1-800-633-0405 **RHINO PSB Power Supply Accessories**

Buffer Module

The RHINO PSB24-BFM20S buffer module is a cost effective alternative to battery-based backup systems. Utilizing electrolytic capacitors the buffer module is maintenance free and will maintain the output voltage of a 24VDC power supply system for 250 msec minimum with a 20A load and 5 sec minimum with a 1A load. A switch is provided to select the voltage level to start buffering. An inhibit input is available for remote shutdown as well as output signals for remote stand-by and buffering mode indication. The module is housed in a corrosion-resistant aluminum chassis with IP20 terminals and conformal coated circuit board for protection against demanding environments.

Features

- Corrosion-resistant aluminum housing
- Long minimum buffering time of 250ms @ 24V/20A
- Units can be connected in parallel to increase buffering time
- Less than 30 second charging time locations
- P20 wiring terminals
- Overvoltage / Overcurrent / Short Circuit protections

• 3-year warranty



Buffer Module				
Part Number	PSB24-BFM20S			
Price	\$129.00			
Drawing Link	PDF			
Weight kg [lb]	0.76 [1.68]			
Buffer Module Input Specifications				
Nominal Input Voltage	24VDC			
Voltage Range	22.8 to 28.8 VDC [35VDC Max]			
Input Current	Charging mode: < 0.6 A; Discharging mode: 20A Max			
Input Power	2.5 W average			
Maximum Signal Input (Inhibit)	35V / 10mA			
Max Inrush Current	< 20A			
Charging Time	< 30sec			
Buffer Module Output Specifications				
Nominal Output Voltage	24VDC typ. [depends on V _{in}]			
Adjustment Range Of The Voltage	22 to 28VDC Switch = "Fix 22V" - Buffering starts if terminal voltage falls below 22V Factory Setting, Switch = "V _{in} - 1V" - Buffering starts if terminal voltage is decreased by >1V			
Maximum Output Voltage	35VDC			
Output Current	20A max			
Buffering Time	250ms Min @ 24V / 20A Load, 5sec Min @ 24V / 1A Load [Refer to Fig.1]			
Maximum Signal Output	35V / 10mA			
Signals	Inhibit Signal [I] - "Low" = shuts down buffer module Ready Signal [R] - "High" = buffer module is fully charged or in standby mode Buffering Signal [B] - "High" = Buffer module is discharging or in buffering mode Supply Voltage (+Vs) - Common +Vs, 35V Max			
Noise and Ripple (20MHz)	<200mVpp @ 25°C [77°F] during buffering mode			
Parallel Connection	Yes [requires PSB60-REM redundancy module]			
Series Connection	No			
Protective Device	Transient voltage suppressor [TVS] for signals			

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Buffer Module Mechanical Specifications					
Case Cover	Aluminum				
LED Indicators	Green LED Off - Unit is discharged or Vin <22VDC Green LED On - Unit is fully charged				
Cooling System	Convection				
Terminal	Input / Output - M3 x 2 pins [Rated 300V / 30A] Signal - M3 x 5 pins [Rated 300V / 30A]				
Wire	Input / Output - AWG 12–10 [0.08–0.10 in]; Torque: 0.72 Nm [6.3 lb-in] Signal - AWG 24–10 [0.02–0.10 in]; Torque: 0.72 Nm [6.3 lb-in]				
Buffer Module Environmental Specifications					
Operating Temperature	-25 to 75°C [-13 to 167°F]				
Storage Temperature	-25 to 85°C [-13 to 185°F]				
Power De-rating	>70°C [158°F] de-rate power by 5% / °C				
Operating Humidity	<95% RH [Non-Condensing]				
Operating Altitude	2,500 Meters				
Shock Test (Non-Operating)	IEC60068-2-27, 30G [300m/S ²] for a duration of 18ms				
Vibration (Non-Operating)	IEC60068-2-6, 10 Hz to 500 Hz @ 30m/S2 [3G peak]; 60 min per axis for all X, Y, Z direction				
Pollution Degree	2				
Buffer Module Protection Specifications					
Overvoltage	32V ± 10%				
Overload / Overcurrent	30A Max				
Short Circuit	No damage				
Penetration Protection	> 3.5 mm [eg. screws, small parts]				
Reverse Polarity Protection	Yes				
Degree of Protection	IP20				
Protection Against Shock	Class I with GND connection				

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Buffer Module Reliability Specifications				
MTBF (at V _{in} -1V Mode)	>2,800,000 hrs. as per Telcordia SR-332 at Standby Mode [Buffer Module in Ready State]			
Expected Capacitor Life	10 years [Standby mode @ 40°C]			
Buffer Module Safety Standards / Directives				
Electronic Equipment in Power Installations	EN50718 / IEC62103			
Electrical Safety (Information Technology Equipment)	UR/cUR recognized to UL60950-1 and CSA C22.2 No. 60950-1 File no. E198298, CB scheme to IEC60950-1			
Industrial Control Equipment	UL/cUL listed to UL508 and CSA C22.2 No. 107.1-01 File no. E197592, CSA to CSA C22.2 No. 107.1-01; File No. 249074			
Hazardous Location	cCSAus to CSA C22.2 No. 213-M1987, ANSI / ISA 12.12.01:2007 [Class I, Division 2, Group A,B,C,D T4, Ta = -25°C to +75°C (> +70°C derating)], File No. 249074			
CE	in conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC			
Materials and Parts	RoHS Directive 2011/65/EU Compliant			
Galvanic Isolation	Input & Output to Ground - 1.5 KVAC Signal to Ground - 1.5 KVAC			
Buffer Module EMC Specifications				
EMC / Emissions	CISPR32, EN55032, EN55011			
Component Power Supply for General Use	EN61204-3			
Immunity	EN55024, EN61000-6-2			
Electrostatic Discharge	EN61000-4-2			
Radiated Field	EN61000-4-3			
Fast Transient / Burst	EN61000-4-4			
Surge	IEC61000-4-5			
Conducted	EN61000-4-6			
Power Frequency Magnetic Fields	EN61000-4-8			
Voltage Dips	EN61000-4-11			
Low Energy Pulse Test (Ring Wave)	EN61000-4-12			

Note: Product intended to be used as Apparatus with AC-DC Power Supply, EMC compliance to be verified in correspondence to the connected units.

PSB24-BFM20S

Wiring Connection					
Input		Output			
+	DC+	R	Ready		
-	DC+	В	Buffering		
I	Inhibit	+Vs	+ Voltage Supply		
		Ŧ	Ground		

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Buffering, Ready and Inhibit Signal			
Buffering Output Signal (B)	"High" = <u>PSB24-BFM20S</u> is discharging or in Buffering Mode		
Ready Output Signal (R)	"High" = <u>PSB24-BFM20S</u> is fully charged or in Standby Mode		
Inhibit Input Signal (I)	"Low" = Shuts down Buffer Module		
Signal Voltage	+VS: 10–35 VDC		
Maximum Signal Current	10mA		
Isolation (Signal to Power)	1.5 KVAC		





Buffer Module Operations

Example



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Buffer Module Wiring



Parallelling of buffer units



Decoupling of buffered branches

