MEAN WELL DUPS20 DIN Rail Type Uninterruptible DC-UPS Module Owner's Manual

Contents

MEAN WELL DUPS20 DIN Rail Type Uninterruptible DC-UPS Module

Product Information

- **Product Name:** 24V/20A DIN Rail Type Uninterruptible DC-UPS Module
- **Model:** DUPS20
- **User's Manual:** UL62368-1 TPTC004
- **Features:**
  - Uninterruptible DC-UPS controller
  - Parallel connection to DC BUS
  - Suitable for 24V system, up to 20A
  - 2A Battery charging current
  - Complete diagnostic and monitoring for DC BUS OK, battery discharge, battery fail
  - LED indicator for signal status
  - Protections: Battery reverse polarity protection & Short circuit(By internal detection) / Battery discharge / Over discharge current
  - Cooling by free air convection
  - Width only by 40mm
  - 3 years warranty
- **Applications:**
  - Industrial control system
  - Semiconductor fabrication equipment (Power supply + DC-UPS Module + Batteries + Load)
  - Factory automation
  - Electro-mechanical apparatus
- **GTIN CODE:** MW Search: **https://www.meanwell.com/serviceGTIN.aspx**

Product Usage Instructions

To use the 24V/20A DIN Rail Type Uninterruptible DC-UPS Module (DUPS20), follow these instructions:

1. Make sure the input voltage for the DC UPS is within the range of 24V to 29Vdc.

2. Connect the DC UPS module to the appropriate industrial control system or semiconductor fabrication equipment using parallel connection to the DC BUS.
3. Choose a suitable lead-acid battery with capacities ranging from 4AH to 135AH.
4. Connect the battery to the DC UPS module, ensuring correct polarity.
5. If batteries are not connected, it is recommended to use an external fuse for short circuit protection.
6. The DC UPS module supports a discharge current range of 0 to 20A. Ensure that the load does not exceed this range.
7. To charge the battery, connect a power supply with a charging current of 2A to the DC UPS module.
8. Monitor the LED indicator for signal status, which will indicate the battery's OK status or any warnings related to battery over-discharge or breakage.
9. The DC UPS module provides complete diagnostic and monitoring for DC BUS OK, battery discharge, and battery fail. Refer to the user manual for details on interpreting these diagnostics.
10. The module is cooled by free air convection, so ensure proper ventilation for optimal performance.

Features

- Uninterruptible DC-UPS controller
- Parallel connection to DC BUS (Power supply + DC-UPS Module + Batteries + Load)
- Suitable for 24V system, up to 20A
- 2A Battery charging current
- Allows 4AH~135AH lead-acid various battery capacities
- Complete diagnostic and monitoring for DC BUS OK, battery discharge, battery fail
- LED indicator for signal status
- **Protections:** Battery reverse polarity protection & Short circuit(By internal detection) / Battery discharge / Over discharge current
- Cooling by free air convection
- Width only by 40mm
- 3 vears warranty

Applications

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

GTIN CODE
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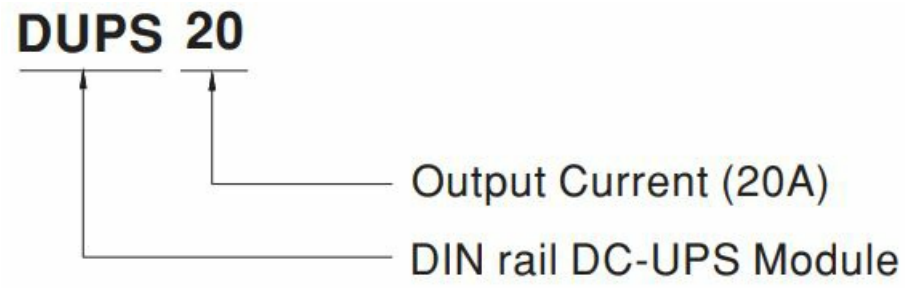
Description

The DUPS20 is a 20A DIN rail type DC-UPS module, and it is paired with a power supply and an external battery to achieve the backup function. When the AC mains fails or is interrupted, the load will be immediately connected to the battery pack to avoid interruption and to ensure the continuous operation of the entire system (the operating time depends on the capacity of the battery pack). The main features of DUPS20 include: fast installation, small size (only 40mm wide)suitability for 24 V battery packs and various capacities of 4AH~135AH, 2A battery charging current, low voltage disconnect for battery protection and more. The product is suitable for use in data centers, security systems, emergency lighting, wireless communication UPS, central monitoring systems, etc.

