SPECIFICATION FOR APPROVAL

Customer : 大華

Customer P/N:

Part No : **Rev :**

Description : AC-DC Power Supply

Delta Model No : DRL-48V120W1AAD **Rev :** 00

Sample Issue Date : Apr.12, 2017

DELTA ELECTRONICS, INC.

3, Tung Yuan Road
Chungli Industrial Zone.
Taoyuan Hsien 320, Taiwan, R.O.C
Internet : http:/www.deltaww.com
TEL:886-3-4526107 FAX:886-3-4343617

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Please send one copy of this specification back after you signed approval for production pre-arrangement.

Customer Sign : _____ Date : _____

Approved By : Paul Lo Date : 2017/4/12

Engineer By: Rock.Yao M.Engineer By: Leon.Yeh Approved By: Paul.Lo

1. Revision History

DELTA P/N	DRL-48V120W1AAD	SHEET 1 OF 1
CONTENT	Revision History	DATE Apr. 12, 2017

1.Revision History

REV.	DESCRIPTION	ENGINEER	DATE
00	ISSUE	Rock Yao	4/12/2017

2. Electrical Specification

DIN Rail Power Supply

48V 120W 1 Phase / DRL-48V120W1AAD

Highlights & Features

- Universal AC input voltage
- Built-in constant current circuit for reactive loads
- Up to 90.0% efficiency
- Full power from -10°C to +50°C operation at 230Vac @ 5000 meters or 16400 feet altitude
- Compliance to SEMI F47 @ 200Vac
- Conformal coating on PCBAs to protect against common dust and chemical pollutants

Safety Standards

CB Certified for worldwide use

Model Number: DRL-48V120W1AAD
Unit Weight: 0.54 kg (1.19 lb)
Dimensions (L x W x D): 123.6 x 40 x 117.6 mm (4.86 x 1.57 x 4.62 inch)

General Description

The DRL-48V120W1AAD is designed for cost sensitive users who need to fulfill essential features needed for many general industrial applications, without compromising on quality and reliability. The convection-cooled product will operate between -20°C to +70°C, with full rated power available from -10°C to +50°C at 230Vac. The overcurrent protection is designed to operate in constant current mode, which makes the power supply suitable for inductive and capacitive load applications. The product is certified according to safety standards IEC/EN/UL 60950-1 for Information Technology Equipment (ITE) and UL 508 for Industrial Control Equipment (ICE). Electromagnetic radiated and conducted emissions are compliant to EN 55022, Class B; and, the product is fully compliant for environmental protection requirements per RoHS Directive 2011/65/EU.

Model Information

DIN Rail Power Supply

Model Number	Input Voltage Range	Rated Output Voltage	Rated Output Current
DRL-48V120W1AAD	85-264Vac (120-375Vdc)	48Vdc	2.50A

Model Numbering

DRL –	48V	120W	1	A	A	D
DIN Rail Power Supply	Output Voltage	Output Power	Single Phase	Delta Standard	A – Without DC OK Contact	D – Dahua

All parameters are specified at 25°C ambient and AC input unless otherwise indicated.
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DIN Rail Power Supply
48V 120W 1 Phase / DRL-48V120W1AAD

Specifications

Input Ratings / Characteristics

Nominal Input Voltage		100-240Vac
Input Voltage Range		85-264Vac
Nominal Input Frequency		50-60Hz
Input Frequency Range		47-63Hz
DC Input Voltage Range*		120-375Vdc
Input Current		2.2A typ. @ 115Vac, 1.2A typ. @ 230Vac
Efficiency at 100% Load		89% typ. @ 115Vac, 90% typ. @ 230Vac
Max Power Dissipation	0% load 100% load	1.21W @ 115Vac & 230Vac 13.3W @ 115Vac & 230Vac
Max Inrush Current (Cold Start)		20A typ. @ 115Vac, 40A typ. @ 230Vac
Leakage Current		< 0.25mA @ 264Vac

*Fulfills test conditions for DC input. Safety approval for DC input can be obtained upon request.

Output Ratings / Characteristics**

Nominal Output Voltage	48Vdc
Factory Set Point Tolerance	48Vdc ± 2%
Output Voltage Adjustment Range	44-56Vdc
Output Current	2.50A (120W max.)
Output Power	120W
Line Regulation	< 0.5% (@ 85-264Vac, 100% load)
Load Regulation	< 1% (0-100% load)
PARD*** (20MHz)	< 150mVpp @ > -10°C to +70°C < 300mVpp @ ≤ -10°C to -20°C
Rise Time	30ms typ. @ nominal input (100% load)
Start-up Time	200ms typ. @ 115Vac & 230Vac (100% load)
Hold-up Time	20ms typ. @ 115Vac (100% load) 90ms typ. @ 230Vac (100% load)
Dynamic Response (Overshoot & Undershoot O/P Voltage)	± 10% @ 85-264Vac input, 0-100% load (Slew Rate: 0.1A/μs)
Start-up with Capacitive Loads	4,000μF Max

**For power de-rating from -10°C to -20°C, and 40°C to 70°C @ 115Vac & 50°C to 70°C @ 230Vac, and Vin < 100Vac, see power de-rating on page 3.
***PARD is measured with an AC coupling mode, 5cm wires, and in parallel with 0.1μF ceramic capacitor & 47μF electrolytic capacitor.

DIN Rail Power Supply

48V 120W 1 Phase / DRL-48V120W1AAD

Mechanical

Case Cover / Chassis		SGCC / Aluminium
Dimensions (L x W x D)		123.6 x 40 x 117.6 mm (4.86 x 1.57 x 4.62 inch)
Unit Weight		0.54 kg (1.19 lb)
Indicator		Green LED (DC OK)
Cooling System		Convection
Terminal	Input	3 Pins (Rated 600V/35A)
	Output	4 Pins (Rated 300V/28A)
Wire	Input	AWG 18-8
	Output	AWG 24-12
Mounting Rail		Standard TS35 DIN Rail in accordance with EN 60715
Noise (1 Meter from power supply)		Sound Pressure Level (SPL) < 25dBA

Environment

Surrounding Air Temperature	Operating	-20°C to +70°C
	Storage	-40°C to +85°C
Power De-rating		-10°C to -20°C de-rate power by 2%/°C > 40°C de-rate power by 1.67% / °C @ 115Vac > 50°C de-rate power by 2.5% / °C @ 230Vac < 100Vac de-rate power by 1% / Vac
Operating Humidity		5 to 95% RH (Non-Condensing)
Operating Altitude		0 to 5,000 Meters (16,400 ft.) for ITE application 0 to 2,000 Meters (6,560 ft.) for ICE application
Shock Test	Non-Operating	IEC 60068-2-27, 27, Half Sine Wave: 50G for duration of 11ms; 3 times per direction, 9 times in total
	Operating	IEC 60068-2-27, 27, Half Sine Wave: 10G for duration of 11ms; 1 time in X axis
Vibration	Non-Operating	IEC 60068-2-6, Random: 5Hz to 500Hz; 2.09G_{rms}; 20 min per axis for all X, Y, Z directions
	Operating	IEC 60068-2-6, Sine Wave: 10Hz to 500Hz @ 19.6m/s² (2G peak); displacement of 0.35mm; 10 min per cycle, 60 min for X direction
Pollution Degree		2

Protections

Overvoltage	57.0V-67.2V, SELV Output, Latch Mode
Overload / Overcurrent	105-150% of rated load current, Continuous current
Over Temperature	Latch Mode
Short Circuit	Hiccup Mode, Non-Latching (Auto-Recovery when the fault is removed)
Internal Fuse	T4A / 250V
Degree of Protection	IP20 Compliance
Protection Against Shock	Class I with PE* connection

*PE: Primary Earth

All parameters are specified at 25°C ambient and AC input unless otherwise indicated.

DIN Rail Power Supply

48V 120W 1 Phase / DRL-48V120W1AAD

Reliability Data

MTBF	Telcordia SR-332	> 700,000 hrs	I/P: 100Vac, O/P: 100% load, Ta: 25°C
Expected Cap Life Time		10 years (115Vac & 230Vac, 50% load @ 40°C)	

Safety Standards / Directives

Safety Entry Low Voltage		SELV (EN 60950-1)
Electrical Safety	TUV Bauart	EN 60950-1
	UL/cUL recognized	UL 60950-1 and CSA C22.2 No. 60950-1 (File No. E131881)
	CCC	GB4943.1
	CB scheme	IEC 60950-1
Industrial Control Equipment	UL/cUL listed	UL 508 and CSA C22.2 No. 107.1-01 (File No. E338991)
CE		In conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC
Material and Parts		RoHS Directive 2011/65/EU Compliant
Galvanic Isolation	Input to Output	3.0KVac
	Input to Ground	2.0KVac
	Output to Ground	0.5KVac

DIN Rail Power Supply
48V 120W 1 Phase / DRL-48V120W1AAD

EMC

EMC / Emissions		Generic Standards: EN 61000-6-3, EN 61000-6-4 CISPR 22, EN 55022, EN 55011, FCC Title 47: Class B; GB9254.1		
Component Power Supply for General Use		EN 61204-3		
Immunity to		Generic Standards: EN 61000-6-1, EN 61000-6-2, EN 55024		
Electrostatic Discharge	IEC 61000-4-2	Level 4 Criteria A[1)] Air Discharge: 15kV Contact Discharge: 8kV		
Radiated Field	IEC 61000-4-3	Level 3 Criteria A[1)] 80MHz-1GHz, 10V/M with 1kHz tone / 80% modulation 1.4GHz-2GHz, 3V/M with 1kHz tone / 80% modulation 2GHz-2.7GHz, 1V/M with 1kHz tone / 80% modulation		
Electrical Fast Transient / Burst	IEC 61000-4-4	Level 3 Criteria A[1)] 2kV		
Surge	IEC 61000-4-5	Level 4 Criteria A[1)] Common Mode[3)]: 4kV Differential Mode[4)]: 2kV		
Conducted	IEC 61000-4-6	Level 3 Criteria A[1)] 150kHz-80MHz, 10Vrms		
Power Frequency Magnetic Fields	IEC 61000-4-8	Level 4 Criteria A[1)] 30A/m		
Voltage Dips and Interruptions	IEC 61000-4-11	0% of 100Vac, 20ms 40% of 100Vac, 200ms 70% of 100Vac, 500ms 0% of 100Vac, 5000ms 0% of 2400Vac, 20ms 40% of 240Vac, 200ms 70% of 240Vac, 500ms 0% of 240Vac, 5000ms	Criteria A[1)] Criteria B[2)] Criteria A[1)] Criteria B[2)] Criteria A[1)] Criteria A[1)] Criteria A[1)] Criteria B[2)]	
Low Energy Pulse Test (Ring Wave)	IEC 61000-4-12	Level 3 Criteria A[1)] Common Mode[3)]: 2kV Differential Mode[4)]: 1kV		
Harmonic Current Emission		IEC/EN 61000-3-2, Class A; GB17625.1		
Voltage Fluctuation and Flicker		IEC/EN 61000-3-3		
Voltage Sag Immunity SEMI F47 - 0706		80% of 200Vac 70% of 200Vac 50% of 200Vac	160Vac, 1000ms 140Vac, 500ms 100Vac, 200ms	Criteria A[1)] Criteria A[1)] Criteria A[1)]

