

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.

**Visit our website - *Click HERE***

# MI-ComPAC™
## DC-DC Switchers



50 – 300 Watts; 1 – 3 Outputs

## Features & Benefits

- Inputs 28 and 270$V_{DC}$
- Transient protection: 28$V_{DC}$ designed to meet MIL-STD-704A-F, MIL-STD-1275A/B/D and DO-160E
- One, two or three outputs
- Outputs: 2 – 48$V_{DC}$
- Up to 5W/in$^3$
- High efficiency
- Remote sense
- ZCS power architecture
- Low noise FM control
- MIL-STD-461C/D/E EMI compliance

## Product Description

The MI-ComPAC is a complete single, dual, or triple output DC-DC power supply that delivers up to 300W from inputs of 28 or 270$V_{DC}$.

The MI-ComPAC meets the conducted emissions and conducted susceptibility specifications of MIL-STD-461C/D/E and designed to meet the input transient, surge, and spike protection to the most severe levels of MIL-STD-1275, MIL-STD-704 and DO-160E.

Over/undervoltage lockout provides an additional safeguard against potentially damaging line conditions. The MI-ComPAC also features a overall disable.

## Packaging Options

Conduction Cooled Models Available. Add "–CC" to the end of the part number. (Consult factory for details.)

Extended heat sink available add "–H1" to end of part number.

## Configuration Chart

| Configuration | Output Power | Number of Modules | Dimensions |
|---|---|---|---|
| **Single Output** | | | |
| MI-LC ▪ ▪▪–▪▪ ▪▪ | 50 – 100W | 1 | 8.6 x 2.5 x 0.99in [218,4 x 63,5 x 25,2mm] |
| MI-MC ▪ ▪▪–▪▪ ▪▪ | 150 – 200W | 2 | 8.6 x 4.9 x 0.99in [218,4 x 124,5 x 25,2mm] |
| MI-NC ▪ ▪▪–▪▪ ▪▪ | 300W | 3 | 8.6 x 7.3 x 0.99in [218,4 x 185,4 x 25,2mm] |
| **Dual Output** | | | |
| MI-PC ▪ ▪▪ ▪▪–▪▪ ▪▪ ▪▪ | 100 – 200W | 2 | 8.6 x 4.9 x 0.99in [218,4 x 124,5 x 25,2mm] |
| MI-QC ▪ ▪▪ ▪▪–▪▪ ▪▪ ▪▪ | 200 – 300W | 3 | 8.6 x 7.3 x 0.99in [218,4 x 185,4 x 25,2mm] |
| **Triple Output** | | | |
| MI-RC ▪ ▪▪ ▪▪ ▪▪–▪▪ ▪▪ ▪▪ ▪▪ | 150 – 300W | 3 | 8.6 x 7.3 x 0.99in [218,4 x 185,4 x 25,2mm] |

### Input Voltage

| Nominal | Input Range Full Power | Brownout Voltage [a] | Transient (1s) |
|---|---|---|---|
| **2** = 28V | 18 – 50V | 16 | 60 |
| **6** = 270V | 125 – 400V | N/A | 475 |

### Product Grade Case Temps. °C

| Grade | Operating | Storage |
|---|---|---|
| **I** = | –40 to +85 | –55 to +100 |
| **M** = | –55 to +85 | –65 to +100 |

### Output Power / Current

| $V_{OUT}$ ≥ 5V | $V_{OUT}$ < 5V |
|---|---|
| **Y** = 50W | **Y** = 10A |
| **X** = 75W | **X** = 15A |
| **W** = 100W | **W** = 20A |
| **V** = — | **V** = 30A |

### Output Voltage

| | |
|---|---|
| **Z** = 2V [b] | **1** = 12V |
| **Y** = 3.3V [b] | **P** = 13.8V |
| **0** = 5V [b] | **2** = 15V |
| **X** = 5.2V | **N** = 18.5V |
| **W** = 5.5V | **3** = 24V |
| **V** = 5.8V | **L** = 28V |
| **T** = 6.5V [c] | **J** = 36V |
| **R** = 7.5V [c] | **K** = 40V |
| **M** = 10V | **4** = 48V |

### Output Power / Current

| $V_{OUT}$ ≥ 5V | $V_{OUT}$ < 5V |
|---|---|
| **V** = 150W | **V** = 30A |
| **U** = 200W | **U** = — |
| **S** = 300W | **S** = 60A |

### Output Power / Current

| $V_{OUT}$ ≥ 5V | $V_{OUT}$ < 5V |
|---|---|
| **S** = 300W | **S** = — |
| **P** = — | **P** = 90A |

[a] Brownout voltage for output power de-rated to 75% of maximum
[b] These units rated for 75% load from 125 to 150V: "V" power for "Z & Y" voltages, "W power for "0" voltages
[c] 75W maximum module power for 28V input voltage

## MI-ComPAC Specifications

Typical at $T_{BP}$ = 25°C, nominal line and 75% load, unless otherwise specified.