Model Encoding



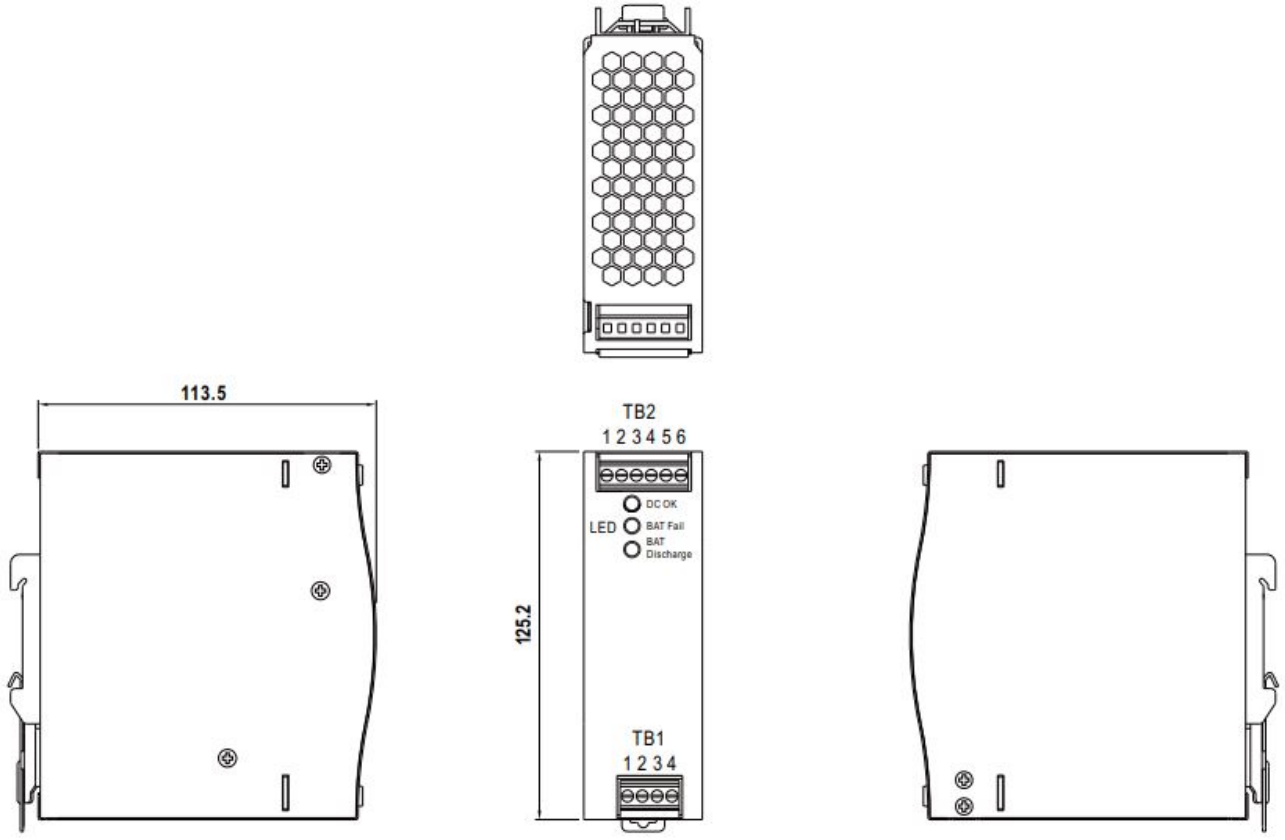
SPECIFICATION

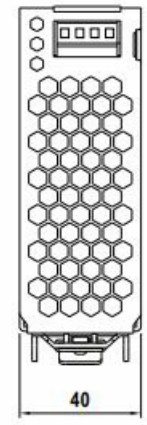
MODEL		**DUPS20**
DC UPS INPUT	**NORMAL INPUT VOLTAGE**	24Vdc
	INPUT VOLTAGE RANGE	24 ~ 29Vdc
	RATED CURRENT	20A
DC UPS OUTPUT	**VOLTAGE RANGE**	21 ~ 29Vdc
	DISCHARGE CURRENT RANGE	0 ~ 20A
	CHARGING CURRENT	2A
BATTERY	**NORMAL BATTERY VOLTAGE**	24Vdc (2 x 12Vdc in series or 1 x 24Vdc)
	BATTERY TYPE	Lead-acid battery
	EXTERNAL BATTERY CAPACITIES	4AH ~ 135AH
PROTECTION	**BATTERY POLARITY**	Protected by internal detection, No Damage, recovers automatically after fault conduction is removed
	SHORT CIRCUIT	This protection only works when batteries are not connected, No Damage. External fuse is recommended when batteries are connected.
	OVER DISCHARGE CURRENT	21~23A,After 3 sec., unit will cut-off battery discharging by relay
	BATTERY DEEP DISCHARGE	Cut-off battery discharging by relay

FUNCTION	**RELAY CONTACT RATINGS (max.)**	30VDC/1A resistive load		
	DC BUS OK	Relay contact: Short when DC voltage between 21~29V(±2%), relay contacts		
		LED(Green): DC BUS OK : light ; DC BUS fail : dark		
	BATTERY FAIL **Note.2**	Short when battery voltage falls below 22V(±2%) or battery failure is observed through the battery test function, relay contacts		
		LED(Red): Battery over-discharge warning or battery broken : light ; Battery OK : dark		
	BATTERY DISCHARGE	Relay contact: Short when battery in discharge condition, relay contacts		
		LED(Yellow): light : Battery discharging ; dark : Battery is not discharging or discharging current < 1.0A		
ENVIRONMENT	**COOLING**	Free air convection		
	WORKING TEMP. **Note.3**	-30 ~ +70℃ (Refer to “Derating Curve”)		
	WORKING HUMIDITY	5 ~ 95% RH non-condensing		
	STORAGE TEMP.	-40 ~ +85℃		
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 60℃)		
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6		
