



Jameco SKU Number: 2103273

40A DC UPS Module

DR-UPS40



■ Features :

- Battery controller for DIN Rail UPS system
- Parallel connection to DC BUS
- Suitable for 24V system up to 40A
- Installed on DIN Rail TS35 / 7.5 or 15
- Built-in battery test function
- Battery polarity protection
- Relay contact signal output and LED indicator for DC BUS OK, Battery Fail, and Battery Discharge
- Cooling by free air convection
- 3 years warranty



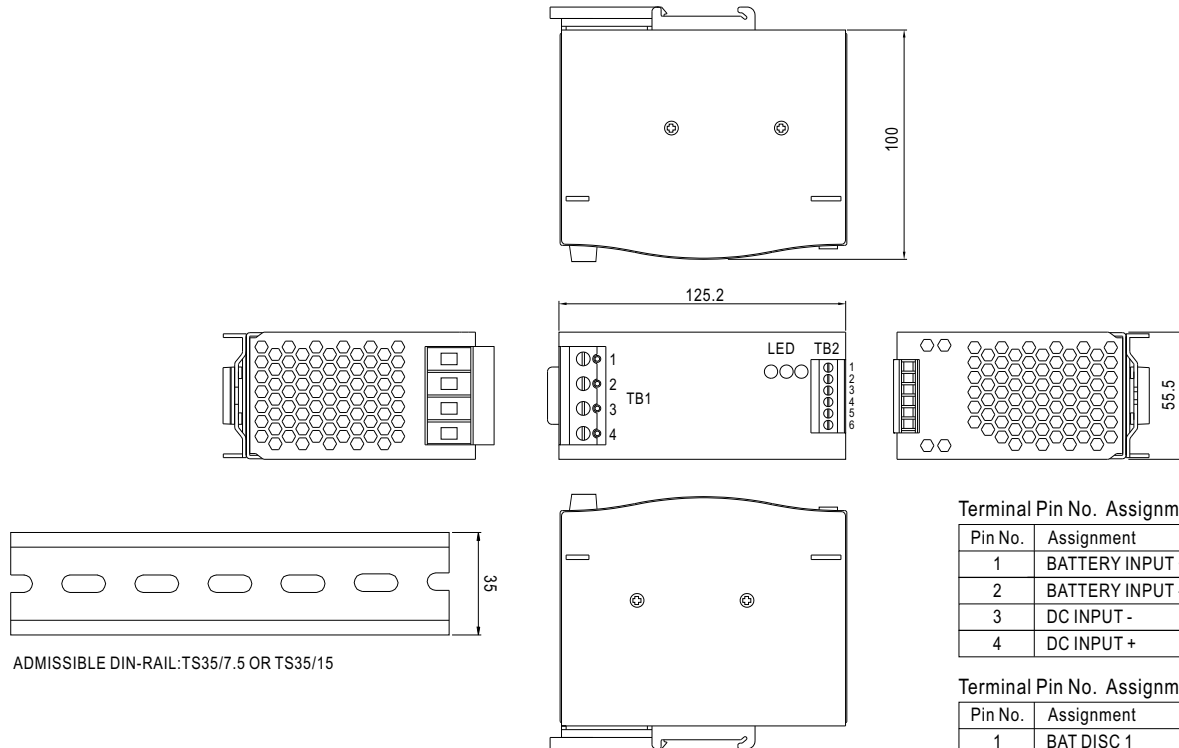
SPECIFICATION

MODEL	DR-UPS40	
DC INPUT / DC BUS	DC VOLTAGE (Typ.)	24 ~ 29V
	RATED CURRENT	40A
BATTERY INPUT / OUTPUT	VOLTAGE RANGE (Typ.)	21 ~ 29V
	CURRENT RANGE	0 ~ 40A
	CHARGE CURRENT (Typ.)	2A
	EXTERNAL BATTERY (Typ.)	4 / 7 / 12AH / 24V
FUNCTION	RELAY CONTACT RATING (max.)	30VDC, 1A
	DC BUS OK	Relay contact : Short when DC voltage between 21~29V($\pm 3\%$), relay contacts LED(Green) : DC BUS OK : light ; DC BUS fail : dark
	BATTERY FAIL Note.2	Relay contact : Short when 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) : Battery discharging : light ; Battery is not discharging or discharging current<2.0A : dark
ENVIRONMENT	WORKING TEMP.	-20 ~ +70°C
