

BALLUFF

sensors worldwide

Power Supplies

Supplying power for your industrial applications

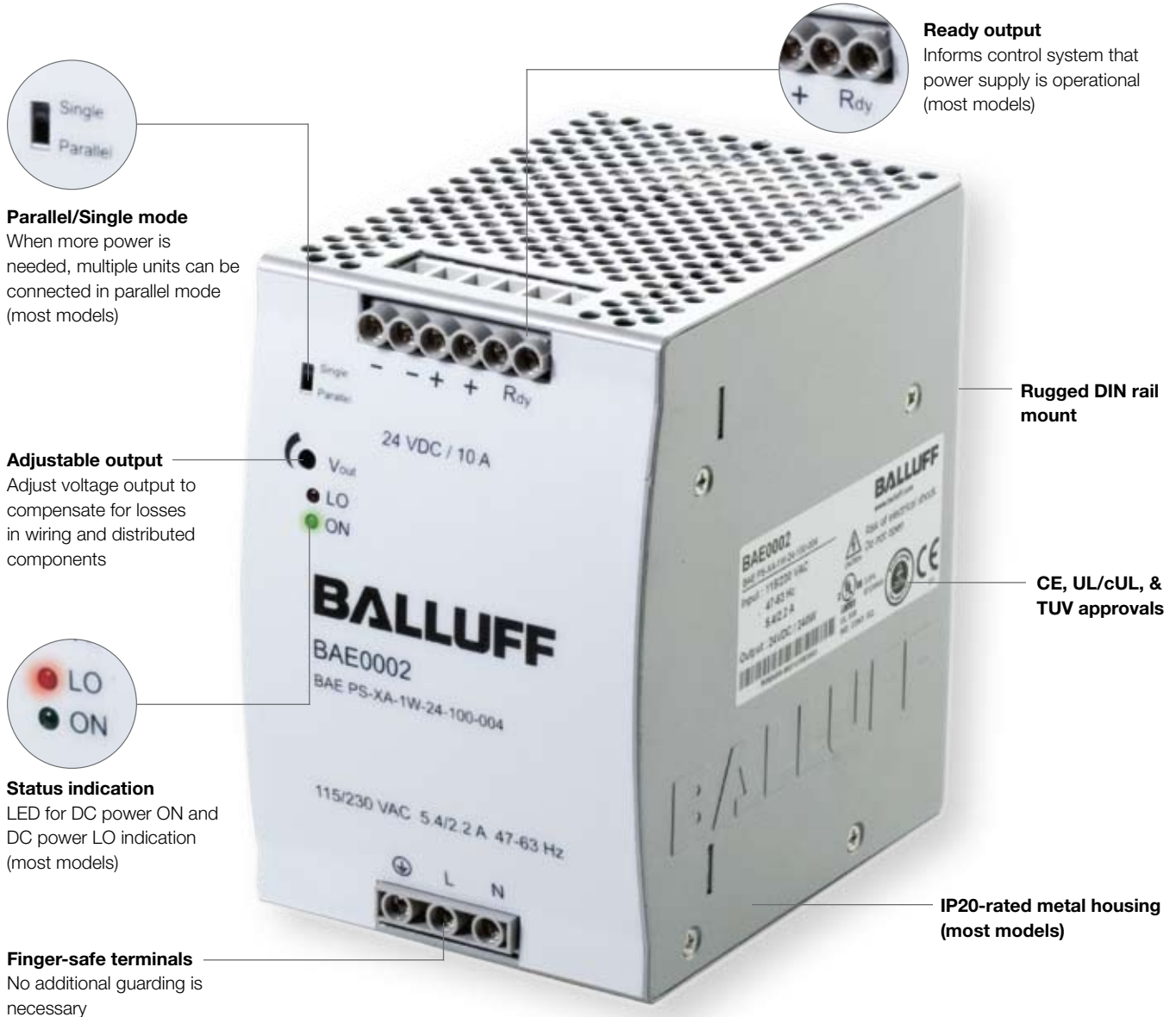


Balluff PS Power Supply Series

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 +/- 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



Parallel/Single mode
When more power is needed, multiple units can be connected in parallel mode (most models)

