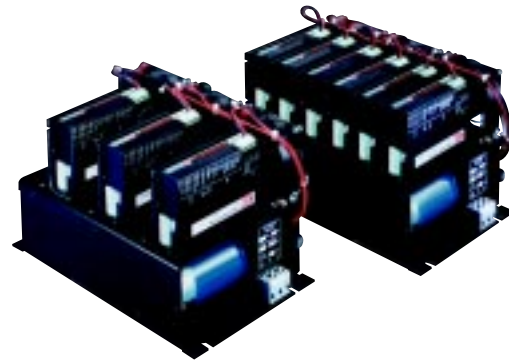


## FEATURES

- Linear, unregulated power for PWM servo amplifiers.
- Power, Mounting, and Cooling for 1~6 amplifiers
- Optional fan-bar holds three 3.15" fans.
- PST Models utilize an *internal toroidal transformer*
- PSX Models require an *external transformer ( single or 3 phase )*
- Thermal circuit breakers on AC power inputs eliminate inrush tripping at power on, permit fast reset in field.
- Screw-terminal connections for mains wiring and motor power connections.

## THE OEM ADVANTAGE

- *Add amplifiers for complete drive subsystem.*
- Small footprint ( 7" X 11.5" )
- Dual AC-voltage models for OEM flexibility when shipping to international markets



## DESCRIPTION

PST/PSX models are linear, unregulated power supplies designed to be used with Copley Controls PWM servo amplifiers. They provide DC power, mounting, and (optional) cooling for 1-6 servo amplifiers.

The small footprint takes advantage of the fact that multiple-amplifier installations seldom operate at the maximum continuous power rating of each individual amplifier. Particularly in incremental motion applications, machine design commonly prevents simultaneous movement of all axes, and when motion occurs, it requires less than the amplifiers peak rating. This package was developed to put the largest possible transformer into the smallest package that would mount up to six amplifiers.

The 750W output rating of the PST models (630W for dual-voltage PST-DP models) is sufficient to drive the majority of applications, given the varying duty cycles and power outputs of the mounted amplifiers.

When higher power is required, the PSX models utilize external isolation transformers to increase unit power ratings to 1500W.

The PSX series require either single or three-phase isolation transformers and incorporate extra capacitance internally.

Model PST-075 and PST-150 provide +75VDC and +150VDC respectively for powering Copley Controls Corp. amplifiers that operate from +24 to +90VDC, and +24 to +180VDC.

When utilizing lower voltage amplifiers such as Models 403, 405, 503, and 505 that operate from +18 to +55VDC, Model PST-040-13-DP, supplying +40VDC is available.

PEM fasteners on top plate provide easy mounting of 1 to 6 amplifiers in a 7.0 X 11.5 in. footprint.

An optional fanbar mounts three high efficiency 3.15" fans for direct, forced-air cooling when required.

An optional extension plate adapts the larger amplifiers (Models 513 and 5xx1 series), increasing the footprint to 9.35" X 11.5".

Standard PST models operate from USA standard mains (120VAC at 60Hz) and output 75 or 150VDC with a 750W rating.

For international power operation, PST-DP models offer switch-selection of mains voltages: 115/230VAC at 50/60Hz in three output voltages.

# PST/PSX Series Unregulated Power Supplies for PWM Servo Amplifiers

## APPLICATION INFORMATION

### PST MODELS

These models employ internal toroidal transformers and connect directly to the mains. There is a thermal circuit breaker in the AC input circuit. This protects against external overloads, and internal failures, but permits the high inrush currents into the filter capacitor without false tripping.

### PSX MODELS

These models have no internal transformers, and connect to the secondary windings of external isolation transformers.

MODEL PSX-1 USES SINGLE-PHASE TRANSFORMERS, MODEL PSX-3 USES THREE-PHASE.

**EACH TYPE HAS INPUT THERMAL CIRCUIT BREAKERS THAT PROTECT AGAINST OVERLOADS AND PREVENT FALSE TRIPPING WITH INRUSH CURRENTS INTO THE FILTER CAPACITOR.**

## GENERAL SPECIFICATIONS

Ripple Voltage	2%V at full load
Environmental	Operating temperature range: 0° C to 50° C.
Derating:	0.86%/°C from 50°C to 65 °C.
Grounding	TB1 ground pin connects to chassis "star" ground point. Chassis grounding lug provided. Output filter capacitor (-) terminal connects to chassis star ground internally.
Peak output current	2.5X rated continuous current for 1s. at 20% duty cycle.

