

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



Dimensions:

DDC30:

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

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.

Models & Ratings

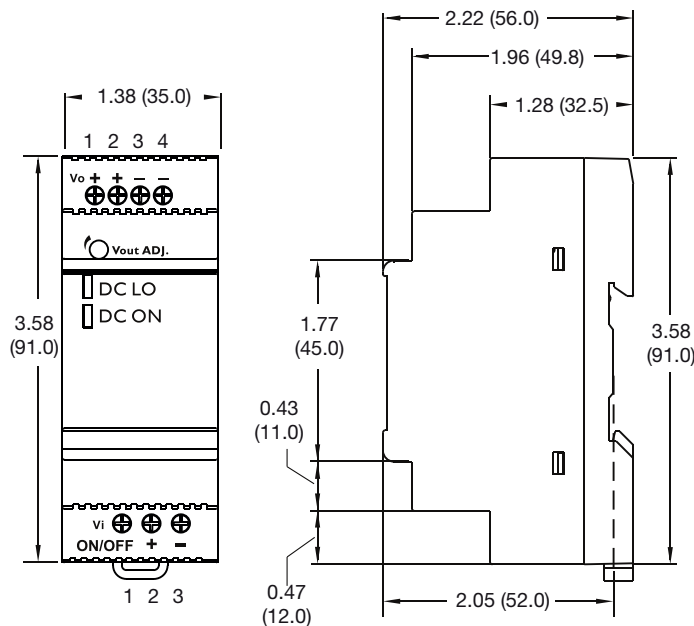
Output Voltage	Output Power	Output Voltage Trim	Output Current ⁽¹⁾	Input Current Typical, Max	Maximum Capacitive Load	Efficiency ⁽²⁾	Model Number
5 V	22.5 W	4.75-5.5 V	4.5 A	1.13 A, 3.1 A	3500 µF	81%	DDC3024S05
9 V	25.0 W	8.55-9.9 V	2.8 A	1.25 A, 3.4 A	2200 µF	82%	DDC3024S09
12 V	30.0 W	11.4-13.8 V	2.5 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

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 36V
Input Filter	Pi type				
Undervoltage Lockout	On at >8.5V				
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/in ³	
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				

EMC: Emissions

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

EMC: Immunity

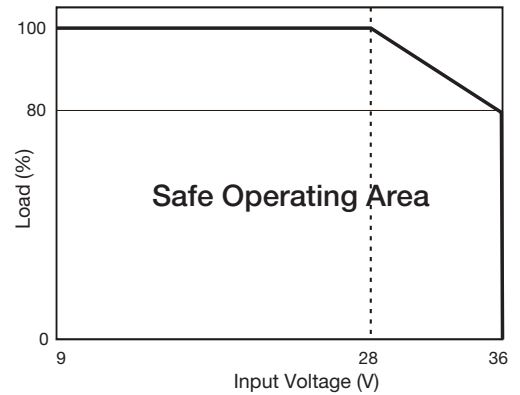
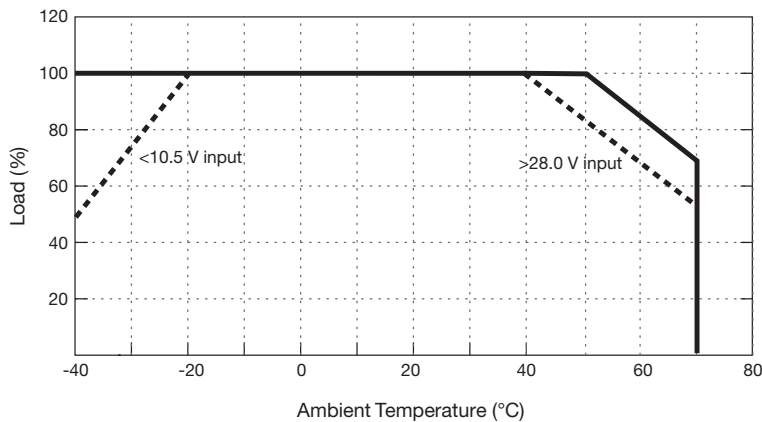
Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD Immunity	EN61000-4-2	6 kV	A	Contact
		8 kV		Air Discharge
Radiated Immunity	EN61000-4-3	10 V/m	A	
EFT/Burst	EN61000-4-4	2	A	
Surge	EN61000-4-5	2	A	
Conducted	EN61000-4-6	10 V	A	
Magnetic Fields	EN61000-4-8	4	A	

Safety Approvals

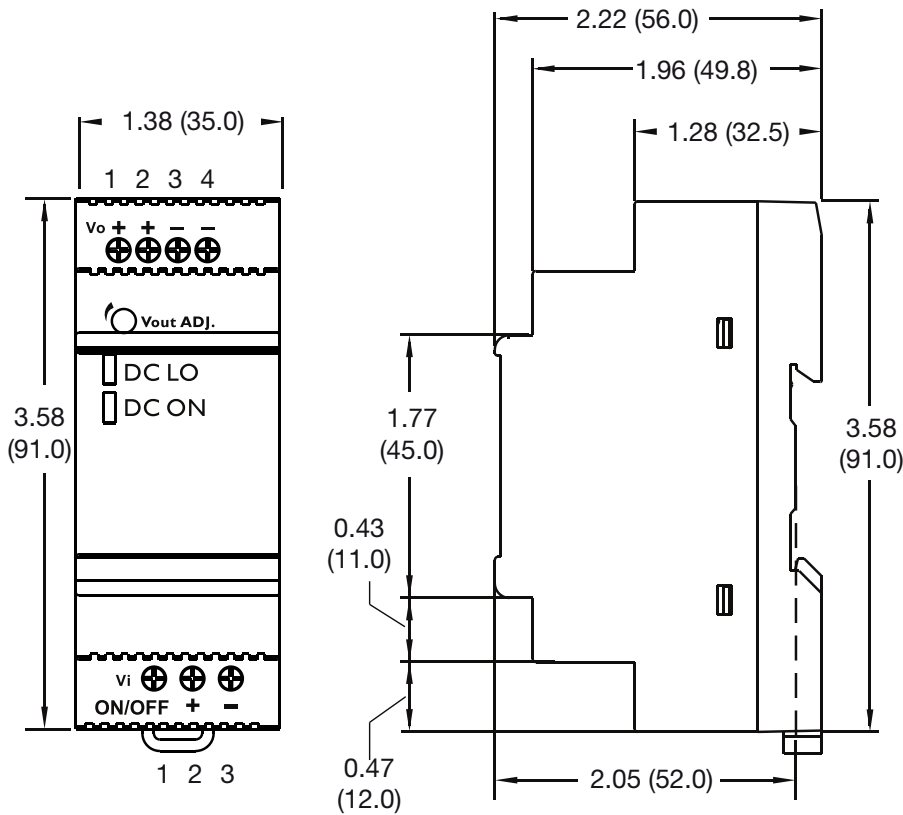
Safety Agency	Safety Standard	Notes & Conditions
UL	UL508, UL 62368-1:2014	Industrial Control Equipment
TUV	EN62368-1:2014/A11:2017	Information Technology
CB	IEC60950-1 +A1:2009	Information Technology

Application Notes

Derating Curves



Mechanical Details



Pin Connector		
Conn	Pin	Designation
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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)