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DDC30 Series

DC-DC Power Supplies

XP Power

30 Watts

- 4:1 DC Input Range
- 5 V to 24 V DC Output
- Low Profile Design
- Ambient Operation from -40 °C to +70 °C
- Remote On/Off
- 1500 VDC Isolation
- Class A Conducted and Radiated Emissions
- High Efficiency – Up to 85%
- 3 Year Warranty



The DDC series is a range of DIN Rail mounting DC/DC converters designed to offer additional voltages in DIN Rail power systems, provide isolated outputs & noise immunity or support battery powered or battery backed applications. With a 4:1 wide input range the DDC series converters can be supplied by both a 12V or 24V nominal input and offer output voltages between 5VDC and 24VDC.

Dimensions:

DDC30:
1.38 x 3.58 x 2.22" (35.0 x 91.0 x 56.5 mm)

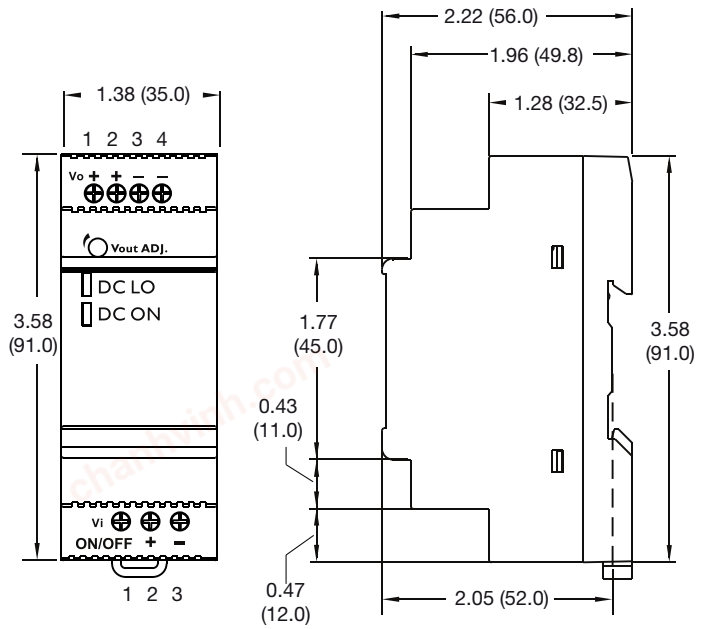
Models & Ratings

Output Voltage	Output Power	Output Voltage Trim	Output Current[1]	Input Current Typical, Max	Maximum Capacitive Load	Efficiency[2]	Model Number
5 V	22.5 W	4.75-5.5 V	4.5 A	1.13 A, 3.1 A	3500 µF	81%	DDC3024S05
9 V	25.0 W	8.55-9.9 V	2.8 A	1.25 A, 3.4 A	2200 µF	82%	DDC3024S09
12 V	30.0 W	11.4-13.8 V	2.5 A	1.48 A, 4 A	1000 µF	83%	DDC3024S12
15 V	30.0 W	14.25-16.5 V	2.0 A	1.48 A, 4 A	1000 µF	84%	DDC3024S15
24 V	30.0 W	22.8-27.6 V	1.25 A	1.48 A, 4 A	470 µF	85%	DDC3024S24

Notes

1. *Output current should be limited so that nominal output power is not exceeded*
2. *Typical efficiency at nominal input and full load.*

Mechanical Details



Pin Connector		
Conn	Pin	Designation
DC I/P	1	Remote On/Off
	2	+Vin
	3	-Vin
DC O/P	1	+Vout
	2	+Vout
	3	-Vout
	4	-Vout

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Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage Range	10		36	VDC	Input polarity reversal protection
Input Current					See Models and Ratings table
Inrush Current			90	A	at 36 V
Input Filter	Pi type				
Undervoltage Lockout	On at >8.5 V				
Input Surge			40	VDC	No Damage
Input Protection	T7.0A/63 VDC Internal Fuse				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	5		24	V	See Models and Ratings table
Output Voltage Trim				%	See Models and Ratings table
Initial Set Accuracy	0		+1	%	
Minimum Load	0			A	No minimum load required
Start Up Delay		50		ms	
Start Up Rise Time		7		ms	
Line Regulation			±1.0	%	
Load Regulation			±1.0	%	0 - 100% load
Transient Response			4	% deviation	Recovery to within 1% in <1 ms for a 50% load change at 0.25 A/µs rate
Ripple & Noise			100	mV pk-pk	20 MHz bandwidth
Short Circuit Protection					Constant Current, auto recovery
Overload Protection	110		165	%	Constant Current
Overvoltage Protection	115		135	%	Of nominal output voltage
Temperature Coefficient			0.03	%/°C	
Remote On/Off	Output On: Open circuit or 8-10 VDC WRT -Vin Output Off: -0.3 - 2 VDC WRT -Vin				

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		83		%	See Models and Ratings table
Isolation	1500			VDC	
Switching Frequency	100		200	kHz	
Power Density			2.7	W/in³	
Mean Time Between Failure	680			kHrs	MIL-HDBK-217F, +25 °C GB
Weight		0.265 (120)		lb (g)	
DC ON Indicator	90			%	Of nominal voltage. Green LED
DC Low Indicator	70		90	%	Of nominal voltage. Red LED

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-40		+70	°C	See derating curve
Storage Temperature	-55		+100	°C	
Humidity	5		90	%RH	Non-condensing
Operating Altitude			4850	m	
Cooling					Natural convection
Shock	±3 shocks in each plane, total 36 shocks of 15 g : 11 ms halfsine. Conforms to EN60068-2-27				
Vibration	10-500 Hz at 2 g sweep and endurance at resonance in all 3 planes. Conforms to EN60068-2-6				

