

# BALLUFF

sensors worldwide

## Power Supplies

Reliable power for industrial automation



# 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

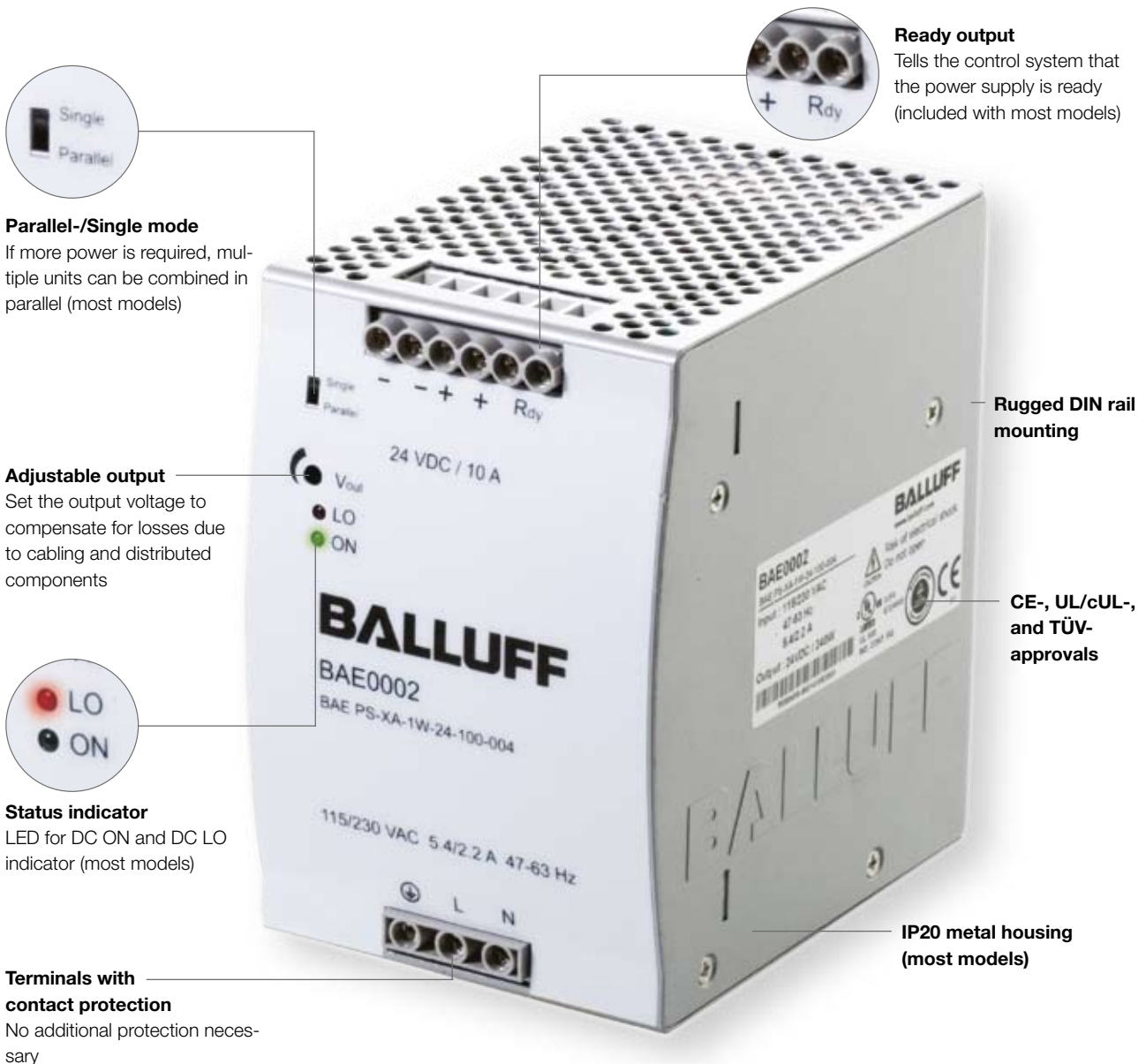
whether stand-alone or an individual combination of various models, use these optimal solutions for your requirements

## ■ Clean, precise power supply for especially demanding systems

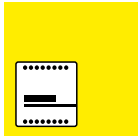
Load regulation +/- 1 % for all models, ripple & noise for most models less than 50 mV

