

# AC-DC Converter

**POWER  
SOLVE**

## JBX350/650/1000 Series 350-1200 Watt Enclosed Single Output

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### Features

- Rugged Industrial Construction
- Variable Speed Fan for Noise Reduction
- -40°C to +70°C Operating Temperature
- AC OK, Remote On/Off & Active Current Share
- 5V Standby
- Screw Terminals

### Electrical Specification

Input Voltage Range	650W: 80-264VAC (Derate output power 10% <90VAC & 20% <85VAC) 350 & 1000W: 85-264VAC (Derate output power 10% <90VAC)
Frequency	47-63Hz
Input Current	350W: 3.8A/2.1A typical at 115V/230VAC, full load 650W: 6.5A/3.2A typical at 115V/230VAC, full load 1000W: 10.9/5.1A typical at 115V/230VAC, full load
Inrush Current	650W: 40A max. at 264VAC, 350 & 1000W: 60A max. at 264VAC
Power Factor	>0.9
Earth Leakage Current	0.5mA max. at 264VAC/60Hz
Input Protection	650W: T16A/250V, 1000W: T20A/250V internal fuse in line & neutral 350W: T10A/250V single internal fuse in line
Output Voltage	12-48VDC See Table
Output Voltage Trim	±10% V1
Initial Set Accuracy	650W: ±1% V1, ±5% V3, 350 & 1000W: ±1% V1, ±5% V2
Minimum Load	No minimum load requirement
Start Up Delay & Rise Time	Delay: 500ms max. Rise Time: 50ms typical
Hold Up Time	20ms min.
Drift	±0.2% after 20 mins. warm up
Regulation	Line: ±0.5% max. Load: 650W: ±1% V1, ±5% V3, 350 & 1000W: ±1% V1, ±5% V2
Transient Response	4% max. deviation, recovery to within 1% in 500µs for a 50-75-50% load change
Ripple & Noise	1% pk-pk typical V1, 20MHz bandwidth
Overvoltage Protection	115-145% Vnom, recycle input to reset
Overload Protection	110-140%, V1 only
Overtemperature Protection	Auto reset
Short Circuit Protection	Constant current characteristic
Temperature Coefficient	0.05% / °C
Remote Sense	Compensates for 0.5V total voltage drop
Remote On/Off	Uncommitted isolated optocoupler diode, powered diode inhibits V1 & fan supply
Current Share	Single wire current share
Efficiency	85% typical
Isolation	3000VAC I/P to O/P, 1500VAC I/P to FG, 500VDC O/P to FG
Switching Frequency	PFC: 70kHz; main converter: 200kHz; standby: 130kHz typical
Power Density	350W: 6.6W/in <sup>3</sup> ; 650W: 8.2W/in <sup>3</sup> ; 1000W: 8.9W/in <sup>3</sup>
Signals	AC OK, remote on/off, current share
Operating Temperature Range	-20°C to +70°C (derating linearly from 50°C at 2.5%/°C to 50% load at 70°C); -40°C start up
Cooling	650W: Forced cooled, '-TF' & '-EF' models have integral dual voltage level fan, which is load dependant, U channel requires 5.5m/s minimum airflow. 350 & 1000W: Forced cooled via integral multi voltage level fan which is load dependant
Operating Humidity	95% RH, non-condensing
Storage Temperature Range	-40°C to +85°C
Operating Altitude	3000m
Shock	30g pk, half sine, 6 axes EN60068-2-27, -2-47
Vibration	5-500Hz, 2g rms, 3 axes EN60068-2-6

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## Electrical Specification (cont.)