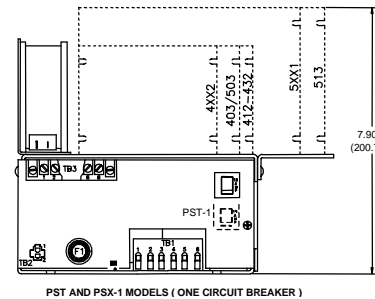
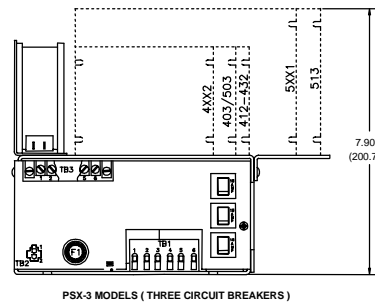
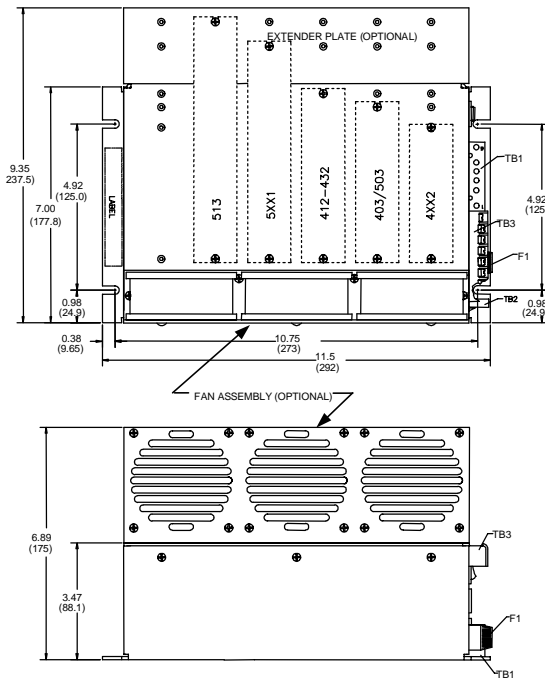
### ISOLATION WINDINGS. TRANSFORMER-ISOLATED SECONDARY 4KV BREAKDOWN RATING

Internal Circuit Breaker 15A thermal time-delay on all models, except PSX-065-17-1 and PSX-140-10-1 (30A)

### CAUTION:

1. **Transformers used must have fully-isolated secondaries that are ungrounded.**
2. **PSX models use full-wave bridge rectifier circuits.**
3. **DO NOT USE with autotransformers, or with transformers having center-tapped grounded secondaries.**
4. **DO NOT CONNECT INPUT DIRECTLY TO AC MAINS!!**

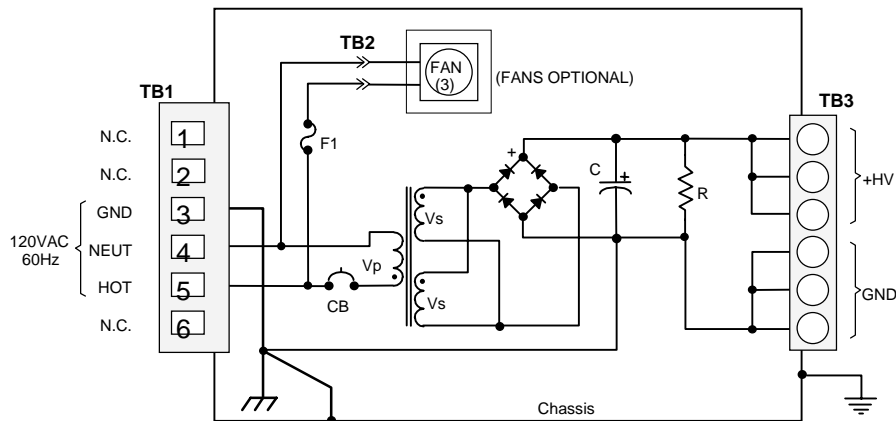
## OUTLINE DIMENSIONS



<b>WEIGHTS:</b>	PST-(065)075-10, PST-150-5	18.0 lbs. (8.2 kg)	PST-040-13-DP	18.0 lbs. (8.2 kg)
	PSX-075-20, PSX-150(140)-10	5.0 lbs. (2.3 kg)	Fan (option)	2.4 lbs. (1.1 kg)