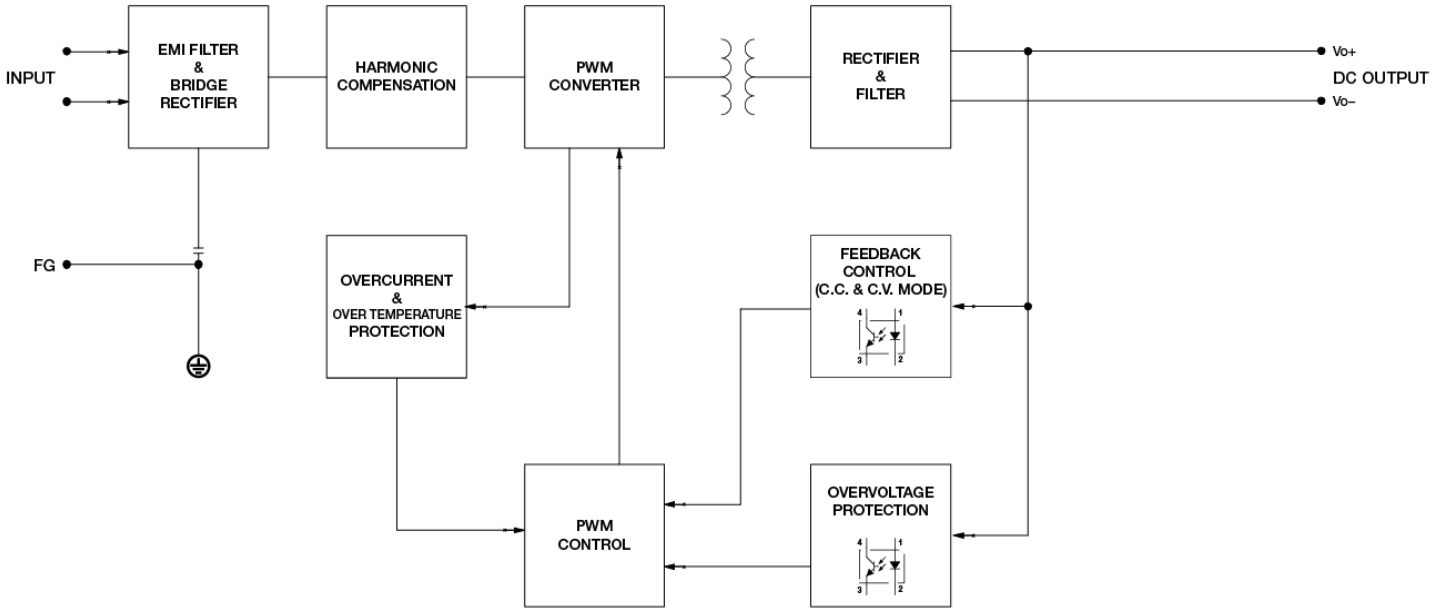
1) Criteria A: Normal performance within the specification limits
2) Criteria B: Temporary degradation or loss of function which is self-recoverable
3) Asymmetrical: Common mode (Line to earth)
4) Symmetrical: Differential mode (Line to line)

DIN Rail Power Supply

48V 120W 1 Phase / DRL-48V120W1AAD

Block Diagram

DRL-48V120W1AAD

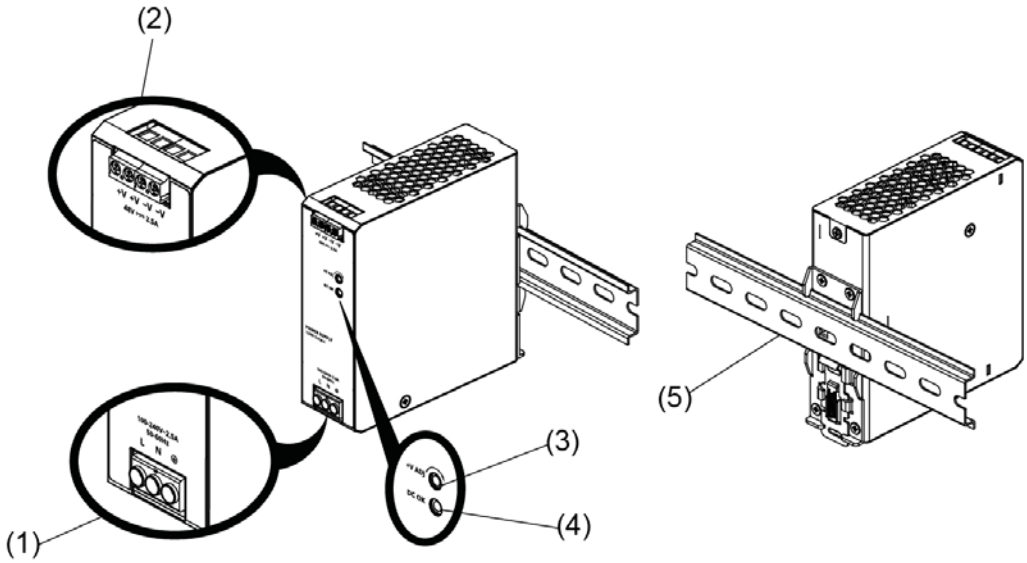


All parameters are specified at 25°C ambient and AC input unless otherwise indicated.

DIN Rail Power Supply

48V 120W 1 Phase / DRL-48V120W1AAD

Device Description

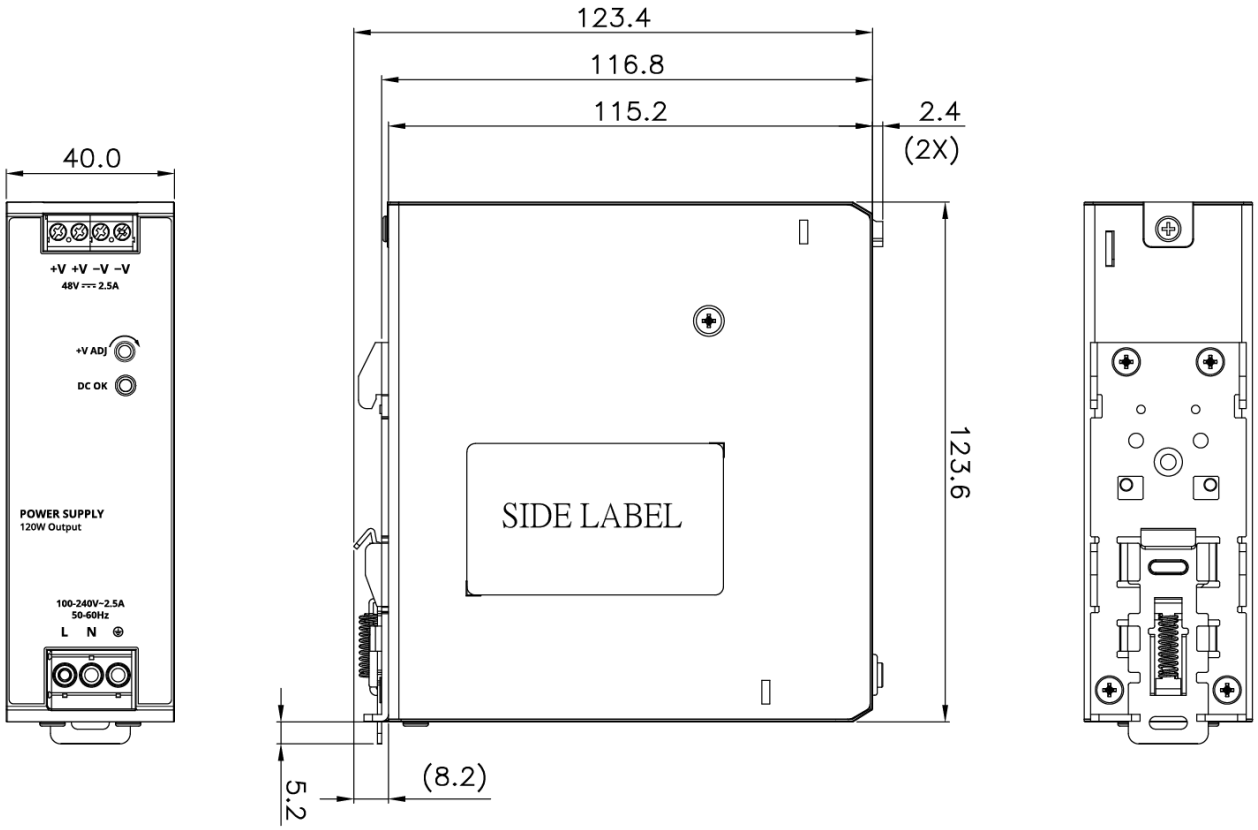


1) Input terminal block connector
2) Output terminal block connector
3) DC voltage adjustment potentiometer
4) DC OK LED (Green)
5) Universal mounting rail system

Dimensions

L x W x D: 123.6 x 40 x 117.6 mm (4.86 x 1.57 x 4.62 inch)

