



Buffer Control Module



PC-0424-010-00

Overview

The PC-0424 is a capacitive buffer control module that uses supercapacitors (Electrolytic Double Layer Capacitors (EDLC)). Instead of using traditional battery control modules and batteries, the buffer control module monitors, controls, and provides the backup power in one unit. When mains power fails, the supercapacitors immediately take over without interruption, providing clean 24 VDC power to your critical loads. This makes it ideal for applications requiring short-duration power bridging with maintenance-free operation and extended lifespan.

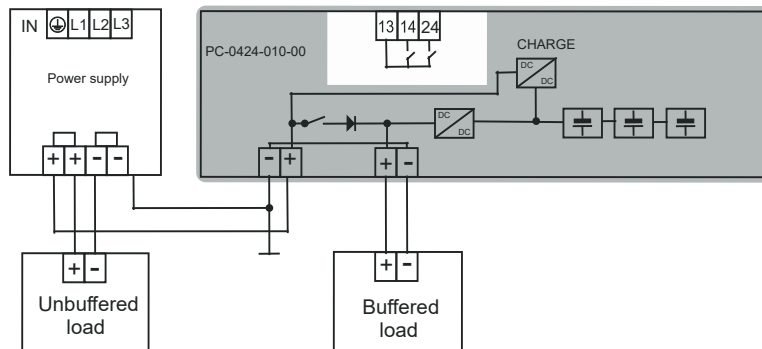
Features

- 35mm DIN rail mounting
- Simple one unit back up
- Provides short power needs up to 20A for 2.5s
- Pairs with any brand power supply
- **Requires** 24 VDC power supply

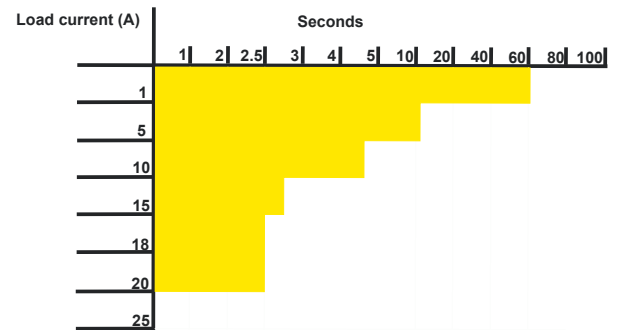
| Buffer Control Module | | | | | | | | | | |
|--------------------------------|----------|---------------------|----------------------|------------------|----------------------------------|-----------------|----------------|------------------|--|---------------------|
| Part Number | Price | Input Voltage Range | Output Voltage Range | Number of Inputs | Buffer Time | Amperage Rating | Connector Type | Housing Material | Dimensions H x W x D (mm [in]) | Drawing Link |
| PC-0424-010-00 | \$295.00 | 18.5–30 VDC | 18.25–29.75 VDC | 1 | 2.5s hold-up at 20A or 60s at 1A | 20A | Push terminals | Metal | 127.00 x 55.00 x 131.50 [5.00 x 2.16 x 5.17] | PDF |

NOTE: Requires 24 VDC power supply

Wiring Diagram



Buffer Time



Additional Data

| Part Number | PC-0424-010-00 |
|---------------------------------|-------------------------------------|
| Weight g [lb] | 725 [1.60] |
| Terminal Type | Push-in |
| Bare Wire (Input/Output) | 0.75–16 mm ² [AWG 20–4] |
| With Ferrule (Input/Output) | 0.75–16 mm ² [AWG 20–4] |
| Stripping Length (Input/Output) | 18mm |
| Bare Wire (Signaling) | 0.2–2.5 mm ² [AWG 24–12] |
| With Ferrule (Signaling) | 0.2–2.5 mm ² [AWG 24–12] |
| Stripping Length (Signaling) | 10mm |

* Use 90 °C rated copper conductors only.