PST MODELS FOR 120VAC, 60HZ

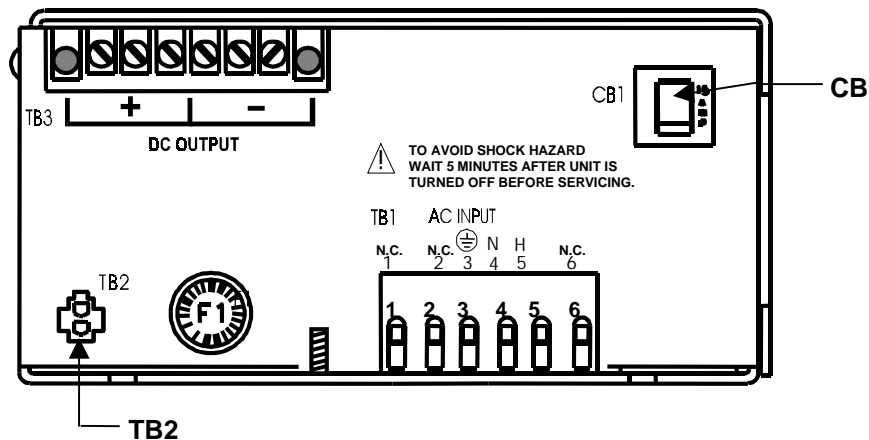
FUNCTIONAL DIAGRAM



Note: Secondary configuration shown above represents PST-75-10

Model	C	R	CB
PST-75-10	20,000 $\mu$ F	3.9k	15A
PST-150-05	6,800 $\mu$ F	6.8k	15A

PANEL LAYOUT



Test conditions: 120VAC, 60Hz. mains power.

RATINGS

Model	Output Power @ Full Load	No Load Voltage <sup>1</sup>	Output Power @ Full Load
PST-075-10	+70VDC @ 10A continuous	77VDC	105 to 132VAC, 60Hz, Single-phase mains, 9A maximum continuous current
PST-150-05	+141VDC @ 5A continuous	150VDC	

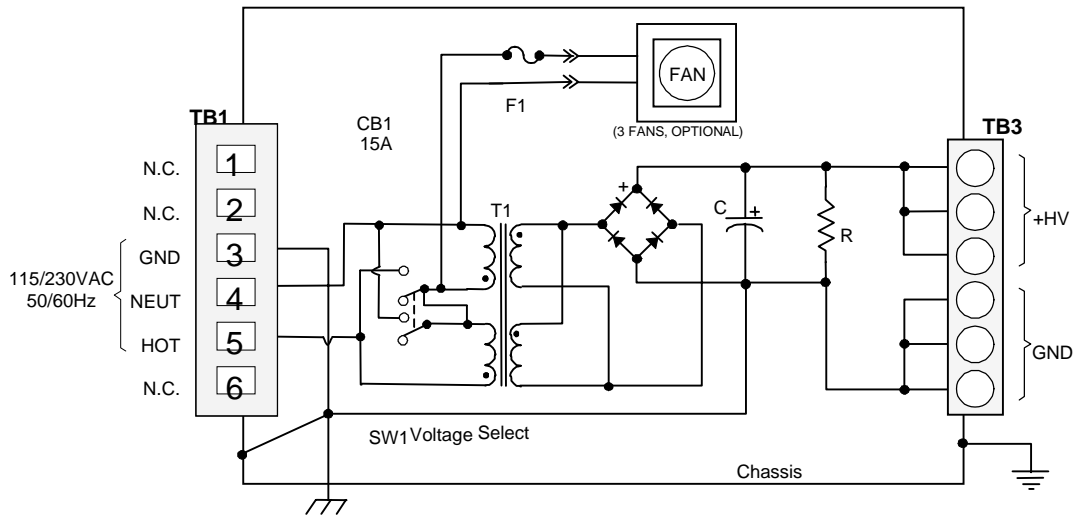
Notes:

1. No load voltage @ 120 VAC input.

# PST/PSX Series Unregulated Power Supplies for PWM Servo Amplifiers

PST-DP MODELS FOR 115/230VAC, 50/60HZ

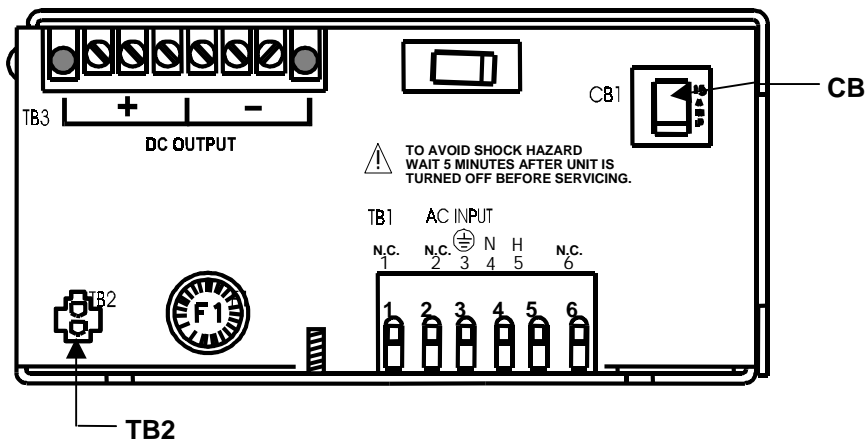
## FUNCTIONAL DIAGRAM



Note: Secondary configuration shown above represents PST-070-08-DP

Model	C	R	CB
PST-70-08-DP	20,000 $\mu$ F	3.9k	15A
PST-140-04-DP	6,800 $\mu$ F	6.8k	15A
PST-040-13-DP	47,000 $\mu$ F	3.9k	15A

## PANEL LAYOUT



ratings

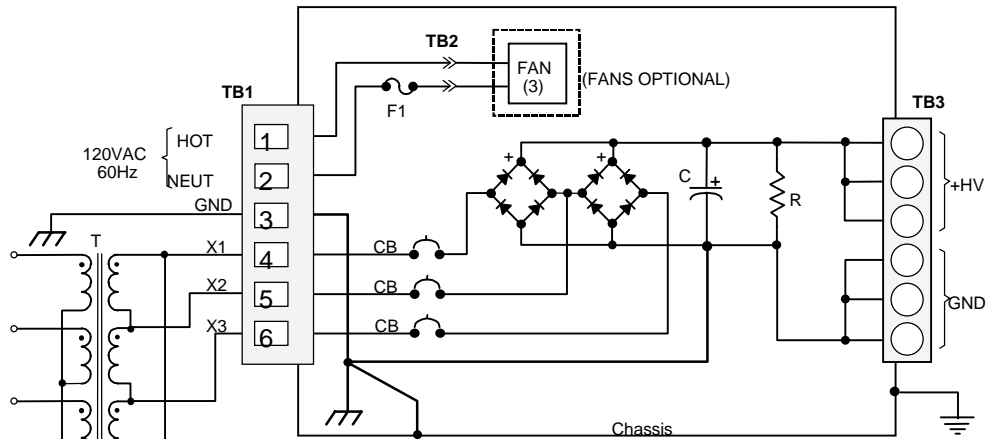
Test conditions: 115VAC, 50/60Hz. mains power.

Model	Output Power @ Full Load	No Load Voltage <sup>1</sup>	Input Power
PST-040-13-DP	+40VDC @ 13A continuous	45VDC	115/230VAC, 50/60Hz, Single-phase mains, 7.6/3.8A maximum continuous current
PST-070-08-DP	+70VDC @ 7.5A continuous	79VDC	
PST-140-04-DP	+140VDC @ 3.5A continuous	159VDC	

1. No load voltage @ 115 VAC or 230 VAC input.

PSX-3 MODELS ( EXTERNAL 3-PHASE TRANSFORMER )