DRL-48V120W1AAD



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DIN Rail Power Supply

48V 120W 1 Phase / DRL-48V120W1AAD

Engineering Data

Output Load De-rating VS Surrounding Air Temperature

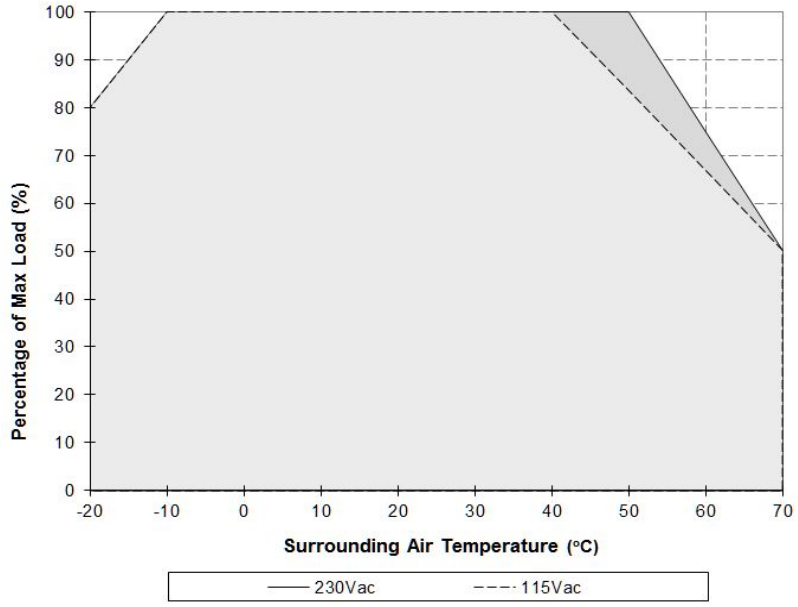
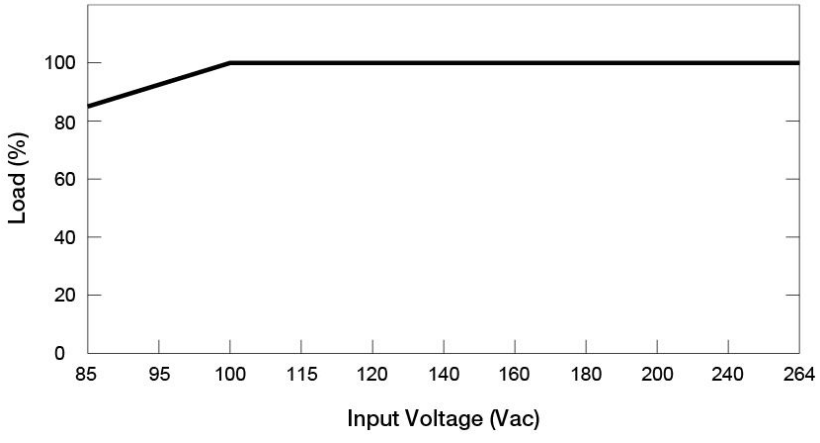


Fig. 1 De-rating for Vertical Mounting Orientation
-10°C to -20°C de-rate power by 2%/°C
> 40°C de-rate power by 1.67% / °C @ 115Vac
> 50°C de-rate power by 2.5% / °C @ 230Vac

Note

1. Power supply components may degrade, or be damaged, when the power supply is continuously used outside the shaded region, refer to the graph shown in Fig. 1.
2. If the output capacity is not reduced when the surrounding air temperature >40°C (115Vac) or >50°C (230Vac), the device will run into Over Temperature Protection. When activated, the output voltage will go into bouncing mode and will recover when the surrounding air temperature is lowered or the load is reduced as far as necessary to keep the device in working condition.
3. In order for the device to function in the manner intended, it is also necessary to keep a safety distance as recommended in the safety instructions while the device is in operation.
4. Depending on the surrounding air temperature and output load delivered by the power supply, the device can be very hot!
5. If the device has to be mounted in any other orientation, please contact **info@deltapsu.com** for more details.

Output Load De-rating VS Input Voltage



- No output power de-rating for the input voltage from 100Vac to 264Vac

All parameters are specified at 25°C ambient and AC input unless otherwise indicated.

DIN Rail Power Supply
48V 120W 1 Phase / DRL-48V120W1AAD

Assembly & Installation

The power supply unit (PSU) can be mounted on 35mm DIN rails in accordance with EN 60715. The device should be installed with input terminal block at the bottom.

Each device is delivered ready to install.

Mounting

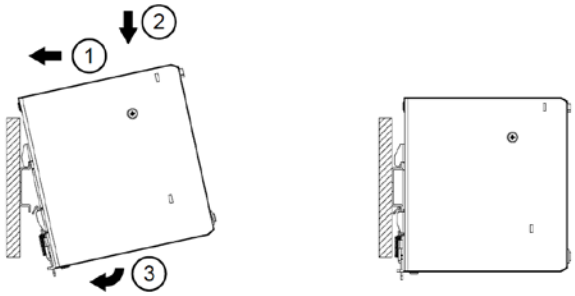


Fig. 2.1 Mounting

Snap on the DIN rail as shown in Fig. 2.1:
1. Tilt the unit upwards and insert it onto the DIN rail.
2. Push downwards until stopped.
3. Press against the bottom front side for locking.
4. Shake the unit slightly to ensure that it is secured.

Dismounting

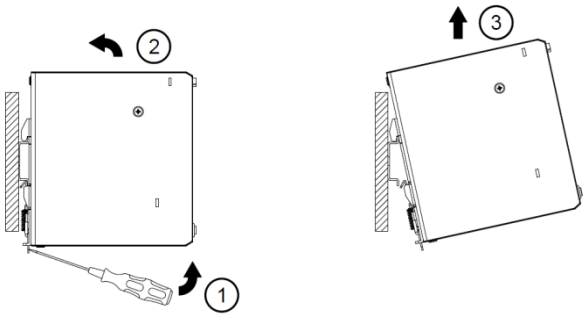


Fig. 2.2 Dismounting

To uninstall, pull or slide down the latch with screw driver as shown in Fig. 2.2. Then slide the power supply unit (PSU) in the opposite direction, release the latch and pull out the power supply unit (PSU) from the rail.

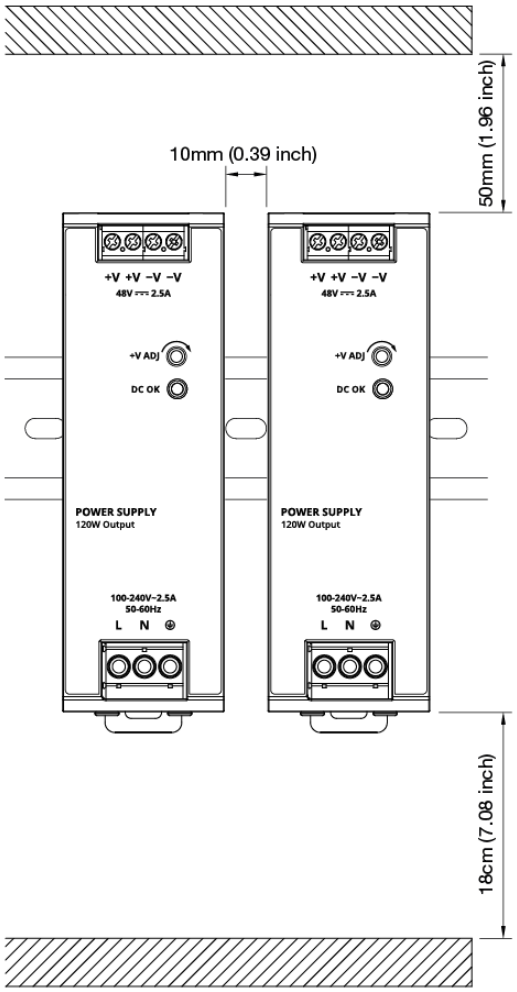
In accordance to EN 60950 / UL 60950, flexible cables require ferrules.
Use appropriate copper cables designed to sustain operating temperature of at least 60°C / 75°C or more to fulfill UL requirements.

DIN Rail Power Supply

48V 120W 1 Phase / DRL-48V120W1AAD

Safety Instructions

■ **Vertical Mounting**



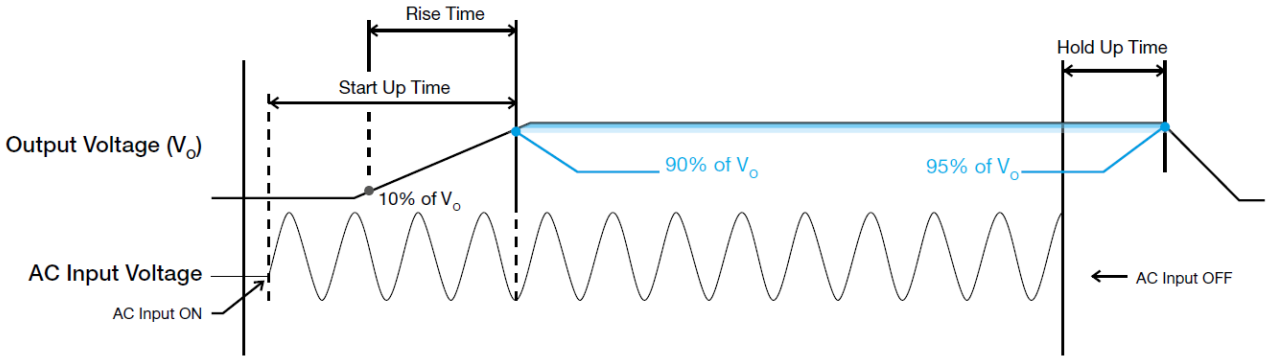
- ALWAYS switch mains of input power OFF before connecting and disconnecting the input voltage to the unit. If mains are not turned OFF, there is risk of explosion / severe damage.
- **To guarantee sufficient convection cooling, keep a distance of 50mm (1.96 inch) above and 18cm (7.08 inch) below the device as well as a lateral distance of 10mm (0.39 inch) to other units.**
- Note that the enclosure of the device can become very hot depending on the surrounding air temperature and load of the power supply. Risk of burns!
- The main power must be turned off before connecting or disconnecting wires to the terminals.
- DO NOT insert any objects into the unit.
- Hazardous voltages may be present for up to 5 minutes after the input mains voltage is disconnected. Do not touch the unit during this time.
- The power supplies are built in units and must be installed in a cabinet or room (condensation free environment and indoor location) that is relatively free of conductive contaminants.

DIN Rail Power Supply

48V 120W 1 Phase / DRL-48V120W1AAD

Functions

■ **Graph illustrating the Start-up Time, Rise Time, and Hold-up Time**



Start-up Time

The time required for the output voltage to reach 90% of its final steady state set value, after the input voltage is applied.

Rise Time

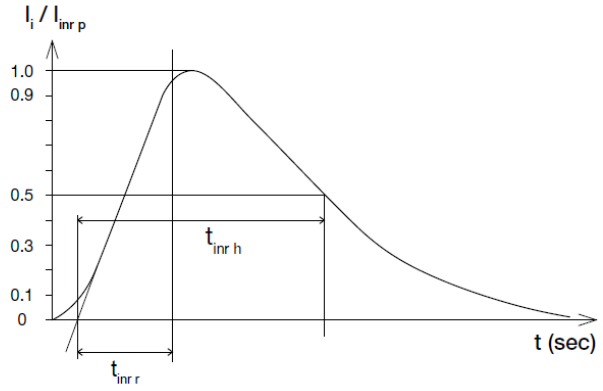
The time required for the output voltage to change from 10% to 90% of its final steady state set value.

Hold-up Time

Time between the collapse of the AC input voltage, and the output falling to 95% of its steady state set value.

