YINGJIAO®

YSDB20 SERIES 24V

Yingjiao's 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.

Features

- Buffering with electrolytic capacitors instead of lead acid batteries
- Buffer mode selectable by switch: fixed mode at 22Vdc, Dynamic mode for Vin-1Vdc
- Supports parallel connection to extend buffering time
- Type buffering time of 350ms @22Vdc/20A
- Cooling by free aur convection
- Three Years Warranty

BUFFER MODE

DC NORMAL OPERATING VOLTAGE		22Vdc/Vin-1Vdc
DC OPERATING VOLTAGE RANGE		22-29Vdc
OUTPUT CURRENT(max.)		20A
BUFFER TIME	Output current	20A
(Refer to Buffering Curve at 22Vdc)	Typ.	350ms
	Min.	250ms
RIPPLE & NOISE (max.) Note.2		200mVp-p

CHARGING MODE

DC NORMAL OPERATING VOLTAGE	24Vdc
CHARGING VOLTAGE	23~30Vdc
CHARGING CURRENT	900mA Max.
CURRENT CONSUMPTION ATSTANDBY	100mA Max.
CHARGING TIME	15s Typ.
	25s Max.

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 BYSWITCH	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

ENVIRONMENT

WORKING TEMP.	-25℃ to +75℃,Refer to Derating Curve
WORKING HUMIDITY	5 ~ 95% RH non-condensing
STORAGE TEMP.	-25℃ to +80℃
SHOCK TEST	IEC60068-2-27,30G (300m/S) 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
OPERATINGALTITUDE Note.3	5000 meters /OVC Ⅱ

SAFETY &EMC(Note.4)

SAFETY STANDARDS	IEC62368-1,UL62368-1 approved		
WITHSTAND VOLTAGE	IP OP KV c; Signals- KV c		
ISOLATION RESISTANCE	IP OP-FG Signals-FG >100M Ohms / 500Vdc / 25 / 70% RH		
EMC EMISSION	Parameter	Standard	Test Level / Note
	Conducted	Standard	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; criteriaA
	Radiated	BS EN/EN61000-4-3	Level 3, 10V/m ; criteriaA
	EFT / Burst	BS EN/EN61000-4-4	Level 4, 30A/m ; criteriaA
	Surge	BS EN/EN61000-4-5	Level 3, 1KV/Line-Line ;Level 3, 2KV/Line-Line-FG ;criteriaA
	Conducted	BS EN/EN61000-4-6	Level 3, 10V ; criteriaA
	Magnetic Field	BS EN/EN61000-4-8	Level 3, 2KV ; criteriaA

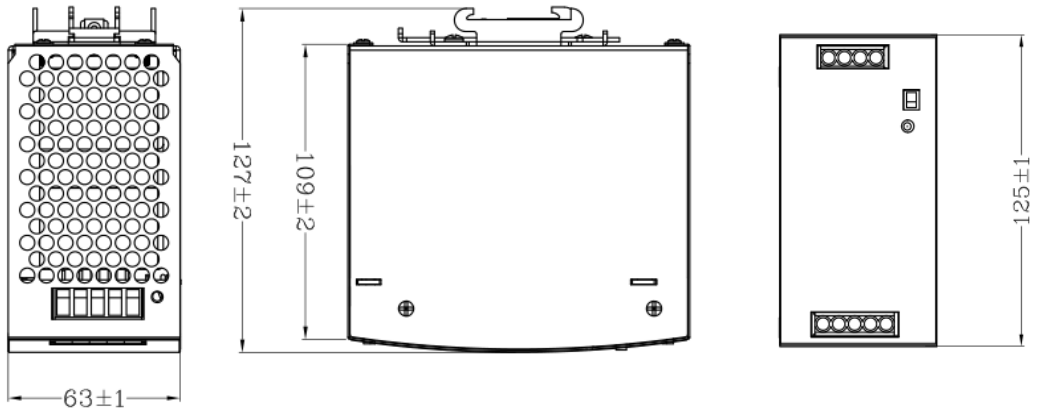
Dimensions & Weight

Length	63mm / 2.48in
Width	125mm / 4.92in
Height	110mm / 4.33in
Weight	1.05kg

Packing

Carton Size	52.5 x 33 x 17.5 CM 20.67 x12.99 x 6.9 in
Master Carton Quantities	10pcs/Carton

