



MicroPower Direct



ADB05, ADB10, ADB16 Series

Miniature, High Performance AC/DC Power Supplies

Electrical Specifications

Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Range	See Note 1	90		264	VAC
Input Frequency	See Note 1	47		63	Hz
Input Current	See Model Selection Guides				
Inrush Current	115 VAC		14.1		A Pk
	230 VAC		32.5		
EMI	Meets CISPR PUB. 22/FCC Class B				
Safety Ground Leakage Current	115 VAC			0.5	mA
	230 VAC			3.5	

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage	See Model Selection Guides				
Output Current	See Model Selection Guides				
Output Voltage Accuracy	See Note 2		±2.0		%
Line Regulation	See Model Selection Guides				
Load Regulation	See Model Selection Guides				
Noise & Ripple			1.0		% Pk- Pk
Hold-Up Time	115 VAC		20		mSec.
	230 VAC		80		
Transient Response	See Note 4			3	mSec
Temperature Coefficient			0.02		%/1C
Over Voltage Protection	Primary Output	116	124	132	% V _{OUT}
Short Circuit Protection	Power Foldback, Self-Recovering				
Overload Protection	Typ. 130% of Output Power, Foldback Type				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Efficiency	See Model Selection Guides				
Isolation Voltage	Input to Output	3,000			VAC
	Input to Ground	1,500			
	Output to Ground	500			
Switching Frequency	See Note 5		75		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range		-0		+50	1C
Storage Temperature Range		-40		+85	1C
Cooling	Free Air Convection (see derating curve)				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	See Mechanical Configurations (Page 4)
Case Material	Impact Resistant, Non-Conductive Black Plastic

Key Features:

- 3,000VAC Isolation
- Universal Input Range
- Full Safety Approvals
- Single, Dual & Triple Outputs
- Miniature Packaging
- Wide Operating Temp
- Low Leakage Current
- LOW LOW COST



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Specifications typical @ +251C with nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

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Model Selection Guide, ADB05 Series

Model Number	Input Current		Output One (Vout 1)		Output Two (Vout 2)		Regulation		Efficiency
	115 VAC	230 VAC	Voltage	Current	Voltage	Current	Line	Load	
ADB05S03	0.15A	0.07A	3.3 VDC	1.33A			±0.1%	±1.0%	65%
ADB05S05	0.15A	0.07A	5.0 VDC	1.00A			±0.1%	±1.0%	65%
ADB05S12	0.15A	0.07A	12.0 VDC	0.45A			±0.1%	±1.0%	67%
ADB05S15	0.15A	0.07A	15.0 VDC	0.36A			±0.1%	±1.0%	67%
ADB05D05	0.15A	0.07A	+5.0 VDC	+0.50A	-5.0 VDC	-0.50A	±0.5%	±2.0%	65%
ADB05D12	0.15A	0.07A	+12.0 VDC	+0.23A	-12.0 VDC	-0.23A	±0.5%	±2.0%	67%
ADB05D15	0.15A	0.07A	+15.0 VDC	+0.18A	-15.0 VDC	-0.18A	±0.5%	±2.0%	67%