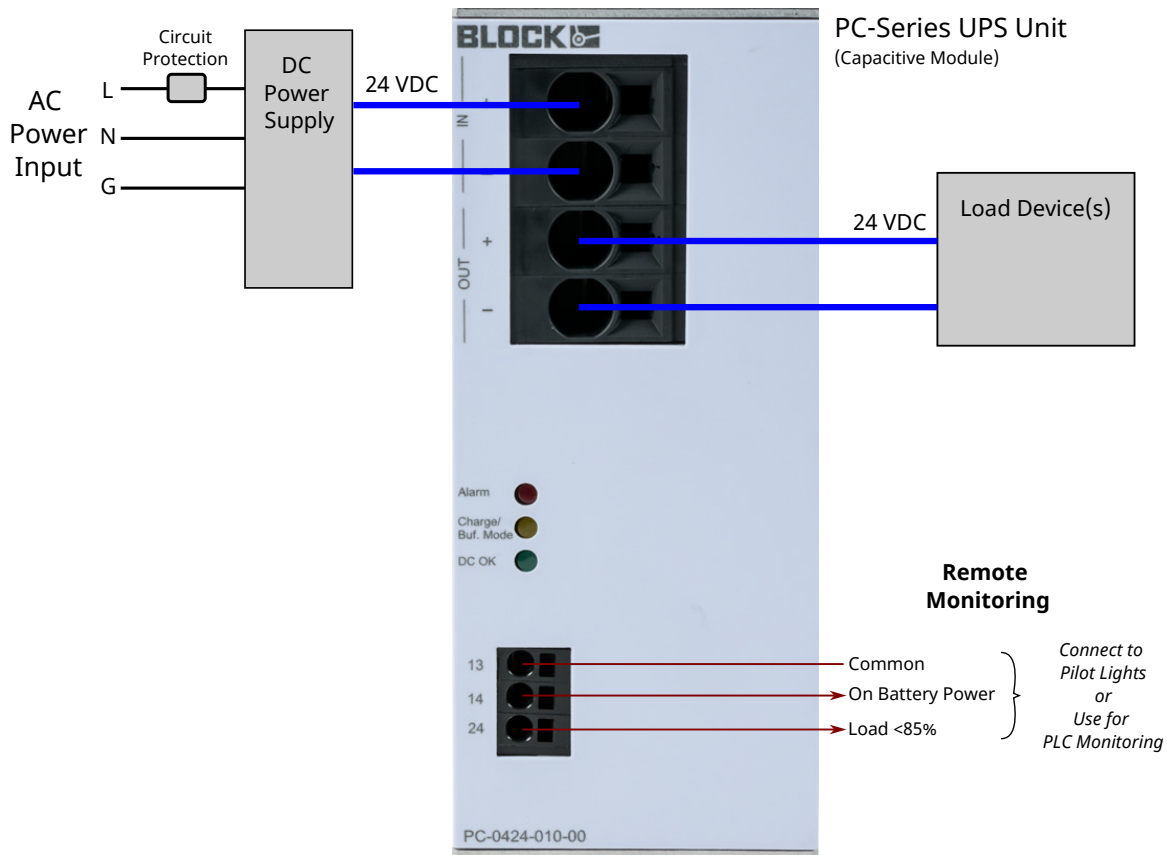


Buffer Control Module

| Specifications | |
|---|--|
| Input Specifications | <i>PC-0424-010-00</i> |
| Nominal Input Voltage | 24 VDC |
| Input Current at 24 VDC (Stand-by/Charging Process/Max.) | 0.1A/3A/24A |
| Output Specifications | |
| Nominal Output Voltage | 24 VDC |
| Operating Output Voltage (Normal Operation Typical) | U _{in} – 0.25 VDC (Decoupling via MosFet), Buffer Operation buffer threshold – 0.25VDC (Decoupling via MosFet) |
| Operating Output Voltage (Buffer Operation Typical) | Battery voltage – 0.25 VDC |
| Operating Output Current | 20A |
| Over Load Behavior in Normal Mode | Constant current: 22A hiccup mode under 18.5 VDC |
| Over Load Behavior in Buffer Mode | Constant current: 22/25A for 3s |
| Max. Power Loss (Idling/Normal Load) | 3W/14W |
| Feedback Voltage (Max.) | 35 VDC |
| Energy Storage | |
| Type of Internal Memory | Electrolytic double layer capacitor (EDLC) |
| Size of Internal Memory | 1000 Ws |
| Life Cycle | Load dependent: 25 °C (up to 14 years) |
| End of Charge Voltage per Cell | To protect the capacitors, the state of charge is automatically reduced at high temperatures |
| Charging Current | 1A |
| Charge Time | 90s |
| Signaling | |
| LED | Green/Yellow/Red |
| Potential Free Signal Contact | Solid state: 2 x N.O. 30 VDC / 0.1A |
| Environment | |
| Storage Temperature | -25 to +85 °C [-13 to +185 °F] |
| Operating Temperature | -25 to +70 °C [-13 to +158 °F] |
| Cooling | Natural convection |
| Humidity | 5 to 96 % relative humidity with no dew |
| Derating | Output current: 2.5%/K>55 °C Charge controller: 3.3%/K>55 °C based on 1A (automatic reduction) Buffer time: 3.3%/K>55 °C based on max. buffer time |
| Pollution Degree | 2 |
| Operating Altitude | 4,000m |
| 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 |
| Safety | EN 61010-1, EN 61010-2-201 |
| EMC | EN 61000-6-2, EN 61000-6-3 |
| Agency Approval | UL 61010-1, UL 61010-201, UL File E219022, CE |

BLOCK Buffer Control Module

Buffer Control Module Wiring Diagram - Sample



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.