VIA AIM™
AIM1714xB6AB6D0yzz

Universal AC Input Module

Features & Benefits

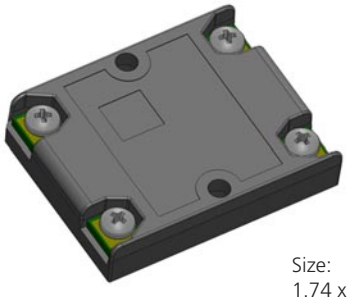
- Universal input (85 to 264 Vac, 47 to 63 Hz)
- Can be used with any Vicor VIA PFM product
- Ease of use
- Chassis Mount or PCB Mount Form Factor
- Small robust package
- Low profile
- Cost effective
- EMI filtering
- Enables EN61000-4-5 Class 3 surge protection when used with Vicor PFM products

Product Description

The VIA AIM (AC Input Module) is a front end module designed to interface directly with worldwide AC mains and provide a rectified AC input to Vicor's family of VIA PFM products. The VIA AIM combines a bridge rectifier, EMI filter, and surge protection circuitry in an easy to use VIA plastic housing. Together, the VIA AIM and VIA PFM realize a small, efficient, simple, and cost effective EMI Class V AC-DC solution for a broad range of end applications.

Typical Applications

- Small cell base stations
- Telecom switching equipment
- LED lighting
- Test and Measurement Equipment
- 200 – 400 W Industrial Power Systems
- Office Equipment

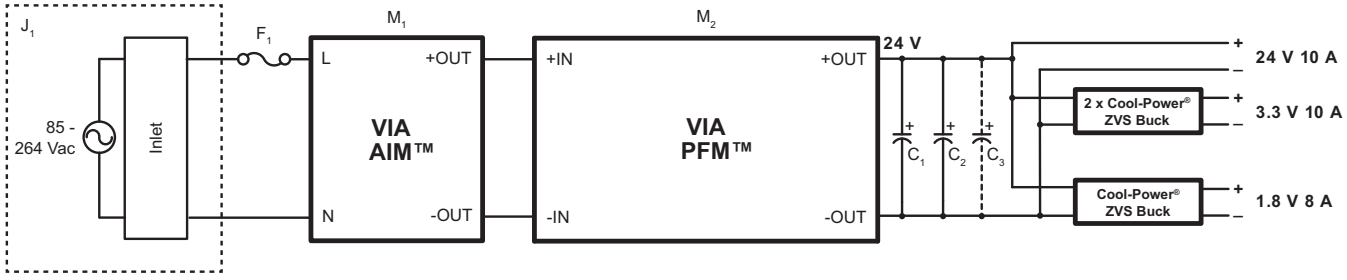


Size:
1.74 x 1.40 x .37 in
44.2 x 35.5 x 9.3 mm

Part Ordering Information

Product Function	Package Length	Package Width	Package Type	Input Voltage	Range Ratio	Output Voltage (Range)	Max Output Current	Product Grade	Option Field	
AIM	17	14	x	B6	A	B6	D0	y	z	z
AIM = AC Input Module	Length in Inches x 10	Width in Inches x 10	B = Board VIA V = Chassis VIA	Internal Reference				C = -20 to 100°C T = -40 to 100°C	00 = Chassis/Always On 04 = Short Pin/Always On 08 = Long Pin/Always On	