## ■ 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 <sup>1</sup>	Plastic			<b>BAE0001</b>	BAE-PS-XA-1W-24-007-001	4	
	■						Single-phase <sup>1</sup>	Plastic		■	<b>BAE0004</b>	BAE-PS-XA-1W-24-012-002	5	
		■					Single-phase <sup>1</sup>	Plastic			■	<b>BAE0005</b>	BAE-PS-XA-1W-24-025-002	5
			■				Single-phase <sup>2</sup>	Metal	■	■	<b>BAE0006</b>	BAE-PS-XA-1W-24-050-003	6	
				■			3-phase <sup>3</sup>	Metal		■	<b>BAE0007</b>	BAE-PS-XA-3Y-24-050-009	8	
					■		Single-phase <sup>2</sup>	Metal	■	■	<b>BAE0002</b>	BAE-PS-XA-1W-24-100-004	7	
						■	3-phase <sup>3</sup>	Metal	■	■	<b>BAE0008</b>	BAE-PS-XA-3Y-24-100-006	9	
							Single-phase <sup>2</sup>	Metal	■	■	<b>BAE0003</b>	BAE-PS-XA-1W-24-200-005	7	
							3-phase <sup>3</sup>	Metal	■	■	<b>BAE0009</b>	BAE-PS-XA-3Y-24-200-007	9	
						■	3-phase <sup>3</sup>	Metal			<b>BAE000A</b>	BAE-PS-XA-3Y-24-400-008	10	



<sup>1</sup> = 100...240 V AC  
<sup>2</sup> = 115/230 V AC (Auto-Select)  
<sup>3</sup> = 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

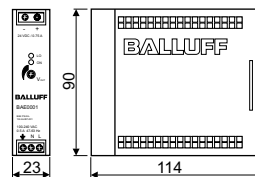
Reliable power has never been so simple to install. It starts with the convenient DIN rail mounting using the integrated Balluff high-performance mounting system. The screw terminals are arranged so that enable the AC input from beneath and the DC output from above. Terminals with built-in contact protection 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								
<b>Ordering code</b>	<b>BAE0001</b>								
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" 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 +								



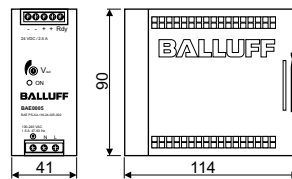
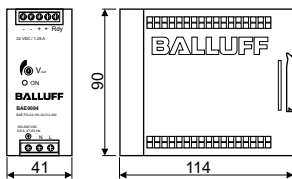
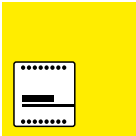
# Power Supplies

Single-phase input voltage  
1.25 A, 2.5 A



1.25 A											
30 W											
24 V DC											
100...240 V AC											
<b>BAE0004</b>											
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 %											
Forward characteristic											
> 100 kHz											
3000 V AC											
100 MΩ											
< 1 s											
-25 °C to +71 °C											
-2.5 %/°C above +61 °C											
Yes (with external diodes)											
IP 20											
DC OK output											
Air convection											
Plastic											
0.29 kg											
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
L, N	Input terminals										
PE	PE connection										
Vo -	Output terminal -										
Vo +	Output terminal +										
Rdy	Ready output										

2.5 A											
60 W											
24 V DC											
100...240 V AC											
<b>BAE0005</b>											
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 mode											
> 100 kHz											
3000 V AC											
100 MΩ											
< 1 s											
-25 °C to +71 °C											
-2.5 %/°C above +61 °C											
Yes (with external diodes)											
IP 20											
DC OK output											
Air convection											
Plastic											
0.36 kg											
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
L, N	Input terminals										
PE	PE connection										
Vo -	Output terminal -										
Vo +	Output terminal +										
Rdy	Ready output										

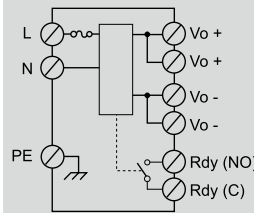


# Power Supplies

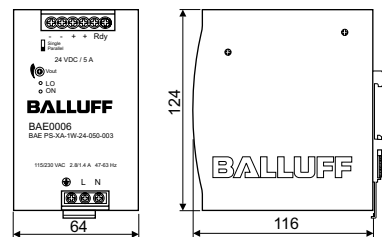
Single-phase input voltage  
5 A



Output current	5 A
Output power	120 W
Output voltage	24 V DC
Input voltage	115/230 V AC (Auto-Select)
<b>Ordering code</b>	<b>BAE0006</b>
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