### Input Specifications

| Parameter | Min | Typ | Max | Unit | Notes |
|---|---|---|---|---|---|
| 28$V_{DC}$ Input Modules | | | | | |
| Steady-State Input | 18 | 28 | 50 | $V_{DC}$ | |
| Low-Line Lockout | | | 17.5 | $V_{DC}$ | Automatic recovery |
| Input Spike Limit | –250 | | +250 | $V_{DC}$ | 70µs, 15mJ per MIL-STD-1275A/B/D |
| Input Surge Limit | | | 100 | $V_{DC}$ | 50ms, 0.5Ω per MIL-STD-1275A/B/D |
| | | | 80 | $V_{DC}$ | 100ms per DO-160E, Section 16, Power Input, Category Z |
| Overvoltage Shut Down | 50 | | | $V_{DC}$ | 100ms automatic recovery |
| Recommended Fuse | | | 10 [d] | A | F03A type |
| 270$V_{DC}$ Input Modules | | | | | |
| Steady-State Input | 125 | 270 | 400 | $V_{DC}$ | |
| Low-Line Lockout | | | 125 | $V_{DC}$ | Automatic recovery |
| Input Spike Limit | | | +800 | $V_{DC}$ | 10µs, 50Ω |
| | –600 | | +600 | $V_{DC}$ | 100µs, 15mJ |
| Input Surge Limit | –250 | | 500 | $V_{DC}$ | 100ms, 0.5Ω |
| Overvoltage Shut Down | 400 | | | $V_{DC}$ | 100µs automatic recovery |
| Recommended Fuse | | | 2 [d] | A | F03A type |
| All Models | | | | | |
| No Load Power Dissipation | | 1.5 [d] | 2 [d] | W | |
| Overall Disable Input Current [e] (Absolute Maximum, 20mA) | 4 | | | mA | Sink; disables all outputs |
| Inrush Current | | 110 | 125 | %, $I_{IN}$ | Steady state $I_{IN}$, 10ms |

[d] Per internal module configuration.
[e] Multiply minimum x2 for 2-ups and x3 for 3-ups

### Output Specifications

| Parameter | Min | Typ | Max | Unit | Notes |
|---|---|---|---|---|---|
| Set Point Accuracy | | 0.5 | 1.0 | %$V_{NOM}$ | |
| Load / Line Regulation | | 0.2 | 0.5 | %$V_{NOM}$ | LL to HL, NL to 10% |
| | | 0.05 | 0.2 | %$V_{NOM}$ | LL to HL, 10% to FL |
| Output Temperature Drift | | 0.01 | 0.02 | % / °C | |
| Output Noise, Peak-to-Peak | | 1.0 | 1.5 | %$V_{NOM}$ | Whichever is greater; 20MHz BW |
| | | 100 | 150 | mV | |
| Output Voltage Trimming [f] | 50 | | 110 | %$V_{NOM}$ | |
| Remote Sense Compensation | 0.5 | | | $V_{DC}$ | |
| OVP Set Point | 115 | 125 | 135 | %$V_{NOM}$ | Latching |
| Current Limit | 105 | | 125 | %$I_{NOM}$ | Auto restart |
| Short-Circuit Current [g] | 20 | | 130 | %$I_{NOM}$ | |

[f] 10, 12 and 15V outputs, standard trim range ±10%. Consult factory for wider trim range.
[g] Output ranges of 5V or less incorporate foldback current limiting, outputs of 10V and above incorporate straight-line current limiting.

## MI-ComPAC Specifications (Cont.)

Typical at $T_{BP}$ = 25°C, nominal line and 75% load, unless otherwise specified.