Adjustable output
Adjust voltage output to compensate for losses in wiring and distributed components

Status indication
LED for DC power ON and DC power LO indication (most models)

Finger-safe terminals
No additional guarding is necessary

Ready output
Informs control system that power supply is operational (most models)

Rugged DIN rail mount

CE, UL/cUL, & TUV approvals

IP20-rated metal housing (most models)

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

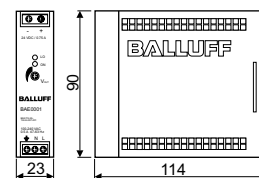
Reliable power has never been this easy to install. It starts with convenient DIN mounting with Balluff's heavy-duty, built-in mounting system. Screw terminals are oriented to allow AC power to enter from the bottom and DC power to exit from the top. Finger-safe terminals require no additional guarding.

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 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 Supply

Single phase input voltage
1.25 A, 2.5 A output



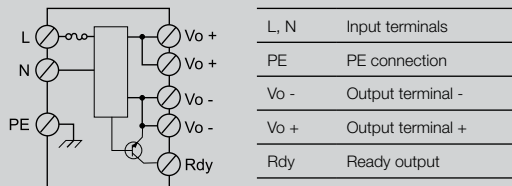
1.25 A
30 W
24 V DC
100...240 V AC

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



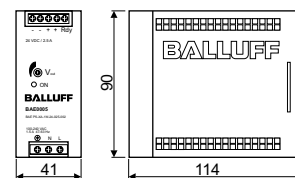
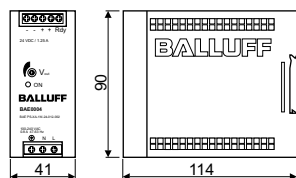
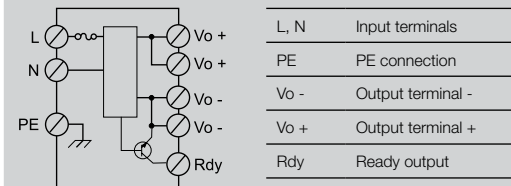
2.5 A
60 W
24 V DC
100...240 V AC

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

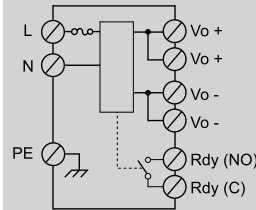


Power Supply

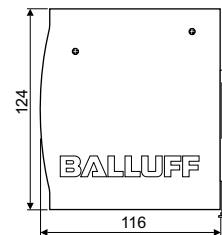
Single phase input voltage
5 A output



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



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

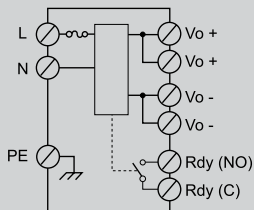
DC OK output relay

Air free convection

Metal

1.0 kg

CE, UL/cUL, TUV



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 limited

> 100 kHz

3000 V AC

100 MΩ

< 1 s

-25 °C to +71 °C

-2.5 % / °C from +61 °C

Yes

IP 20

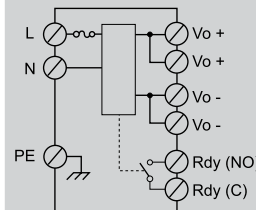
DC OK output relay

Air free convection

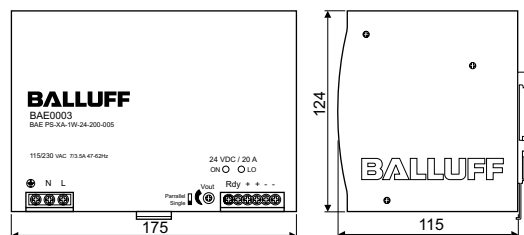
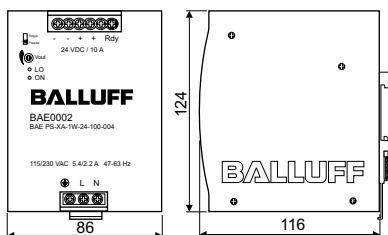
Metal