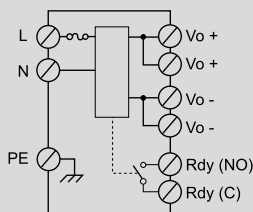
DC OK output relay

Air convection

Metal

1.0 kg

CE, UL/cUL, TÜV



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

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

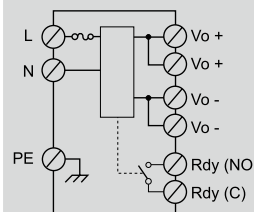
DC OK output relay

Air convection

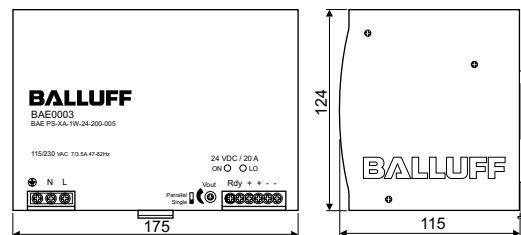
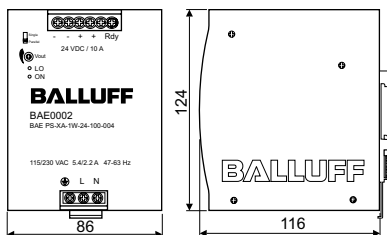
Metal

1.92 kg

CE, UL/cUL, TÜV



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

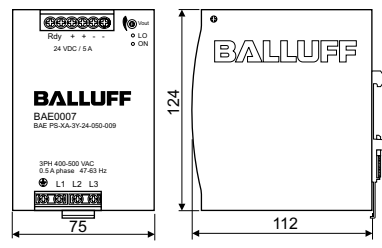
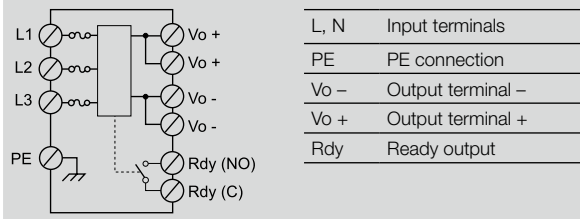


# Power Supplies

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
<b>Ordering code</b>	<b>BAE0007</b>
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



# Power Supplies

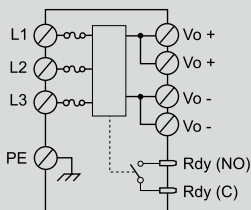
3-phase input voltage  
10 A, 20 A



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

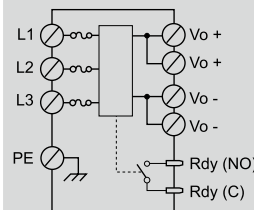


L, N	Input terminals
PE	PE connection
Vo -	Output terminal -
Vo +	Output terminal +
Rdy	Ready output

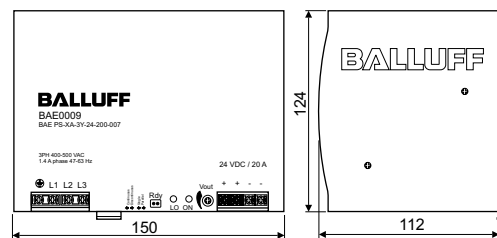
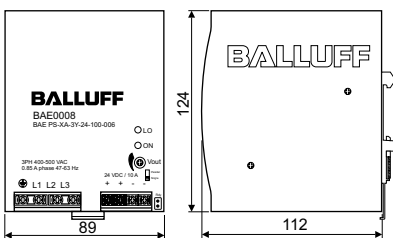
20 A  
480 W  
24 V DC  
3x 340...575 V AC

**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 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



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

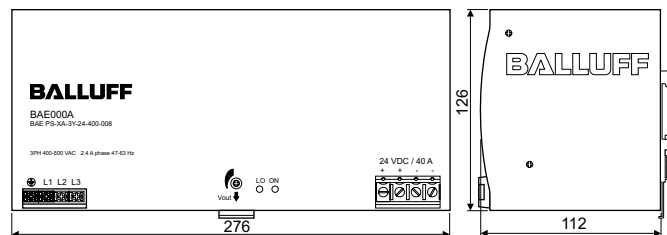


# Power Supplies

3-phase input voltage  
40 A

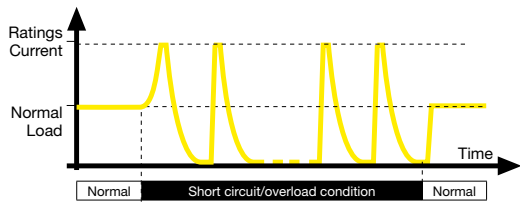


Output current	40 A								
Output power	960 W								
Output voltage	24 V DC								
Input voltage	3x 340...575 V AC								
<b>Ordering code</b>	<b>BAE000A</b>								
Part number	BAE PS-XA-3Y-24-400-008								
Input voltage range	340...575 V AC/480...820 V DC								
Inrush current	< 30 A								
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 +
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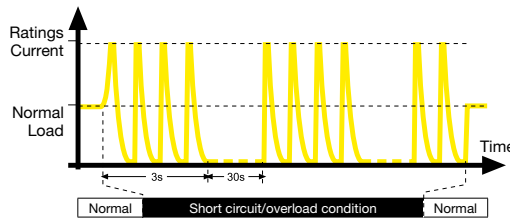


