ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Vicor VI-FKE6-CMX* at our website: ***Click HERE***

Data Sheet

Off-Line Front Ends

Single or Three Phase

Strappable



Features

- 250 W, 500 W, 750 W, 115/230 Vac strappable single-phase
- 1.5, 3, 5 kW, 208 Vac three-phase
- 20 – 50 mS holdup
- UL, CSA, TÜV, VDE, BABT
- FCC/VDE Class B (single-phase)
- FCC/VDE Class A (three-phase)
- BUS OK, AC OK, DC OK status signal
- 96 – 98% efficiency
- PC and chassis mount
- VI-26X, VI-J6X series compatible
- CE Marked

Product Highlights

From AC line in, to highly regulated DC out, Vicor offers the total design solution through a complete family of off-line front end and DC-DC modular power components.

Vicor's family of off-line front ends interface VI-260 and VI-J60 series DC-DC converters, and MegaMods, to 100, 115, 230 or 240 Vac single-phase and 208 Vac three-phase mains. In addition, front ends provide conducted EMI/RFI filtering to FCC/VDE (Class B single-phase, Class A three-phase), transient surge protection, active inrush limiting, a BUS OK status output (suitable for controlling Vicor DC-DC converter modules via their Gate In pin) and an AC OK status output for system use in the event of loss of the AC line.

Operating Temperature

(Free Convection)

C: 0°C to +50°C (750 W: +45°C)

I: -20°C to +50°C (750 W: +45°C)

Storage Temperature

-40°C to +80°C

Front End Specifications

(typical at T = 25°C, nominal line, 75% load, unless otherwise specified)

	Single Phase (250, 500, 750W)	Three Phase (1.5, 3, 5 kW)
AC Line Input	Strappable 115/230 Vac	208 Vac +20%/–10% (Wye or Delta, ø to ø)
With Range Strap	90 Vac to 135 Vac	N/A
Without Range Strap	180 Vac to 270 Vac	N/A
Line Frequency	47 to 63 Hz (C-Grade) 47 to 440 Hz (I-Grade)	47 to 63 Hz (C-Grade) 47 to 440 Hz (I-Grade)
Line Inrush Current		
115 Vac Operation	35 A at peak line	
230 Vac Operation	67 A at peak line	
240 Vac Operation		52 A at peak line
AC Leakage Current	1.9 mA max. at 250 Vac, 63 Hz (C- Grade)	3.2 mA max. at 208 Vac, 63 Hz
Power Factor (at full load)	0.52 to 0.65 (at low line input)	0.9 (typical at nom. line)
Holdup Time (at full load)		
Low Line	250 W (60 Hz): 4 ms min. 500, 750 W (60 Hz): 7 ms min.	
Nominal Line	250 W (60 Hz): 27 ms min. 500, 750 W (60 Hz): 29 ms. min.	20 ms min. (47 Hz)
AC Fail Warning Time (at full load)	250W: None 500, 750W: 6 ms min.	5 ms min.
Module Gate Control Output (open drain FET, non-isolated, referenced to –DC output)	Called BUS OK	Called Module Enable
ENABLE Active High (FET cutoff)	Active High (FET cutoff) Vds max. 18 V transorb clamp Power up threshold DC bus: 250 W: 216 V, ±12% 500, 750 W: 244, ±3.5%	Power-up threshold >227 V Vds max: 15 V zener clamp
$\overline{\text{ENABLE}}$	Inactive state (DC BUS <190 V ±5%) Current sinking 100 mA @ .3 Vds max., threshold DC bus 250 W: 172 V, ±16% 500, 750 W: 175 V, ±3.5%	Inactive state (DC BUS <187 Vdc) Current sinking 100 mA @ .3Vds max.
AC OK and BUS OK Status Outputs (optically isolated, transistor output; 500 W, 750 W only)	500, 750 W only	AC OK and BUS OK
Off State Breakdown Voltage	70 Vce max.	70 Vce max.
On State Voltage	.4 Vce (sat.) max. at 1 mA	.4 Vce (sat.) max. at 1 mA
On State Current	15 mA max.	15 mA max.
On State Threshold (no load)	80 – 89 Vac	>210 Vdc/187 Vac
Off State Threshold (load dependent)	85 – 76Vac	<205 Vdc/<182 Vac
Conducted EMI/RFI	VDE 0871/FCC part 15, Class B	VDE 0871/FCC part 15, Class A
Dielectric Withstand	AC line (both phases) to GND or case 1.5 kVAC; 2121 Vdc	AC line (all phases) to GND or case 1.5 kVAC; 2121 Vdc
Transient Surge Withstand Capability (with no disruption of function)	IEC 61000-4-5, Level 3	IEC 61000-4-5, Level 3
Common Mode	1.2/50 µs, 2 kV, either polarity 0 to 360 degree phase angle with respect to AC line	1.2/50 µs, 2 kV, either polarity 0 to 360 degree phase angle with respect to AC line
Normal Mode	1.2/50 µs, 1 kV pulse, either polarity 0 to 360 degree phase angle with respect to AC line	1.2/50 µs, 1 kV pulse, either polarity 0 to 360 degree phase angle with respect to AC line

