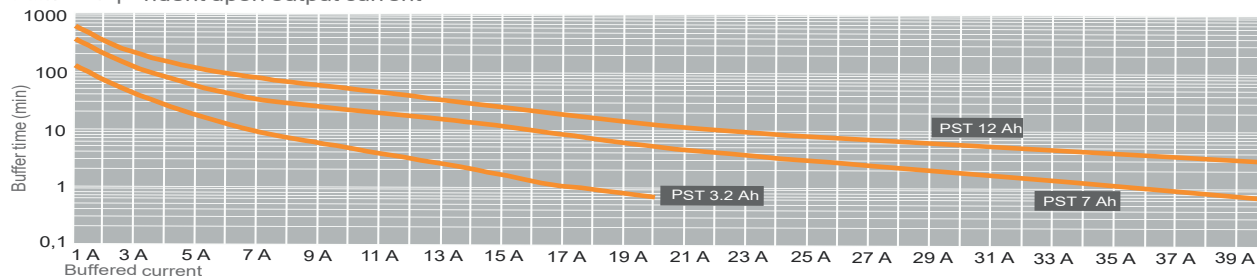
The PST-0024-xxx-xx variants are empty enclosures without battery modules. The specified values assume customer-side installation of the battery modules listed under Recommended Battery (or equivalent).

Wiring Diagram



Buffer Time

Buffer times dependent upon output current





Battery Storage Modules

Specifications					
Part Number	<i>PST-0024-032-10</i>	<i>PST-0024-070-00</i>	<i>PST-0024-070-10</i>	<i>PST-0024-120-00</i>	<i>PST-0024-120-10</i>
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 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.