E-Star Power Development Co., Ltd. (E-STAR)
1F., No.40, Juren Ln., Sec. 2, Sanmin Rd., Banciao Dist., New Taipei City 22069, Taiwan (R.O.C.)
Phone : 886-2-2957 5580 Fax : 886-2-2957 7473

40A Din Rail power supply < DRDN40

UL62368-1 IEC62368-1 TPTC004

Automate Industrial Security Network Telecom

Features

- Support 1+1 and N+1 redundancy system
- 2 channels input and 1 output
- Suitable for redundancy operation of 12V/24V/48V system
- Output current up to 40A
- Cooling by free air convection
- -40~+80°C ultra-wide operating temperature (>+60°C derating)
- 55mm slim width
- Built-in 2 channels DC OK signal and alarm relay contact
- 3 years warranty

Applications

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

Description

The DRDN40 series is a 40A redundancy module that can be used with a power supply to improve overall system operation reliability. Product key features include:12V/24V/48V input voltage for selection, support N+1 and 1+1 redundancy systems,built-in two rails DC input contacts and single output. The MOSFET technology implemented can reduce heat loss and reduce the voltage difference between the input and output voltages, built-in 2 channels DC OK relay contacts for monitoring output status, ultra-wide operating temperature of -40 to +80°C and narrow width (55mm).

Model Encoding

DRDN40 - 24

- 24 — Intput voltage (12V/24V/48V)
- DRDN40 — Output current (40A)
- DRDN40 — DIN Rail Redundancy Module

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SPECIFICATION

MODEL		DRDN40-☐		
		☐ =12V, 24V, 48V		
INPUT	NUMBER OF INPUT	2 Channels		
	DC NORMAL VOLTAGE	12Vdc	24Vdc	48Vdc
	DC VOLTAGE RANGE	9~14Vdc	19~29Vdc	36~60Vdc
	RATED CURRENT	0~40A per input Continuous		
	VOLTAGE DROP (Vin-Vout) (max.)	0.3V		
	PEAK CURRENT	0~60A per input 5Sec.		
	EFFICIENCY (Typ.)	98%		
	INPUT REVERSE CURRENT (max.)	1mA		
	INPUT REVERSE VOLTAGE (max.)	40Vdc	40Vdc	65Vdc
OUTPUT	RATED CURRENT	0~40A, Continuous		
	PEAK CURRENT (max.)	60A, 5Sec.		
	CAPACITANCE(Typ.)	320uF		
	STANDBY POWER LOSSES(Typ.)	1.5W		
PROTECTION	OVERLOAD	<60A,5Sec. No damage		
	SHORT CIRCUIT	<60A,5Sec. No damage		
FUNCTION	REDUNDANCY	For 1+1 redundancy ,and support N+1 redundancy		
	BOTH INPUTS VOLTAGE ALARM	<8.5V or >14.7V (±5%)	<18V or >31V (±5%)	<34.2V or >63V (±5%)
	RELAY	30Vdc/1A resistive load		
	LED STATUS DISPLAY	Green LED OK		
ENVIRONMENT	COOLING	Free air convection		
	WORKING TEMP. Note.2	-40 ~ +80℃ (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, 5G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC61373		
	OPERATING ALTITUDE Note.3	5000 meters/OVC II		
SAFETY & EMC (Note.4)	SAFETY STANDARDS	IEC62368-1, UL62368-1, EAC TP TC 004 approved		
	WITHSTAND VOLTAGE	IP/OP - Chassis : 0.5KVac ; IP/OP- Relay : 0.5KVac ; Relay - Chassis : 0.5KVac		
	ISOLATION RESISTANCE	IP/OP - Chassis, IP/OP- Relay, Relay - Chassis:>100M Ohms / 500Vdc / 25℃/ 70% RH		
	EMC EMISSION	**Parameter**	**Standard**	**Test Level / Note**
		Conducted	EN55032(CISPR32)	Class B
		Radiated	EN55032(CISPR32)	Class B
		Voltage Flicker	-----	-----
		Harmonic Current	-----	-----
	EMC IMMUNITY	EN55035, EN61000-6-2(EN50082-2), EN55024		
		Parameter	**Standard**	**Test Level / Note**
		ESD	EN61000-4-2	Level 4, 15KV air ; Level 3, 8KV contact; criteria A
		Radiated	EN61000-4-3	Level 3, 10V/m ; criteria A
		EFT / Burst	EN61000-4-4	Level 3, 2KV ; criteria A
		Surge	EN61000-4-5	Level 3, 1KV/Line-Line ;Level 3, 2KV/Line-Line-Chassis ;criteria A
		Conducted	EN61000-4-6	Level 3, 10V ; criteria A
		Magnetic Field	EN61000-4-8	Level 4, 30A/m ; criteria A
OTHERS	MTBF	557.52K hrs min. Telcordia SR-332 (Bellcore) ; 277.24K hrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	55*125.2*100mm (W*H*D)		
	PACKING	0.5Kg;20psc/11Kg/1.49CUFT		
NOTE	1. All parameters NOT specially mentioned are measured at normal input(12V/24V/48V) , rated load and 25℃ of ambient temperature. 2. Derating may be needed over high ambient temperature. Please check the derating curve for more details. 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."			

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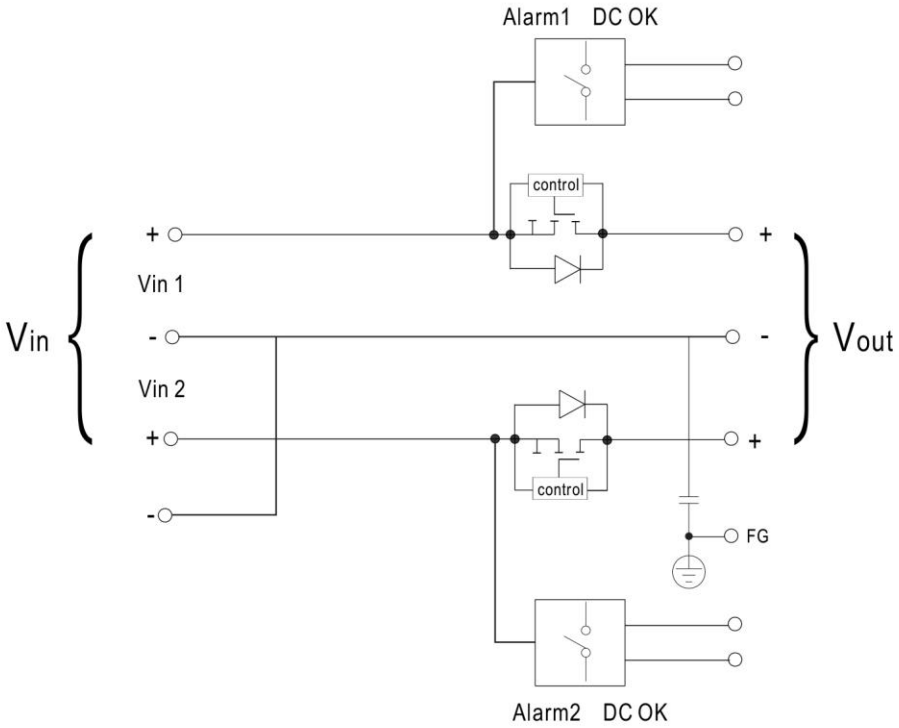
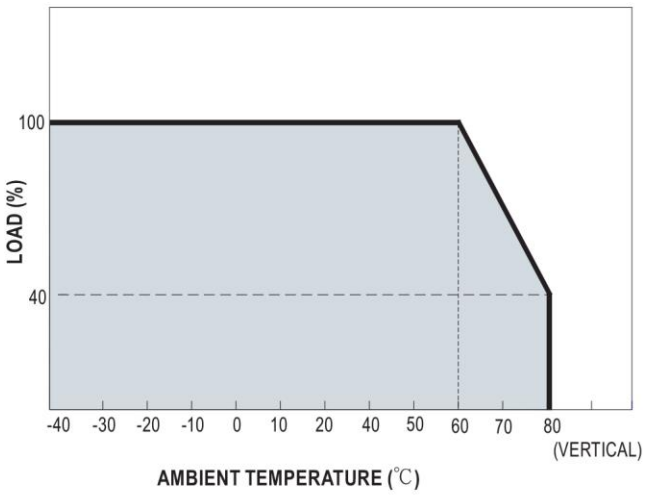
■ Block Diagram