Set your site on VICOR at www.vicorpower.com

THERMAL CONSIDERATIONS

Free Convection Derating

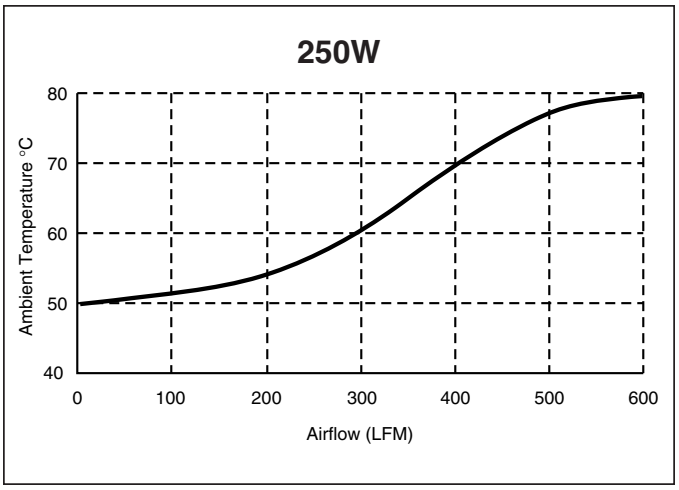
- 250 W: Derate output power linearly at 7.2 W/˚C over 50˚C.
- 500 W: Derate output power linearly at 14.3 W/˚C over 50˚C.
- 750 W: Derate output power linearly at 18.8 W/˚C over 45˚C.

