

DRV-24 Series

120-480 WATTS - DELTA CLIQ VA- AC/DC DIN RAIL

FEATURES

- 24VDC 120W - 480W
- 1Ph AC/DC Power Supply
- DIN Rail Mountable
- LCD display monitoring
- The output current / voltage / peak current and temperature
- Life time expectancy alarm signal and monitoring
- Built-in active PFC with up to 94% efficiency
- Power Boost of 150% up to 7 seconds
- Advanced Power Boost (APB) – protect system and ensure continueing operation when large inrush current detected
- DC OK Contact and LED indicator for DC OK/ Overload
- Conformal coating on PCBAs to protect against common dust and chemical pollutants



Delta Electronics CliQ VA Series

120W to 480W 1 Phase Power Supplies

Delta Electronics introduces the CliQ VA DIN rail power supply series with LCD display. The LCD displays output current, output voltage, peak hold current, lifetime expectancy and ambient temperature data. The high power density product is designed according to major industrial safety standards. Similar to the CliQ M DIN rail series, CliQ VA provides 150% Power Boost up to 7 seconds, including the Advanced Power Boost (APB) feature. APB works in a way when large outrush current due to faulty load on a current path of a multiple loads connection is detected by APB, APB will trip the circuit breaker on that current path. This prevents the other connected loads from shutting down. Other features include compliance to harmonic current IEC/EN 61000-3-2, Class A, built-in DC OK contacts, and an LED for indicating DC OK and Overload conditions

OUTPUT	DRV-24V120W1PN	DRV-24V240W1PN	DRV-24V480W1PN
Output Voltage	24Vdc	24Vdc	24Vdc
Output Current	5A	10A	20A
Output Voltage Range	24V - 28Vdc	24V - 28Vdc	24V - 28Vdc
Line Regulation	20mV max. (85-264Vac, 100% load)	10mV max. (85-264Vac, 100% load)	10mV max. (85-264Vac, 100% load)
Load Regulation	100mV max, (85-264Vac, 0-100% load)	100mV max, (85-264Vac, 0-100% load)	100mV max, (85-264Vac, 0-100% load)
PARD (20MHz)	50mVpp max.	50mVpp max.	100mVpp max.
Start-up Time	At 24V, 5A: 750ms max. @ 230Vac	At 24V, 10A: 800ms max. @ 230Vac	At 24V, 20A: 1000ms max. @ 230Vac
Hold-up Time	70ms typ. (24V, 5A.) 230Vac	92ms typ. (24V, 5A.) 230Vac	90ms typ. (24V, 5A.) 230Vac
Start-up with capacitive loads	10,000uF max	10,000uF max	20,000uF max
Rise Time	50ms max.(5,000µF, 24V, 5A) 230Vac	120ms max.(5,000µF, 24V, 5A)230Vac	100ms max.(5,000µF, 24V, 5A) 230Vac

INPUT	DRV-24V120W1PN	DRV-24V240W1PN	DRV-24V480W1PN
Input Voltage	85-276Vac	85-276Vac	85-276Vac
Input Frequency	50-60Hz	50-60Hz	50-60Hz
Nominal DC Input Voltage	110-300Vdc	110-300Vdc	110-300Vdc
DC Input Voltage Range	88-375Vdc	88-375Vdc	Vertical Mounting: 88-375Vdc Horizontal Mounting: 100-375Vdc
Input Current	0.61A Typ. @ 230Vac	1.16A Typ. @ 230Vac	2.29A Typ. @ 230Vac
Efficiency at 100% Load	91% Typ. @ 230Vac	94% Typ. @ 230Vac	94% Typ. @ 230Vac
Max Inrush Current	(Cold Start) 15.0A max. @ 230Vac	(Cold Start) 10.0A max. @ 230Vac	(Cold Start) 13A max @ 230Vac
Power Factor at 100% load	0.93 Typ. @ 230Vac	0.95 Typ. @ 230Vac	0.95 Typ. @ 230Vac
Leakage Current	Enclosure to Neutral) < 0.45mA / 1.08mA : 264Vac, 50Hz, TN/TT system / IT system	(Enclosure to Neutral), < 0.74mA / 2.10mA: 264Vac, 50Hz, TN/TT system / IT system	(Enclosure to Neutral) < 0.80mA / 2.00mA: 264Vac, 50Hz, TN/TT system / IT system
Max Power Dissipation	At 24V,5A: 11.6W max, 230Vac	At 24V,10A: 16.7W max, 230Vac	At 24V,20A: 34W max, 230Vac

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ENVIRONMENTAL	DRV-24V120W1PN	DRV-24V240W1PN	DRV-24V480W1PN
Operating Temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Storage Temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Power De-rating	Vertical Mounting: > 60°C de-rate power by 2.5% / °C Horizontal Mounting: > 50°C de-rate power by 2.5% / °C	Vertical Mounting: > 60°C de-rate power by 2.5% / °C Horizontal Mounting: > 50°C de-rate power by 2.5% / °C	Vertical Mounting: > 60°C de-rate power by 2.5% / °C Horizontal Mounting: > 40°C de-rate power by 2.5% / °C
Operating Humidity	5 to 95% RH (Non-Condensing)	5 to 95% RH (Non-Condensing)	5 to 95% RH (Non-Condensing)
Shock Test (Non-Operating)	IEC 60068-2-27, 30G for a duration of 18ms, 2 times per direction, 6 times in total	IEC 60068-2-27, 30G for a duration of 18ms, 2 times per direction, 6 times in total	IEC 60068-2-27, 30G for a duration of 18ms, 2 times per direction, 6 times in total
Vibration Test (Non-Operating)	IEC 60068-2-6, Sine Wave: 10-500Hz; 3G peak; displacement of 0.35mm; 60 min per axis for all X, Y, Z	IEC 60068-2-6, Sine Wave: 10-500Hz; 3G peak; displacement of 0.35mm; 60 min per axis for all X, Y, Z	IEC 60068-2-6, Sine Wave: 10-500Hz; 3G peak; displacement of 0.35mm; 60 min per axis for all X, Y, Z
Operating Altitude	0 to 5,000 Meters	0 to 5,000 Meters	0 to 5,000 Meters
Pollution Degree	2	2	2
Bump Test (Operating)	IEC 60068-2-29, 10G (100m/S²) for a duration of 11ms, 1,000 times per direction, 6,000 times in total	IEC 60068-2-29, 10G (100m/S²) for a duration of 11ms, 1,000 times per direction, 6,000 times in total	IEC 60068-2-29, 10G (100m/S²) for a duration of 11ms, 1,000 times per direction, 6,000 times in total
Over Voltage Category	III	III	III

RELIABILITY	DRV-24V120W1PN	DRV-24V240W1PN	DRV-24V480W1PN
MTBF	MTBF (as per Telcordia SR-332): 1,444,000 hrs. I/P: 100Vac, O/P: 24V, 5A, Ta: 25°C 801,000 hrs. I/P: 100Vac, O/P: 24V, 5A, Ta: 40°C	MTBF (as per Telcordia SR-332): 1,268,000 hrs. I/P: 100Vac, O/P: 24V, 10A, Ta: 25°C 666,000 hrs. I/P: 100Vac, O/P: 24V, 10A, Ta: 40°C	MTBF (as per Telcordia SR-332): 751,100 hrs. I/P: 100Vac, O/P: 24V, 20A, Ta: 25°C 424,800 hrs. I/P: 100Vac, O/P: 24V, 20A, Ta: 40°C
Expected Cap Life Time	131,400hrs. O/P: 24V, 5A, Ta: 25°C 92,230hrs. @ 100Vac, 98,540hrs. @ 230Vac O/P: 24V, 5A, Ta: 40°C 131,400hrs. O/P: 24V, 2.5A, Ta: 40°C	131,400hrs. O/P: 24V, 10A, Ta: 25°C 81,490hrs. @ 100Vac, 121,350hrs. @ 230Vac O/P: 24V, 10A, Ta: 40°C 131,400hrs. O/P: 24V, 5A, Ta: 40°C	131,400hrs. O/P: 24V, 20A, Ta: 25°C 96,500hrs. @ 100Vac, 114,100hrs. @ 230Vac O/P: 24V, 20A, Ta: 40°C 131,400hrs. O/P: 24V, 10A, Ta: 40°C

MECHANICAL	DRV-24V120W1PN	DRV-24V240W1PN	DRV-24V480W1PN
Dimensions	124 x 60 x 139 mm	124 x 60 x 139 mm	124 x 82 x 149 mm
Weight	0.75 kg	1.02 kg	1.45 kg
Case Chassis / Cover	Aluminium and Plastic / Aluminium	Aluminium and Plastic / Aluminium	Aluminium and Plastic / Aluminium
Indicator	Green LED (DC OK) and Red LED (Overload)	Green LED (DC OK) and Red LED (Overload)	Green LED (DC OK) and Red LED (Overload)
Cooling System	Convection	Convection	Convection

MODEL NUMBER	OUTPUT VOLTAGE	OUTPUT CURRENT	OUTPUT POWER
DRV-24V120W1PN	24Vdc	5A	120W
DRV-24V240W1PN	24Vdc	10A	240W
DRV-24V480W1PN	24Vdc	20A	480W

DRV-24 Series

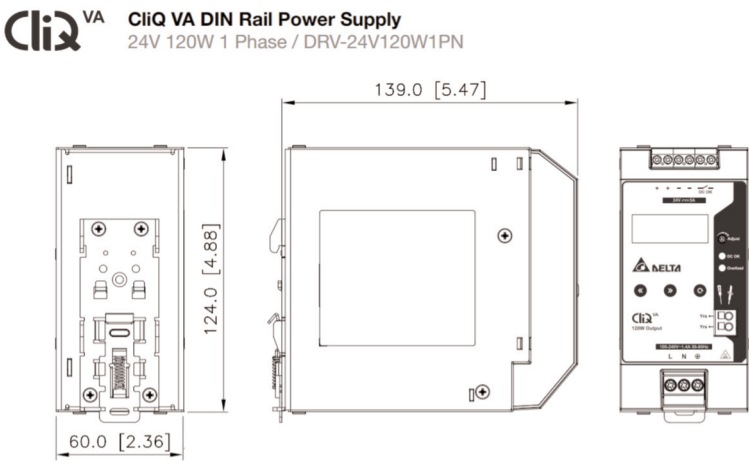
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SAFETY	
Electrical Safety	SIQ Bauart: EN 60950-1, EN 61010-1, EN 61010-2-201 UL/cUL recognized: UL 60950-1 and CSA C22.2 No. 60950-1 (File No. E191395) CB scheme: IEC 60950-1, IEC 61010-1, IEC 61010-2-201
CE	In conformance with EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU
Galvanic Isolation	3.0KVac: Input / Output, 2.0KVac: Input / PE, 3.0KVac: Input / DC OK relay contact, 1.5KVac: Output / PE 0.5KVac: Output / DC OK relay contact, 1.5KVac: DC OK relay contact / PE
Industrial Control Equipment	UL/cUL listed: UL 508 and CSA C22.2 No. 107.1-01 (File No. E315355)
Electrical Equipments of Machines	EN 60204-1 (over voltage category III)
Electrical Equipment for Use in Electrical Power Installations	IEC/EN 62477-1 / IEC 62103
Safety Entry Low Voltage	PELV* (EN 60204-1), SELV (EN 60950-1)
Material and Parts	RoHS Directive 2011/65/EU Compliant (EN 50581)
Isolation Resistance	> 5MOhm: Input to Output, 500Vdc
PE Resistance	< 0.10hm

PROTECTIONS	
Overvoltage	28.8 – 35.2V, SELV Output, Hiccup Mode, Non-Latching (Auto-Recovery)
Overload/Overcurrent	> 150% of rated load current, Constant current, Hiccup Mode (Auto-Recovery)
Over Temperature	< 80°C Surrounding Air Temperature @ 100% load, Non-Latching (Auto-Recovery)
Short Circuit	Hiccup Mode, Non-Latching (Auto-Recovery) when the fault is removed
Degree of Protection	IP20
Protection Against Shock	Class I with Primary Earth connection

EMC	
Emission	(CE & RE) Generic Standards: EN 61000-6-3 CISPR 32, EN 55032, CISPR 11, EN 55011, FCC Title 47: Class B
Immunity	Generic Standards: EN 55024, EN 61000-6-2
Harmonic Current Emissions	IEC/EN 61000-3-2, Class A
Voltage Fluctuation & Flicker	IEC/EN 61000-3-3
Component Supply General Use	EN 61204-3

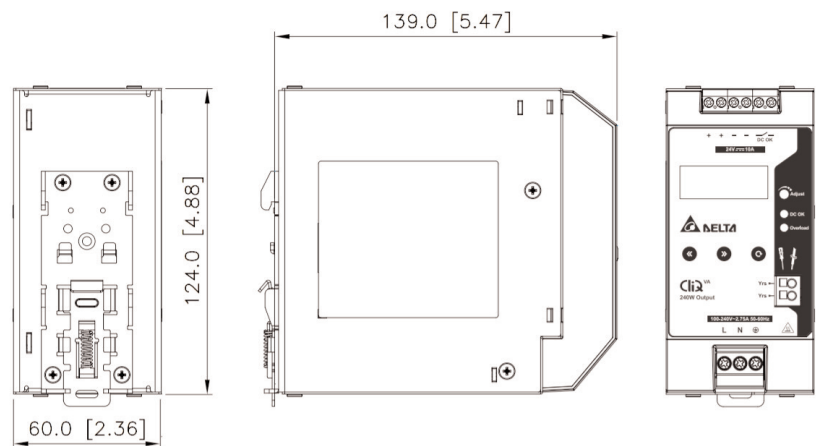
TECHNICAL ILLUSTRATIONS



DRV-24 Series

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CLiQ^{VA} **CLiQ VA DIN Rail Power Supply**
24V 240W 1 Phase / DRV-24V240W1PN



CLiQ^{VA} **CLiQ VA DIN Rail Power Supply**
24V 480W 1 Phase / DRV-24V480W1PN

