

15W

DIN
rail mount

DC-DC
power supplies



The DDC15 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 DDC15 series converters can be supplied by both a 12V or 24V nominal input and offer output voltages between 3.3VDC 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 9V to 36VDC
- ▶ 3.3V to 24VDC outputs
- ▶ Low profile design
- ▶ 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

18.0 x 91.0 x 56.5mm (0.71" x 3.58" x 2.22")

Documentation

For further information click the link or scan the code

→ xppower.com



Models & ratings

Model number	Output voltage	Output power	Output current	Input current, typ Max	Maximum capacitive load	Typical efficiency ⁽¹⁾
DDC1524S03	3.3VDC	11.5W	3.50A	0.62A/1.8A	3500µF	79%
DDC1524S05	5.0VDC	13.5W	2.70A	0.70A/1.9A	3500µF	80%
DDC1524S09	9.0VDC	13.5W	1.50A	0.70A/1.9A	2200µF	81%
DDC1524S12	12.0VDC	15.0W	1.25A	0.76A/2.1A	1000µF	82%
DDC1524S15	15.0VDC	15.0W	1.00A	0.76A/2.1A	1000µF	83%
DDC1524S24	24.0VDC	15.0W	0.63A	0.76A/2.1A	470µF	83%

Notes:

1. Typical efficiency at nominal input and full load.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range	9		36	VDC	
Input current	See models and ratings table				
Inrush current			95	A	At 36V
Input filter	Pi type				
Undervoltage lockout	On at >8.5V				
Input surge			40	VDC	No damage
Input protection	T3.0A/63VDC internal fuse				

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	3.3		24	VDC	See models and ratings table
Initial set accuracy	0		±1	%	No minimum load required
Minimum load	No minimum load required				
Start Up delay		50		ms	
Start Up rise time		11		ms	
Line regulation			±1	%	
Load regulation			±1.5, ±1	%	3V3 model, other models
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	Trip & restart (hiccup mode), auto recovery				
Overload protection	110		165	%	Trip & restart (hiccup mode)
Overvoltage protection	115		135		Of nominal output voltage
Temperature coefficient			0.03	%/°C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency		82		%	See models and ratings table
Isolation	1500			VDC	Variable
Switching frequency	150		300	kHz	
Power density			0.16 (2.7)	W/cm³ (W/in³)	
Mean time between failure	990			khrs	MIL-HDBK-217F, +25°C GB
Weight		65.0 (0.143)		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 B	
Radiated	EN55032	Class B	

Emissions - Immunity

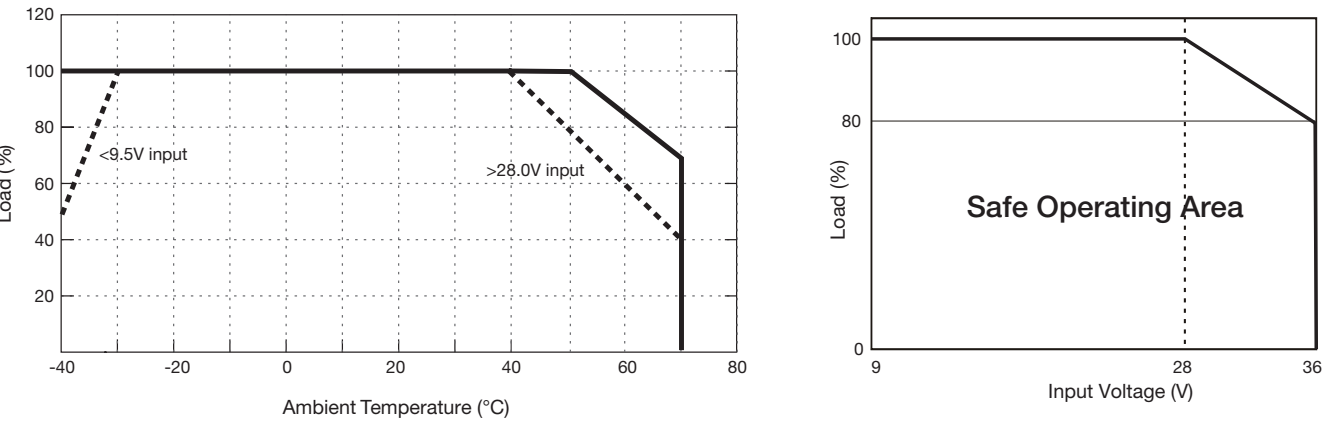
Phenomenon	Standard	Test Level	Criteria	Notes & conditions
ESD immunity	EN61000-4-2	6kV	B	Contact
		8kV		Air discharge
Radiated immunity	EN61000-4-3	10 V/m	A	
EFT/burst	EN61000-4-4	2	B	
Surge	EN61000-4-5	1	A B/C	
Conducted	EN61000-4-6	10V	A	
Magnetic fields	EN61000-4-8	4	A	