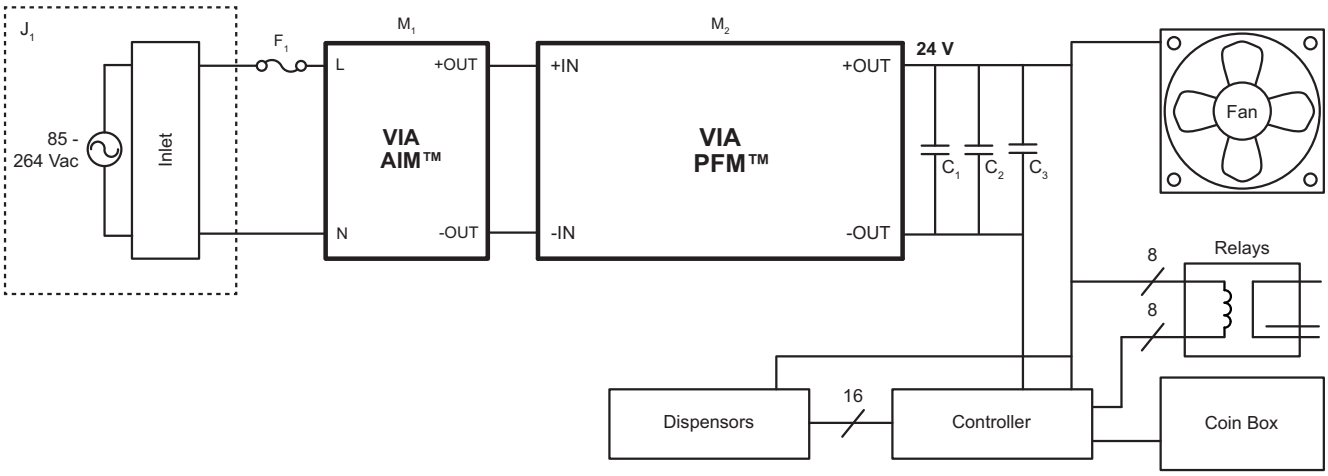
Typical PCB Mount Applications



The PCB terminal option allows mounting on an industry standard printed circuit board, with two different pin lengths.

Parts List for Typical PCB Mount Applications	
J1	**Qualtek** 703 W IEC 320-C14 Power Inlet
F1	**Littelfuse** 0216008.MXP 8 A 250 VAC 5 x 20 mm holder
M1	**Vicor AIM™** AIM1714VB6AB6D0T00
M2	**Vicor PFM™** PFM4414xB6M24D0yzz
C1, C2, (C3)	**Nichicon** UVR1V153MRD 15,000 µF 35 V 4.3 A 25 x 50 mm bent 90°, x 3 pcs **or**
	CDE 380LX153M035A022 15,000 µF 35 V 5.6 A 35 x 30 mm snap in, x 3 pcs **or**
	Sic Safco Cubisic LP A712062 22,000 µF 35 V 5.8 A 45 x 75 x 12 mm rectangular, x 2 pcs

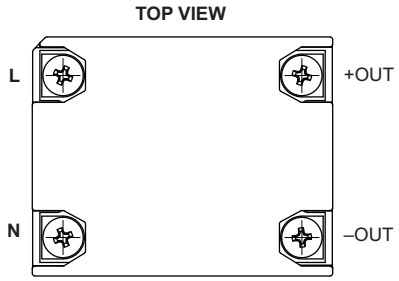
Typical Chassis Mount Applications



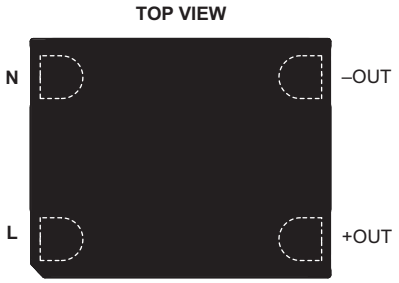
The VIA AIM and VIA PFM are available in Chassis Mount option, saving the cost of a PCB and allowing access to both sides of the power supply for cooling. The parts list below minimizes the number of interconnects required between necessary components, and selects components with terminals traditionally used for point to point chassis wiring.

Parts List for Typical Chassis Mount Applications	
J1	**Qualtek** 719 W or 723 W IEC 320-C14 Power Inlet
F1	**Littelfuse** 0216008.MXP 8 A 250 VAC 5 x 20 mm in a J1, or separate fuse holder
M1	**Vicor AIM™** AIM1714VB6AB6D0T00
M2	**Vicor PFM™** PFM4414xB6M24D0yzz
C1, C2, C3	**Nichicon** LNT1V153MSE 15,000 µF 35 V 5.1 A 35 x 83 mm screw terminal **or**
C1	**Kemet** ALS30A473KE040 47,000 µF 40 V 14.2 A 51 x 84 mm screw terminal

Pin Configuration



1714 VIA AIM - Chassis Mount - Terminals Up



1714 VIA AIM - PCB Mount - Pins Down

Please note that these Pin drawings are not to scale.