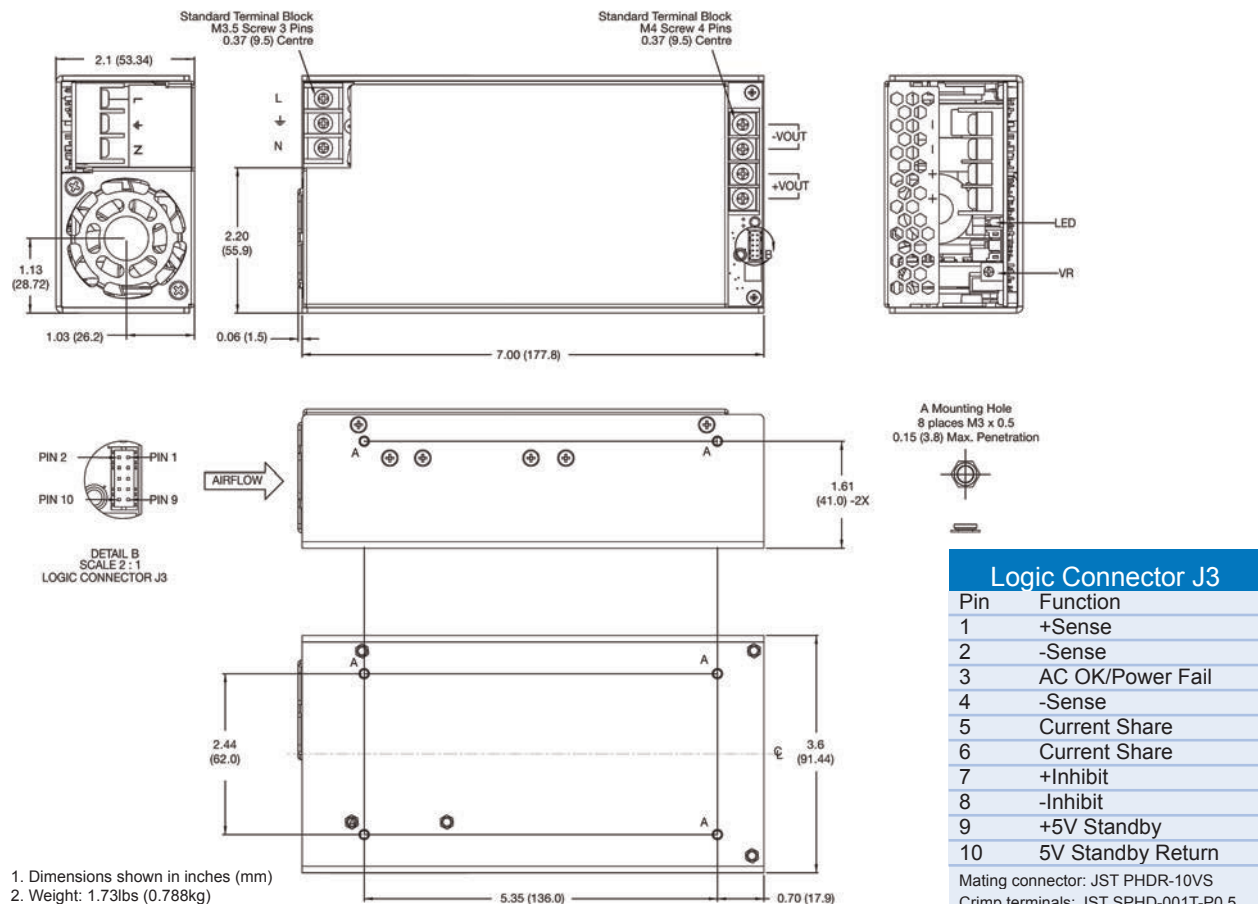
Emissions	EN55022 class B conducted, EN55022 class A radiated
Harmonic Currents	EN61000-3-2, class A 650W: class C for loads $\geq 20\%$ 350 & 1000W: class C for loads $\geq 10\%$
Voltage Flicker	EN61000-3-3
ESD Immunity	EN61000-4-2, level 3 contact, level 3 air, Perf Criteria A
Radiated Immunity	EN61000-4-3, level 3, Perf. criteria A
EFT/Burst	EN61000-4-4, level 3, Perf. criteria A
Surge	EN61000-4-5, installation class 3, Perf. criteria A
Conducted Immunity	EN61000-4-6, level 3, Perf. criteria A
Dips & Interruptions	EN61000-4-11, 30% 10ms, 60% 100ms, 100% 5000ms, Perf. criteria A, B, B EN60601-1-2, 30% 500ms, 60% 100ms, 100% 5000ms, Perf. criteria A, A, A, B-230VAC
Safety Approvals	IEC60950-1 CB report, CSA 22.2 No. 60950-1, UL60950-1, TUV EN60950-1, SEM F47

## Output Voltage and Current Ratings

MODEL	OUTPUT		STANDBY SUPPLY V2	OUTPUT POWER	
	VOLTAGE V1	CURRENT V1		CONTINUOUS	PEAK
JBX350-12S	12V	26.5A	5V / 0.2A	318W	
JBX350-15S	15V	22.0A	5V / 0.2A	330W	
JBX350-24S	24V	14.5A	5V / 0.2A	348W	417W
JBX350-28S	28V	12.5A	5V / 0.2A	350W	420W
JBX350-36S	36V	9.7A	5V / 0.2A	350W	420W
JBX350-48S	48V	7.3A	5V / 0.2A	350W	420W

