

## PSS Series



PSS Supplies

## Product Description

Eaton's PSS Series of power supplies is designed to work in a variety of applications, including the power supply to the *IT* line of power control products. They also work in most control applications that require 24V DC. All of the PSS power supplies are designed to provide the highest "outrush" current in the industry for units of their size. It is also the only line to provide 110 – 480V AC input voltage down to the smallest current units.

## Application Description

The PSS line of power supplies is specifically designed to work with the S801, S811, MV811 and *IT* electro-mechanical devices. They can also serve in a variety of other applications, including support of sensors, operator interfaces, PLCs, communication networks, heaters and lights and in many other industrial applications where 24V DC power supplies are required. With the widest operating temperature range in the industry, rugged design and a long list of advanced features, they can be applied in a very wide range of applications.

The higher input voltage ranges are designed to allow users to eliminate the need for a control power transformer in the enclosure or cabinet, thus saving space, wiring and money.

## Features

- Wide range voltage input (110 – 480V AC operating).
- High current outrush capability in all units.
- Semiconductor F47 approved.
- Long ride-through capability designed in.
- Wide operating temperature range.
- Power supplies can be used in parallel (6.5A and greater).
- Multiple 24V DC terminals for easy wiring.
- DIN-rail and panel mount available in most units.
- Removable terminal connections.
- IP20 fingerproof design.
- Larger units have —
  - Active power factor correction
  - Adjustable output voltages
  - Fault contacts
  - Analog outputs

## Benefits

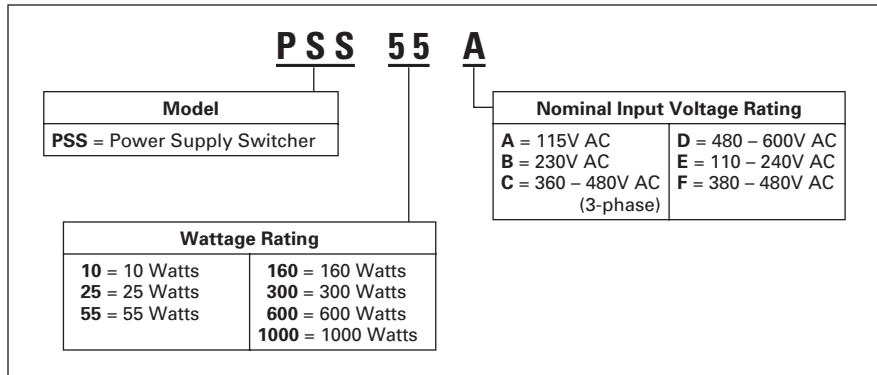
- 24V DC control enhances personnel and equipment safety.
- IP20 design improves personnel safety.
- Removable terminal connectors make installation and repair quick and easy.
- Wide operating temperature range allows for installation in most areas where standard control products can be installed today.
- High current outrush capability allows use of smaller power supplies in many applications and ensures stable output during high power demand cycles.
- Due to long ride-through time, the Power Supply can maintain the control power system during brown out and black out conditions.

## Standards and Certifications

- UL Listed 508.
- CSA Certified.
- CE Marked.
- F47 Certified.

**Catalog Number Selection**

**Table 4. PSS Catalog Numbering System**



**Accessories**

**DIN-Rail Mounting Kit**

**Table 7. Kits**

Description	Catalog Number	Price U.S. \$
DIN-Rail Mounting Kit	PSSDIN	22.30

**Product Selection**

**Table 5. Power Supply Product Selection**

Steady State Current (Amps)	Steady State Wattage	Input Voltage	Catalog Number	Price U.S. \$
.4	10W	110 – 240	PSS10E	99.50
		380 – 480	PSS10F	121.00
1.0	25W	110 – 240	PSS25E	125.00
		380 – 480	PSS25F	150.00
2.3	55W	110 – 240	PSS55A	233.00
		190 – 264	PSS55B	233.00
		360 – 480	PSS55C	279.00
		480 – 600	PSS55D	580.00
6.5	160W	110 – 240	PSS160E	342.00
		380 – 480	PSS160C	399.00
12.5	300W	90 – 264	PSS300E	471.00
		380 – 480	PSS300C	580.00
25.0	600W	380 – 480	PSS600C	700.00
40.0	1000W	380 – 480	PSS1000C	1290.00