## Output short circuit protection

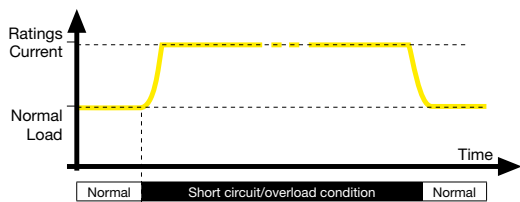
Hiccup mode overload protection\*



Hiccup mode with turn-off overload protection\*

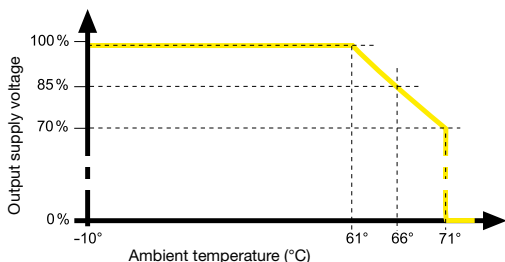


Current limiter and forward characteristic\*



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

Temperature under-load

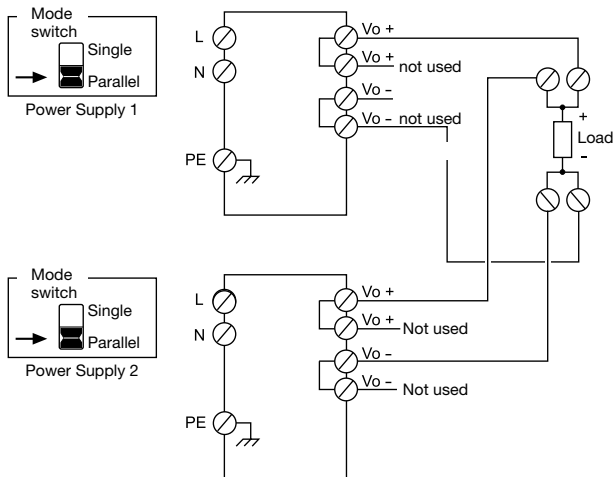


LED definition

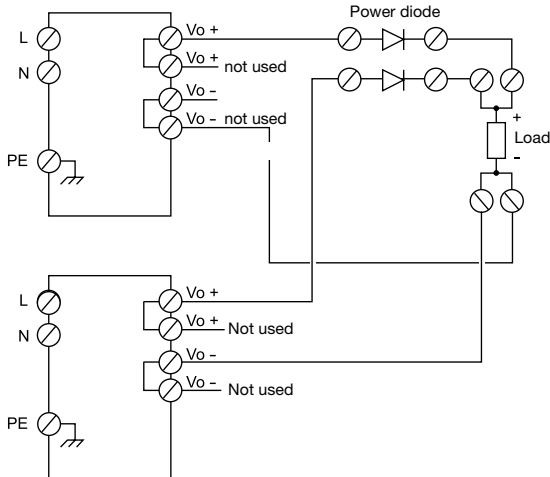
DC ON	DC LO	Possible situation
○ off	○ off	AC supply off, internal fuse burned out, short circuit
● on	○ off	Normal operation
○ off	● on	Output voltage < 19.2 V
● on	● on	Power supply failure

## Parallel mode\*\*

BAE0002, BAE0003 BAE0006, BAE0008, BAE0009



BAE0001, BAE0004, BAE0005, BAE0007, BAE000A



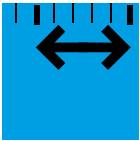
\*\*Note: When wiring power supplies in parallel, the cable lengths should be the same for all DC connections on the load.

# BALLUFF

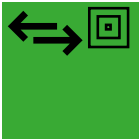
sensors worldwide



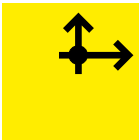
**Object Detection**



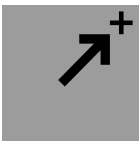
**Linear Position Sensing**



**Industrial Identification**



**Industrial Networking and Connectivity**



**Mechanical Accessories**

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Fax +49 7158 5010  
balluff@balluff.de



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