

PRODUCT BROCHURE

# POWER DISTRIBUTION UNITS

## AC/DC POWER DISTRIBUTION & CONTROL SYSTEM

*Power Distribution Units control and distribute reliable electric power to various downstream equipment.*



# DESIGN WITHOUT LIMITS!

Astrodyne TDI designs and manufactures Custom Power Distribution Units (PDUs) to support critical applications in the Medical, Semiconductor Capital Equipment, and Industrial Markets. Our team streamlines system design while simplifying manufacturing processes and reducing cost.

**Custom PDUs offer effective and efficient implementation of power distribution, safety features, remote communication, output monitoring, and control.**

## POWER DISTRIBUTION

Power distribution is the fundamental functionality of a PDU. Astrodyne TDI will work closely with the end-user to set requirements, stipulating the number of connections, along with their power rating. Current capabilities range from small PDUs delivering 100's of watts to large scale Power Systems delivering 100's of kilowatts. Supported power input sources include: **uninterruptible power supplies (UPS), power supplies (PSU), and utility power sources (AC Main), or battery power (DC)**; with ability to support additional power sources available upon request.

## POWER PROTECTION

The PDU can function as part of a system or safety interlock process, where power delivery to connected equipment is coordinated with various distributed system controls and switches. Astrodyne TDI PDUs offer:

- ▶ **Safety Interlocks, Circuit Breakers, Fuses, ON/OFF Switch, EMO, Indicators, Safety Communication, and Alarms/Alerts** that can protect the functionality of the connected equipment.



**Extensive variety of connector options, including, but not limited to MIL connectors, Bus Bars, Molex, IEC Inlets/Outlets, etc.**

## POWER CONVERSION

Astrodyne TDI's PDUs can provide power conversion elements, such as **AC-DC, DC-DC, or DC-AC** converters. They may also include **AC-AC** transformers for isolation, step-up, step-down, and/or power conditioning.

### Input Options

- ▶ Up to **5 Inputs** per single PDU  
Parallel options available upon request
- ▶ DC options from **0 to 2kV**
- ▶ AC options from **90-120VAC 1PH (low line), 176-264VAC 1PH (high line), 208VAC 3PH, 380-480VAC 3PH**  
(50/60Hz, 400 Hz)

### Output Options

- ▶ Up to **30 Outputs** per PDU/Rack
- ▶ DC options from **0 to 2kVDC** and **0 to 500kW**
- ▶ AC options from **90-120VAC 1PH (low line), 176-264VAC 1PH (high line), 208VAC 3PH, 380-480VAC 3PH** and **200kW**  
(50/60Hz, 400 Hz)

*Additional options available upon request.*



## POWER CONDITIONING & ELECTROMAGNETIC COMPATIBILITY

Integrate EMI filters that are specifically tailored to suppress noise generated by connected equipment, or from input power surges, such as those specified by IEC-61000

- ▶ Extensive line of in-house **EMI filer solutions**
- ▶ **Surge protection available to eliminate voltage spikes**

## CONTROL FEATURES

Astrodyne TDI's PDU can provide DC bias voltage for connected system control functions and monitoring of input and delivered power. A bias voltage may be made independent of system interlock and EMO functions. Facilitate system maintenance and troubleshooting with some common protocols including:

- ▶ **RS232/485, Ethernet, Ether CAT, Modbus, ProfiNet, Analog, Can Bus,**

## MONITORING FEATURES

PDUs can provide accurate digital or analog monitoring of:

- ▶ **Voltage, Current, Power, PSU ON, AC, DC, Temperature Alarms, Over Voltage Alarms, Over Current Alarms**



## IN-HOUSE ISOLATION TRANSFORMERS

90-120VAC 1PH (low line), 176-264VAC 1PH (high line), 208VAC 3PH, 380-480VAC 3PH

- ▶ Medical standards include **2MOPP, B Rated, and BF Rated**



## BATTERY BACKUP

In the event the power fails, the battery will immediately take over and provide the power necessary ensuring glitch-free power to the user equipment.

- ▶ **On-Line Battery Backup** - auto-transfer switching between dual sources
- ▶ **LiFePO4 (Lithium-Ion Phosphate) Battery Cells**
- ▶ **DC/AC Inverters Pure Sin Wave Output**
- ▶ **Integrated Options** (AC/DC, Battery Backup, DC/AC Inverter)



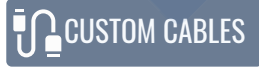
AC IN



AC/DC PSU



BATTERY BACKUP



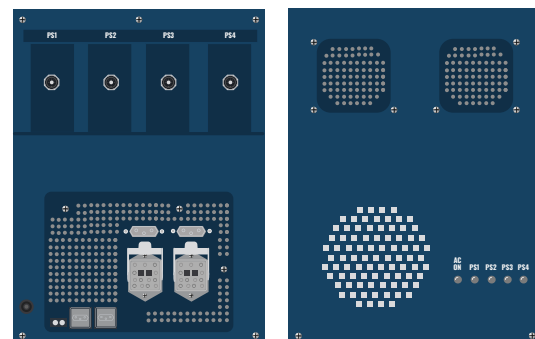
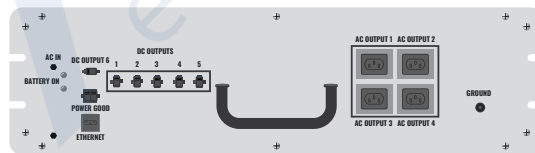
CUSTOM CABLES



EMERGENCY OFF



CIRCUIT BREAKERS, CONTACTORS



DC IN



DC/DC PSU



ISOLATION XFMR



EMI FILTER



SYSTEM FAN



HIGH PERFORMANCE CONNECTORS



## FEATURES & COMPONENT SELECTION EXAMPLES

Key Features		Surgical Suite/Diagnostic	Surgical Robotic	Semiconductor Capital	Industrial Automation
	AC In - Standard	✓	✓		✓
	AC In - Custom			✓	
	DC In	✓	✓		
	Isolation XFMR	✓	✓		
	EMI Filter	✓	✓	✓	✓
	UPS	✓	✓		
	Communication & Monitoring	✓	✓	✓	✓
	EMO Stop			✓	✓
	Custom Cables	✓	✓	✓	✓
	Battery Backup	✓	✓		
	AC/DC PSU	✓	✓	✓	✓
	DC/DC PSU	✓	✓	✓	
	High Performance Connectors	✓	✓	✓	✓
	System Fan	✓	✓		
	Circuit Breakers, contactors	✓	✓	✓	✓

Power distribution requirements vary by application. Additional modules available upon request. Please contact the Astrodyne TDI team for additional information.

## SIMPLIFY SUPPLY CHAIN MANAGEMENT & SPEED UP TIME TO MARKET

- ✓ Install a single power management unit to streamline assembly and installation
- ✓ Build a unique power solution by selecting features that meet application-specific requirements
- ✓ Extend your engineering resources with a team of power experts for a collaborative development
- ✓ Eliminate the hassle of managing a variety of parts and upgrade to a single unit