Model Selection Guide, ADB10 Series

Model Number	Input Current		Output One (Vout 1)		Output Two (Vout 2)		Output Three (Vout 3)		Regulation		Efficiency
	115 VAC	230 VAC	Voltage	Current	Voltage	Current	Voltage	Current	Line	Load	
ADB10S03	0.3A	0.13A	3.3 VDC	2.40A					±0.1%	±1.0%	70%
ADB10S05	0.3A	0.13A	5.0 VDC	2.00A					±0.1%	±1.0%	70%
ADB10S12	0.3A	0.13A	12.0 VDC	0.83A					±0.1%	±1.0%	70%
ADB10S15	0.3A	0.13A	15.0 VDC	0.70A					±0.1%	±1.0%	70%
ADB10S24	0.3A	0.13A	24.0 VDC	0.45A					±0.1%	±1.0%	70%
ADB10S48	0.3A	0.13A	48.0 VDC	0.25A					±0.1%	±1.0%	70%
ADB10D05	0.3A	0.13A	+5.0 VDC	+1.00A	-5.0 VDC	-1.00A			±0.2%	±2.0%	70%
ADB10D12	0.3A	0.13A	+12.0 VDC	+0.45A	-12.0 VDC	-0.45A			±0.2%	±2.0%	70%
ADB10D15	0.3A	0.13A	+15.0 VDC	+0.35A	-15.0 VDC	-0.35A			±0.2%	±2.0%	70%
ADB10T305	0.3A	0.13A	+3.3 VDC	+1.00A	+5.0 VDC	+0.40A	-5.0 VDC	-0.40A	±0.5%	See Note 3	73%
ADB10T312	0.3A	0.13A	+3.3 VDC	+1.00A	+12.0 VDC	+0.25A	-12.0 VDC	-0.25A	±0.5%		73%
ADB10T512	0.3A	0.13A	+5.0 VDC	+1.00A	+12.0 VDC	+0.25A	-12.0 VDC	-0.25A	±0.5%		73%
ADB10T515	0.3A	0.13A	+5.0 VDC	+1.00A	+15.0 VDC	+0.20A	-15.0 VDC	-0.20A	±0.5%		73%

Model Selection Guide, ADB16 Series

Model Number	Input Current		Output One (Vout 1)		Output Two (Vout 2)		Output Three (Vout 3)		Regulation		Efficiency
	115 VAC	230 VAC	Voltage	Current	Voltage	Current	Voltage	Current	Line	Load	
ADB16S03	0.33A	0.16A	3.3 VDC	3.70A					±0.1%	±1.0%	73%
ADB16S05	0.33A	0.16A	5.0 VDC	3.00A					±0.1%	±1.0%	73%
ADB16S12	0.33A	0.16A	12.0 VDC	1.35A					±0.1%	±1.0%	73%
ADB16S15	0.33A	0.16A	15.0 VDC	1.10A					±0.1%	±1.0%	73%
ADB16S24	0.33A	0.16A	24.0 VDC	0.70A					±0.1%	±1.0%	73%
ADB16S48	0.33A	0.16A	48.0 VDC	0.35A					±0.1%	±1.0%	73%
ADB16D05	0.33A	0.16A	+5.0 VDC	+1.50A	-5.0 VDC	-1.50A			±0.5%	±2.0%	75%
ADB16D12	0.33A	0.16A	+12.0 VDC	+0.68A	-12.0 VDC	-0.68A			±0.5%	±2.0%	75%
ADB16D15	0.33A	0.16A	+15.0 VDC	+0.55A	-15.0 VDC	-0.55A			±0.5%	±2.0%	75%
ADB16T305	0.33A	0.16A	+3.3 VDC	+1.80A	+5.0 VDC	+0.75A	-5.0 VDC	-0.75A	±0.5%	See Note 3	73%
ADB16T312	0.33A	0.16A	+3.3 VDC	+1.80A	+12.0 VDC	+0.30A	-12.0 VDC	-0.30A	±0.5%		73%
ADB16T512	0.33A	0.16A	+5.0 VDC	+1.80A	+12.0 VDC	+0.30A	-12.0 VDC	-0.30A	±0.5%		73%
ADB16T515	0.33A	0.16A	+5.0 VDC	+1.80A	+15.0 VDC	+0.24A	-15.0 VDC	-0.24A	±0.5%		73%

Specification Notes

1. All models will also operate off a DC input of 110 VDC to 340 VDC.
2. The primary output (Vout1) is adjustable by approximately -10% to +15%. The adjustment pot is located on the top of the unit.
3. Load regulation for **ADB10** and **ADB16** triple output models is $\pm 2.0\%$ for Vout 1 and Vout 3. Load regulation for Vout 2 is $\pm 5.0\%$. Load regulation for all models is measured with the output under test undergoing a load step change of 100% to 50% at nominal input and all other outputs at 50% load.
4. Transient response is measured for the output returning to within specification within 3 mS following a 50% load change.
5. The switching frequency of the **ADB16** series is 83 kHz.
6. It is recommended that an external 1A/250 VAC fuse be connected to the input line.