1.92 kg

CE, UL/cUL, TUV



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

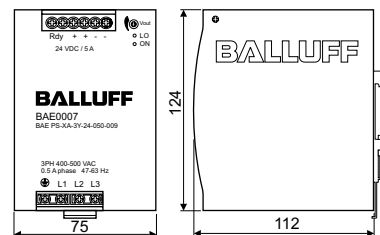
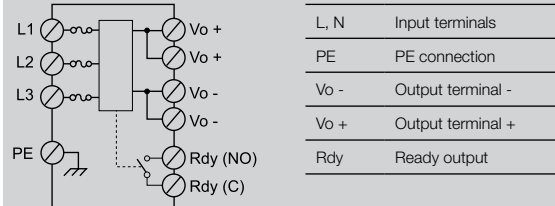


Power Supply

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	



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

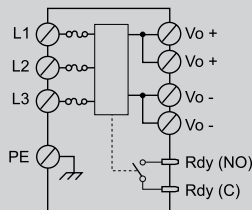
DC OK output relay

Air free convection

Metal

1.1 kg

CE, UL/cUL, TUV



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 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

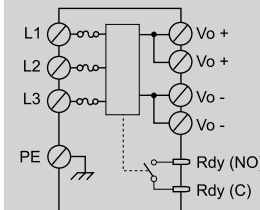
DC OK output relay

Air free convection

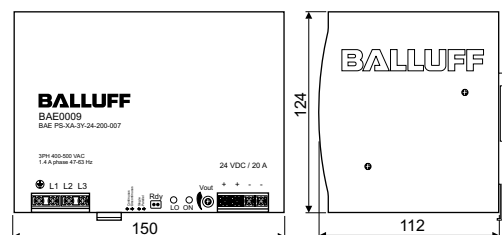
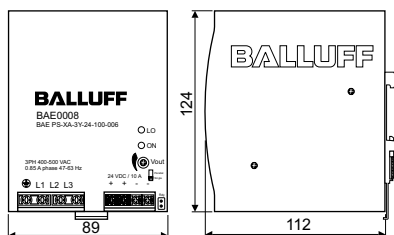
Metal

1.75 kg

CE, UL/cUL, TUV



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

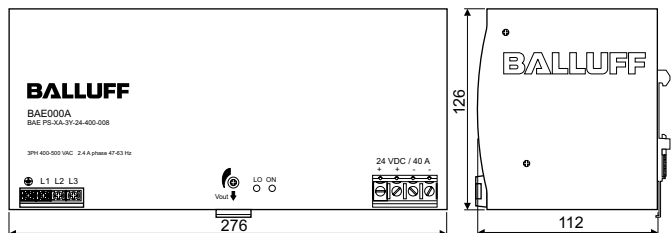
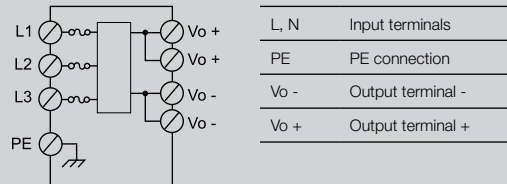


Power Supply

Three phase input voltage
40 A output

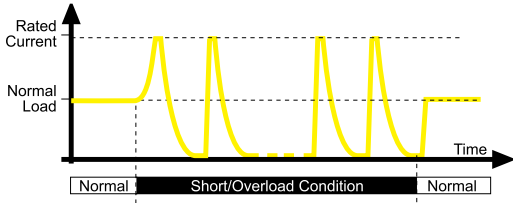


Output current	40 A
Output wattage	960 W
Output voltage	24 V DC
Input voltage	3x340...575 V AC
Ordering code	BAE000A
Part number	BAE PS-XA-3Y-24-400-008
Input voltage range	340...575 V AC / 480...820 V DC
Inrush current	< 30 A
Line frequency	47...63 Hz
Input fuse	T5 A / 500 V AC internal/phase
Voltage 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