	OPERATING ALTITUDE **Note.4**	2000 meters/OVC II		
SAFETY & EMC (Note.	**SAFETY STANDARDS**	UL62368-1, EAC TP TC 004 approved		
	WITHSTAND VOLTAGE	IP/OP – Chassis : 0.5KVac ; IP/OP- Relay : 0.5KVac ; Relay – Chassis : 0.5 KVac		
	ISOLATION RESISTANCE	IP/OP – Chassis, IP/OP- Relay, Relay – Chassis:>100M Ohms / 500Vdc / 25℃/ 70% RH		
	EMC EMISSION	**Parameter**	**Standard**	**Test Level / Note**
		Conducted	──	──
		Radiated	BS EN/EN55032(CISPR32)	Class B
		Voltage Flicker	──	──
		Harmonic Current	──	──
		BS EN/EN55035, BS EN/EN61000-6-2, BS EN/EN61204-3		
		Parameter	**Standard**	**Test Level / Note**

5)	**EMC IMMUNITY**	ESD	BS EN/EN61000-4-2	Level 3, 8KV air ; Level 2, 4KV contact; criteria B Level 2, 4KV air ; Level 1, 2KV 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, 0.5KV(DC input ports)
		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**	1252.0K hrs min. Telcordia SR-332 (Bellcore) ; 482.1K hrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	40*125.2*113.5mm (W*H*D)		
	PACKING	0.31Kg; 20pcs/7.2Kg/1.16CUFT		
NOTE	1. All parameters NOT specially mentioned are measured at normal input(24V) , rated load and 25℃ of ambient temperature. 2. Every 30 seconds, unit will test the battery.If the testing result is faulty, unit will turn on “Battery Fail” relay contact and “Red LED” indicator. 3. Derating may be needed over high ambient temperature. Please check the derating curve for more details. 4. 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). 5. The unit is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360*720mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests,please refer to “EMI testing of component power supplies.”(as available on **http://www.meanwell.com**) ※ Product Liability Disclaimer For detailed information, please refer to **https://www.meanwell.com/serviceDisclaimer.aspx**			