Inrush Current

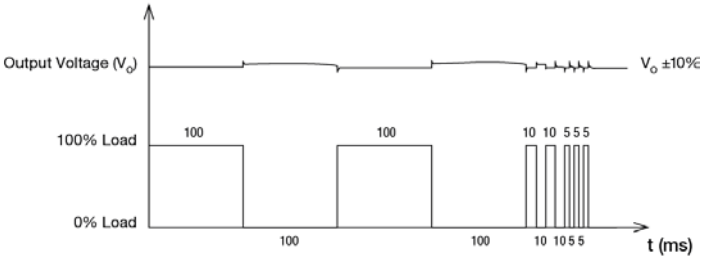
Inrush current is the peak, instantaneous, input current measured and, occurs when the input voltage is first applied. For AC input voltages, the maximum peak value of inrush current will occur during the first half cycle of the applied AC voltage. This peak value decreases exponentially during subsequent cycles of AC voltage.



Dynamic Response

The power supply output voltage will remains within ±10% of its steady state value, when subjected to a dynamic load from 0 to 100% of its rated current.

■ **50% duty cycle / 5Hz to 100Hz**



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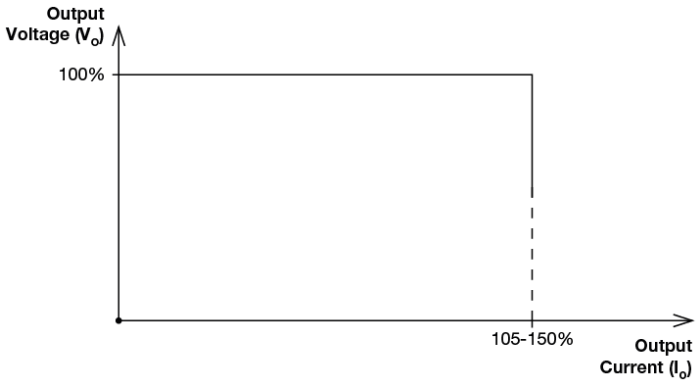
DIN Rail Power Supply
48V 120W 1 Phase / DRL-48V120W1AAD

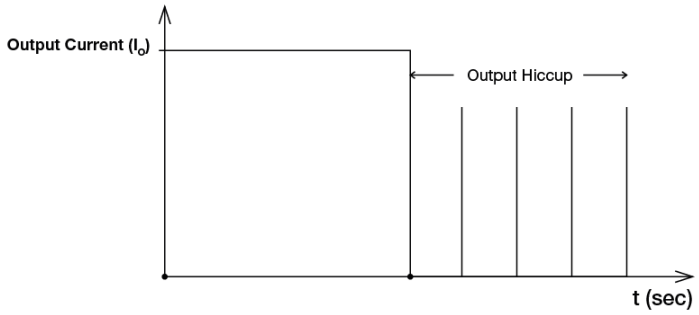
Overload & Overcurrent Protections (Continuous Current)

The power supply's Overload (OLP) and Overcurrent (OCP) Protections will be activated when output current is 105~150% of I_O (Max load). Upon such an occurrence, the V_O (output voltage) will start to droop. Once the power supply has reached its maximum power limit, the protection will be activated; and, the power supply will operate in continuous current. The power supply will recover once the cause of OLP or OCP is removed, and I_O (output current) is back within the specified range.



Short Circuit Protection (Auto-Recovery)

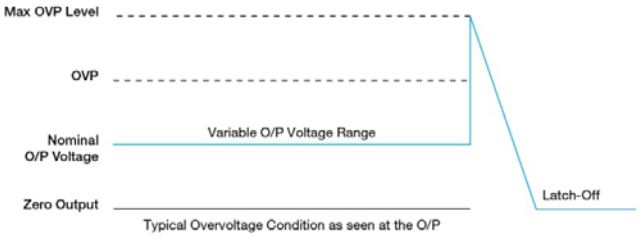
The power supply's output Short Circuit Protection function also provides protection against short circuits. When a short circuit is applied, the output current will operate in "Hiccup mode". The power supply will return to normal operation after the short circuit is removed.



Overvoltage Protection (Latch Mode)

The power supply's overvoltage circuit will be activated when its internal feedback circuit fails. The output voltage shall not exceed its specifications as described in "Protections" section. Power supply will latch off, and require removal/re-application of input AC voltage in order to restart.

The power supply should be latch.



Over Temperature Protection (Latch Mode)

As described in load de-rating section, the power supply also has Over Temperature Protection (OTP). In the event of a higher operating temperature at 100% load; or, when the operating temperature is beyond what is recommended in the de-rating graph, the OTP circuit will be activated. When activated, power supply will latch off, until the surrounding air temperature drops to its normal operating temperature or the load is reduced as recommended in the de-rating graph. Removal/re-application of input AC voltage will then be required in order to restart.

DIN Rail Power Supply
48V 120W 1 Phase / DRL-48V120W1AAD

Operating Mode

■ Redundant Operation

In order to ensure proper redundant operation for the power supply units (PSUs), the output voltage difference between the two units must be kept at 0.9~1.0V for these 48V supplies. Follow simple steps given below to set them up for the redundant operation:

Step 1.
Measure output voltage of PSU 1 and PSU 2. If PSU 1 is the master unit, then V_O of PSU 1 must be higher than PSU 2. In order to set the output voltage, individually connect each power supply to 50% of rated load at any line voltage from 85-264Vac, and set the PSU 1 and PSU 2 output voltage.

Step 2.
Connect the power supply units PSU 1 and PSU 2 to Vin 1 & Vin 2, respectively, of the DRR-20N (or 20A) module shown on the right of above diagram.

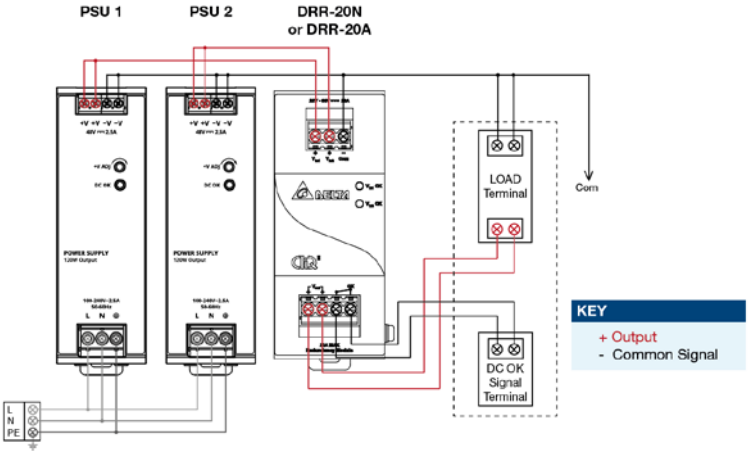


Fig. 3 Redundancy Operation Connection Diagram

Step 3.
Connect the system load to V_{out}. Please note that output voltage V_{out} from DRR module will be = V_O (output voltage of power supply) – V_{drop}* (in DRR module).

*Vdrop will vary from 0.60V to 0.90V (Typical 0.65V) depending on the load current and surrounding air temperature.

■ Parallel Operation

The power supply units (PSUs) can also be used for parallel operation in order to increase the output power. The difference in output voltage between the two units must be kept to within 25mV of each other. This difference must be verified with the same output load connected independently to each unit.

Parameters such as EMI, inrush current, leakage current, PARD, start up time will be different from those on the datasheet, when two units are connected in parallel. The user will need to verify that any differences will still allow the two power supplies connected in parallel will work properly in their product/application.

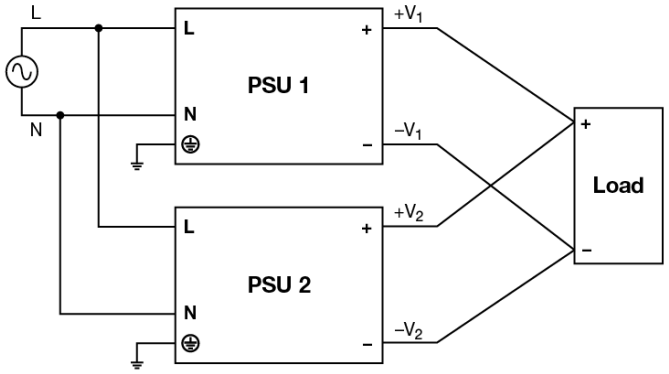


Fig. 4 Parallel Operation Connection Diagram

All parameters are specified at 25°C ambient and AC input unless otherwise indicated.

DIN Rail Power Supply
48V 120W 1 Phase / DRL-48V120W1AAD

Others

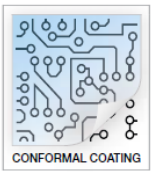
Delta RoHS Compliant

Restriction of the usage of hazardous substances

The European directive 2011/65/EU limits the maximum impurity level of homogeneous materials such as lead, mercury, cadmium, chrome, polybrominated flame retardants PBB and PBDE for the use in electrical and electronic equipment. RoHS is the abbreviation for “Restriction of the use of certain hazardous substances in electrical and electronic equipment”.

This product conforms to this standard.

Conformal Coating



The Protective Coating Technology

Delta Electronics Group has designed the perfect dipping technique which penetrates everywhere including under device, and prevents leakage. The conformal coating dipping can be applied to PCBAs or circuit board. The coating preserves the performance of precision electronic primarily by preventing ionizable contaminants such as salt from reaching circuit nodes, where the material slumps around sharp edges. This can be a problem especially in highly conversing atmosphere.

PFC – Norm EN 61000-3-2

Line Current Harmonic content

Typically, the input current waveform is not sinusoidal due to the periodical peak charging of the input capacitor. In industrial environment, complying with EN 61000-3-2 is only necessary under special conditions. Complying to this standard can have some technical drawbacks, such as lower efficiency as well as some commercial aspects such as higher purchasing costs. Frequently, the user does not profit from fulfilling this standard, therefore, it is important to know whether it is mandatory to meet this standard for a specific application.

3. Physical Dimension

TABLE 2.

