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DBUF40 series

Buffer Module



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DBUF40-24

24V/40A DIN Rail Type Buffer Module

User's Manual Click Me

Video Click Me



UL62368-1 IEC62368-1

Automate Industrial Security Network Telecom

Features

- Buffering with electrolytic capacitors instead of lead acid batteries
- Type buffering time of 250ms @22Vdc/40A
- Buffer mode selectable by switch:
  Fixed mode at 22Vdc
  Dynamic mode for Vin-1Vdc
- LED indicator for signal status
- Supports parallel connection to extend buffering time
- Cooling by free air convection
- -25~+75℃ wide operating temperature
- 3 years warranty

Applications

- Industrial control system
- Semiconductor fabrication equipment
- Factory automation
- Electro-mechanical apparatus

GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Description

The DBUF40-24 buffer module is a supplementary device for regulated DC 24V power supplies. The buffer module utilizes maintenance-free electrolytic capacitors to store energy,thus eliminates the need of periodic replacement as compared to costlier batteries which also have shorter functional life span. The DBUF40-24 comes with comprehensive protection features like over voltage, over current and short circuit protections.Buffer modules can be connected in parallel to increase the output ampacity or the hold-up time.

Model Encoding

DBUF 40 - 24

- 24 — Operational Voltage
- 40 — Output Current (40A)
- DBUF — DIN rail Buffer Module

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24V/40A DIN Rail Type Buffer Module — DBUF40-24

SPECIFICATION

MODEL			DBUF40-24		
CHARGING MODE	DC NORMAL OPERATING VOLTAGE		24Vdc		
	CHARGING VOLTAGE		23~30Vdc		
	CHARGING CURRENT		900mA Max.		
	CURRENT CONSUMPTION AT STANDBY		100mA Max.		
	CHARGING TIME		25s Typ.		
			35s Max.		
BUFFER MODE	DC NORMAL OPERATING VOLTAGE		22Vdc/Vin-1Vdc		
	DC OPERATING VOLTAGE RANGE		22-29Vdc		
	OUTPUT CURRENT(max.)		40A		
	BUFFER TIME (Refer to Buffering Curve at 22Vdc)	Output current	40A	20A	0.1A
		Typ.	250ms	500ms	62s
		Min.	160ms	320ms	42s
	RIPPLE & NOISE (max.) Note.2		350mVp-p		
PROTECTION	OVER VOLTAGE		31~37.5V only,shut down o/p voltage		
	OVER LOAD		105%~125% rated output power at buffer mode		
			Protection type:Shut down o/p voltage , re-power on to recover		
	SHORT CIRCUIT		Protection type:Shut down o/p voltage , re-power on to recover		
	TVS FOR SIGNALS (max.)		35V		
	REVERSE POLARITY PROTECTION		By internal MOSFET, no damage , recovers automatically after fault condition removed		
FUNCTION	SELECTABLE BY SWITCH	Fix 22Vdc(Default)	Buffering starts if terminal voltage falls below 22Vdc		
		Vin-1Vdc	Buffering starts if terminal voltage is decreased by > 1Vdc		
	CONTROL	Inhibit (I)	+Vs - V(I) < 6Vdc: Buffer module ON; +Vs - V(I) >10Vdc: Buffer module OFF		
			35Vdc /4mA Max.		
	SIGNALS	Ready(R)	Charged ready: V(R)>+Vs - 2Vdc; Unready: V(R)<1Vdc		
			35Vdc /10mA Max.		
		Buffering (B)	Buffering: V(B)>+Vs - 2Vdc; Other mode: V(B)<1Vdc		
			35Vdc /10mA Max.		
		Supply Voltage(+Vs)	10~35Vdc /10mA(Connected to +V or external voltage)		
	LED STATUS DISPLAY		ON		Ready
			OFF		Discharged
			Flashing	1Hz	Charging
				10Hz	Buffering
	PARALLEL CONNECTION		Refer to Typical Application Notes(Page 6)		

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24V/40A DIN Rail Type Buffer Module — DBUF40-24