**Table 6. PSS Sizing Chart**

Frame Size	IEC Size	NEMA Size	Steady State Current	Inrush	
				Amps	Durahon
27 mm	A	N/A	.83A	.83A	30 mS
45 mm	B	00, 0	.13A	3.30A	50 mS
54 mm	C	1	.15A	3.80A	50 mS
76 mm	D	2	.21A	5.40A	65 mS
105 mm	E	3, 4	.23A	5.80A	85 mS
140 mm	F	5	.54A	8.30A	250 mS

Discount Symbol ..... DT-1

## Technical Data and Specifications



Table 8. Power Supply Specifications

Capacity	PSS10E	PSS10F	PSS25E	PSS25F	PSS55A	PSS55B	PSS55C	PSS55D
	10W	10W	25W	25W	55W	55W	55W	55W

## Input

Voltage	110 to 240V AC	380 to 480V AC	110 to 240V AC	380 to 480V AC	115V AC	230V AC	380 to 480V AC 3-Phase	480 to 600V AC 3-Phase	
Input Current (RMS)	.19A	.1A	.45A	.17A	.9A	.54A	.20A/Phase	.07A/Phase	
Frequency	47 – 63 Hz	47 – 63 Hz	47 – 63 Hz	47 – 63 Hz	47 – 63 Hz	47 – 63 Hz	47 – 63 Hz	47 – 63 Hz	
Voltage Range	± 10%	± 10%	± 10%	± 10%	± 15%	± 15%	± 10%	± 15%	
Inrush Current	25A	25A	35A	35A	16A	32A	15A	15A	
Overvoltage	330V AC	550V AC	330V AC	550V AC	Varistor	Varistor	Varistor	Varistor	
Internal Input Fuse	T2A @ 250V	T2A @ 250V	T4A @ 250V	T2A @ 250V	T2A @ 250V	T2A @ 250V	3 x T2A @ 250V	—	
External Fusing	Not Required 2A 250V AC Slow Blow							3 x 1A 600V AC Slow Blow	

## Output

Voltage Nominal	24V DC	24V DC	24V DC	24V DC	24V DC	24V DC	24V DC	24V DC
Voltage Regulation	±10%	±10%	±10%	±10%	±3.5%	±3.5%	±3.5%	±3.5%
Current Nominal	.4A	.4A	1.0A	1.0A	2.3A	2.3A	2.3A	2.3A
Voltage Adj. Range	None	None	None	None	None	None	None	None
Current Surge	1A	1A	6.8A	6.8A	10A	10A	10A	10A
Current Surge Time	35 mS	35 mS	85 mS	85 mS	180 mS	180 mS	180 mS	180 mS
Surge Cycle Time					10 sec	10 sec	10 sec	10 sec
Hold Up Time	100 mS	100 mS	100 mS	100 mS	70 mS	70 mS	24 mS	30 mS
Max. Load Capacitance	10,000 µF	10,000 µF	10,000 µF	10,000 µF	10,000 µF	10,000 µF	10,000 µF	10,000 µF
Switching Frequency	60k Hz	60k Hz	100k Hz	100k Hz	100k Hz	100k Hz	100k Hz	61k Hz
Efficiency @ Max. Load	80%	75%	80%	80%	80%	80%	80%	85%
Output Ripple	±1%	±1%	±1%	±1%	±1%	±1%	±1%	±1%