Remote ON/OFF (ADB16 Only)

Parameter	Min	Max.	Units
Supply ON	2.5	7.0 or Open	VDC
Supply OFF	Short or 0.0	0.8	VDC

TTL/CMOS Compatible Input

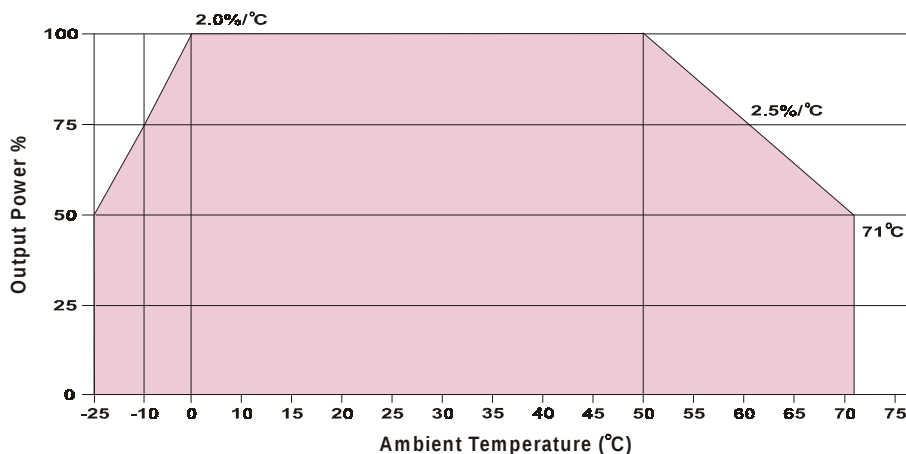
Referenced to DC Gnd

Derating Curve

All **ADB05/10/16** models are specified for operation over the wide operating temp range of 0°C to +50°C without derating. For operation over +50°C, without moving air, derate the output power linearly 2.5%/°C to 50% output power at +71°C.

For operation below 0°C, see the derating curve at left. With proper derating, the units can be operated down to -25°C.

To operate the units over +50°C at full load, a minimum forced air flow of 100 LFM is recommended



Peak Output Capability

The maximum and peak current capabilities of all ADB05/10/16 models are given in the charts below. These specifications are defined as:

Maximum - The maximum continuous operating load of each output. On multiple output units, the max load cannot be drawn from each output at the same time. The total output load cannot exceed the rating for the whole unit.

Peak - The peak output load can be drawn for less than 60 seconds at a duty cycle that is less than 10%

Single Output Models

Model Number	Output		
	Voltage	Max. Current	Peak Current
ADB05S03	3.3 VDC	1.33A	1.59A
ADB05S05	5.0 VDC	1.00A	1.20A
ADB05S12	12.0 VDC	0.45A	0.54A
ADB05S15	15.0 VDC	0.36A	0.43A
ADB10S03	3.3 VDC	2.40A	2.88A
ADB10S05	5.0 VDC	2.00A	2.44A
ADB10S12	12.0 VDC	0.83A	1.00A
ADB10S15	15.0 VDC	0.70A	0.84A
ADB10S24	24.0 VDC	0.45A	0.54A
ADB10S48	48.0 VDC	0.25A	0.30A
ADB16S03	3.3 VDC	3.70A	4.44A
ADB16S05	5.0 VDC	3.00A	3.60A
ADB16S12	12.0 VDC	1.35A	1.62A
ADB16S15	15.0 VDC	1.10A	1.32A
ADB16S24	24.0 VDC	0.70A	0.84A
ADB16S48	48.0 VDC	0.35A	0.42A