Mechanical Specification





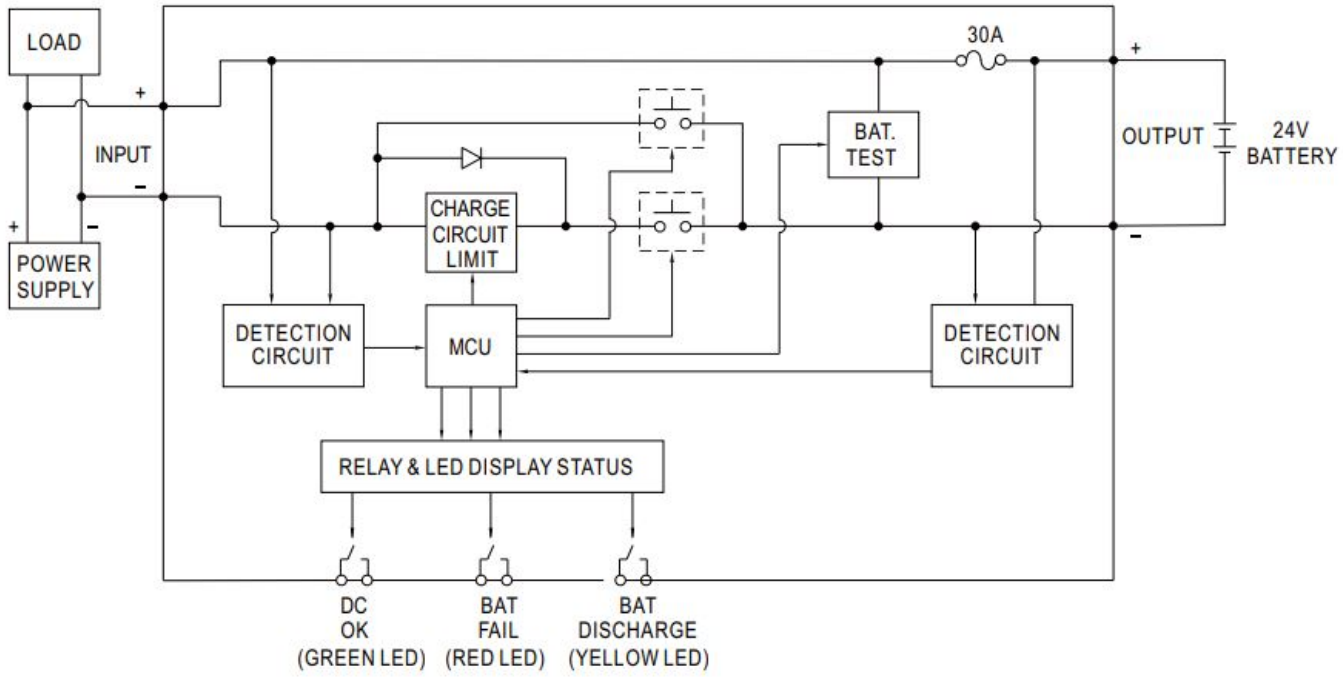
Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	BAT INPUT +
2	BAT INPUT -
3	DC INPUT -
4	DC INPUT +

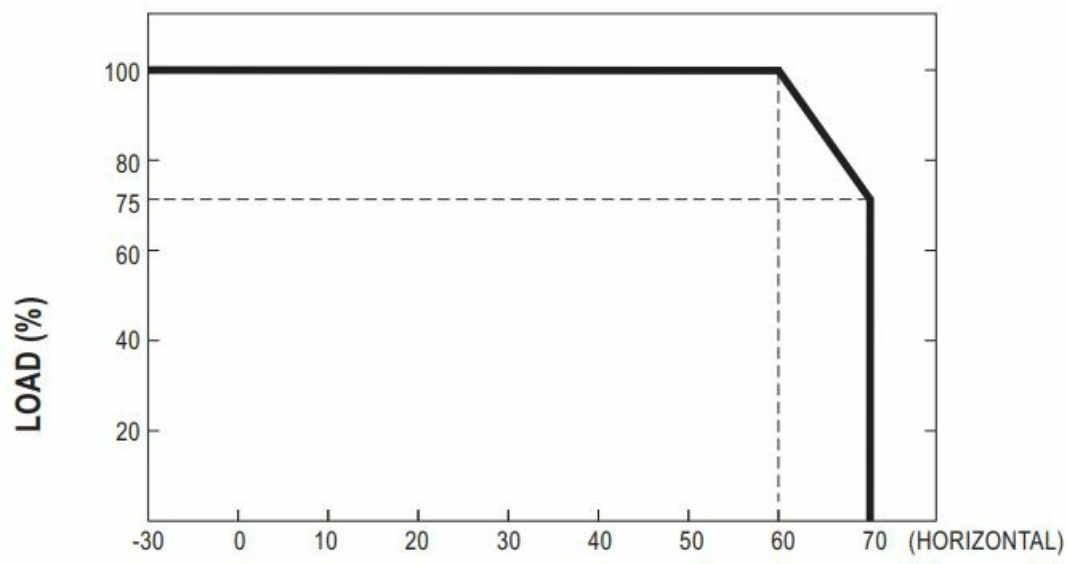
Terminal Pin No. Assignment (TB2)

Pin No.	Assignment	LED
1	BAT Discharge	YELLOW
2		
3	BAT Fail	RED
4		
5	DC OK	GREEN
6		