	WORKING HUMIDITY	20 ~ 90% RH
	STORAGE TEMP., HUMIDITY	-20 ~ +85°C, 10 ~ 95% RH
	VIBRATION	Component : 10 ~ 500Hz, 2G 10min./1cycle, 60min. each X, Y, Z axes ; Mounting : Compliance to IEC600068-2-6
SAFETY & EMC	WITHSTAND VOLTAGE	Terminal-Chassis :0.5KVAC, Relay Contacts-Terminal :0.5KVAC
	ISOLATION RESISTANCE	Terminal-Chassis :>100M Ohms/500VDC 25°C 70%RH
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8, ENV50204, heavy industry level, criteria A
OTHERS	MTBF	161.9Khrs min. MIL-HDBK-217F (25°C)
	DIMENSION	55.5*125.2*100mm (W*H*D)
	PACKING	0.55Kg; 20pcs/12Kg/1.29CUFT
NOTE	1. All parameters NOT specially mentioned are measured at rated load and 25°C of ambient temperature. 2. Every 25 seconds, unit will send out test signal through "Battery Fail" relay contact and LED indicator once the battery is fail.	



Case No.923D Unit:mm

Mechanical Specification



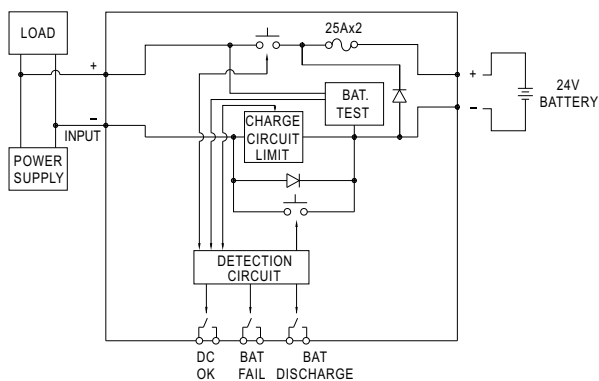
Terminal Pin No. Assignment (TB1)

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

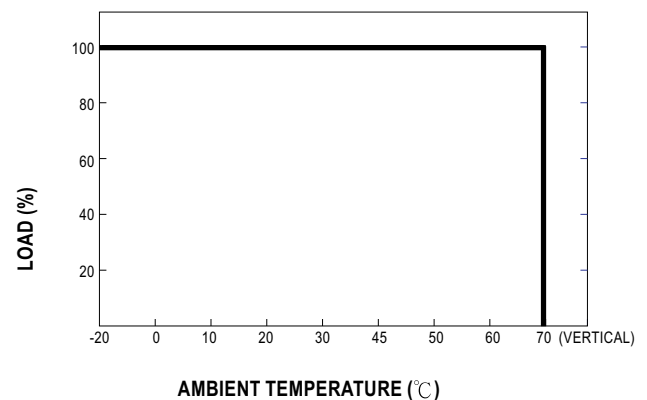
Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1	BAT DISC 1
2	BAT DISC 2
3	BAT FAIL 1
4	BAT FAIL 2
5	DC OK 1
6	DC OK 2

