

DBA1200 Series

POWERBOX DEFENSE LINE

FEATURES

- 85-264VAC or 120-350VDC input voltage ranges
- 1-6 isolated outputs up to 1200W
- 255 x 127 x 40mm very low profile
- Power Factor Correction EN61000-3-2
- Active very low inrush limitation
- Surge and transient protection
- Many output configurations available
- Conduction cooled 100°C baseplate. No derating
- Safety IEC/EN 60950-1
- Parallel operation possible,
- RoHS lead-free-solder compliant

SPECIFICATIONS

INPUT	
Input Voltage	85-264VAC. 120-350VDC.
Frequency	44Hz min, 50Hz typ, 440Hz max.
Power factor	0.96 typ, 230VAC, 50Hz, Pnom
Input current	16A at Vin min.
No-load input power	15W at Vin typ.
Peak inrush current	4A Vin max.
Start-up time	3s typ.
Input fuse	A fuse mounted inside the psu protects against damages in case of a failure.
Fuse type	Littlefuse, 15A, 0218015.MXP
Transient protection	Yes.
OUTPUT	
DC Output	See Selection Table
Parallel operation	Possible.
Redundant operation	Requires external oring diodes.
Hold-up time	Yes.
Output current limitation	All outputs are protected against short circuit, automatic recovery.
Thermal considerations	Baseplate should not exceed 100°C.
Thermal protection	OTP protection, automatic restart.
Overvoltage protection	Incorporated on each output.
Remote on/off	An isolated INHIB signal disable corresponding output voltage when connected to RTN.
Overvoltage adjustment	90-110%Vnom.
Remote sense	V1, V2, total drop <0.5V, positive line drop <0.25V
Auxiliary bias voltage	Limited to 200mA.
Paralleling signal	Parallel only identical outputs (voltage and power).
OPTIONS DESCRIPTION	
MIL-STD ruggedized (-M)	Meet MIL-STD 461E CE102, MIL-STD 1399-300A, MIL-STD810E shock & vibrations. No laboratory certification.
-40°C operation (-T)	The thermal grade of the DC/DC converters used and other components are changed to comply with low ambient temperature.



Conformal coating (-V)	During manufacturing process , when V option is specified, components and pcb are covered with an acrylic coating to address high level of ambient humidity application.
Heatsink (-H, -H1)	-H: a 15 mm heatsink is mounted on the baseplate with longitudinal fins. -H1: a 15 mm heatsink is mounted on the baseplate with transversal fins.
ENVIRONMENTAL	
Operating temperature	-20°C to +71°C, see derating (T-option -40°C)
Heatsink temperature	-20°C to +71°C, see derating (T-option -40°C).
Storage temperature	-40°C to +125°C.
Damp heat	MIL STD 810 Proc. 507-2.
Shock	MIL STD 810 Proc. 516.3
Vibrations	MIL STD 810 Proc. 514-5.
MTBF	MTBF calculation for a specific part number has to be ordered
STANDARDS	
Safety standards	Built to meet IEC60950-1, EN60950-1.
Surges	Built to meet EN61000-4-5, 1kV, Criteria B. 2kV, Criteria A.
Electrostatic discharge	Built to meet EN61000-4-2, 8000V, Criteria B.
Fast transients/burst	Built to meet EN61000-4-4, 4000V, Criteria B.
Harmonics	Built to meet EN61000-3-2.
Flickers	Meets EN61000-3-3. EN61000-4-3, -6, -11
GENERAL	
Electric strength	Input to earth 1500Vrms. Input to output 3000Vrms. Output to earth 500Vrms.
Insulation resistance	>100Mohms.
Dimensions	255 x 127 x 40mm
Case	Aluminum natural.
Weight	1500g without heatsink.

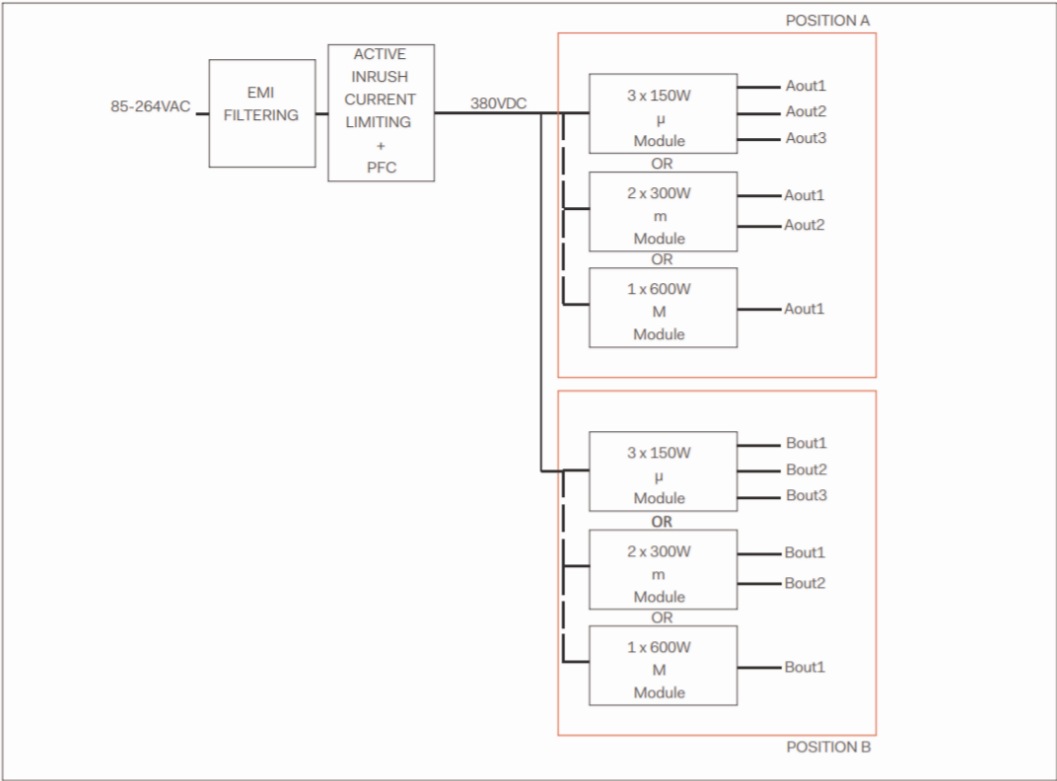
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DBA1200 - SELECTION TABLE

Output		3V3			5V			12V			15V			24V			28V			48V			
Characteristics	Conditions	min	typ	max	min	typ	max	min	typ	max	min	typ	max	min	typ	max	min	typ	max	min	typ	max	Unit
Output voltage		3V3			5			12			15			24			28			48			V
Trim range	Factory set	3		3.6	4.5		5.5	10.8		13.2	13.5		16.5	21.6		26.2	25.2		30.8	43.2		51.8	V
Overvoltage protection		4.5			6.5			14.9			18.5			29.1			34			58			V
Output noise	20Mhz	75			75			100			100			100			100			150			mVpp
Efficiency		75			83			85			84						83			84			%
Load regulation	Vin nom	1			1			0.5			0.5			0.4			0.4			0.4			%
2M board		Each board include 2 identical M modules in parallel for high power configuration																					
Output current		0		160	0		160	0		100	0		80	0		50	0		43	0		25	A
Max power		528			800			1200			1200			1200			1200			1200			W
Output power limit		184	208		184	208		115	135		92	112		58	78		48	58		28	34		A
M board		Each board includes 1 M module below																					
Output current		0		80	0		80	0		50	0		40	0		25	0		21.5	0		12.5	A
Max power		264			400			600			600			600			600			600			W
Output current limit		92	104		92	108		57.5	67.5		46	56		29	39		24	29		14	17		A
m board		Each board includes up to 2 m modules below																					
Output current		0		45	0		40	0		25	0		20	0		12.5	0		10.7	0		6.25	A
Max power		150			200			300			300			300			300			300			W
Output current limit		54	64		46	52		29	35		23	26		14.5	17		12.5	14.5		7.2	8.2		A
μ board		Each board includes up to 3 μ modules below																					
Output current		0		22.7	0		20	0		12.5	0		10	0		6.25	0		5.3	0		3.1	A
Max power		75			100			150			150			150			150			150			W
Output current limit		25	31		23	26		14.5	17		11	14		7.2	8.2		6.2	7		3.6	4.4		A

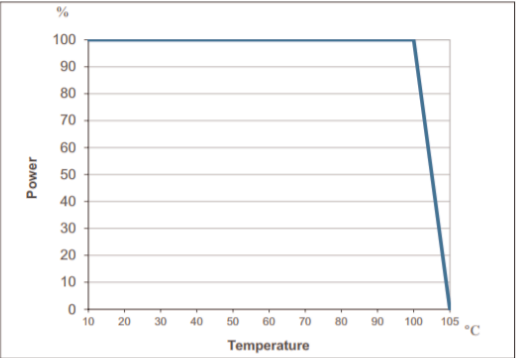
DBA1200 - BLOCK DIAGRAM



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DBA1200 - DERATING CURVE



DBA1200 - PIN CONNECTION

Description	Pin	Connector	
Input screw type connector GMKDS 3/3-7.62			
1	J1-1	Earth	
2	J1-2	Neutral AC/N	
3	J1-3	Line AC/L	
Output 2M-board power connectors			
OUT+	J1	Wurth Pres Fit M4 Ref : 7461095	
OUT-	J2	Wurth Pres Fit M4 Ref : 7461095	
Output M-board power connectors			
OUT+	J1	Wurth Pres Fit M4 Ref : 7461095	
OUT-	J2	Wurth Pres Fit M4 Ref : 7461095	
Output m-board power connectors			
OUT1+	J1	Wurth Pres Fit M3 Ref : 7461093	
OUT1-	J2	Wurth Pres Fit M3 Ref : 7461093	
OUT2+	J3	Wurth Pres Fit M3 Ref : 7461093	
OUT2-	J4	Wurth Pres Fit M3 Ref : 7461093	
Output µ-board power connector 6 Pins Male			
OUT1+	J1-1	WURTH TBL3117691311700006	
OUT1-	J1-2		
OUT2+	J1-3		
OUT2-	J1-4		
OUT3+	J1-5		
OUT3-	J1-6		
Signals Wurth 690368191472 Female Male 2*7 pins			
µ-board	m-board	M-board	2M-board
J5-1 : ACFAIL	J5-1 : ACFAIL	J5-1 : ACFAIL	J5-1 : ACFAIL
J5-2 : PGOOD	J5-2 : PGOOD	J5-2 : PGOOD	J5-2 : PGOOD
J5-3 : RTN	J5-3 : RTN	J5-3 : RTN	J5-3 : RTN
J5-4 : INHIB	J5-4 : INHIB	J5-4 : NC	J5-4 : NC
J5-5 : +5VAUX	J5-5 : +5VAUX	J5-5 : +5VAUX	J5-5 : +5VAUX
J5-6 : NC	J5-6 : S1+	J5-6 : NC	J5-6 : NC
J5-7 : NC	J5-7 : S1-	J5-7 : NC	J5-7 : NC
J5-8 : ADJ1	J5-8 : ADJ1	J5-8 : NC	J5-8 : NC
J5-9 : NC	J5-9 : PR1	J5-9 : PR1	J5-9 : PR1
J5-10 : NC	J5-10 : NC	J5-10 : NC	J5-10 : NC
J5-11 : ADJ2	J5-11 : PR2	J5-11 : INHIB	J5-11 : INHIB
J5-12 : NC	J5-12 : S2+	J5-12 : S1+	J5-12 : S1+
J5-13 : NC	J5-13 : S2-	J5-13 : S1-	J5-13 : S1-
J5-14 : ADJ3	J5-14 : ADJ2	J5-14 : ADJ1	J5-14 : ADJ1

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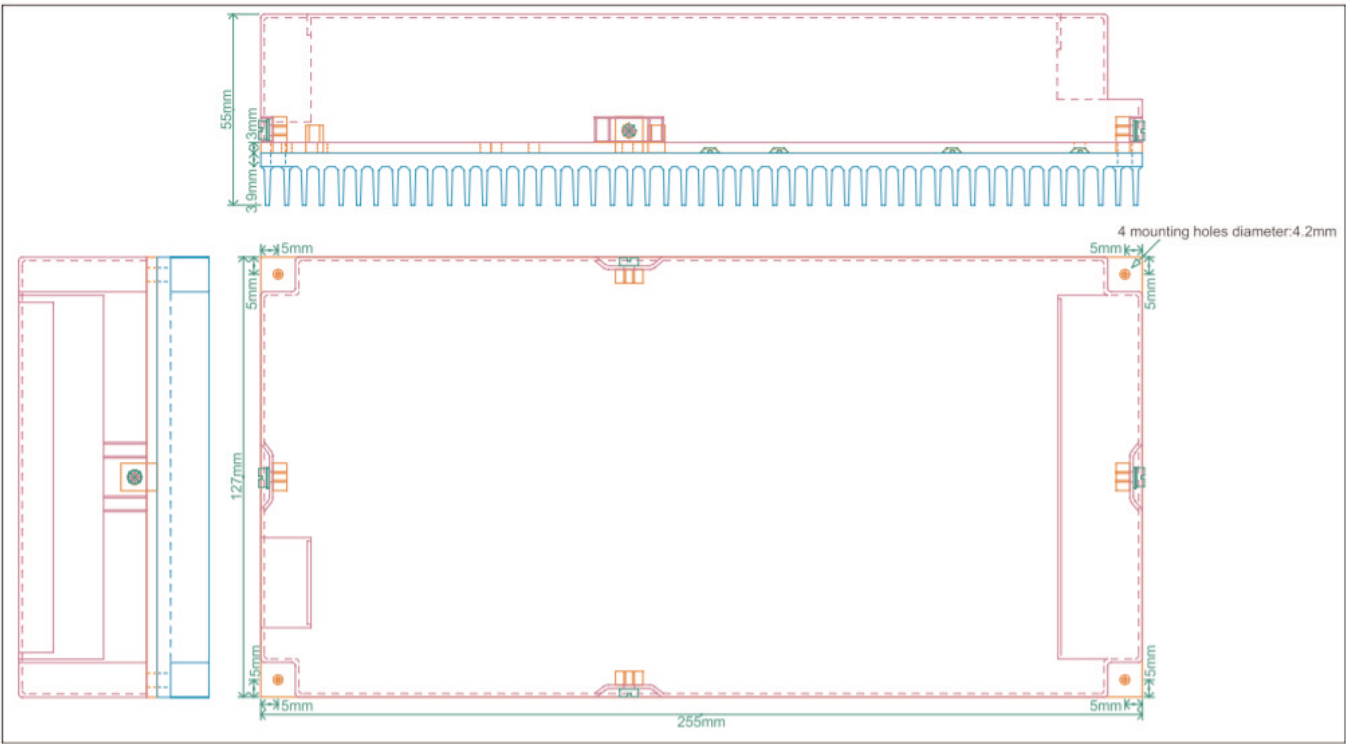
Technical drawing of the PCB layout showing dimensions and mounting holes. The drawing includes a top view and a side view. The top view shows a rectangular board with a width of 40mm and a length of 255mm. The side view shows a width of 127mm. The drawing indicates 5 mounting holes with a diameter of 4.2mm. The layout includes various components, including a microcontroller, memory, and other electronic components, with their respective pin connections and mounting locations clearly marked.

Technical drawing of the PCB layout for the 'PCB' project. The drawing shows the top and bottom views of the board. The top view is a rectangle with dimensions 127mm by 255mm. It features a central microcontroller unit (MCU) with a circular logo, surrounded by various components including resistors, capacitors, and a USB connector. The bottom view shows the reverse side of the board with components like the USB connector, a power switch, and a battery connector. Dimensions for component placement and board size are provided in millimeters.

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DBA1200 - MECHANICAL - H1 OPTION



DBA1200 - MECHANICAL - IP OPTION