1. Peak power available for 10 seconds with 35% duty cycle.

## Mechanical and Connection Details



### Logic Connector J3

Pin	Function
1	+Sense
2	-Sense
3	AC OK/Power Fail
4	-Sense
5	Current Share
6	Current Share
7	+Inhibit
8	-Inhibit
9	+5V Standby
10	5V Standby Return

Mating connector: JST PHDR-10VS  
Crimp terminals: JST SPHDR-001T-P0.5

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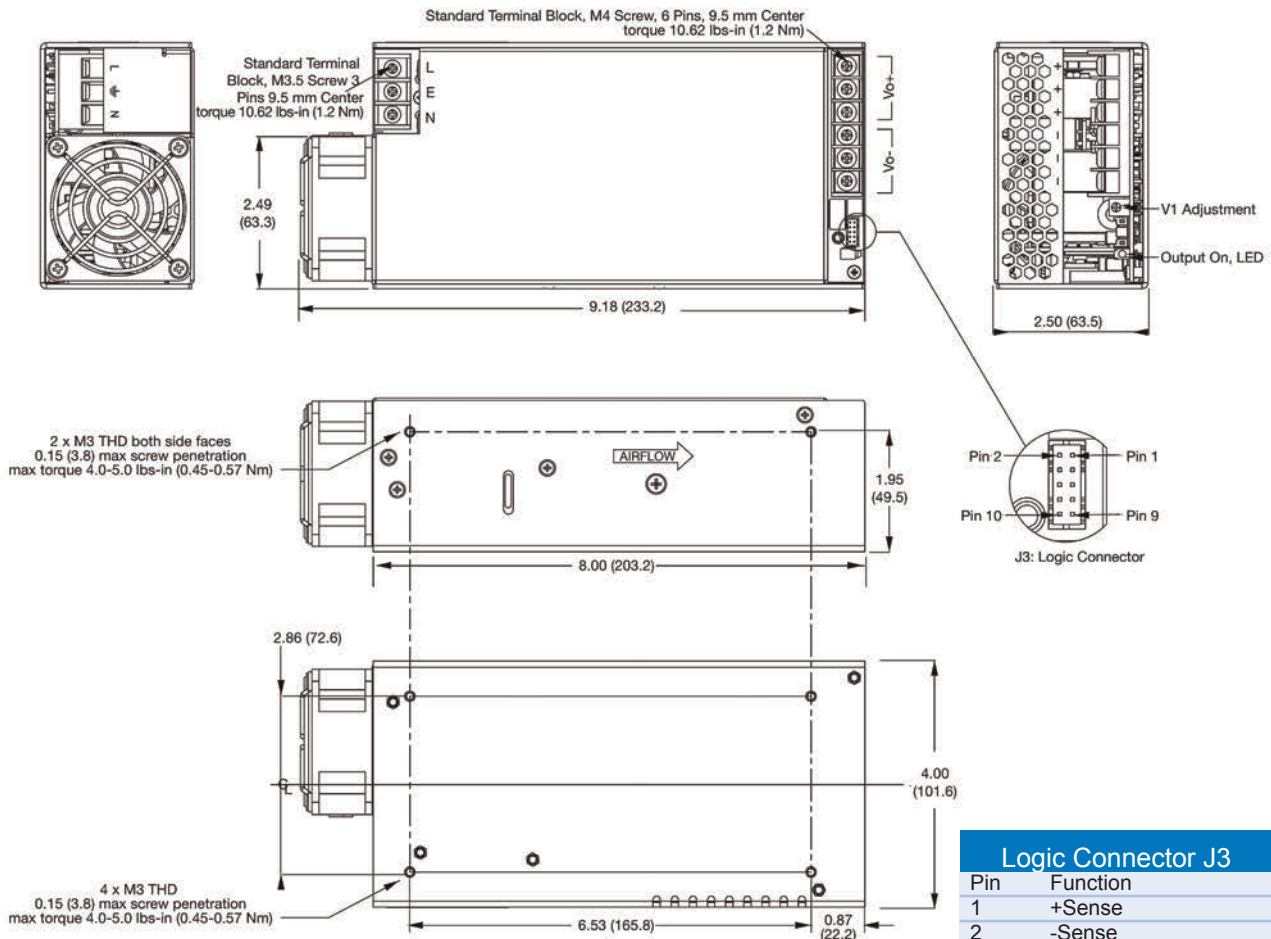
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## Output Voltage and Current Ratings