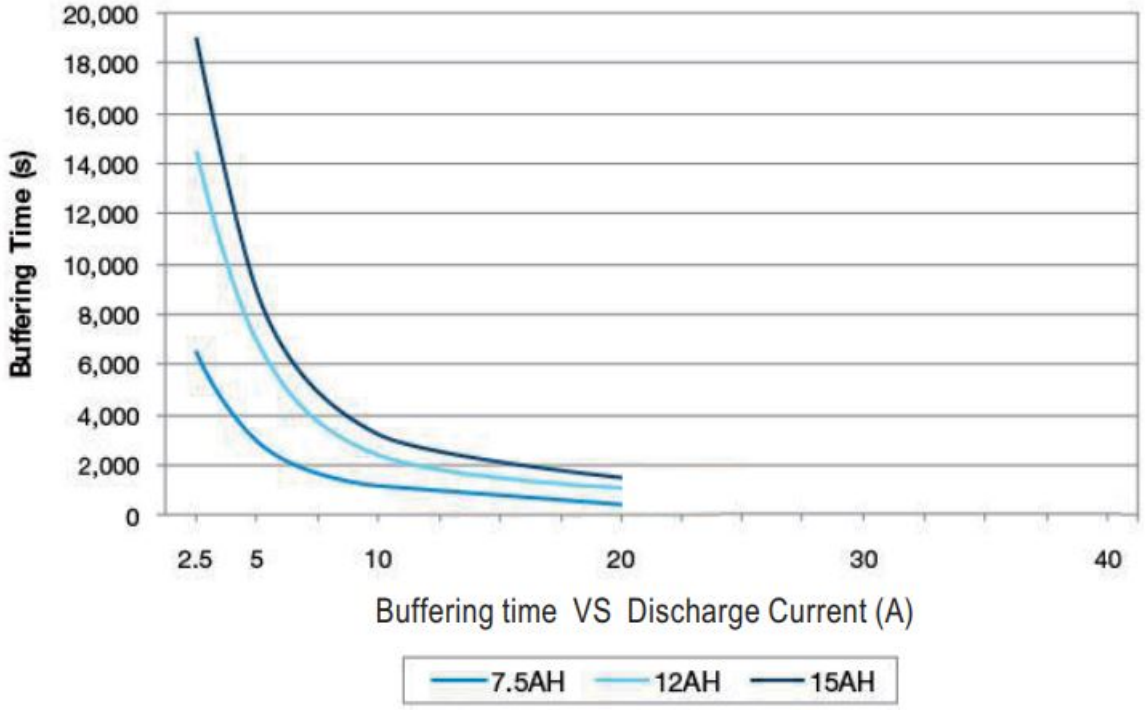
Block Diagram



Derating Curve

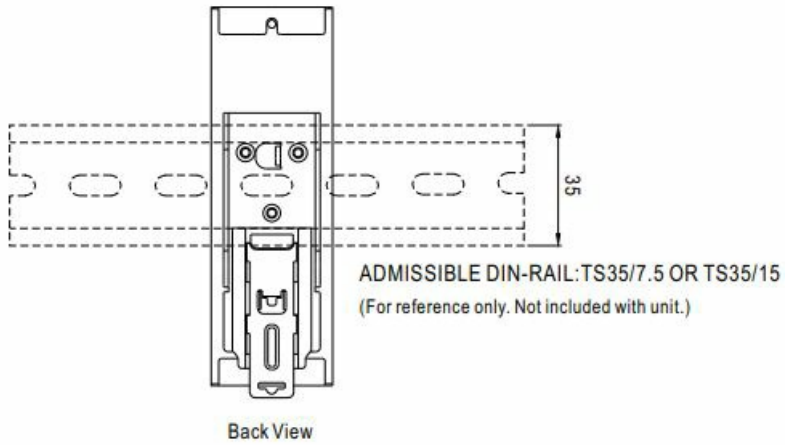


Buffering Time



Discharge Current	Buffering Time(Reference)		
	7.5AH	**12AH**	**15AH**
2.5A	6500s	14500s	19000s
5A	3000s	7000s	9000s
10A	1200s	2400s	3200s
20A	400s	1100s	1500s

