

30W

DIN
rail mount

DC-DC
power supplies



The DDC30 series is a range DC-DC converters housed in a low-profile DIN rail case of a similar profile to that of circuit breakers, allowing them to fit in consumer unit style housings, or in standard control panel installations. 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 DDC30 series converters can be supplied by both a 12V or 24V nominal input and offer output voltages between 5VDC and 24VDC. Typical applications are: Machine control; Process control; Factory automation; Building heating/aircon monitoring, control & security systems; Escalator/travelator/elevator/lift control.



Features

- ▶ 4:1 DC input range 10V to 36VDC
- ▶ 5V to 24VDC output
- ▶ Low profile design
- ▶ Remote On/Off
- ▶ 1.5kVDC isolation
- ▶ Class B conducted & radiated emissions
- ▶ High efficiency – up to 85%
- ▶ Ambient operation from -40°C to +70°C
- ▶ 3 year warranty

Applications


Industrial


Instrumentation


Technology

Dimensions

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

Documentation

For further information click the link or scan the code

→ [xppower.com](https://www.xppower.com)



Models & ratings

Model number	Output voltage	Output power	Output voltage trim	Output current ⁽¹⁾	Input current, typ. max	Maximum capacitive load	Typical efficiency ⁽²⁾
DDC3024S05	5.0VDC	22.5W	4.75-5.5V	4.5A	1.13A, 3.1A	3500µF	81%
DDC3024S09	9.0VDC	25.0W	8.55-9.9V	2.8A	1.25A, 3.4A	2200µF	82%
DDC3024S12	12.0VDC	30.0W	11.4-13.8V	2.5A	1.48A, 4A	1000µF	83%
DDC3024S15	15.0VDC	30.0W	14.25-16.5V	2.0A	1.48A, 4A	1000µF	84%
DDC3024S24	24.0VDC	30.0W	22.8-27.6V	1.25A	1.48A, 4A	470µF	85%

Notes:

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

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 9.6V				
Input surge			40	VDC	No damage
Input protection	T3.0A/63VDC internal fuse				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	5		24	VDC	See models and ratings table
Output voltage trim	No minimum load required				
Initial set accuracy	0		+1	%	No minimum load required
Minimum load	No minimum load required				
Start Up delay		50		ms	
Start Up rise time		7		ms	
Line regulation			±1	%	
Load regulation			±1	%	0 - 100% load
Transient response			4	% deviation	Recovery to within 1% in <1ms for a 50% load change at 0.25A/μs rate
Ripple & noise			100	mV pk-pk	20MHz 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	Variable
Switching frequency	150		200	kHz	
Power density			0.16 (2.7)	W/cm³ (W/in³)	
Mean time between failure	680			khrs	MIL-HDBK-217F, +25°C GB
Weight		120.0 (0.265)		g (lbs)	
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		+85	°C	
Humidity	5		95	%RH	Non-condensing
Operating altitude			4850 (15912.07)	metres (ft)	
Cooling				m	Natural convection
Shock	±3 shocks in each plane, total 36 shocks of 15g : 11ms halfsine. Conforms to EN60068-2-27				
Vibration	10-500Hz at 2g sweep and endurance at resonance in all 3 planes. Conforms to EN60068-2-6				

Emissions - EMC

Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55032	Class A	
Radiated	EN55032	Class A	

Emissions - Immunity

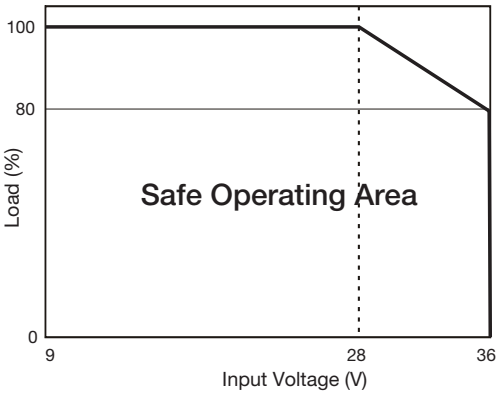
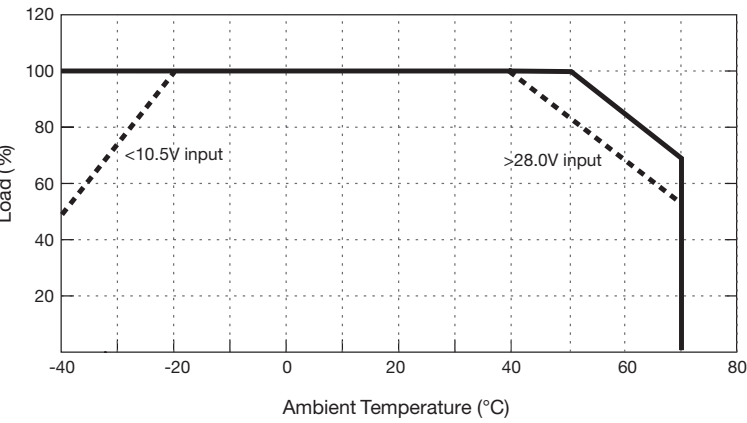
Phenomenon	Standard	Test Level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	6kV	B	Contact
		8kV		Air discharge
Radiated immunity	EN61000-4-3	10 V/m	A	
EFT/burst	EN61000-4-4	2	B	
Surge	EN61000-4-5	1	A B/C	
Conducted	EN61000-4-6	10V	A	
Magnetic fields	EN61000-4-8	4	A	

Safety approvals

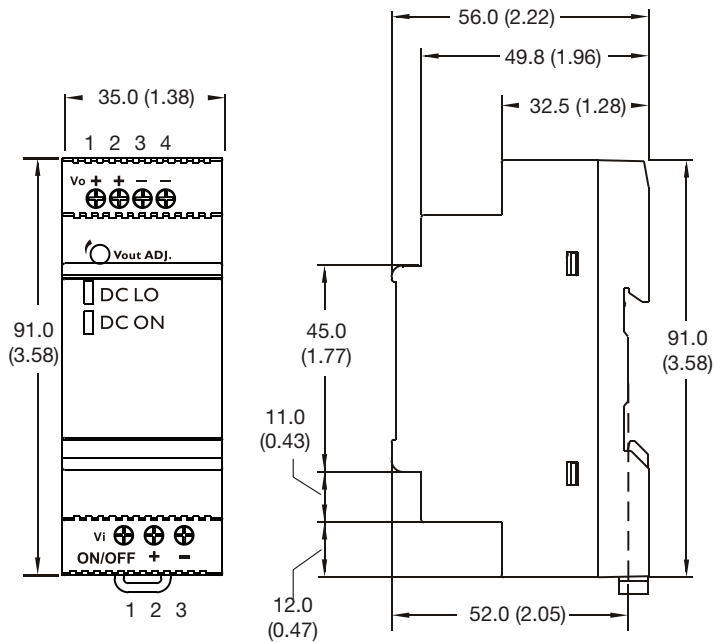
Certification	Standard	Notes & Conditions
UL	UL508, UL62368-1:2014	Industrial Control Equipment
EN	EN62368-1:2014/A11:2017	Information Technology
CB	IEC60950-1 +A1:2009	Information Technology
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Application notes

Derating curve



Mechanical details



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

Notes:

1. All dimensions in mm (inches).

2. Weight: 120g (0.265lbs)

3. Tolerances: x.xx (x.x) = ±0.5 (±0.02)
4. Screw terminal: 12-26AWG cables size.

5. Connection screw maximum torque: Input: 0.68Nm (6lbs-in)