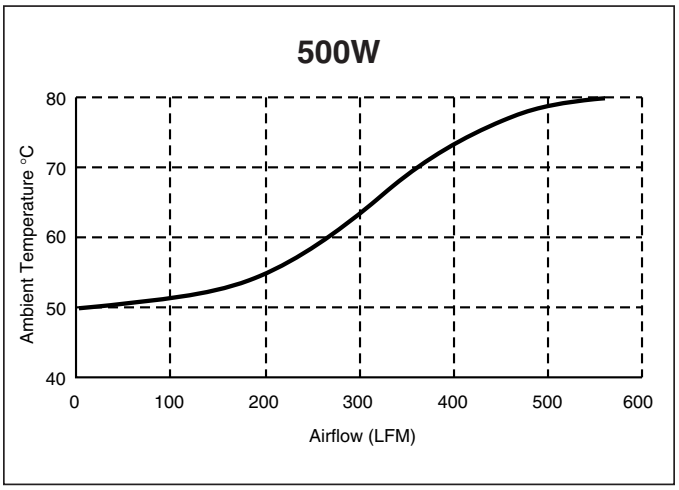
Forced Convection

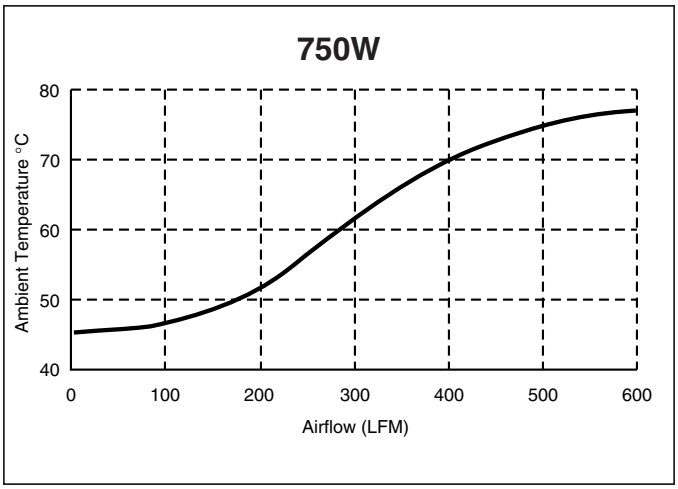
The curves below represent worst case data for chassis mounted (enclosed) front ends, i.e., low line, full load. System conditions such as higher line voltage, lighter load or PC mount versions of the front ends will increase reliability if the data here is used as the nominal design criteria.

The sigmoid shape of the curves at low air flows is due to the chassis mount cover restricting the airflow to the inboard components until an airflow of approximately 200 LFM is achieved. Thereafter, the velocity of air rushing over the cover causes air to be pulled in through the side perforations, causing a rapid improvement of cooling of internal components.

Max. Amb. Temp. vs. Airflow (LFM) Over Cover
(Full Load, 90 Vac In, Chassis Mount)