### Thermal Characteristics

| Parameter | Min | Typ | Max | Unit | Notes |
|---|---|---|---|---|---|
| Efficiency | | 81 | | % | |
| Operating Temperature, Case | | | +85 | °C | See product grade |
| Storage Temperature | | | +100 | °C | See product grade |
| Shut-Down Temperature | +90 | +95 | +105 | °C | Cool and recycle power to restart |

### Isolation Characteristics

| Parameter | Min | Typ | Max | Unit | Notes |
|---|---|---|---|---|---|
| Input to Output | 4242 | | | $V_{RMS}$ | 1 minute |
| Input to Case | | | | | |
| $28V_{DC}$ Input | 2121 | | | $V_{RMS}$ | 1 minute |
| $270V_{DC}$ Input | 2500 | | | $V_{RMS}$ | 1 minute |
| Output to Case | 500 | | | $V_{RMS}$ | 1 minute |

### Mechanical Specifications

| Parameter | Min | Typ | Max | Unit | Notes |
|---|---|---|---|---|---|
| Weight | | | | | |
| 1-Up | | 1.2 [544] | | lbs [g] | |
| 2-Up | | 2.4 [1088] | | lbs [g] | |
| 3-Up | | 3.6 [1633] | | lbs [g] | |

### EMC CHARACTERISTICS; MIL-STD-461C/D/E

| Parameter | Notes | |
|---|---|---|
| Input Power Leads | | |
| Conducted Emissions | CE01, CE03, CE07 | MIL-STD-461C — 1-up |
| | CE101, CE102 | MIL-STD-461D — 1-up |
| | CE101 | MIL-STD-461E — 2-up & 3-up |
| Conducted Susceptibility | CS01, CS02, CS06 | MIL-STD-461C — 1-up |
| | CS101, CS114, CS116 | MIL-STD-461D — 1-up |
| | CS101, CS114, CS116 | MIL-STD-461E — 2-up & 3-up |

## MI-ComPAC Specifications (Cont.)

### Thermal Considerations

| Parameter | Standard Units 1-Up | 2-Up | 3-Up | With Optional Heat Sink[h] 1-Up | 2-Up | 3-Up |
|---|---|---|---|---|---|---|
| Thermal Impedance — Case-to-Air (°C / W) | | | | | | |
| Free Air (Horizontal) | 3.6 | 1.7 | 1.4 | 2.1 | 1.3 | 1.0 |
| Forced Convection Through Heat-Sink Fins | | | | | | |
| 50LFM | 2.7 | 1.4 | 1.3 | 1.5 | 1.1 | 0.9 |
| 100LFM | 2.3 | 1.3 | 1.1 | 1.2 | 0.9 | 0.7 |
| 250LFM | 1.6 | 1.0 | 0.8 | 0.7 | 0.5 | 0.4 |
| 500LFM | 1.2 | 0.7 | 0.6 | 0.4 | 0.3 | 0.3 |
| 750LFM | 0.9 | 0.5 | 0.5 | 0.3 | 0.2 | 0.2 |
| 1000LFM | 0.8 | 0.4 | 0.4 | 0.2 | 0.2 | 0.2 |

- Thermal impedance, chassis-to-air, is provided for 1-up, 2-up and 3-up MI-ComPAC package configurations as a function of airflow.
- Case temperature = (total power dissipated • thermal impedance) + ambient temperature.
- Watts dissipated per output = (output power ÷ efficiency) – output power.

[h] To order optional heat sink add –H1 to part number.

**Disable Current**

- 4mA DC minimum for 1-up ComPAC
- 8mA DC minimum for 2-up ComPAC
- 12mA DC minimum for 3-up ComPAC

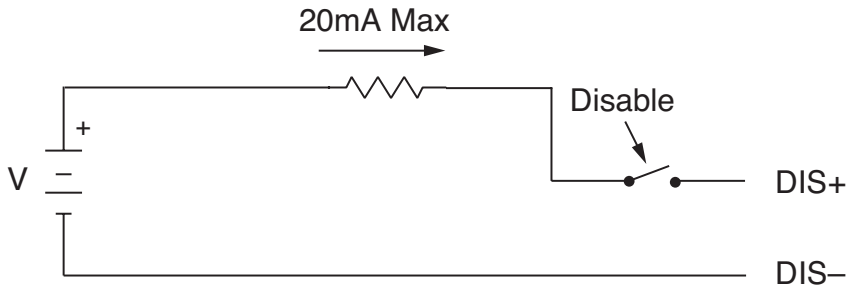



***Figure 1 —*** *Disable circuit; The MI-ComPAC incorporates an optically isolated overall disable input which will shut down the MI-ComPAC when a current is driven through the disable terminals*