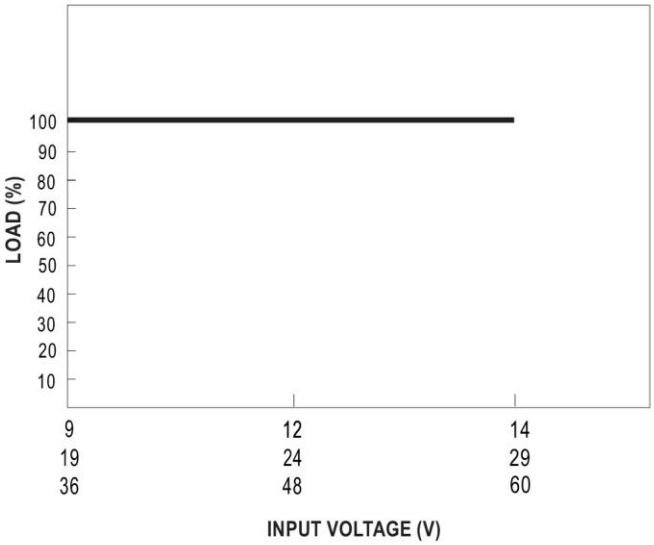
■ DC OK Relay Contact

Contact Ratings (max.)	30V/1A resistive load
Contact Close(DC OK)	PSU turns on
Contact Open(DC Fail)	PSU turns off / over or under input voltage

■ Derating Curve



■ Output Derating VS Input Voltage



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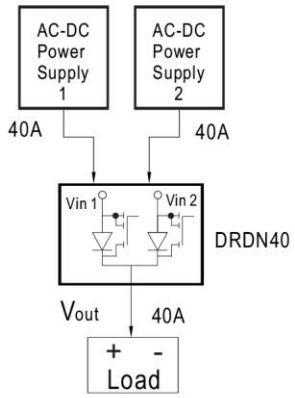
■ Typical Application Notes

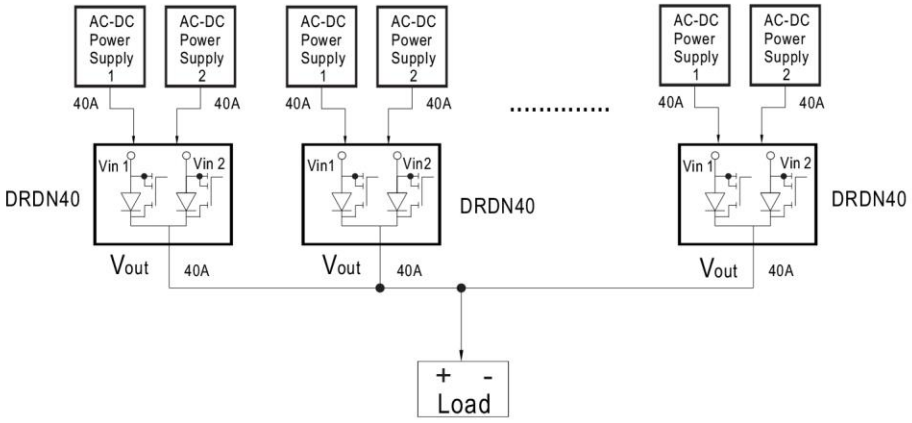
1. 1+1 Redundancy:

Using 1 more PSU as the redundant unit



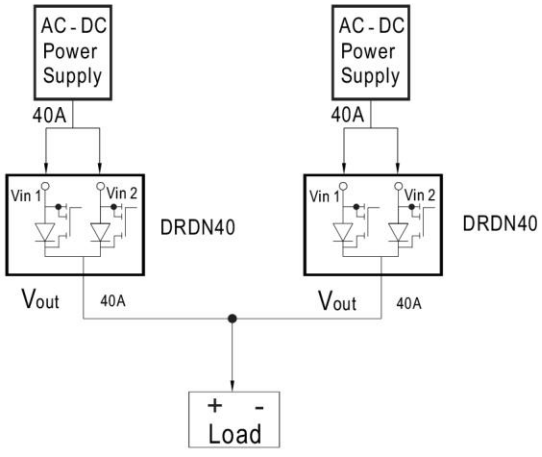
2. 1+N Redundancy:

Using more PSUs as the redundant units to increase the reliability



3. Single Use:

Connecting only one PSU to one DRDN40 to reduce the stress of the MOSFET and hence increase the reliability



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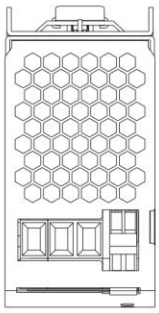
■ Mechanical Specification

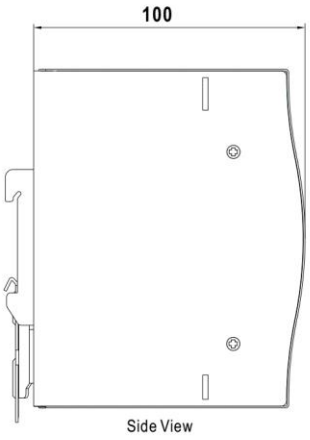
Case No.923E Unit:mm



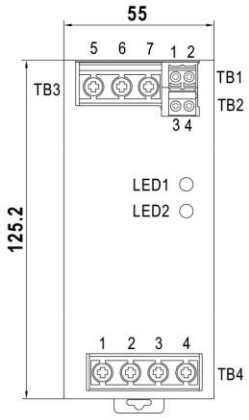
Top View

Terminal Pin No. Assignment (TB1,TB2,TB3)

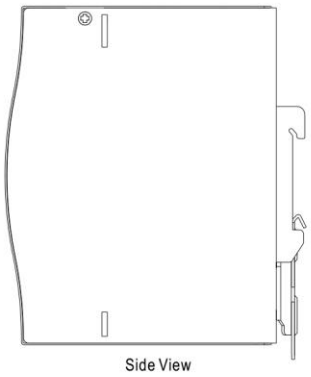
Pin No.	Assignment
1,2	Alarm1 DC OK
3,4	Alarm2 DC OK
5	FG
6	DC output +Vout
7	DC output -Vout



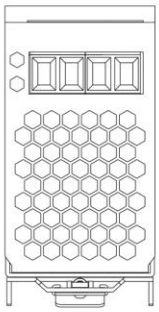
Side View



Front View



Side View

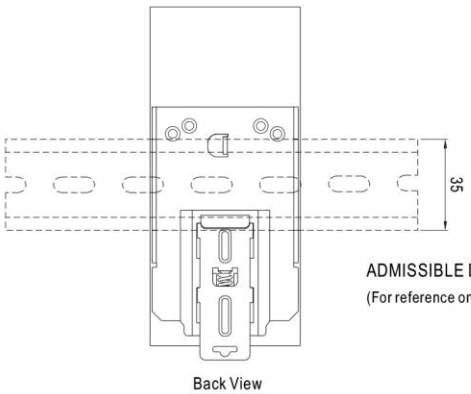


Bottom View

Terminal Pin No. Assignment (TB4)

Pin No.	Assignment
1	DC input +Vin1
2	DC input -Vin1
3	DC input +Vin2
4	DC input -Vin2

■ Installation Instruction



Back View

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

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