Block Diagram

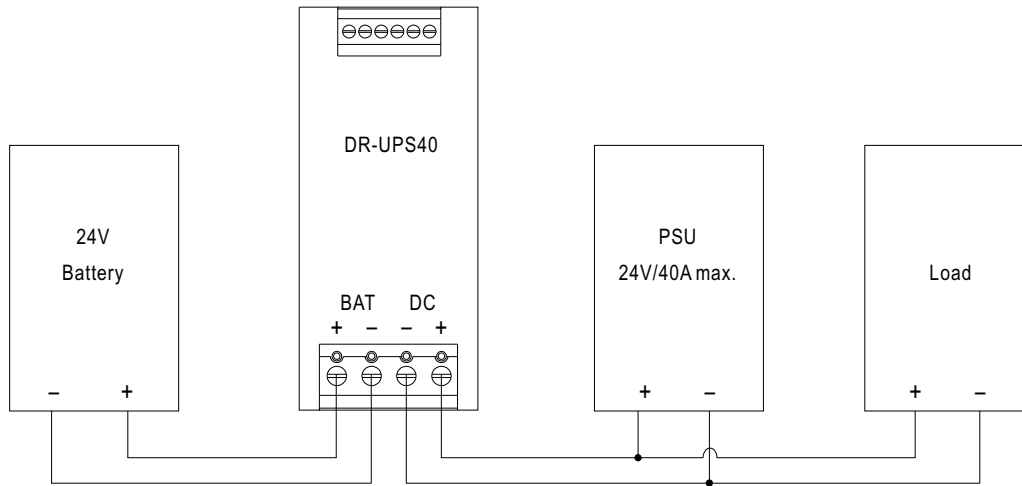


Derating Curve

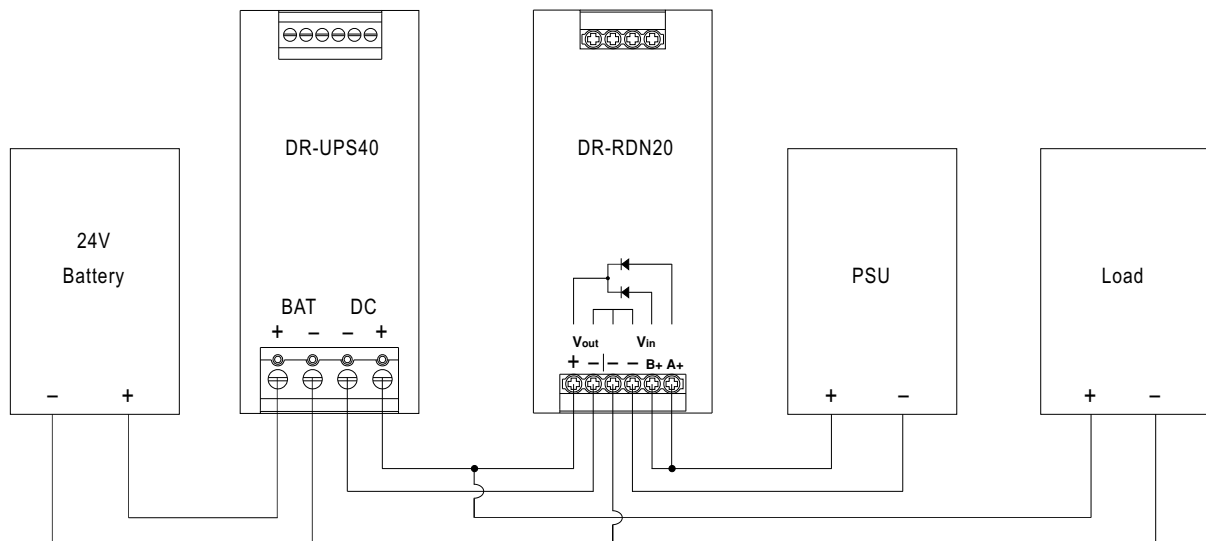


■ Suggested Application

1. Back up connection for AC interruption



2. Combine redundancy module (DR-RDN20) to back up AC interruption or failure of PSU



MODEL : DR-UPS40

DC INPUT / DC BUS

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	DC VOLTAGE RANGE (TYP)	24V~29V	I/P: TESTING O/P:FULL LOAD Ta:25℃	23.68V~29.16 V	P
2	RATED CURRENT	40A	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	OK	P