Pin Descriptions

Signal Name	Type	Function
N	INPUT POWER RETURN	AC Neutral / Line 2 input
L	INPUT POWER	AC Line1 input
–OUT	OUTPUT POWER RETURN	Negative output power terminal
+OUT	OUTPUT POWER	Positive output power terminal

Absolute Maximum Ratings

The absolute maximum ratings below are stress ratings only. Operation at or beyond these maximum ratings can cause permanent damage to the device.

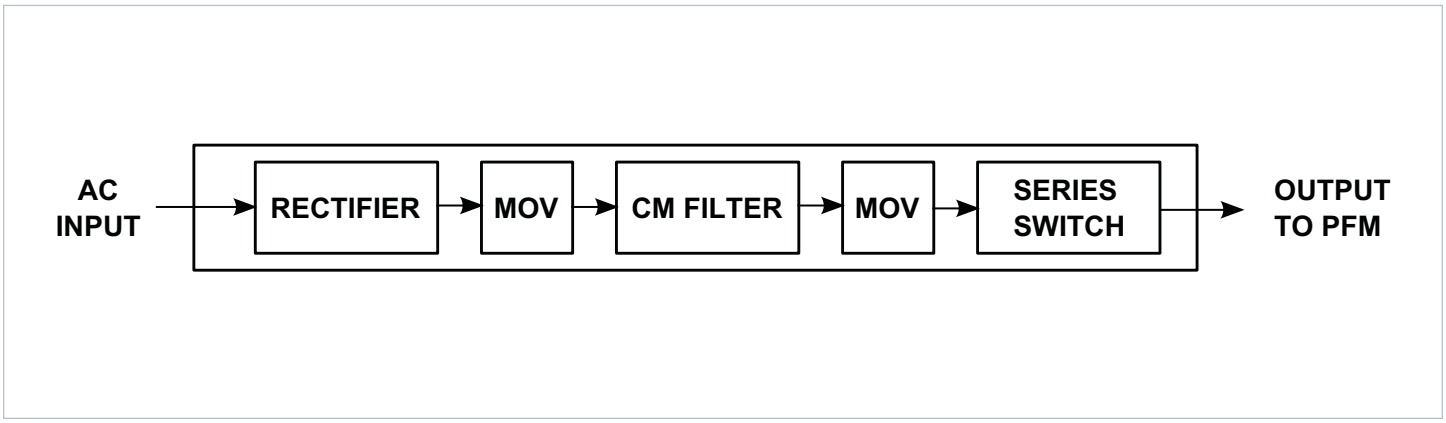
Parameter	Comments	Min	Max	Unit
Input voltage pp at terminals, 1ms max		0	600	Vpk
Input voltage (AC RMS) continuous		0	275	V_{RMS}
Output current (continuous)		0	4.5	A_{RMS}
Operating junction temperature		-40	125	C
Storage temperature		-40	125	°C

Electrical Specifications

Specifications apply over all line and load conditions, 50 Hz and 60 Hz line frequencies, T_J = 25°C, unless otherwise noted.
Boldface specifications apply over the temperature range of the specified product grade.

Attribute	Symbol	Conditions / Notes	Min	Typ	Max	Unit
Input Specification						
Input voltage range, continuous operation	V_{IN}		**85**		**264**	V_{RMS}
Input voltage range, transient, non-operational (peak), 30s minimum interval	V_{IN}				600	V
Output Specification						
Maximum DM Clamped Output Range		1 kV DM 1.2/50 µs	600	630	700	V

Block Diagram



General Characteristics

Specifications apply over all line and load conditions, 50 Hz and 60 Hz line frequencies, TC = 25°C, unless otherwise noted.
Boldface specifications apply over the temperature range of the specified Product Grade.