Mechanical Specification



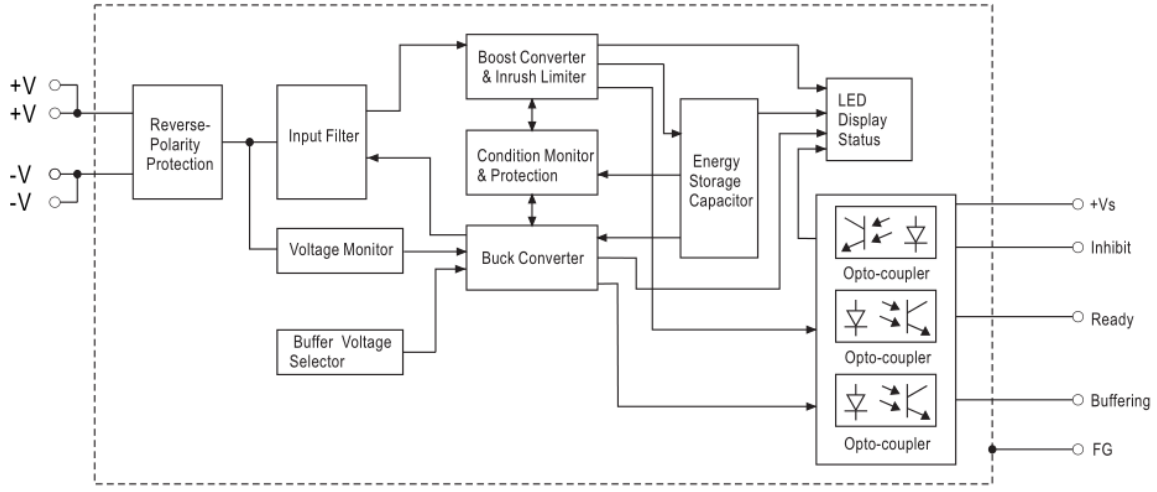
Output

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

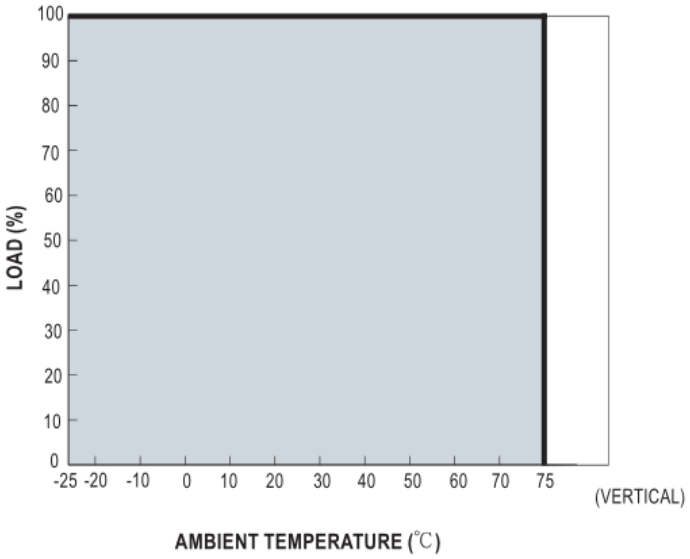
Input

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

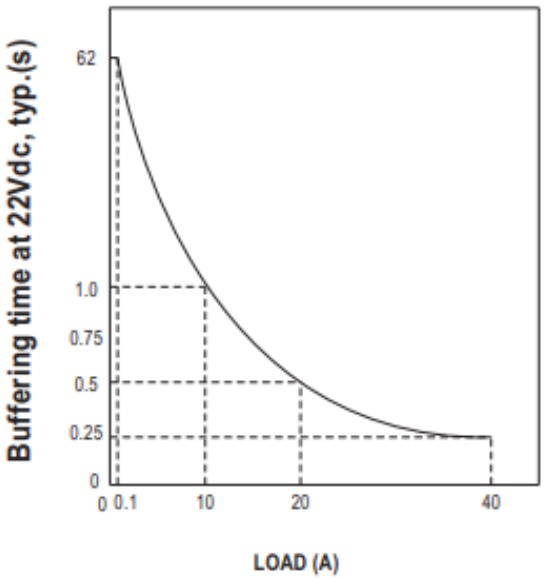
Block Diagram



Derating Curve And Temperature

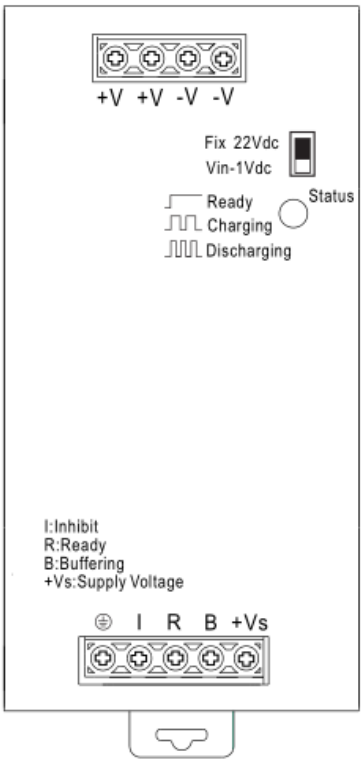


Buffering Curve



Function Manual

1. User Elements



Back-up Threshold Voltage Selectable by Switch:

Option 1: Fixed mode (in Switch Fix 22Vdc)

The unit switches to buffer mode as soon as the voltage falls below 22Vdc.