ENVIRONMENT	WORKING TEMP.	-25~+75℃(Refer to"Derating Curve")		
	WORKING HUMIDITY	5 ~ 95% RH non-condensing		
	STORAGE TEMP.	-25~+80℃		
	SHOCK TEST	IEC60068-2-27,30G (300m/S²) for a duration of 18ms,1 time per direction,2 times in total		
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 75℃)		
	VIBRATION	Component: 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting clip: Compliance to IEC60068-2-6		
	OPERATING ALTITUDE Note.3	5000 meters /OVC II		
SAFETY & EMC (Note.4)	SAFETY STANDARDS	IEC62368-1,UL62368-1 approved		
	WITHSTAND VOLTAGE	I/P-O/P-FG:2.2KVdc; Signals-FG:2.2KVdc		
	ISOLATION RESISTANCE	I/P-O/P-FG, Signals-FG: >100M Ohms / 500Vdc / 25℃/ 70% RH		
	EMC EMISSION	**Parameter**	**Standard**	**Test Level / Note**
		Conducted	BS EN/EN55032	Class B
		Radiated	BS EN/EN55032	Class B
		Voltage Flicker	-----	-----
		Harmonic Current	-----	-----
	EMC IMMUNITY	BS EN/EN55035, BS EN/EN61000-6-2		
		Parameter	**Standard**	**Test Level / Note**
		ESD	BS EN/EN61000-4-2	Level 4, 15KV air ; Level 3, 8KV contact; criteria A
		Radiated	BS EN/EN61000-4-3	Level 3, 10V/m ; criteria A
		EFT / Burst	BS EN/EN61000-4-4	Level 3, 2KV ; criteria A
		Surge	BS EN/EN61000-4-5	Level 3, 1KV/Line-Line ;Level 3, 2KV/Line-Line-FG ;criteria A
		Conducted	BS EN/EN61000-4-6	Level 3, 10V ; criteria A
		Magnetic Field	BS EN/EN61000-4-8	Level 4, 30A/m ; criteria A
OTHERS	MTBF	162.6K hrs min. MIL-HDBK-217F (25℃) ; 1420.2K hrs min. Telcordia TR/SR-332 (Bellcore) (25℃)		
		106.8K hrs min. MIL-HDBK-217F (40℃) ; 717.2K hrs min. Telcordia TR/SR-332 (Bellcore) (40℃)		
	DIMENSION	63*125.2*114.9mm (W*H*D)		
	PACKING	1.062Kg; 12pcs/12.8Kg/0.74CUFT		

NOTE

1. All parameters NOT specially mentioned are measured at normal input, rated load and 25℃ of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 μF & 47 μF parallel capacitor.
3. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).
4. The power supply is considered as an independent unit, but the final equipment still need to re-confirm that the whole system complies with the EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies." (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)