MODEL	OUTPUT VOLTAGE V1	OUTPUT CURRENT V1	FAN SUPPLY V2	STANDBY SUPPLY V3	OUTPUT POWER
JBX650-12S	12V	50.0A	12V / 0.5A	5V / 0.2A	607W
JBX650-15S	15V	40.0A	12V / 0.5A	5V / 0.2A	607W
JBX650-24S	24V	27.0A	12V / 0.5A	5V / 0.2A	655W
JBX650-28S	28V	23.0A	12V / 0.5A	5V / 0.2A	655W
JBX650-36S	36V	18.0A	12V / 0.5A	5V / 0.2A	655W
JBX650-48S	48V	13.5A	12V / 0.5A	5V / 0.2A	655W

1. For end fan version add suffix '-EF' to model number; for top fan add suffix '-TF' to model number. E.G. JBX650-12S-EF
2. For U Channel version remove suffix. Contact sales for details.
3. U Channel versions require a minimum of 5.5m/s airflow.
4. Fan supply used to power integral fans in '-EF' & '-TF' versions

## Mechanical and Connection Details - End Fan (suffix -EF)



### Logic Connector J3

Pin	Function
1	+Sense
2	-Sense
3	AC OK/Power Fail
4	-Sense
5	Current Share
6	Current Share
7	+Inhibit
8	-Inhibit
9	+5V Standby (V3)
10	5V Standby Rtn (V3)

Mating connector: JST PHDR-10VS  
Crimp terminals: JST SPHD-001T-P0.5

1. Dimensions shown in inches (mm)
2. Weight: 2.8lbs (1.27kg)

Fan supply mating connector:  
Housing: JST PHR-2  
Contacts: SPH-002T-P0.5

This connector is used to power the integral fan in the -EF & -TF versions.