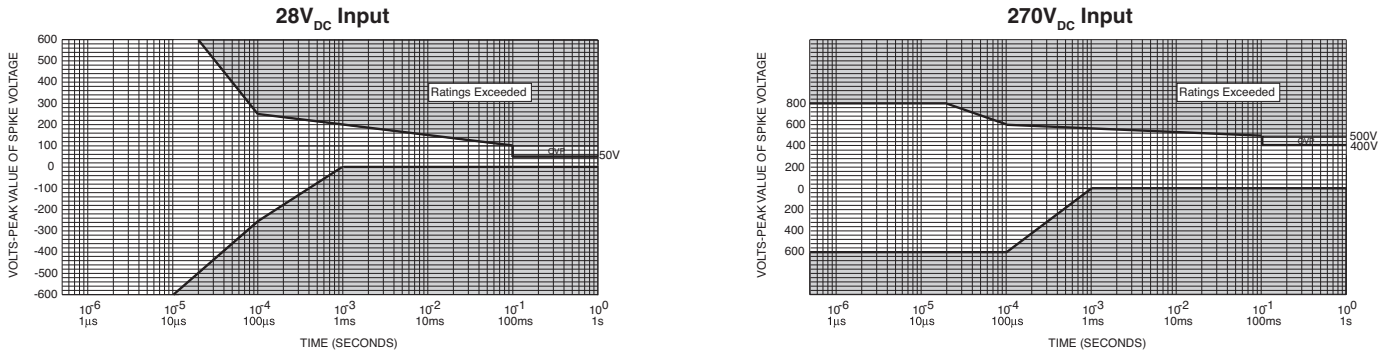
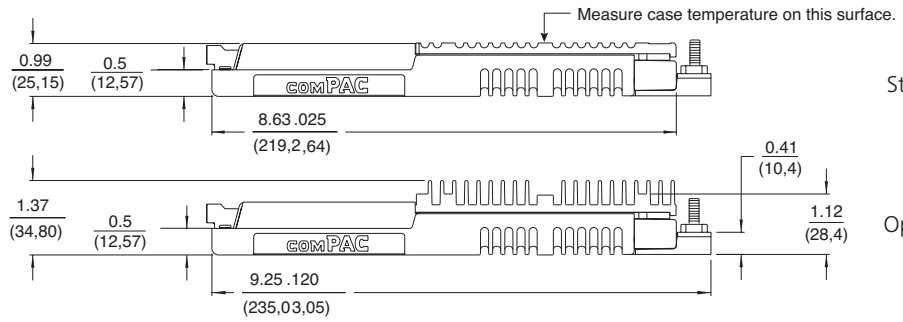



***Figure 2 —*** *Long term safe operating area curves; 1% duty cycle maximum, for short duration transient capability refer to specifications*

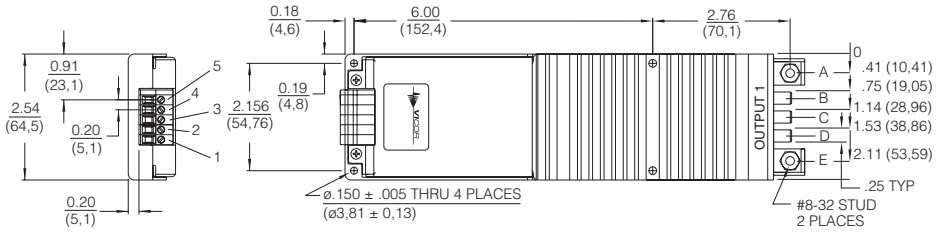
## Mechanical Drawings

### All Models

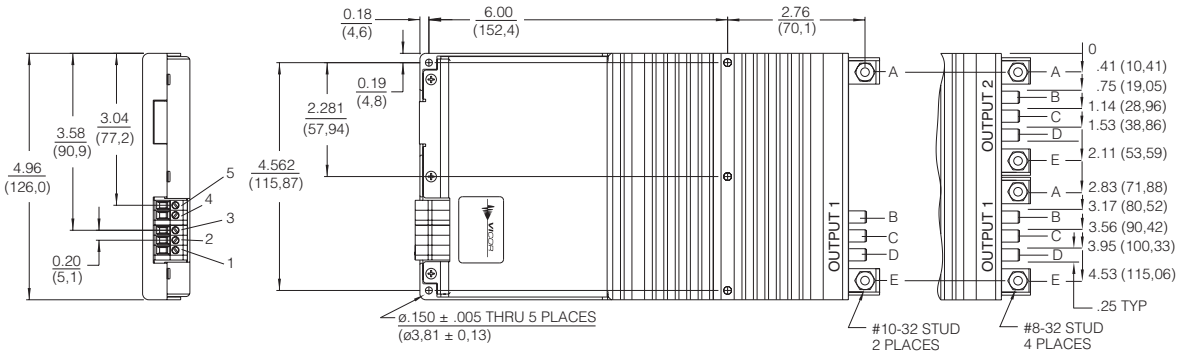
| INPUTS | |
|---|---|
| 1 | Ground |
| 2 | –Input |
| 3 | +Input |
| 4 | Disable– |
| 5 | Disable+ |
| **OUTPUTS** | |
| A | +Output |
| B | +Sense |
| C | Trim |
| D | –Sense |
| E | –Output |