**Table 8. Power Supply Specifications (Continued)**

Capacity	PSS10E	PSS10F	PSS25E	PSS25F	PSS55A	PSS55B	PSS55C	PSS55D
	10W	10W	25W	25W	55W	55W	55W	55W
<b>Protection</b>								
Short Circuit	Auto restart	Auto restart	Auto restart	Auto restart	Auto restart	Auto restart	Auto restart	Auto restart
Over Voltage	No	No	No	No	No	No	No	No
Under Voltage	No	No	No	No	No	No	No	No
Over Temperature	None. Software in Micro Controller							
Over Current	0.8A typical @ 24V for >100 mS	0.8A typical @ 24V for >160 mS	6.8 A typical @ 24V for >160 mS	6.8A typical @ 24V for >160 mS	10A typical @ 24V for >300 mS	10A typical @ 24V for >300 mS	10A typical @ 24V for >300 mS	10A typical 24V for >300 mS
<b>Galvanic Isolation</b>								
Input to Output	1.5 kV	2 kV	1.5 kV	2 kV	3 kV	3 kV	3 kV	4 kV
Input/Output to Rail	1.5 kV	2 kV	1.5 kV	2 kV	3 kV	3 kV	3 kV	4 kV
Input to Ground	1.5 kV	2 kV	1.5 kV	2 kV	1.5 kV	1.5 kV	1.5 kV	2.0 kV
Output to Ground	200V	200V	200V	200V	200V	200V	200V	250V
<b>Special Features</b>								
Cooling	Convection	Convection	Convection	Convection	Convection	Convection	Convection	Convection
Load Sharing	None	None	None	None	None	None	None	None
Redundancy	None	None	None	None	None	None	None	None
Analog Outputs	None	None	None	None	None	None	None	None
Fault Relay	None	None	None	None	None	None	None	None
<b>Wire Size</b>								
Input	20 – 14 AWG	20 – 14 AWG	20 – 14 AWG	20 – 14 AWG	20 – 14 AWG	20 – 14 AWG	20 – 14 AWG	20 – 14 AWG
Output	20 – 14 AWG	20 – 14 AWG	20 – 14 AWG	20 – 14 AWG	20 – 14 AWG	20 – 14 AWG	20 – 14 AWG	20 – 14 AWG
I/O	None	None	None	None	None	None	None	None
<b>Indications</b>								
Indicators	Green LED (DC on)							
<b>Physical Data</b>								
Dimensions Length x Width x Depth in inches (mm)	4.49 x 1.97 x 4.49 (114 x 50 x 114)	4.49 x 1.97 x 4.49 (114 x 50 x 114)	4.49 x 1.97 x 4.49 (114 x 50 x 114)	4.49 x 1.97 x 4.49 (114 x 50 x 114)	2.09 x 3.86 x 5.59 (53 x 98 x 142)	2.09 x 3.86 x 5.59 (53 x 98 x 142)	2.32 x 4.21 x 6.73 (59 x 107 x 171)	2.32 x 6.19 x 6 (59 x 157 x 154)
Weight (kg)	.57 (.26)	.64 (.29)	.73 (.33)	.81 (.37)	1.06 (.48)	1.06 (.48)	1.17 (.53)	2.45 (1.1)
Mounting and Recommended Clearance	TS35 rail or chassis; leave 4 in. (10 cm) free space on venting sides.				TS35 Rail (with optional PSSDIN Kit) or Chassis; Leave 4 in. (10 cm) free space on venting sides.			—
<b>Environmental Performance</b>								
Storage Temperature	-25 to 80°C	-25 to 80°C	-25 to 80C	-25 to 80C	-40 to 85°C	-40 to 85°C	-40 to 85°C	-40 to 85°C
Operating Temperature	-5 to 50°C	-5 to 50°C	-5 to 50°C	-5 to 50°C	-25 to 50°C	-25 to 50°C	-25 to 50°C	-25 to 50°C
Storage Humidity	5 to 95%	5 to 95%	5 to 95%	5 to 95%	5 to 95%	5 to 95%	5 to 95%	5 to 95%
Operating Humidity	<95% RH non-condensing	<95% RH non-condensing	<95% RH non-condensing	<95% RH non-condensing	20 to 85% non-condensing	20 to 85% non-condensing	20 to 85% non-condensing	20 to 85% non-condensing
<b>Approvals/Certifications</b>								
	UL, IEC, CSA	UL, IEC, CSA	UL, IEC, CSA	UL, IEC, CSA	cULus 1950 Recognized, cULus 508 Listed, CE			cCSAus