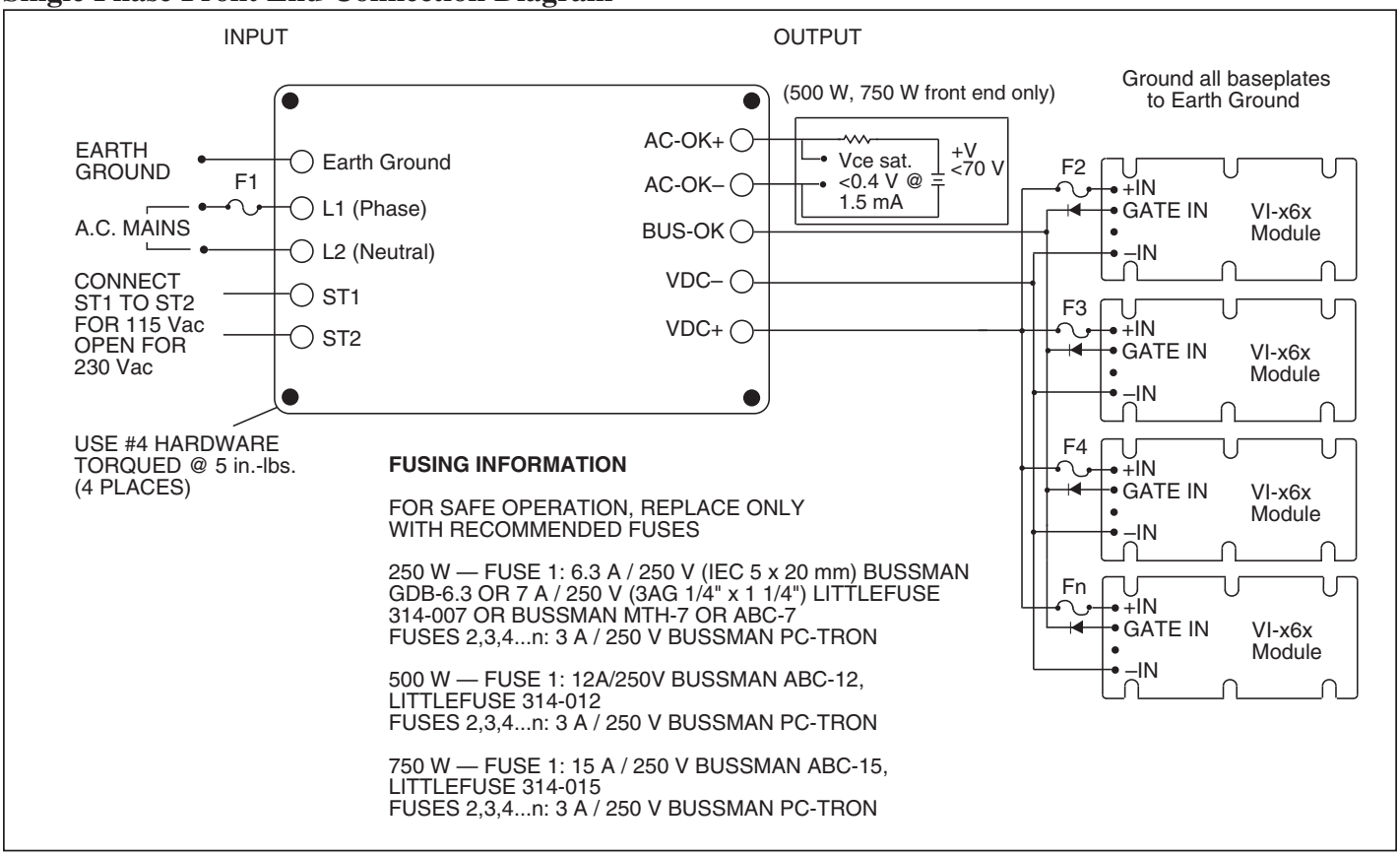


Front End Selection Chart

Model	PC	Mounting	Output Power (Watts)		
Single Phase		**Chassis**	**250**	**500**	**750**
VI-FPE6-CUX	■		■		
VI-FKE6-CUX		■	■		
VI-FPE6-CQX	■			■	
VI-FKE6-CQX		■		■	
VI-FPE6-CMX	■				■
VI-FKE6-CMX		■			■
Three Phase			**1,500**	**3,000**	**5,000**
VI-TKY6-CHX		■	■		
VI-TKY6-CEX		■		■	
VI-TRY6-CCX		■			■

Set your site on VICOR at www.vicorpower.com

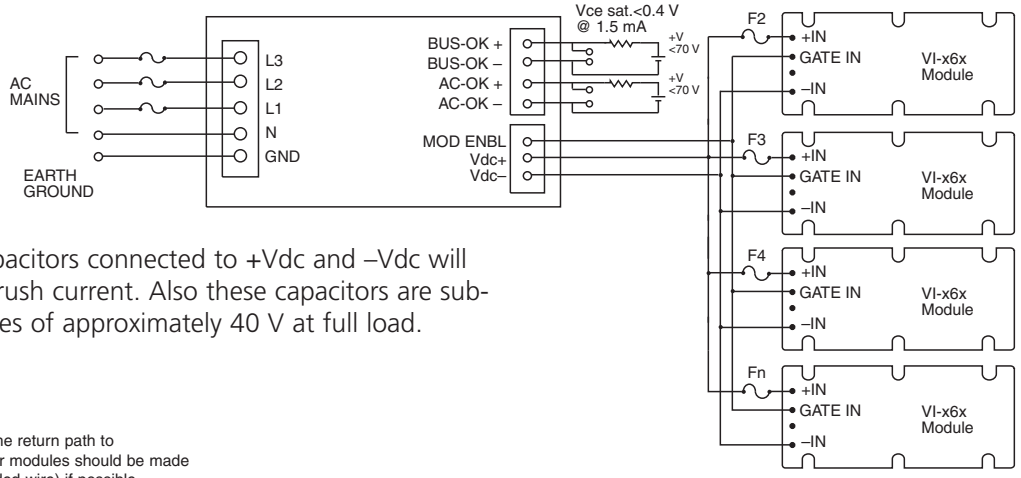
Single Phase Front End Connection Diagram



Notes:

1. If input power is applied with the DC output BUS shorted, the active inrush circuitry will usually prevent Fuse 1 from blowing. Remove power, clear shorts, wait a few minutes and reapply input power.
2. If unit is strapped for 115V operation and 230V is applied, the internal overvoltage crowbar will clear Fuse 1. Replace fuse, strap correctly and reapply power.
3. To control EMI/RFI most effectively, the return path to earth ground from either the front end or modules should be made via a good RF ground. User must assure proper grounding for safe operation.