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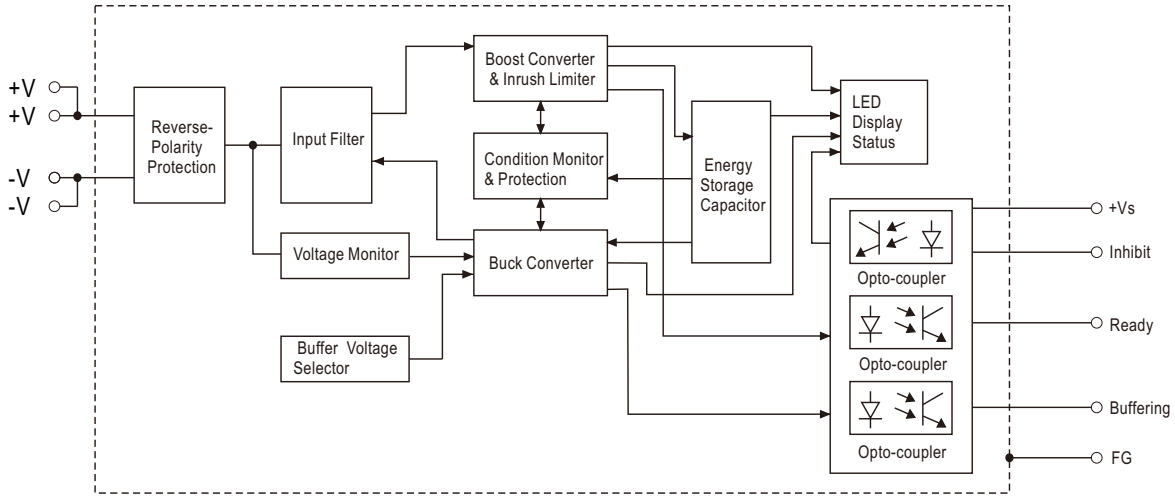
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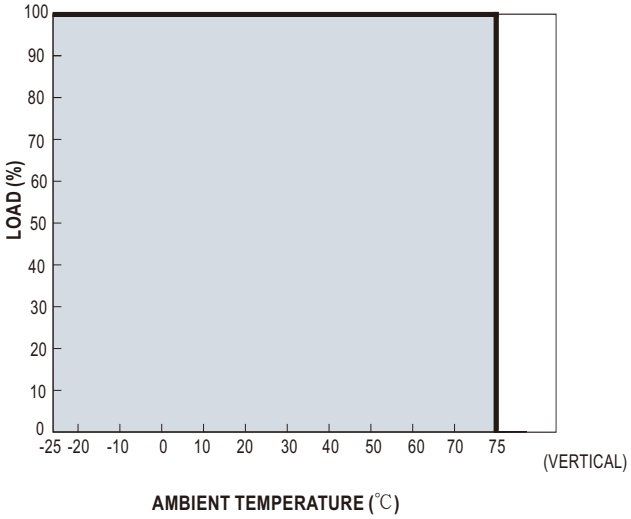
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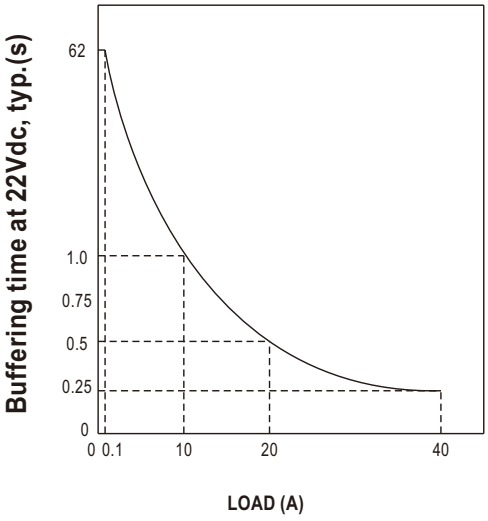
■ Block Diagram



■ Derating Curve



■ Buffering Curve



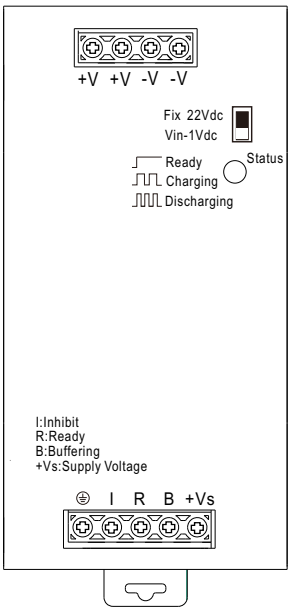
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■ Function Manual

1. User Elements



Back-up Threshold Voltage Selectable by Switch:

Option 1: Fixed mode (Switch in Fix 22Vdc)
The unit switches to buffer mode as soon as the voltage falls below 22Vdc.
Option 2: Dynamic mode (Switch in Vin-1Vdc)
Unit switches to buffer mode when input voltage decreases by 1Vdc.
Note: Factory setting is fixed mode.

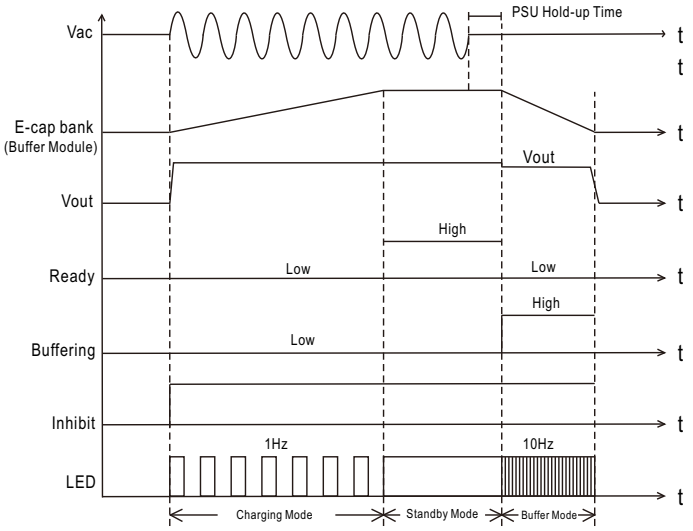
LED Indicator Status:

LED OFF: Capacitors are discharged.
LED ON: Capacitors are fully charged.
LED Flashing slowly (1Hz): Capacitors are getting charged.
LED Flashing quickly (10Hz): Capacitors are getting discharged.