PSS160E



PSS300E

Table 8. Power Supply Specifications (Continued)

Capacity	PSS160E	PSS160C	PSS300E	PSS300C	PSS600C	PSS1000C
	160W	160W	300W	300W	600W	1000W
<b>Input</b>						
Voltage	115 to 230V AC	380 to 480V AC 3-Phase	115 to 230V AC	380 to 480V AC 3-Phase	380 to 480V AC 3-Phase	380 to 480V AC 3-Phase
Input Current (RMS)	2.3A/1.4A	.43A/Phase	3.3A/1.65A	.75A/Phase	1.4A/Phase	1.9A/Phase
Frequency	47 – 63 Hz	47 – 63 Hz	47 – 63 Hz	47 – 63 Hz	47 – 63 Hz	47 – 63 Hz
Voltage Range	± 10%	± 10%	± 10%	± 10%	± 10%	± 10%
Inrush Current	16/32A	5.7A	30A	40A	40A	40A
Over Voltage	Varistor	Varistor	Varistor	Varistor	Varistor	Varistor
Internal Input Fuse	T6.3A @ 250V	3 x T2A @ 500V	T5A @ 250V	No	No	No
External Fusing	Not Required 3A 250V AC Slow Blow	Not Required 2A 480V AC Slow Blow	Not Required 6A 250V AC Slow Blow	3 x T2A @ 480V AC Slow Blow	Required 3 x 6A @ 480V AC Slow Blow	
<b>Output</b>						
Voltage Nominal	24V DC	24V DC	24V DC	24V DC	24V DC	24V DC
Voltage Regulation	±3.5%	±3.5%	±6%	±5%	±6%	±6%
Current Nominal	6.5A	6.5A	12.5A	12.5A	25A	40A
Voltage Adj. Range	22.5 to 28.5V DC	22.5 to 28.5V DC	23 to 28V DC	23 to 28V DC	23 to 28V DC	23 to 28V DC
Current Surge	13A	20A	18A	25A	50A	80A
Current Surge Time	1 sec	1 sec	1 sec	1 sec	1 sec	1 sec
Surge Cycle Time	10 sec	10 sec	10 sec	60 sec	60 sec	60 sec
Hold Up Time	50 mS	15 mS	30 mS	25 mS @ 480V AC	12 mS	>14 mS
Max. Load Capacitance	10,000 µF	10,000 µF	10,000 µF	10,000 µF	10,000 µF	10,000 µF
Switching Frequency	65k Hz	100k Hz	100k Hz	100k Hz	65k Hz	65k Hz
Efficiency @ Max. Load	85%	83%	80%	83%	87%	90%
Output Ripple	±1%	±1%	±.1%	±.1%	±.1%	±.1%

**Table 8. Power Supply Specifications (Continued)**

Capacity	PSS160E	PSS160C	PSS300E	PSS300C	PSS600C	PSS1000C
	160W	160W	300W	300W	600W	1000W

**Protection**

Short Circuit	Auto restart	Auto restart	Auto restart	Auto restart	Auto restart	Auto restart
Over Voltage	No	Yes	Yes	Yes	Vout > 30V DC	Vout > 30.5V DC
Under Voltage	No	Yes	Yes	Yes	Vout < 20V DC	Vout < 20V DC
Over Temperature	None. Software in Micro Controller		Vout heatsink temp. is greater than 100°C			
Over Current	13A typical @ 24V for >1 sec	13A typical @ 24V for >1 sec	20A typical @ 24V for >1 sec	20A typical @ 24V for >1 sec	26.5A typical @ 24V for >1 sec	43A typical @ 24V for >1 sec

