

Balluff Power Supplies

Reliable power for demanding industrial automation

Every industrial automation system needs a reliable, clean and controlled source of power without spikes. Only then can these systems deliver the expected performance. With the new Balluff power supplies you get what you expect and more. They ensure reliable power even under demanding conditions. Which places them in the long Balluff tradition of reliable and high-quality performance for industrial automation. And that's not all. Balluff power supplies are another aspect of comprehensive systems expertise. From a single source – for you: from standardized inductive and photoelectric sensors and connectivity products to industrial RFID and industrial network solutions including our new product line of I/O modules for Profibus, DeviceNet and EtherNet/IP networks.

■ Ultra-reliable power supplies

for protecting sensitive control electronics

■ Protection against unforeseen events

integrated overload and over-voltage protection

■ Wide selection of models

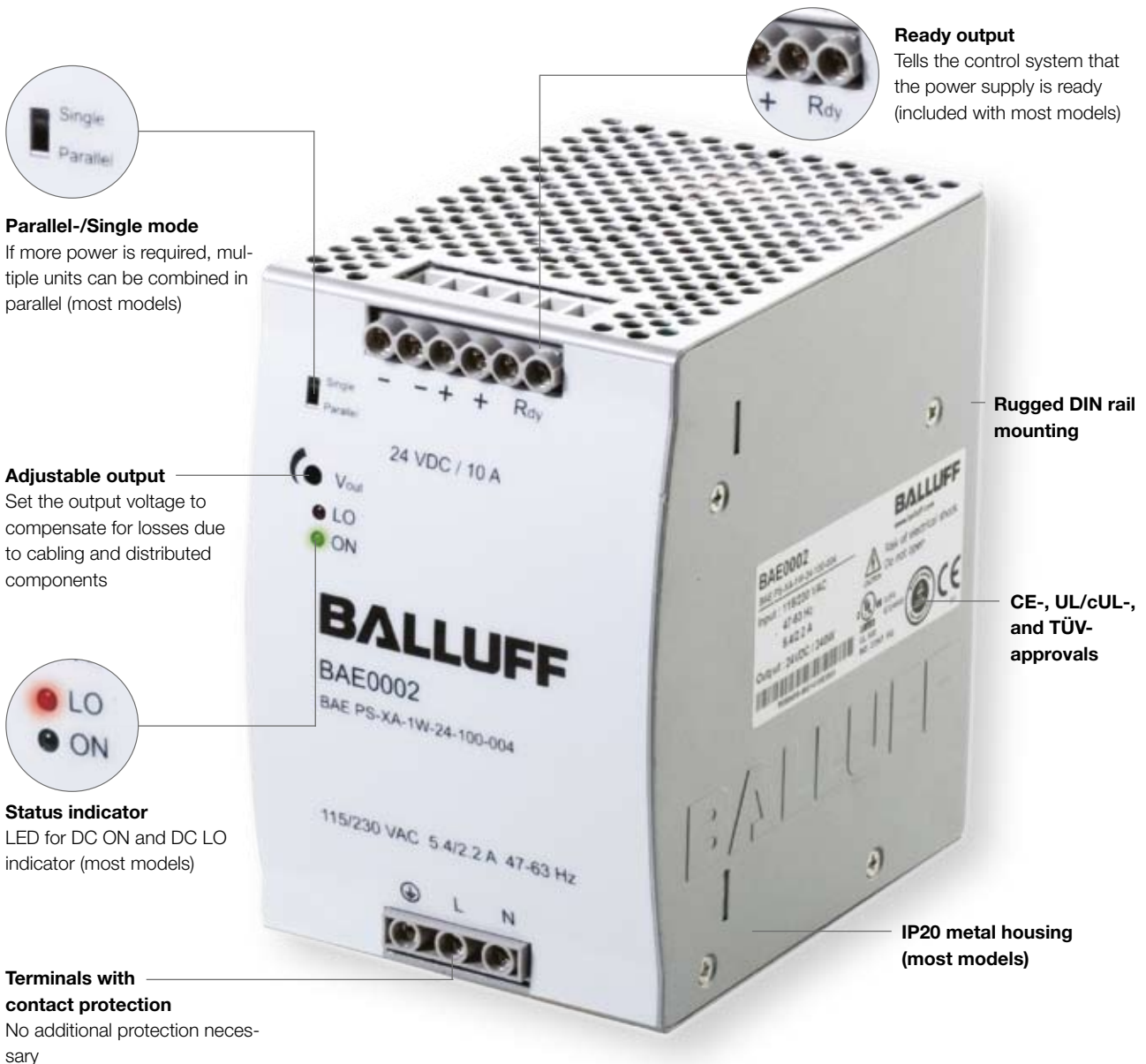
whether stand-alone or an individual combination of various models, use these optimal solutions for your requirements

■ Clean, precise power supply for especially demanding systems

Load regulation +/- 1 % for all models, ripple & noise for most models less than 50 mV

■ Long service life for less system downtime

MTBF (Mean Time Between Failure) over 210,000 hours/24 years



Output voltage (24 V DC)								Features			Product 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 mode	Ready output	Ordering code	Part number	Page	
■							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	
				■			3-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	
						■	3-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	
							3-phase ³	Metal	■	■	BAE0009	BAE-PS-XA-3Y-24-200-007	9	
						■	3-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



Power for controllers and networks

Specially designed for control devices, Balluff power supplies offer security that is easily integrated into your control package.

The PS series of ultra-reliable power supplies is available in a wide range of 24V models with single- or 3-phase input. With a bandwidth of 0.75 A (18 W) to 40 A (960 W) we have you covered. If you need even more power, connect multiple power supplies together in parallel for greater capacity.



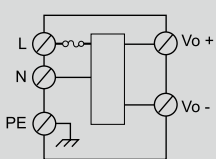
Trouble-free installation

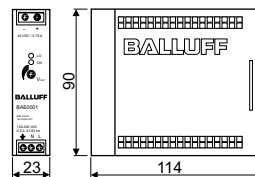
Reliable power has never been so simple to install. It starts with the convenient DIN rail mounting using the integrated Balluff high-performance mounting system. The screw terminals are arranged so that enable the AC input from beneath and the DC output from above. Terminals with built-in contact protection make any additional protection unnecessary.

Power Supplies

Single-phase input voltage
750 mA



Output current	0.75 A								
Output power	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								
Frequency range	47...63 Hz								
Input fuse	T2 A/250 V AC internal								
Voltage adjustment range	21.6...28.8 V DC								
Temperature coefficient	±0.02 %/°C								
Ripple & Noise	50 mV								
Holdup time	115 V AC > 20 ms/230 V AC > 75 ms								
Status indicator DC ON	Green LED								
Status indicator DC LOW	Red LED								
Efficiency	77 %								
Response	Hiccup mode								
Switching frequency	> 100 kHz								
Isolation voltage	3000 V AC								
Isolation resistance	100 MΩ								
Turn-on delay	< 1 s								
Ambient temperature range	-25 °C to +71 °C								
Derating	-3 %/°C above +61 °C								
Parallel mode	Yes (with external diodes)								
Degree of protection per IEC 60529	IP 20								
Ready output	no								
Cooling	Air convection								
Housing material	Plastic								
Weight	0.15 kg								
Approvals	CE, UL/cUL, TÜV								
Wiring diagram	 <table border="1" data-bbox="1045 1444 1332 1579"> <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 +								

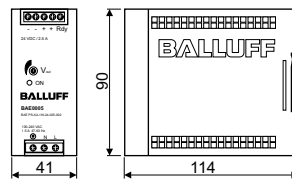
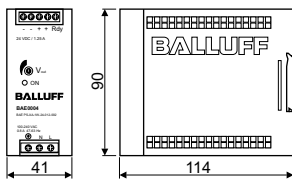


Power Supplies

Single-phase input voltage
1.25 A, 2.5 A



1.25 A	2.5 A																				
30 W	60 W																				
24 V DC	24 V DC																				
100...240 V AC	100...240 V AC																				
BAE0004	BAE0005																				
BAE PS-XA-1W-24-012-002	BAE PS-XA-1W-24-025-002																				
85...264 V AC/90...375 V DC	85...264 V AC/90...375 V DC																				
115 V AC < 20 A/230 V AC < 40 A	115 V AC < 30 A/230 V AC < 60 A																				
47...63 Hz	47...63 Hz																				
T2 A/250 V AC internal	T2 A/250 V AC internal																				
24.0...28.0 V DC	24.0...28.0 V DC																				
±0.02 %/°C	±0.02 %/°C																				
50 mV	50 mV																				
115 V AC > 20 ms/230 V AC > 30 ms	115 V AC > 20 ms/230 V AC > 30 ms																				
Green LED	Green LED																				
86 %	89 %																				
Forward characteristic	Hiccup mode																				
> 100 kHz	> 100 kHz																				
3000 V AC	3000 V AC																				
100 MΩ	100 MΩ																				
< 1 s	< 1 s																				
-25 °C to +71 °C	-25 °C to +71 °C																				
-2.5 %/°C above +61 °C	-2.5 %/°C above +61 °C																				
Yes (with external diodes)	Yes (with external diodes)																				
IP 20	IP 20																				
DC OK output	DC OK output																				
Air convection	Air convection																				
Plastic	Plastic																				
0.29 kg	0.36 kg																				
CE, UL/cUL, TÜV	CE, UL/cUL, TÜV																				
<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	<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																				
L, N	Input terminals																				
PE	PE connection																				
Vo -	Output terminal -																				
Vo +	Output terminal +																				
Rdy	Ready output																				

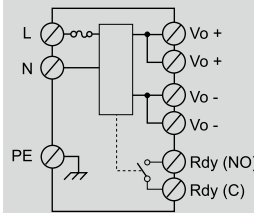


Power Supplies

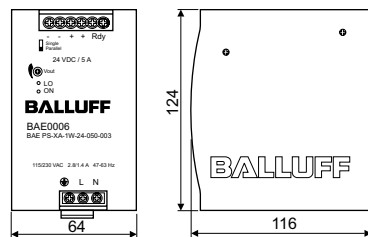
Single-phase input voltage
5 A



Output current	5 A
Output power	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
Frequency range	47...63 Hz
Input fuse	T3.15 A/250 V AC internal
Voltage adjustment range	22.5...28.5 V DC
Temperature coefficient	±0.03 %/°C
Ripple & Noise	50 mV
Holdup time	115 V AC > 25 ms/230 V AC > 30 ms
Status indicator DC ON	Green LED
Status indicator DC LOW	Red LED
Efficiency	86 %
Response	Current limiter
Switching frequency	> 80 kHz
Isolation voltage	3000 V AC
Isolation resistance	100 MΩ
Turn-on delay	< 1 s
Ambient temperature range	-25 °C to +71 °C
Derating	-2.5 %/°C above +61 °C
Parallel mode	yes
Degree of protection per IEC 60529	IP 20
Ready output	DC OK output relay
Cooling	Air convection
Housing material	Metal
Weight	0.92 kg
Approvals	CE, UL/cUL, TÜV



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



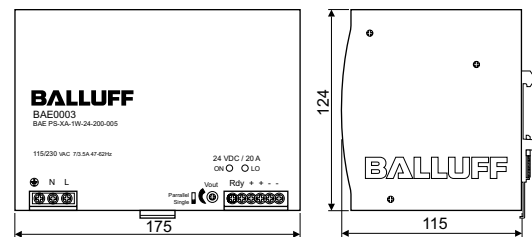
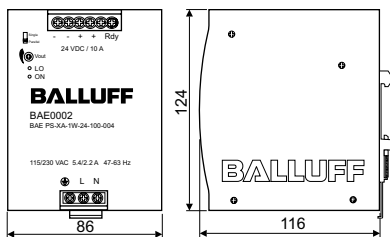
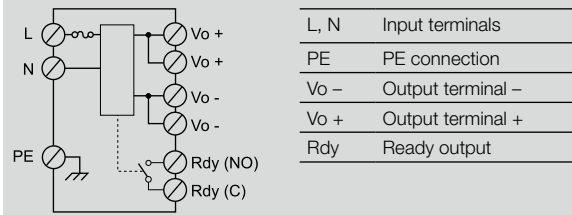
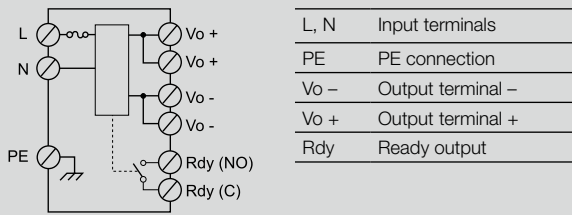
Power Supplies

Single-phase input voltage
10 A, 20 A



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 limiter
> 80 kHz
3000 V AC
100 MΩ
< 1 s
-25 °C to +71 °C
-2.5 %/°C above +61 °C
yes
IP 20
DC OK output relay
Air convection
Metal
1.0 kg
CE, UL/cUL, TÜV

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 limiter
> 100 kHz
3000 V AC
100 MΩ
< 1 s
-25 °C to +71 °C
-2.5 %/°C above +61 °C
yes
IP 20
DC OK output relay
Air convection
Metal
1.92 kg
CE, UL/cUL, TÜV

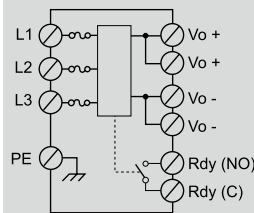


Power Supplies

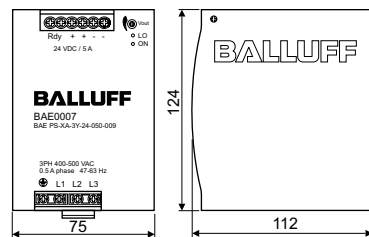
3-phase input voltage
5 A



Output current	5 A
Output power	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
Frequency range	47...63 Hz
Input fuse	2 A/600 V AC internal/phase
Voltage adjustment range	22.5...28.5 V DC
Temperature coefficient	±0.02 %/°C
Ripple & Noise	100 mV
Holdup time	> 20 ms
Status indicator DC ON	Green LED
Status indicator DC LOW	Red LED
Efficiency	89 %
Response	Current limiter
Switching frequency	> 100 kHz
Isolation voltage	3000 V AC
Isolation resistance	100 MΩ
Turn-on delay	< 1 s
Ambient temperature range	-25 °C to +71 °C
Derating	-2.5 %/°C above +61 °C
Parallel mode	Yes (with external diodes)
Degree of protection per IEC 60529	IP 20
Ready output	DC OK output relay
Cooling	Air convection
Housing material	Metal
Weight	0.8 kg
Approvals	CE, UL/cUL, TÜV



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



Power Supplies

3-phase input voltage
10 A, 20 A

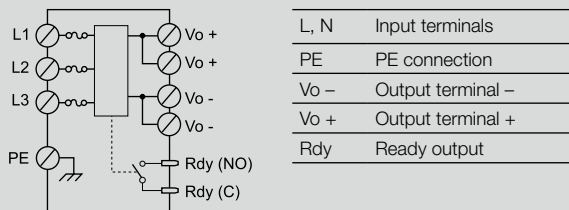


10 A
240 W
24 V DC
3x 340...575 V AC

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 limiter
> 100 kHz
3000 V AC
100 MΩ
< 1 s
-25 °C to +71 °C
-2.5 %/°C above +61 °C

yes
IP 20
DC OK output relay
Air convection
Metal
1.1 kg
CE, UL/cUL, TÜV

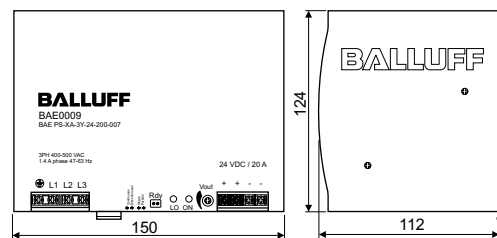
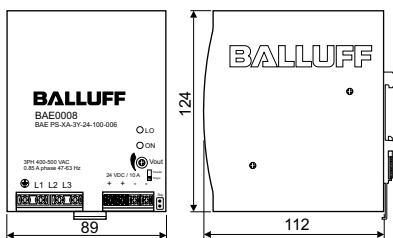
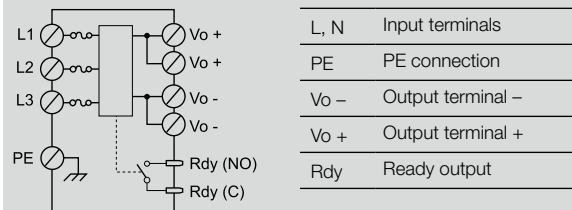


20 A
480 W
24 V DC
3x 340...575 V AC

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 limiter/Hiccup mode
> 100 kHz
3000 V AC
100 MΩ
< 1 s
-25 °C to +71 °C
-2.5 %/°C above +61 °C

yes
IP 20
DC OK output relay
Air convection
Metal
1.75 kg
CE, UL/cUL, TÜV

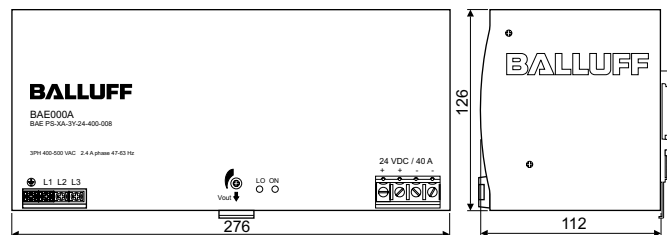


Power Supplies

3-phase input voltage
40 A

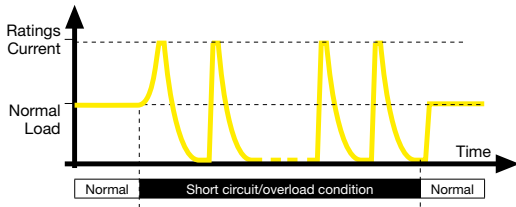


Output current	40 A								
Output power	960 W								
Output voltage	24 V DC								
Input voltage	3x 340...575 V AC								
Ordering code	BAE000A								
Part number	BAE PS-XA-3Y-24-400-008								
Input voltage range	340...575 V AC/480...820 V DC								
Inrush current	< 30 A								
Frequency range	47...63 Hz								
Input fuse	T5 A/500 V AC internal/phase								
Voltage adjustment range	22.5...28.5 V DC								
Temperature coefficient	±0.02 %/°C								
Ripple & Noise	80 mV								
Holdup time	> 20 ms typically 15 ms/400 V AC typically 30 ms/500 V AC								
Status indicator DC ON	Green LED								
Status indicator DC LOW	Red LED								
Efficiency	92 %								
Response	Current limiter								
Switching frequency	> 100 kHz								
Isolation voltage	3000 V AC								
Isolation resistance	100 MΩ								
Turn-on delay	< 1 s								
Ambient temperature range	-25 °C to +71 °C								
Derating	-3.5 %/°C above +61 °C								
Parallel mode	Yes (with external diodes)								
Degree of protection per IEC 60529	IP 20								
Ready output	no								
Cooling	Air convection								
Housing material	Metal								
Weight	3.2 kg								
Approvals	CE, UL/cUL, TÜV								
Wiring diagram	<table border="1" style="margin-left: 20px;"> <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 +								