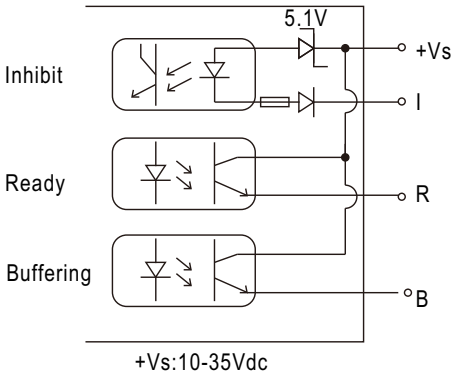
Signal Connector:

- Inhibit,+Vs - V(I)<6Vdc: Buffer module ON; +Vs - V(I)>10Vdc: Buffer module OFF.
- Ready,Charged ready: V(R)>+Vs - 2Vdc; Unready: V(R)<1Vdc.
- Buffering, Buffering: V(B)>+Vs - 2Vdc; Other mode: V(B)<1Vdc.

2. Operating Diagram



3. Signal Schematics

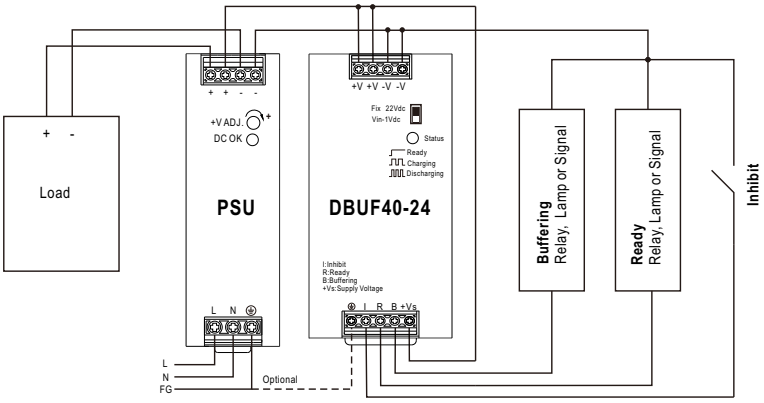


(+Vs can connected to DBUF40 "+V" or external voltage source,Please refer to "Typical Application Notes")

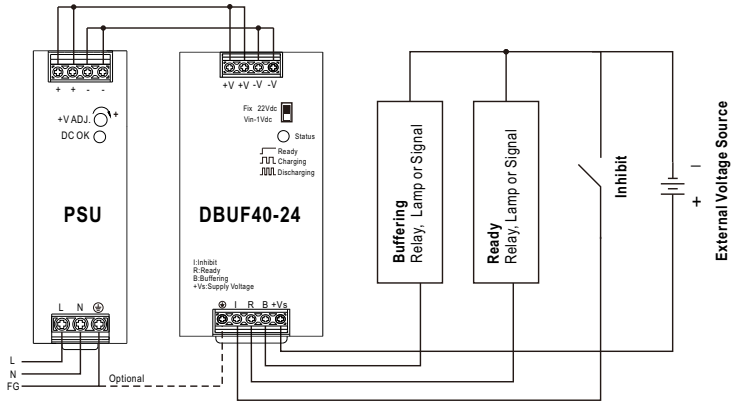
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■ Typical Application Notes