Safety approvals

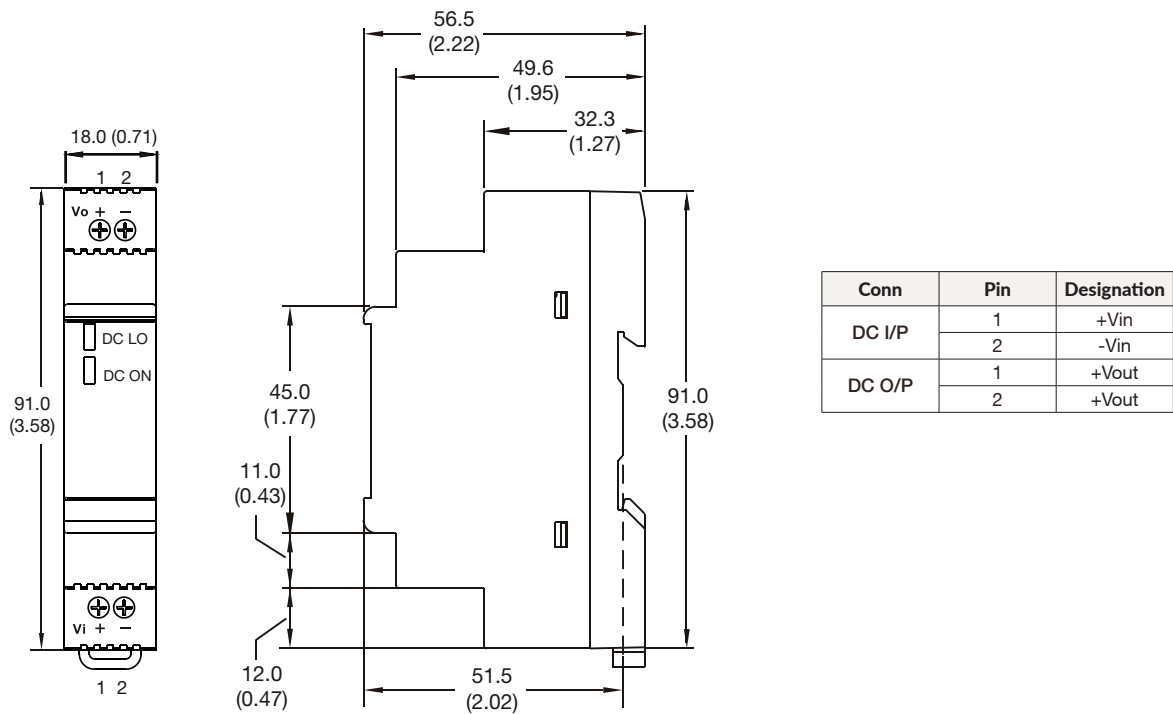
Certification	Standard	Notes & Cconditions
UL	UL508, UL62368-1:2014	Industrial Control Equipment
EN	EN62368-1:2014/A11:2017	Information Technology
CB	IEC60950-1 +A2:2013	Information Technology
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Application notes

Derating curve



Mechanical details



Notes:

1. All dimensions in mm (inches).
2. Weight: 65g (0.143lbs)
3. Tolerances: x.xx (x.x) = ±0.5 (±0.02)
4. Screw terminal: 12-26AWG cables size.
5. Connection screw maximum torque: Input: 0.56Nm (5lbs-in)