

Power Supplies

Supplying power for your industrial applications



Balluff PS Power Supply Series

Reliable power for demanding industrial automation systems

All industrial automation systems need reliable power – power that is clean, spike-free, and controlled to provide the amount of power required by the system. Balluff has a long tradition of producing reliable quality automation control products. This tradition continues with this new line of power supplies. They add another piece to Balluff's total control solution, from standard inductive and photoelectric sensors and connectivity, to RFID and industrial network solutions, including our new line of I/O modules for Profibus, DeviceNet, and EtherNet I/P networks.

■ Ultra reliable Power Supplies

Protects sensitive control electronics

■ Protects against unforeseen events

Built-in advanced overload and overvoltage protection

■ Complete range of models to choose from

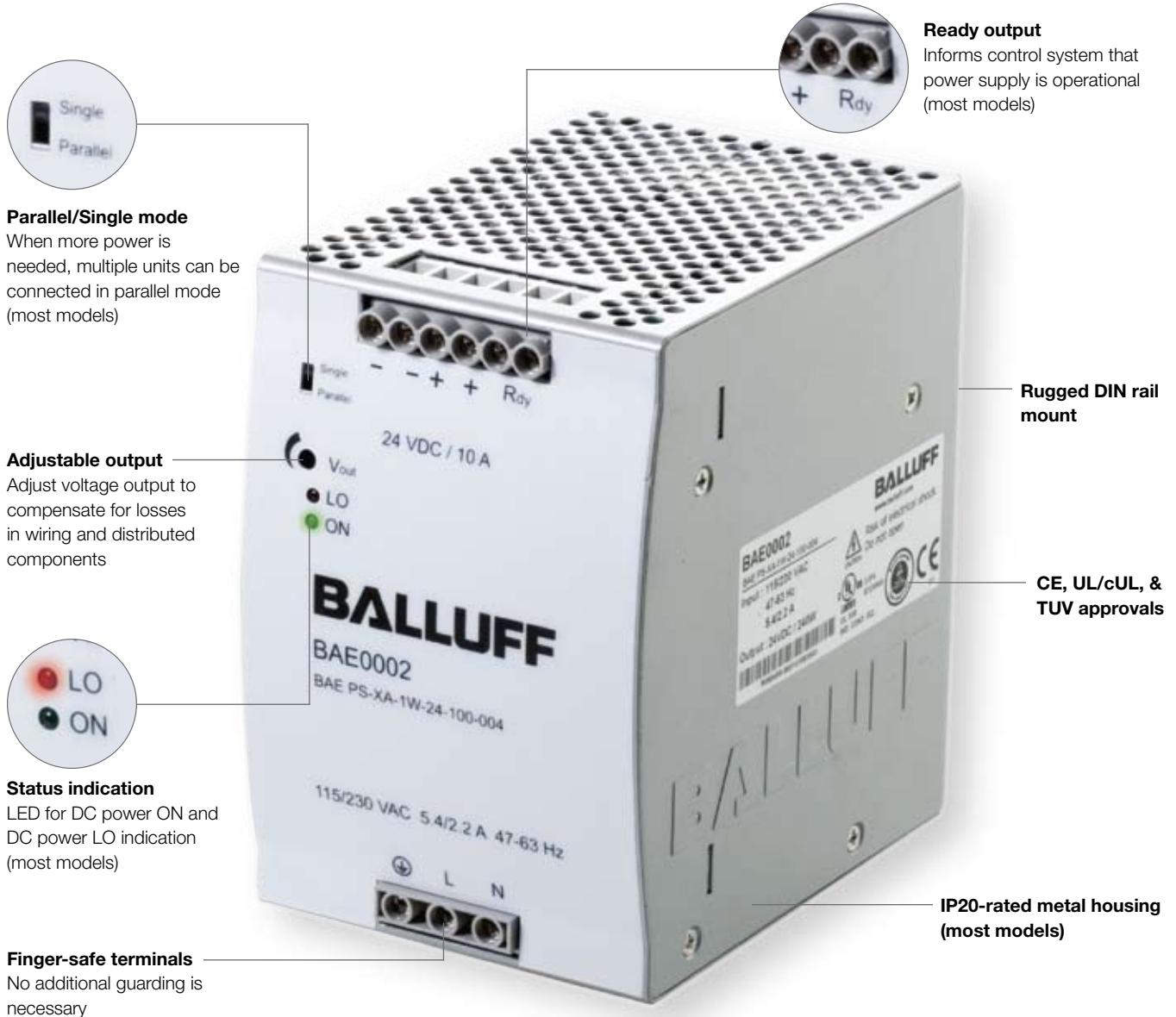
One single model or a combination of models will meet your needs exactly

■ Clean, accurate power for the most demanding equipment

Load regulation to $\pm 1\%$ on all models, ripple/noise less than 50mV on most models

■ Long life for less system unplanned downtime

MTBF (mean time between failure) of over 210,000 hours/24 years while operating at published specifications for the duration



Power Supply Selection guide

Output Power (24 V DC)								Features			Part Information		
750 mA / 18 W	1.25 A / 30 W	2.5 A / 60 W	5 A / 120 W	10 A / 240 W	20 A / 480 W	40 A / 960 W	Input Voltage	Housing Material	Parallel Switch Mode	Ready Output	Ordering Code	Part Number	Page Number
■							Single phase ¹	Plastic			BAE0001	BAE-PS-XA-1W-24-007-001	4
	■						Single phase ¹	Plastic		■	BAE0004	BAE-PS-XA-1W-24-012-002	5
		■					Single phase ¹	Plastic		■	BAE0005	BAE-PS-XA-1W-24-025-002	5
			■				Single phase ²	Metal	■	■	BAE0006	BAE-PS-XA-1W-24-050-003	6
			■				Three phase ³	Metal		■	BAE0007	BAE-PS-XA-3Y-24-050-009	8
				■			Single phase ²	Metal	■	■	BAE0002	BAE-PS-XA-1W-24-100-004	7
				■			Three phase ³	Metal	■	■	BAE0008	BAE-PS-XA-3Y-24-100-006	9
					■		Single phase ²	Metal	■	■	BAE0003	BAE-PS-XA-1W-24-200-005	7
					■		Three phase ³	Metal	■	■	BAE0009	BAE-PS-XA-3Y-24-200-007	9
						■	Three phase ³	Metal			BAE000A	BAE-PS-XA-3Y-24-400-008	10

¹ = 100...240 V AC

² = 115/230 V AC (auto select)

³ = 340...575 V AC



Control and Network Power

These power supplies were designed by Balluff with control products in mind, so you can be sure they will integrate perfectly with your control suite.

The PS Series of ultra reliable power supplies come in a wide range of 24 V DC models with single or 3-phase inputs. With current ranges from 0.75 A (18 W) to 40 A (960 W), there is a size for most applications. But if more power is needed, connect multiple power supplies together (parallel mode) for additive current capacity.



Seamless Installation

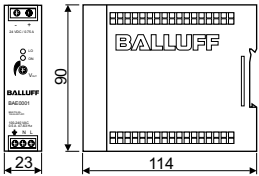
Reliable power has never been this easy to install. It starts with convenient DIN mounting with Balluff's heavy-duty, built-in mounting system. Screw terminals are oriented to allow AC power to enter from the bottom and DC power to exit from the top. Finger-safe terminals require no additional guarding.

Power Supply

Single phase input voltage
750 mA output



Output current	0.75 A								
Output wattage	18 W								
Output voltage	24 V DC								
Input voltage	100...240 V AC								
Ordering code	BAE0001								
Part number	BAE PS-XA-1W-24-007-001								
Input voltage range	90...265 V AC / 120...370 V DC								
Inrush current	115 V AC < 10 A / 230 V AC < 18 A								
Line frequency	47...63 Hz								
Input fuse	T2 A / 250 V AC internal								
Voltage trim range	21.6...28.8 V DC								
Temperature coefficient	±0.02 % / °C								
Ripple and noise	50 mV								
Hold-up time	115 V AC > 20 ms / 230 V AC > 75 ms								
DC ON indicator	Green LED								
DC LOW indicator	Red LED								
Efficiency	77 %								
Output short circuit	Hiccup-Modus								
Switching frequency	> 100 kHz								
Isolation voltage	3000 V AC								
Isolation resistance	100 MΩ								
Power up delay	< 1 s								
Ambient temperature	-25 °C to +71 °C								
Derating	-3 % / °C from +61 °C								
Parallel switch mode	Yes (with external diodes)								
Degree of protection per IEC 60529	IP 20								
Ready output	No								
Cooling	Air free convection								
Housing material	Plastic								
Weight	0.15 kg								
Approvals	CE, UL/cUL, TUV								
Wiring diagram	<table><tr><td>L, N</td><td>Input terminals</td></tr><tr><td>PE</td><td>PE connection</td></tr><tr><td>Vo -</td><td>Output terminal -</td></tr><tr><td>Vo +</td><td>Output terminal +</td></tr></table>	L, N	Input terminals	PE	PE connection	Vo -	Output terminal -	Vo +	Output terminal +
L, N	Input terminals								
PE	PE connection								
Vo -	Output terminal -								
Vo +	Output terminal +								



Power Supply

Single phase input voltage
1.25 A, 2.5 A output



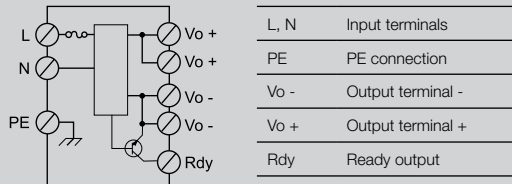
1.25 A
30 W
24 V DC
100...240 V AC

BAE0004

BAE PS-XA-1W-24-012-002

85...264 V AC / 90...375 V DC
115 V AC < 20 A / 230 V AC < 40 A
47...63 Hz
T2 A / 250 V AC internal
24.0...28.0 V DC
±0.02 % / °C
50 mV
115 V AC > 20 ms / 230 V AC > 30 ms
Green LED

86 %
Fold forward
> 100 kHz
3000 V AC
100 MΩ
< 1 s
-25 °C to +71 °C
-2.5 % / °C from +61 °C
Yes (with external diodes)
IP 20
DC OK output
Air free convection
Plastic
0.29 kg
CE, UL/cUL, TUV



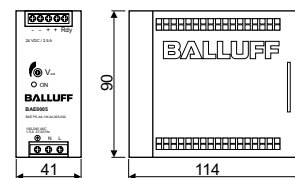
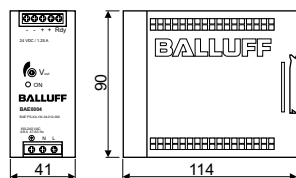
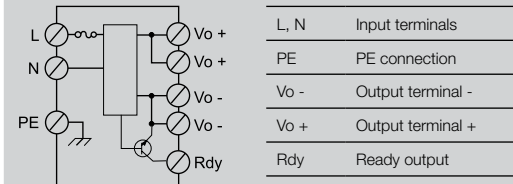
2.5 A
60 W
24 V DC
100...240 V AC

BAE0005

BAE PS-XA-1W-24-025-002

85...264 V AC / 90...375 V DC
115 V AC < 30 A / 230 V AC < 60 A
47...63 Hz
T2 A / 250 V AC internal
24.0...28.0 V DC
±0.02 % / °C
50 mV
115 V AC > 20 ms / 230 V AC > 30 ms
Green LED

89 %
Hiccup-Modus
> 100 kHz
3000 V AC
100 MΩ
< 1 s
-25 °C to +71 °C
-2.5 % / °C from +61 °C
Yes (with external diodes)
IP 20
DC OK output
Air free convection
Plastic
0.36 kg
CE, UL/cUL, TUV

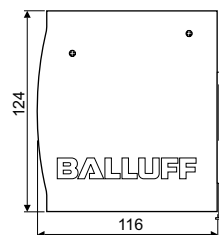


Power Supply

Single phase input voltage
5 A output



Output current	5 A										
Output wattage	120 W										
Output voltage	24 V DC										
Input voltage	115/230 V AC (auto select)										
Ordering code	BAE0006										
Part number	BAE PS-XA-1W-24-050-003										
Input voltage range	90...132 V AC; 186...264 V AC / 210...370 V DC										
Inrush current	115 V AC < 24 A / 230 V AC < 48 A										
Line frequency	47...63 Hz										
Input fuse	T3.15 A / 250 V AC internal										
Voltage trim range	22.5...28.5 V DC										
Temperature coefficient	±0.03 % / °C										
Ripple and noise	50 mV										
Hold-up time	115 V AC > 25 ms / 230 V AC > 30 ms										
DC ON indicator	Green LED										
DC LOW indicator	Red LED										
Efficiency	86 %										
Output short circuit	Current limited										
Switching frequency	> 80 kHz										
Isolation voltage	3000 V AC										
Isolation resistance	100 MΩ										
Power up delay	< 1 s										
Ambient temperature	-25 °C to +71 °C										
Derating	-2.5 % / °C from +61 °C										
Parallel switch mode	Yes										
Degree of protection per IEC 60529	IP 20										
Ready output	DC OK output relay										
Cooling	Air free convection										
Housing material	Metal										
Weight	0.92 kg										
Approvals	CE, UL/cUL, TUV										
Wiring diagram	<table border="1"> <tr> <td>L, N</td><td>Input terminals</td></tr> <tr> <td>PE</td><td>PE connection</td></tr> <tr> <td>Vo -</td><td>Output terminal -</td></tr> <tr> <td>Vo +</td><td>Output terminal +</td></tr> <tr> <td>Rdy</td><td>Ready output</td></tr> </table>	L, N	Input terminals	PE	PE connection	Vo -	Output terminal -	Vo +	Output terminal +	Rdy	Ready output
L, N	Input terminals										
PE	PE connection										
Vo -	Output terminal -										
Vo +	Output terminal +										
Rdy	Ready output										

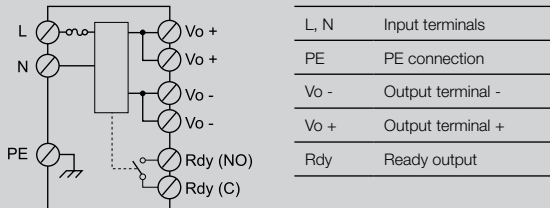


Power Supply

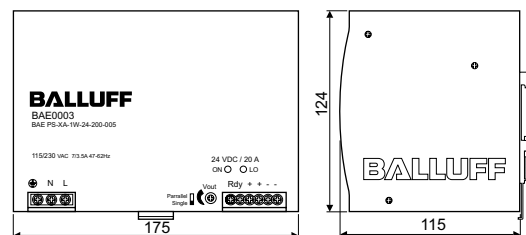
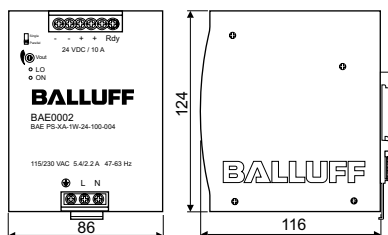
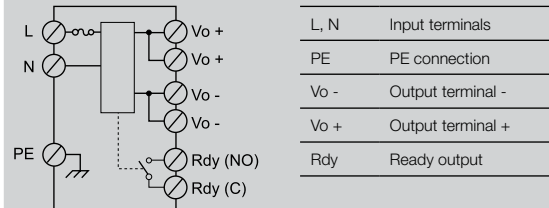
Single phase input voltage
10 A, 20 A output



10 A
240 W
24 V DC
115/230 V AC (auto select)
BAE0002
BAE PS-XA-1W-24-100-004
93...132 V AC; 186...264 V AC / 210...370 V DC
115 V AC < 30 A / 230 V AC < 60 A
47...63 Hz
T6.3 A / 250 V AC internal
22.5...28.5 V DC
±0.02 % / °C
100 mV
115 V AC > 25 ms / 230 V AC > 30 ms
Green LED
Red LED
89 %
Current limited
> 80 kHz
3000 V AC
100 MΩ
< 1 s
-25 °C to +71 °C
-2.5 % / °C from +61 °C
Yes
IP 20
DC OK output relay
Air free convection
Metal
1.0 kg
CE, UL/cUL, TUV



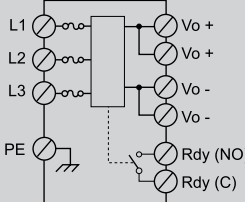
20 A
480 W
24 V DC
115/230 V AC (auto select)
BAE0003
BAE PS-XA-1W-24-200-005
90...264 V AC / 120...370 V DC
115 V AC < 25 A / 230 V AC < 50 A
47...63 Hz
T10 A / 250 V AC internal
22.5...28.5 V DC
±0.02 % / °C
100 mV
115 V AC > 25 ms / 230 V AC > 30 ms
Green LED
Red LED
89 %
Current limited
> 100 kHz
3000 V AC
100 MΩ
< 1 s
-25 °C to +71 °C
-2.5 % / °C from +61 °C
Yes
IP 20
DC OK output relay
Air free convection
Metal
1.92 kg
CE, UL/cUL, TUV

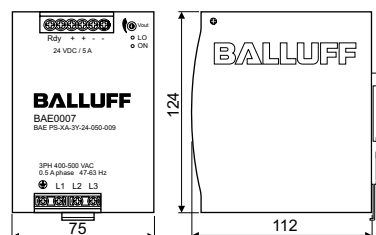


Power Supply

Three phase input voltage
5 A output



Output current	5 A										
Output wattage	120 W										
Output voltage	24 V DC										
Input voltage	3x 340...575 V AC										
Ordering code	BAE0007										
Part number	BAE PS-XA-3Y-24-050-009										
Input voltage range	340...575 V AC / 480...820 V DC										
Inrush current	< 10 A										
Line frequency	47...63 Hz										
Input fuse	2 A / 600 V AC internal/phase										
Voltage trim range	22.5...28.5 V DC										
Temperature coefficient	±0.02 % / °C										
Ripple and noise	100 mV										
Hold-up time	> 20 ms										
DC ON indicator	Green LED										
DC LOW indicator	Red LED										
Efficiency	89 %										
Output short circuit	Current limited										
Switching frequency	> 100 kHz										
Isolation voltage	3000 V AC										
Isolation resistance	100 MΩ										
Power up delay	< 1 s										
Ambient temperature	-25 °C to +71 °C										
Derating	-2.5 % / °C from +61 °C										
Parallel switch mode	Yes (with external diodes)										
Degree of protection per IEC 60529	IP 20										
Ready output	DC OK output relay										
Cooling	Air free convection										
Housing material	Metal										
Weight	0.8 kg										
Approvals	CE, UL/cUL, TUV										
Wiring diagram	 <table border="1" data-bbox="1112 1417 1372 1585"> <tr> <td>L, N</td><td>Input terminals</td></tr> <tr> <td>PE</td><td>PE connection</td></tr> <tr> <td>Vo -</td><td>Output terminal -</td></tr> <tr> <td>Vo +</td><td>Output terminal +</td></tr> <tr> <td>Rdy</td><td>Ready output</td></tr> </table>	L, N	Input terminals	PE	PE connection	Vo -	Output terminal -	Vo +	Output terminal +	Rdy	Ready output
L, N	Input terminals										
PE	PE connection										
Vo -	Output terminal -										
Vo +	Output terminal +										
Rdy	Ready output										



Power Supply

Three phase input voltage
10 A, 20 A output



10 A
240 W
24 V DC
3x 340...575 V AC

BAE0008

BAE PS-XA-3Y-24-100-006

340...575 V AC / 480...820 V DC

< 20 A

47...63 Hz

T2 A / 600 V AC internal/phase

22.5...28.5 V DC

±0.02 % / °C

100 mV

> 20 ms

Green LED

Red LED

90 %

Current limited

> 100 kHz

3000 V AC

100 MΩ

< 1 s

-25 °C to +71 °C

-2.5 % / °C from +61 °C

Yes

IP 20

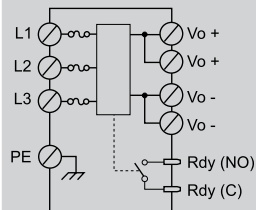
DC OK output relay

Air free convection

Metal

1.1 kg

CE, UL/cUL, TUV



L1, N	Input terminals
PE	PE connection
Vo -	Output terminal -
Vo +	Output terminal +
Rdy	Ready output

20 A
480 W
24 V DC
3x 340...575 V AC

BAE0009

BAE PS-XA-3Y-24-200-007

340...575 V AC / 480...820 V DC

< 20 A

47...63 Hz

3.15 A / 500 V AC internal/phase

22.5...28.5 V DC

±0.02 % / °C

100 mV

> 20 ms

Green LED

Red LED

90 %

Current limited/Hiccup-Modus

> 100 kHz

3000 V AC

100 MΩ

< 1 s

-25 °C to +71 °C

-2.5 % / °C from +61 °C

Yes

IP 20

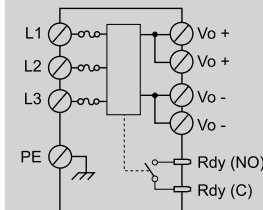
DC OK output relay

Air free convection

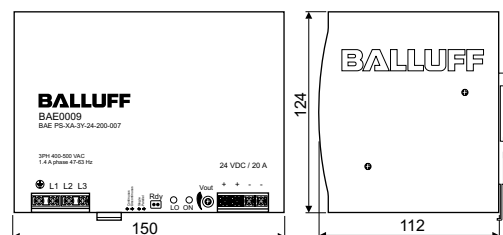
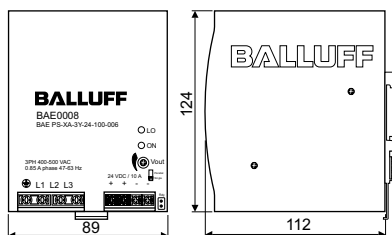
Metal

1.75 kg

CE, UL/cUL, TUV



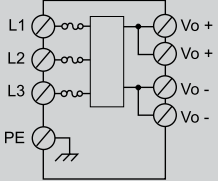
L1, N	Input terminals
PE	PE connection
Vo -	Output terminal -
Vo +	Output terminal +
Rdy	Ready output

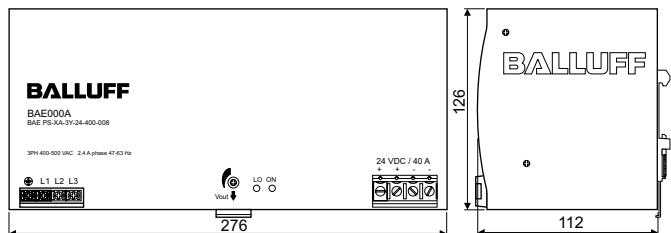


Power Supply

Three phase input voltage
40 A output

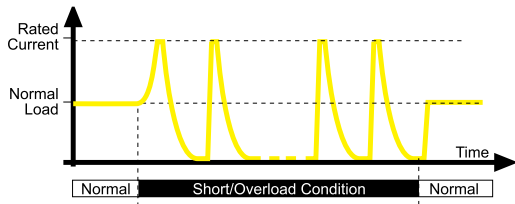


Output current	40 A								
Output wattage	960 W								
Output voltage	24 V DC								
Input voltage	3x340...575 V AC								
Ordering code	BAE000A								
Part number	BAE PS-XA-3Y-24-400-008								
Input voltage range	340...575 V AC / 480...820 V DC								
Inrush current	< 30 A								
Line frequency	47...63 Hz								
Input fuse	T5 A / 500 V AC internal/phase								
Voltage trim range	22.5...28.5 V DC								
Temperature coefficient	±0.02 % / °C								
Ripple and noise	80 mV								
Hold-up time	> 20 ms typ 15 ms @ 400 V AC / typ 30 ms @ 500 V AC								
DC ON indicator	Green LED								
DC LOW indicator	Red LED								
Efficiency	92 %								
Output short circuit	Current limited								
Switching frequency	> 100 kHz								
Isolation voltage	3000 V AC								
Isolation resistance	100 MΩ								
Power up delay	< 1 s								
Ambient temperature	-25 °C to +71 °C								
Derating	-3.5 % / °C from +61 °C								
Parallel switch mode	Yes (with external diodes)								
Degree of protection per IEC 60529	IP 20								
Ready output	No								
Cooling	Air free convection								
Housing material	Metal								
Weight	3.2 kg								
Approvals	CE, UL/cUL, TUV								
	 <table border="1"> <tr> <td>L, N</td><td>Input terminals</td></tr> <tr> <td>PE</td><td>PE connection</td></tr> <tr> <td>Vo -</td><td>Output terminal -</td></tr> <tr> <td>Vo +</td><td>Output terminal +</td></tr> </table>	L, N	Input terminals	PE	PE connection	Vo -	Output terminal -	Vo +	Output terminal +
L, N	Input terminals								
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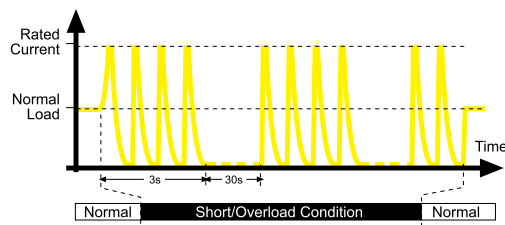