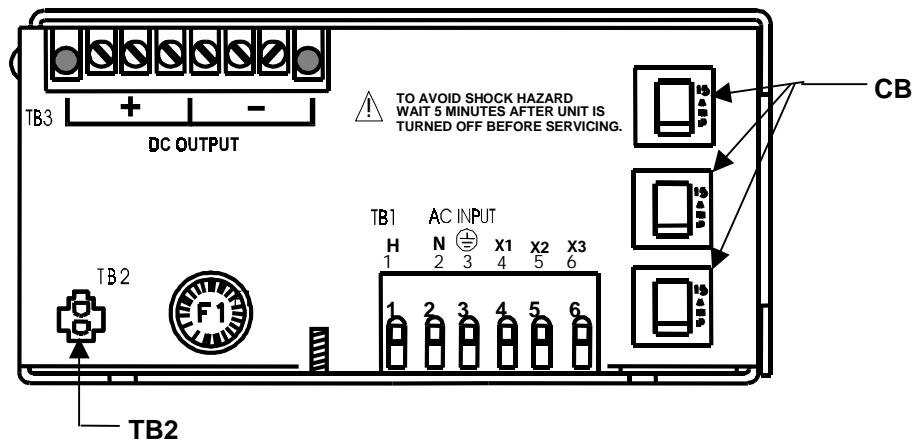
FUNCTIONAL DIAGRAM



Note: Secondary configuration shown above represents PSX-3

Model	C	R	CB	T
PSX-065-17-3	40,000 $\mu$ F	1.95k	15A	53VAC secondary, 3-phase, 2kVA
PSX-140-10-3	13,600 $\mu$ F	3.4k	15A	106VAC secondary, 3-phase, 2kVA

PANEL LAYOUT



RATINGS

Test conditions: 53VAC / 106VAC 60Hz secondary, 3-phase, 2kVA

Model	Output Power @ Full Load	No Load Voltage <sup>1</sup>	Input Power
PSX-065-17-3	+65VDC @ 16.5A continuous	+75VDC	53VAC, 50/60Hz, 17A max. cont. per phase
PSX-140-10-3	+140VDC @ 10A continuous	+150VDC	106VAC, 50/60Hz, 11A max. cont. per phase

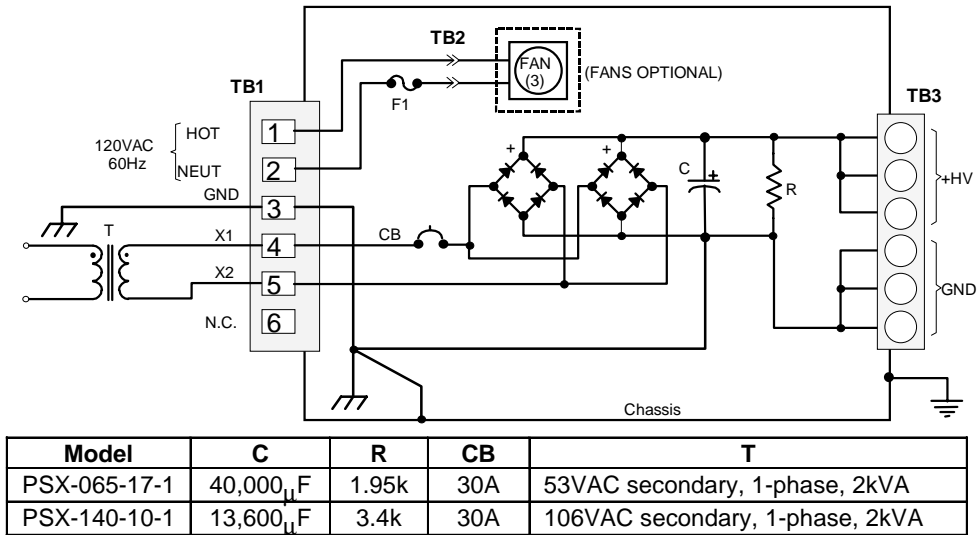
Notes:

1. No load voltage @ 115 VAC input.

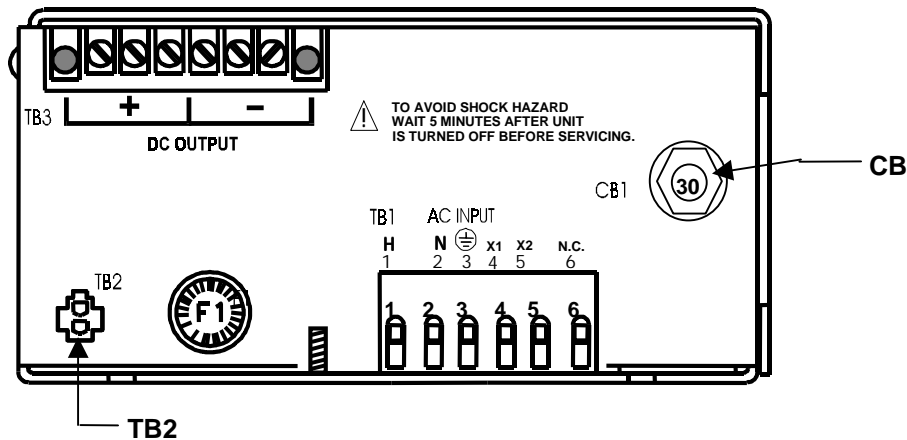
**PST/PSX Series Unregulated Power Supplies  
for PWM Servo Amplifiers**

**PSX-1 MODELS ( EXTERNAL SINGLE-PHASE TRANSFORMER )**

**FUNCTIONAL DIAGRAM**



**PANEL LAYOUT**



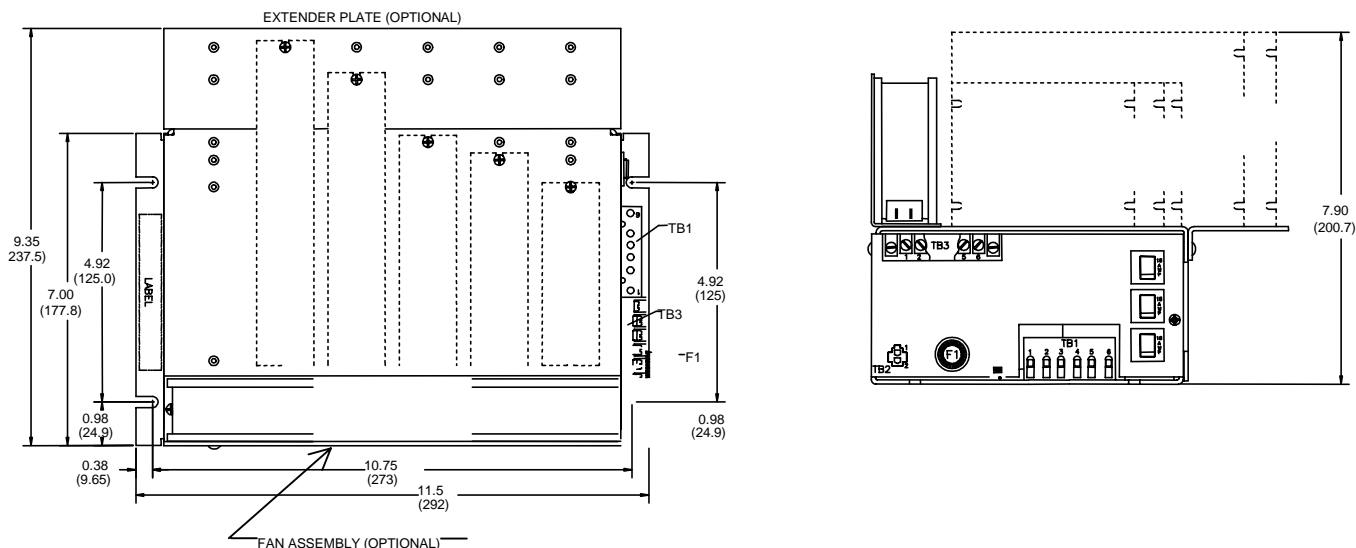
**RATINGS** Test conditions: 53VAC / 106VAC 60Hz secondary, 1-phase, 2kVA

Model	Output Power @ Full Load	No Load Voltage <sup>1</sup>	Input Power
PSX-065-17-1	+65VDC @ 16.5A continuous	+75VDC	53VAC, 50/60Hz, 30A max. cont.
PSX-140-10-1	+140VDC @ 10A continuous	+150VDC	106VAC, 50/60Hz, 19A max. cont.