PART NAME	PIN	FUNCTION
INPUT TERMINAL BLOCK(3 POLE)	1	L
	2	N
	3	PE
OUTPUT TERMINAL BLOCK(4POLE)	1	V−
	2	V−
	3	V+
	4	V+

NOTE:

1. " * " IS CRITICAL DIM WHICH MUST BE CONTROLLED STRICTLY BY QA.
2. PRODUCT SURFACE SHOULD BE CLEAN, NO DENT AND FREE FROM TOOLING MARK.
3. ENGRAVING ON CHASSIS MUST BE VISIBLE.
4. COMPLIANT MODEL: DRL-48V120W1AAD
5. UNLESS OTHERWISE SPECIFIED TOLERANCE OF DIMENSION ARE ±0.5

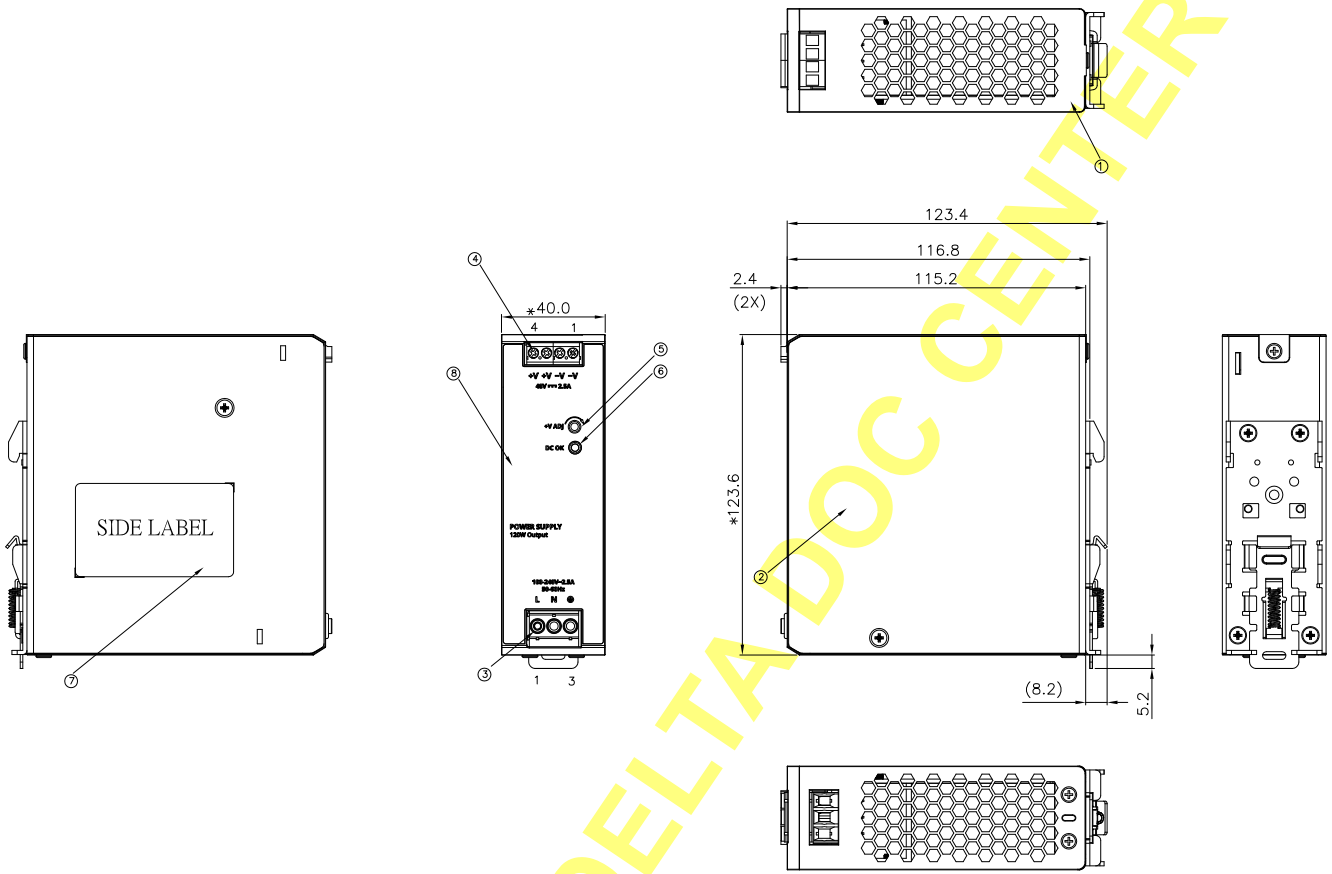


TABLE 1.

ITEM	PART NAME	REMARKS
①	COVER	NATURE
②	CHASSIS	NATURE
③	INPUT TERMINAL BLOCK(3POLE)	BLACK
④	OUTPUT TERMINAL BLOCK(6POLE)	BLACK
⑤	VR	−−
⑥	LED	GREEN
⑦	SIDE LABEL	WHITE
⑧	FRONT LABEL	PANTONE COOL GRAY 4C

台達電子工業股份有限公司
DELTA ELECTRONICS, INC.

Drawn: 葉柏園 04/05'17

Design: 葉柏園 04/05'17

THIRD ANGLE PROJECTION

Description: PHYSICAL DIMENSIONS

DIMENSIONAL TOLERANCES
HOLES : ±0.05 ANGLES : ±0.5°

( )		( )		( )		( )	
<30	: ±0.25	DECIMALS		UP~100	: ±0.2	250~300	: ±0.4	UP~600	: ±1.5
>30~100	: ±0.35	X	: ±0.3	100~150	: ±0.25	300~350	: ±0.45	600~900	: ±2.4
>100~300	: ±0.5	X.X	: ±0.2	150~200	: ±0.3	350~400	: ±0.5	900~OVER	: ±3.1
ABOVE 300	: ±0.8	X.XX	: ±0.1	200~250	: ±0.35				

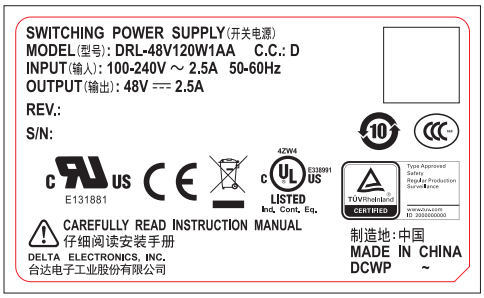
A1 SIZE

Part No. DRL-XXV120W1AAD

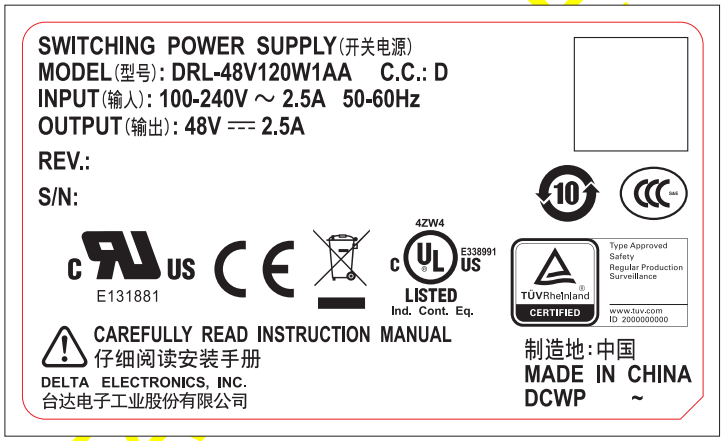
REV. 00

SCALE	--	UNIT	mm	USED ON	DRL-48V120W1AAD	SHEET 3 OF 4	ISSUE DATE: 04/05'17

4.Label Drawing



SCALE 1:1



SCALE 1.5:1

The mark "~" is the label vendor code of DELTA who registered at CSA or UL :
CM-2 : CymMetrik
MMC : Yongta

台達電子工業股份有限公司 DELTA ELECTRONICS, INC.	Drawn: 04/12/17	Design: Leon 04/12/17
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DELTA ELECTRONICS, INC. AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SELL OF APPARATUSES OR DEVICES WITHOUT PERMISSION.	THIRD ANGLE PROJECTION	Description: LABEL
DIMENSIONAL TOLERANCES ( ) (V) ( ) HOLES : ±0.05 ANGLES : ±0.5° <30 : ±0.25 DECIMALS UP~100 : ±0.2 250~300 : ±0.4 UP~600 : ±1.5 >30~100 : ±0.35 X : ±0.3 100~150 : ±0.25 300~350 : ±0.45 600~900 : ±2.4 >100~300 : ±0.5 X.X : ±0.2 150~200 : ±0.3 350~400 : ±0.5 900~OVER : ±3.1 ABOVE 300 : ±0.6 X.XX : ±0.1 200~250 : ±0.35	A4 SIZE	Part No. 3268761650 REV. 00
SCALE -- UNIT mm USED ON DRL-48V120W1AAD		SHEET 3 OF 3 ISSUE DATE: 04/12/17