Dual Output Models

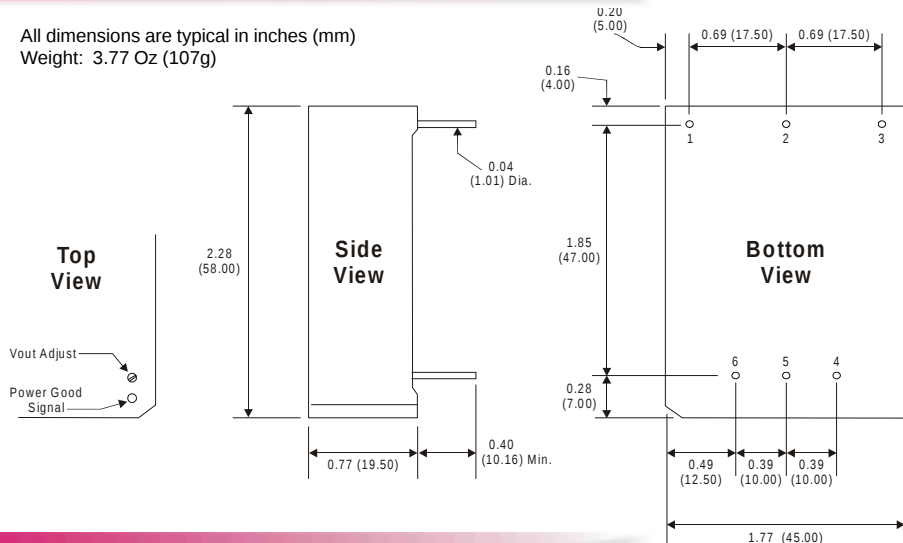
Model Number	Outputs (Vout 1 & Vout 2)		
	Voltage	Max. Current	Peak Current
ADB05D05	± 5.0 VDC	± 0.50 A	± 0.57 A
ADB05D12	± 12.0 VDC	± 0.23 A	± 0.26 A
ADB05D15	± 15.0 VDC	± 0.18 A	± 0.20 A
ADB10D05	± 5.0 VDC	± 1.00 A	± 1.15 A
ADB10D12	± 12.0 VDC	± 0.45 A	± 0.51 A
ADB10D15	± 15.0 VDC	± 0.35 A	± 0.40 A
ADB16D05	± 5.0 VDC	± 1.50 A	± 1.72 A
ADB16D12	± 12.0 VDC	± 0.68 A	± 0.78 A
ADB16D15	± 15.0 VDC	± 0.55 A	± 0.63 A

Triple Output Models

Model Number	Output One (Vout 1)			Output Two/Three (Vout 2/3)		
	Voltage	Max. Current	Peak Current	Voltage	Max. Current	Peak Current
ADB10T305	+3.3 VDC	+1.00A	+1.15A	± 5.0 VDC	± 0.40 A	± 0.46 A
ADB10T312	+3.3 VDC	+1.00A	+1.15A	± 12.0 VDC	± 0.25 A	± 0.29 A
ADB10T512	+5.0 VDC	+1.00A	+1.15A	± 12.0 VDC	± 0.25 A	± 0.28 A
ADB10T515	+5.0 VDC	+1.00A	+1.15A	± 15.0 VDC	± 0.20 A	± 0.23 A
ADB16T305	+3.3 VDC	+1.80A	+2.0A	± 5.0 VDC	± 0.75 A	± 0.86 A
ADB16T312	+3.3 VDC	+1.80A	+2.0A	± 12.0 VDC	± 0.30 A	± 0.35 A
ADB16T512	+5.0 VDC	+1.80A	+2.0A	± 12.0 VDC	± 0.30 A	± 0.34 A
ADB16T515	+5.0 VDC	+1.80A	+2.0A	± 15.0 VDC	± 0.24 A	± 0.27 A

Mechanical Configuration - AB05 Series

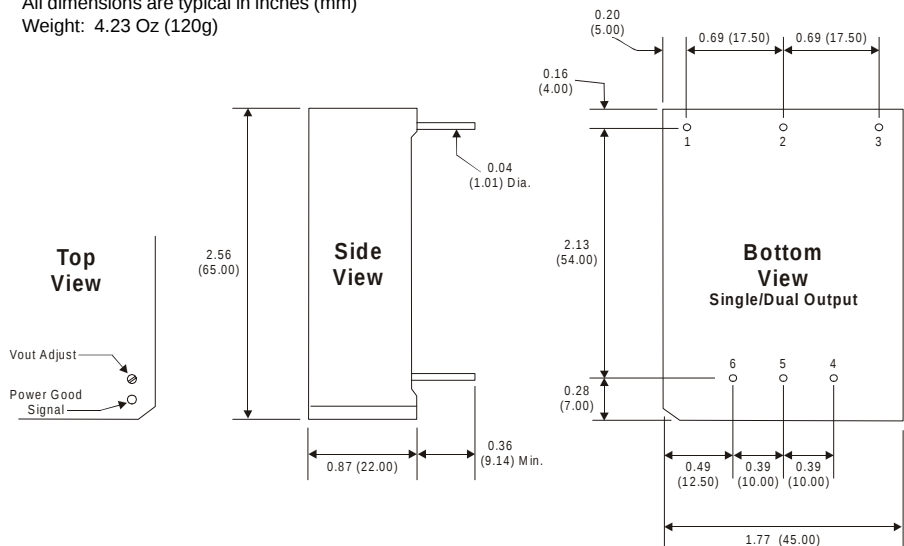
All dimensions are typical in inches (mm)
Weight: 3.77 Oz (107g)