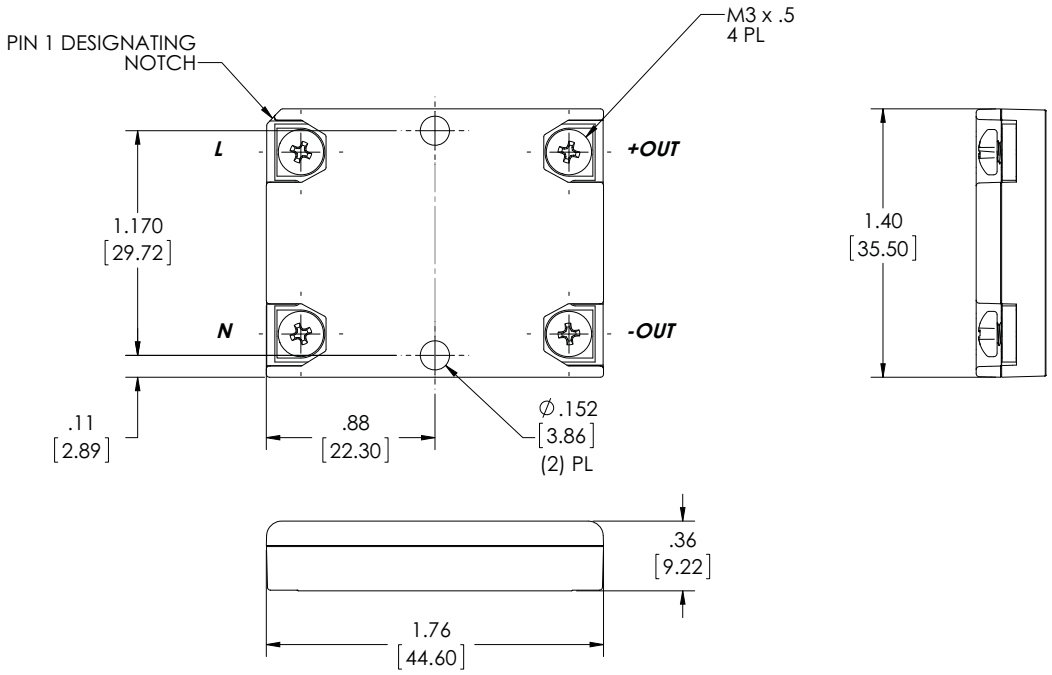
Attribute	Symbol	Conditions / Notes	Min	Typ	Max	Unit
Mechanical						
Length	L			44.20 / [1.74]		mm / [in]
Width	W			35.5 / [1.40]		mm / [in]
Height	H			9.22 / [0.36]		mm / [in]
Volume	Vol	Without heatsink		14.5 / [0.88]		cm^3/ [in^3]
Weight	W			148 / [5.2]		g / [oz]
Pin material		C145 copper, half hard				
Underplate		Low stress ductile nickel	50		100	µin
Pin finish		Palladium	0.8		6	µin
		Soft Gold	0.12		2	µin
Thermal						
Operating case temperature	T_C	C - Grade	-20		100	°C
		T - Grade	-40		100	°C
Safety						
Agency approvals/standards						
EMI/EMC Compliance						
FCC Part 15, EN55022, CISPR22: 2006 + A1: 2007, Conducted Emissions		Class B Limits - with VIA PFM -OUT connected to GND				
EN61000-4-4: 2004, Electrical Fast Transients		Level 2, Performance Criteria A				

General Characteristics (Cont.)

Specifications apply over all line and load conditions, 50 Hz and 60 Hz line frequencies, TC = 25°C, unless otherwise noted.
Boldface specifications apply over the temperature range of the specified Product Grade.

Attribute	Symbol	Conditions / Notes	Min	Typ	Max	Unit
EMI/EMC Compliance (cont.)						
EN61000-4-5: 2006, Surge Immunity		Level 3, Immunity Criteria A				
EN61000-4-6: 2009, Conducted RF Immunity		Level 2, 130 dBµV (3.0 V_{RMS})				
EN61000-4-8: 1993 + A1 2001, Power Frequency H-Field 10A/m, continuous field		Level 3, Performance Criteria A				

VIA AIM Chassis Mount Package Mechanical Drawing



Product outline drawing; Product outline drawings are available in .pdf and .dxf formats.
3D mechanical models are available in .pdf and .step formats.

Revision History

Revision	Date	Description	Page Number(s)
A	08/??/15	Preliminary Version	n/a

Vicor's comprehensive line of power solutions includes high density AC-DC and DC-DC modules and accessory components, fully configurable AC-DC and DC-DC power supplies, and complete custom power systems.

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