

M1155 SERIES

СОМРАСТ,	HIGH	ł	DEN	NSITY,	HIGH
EFFICIENCY,	S	IN	GLE	OL	JTPUT,
THREE-PHASE	AC	/	DC	CONVE	RTERS

Up to 500 W



Applications Military (Airborne, ground-fix, shipboard), Ruggedized, Telecom, Industrial Power Supply					
Special Features • Miniature size • High efficiency • Wide input range • Input / Output isolation	 Remote Inhibit (On/Off) <u>Fixed</u> internal switching freq. External sync. capability Power factor 0.8-0.9 @ full load 	 <u>EMI</u> filters included Non-latching protections: Overload / short-circuit Over temperature 			
Electrical Specifications <u>AC Input</u> Voltage range: 115 (98-150) V _{AC,L-N} 50/60/400 Hz, 3-phase per MIL-STD-704A.	<u>DC Output</u> Voltage range: 5 to 50 V _{DC} Current: 0 to 25 A Power output: 0 to 500 W	$\frac{Isolation}{Input to Output: 500 V_{DC}}$ Input to Case: 500 V_{DC} Output to Case: 100 V_{DC}			
Line/Load regulation: Less than ±1% (low line to high line voltage, no load to full load, -55 °C to +85 °C). Ripple and Noise: 100÷150 mV _{p-p} , typical (max. 1%) without external capacitance. Additional load capacitance	<u>Efficiency</u> 90% - Typical (full load, room temperature) <u>Turn on Transient</u> No Voltage over shoot during power on.	EMC Designed to meet [†] MIL-STD-461F (CE102, CS101, CS114, CS115, CS116, RE101, RE102, RS101, RS103) with M1289 line filter Designed to also meet CE101 with M1289 line filter, for loads up to 200W.			
Description Output • Over temperature protection • Passive transorb on outputs Shutdown at base plate temperature of +105 °C ± 5 °C. Automatic • Passive transorb on outputs 20% above nominal voltage. • Current limiting Continuous protection (10-30%) above maximum current) for unlimited time. • Output					

* Thresholds and protections can be modified / removed – please consult factory.

+ Compliance achieved when tested with shielded cables and static resistive load.

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Environmental Conditions Designed to meet MIL-STD-810F		
TemperatureOperating:-55 °C to +85 °C (at baseplate)Storage:-55 °C to +125 °C (ambient)	<u>Altitude</u> Method 500.4 Procedure I (non-operational): Up to 70,000 ft. Procedure II (operational): Up to 40,000 ft.	<u>Salt Fog</u> Method 509.4
<u>Humidity</u> Method 507.4 Up to 95% RH	<u>Vibration</u> Method 514.5 Category 24 - General minimum integrity exposure 1 hour per axis	<u>Shock</u> Method 516.5 Saw-tooth, 20g peak, 11 ms.

Reliability

At least 150,000 hours. Calculated IAW MIL-HDBK-217F Notice 2 with +85 °C baseplate temperature at Ground Fix conditions.

Environmental Stress Screening (ESS)

Including random vibration and thermal cycles is also available. Please consult factory for details.

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Pin Assignment

J1 - Input Connector

Connector type: M24308/24-37F or eq. **Mating connector type:** M24308/2-1F or eq.

Pin #	Function	
1	Phase A	
2	N.C.	
3	Phase B	-

Pin #	Function	
4	Phase C	Ø
5	Chassis	
6	Phase A	•

Pin #	Function	
7	N.C.	
8	Phase B	0
9	Phase C	0



J2 - Output Connector

Connector type: M24308/23-39F or eq. **Mating connector type:** M24308/4-3F or eq.

Pin #	Function	Ρ	
1	SENSE	+	8
2	SYNC	+	•
3	INHIBIT	+	•
4	OUT RTN	I	•
5	OUT RTN	I	۲
6	OUT RTN	-	٠
7	OUT RTN	-	٠
8	OUT RTN	_	٠
9	OUT	+	•

Pin #	Function	Ρ	
10	OUT	+	•
11	OUT	+	•
12	OUT	+	•
13	OUT	+	•
14	SENSE RTN	I	۲
15	SYNC RTN	I	0
16	OUT RTN	-	•
17	OUT RTN	I	٠
18	OUT RTN	_	•

Pin #	Function	Ρ	
19	OUT RTN	-	٠
20	OUT RTN	-	٠
21	OUT	+	•
22	OUT	+	•
23	OUT	+	•
24	OUT	+	•
25	OUT	+	•



Note: All output pins with same designation should be connected together for best performance.

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Functions and Signals

INHIBIT (con	nector J2, pin 3)
Description:	The INHIBIT signal is used to turn the power supply ON and OFF.
Operation:	Applying "1" or leaving open will turn the power supply ON.
	Applying "0" or shorting this pin to OUT RTN will turn the power supply OFF.
	For constant operation, leave this pin unconnected.
Signal Type:	5V TTL or dry contact (open/short).
Return line:	This signal is referenced to OUT RTN (connector J2, pins 4-8, 16-20).
<u>SYNC</u> (conne	ctor J2, pin 2)
Description:	The SYNC signal can be used to allow the power supply switching frequency to synchronize with a system clock.
Operation:	Apply a square wave clock with frequency in the range of 250 kHz \pm 10 kHz and duty-cycle of 50% \pm 10%., TTL level.
	If not required, leave open. The power supply will work at 250 kHz \pm 10 kHz (internal clock).
Signal Type:	5V TTL
Return line:	This signal is referenced to SYNC RTN (pin 15).
SENSE (conne	ector J2, pin 1)
Description:	The SENSE function is used to achieve accurate load regulation at load terminals.
Operation:	Connect the pins directly to the load terminals.
	The correction ability is limited to 2 to 10% of nominal voltage output, and up to 2 V. Note that if sense correction function is not needed, the sense lines must be shorted to their respective output pins: <i>SENSE</i> (pin 1) to <i>OUT</i> pins (9-13, 21-25) and <i>SENSE RTN</i> (pin 14) to <i>OUT RTN</i> (pins 4-8, 16-20).
Signal Type:	5V TTL
Return line:	This signal is referenced to SENSE RTN (connector J2, pin 14).



Typical Connection Diagram



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Outline Drawing



Heat Dissipation Surface





<u>Notes</u>

- Dimensions are in Inches [mm] 1.
- 2. Tolerance is: $.XX\pm0.02~\text{IN}$
 - $.XXX\pm0.01~\text{IN}$
- 3. Weight: Approx. 1.534 lbs [696 g]

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Standard Variants

Part number	Normal input voltage range	Output configuration
M1155-100	103 to 127 V _{AC} / 400 Hz	5 V _{DC} / 20 A
M1155-101	103 to 127 V _{AC} / 400 Hz	12 V _{DC} / 20 A
M1155-102	103 to 127 V _{AC} / 400 Hz	15 V _{DC} / 20 A
M1155-103	103 to 127 V _{AC} / 400 Hz	24 V _{DC} / 20 A
M1155-104	103 to 127 V _{AC} / 400 Hz	28 V _{DC} / 18 A
M1155-105	103 to 127 V _{AC} / 400 Hz	48 V _{DC} / 10.4 A

Note: Specifications are subject to change without prior notice by the manufacturer

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