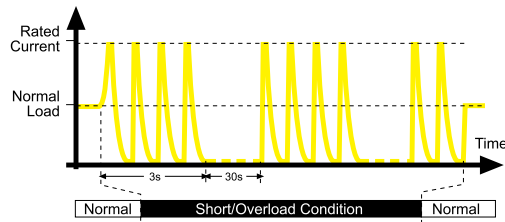


Output Short Circuit Protection

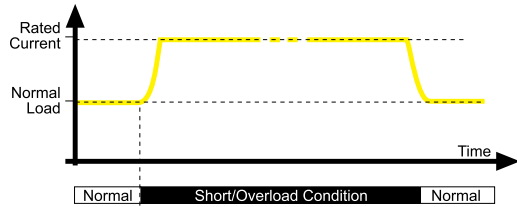
Hiccup mode overload protection*



Hiccup mode with shutdown overload protection*

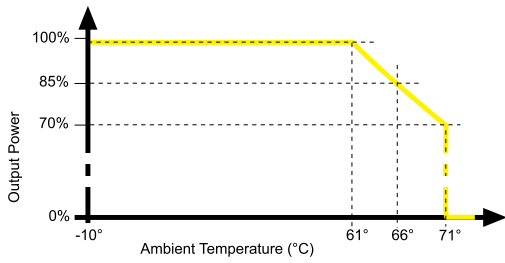


Current limited and fold forward overload protection*



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

Temperature Derating

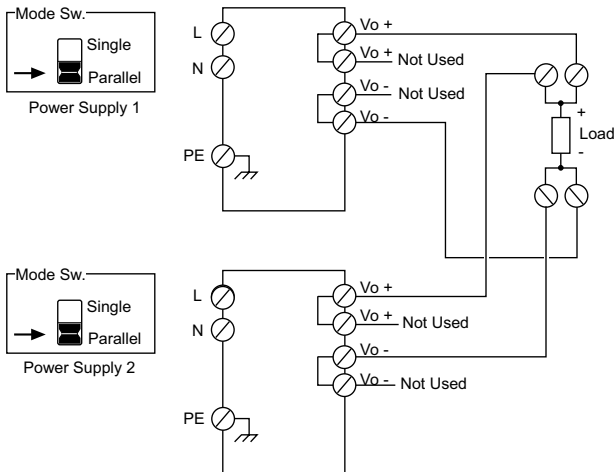


LED Definition

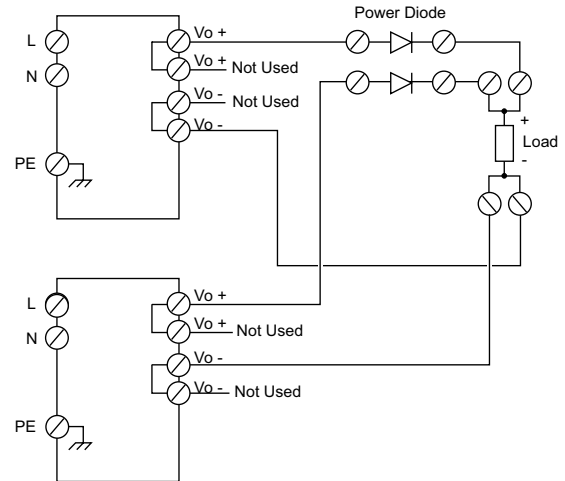
DC ON	DC LO	Possible Situation
<input type="radio"/> off	<input type="radio"/> off	AC power off, internal fuse blown, short circuit
<input checked="" type="radio"/> on	<input type="radio"/> off	Normal Operation
<input type="radio"/> off	<input checked="" type="radio"/> on	Output voltage < 19.2V
<input checked="" type="radio"/> on	<input checked="" type="radio"/> on	Power Supply Fault

Parallel Mode Wiring**

BAE0002, BAE0003, BAE0006, BAE0008, BAE0009



BAE0001, BAE0004, BAE0005, BAE0007, BAE000A



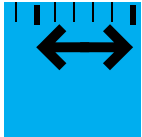
**Note: When wiring power supplies in parallel, it is recommended that the wire lengths be equal for all DC connections to the load.

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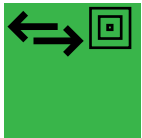
sensors worldwide



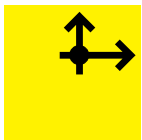
Object Detection



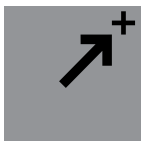
Linear Position and Measurement



Industrial Identification



Networking and Connectivity



Accessories



Gordy's Sensors

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Website: www.gordyssensors.com or Email: sales@gordyssensors.com