Option 2: mode (in - Dynamic Switch V n 1Vdc i)

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.

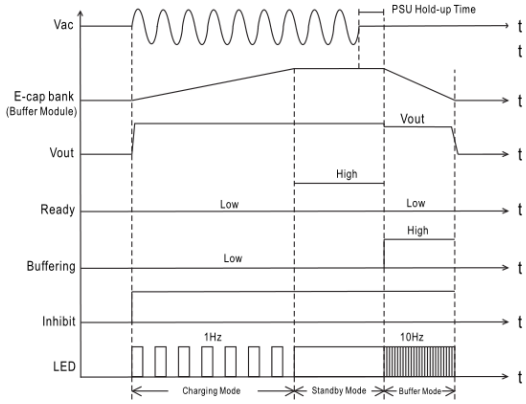
Signal Connector:

-Inhibit,+Vs - V(I)<6Vdc: Buffer module ON; +Vs - V(I)>10Vdc: Buffer module OFF.

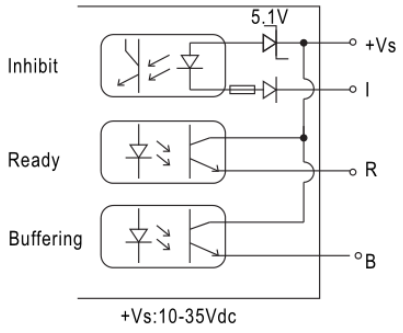
-Ready,Charged ready: V(R)>+Vs - 2Vdc; Unready: V(R)<1Vdc.

--Buffering, Buffering: V(B)>+Vs - 2Vdc; Other mode: V(B)<1Vdc.

2. Operating Diagram



3. Signal Schematics



(+Vs can connected to DBUF20 "+V" or external voltage source,Please refer to "Typical Application Notes")