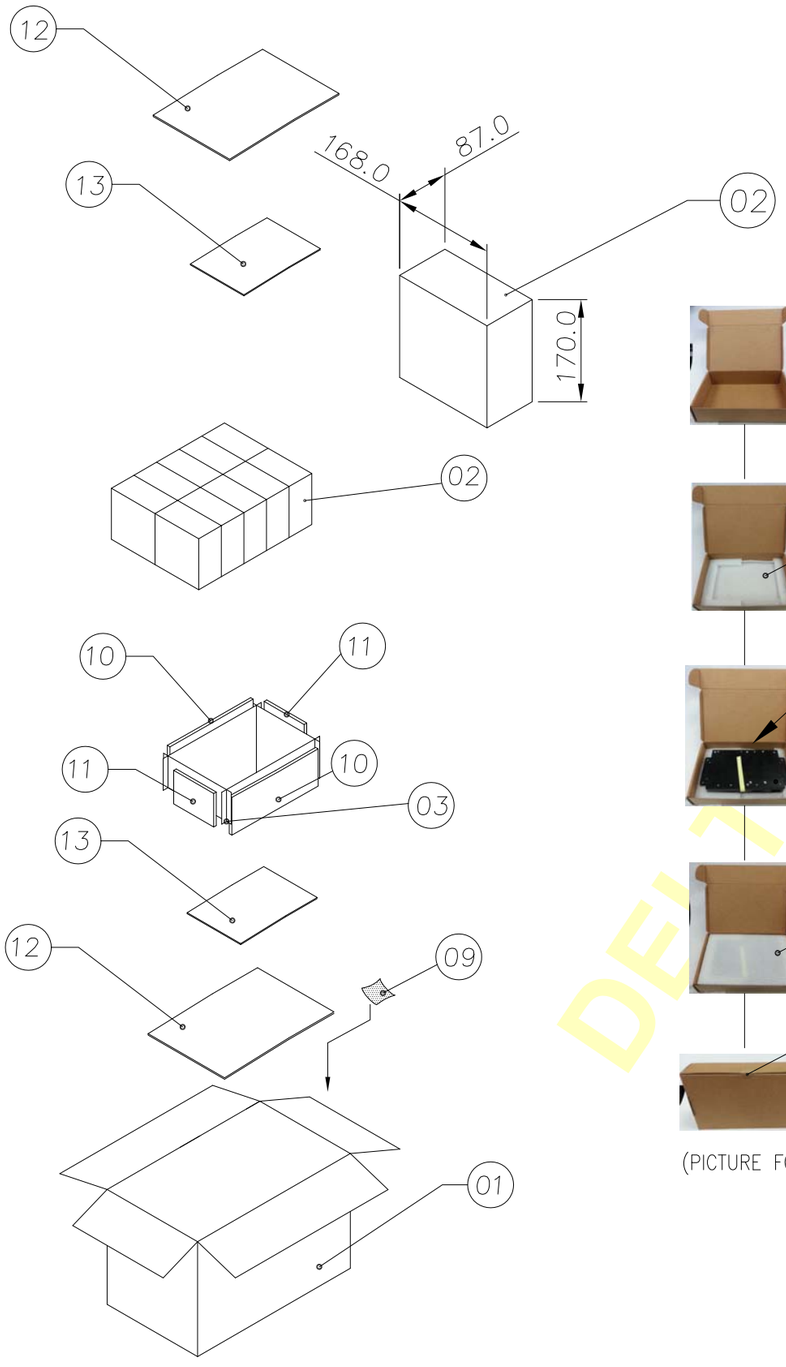
FRAME NAME: DF-MEA4V-1R01.DWG

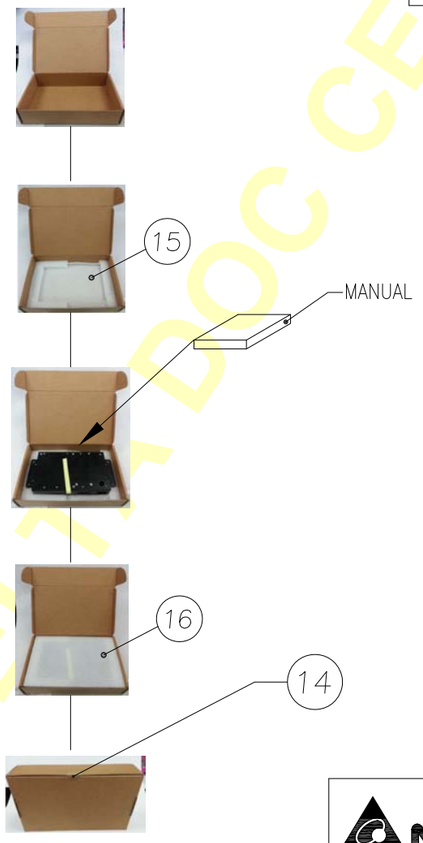
5. Packing

NOTES:

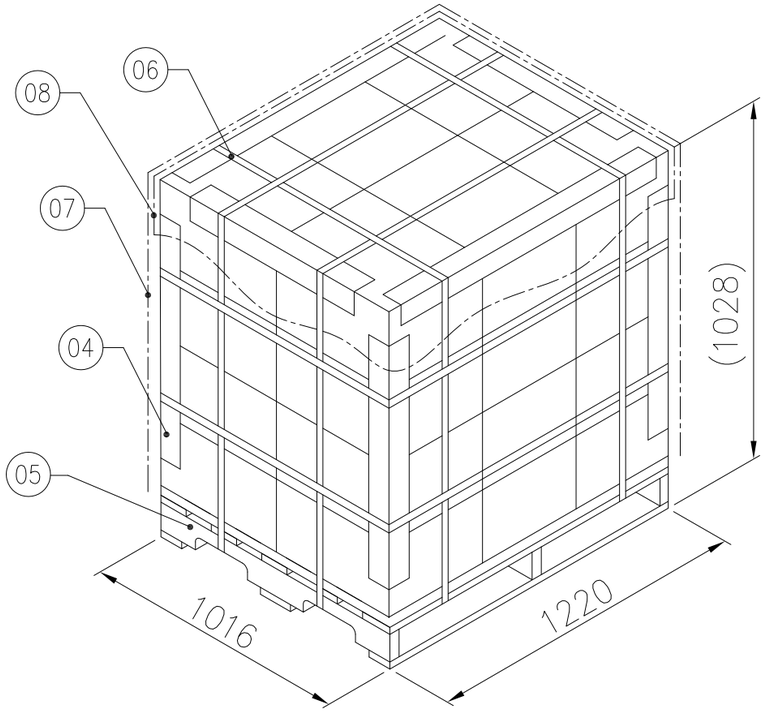
1. 10PCS/CARTON*3*2CARTONS/LAYER*4LAYERS=240PCS/PALLET
2. ALL THE PACKING MATERIAL SHOULD MEET DELTA GENERAL SPEC:10000-0162.
3. 當非滿棧板出貨時,四周仍需使用豎型角紙板(ANGLE PAPER),請包裝/採購單位協助按實際情況裁切適當尺寸,
   豎型紙板(ANGLE PAPER)長度應儘量接近於Carton箱堆疊後的高度.

ITEM	PART NO.	NAME	OUTSIDE DIM.(mm)	Q'TY		UNIT
01	35125310XX	CARTON	506X406X228	1/10	100.000	TP
02	35182595XX	BOX	168X87X170	1/1	1.000	PCE
03	35143440XX	PARTITION	490X390X172	1/10	100.000	TP
04	35101802XX	ANGLE PAPER	900X55X55	8/240	33.334	TP
05	3524029200	PALLET	1220X1016X120	1/240	4.167	TP
06	35201427XX	PLASTIC STRIP	W=12, T=0.5	27M/240	112.500	MM
07	35200824XX	PE FILM	T=0.02mm	150g/240	0.625	GRM
08	35200899XX	PE SHEET	1500X1300	1/240	4.167	TP
09	35201301XX	DRYER	5g	1/10	100.000	TP
10	35026226XX	FOAM PAD	400X100X20	2/10	200.000	TP
11	35026230XX	FOAM PAD	300X100X20	2/10	200.000	TP
12	35129485XX	PAD PAPER	485X385X5	2/10	200.000	TP
13	35026214XX	FOAM PAD	490X390X10	2/10	200.000	TP
14	32611692XX	LABEL PET	ø25	1/1	1.000	PCE
15	35018626XX	FOAM PAD	162X159X62	1/1	1.000	PCE
16	35018627XX	FOAM PAD	162X159X62	1/1	1.000	PCE





(PICTURE FOR REFERNES)



台達電子工業股份有限公司
DELTA ELECTRONICS, INC.

Drawn: Johnny 04/11'17

Design: Johnny 04/11'17

THIRD ANGLE PROJECTION

Description: PML

DIMENSIONAL TOLERANCES HOLES : ±0.05 ANGLES : ±0.5°

( )		( )		( )		( )	
<30	: ±0.25	DECIMALS		UP~100	: ±0.2	250~300	: ±0.4	UP~600	: ±1.5
>30~100	: ±0.35	X	: ±0.3	100~150	: ±0.25	300~350	: ±0.45	600~900	: ±2.4
>100~300	: ±0.5	X.X	: ±0.2	150~200	: ±0.3	350~400	: ±0.5	900~OVER	: ±3.1
ABOVE 300	: ±0.6	X.XX	: ±0.1	200~250	: ±0.35				

SCALE	–	UNIT	mm	USED ON	DRL-24V120W1AR

A3 SIZE

Part No. DRL-48V120W1AAD

REV. 00

SHEET 2 OF 2

ISSUE DATE:04/11'17

FRAME NAME: DF-MEA3H-1R01.DWG

6. Safety License

Ref. Certif. No.

DK-48865-A1-UL

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	SWITCHING POWER SUPPLY
Name and address of the applicant Nom et adresse du demandeur	DELTA ELECTRONICS INC 3 TUNGYUAN RD CHUNGLI INDUSTRIAL ZONE TAOYUAN COUNTY, 32063 Taiwan
Name and address of the manufacturer Nom et adresse du fabricant	DELTA ELECTRONICS INC 3 TUNGYUAN RD CHUNGLI INDUSTRIAL ZONE TAOYUAN COUNTY, 32063 Taiwan
Name and address of the factory Nom et adresse de l'usine Note: *When more than one factory, please report on page 2* Note: *Lorsque il y plus d'une usine, veuillez utiliser la 2ème page*	DELTA ELECTRONICS (JIANGSU) LTD. NO 1688 JIANGXING EAST RD WUJIANG ECONOMIC DEVELOPMENT ZONE WUJIANG CITY, 215200 JIANGSU PROVINCE China ☒ Additional Information on page 2
Ratings and principal characteristics Valeurs nominales et caractéristiques principales	See Page 2
Trademark (if any) Marque de fabrique (si elle existe) Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	Delta Electronics Inc.
Model / Type Ref. Ref. De type	DRL-24V120W1X1X2, DRL-48V120W1X1X2, TIPS-120W24V1MA, TIPS-120W48V1MA See Page 2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire,, peuvent être indiqués sur la 2ème page	Additionally evaluated to EN 60950-1: 2006 / A11: 2009 / A1: 2010 / A12: 2011 / A2:2013; National Differences specified in the CB Test Report ☒ Additional Information on page 2
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60950-1(ed.2), IEC 60950-1(ed.2);am1, IEC 60950-1(ed.2);am2
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	E131881-A1919-CB-1 issued on 2015-10-26, E131881-A1919-CB-1 issued on 2015-10-23

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme **National de Certification**

☐ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☒ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2015-10-23
Original Issue Date: 2015-10-01

Signature:

Jan-Erik Storgaard

Model Details:

DRL-24V120W1X1X2,DRL-48V120W1X1X2 (Where X1 can be any alphanumeric character or blank; X2=N, R, A, S, for marketing purpose only and no impact to safety related critical components and constructions)

Factories:

DELTA ELECTRONICS (THAILAND) PUBLIC CO LTD
909 SOI 9, MOO 4,PATTANA 1RD
BANGPOO INDUSTRIAL ESTATE (E P Z)
TAMBOL PHRAKSA AMPHUR MUANG
SAMUTPRAKARN, 10280 Thailand

DELTA ELECTRONICS POWER (DONGGUAN) CO LTD
DELTA INDUSTRIAL ESTATE
SHIJIE TOWN
DONGGUAN, 523308 GUANGDONG China

Additional Information:
The original report was modified to include the following changes/additions:
1) Changed model names
2) Alternated CY1, CY2, CY3 second sources, Walsin Technology Corp., Type AH.
3) Corrected to remove double square symbol in all labels.
4) Corrected to change clause 1.7.1.2, Symbol for Class II equipment only from "Pass" to "N/A".
5) Corrected to remove "CY1=CY2" from table 1.5.1 item 09.

