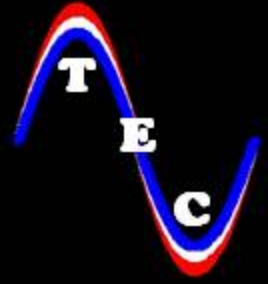


Tier Electronics

Your Future For Electronics

www.TierElectronics.com



All - In - One (AIO) Power Converter Family

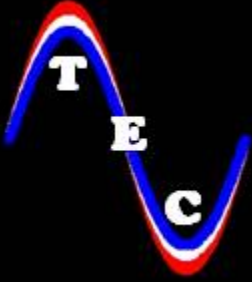
Tier Electronics offers a power converter family that is specifically designed for OEM power conversion systems. Unlike most power converters that are only a simple power stage, these converters are a complete package.

AIO Family:

- **Micro AIO**
 - Low Cost
 - Small Size
 - 32 Bit DSP Controller
 - 2 to 20 kW
 - 100 VAC through 480 VAC
- **Mini AIO**
 - Compact Design
 - 32 Bit DSP Controllers
 - Programmable I/O via Flash CPLD
 - Optional I/O
 - 5 to 30 kW
 - 200 VAC through 480 VAC
- **Mid AIO**
 - Compact Design
 - 32 Bit DSP Controllers
 - Programmable I/O via Flash CPLD
 - Optional I/O
 - 20 to 125 kW
 - 200 VAC through 690 VAC
- **Max AIO**
 - Multiple AIO Modules in Parallel
 - Main Controller PCB
 - 50 to 600 kW
 - N+1 and Multi-Phase Systems
- **Tri AIO**
 - Unique High Frequency Converter
 - 20 kHz PWM for 600 VAC Systems
 - Low Common Mode Output
 - Greatly Reduced Filter Component Sizes

All - In - One Power Converter Family

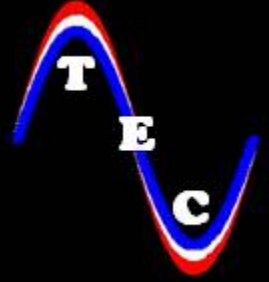




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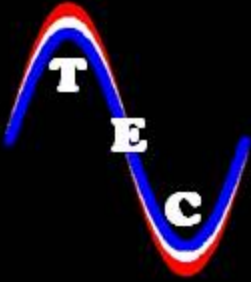
All - In - One (AIO) Power Converter Family

Features:

- Power Range of 2 kW to 600 kW
- 100 VAC through 690 VAC Versions
- Rugged Input and Output Terminations
- Programmable
- Built-in:
 - High Frequency Capacitors
 - Current Sensors
 - High Voltage DC-DC Converter
 - All Logic and Support Power Supplies
 - 32 Bit DSP Controller
 - Communications
 - AC Feedback
 - Pre-Charge and Discharge Control
 - Temperature Sensors
 - E² Memory for User Parameters

Protection Features:

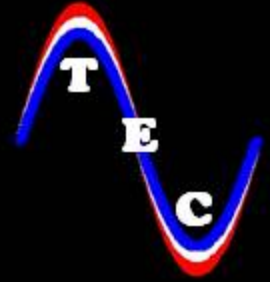
- Overcurrent
- Overvoltage
- Internal Logic and Support Power Supply Monitors
- IGBT Overtemperature Monitor
- De-Sat Protection (most models)
- IGBT Gate Status Feedback with Anti-Shoot-Through Circuitry
- Loss of Communications (Optional)
- Loss of Sync (Optional)



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All - In - One (AIO) Power Converter Family

Available Options:

- Packaged Unit with Input and Output Filters
- Self Powered Touch Screen LCD Display
- BLDC Encoder Fiber Optic Interface
- Fiber Optic Communications
- Fiber Optic Sync for Multiple Converters
- BLDC Sensorless Interface
- High Speed Fiber Optic CAN or RS-232 Communications

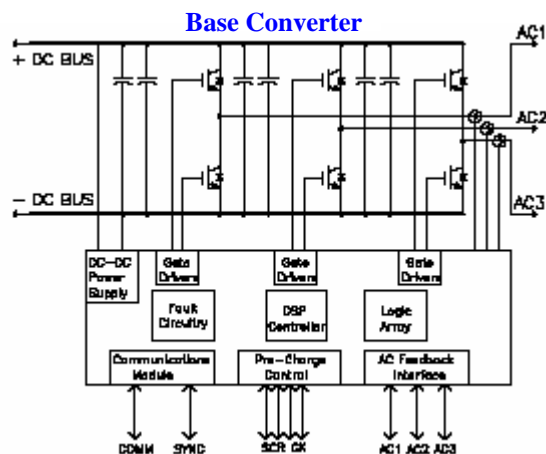
Cooling Selections:

- Liquid Cooled
- Air Cooled
- Hybrid

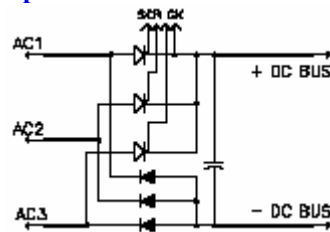
Typical Configurations:

- Motor Controller with Diode Rectifier, Main Capacitors, Pre-Charge, and Input Fusing
- Active Rectifier with Main Capacitors, Pre-Charge, and Input Fusing
- Plain Converter with Main Capacitors, Pre-Charge, and Output Fusing

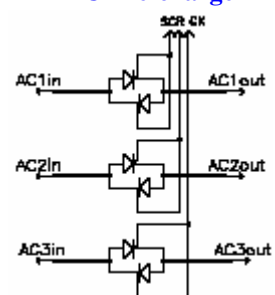
Configurations:



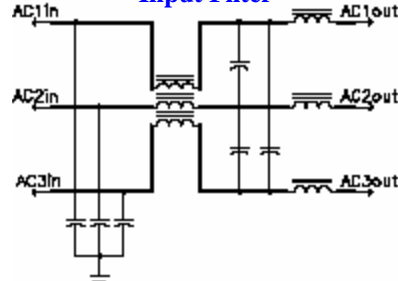
Input Rectifier with Pre-charge



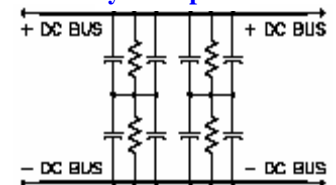
AC Pre-charge

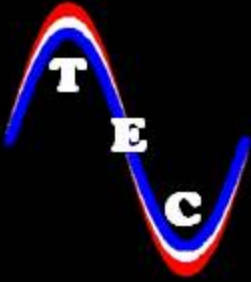


Input Filter



Electrolytic Capacitor Bank

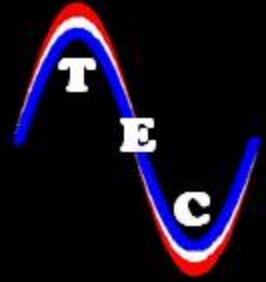




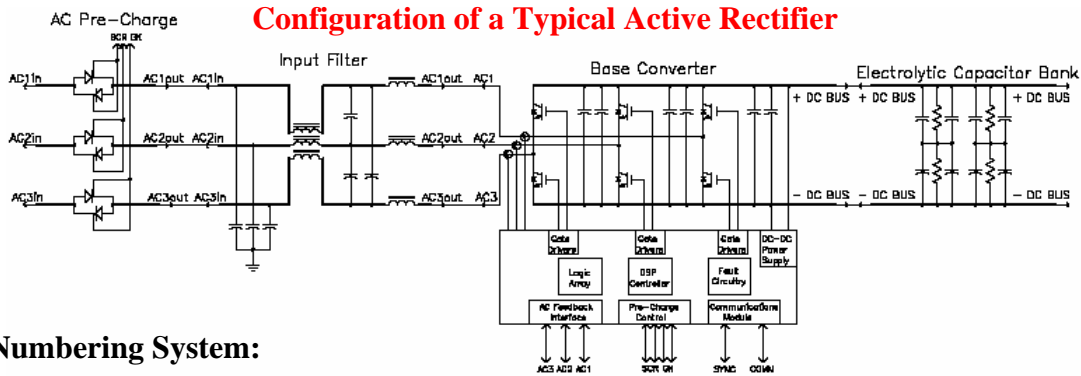
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All - In - One (AIO) Power Converter Family



Numbering System:

- (1) Base Description
AIO = All-In-One Power Converter
- (2) Frame Size
U = Micro
S = Mini
M = Mid
L = Max
T = Tri
- (3) Output Current (in Amps)
002 through 750
- (4) DC Link Voltage
04 = 150 to 400 V (100 - 240 VAC)
08 = 300 to 800 V (200 - 480 VAC)
12 = 500 to 1200 V (380 - 690 VAC)
- (5) Heat Sink
A = Air Cooled
L = Liquid Cooled
H = Hybrid
- (6) Cap Bank
N = None
E = Electrolytic
F = Film
- (7) Communications
R = RS-232 with Power
C = CAN
F = Dual Fiber Optic
D = Status Display
- (8) AC Feedback
1 = Standard
2 = High Precision
3 = BLDC Sensorless
- (9) Discrete I/O
1 = Dual Relays
2 = SCR Pre-charge Control
3 = Power Interface for Phase Control
- (10) Plug-In Options
0 = None
1 = Touch Screen LCD Display
2 = LCD Display Only
- (11) Code
A = Active Rectifier
I = Induction Motor Control
R = Regulated Voltage Output
B = BLDC Motor Control
H = Harmonic Compensator
V = VAR Generator
C = Custom
- (12) Configuration
1 = Converter Only
2 = Converter + Pre-charge + Diode Input
3 = Converter + AC Pre-charge
4 = Dual Converter
5 = Dual Converter + Pre-charge
- (13) Fusing
0 = None
1 = AC Side
2 = AC and DC Side
3 = Both AC Sides
- (14) I/O Filters
0 = None
1 = AC Input Filter
2 = Voltage Output Filter
3 = Input Inductor Only
4 = Output Inductor Only
5 = Dual AC Filter
- (15) Enclosure
F = Open Frame
V = Vented Enclosure
S = Sealed Enclosure

Example: AIO M 075 08 A E F 1 2 0 A 3 1 0 F

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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