**Galvanic Isolation**

Input to Output	3 kV	3 kV	3 kV	3 kV	3 kV AC	3 kV AC
Input/Output to Rail	3 kV	3 kV	3 kV	3 kV	1.5 kV AC	1.5 kV AC
Input to Ground	1.5 kV	1.5 kV	1.5 kV	1.5 kV	1.5 kV AC	1.5 kV AC
Output to Ground	500V	500V	500V	500V	500V AC	500V AC

**Special Features**

Cooling	Convection	Convection	Fan cooled	Convection	Fan cooled	Fan cooled
Load Sharing	Maximum 2 units	Maximum 2 units	Maximum 3 units (active)	Maximum 2 units	Maximum 2 units	Maximum 2 units
Redundancy	Maximum 2 units	Maximum 2 units	Maximum 2 units	Maximum 2 units	Maximum 2 units	Maximum 2 units
Analog Outputs	None	None	VDC Out = 3 x V analog, T = 10 x V analog, IOOUT = 10 x V analog	None	VDC OUT = 3 x V analog, T = 10 x V analog, IOOUT = 10 x V analog	
Fault Relay	Form C, 125V AC and 30V DC @ 1A rating	Form C, 125V AC and 30V DC @ 1A rating	Form C contacts (1A @ 30V DC or 30V AC)	Form C contacts (1A @ 30V DC or 30V AC)	Form C contacts (1A @ 30V DC or 30V AC)	Form C contacts (1A @ 30V DC or 30V AC)

**Wire Size**

Input	26 – 12 AWG	26 – 12 AWG	22 – 12 AWG	22 – 12 AWG	22 – 12 AWG	22 – 12 AWG
Output	26 – 12 AWG	26 – 12 AWG	22 – 6 AWG	22 – 6 AWG	22 – 6 AWG	22 – 6 AWG
I/O	26 – 12 AWG	26 – 12 AWG	22 – 12 AWG (.08 – 2.5 mm <sup>2</sup> )	22 – 12 AWG (.08 – 2.5 mm <sup>2</sup> )	22 – 12 AWG (.08 – 2.5 mm <sup>2</sup> )	22 – 12 AWG (.08 – 2.5 mm <sup>2</sup> )

**Indications**

Indicators	Green LED (DC on)
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**Physical Data**

Dimensions Length x Width x Depth in Inches (mm)	5.0 x 2.2 x 6.8 (127 x 57 x 175)	5.44 x 2.3 x 7 (138.2 x 58.4 x 177.8)	4.1 x 9.53 x 6.1 (104 x 242 x 155)	6.25 x 3.16 x 6.35 (159 x 80 x 161)	6.8 x 9.4 x 5.3 (173 x 238 x 135)	7.2 x 10.6 x 5.3 (182 x 268 x 133)
Weight Lbs. (kg)	1.94 (.88)	2.2 (.99)	2.6 (1.18)	3.0 (1.4)	6.6 (3)	8.35 (3.8)
Mounting and Recommended Clearance	TS35 Rail with optional PSSDIN Kit or Chassis (hardware included); leave 4 in. (10 cm) free space on venting sides.					

**Environmental Performance**

Storage Temperature	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C
Operating Temperature	-20 to 50°C	-20 to 50°C	-20 to 50°C	-20 to 50°C	-10 to +50°C (Full Power)	-10 to +50°C (Full Power)
Storage Humidity	5 to 95%	5 to 95%	4 to 95%	4 to 95%	5 to 95%	5 to 95%
Operating Humidity	20 to 85% non-condensing	20 to 85% non-condensing	19 to 85% non-condensing	19 to 85% non-condensing	20 to 85% non-condensing	20 to 85% non-condensing

**Approvals/Certifications**

	CE, cULus 508 Listed	CE, cULus 508 Listed	CE, cULus 508 Listed	CE, cULus 508 Listed	CE, cULus 508 Listed	CSA 22.2 #950-95, cULus 508 Listed, CE
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