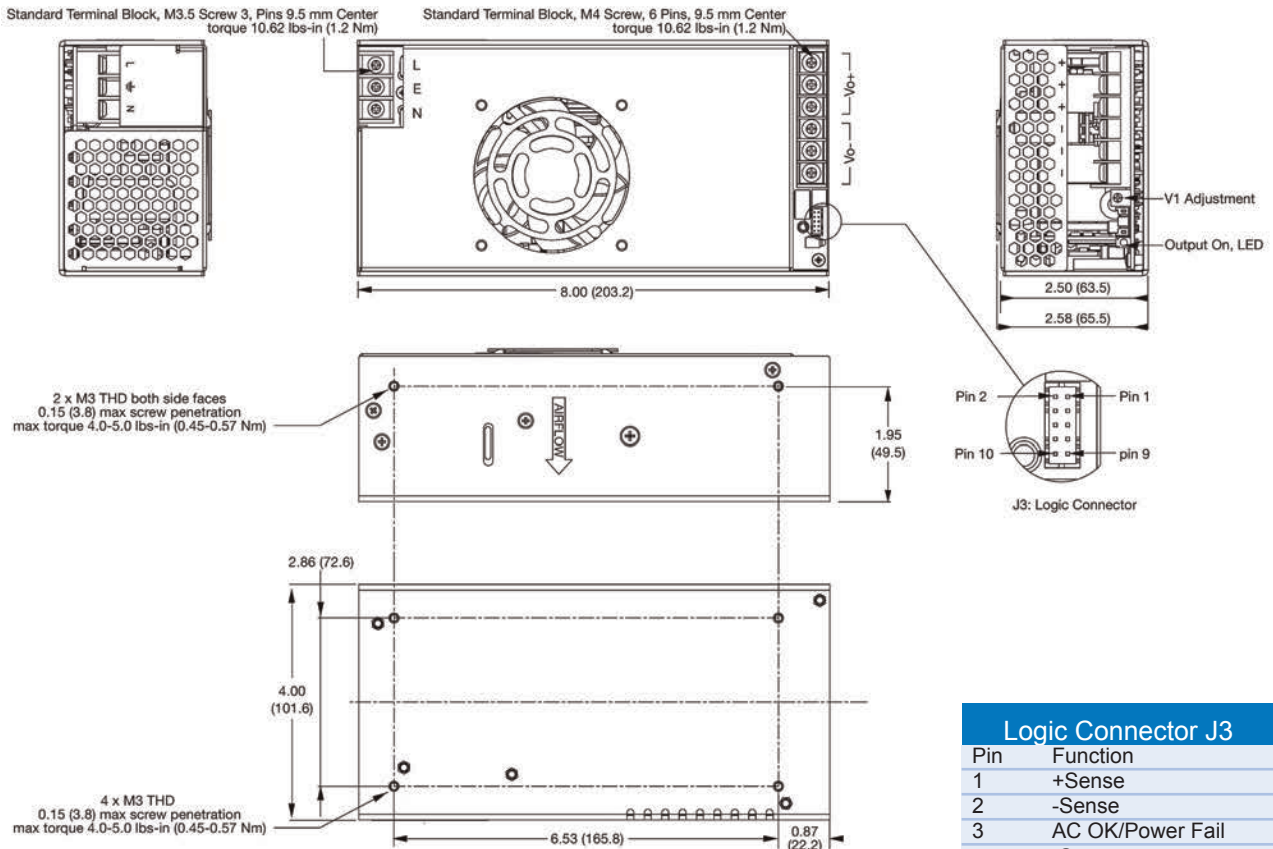


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## Mechanical and Connection Details - Top Fan (suffix -TF)



1. Dimensions shown in inches (mm)
2. Weight: 2.8lbs (1.27kg)

Fan supply mating connector:  
 Housing: JST PHR-2  
 Contacts: SPH-002T-P0.5S  
 This connector is used to power the integral fan in the -EF & -TF versions.

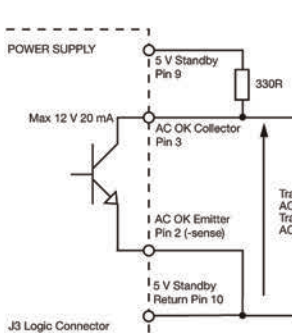
### Logic Connector J3

Pin	Function
1	+Sense
2	-Sense
3	AC OK/Power Fail
4	-Sense
5	Current Share
6	Current Share
7	+Inhibit
8	-Inhibit
9	+5V Standby (V3)
10	5V Standby Rtn (V3)

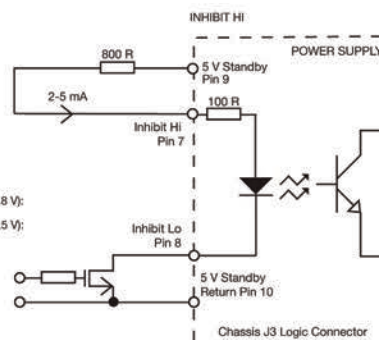
Mating connector: JST PHDR-10VS  
 Crimp terminals: JST SPHD-001T-P0.5