Ratings:
Input:
100-240Vac, 2.5A, 50-60Hz

Output:
(1) 24Vdc, 5A (for DRL-24V120W1X1X2, TIPS-120W24V1MA)

or

(2) 48Vdc, 2.5A (for DRL-48V120W1X1X2, TIPS-120W48V1MA)

Additional information (if necessary)
Information complémentaire (si nécessaire)

☐ UL (US), 333 Pfingsten Rd IL 60062, Northbrook, USA
☒ UL (Demko), Borupvang 5A DK-2750 Ballerup, DENMARK
☐ UL (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN
☐ UL (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA

For full legal entity names see www.ul.com/ncbnames

Date: 2015-10-23
Original Issue Date: 2015-10-01

Signature:

Jan-Erik Storgaard

中国国家强制性产品认证证书

证书编号：2015010907819255

委托人名称、地址

台达电子工业股份有限公司

台湾 桃园县 中坜市 中坜工业区东园路 3 号

生产者(制造商)名称、地址

台达电子工业股份有限公司

台湾 桃园县 中坜市 中坜工业区东园路 3 号

生产企业名称、地址

中达电子(江苏)有限公司

中国 江苏省吴江经济技开发区江兴东路1688号

产品名称和系列、规格、型号

开关电源

TIPS-120W24V1MA、TIPS-120W48V1MA、DRL-24V120W1X1X2、DRL-48V120W1X1X2 （”X1”代表数字0-9 或字母A-Z或空白，其电气特性皆相同，仅为区别客户不同，不影响安全及电磁兼容性，“X2”代表字母N, R, A, S）交流输入：100-240VAC，2.5A 50-60Hz；直流输出：24V, 5A(对于 TIPS-120W24V1MA 和 DRL-24V120W1X1X2)；直流输出：48V, 2.5A(对于TIPS-120W48V1MA 和 DRL-48V120W1X1X2)(产品销售时不配备电线组件，仅适用于海拔5000 米及以下)

产品标准和技术要求

GB4943.1-2011；GB17625.1-2012；GB9254-2008

上述产品符合强制性产品认证实施规则
CNCA-C09-01:2014的要求，特发此证。

发证日期： 2015年11月08日　　**有效期至：** 2020年11月08日

证书有效期内本证书的有效性依据发证机构的定期监督获得保持。

本证书的相关信息可通过国家认监委网站www.cnca.gov.cn查询

主　任：

中国质量认证中心

中国 · 北京 · 南四环西路 188 号 9 区 100070

http://www.cqc.com.cn

T 201511091434407 92

CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No.:2015010907819255

NAME AND ADDRESS OF THE APPLICANT

Delta Electronics, Inc.
3 Tungyuan Road, Chungli Industrial Zone, Taoyuan County 32063, Taiwan

NAME AND ADDRESS OF THE MANUFACTURER

Delta Electronics, Inc.
3 Tungyuan Road, Chungli Industrial Zone, Taoyuan County 32063, Taiwan

NAME AND ADDRESS OF THE FACTORY

Delta Electronics (Jiangsu) Ltd.
215200, No. 1688 East Jiangxing Road Economic and Technology Development Zone, Wujiang ,Jiangsu Province, P.R.China.

NAME, MODEL AND SPECIFICATION

SWITCHING POWER SUPPLY
TIPS-120W24V1MA、TIPS-120W48V1MA、DRL-24V120W1X1X2、DRL-48V120W1X1X2（"X1"=0-9,A-Z or blank, As for different market purpose no impact on Products safety and EMC characteristics only, "X2"=N,R,A,S）, AC input:100-240V~, 2.5A, 50-60Hz;for TIPS-120W24V1MA and DRL-24V120W1X1X2 DC output:24V,5A ; for TIPS-120W48V1MA and DRL-48V120W1X1X2 DC output:48V,2.5A sale without cord set, Altitude up to 5000m

THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS

GB4943.1-2011;GB17625.1-2012;GB9254-2008

This is to certify that the above mentioned products have met the requirements of implementation rules for compulsory certification(REF NO. CNCA-C09-01:2014).

Date of issue:Nov.08,2015 **Date of expiry: Nov.08,2020**

Validity of this certificate is subject to positive result of the regular follow up inspection by issuing certification body until the expiry date.

This certificate can be verified through CNCA ' s website: www.cnca.gov.cn

President: **Wang Kejiao**

CHINA QUALITY CERTIFICATION CENTRE 中国质量认证中心

CHINA QUALITY CERTIFICATION CENTRE
Section 9, No. 188, Nansihuan Xilu, Beijing 100070 P. R. China
http://www.cqc.com.cn

T 20151109143440792

Delta Electronics, Inc

Declaration of Conformity

Ref No: MPBU-TW-201601012-CE-343

Manufacturer name: Delta Electronics, Inc.

Add: 3 Tungyuan Road, Chungli Industrial Zone, Taoyuan County 32063, Taiwan

Tel: 886- 3- 4526107

Fax: 886 -3- 4527314

Is herewith confirmed the following equipment

Product: Switching Power Supply

Brand name:

Type Designation: DRL-24V120W1X1X2,DRL-48V120W1X1X2 (Where X1 can be any alphanumeric character or blank; X2=N, R, A, S, for marketing purpose only and no impact to safety related critical components and constructions); TIPS-120W24V1MA, TIPS-120W48V1MA

Input: 100-240Vac, 2.5A, 50-60Hz.

DC Output: (1) 24Vdc, 5A (for DRL-24V120W1X1X2, TIPS-120W24V1MA) or

(2) 48Vdc, 2.5A (for DRL-48V120W1X1X2, TIPS-120W48V1MA)

Comply with the following directives and requirements set out in the Council Directive on the Approximation for the Laws of the Member States

☒ Low Voltage Directive 2014/35/EU

- ☒ EN 60950-1: 2006+A11: 2009+A1: 2010+A12: 2011 + A2: 2013 (Report No: E131881-A1919-CB-1)
- ☐ EN 60065: 2002+A1: 2006+A11: 2008+A2: 2010 (Report No)
- ☐ EN 62368-1:2014/AC: 2015 (Report No…….)
- ☐ EN 61347-2-12: 2005+A1: 2010 used in conjunction with EN 61347-1: 2008+A1: 2011+A2: 2013 (Report No)
- ☐ EN 61347-2-13: 2006 used in conjunction with EN 61347-1: 2008+A1: 2011+A2: 2013 (Report No)
- ☐ EN 61558-2-16: 2009 used in conjunction with EN 61558-1: 2005/A1: 09 (Report No)
- ☐ EN 60335-2-29:2004+A2:2010 in conjunction with EN 60335-1:2002+A1:2004+ A2:2006+ A11:2004+A12:2006+A13:2008+A14:2010+A15:2011 and EN 62233:2008. (Report No)
- ☐ EN 61010: 2010 (Report No)
- ☐ Other (Report No)

☐ MDD Directive 93/42/EEC

- ☐ EN 60601-1-1: 2006/A12 :2014 (Report No)

- ☐ EN 60601-1-2: 2015 (Report No)
- ☐ CISPR 11:2009+A1:2010 (Group I, Class B)
- ☐ IEC 61000-3-2: 2014
- ☐ IEC 61000-3-3: 2013
- ☐ IEC 61000-4-2: 2008: Edition 2.0
- ☐ IEC 61000-4-3: 2010: Edition 3.2
- ☐ IEC 61000-4-4: 2012: Edition 3.0
- ☐ IEC 61000-4-5: 2014: Edition 3.0
- ☐ IEC 61000-4-6: 2013: Edition 4.0
- ☐ IEC 61000-4-8: 2009: Edition 2.0
- ☐ IEC 61000-4-11: 2004: Edition 2.0

☒ EMC Directive 2014/30/EU

- ☒ EN 55032 : 2012+AC :2013 Class B
- ☒ EN 55022: 2010+AC :2011 Class B
- ☐ EN 55013: 2013
- ☐ EN 55015: 2013
- ☐ EN 55020: 2007/A11:2011
- ☒ EN 55024: 2010
- ☐ EN 55011: 2009+A1: 2010
- ☐ EN 55014-2: 2015
- ☒ EN 61000-3-2: 2014
- ☒ EN 61000-3-3: 2013
- ☒ IEC 61000-4-2: 2008: Edition 2.0
- ☒ IEC 61000-4-3: 2010: Edition 3.2
- ☒ IEC 61000-4-4: 2012: Edition 3.0
- ☒ IEC 61000-4-5: 2014: Edition 3.0
- ☒ IEC 61000-4-6: 2013: Edition 4.0
- ☒ IEC 61000-4-8: 2009: Edition 2.0
- ☒ IEC 61000-4-11: 2004: Edition 2.0

  (Report No: CP150918D02C, CP150918D02, EN150918D02E)

☐ WEEE Directive 2012/19/EU (Report No:)

☒ RoHS Directive 2011/65/EU

- ☒ EN 50581: 2012 (Issue No: 20151126)

☐ Commission Regulation (EC) No 278/2009, ErP Directive 2009/125/EC

- ☐ EN 50563: 2011+A1: 2013 (Report No:)

Person responsible for making this declaration

Name, Surname: Jerry Chang

Title: Principal Engineer

Place: Taiwan

Delta Electronics, Inc

Date: 2017-03-08

Signature: 

ТАМОЖЕННЫЙ СОЮЗ

СЕРТИФИКАТ СООТВЕТСТВИЯ

№ ТС RU C-TW.АЛ16.В.08474

Серия RU № 0370161

ОРГАН ПО СЕРТИФИКАЦИИ продукции Общества с ограниченной ответственностью «Гарант Плюс». Место нахождения: 121170, Российская Федерация, город Москва, Кутузовский проспект, дом 36, строение 3. Фактический адрес: 121170, Российская Федерация, город Москва, Кутузовский проспект, дом 36, строение 3. Телефон/факс: +7(495) 532-86-08, адрес электронной почты: garantplus-os@inbox.ru. Аттестат аккредитации регистрационный № РОСС RU.0001.11АЛ16 выдан 05.02.2013 года Федеральной службой по аккредитации

ЗАЯВИТЕЛЬ Общество с ограниченной ответственностью «Дельта Энерджи Системс». Основной государственный регистрационный номер: 1047796658392. Место нахождения: 101000, Российская Федерация, город Москва, Покровский бульвар, дом 4/17 строение 4б. Фактический адрес: 121357, Российская Федерация, город Москва, улица Верейская, дом 17, офис 112. Телефон: +74956443240, факс: +74956443241, адрес электронной почты: ups.russia@delta.com.tw

ИЗГОТОВИТЕЛЬ «Delta Electronics, Inc.».
Место нахождения: 86 Ruey Kuang Road, Neihu, Taipei 11491, Тайвань (Китай).
Фактический адрес: 86 Ruey Kuang Road, Neihu, Taipei 11491, Тайвань (Китай).
Филиалы завода-изготовителя: согласно приложению на одном листе, бланк № 0242324