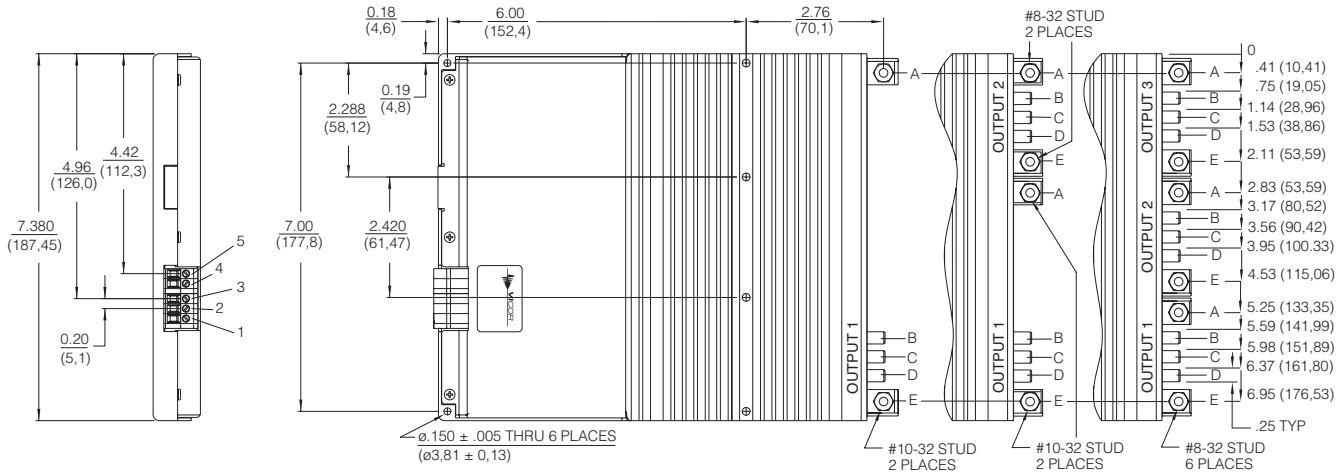

### LC Series




### MC, PC Series




### NC, QC, RC Series



**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 makes no representations or warranties with respect to the accuracy or completeness of the contents of this publication. Vicor reserves the right to make changes to any products, specifications, and product descriptions at any time without notice. Information published by Vicor has been checked and is believed to be accurate at the time it was printed; however, Vicor assumes no responsibility for inaccuracies. Testing and other quality controls are used to the extent Vicor deems necessary to support Vicor's product warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

**Specifications are subject to change without notice.**

Visit http://www.vicorpower.com/mil-cots-power-systems/mi-compac_dc_power_supply for the latest product information.

## Vicor's Standard Terms and Conditions and Product Warranty

All sales are subject to Vicor's Standard Terms and Conditions of Sale, and Product Warranty which are available on Vicor's webpage (http://www.vicorpower.com/termsconditionswarranty) or upon request.

## Life Support Policy

VICOR'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS PRIOR WRITTEN APPROVAL OF THE CHIEF EXECUTIVE OFFICER AND GENERAL COUNSEL OF VICOR CORPORATION. As used herein, life support devices or systems are devices which (a) are intended for surgical implant into the body, or (b) support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in a significant injury to the user. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system or to affect its safety or effectiveness. Per Vicor Terms and Conditions of Sale, the user of Vicor products and components in life support applications assumes all risks of such use and indemnifies Vicor against all liability and damages.

### 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. No license, whether express, implied, or arising by estoppel or otherwise, to any intellectual property rights is granted by this document. Interested parties should contact Vicor's Intellectual Property Department.

Contact Us: http://www.vicorpower.com/contact-us

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

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

©2018 – 2020 Vicor Corporation. All rights reserved. The Vicor name is a registered trademark of Vicor Corporation.
All other trademarks, product names, logos and brands are property of their respective owners.

**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