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EMC: Emissions

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
Conducted	EN55022	Class A		
Radiated	EN55022	Class A		

EMC: Immunity

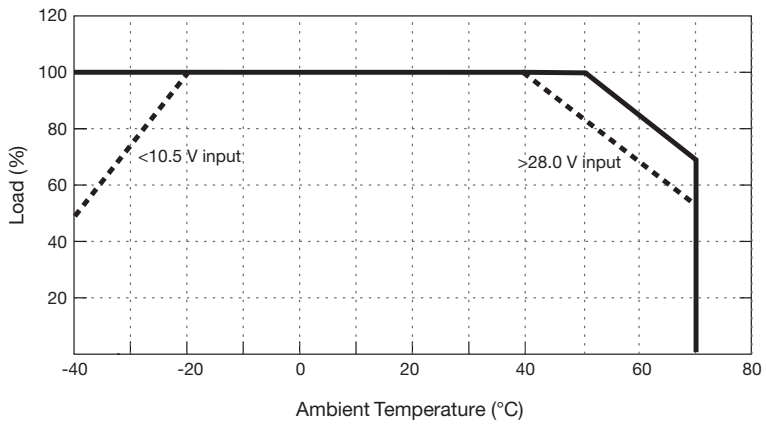
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD Immunity	EN61000-4-2	6 kV	A	Contact
		8 kV		Air Discharge
Radiated Immunity	EN61000-4-3	10 V/m	A	
EFT/Burst	EN61000-4-4	2	A	
Surge	EN61000-4-5	2	A	
Conducted	EN61000-4-6	10 V	A	
Magnetic Fields	EN61000-4-8	4	A	

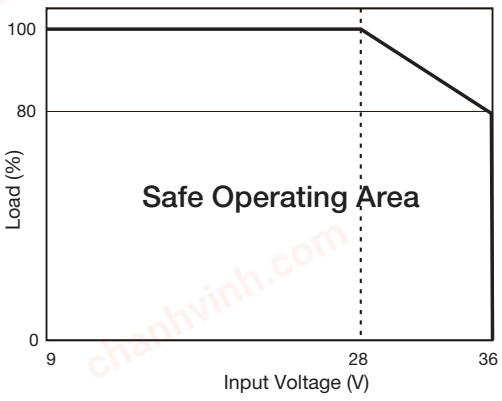
Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
UL	UL508, UL 62368-1:2014	Industrial Control Equipment
TUV	EN62368-1:2014/A11:2017	Information Technology
CB	IEC60950-1 +A1:2009	Information Technology

Application Notes

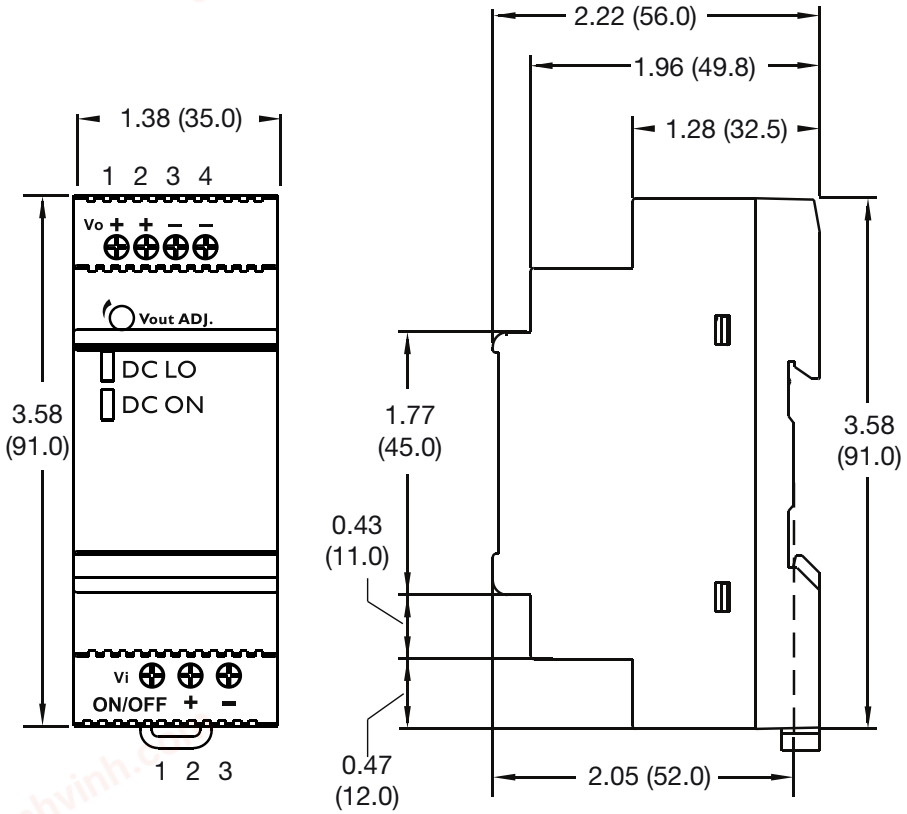
Derating Curves





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	3	-Vout
	4	-Vout

Notes

1. All dimensions in inches (mm)
2. Weight: 0.265 lbs (120 g)
3. Tolerance: ±0.02 in (±0.5 mm)
4. Screw terminal: 12-24 AWG cables size.
5. Connection screw maximum torque: Input: 6 lbs-in (0.68 Nm)