ПРОДУКЦИЯ Источники питания промышленного назначения, серии (типы): AHPS, DVPPS, DRC, DRB, DRL, DRM, DRP, DRR, DRS, DRU, PMB, PMC, PMF, PMH, PMR, PMT, PJ, PJT, MDS
Продукция изготовлена в соответствии с Директивами 2006/95/EC, 2004/108/EC
Серийный выпуск

КОД ТН ВЭД ТС 8504 40 900 0

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ ТЕХНИЧЕСКИХ РЕГЛАМЕНТОВ ТАМОЖЕННОГО СОЮЗА:
ТР ТС 004/2011 «О БЕЗОПАСНОСТИ НИЗКОВОЛЬТНОГО ОБОРУДОВАНИЯ»
ТР ТС 020/2011 «ЭЛЕКТРОМАГНИТНАЯ СОВМЕСТИМОСТЬ ТЕХНИЧЕСКИХ СРЕДСТВ»

СЕРТИФИКАТ ВЫДАН НА ОСНОВАНИИ - протоколов испытаний от 29.12.2015 года №№ 8505-219-15/СП, 8506-219-15/СП, 8507-219-15/СП, 8508-219-15/СП Испытательной лаборатории Общества с ограниченной ответственностью «СПБ-Стандарт», аттестат аккредитации регистрационный № РОСС RU.0001.21АВ94 срок действия с 28.10.2011 по 28.10.2016 года;
- акта анализа состояния производства от 18.01.2016 года № 6477/2016 органа по сертификации продукции Общества с ограниченной ответственностью «Гарант Плюс»;
- эксплуатационных документов

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ Условия и сроки хранения продукции, срок службы (годности) указаны в прилагаемой к продукции эксплуатационной документации

СРОК ДЕЙСТВИЯ С 18.01.2016 **ПО** 17.01.2021 **ВКЛЮЧИТЕЛЬНО**

М.П.

Руководитель (уполномоченное лицо) органа по сертификации (подпись) К.С. Мельникова (инициалы, фамилия)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) (подпись) М.Ю. Шапкин (инициалы, фамилия)

ТАМОЖЕННЫЙ СОЮЗ

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ТС RU C-TW.АЛ16.В.08474

Серия RU № 0242324

Сведения по сертификату соответствия
Филиалы завода-изготовителя: «Delta Electronics (Jiang Su) LTD» Место нахождения: No 1688, Jiangxing East Road, Wujiang Economy Development Zone, Wujiang City, Jiangsu province, Китайская Народная Республика Фактический адрес: No 1688, Jiangxing East Road, Wujiang Economy Development Zone, Wujiang City, Jiangsu province, Китайская Народная Республика «Delta Electronics (Thailand) Plc.» Место нахождения: 909 Soi 9, Moo 4, E.P.Z., Bangpoo Industrial Estate, Tambon Prakasa, Amphur Muang Samutprakarn, Samutprakarn 10280, Королевство Таиланд. Фактический адрес: 909 Soi 9, Moo 4, E.P.Z., Bangpoo Industrial Estate, Tambon Prakasa, Amphur Muang Samutprakarn, Samutprakarn 10280, Королевство Таиланд.

М.П.

Руководитель (уполномоченное лицо) органа по сертификации _____ (подпись) К.С. Мельникова (инициалы, фамилия)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы)) _____ (подпись) М.Ю. Шапкин (инициалы, фамилия)

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Industrial Services, Mobility and Transport,
Product Safety and Quality, Education and
Consulting, IT Services and Innovation

TÜVRheinland®
Precisely Right.

Delta Electronics, Inc.
Ms. Candy Lee, Manager
QA Dept.
3 Tungyuan Road
Chungli Industrial Zone
Taoyuan County 32063
Taiwan

Date : 28.10.2015
Our ref. : WLE ZTW1
Your ref.: MPBU-TW-201510011-1

Ref : R TÜV-Mark Approval

Type of Equipment : SWITCHING POWER SUPPLY
Model Designation : See Certificate
Certificate No. : R 50323663 0001
Report No. : 10053365 001

Dear Ms. Candy Lee,

The above specified equipment has been tested and found to be in accordance with the relevant requirements.

Please find enclosed your certificate as specified above.

If cancellation of the certificate is submitted by 15 November in a given year, no fee will be charged for the following year.

The certificate is issued with the reservation that the license holder applies all information required in § 6 of the ProdSG related to name and address of the manufacturer or his authorized representative / importer, including their respective contact addresses on the product prior to marketing of the product in the European Economic Area.

With kind regards,

Certification Body

Dipl.-Ing. F. Stoelzel

Enclosure

TÜV RHEINLAND TAIWAN LTD.
11F., No. 758, Sec. 4, Bade Rd.,
Songshan Dist., Taipei City 105,
Taiwan R. O. C.
Tel. (02) 2172-7000
Fax (02) 2528-0018
http: //www.tuv.com

TAICHUNG BRANCH:
No. 9, Lane 36, Sec. 3, Minsheng Rd.,
Daya Dist., Taichung City 428
Taiwan, R. O. C.
Tel. (04) 2560-2998
Fax (04) 2566-3598

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
R 50323663

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0001

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum**	*Date of Issue (day/mo/yr)*
MPBU-TW-201510011-1	ZTW1-WLE- 10053365 001	28.10.2015	

Genehmigungsinhaber *License Holder*
Delta Electronics, Inc.
3 Tungyuan Road
Chungli Industrial Zone
Taoyuan County 32063
Taiwan

Fertigungsstätte *Manufacturing Plant*
Delta Electronics Power
(Dongguan) Co., Ltd.
Delta Industrial Estate
Shijie Town, Dongguan City
Guangdong Province 523308
P.R. China

Prüfzeichen *Test Mark*

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www.tuv.com
ID 2000000000

Geprüft nach *Tested acc. to*
EN 60950-1:2006+A11+A1+A12+A2

Zertifiziertes Produkt (Geräteidentifikation) *Certified Product* *(Product Identification)*

Lizenzentgelte - Einheit *License Fee - Unit*

Einbau-Schaltnetzteil (SWITCHING POWER SUPPLY)

Bezeichnung (Type Designation)	: DRL-24V120W1X1X2	10
X1 steht für (stands for)	: alphanumerisch Charakter oder freibleibend (alphanumeric character or blank)	1
X2 steth für (stands for)	: N, R, A oder (or) S	1
Nennspannung (Rated Voltage)	: AC 100-240V, 50-60Hz	
Nennstrom (Rated Current)	: 2.5A	
Ausgang (Output)	: DC 24V/5A	
max. Umgebungstemperatur (max. Ambient Temperature)	: 1) 40°C (AC 100V) 2) 50°C (AC 240V) 3) 70°C (AC 100-240V)	
max. Betriebshöhe (max. Operating Altitude)	: 5000m	

Fortsetzung Blatt (continued on page) 02

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ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH TÜVRheinland Zertifizierungsstelle

Dipl.-Ing. F. Stoelzel

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
R 50323663

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0002

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum**	*Date of Issue* (day/mo/yr)
MPBU-TW-201510011-1	ZTW1-WLE- 10053365 001	28.10.2015	

Genehmigungsinhaber *License Holder*
Delta Electronics, Inc.
3 Tungyuan Road
Chungli Industrial Zone
Taoyuan County 32063
Taiwan

Fertigungsstätte *Manufacturing Plant*
Delta Electronics Power
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Delta Industrial Estate
Shijie Town, Dongguan City
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P.R. China

Prüfzeichen *Test Mark*

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EN 60950-1:2006+A11+A1+A12+A2

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product ***(Product Identification)***

Lizenzentgelte - Einheit
License Fee - Unit

Einbau-Schaltnetzteil (SWITCHING POWER SUPPLY)

wie Blatt (as page) 01
Fortsetzung (Continuation)

Schutzklasse : I
(Protection Class)
Verschmutzungsgrad : 2
(Pollution Degree)

Vermerke: Primär-und Sekundärkreise sind gemäß Verfahren 1 und 2 nach Abschnitt 2.9.4 getrennt. Der Einbau muß gemäß der zugehörigen Einbauanweisung erfolgen.
(Remark: Primary and secondary circuits are separated according to method 1 and 2 of clause 2.9.4. The installation has to be carried out according to the attached installation instruction.)

ANLAGE (Appendix): 1

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Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH TÜVRheinland® Zertifizierungsstelle

Dipl.-Ing. F. Stoelzel

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
R 50323663

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0003

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum**	*Date of Issue (day/mo/yr)*
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Zertifiziertes Produkt (Geräteidentifikation)
Certified Product ***(Product Identification)***

Lizenzentgelte - Einheit
License Fee - Unit

Einbau-Schaltnetzteil (SWITCHING POWER SUPPLY)

wie Blatt (as page) 01

Ergänzung
(Addition)

Bezeichnung (Type Designation)	: 1) TIPS-120W24V1MA	1
	2) DRL-48V120W1X1X2	1
	3) TIPS-120W48V1MA	1
X1 steht für (stands for)	: alphanumerisch Charakter oder freibleibend (alphanumeric character or blank)	1
X2 steth für (stands for)	: N, R, A oder (or) S	1
Ausgang (Output)	: 1) DC 24V/5A 2,3) DC 48V/2.5A	

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ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
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Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH
TÜV Rheinland®
Zertifizierungsstelle

Dipl.-Ing. F. Stoelzel

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
R 50323663

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0004

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum**	*Date of Issue* (day/mo/yr)
MPBU-TW-201510011-1	ZTW1-WLE- 10053365 001	28.10.2015	

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3 Tungyuan Road
Chungli Industrial Zone
Taoyuan County 32063
Taiwan

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Delta Electronics (Jiangsu) Ltd.
No. 1688, Jiangxing East Road
Wujiang Economic Development Zone
Wujiang City, Jiangsu Province 215200
P.R. China

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Zertifiziertes Produkt (Geräteidentifikation)
Certified Product *(Product Identification)*

Lizenzentgelte - Einheit
License Fee - Unit

Einbau-Schaltnetzteil (SWITCHING POWER SUPPLY)

wie Blatt (as page) 01

Ergänzung
(Addition)

Fertigungsstätte: siehe oben
(Factory) (see above)

ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
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Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH TÜVRheinland Zertifizierungsstelle

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TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg
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E191395

UL 60950-1 Recognized

UL 60950-1 Recognized for Canada

E131881

UL 60950-1 Recognized

UL 60950-1 Recognized for Canada

Industrial Control Equipment Certificate (ICE)

Power Supply and Buffer Module

E315355

UL 508 Listed

UL 508 Listed for Canada

E338991

UL 508 Listed

UL 508 Listed for Canada

Redundancy Module

E315355

UL 508 Listed

UL 508 Listed for Canada

Delta Standard Power Supplies

Class 2 Power Units

E350883

 UL 1310 Recognized

 UL 1310 Recognized for Canada

Thank you for your interest in our products.