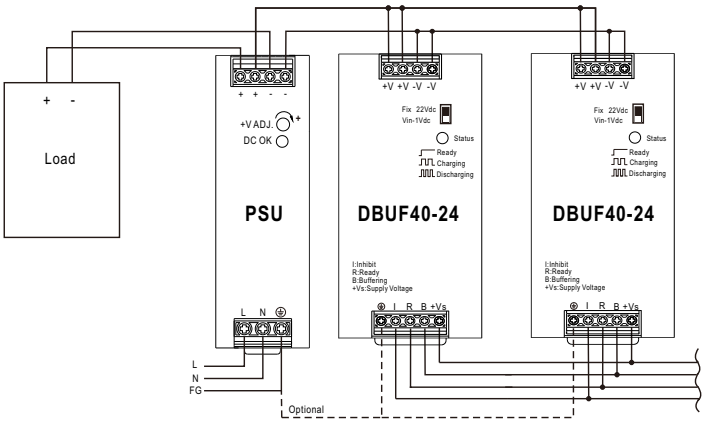
1. General wiring diagram



2. Signals supplied from an external voltage



3. Paralleling of buffer units



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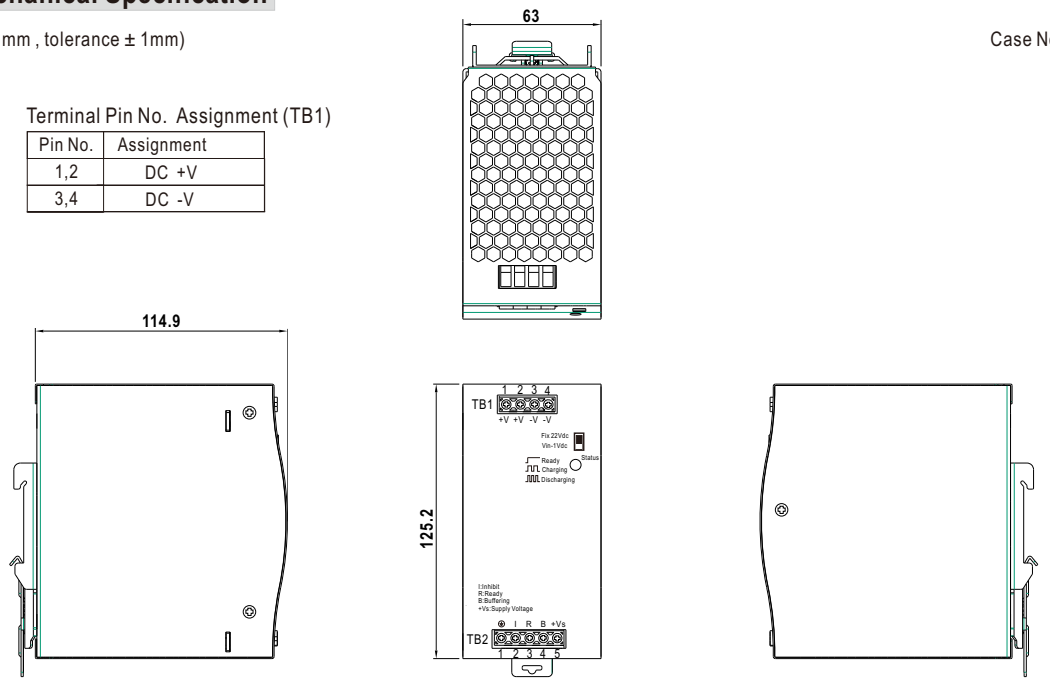
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■ Mechanical Specification

(Unit: mm , tolerance ± 1mm)

Case No. 979E



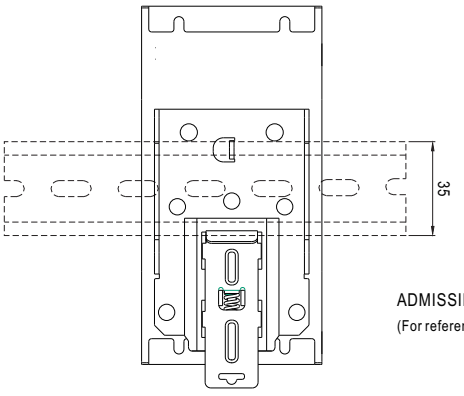
Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1,2	DC +V
3,4	DC -V

Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1	FG ⏚
2	Inhibit (I)
3	Ready (R)
4	Buffering (B)
5	Supply Voltage (+Vs)

■ Installation Instruction



This series fits DIN rail TS35/7.5 or TS35/15.
For installation details, please refer to the Instruction manual.

ADMISSIBLE DIN-RAIL:TS35/7.5 or TS35/15
(For reference only. Not included with unit.)

■ Installation Manual

Please refer to : http://www.meanwell.com/manual.html