BATTERY INPUT / OUTPUT

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	VOLTAGE RANGE (TYP)	21VDC~29VDC	I/P: TESTING O/P: BATTERY Ta:25℃	20.76V~29V	P
2	CURRENT RANGE	0~40A	I/P: 23V O/P: BATTERY Ta:25℃	OK	P
3	CHARGE CURRENT (TYP)	2A	I/P: 24.5VDC O/P:BATTERY Ta:25℃	2.1A	P
4	EXTERNAL BATTERY (TYP)	4 / 7 / 12AH /24V	I/P: 24VDC O/P:BATTERY Ta:25℃	OK	P

FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	RELAY CONTACT RATING	30VDC / 1A (MAX)	I/P: 30VDC O/P:1A Ta:25℃	OK	P
2	DC BUS OK	Relay contact : short when DC voltage Between 21~29V (+.3%), relay contacts ; Green LED on front panel LED (Green) : DC BUS OK : light : DC BUS fail : dark	I/P: TESTING O/P:FULL LOAD Ta:25℃	OK	P
3	BATTERY FAIL	Relay contact : short when battery failure Is observed through the battery test Function, relay contacts ; Red LED on front panel LED(Green): DC BUS OK : light : DC BUS fail : dark	I/P: TESTING O/P:FULL LOAD Ta:25℃	OK	P
4	BATTERY DISCHARGE	Relay contact : short when battery in discharge condition relay contacts ; Yellow LED on front panel LED(Green) : DC BUS OK : light : DC BUS fail : dark	I/P: TESTING O/P:FULL LOAD Ta:25℃	OK	P

ENVIRONMENT TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT																																																																											
1	TEMPERATURE RISE TEST	MODEL : DR-UPS40 1. ROOM AMBIENT BURN-IN : 1HRS I/P: 24VDC O/P: FULL LOAD Ta= 32.7℃ 2. HIGH AMBIENT BURN-IN : 1HRS I/P: 24VVDC O/P: FULL LOAD Ta= 69.8℃ <table><tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 32.7℃</th><th>HIGH AMBIENT Ta= 69.8 ℃</th></tr><tr><td>1</td><td>D16</td><td>MBR1545CT 15A/45V</td><td>37.9℃</td><td>73.4℃</td></tr><tr><td>2</td><td>RG1</td><td>7812 1A/12V</td><td>41.9℃</td><td>76.8℃</td></tr><tr><td>3</td><td>D9</td><td>YG802C04 10A/40V</td><td>36.7℃</td><td>72.6℃</td></tr><tr><td>4</td><td>RY5</td><td>VKP31H42 24V/40A</td><td>36.4℃</td><td>72.4℃</td></tr><tr><td>5</td><td>RY4</td><td>VKP31H42 24V/40A</td><td>52.9℃</td><td>86.6℃</td></tr><tr><td>6</td><td>D17</td><td>SB540 5A/40V</td><td>45.8℃</td><td>79.7℃</td></tr><tr><td>7</td><td>Q6</td><td>IRFZ44V 55A/60V</td><td>36.2℃</td><td>71.8℃</td></tr><tr><td>8</td><td>Q8</td><td>IRFZ44V 55A/60V</td><td>37.0℃</td><td>73.0℃</td></tr><tr><td>9</td><td>RY1</td><td>OUAZ-SS-1246 1A/24V</td><td>44.8℃</td><td>79.0℃</td></tr><tr><td>10</td><td>RY2</td><td>OUAZ-SS-1246 1A/24V</td><td>43.4℃</td><td>77.7℃</td></tr><tr><td>11</td><td>RY3</td><td>OUAZ-SS-1246 1A/24V</td><td>38.8℃</td><td>73.7℃</td></tr><tr><td>12</td><td>C3</td><td>2.2U/50V 105℃ KY</td><td>42.4℃</td><td>77.1℃</td></tr><tr><td>13</td><td>C1</td><td>220U/35V 105℃ KY</td><td>41.6℃</td><td>76.4℃</td></tr><tr><td>14</td><td>U1</td><td>LM358</td><td>44.6℃</td><td>79.9℃</td></tr></table>			NO	Position	P/N	ROOM AMBIENT Ta= 32.7℃	HIGH AMBIENT Ta= 69.8 ℃	1	D16	MBR1545CT 15A/45V	37.9℃	73.4℃	2	RG1	7812 1A/12V	41.9℃	76.8℃	3	D9	YG802C04 10A/40V	36.7℃	72.6℃	4	RY5	VKP31H42 24V/40A	36.4℃	72.4℃	5	RY4	VKP31H42 24V/40A	52.9℃	86.6℃	6	D17	SB540 5A/40V	45.8℃	79.7℃	7	Q6	IRFZ44V 55A/60V	36.2℃	71.8℃	8	Q8	IRFZ44V 55A/60V	37.0℃	73.0℃	9	RY1	OUAZ-SS-1246 1A/24V	44.8℃	79.0℃	10	RY2	OUAZ-SS-1246 1A/24V	43.4℃	77.7℃	11	RY3	OUAZ-SS-1246 1A/24V	38.8℃	73.7℃	12	C3	2.2U/50V 105℃ KY	42.4℃	77.1℃	13	C1	220U/35V 105℃ KY	41.6℃	76.4℃	14	U1	LM358	44.6℃	79.9℃	P
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2	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P: 24VDC O/P: 100% LOAD Ta= -20 ℃	TEST : OK	P																																																																											
3	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 70℃ NO DAMAGE	I/P: 24VDC O/P:FULL LOAD Ta= 70℃ HUMIDITY= 95 %R.H	TEST : OK	P																																																																											
4	VIBRATION TEST	1 Carton & 1 Set (1) Waveform: Sine Wave (2) Frequency:10~500Hz (3) Sweep Time:10min/sweep cycle (4) Acceleration:2G (5) Test Time:1 hour in each axis (X.Y.Z) (6) Ta:25℃		TEST : OK	P																																																																											