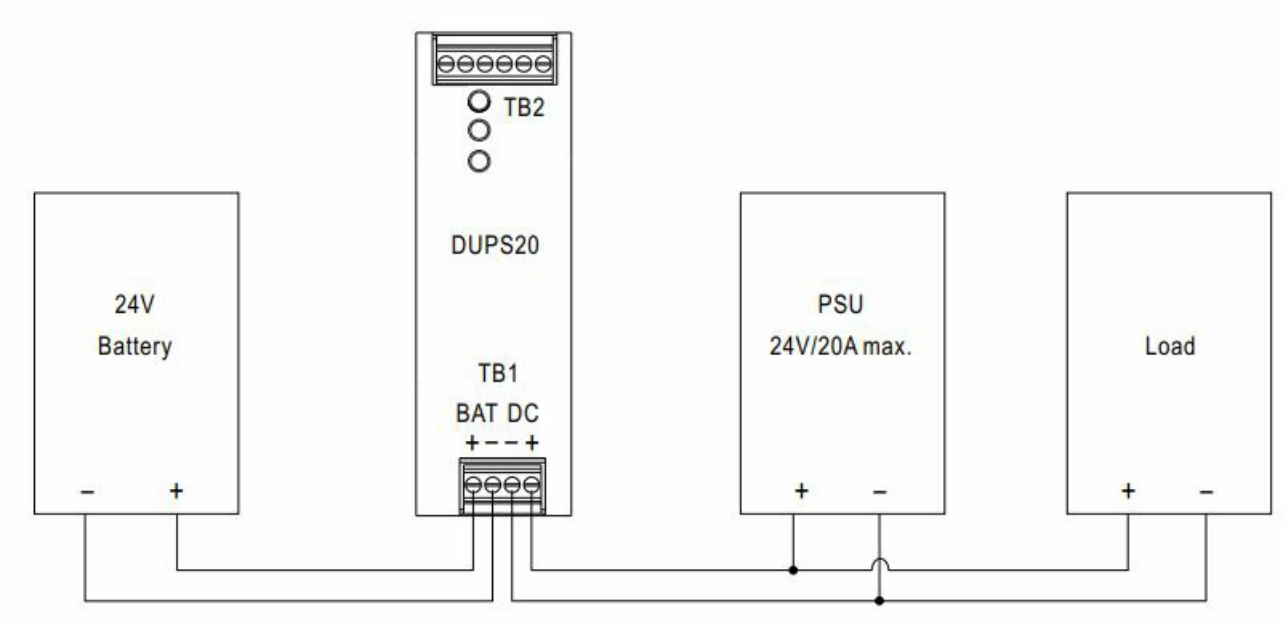
Installation Instruction



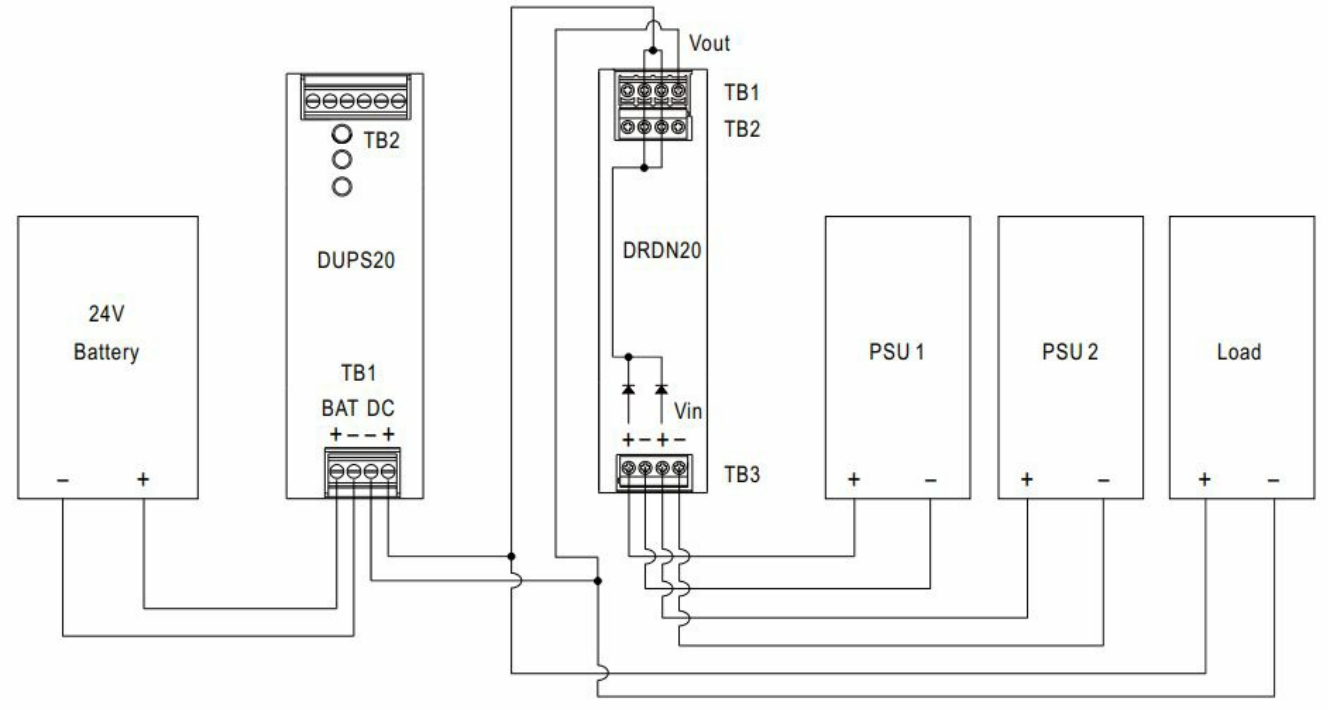
This series fits DIN rail TS35/7.5 or TS35/15. For installation details, please refer to the Instruction manual.

Suggested Application

1. Back up connection for AC interruption.



2. Combine redundancy module (DRDN20) to back up AC interruption or failure of PSU.



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

User's Manual

Documents / Resources

	MEAN WELL DUPS20 DIN Rail Type Uninterruptible DC-UPS Module [pdf] Owner's Manual DUPS20 DIN Rail Type Uninterruptible DC-UPS Module, DUPS20, DIN Rail Type Uninterruptible DC-UPS Module, Type Uninterruptible DC-UPS Module, Uninterruptible DC-UPS Module, DC-UPS Module, Module

References

- Installation Manual-MEAN WELL Switching Power Supply Manufacturer
- Product Liability Disclaimer-MEAN WELL Switching Power Supply Manufacturer
- Global Trade Item Number (GTIN)-MEAN WELL Switching Power Supply Manufacturer