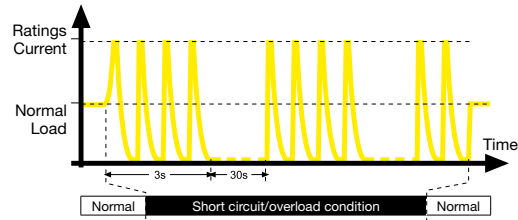


Output short circuit protection

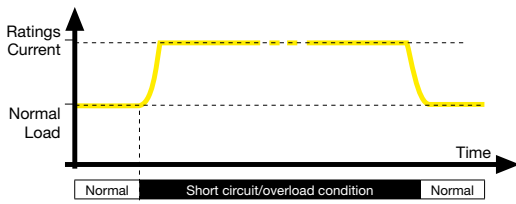
Hiccup mode overload protection*



Hiccup mode with turn-off overload protection*

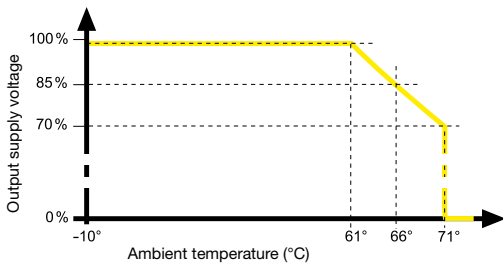


Current limiter and forward characteristic*



*Note: Diagrams are for illustration only.
They do not reflect the actual wave information.

Temperature under-load

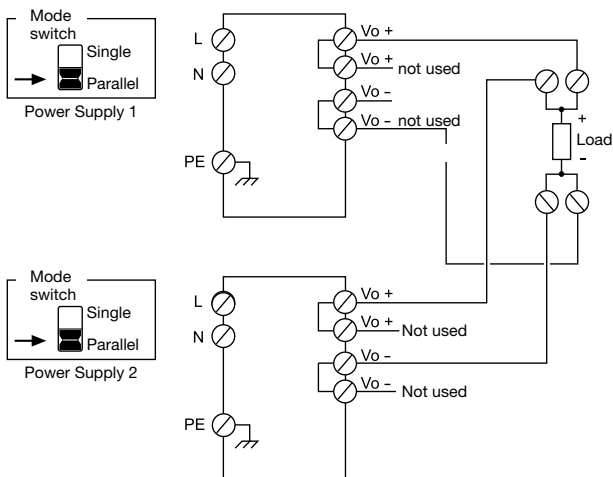


LED definition

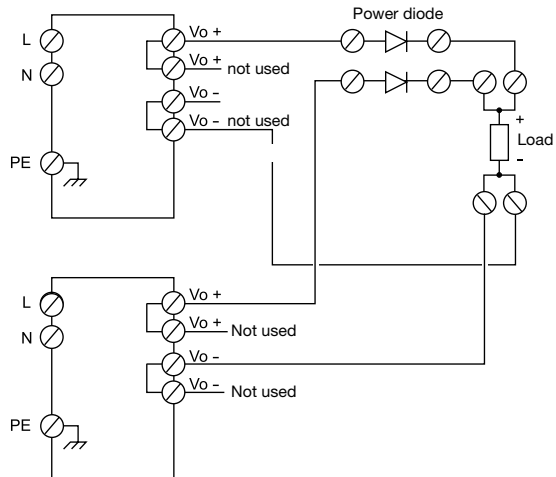
DC ON	DC LO	Possible situation
○ off	○ off	AC supply off, internal fuse burned out, short circuit
● on	○ off	Normal operation
○ off	● on	Output voltage < 19.2 V
● on	● on	Power supply failure

Parallel mode**

BAE0002, BAE0003 BAE0006, BAE0008, BAE0009



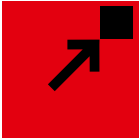
BAE0001, BAE0004, BAE0005, BAE0007, BAE000A



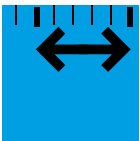
**Note: When wiring power supplies in parallel, the cable lengths should be the same for all DC connections on the load.

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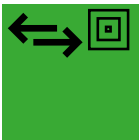
sensors worldwide



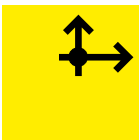
Object Detection



Linear Position Sensing



Industrial Identification



Industrial Networking and Connectivity



Mechanical Accessories

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