SAFETY TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	Terminal-chassis: 0.5 KVAC/min Relay contacts-Terminal:0.5 KVAC/min	Terminal-chassis: 0.6 KVAC/min Relay contacts-Terminal:0.6 KVAC/min Ta:25℃	Terminal-chassis: 0.06 mA Relay contacts-Terminal: 0.06 mA NO DAMAGE	P
2	ISOLATION RESISTANCE	Terminal-chassis : 500VDC>100MΩ	Terminal-chassis : 500 VDC Ta:25℃	Terminal-chassis 16 GΩ NO DAMAGE	P

E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CONDUCTION	EN55022 CLASS B	I/P: 24VDC O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
2	RADIATION	EN55022 CLASS B	I/P: 24VDC O/P:FULL/50% LOAD Ta:25°C	PASS Test by certified Lab	P
3	E.S.D	EN61000-4-2 INDUSTRY AIR:8KV / Contact:4KV	I/P: 24VDC O/P:FULL/50% LOAD Ta:25°C	CRITERIA A	P
4	E.F.T	EN61000-4-4 INDUSTRY V+ / V-: 0.5KV	I/P: 24VDC O/P:FULL/50% LOAD Ta:25°C	CRITERIA A	P
5	SURGE	IEC61000-4-5 INDUSTRY V+ / V- :0.5KV V+,V- / PE : 0.5KV	I/P: 24VDC O/P:FULL/50% LOAD Ta:25°C	CRITERIA A	P
6	Test by certified Lab & Test Report Prepare				

M.T.B.F & LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT	VERDICT
1	CAPACITOR LIFE CYCLE	SUPPOSE C1 IS THE MOST CRITICAL COMPONENT I/P: 24VDC O/P:FULL LOAD Ta= 25 °C LIFE TIME= 966988 HRS I/P: 24VDC O/P:FULL LOAD Ta= 70 °C LIFE TIME= 50120 HRS			P
2	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 161.9KHRS			P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2007/1/16	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2007/3/10	PRODUCT SAMPLE W0702A10	PASS	VINCENT TSENG	MAX LIN
2007/5/9	PRODUCT SAMPLE W0704C05	PASS	VINCENT TSENG	MAX LIN
2007/8/31	PRODUCT SAMPLE W0708D06	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023