Notes:

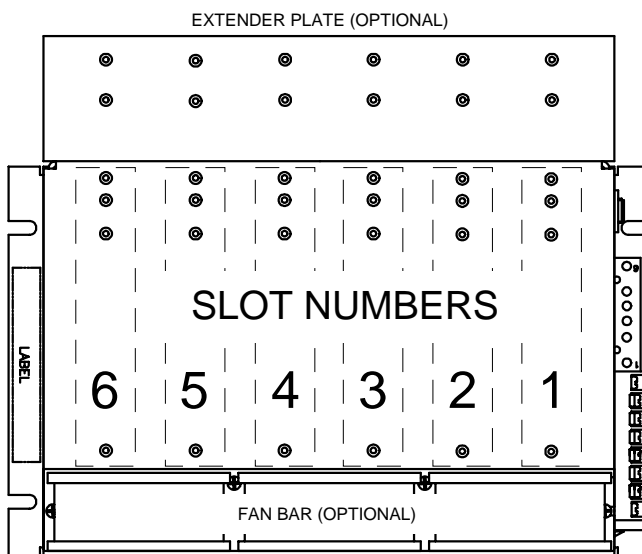
1. NO LOAD VOLTAGE @ 115 VAC INPUT.

**Layout Notes:** Please use these views of a PST/PSX for layout purposes when ordering Copley servoamps (refer back to page 2 for more details on sizing of typical servoamplifiers.)



### AMPLIFIER LOCATION

When ordering, use this chart to specify the location of the amplifiers in your system. For example, you might order a PST-075-10-F with two model 412 amplifiers in slots 1 & 2, and one model 413H amplifier (with heatsink) in slot 3. Call Copley for assistance in configuring the amplifier/power supply system for your requirements.



### CUSTOM CONFIGURATIONS

Contact us! Copley Controls can deliver power supplies with custom input and output voltages and with custom configurations of amplifiers mounted ready for direct installation into your equipment.

# PST/PSX Series Unregulated Power Supplies for PWM Servo Amplifiers

## ORDERING GUIDE

### POWER SUPPLIES SUB-SYSTEMS

Model	Output Ratings	Watts	Input Power
PST-040-13-DP	40VDC @ 13A	520	115/230VAC, 50/60Hz mains
PST-070-08-DP	70VDC @ 7.5A	525	115/230VAC, 50/60Hz mains
PST-075-10	75VDC @ 10A	750	120VAC, 60Hz mains
PST-140-04-DP	140VDC @ 3.5A	490	115/230VAC, 50/60Hz mains
PST-150-05	150VDC @ 5A	750	120VAC, 60Hz mains
PSX-065-17-1	65VDC @ 16.5A	1072	53VAC from 2kVA, 1-phase external transformer secondary <sup>3</sup>
PSX-065-17-3	65VDC @ 16.5A	1072	53VAC from 2kVA, 3-phase external transformer secondaries <sup>3</sup>
PSX-140-10-1	140VDC @ 10A	1400	106VAC from 2kVA, 1-phase external transformer secondary <sup>3</sup>
PSX-140-10-3	140VDC @ 10A	1400	106VAC from 2kVA, 3-phase external transformer secondaries <sup>3</sup>

### ACCESSORY TRANSFORMERS

Input	Transformer	Ratings	For Use With	To Output	Watts
120/240VAC 50/60Hz, single phase	TR116-15	48VAC, 1.25 kVA	PSX-065-17-1	60VDC @ 15A	900
	TR116-30	48VAC, 2.5 kVA	PSX-065-17-1	60VDC @ 30A	1800
	TR119-15	72VAC, 1.88 kVA	PSX-140-10-1	90VDC @ 15A	1350
	TR1112-15	96VAC, 2.5 kVA	PSX-140-10-1	120VDC @ 15A	1800
	TR1115-15	106VAC, 3.1 kVA	PSX-140-10-1	150VDC @ 15A	2250
	TR1115-30	106VAC, 6.2 kVA	PSX-140-10-1	150VDC @ 30A	4500
208VAC 50/60Hz, 3 phase	TR2315-15	106VAC, 2.3kVA	PSX-140-10-3	150VDC @ 15A	
	TR2315-30	106VAC, 4.5kVA	PSX-140-10-3	150VDC @ 15A	