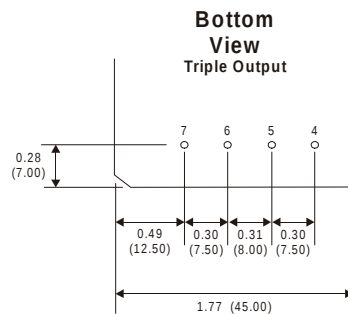
Pin	Single Output	Dual Output
1	AC-Ground	AC-Ground
2	AC-Neutral	AC-Neutral
3	AC-Line	AC-Line
4	+V _{out 1}	+V _{out 1}
5	No Pin	Common
6	-V _{out 1}	-V _{out 2}

Mechanical Configuration - AB10 Series

All dimensions are typical in inches (mm)
Weight: 4.23 Oz (120g)

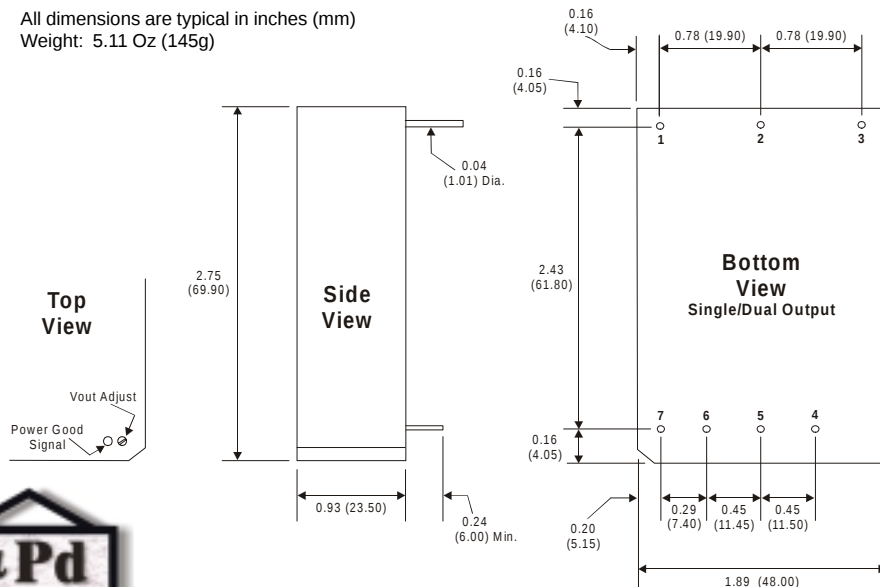


Pin	Single Output	Dual Output	Triple Output
1	AC-Ground	AC-Ground	AC-Ground
2	AC-Neutral	AC-Neutral	AC-Neutral
3	AC-Line	AC-Line	AC-Line
4	+Vout 1	+Vout 1	+Vout 2
5	No Pin	Common	+Vout 1
6	-Vout 1	-Vout 2	Common
7	No Pin	No Pin	-Vout 3



Mechanical Configuration - AB16 Series

All dimensions are typical in inches (mm)
Weight: 5.11 Oz (145g)



Pin	Single Output	Dual Output	Triple Output
1	AC-Ground	AC-Ground	AC-Ground
2	AC-Neutral	AC-Neutral	AC-Neutral
3	AC-Line	AC-Line	AC-Line
4	+Vout 1	+Vout 1	-Vout 3
5	No Pin	Common	+Vout 1
6	Common	-Vout 2	Common
7	Remote On/Off	Remote On/Off	+Vout 2
8	No Pin	No Pin	Remote On/Off