Output Short Circuit Protection

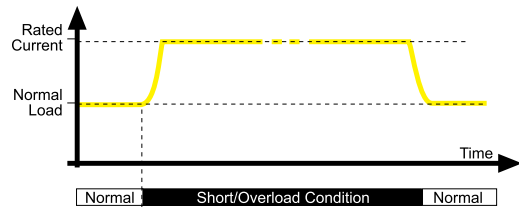
Hiccup mode overload protection*



Hiccup mode with shutdown overload protection*

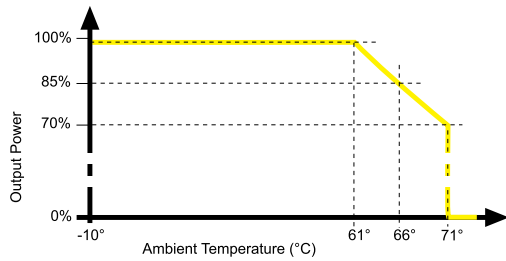


Current limited and fold forward overload protection*



*Note: Diagrams are for illustration purposes only.
They do not reflect actual waveforms.

Temperature Derating

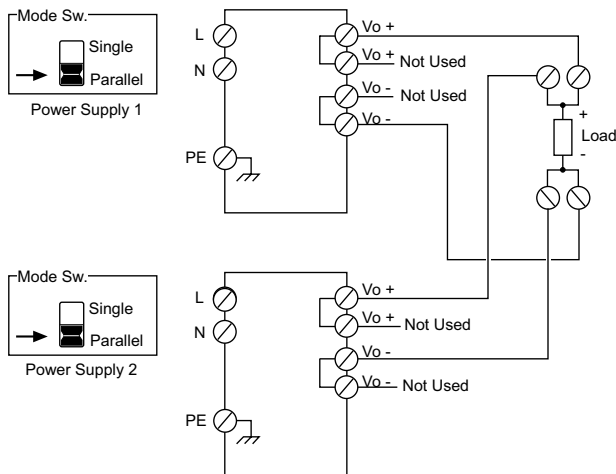


LED Definition

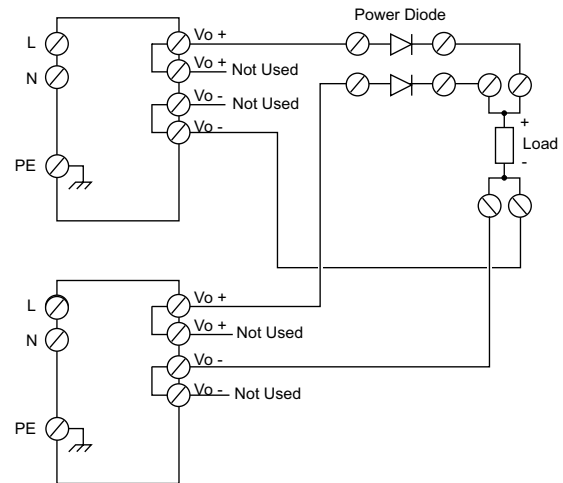
DC ON	DC LO	Possible Situation
☐ off	☐ off	AC power off, internal fuse blown, short circuit
☒ on	☐ off	Normal Operation
☐ off	☒ on	Output voltage < 19.2V
☒ on	☒ on	Power Supply Fault

Parallel Mode Wiring**

BAE0002, BAE0003 BAE0006, BAE0008, BAE0009



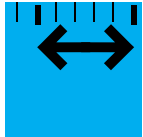
BAE0001, BAE0004, BAE0005, BAE0007, BAE000A



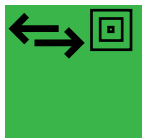
**Note: When wiring power supplies in parallel, it is recommended that the wire lengths be equal for all DC connections to the load.



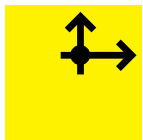
Object Detection



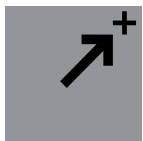
Linear Position and Measurement



Industrial Identification



Networking and Connectivity



Accessories

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Florence, KY 41042
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Fax: (859) 727-4823
E-Mail: balluff@balluff.com

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Balluff Canada, Inc.
2840 Argentia Road, Unit #2
Mississauga, Ontario L5N 8G4
Phone: (905) 816-1494
Toll-free: 1-800-927-9654
Fax: (905) 816-1411
E-Mail: balluff.canada@balluff.ca

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