## Signals

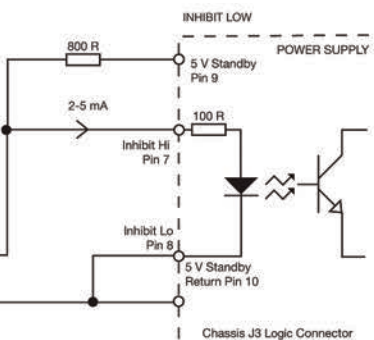
### AC OK / Power Fail



### Remote On/Off (Inhibit)



Signal High: Power Supply OFF  
 Low or Floating: Power Supply ON



Signal High: Power Supply ON  
 Low or Floating: Power Supply OFF

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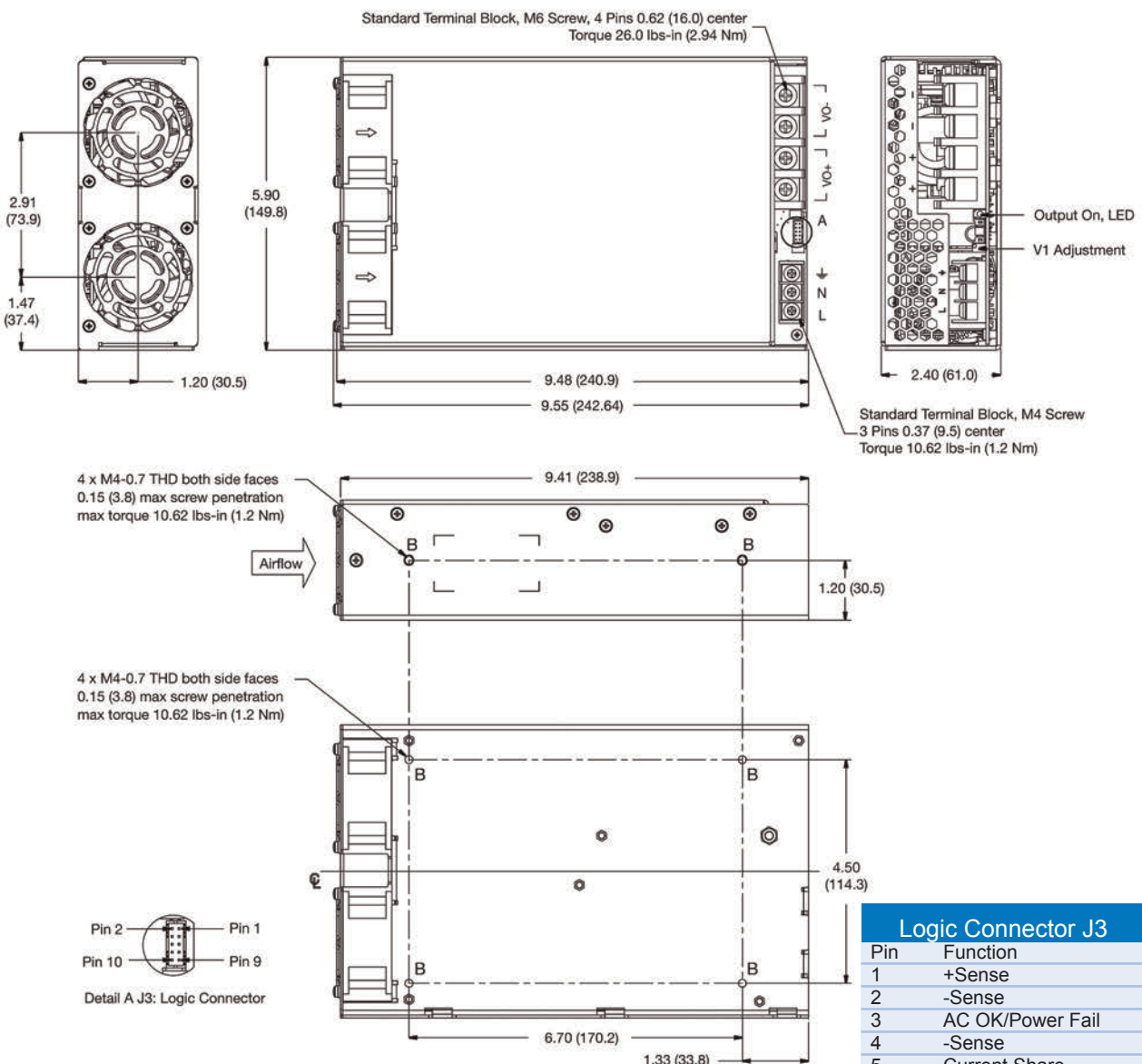


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## Output Voltage and Current Ratings

MODEL	OUTPUT VOLTAGE V1	OUTPUT CURRENT V1		STANDBY SUPPLY V2	OUTPUT POWER	
		<180VAC	>180VAC		<180VAC	>180VAC
JBX1000-12S	12V	83.0A		5V / 1.0A	1000W	
JBX1000-15S	15V	67.0A		5V / 1.0A	1010W	
JBX1000-24S	24V	42.0A	50.0A	5V / 1.0A	1013W	1200W
JBX1000-28S	28V	36.0A	43.0A	5V / 1.0A	1013W	1200W
JBX1000-36S	36V	28.0A	34.0A	5V / 1.0A	1013W	1200W
JBX1000-48S	48V	21.0A	25.0A	5V / 1.0A	1013W	1200W

## Mechanical and Connection Details



### Logic Connector J3

Pin	Function
1	+Sense
2	-Sense
3	AC OK/Power Fail
4	-Sense
5	Current Share
6	Current Share
7	+Inhibit
8	-Inhibit
9	+5V Standby
10	5V Standby Rtn

Mating connector: JST PHDR-10VS  
Crimp terminals: JST SPHD-001T-P0.5

1. Dimensions shown in inches (mm)  
2. Weight: 4.6lbs (2.08kg)