Three Phase Front End Connection Diagram (1.5 kW, 3.0 kW only)



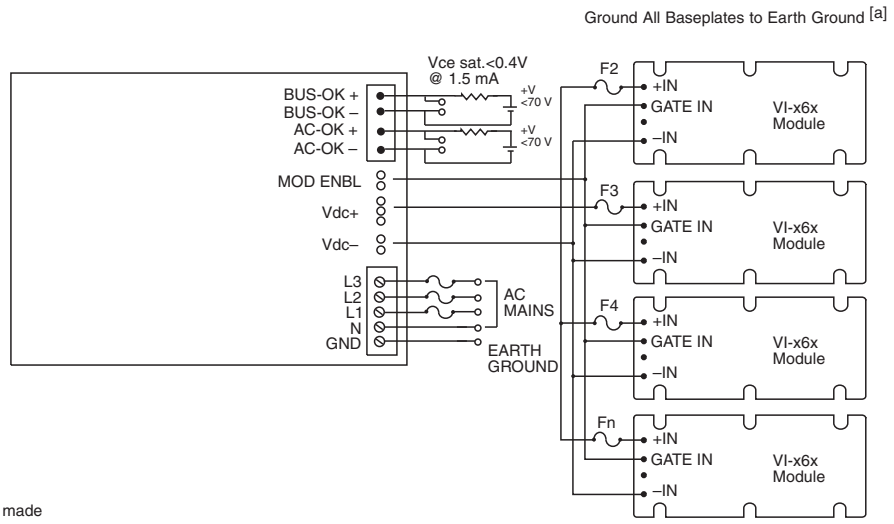
CAUTION: External capacitors connected to +Vdc and –Vdc will significantly increase inrush current. Also these capacitors are subject to AC ripple voltages of approximately 40 V at full load.

[a] To control EMC most effectively, the return path to ground from either the front-end or modules should be made via a good RF ground (i.e., a braided wire) if possible.

NOTE: x,y capacitors not shown for clarity

Three Phase Front End Connection Diagram (5.0 kW only)

CAUTION: External capacitors connected to +Vdc and –Vdc will significantly increase inrush current. Also these capacitors are subject to AC ripple voltages of approximately 40 V at full load.



[a] To control EMC most effectively, the return path to ground from either the front-end or modules should be made via a good RF ground (i.e., a braided wire) if possible.

NOTE: x,y capacitors not shown for clarity

Warranty

Vicor products are guaranteed for two years from date of shipment against defects in material or workmanship when in normal use and service. This warranty does not extend to products subjected to misuse, accident, or improper application or maintenance. Vicor shall not be liable for collateral or consequential damage. This warranty is extended to the original purchaser only.

EXCEPT FOR THE FOREGOING EXPRESS WARRANTY, VICOR MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Vicor will repair or replace defective products in accordance with its own best judgement. For service under this warranty, the buyer must contact Vicor to obtain a Return Material Authorization (RMA) number and shipping instructions. Products returned without prior authorization will be returned to the buyer. The buyer will pay all charges incurred in returning the product to the factory. Vicor will pay all reshipment charges if the product was defective within the terms of this warranty.

Information published by Vicor has been carefully checked and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Vicor reserves the right to make changes to any products without further notice to improve reliability, function, or design. Vicor does not assume any liability arising out of the application or use of any product or circuit; neither does it convey any license under its patent rights nor the rights of others. Vicor general policy does not recommend the use of its components in life support applications wherein a failure or malfunction may directly threaten life or injury. Per Vicor Terms and Conditions of Sale, the user of Vicor components in life support applications assumes all risks of such use and indemnifies Vicor against all damages.

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.

Information furnished by Vicor is believed to be accurate and reliable. However, no responsibility is assumed by Vicor for its use. Vicor components are not designed to be used in applications, such as life support systems, wherein a failure or malfunction could result in injury or death. All sales are subject to Vicor's Terms and Conditions of Sale, which are available upon request.

Specifications are subject to change without notice.

Intellectual Property Notice

Vicor and its subsidiaries own Intellectual Property (including issued U.S. and Foreign Patents and pending patent applications) relating to the products described in this data sheet. Interested parties should contact Vicor's Intellectual Property Department.

Vicor Corporation
25 Frontage Road
Andover, MA, USA 01810
Tel: 800-735-6200
Fax: 978-475-6715

email
Customer Service: custserv@vicorpower.com
Technical Support: apps@vicorpower.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP