



Industrial Power Supplies Range

Introducing the latest family of Industrial Power Supplies from IMO



We have the Power

A power supply unit (PSU) is an electrical device that converts an incoming AC or DC electrical supply, into the correct voltage and power needed for industrial equipment. IMO's range of UL Approved single and three phase industrial power supplies have all been engineered to deliver reliable, high quality DC power to a control panel or automation system with the introduction of a range of compact switching power supply with universal AC and DC voltage inputs, short circuit protection, and a range of output DC voltage options.

These power supplies operate at high efficiencies, making them an exceptionally reliable power source for control panels and components such as, Programmable Logic Controllers (PLC), sensors, relays, contactors, timers, temperature controllers, process controllers and HMIs, all of which are available from IMO and all benefit from our 3-year warranty.



SPS Series - 12W to 150W

Our new SPS series of single phase UL approved power supplies offers a step/modular solution that is ideal for use within a consumer unit, for domestic and industrial applications including building automation applications.

The entire series offers Class II isolation, protecting the user from electrical shock without the need for earthing (LPS certified).

BPS Series - 15W to 180W

The BPS series of single phase UL approved industrial power supply provides a slimline solution for when space on the DIN Rail is limited, and offers an alternative to the LPS range of PSUs.

LPS Series - 10W to 480W

Our new LPS series of single and three phase UL approved industrial power supply offers the largest range encompassing both plastic and metal bodied PSUs, making them ideal for virtually every industrial application.

Featuring DC OK Relay on selected models (see Quick Feature Guide table overleaf), the LPS series offers the widest range of voltage outputs including 5V, 12V, 24V and 48V. All models up to 100W are supplied in slimline fanless plastic bodies, whereas the models from 150W upwards are supplied in fanless metal bodies. Additionally, the metal bodied LPS PSUs offer Power Factor Correction for improved efficiency as well as a reduction in power demand, which not only reduces running costs, but allows for more load. Three phase models can also accept bi-phase power input.

HPS Series - 120W to 480W

The HPS High Peak Power range features DC OK Relay across the entire range, and have been designed with higher peak performance of 150% in mind for more demanding applications that require greater power at start-up (fulfilling transient energy demands), removing the requirement to spend more money on PSUs with a higher rating. All HPS models are UL approved.

REDMOD Series - 20W

The REDMOD series has been designed for redundancy operation within 24V applications and offers both N+1 and 1+1 redundancy. Providing higher peak current and 2 in-built channels, as well as DC OK signal and an alarm relay contact, the REDMOD can be used with another power supply to improve overall reliability for your application.

SPS, LPS & HPS Options & Ordering Information

PLEASE NOTE: The feasibility of a code number does not mean the effective availability of a product.

SPS - 1 - 015 - 5DC

Series	
SPS Modular PSUs	SPS
BPS Slimline PSUs	BPS
LPS Standard PSUs	LPS
HPS High Performance PSUs	HPS

Output Voltage V	
5DC	5V DC
12DC	12V DC
24DC	24V DC
48DC	48V DC

Phase	
Single Phase	1
Three Phase (LPS Series only)	3

Output Power W							
010	10W	-	-	✓	-	-	-
012	12W	✓	-	-	-	-	-
015	15W	✓	✓	-	-	-	-
024	24W	✓	✓	✓	-	-	-
030	30W	✓	✓	✓	✓	-	-
040	40W	-	-	✓	-	-	-
060	60W	✓	✓	✓	✓	-	-
070	70W	-	✓	-	-	-	-
090	90W	-	-	✓	-	-	-
092	92W	✓	-	-	-	-	-
100	100W	-	✓	-	-	-	-
120	120W	-	✓	✓	-	✓	✓
150	150W	✓	-	-	-	-	-
180	180W	-	✓	-	-	-	-
240	240W	-	✓	✓	✓	✓	✓
480	480W	-	✓	✓	✓	✓	✓

Output Power (W) Availability

- ✓ Available in **SPS** Series
- ✓ Available in **BPS** Series*
- ✓ Available in **LPS (Single Phase)** Series
- ✓ Available in **LPS (Three Phase)** Series
- ✓ Available in **HPS** Series

* For BPS Series PSUs under 100W, please remove first "0". eg. BPS-1-15-24DC

Power Supply - Quick Feature Guide

Part Number	Over Temperature Protection	DC OK Relay	Built-In PFC	Class II	Pass LPS	Peak Power (3 secs.)	Approval	Bi-Phase
LPS-1-010-24DC	NO	YES	NO	YES	YES	NO	cULus / cURus	NO
LPS-1-024-24DC	NO	YES	NO	YES	YES	NO	cULus / cURus	NO
LPS-1-030-5DC	NO	YES	NO	YES	YES	NO	cULus / cURus	NO
LPS-1-040-12DC	NO	YES	NO	YES	YES	NO	cULus / cURus	NO
LPS-1-040-24DC	NO	YES	NO	YES	YES	NO	cULus / cURus	NO
LPS-1-060-12DC	NO	YES	NO	YES	YES	NO	cULus / cURus	NO
LPS-1-060-24DC	NO	YES	NO	YES	YES	NO	cULus / cURus	NO
LPS-1-090-12DC	NO	YES	NO	NO	YES	NO	cULus / cURus	NO
LPS-1-120-12DC	YES	NO	NO	NO	NO	NO	cULus / cURus	NO
LPS-1-120-24DC	YES	NO	NO	NO	NO	NO	cULus / cURus	NO
LPS-1-120-48DC	YES	NO	NO	NO	NO	NO	cULus / cURus	NO
LPS-1-240-24DC	YES	NO	YES	NO	NO	NO	cULus / cURus	NO
LPS-1-240-48DC	YES	NO	YES	NO	NO	NO	cULus / cURus	NO
LPS-1-480-24DC	YES	YES	YES	NO	NO	NO	cULus / cURus	NO
LPS-3-240-24DC	YES	YES	YES	NO	NO	NO	cULus / cURus*	YES
LPS-3-480-24DC	YES	YES	YES	NO	NO	NO	cULus / cURus*	YES
ALL SPS PSUs	NO	NO	NO	YES	YES	NO	cULus / cURus	NO
ALL HPS PSUs	YES	YES	YES	NO	NO	YES	cULus / cURus	NO
ALL BPS PSUs	YES	NO	NO	NO	NO	NO	cURus	NO

* Pending approval

GLOSSARY:

Over Temperature Protection	Unit shuts down in over temperature situation / auto recovery one unit cools to within operating threshold.
DC OK Relay	Local LED indication and potential free contact for signalling remote operating systems that the PSU is on, and the DC output is ok.
Built-In PFC	Power Factor Correction: Improved efficiency and reduction in power demand, hence a reduction in the load on the switching gear and cables, reduced costs to the consumer.
Class II	Equipment in which protection against electric shock does not rely on basic insulation only, rather additional safety precautions, such as double insulation or reinforced insulation are provided, ensuring no reliance on either protective earth or installation conditions.
Pass LPS	When an electronic circuit is powered by a limited power source (LPS), its output current and power are under guided limitation and the risk of fire can be reduced significantly.
Peak Power	Can withstand peak power demand for 3 seconds (refer to HPS Series peak power loading curves for more information).
Approval	Indicates international approval standard - see each PSU Series for specific approval.
Bi-Phase	Three phase PSU units can accept bi-phase power input (refer to derating graphs for more information).

SPS Series

Single Phase 12W-150W AC-DC DIN Rail Power Supplies

Key Features

- Class 2 LPS
- Universal input 90-264VAC / 127-370VDC
- Class II Isolation
- 100% full load burn-in test
- Modular design
- IP20 rated protection



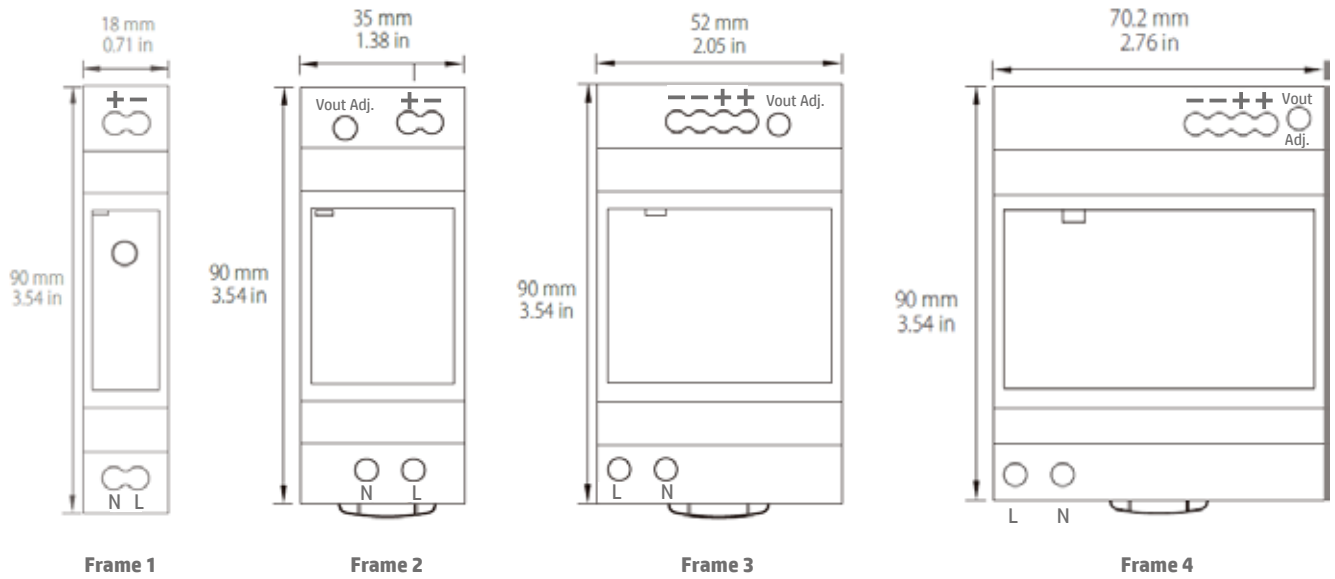
Technical Specification

Model	SPS-1-012-5DC	SPS-1-015-12DC	SPS-1-015-24DC	SPS-1-024-12DC
Frame Size	1		2	
Input Voltage	85-264VAC or 120-370VDC			
Output Wattage	12W	15W	15W	24W
Output Voltage	5VDC	12VDC	24VDC	12VDC
Output Current	2.4A	1.25A	0.63A	2A
Efficiency	82%	88%	89%	88%
General Specification				
Approval	cURus - Class 2			
Isolation Voltage	3000VAC / 4242VDC			
Isolation Resistance	100MΩ @ 500VDC			
Ambient Temperature	-20 to +70°C			
Derating	(50 to 70°C) 2.5%/°C			
Storage Temperature	-40 to +85°C			
Relative Humidity	20 to 90% RH			
Cooling	Free air convection (Fanless)			
Frame Size & Weight (see overleaf)	Frame 1		Frame 2	
Tightening Torque	0.5Nm			
Case Material	Plastic			
Input Specifications				
Rated Input Voltage	85-264VAC or 120-370VDC			
Line Frequency	47 to 63Hz			
Inrush Current (115/230VAC)	25/45A			
Output Specifications				
Output Voltage Accuracy	±1%			
Minimum Load	0%			
Line Regulation	±1%			
Load Regulation	±1%			
Turn On Time	2000ms at full load		500ms at full load	
Voltage Fall Time	80ms			
Voltage Rise Time	80ms			
Hold Up Time (115/230VAC)	30/12ms			
Temperature Coefficient	±0.03%/°C (0-50°C) RH non-condensing			
Ripple & Noise	80mVp-p	120mVp-p	150mVp-p	120mVp-p
Voltage Trim Range	4.5-5.5VDC	10.8-13.8VDC	21.6-29VDC	10.8-13.8VDC
DC ON Indicator (Green LED)	3.5-4.5VDC			
DC LOW Indicator (Red LED)	3.5-4.5VDC			
Control & Protection				
Rated Overload Protection	110 to 145%		105 to 160%	
Over Voltage Protection	5.75-6.5VDC	14.2-16.2VDC	30-36VDC	15-18VDC
Output Short Circuit	Hiccup Mode			
Connector Size Range	AWG 24-12 (0.2-2.5mm ²) flexible / solid cable			



SPS-1-030-24DC	SPS-1-060-24DC	SPS-1-092-24DC	SPS-1-150-24DC*
2	3	4	5
85-264VAC or 120-370VDC			
30W	60W	92W	150W (230VAC) / 127.4W (115VAC)
24VDC			
1.25A	2.5A	3.83A	6.25A (230VAC) / 5.3A (115VAC)
89%	90%		90.5%
cURus - Class 2			cURus
3000VAC / 4242VDC			
100MΩ @ 500VDC			
-20 to +70°C			
(50 to 70°C) 2.5%/°C			
-40 to +85°C			
20 to 90% RH			
Free air convection (Fanless)			
Frame 2	Frame 3	Frame 4	Frame 5
0.5Nm			
Plastic			
85-264VAC or 120-370VDC			
47 to 63Hz			
25/45A	30/60A	35/70A	60A (240VAC)
±1%			
0%			
±1%			
±1%			
500ms at full load			
80ms			
80ms			
30/12ms	12/30ms	30ms (100-240VAC)	
±0.03%/°C (0-50°C) RH non-condensing			
150mVp-p			
21.6-29VDC		24-25.5VDC	21.6-29VDC
3.5-4.5VDC			
3.5-4.5VDC			
105 to 160%		102 to 110%	105 to 135%
30-36VDC			
Hiccup Mode			
AWG 24-12 (0.2-2.5mm ²) flexible / solid cable			

Dimensions (mm)



Frame Sizes & Weights

	Frame 1	Frame 2	Frame 3	Frame 4	Frame 5
Height	90mm (3.54in)	90mm (3.54in)	90mm (3.54in)	90mm (3.54in)	90mm (3.54in)
Width	18mm (0.71in)	35mm (1.38in)	52mm (2.05in)	70.2mm (2.76in)	105mm (4.13in)
Depth	58mm (2.28in)	58mm (2.28in)	58mm (2.28in)	58mm (2.28in)	58mm (2.28in)
Weight	78g	120g	190g	270g	320g

Construction

Easy, safe and secure snap-on, snap-off DIN Rail mounting (TS25/7.5 or TS35/15)

Installation

Ventilation / Cooling

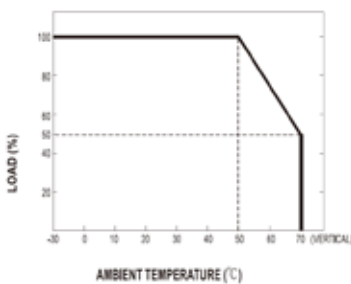
Normal convection. All sides 25mm free space for cooling recommended

Terminal Size Range

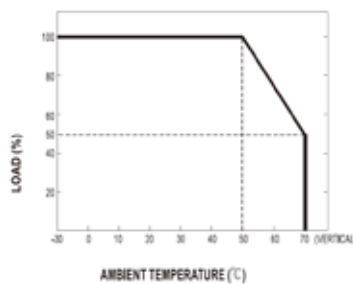
2 Solid: 0.2-2.0mm (AWG24-14)
Use copper conductors only

Derating Graphs

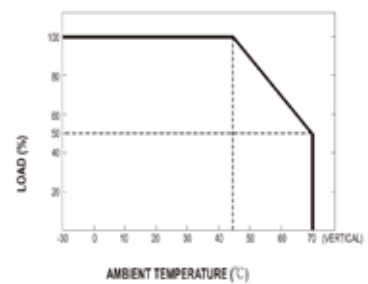
Temperature Derating - Frame 1



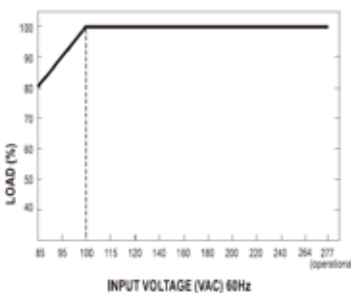
Temperature Derating - Frame 2



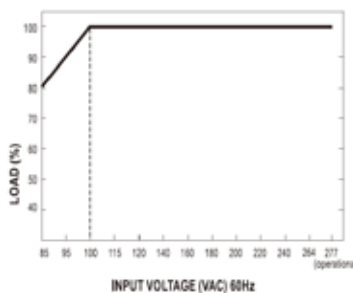
Temperature Derating - Frame 3



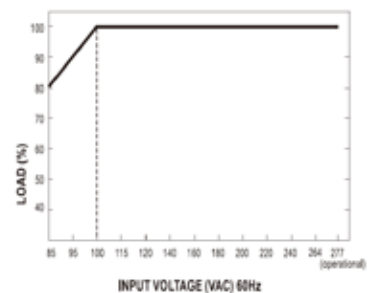
Output Derating - Frame 1

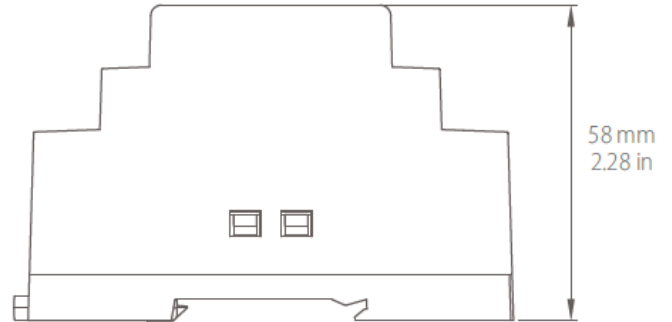
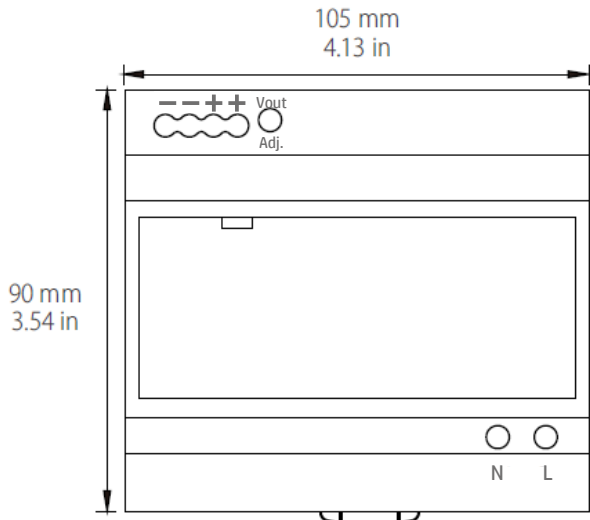


Output Derating - Frame 2



Output Derating - Frame 3



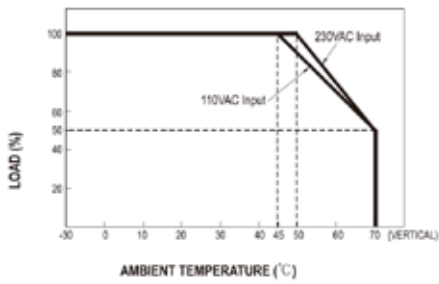


Frame 5

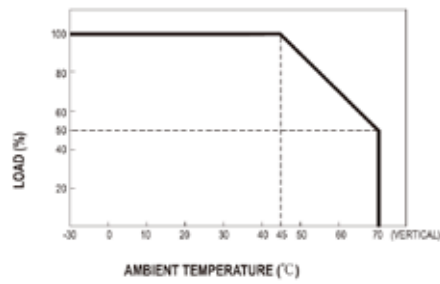
Terminal Assignment

		Description
Output	V+	Positive Output Terminal
	V-	Negative Output Terminal
	Vout Adj.	DC Output Adjustment Trimmer
Input	N	Neutral Input (No Polarity at DC Input)
	L	Phase Input (No Polarity at DC Input)

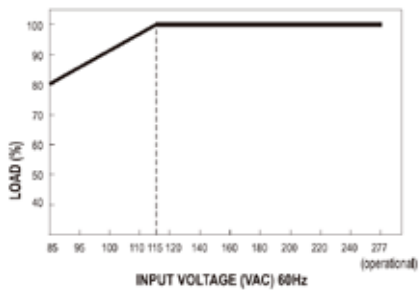
Temperature Derating - Frame 4



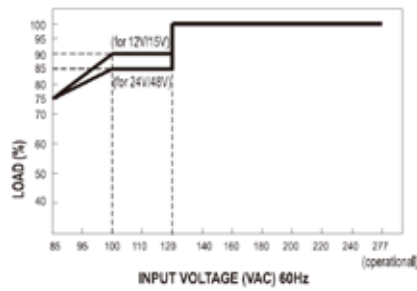
Temperature Derating - Frame 5



Output Derating - Frame 4



Output Derating - Frame 5



BPS Series

Single Phase 15W-180W AC-DC DIN Rail Power Supplies

Key Features

- Universal input 90-264VAC / 120-375VDC
- 12V & 24V DC output models
- High efficiency (up to 90%)
- 100% full load burn-in test
- Short circuit protection
- Parallel connection (back-up)



Technical Specification

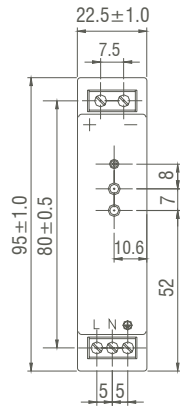
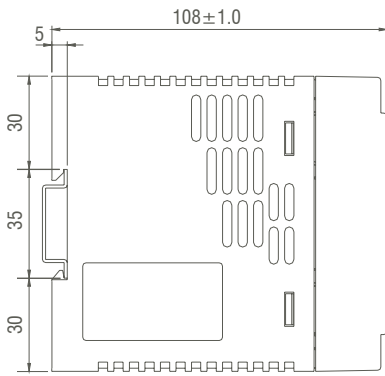
Model	BPS-1-15-24DC	BPS-1-30-24DC	BPS-1-70-24DC	BPS-1-120-24DC	BPS-1-180-24DC
Output Wattage	15W	30W	70W	120W	180W
Output Voltage	24VDC				
Output Current	0.65A	1.3A	3A	5A	7.5A
Efficiency (typ)	83%	87%	86%	85%	90%
Stand-by Power Consumption	1.7W / 230VAC	1W / 230VAC	4W / 230VAC		7W / 230VAC
Surge Voltage (L-N)	2kV				
Power Factor	0.98 ≤ / 115VAC, 0.96 ≤ / 230VAC				
General Specification					
Approvals	cURus, CE, CB, FCC				
Isolation Voltage	I/P-O/P: 3kVAC, I/P-FG: 1.5kVAC, O/P-FG: 1.5kVAC				See BPS-1-240-24DC
Insulation Resistance	100MΩ max. / 500VDC				
Operating Temperature	-25 to +70°C				
Operating Relative Humidity	20 to 95% RH				
Storage Temperature	-40 to +85°C, RH 5 to 95%				
MTBF (Full Load)	min. 200khrs / 220VAC / 25°C				
Cooling	Free air convection (Fanless)				
Tightening Torque	0.5Nm			0.7 - 0.8Nm	
Dimensions (mm)	L95 x W22.5 x D108	L95 x W36 x D108	L130 x W33 x D125	L130 x W40 x D125	L130 x W50 x D125
Weight	200g	250g	650g	800g	950g
Case Material	Plastic			Metal	
Input Specifications					
Input Voltage Range	90 to 264VAC, 127 to 370VDC				
Input Current (Full Load)	0.28A / 115 VAC, 0.15A / 230VAC	0.65A / 115VAC, 0.35A / 230VAC	1.6A / 115VAC, 0.8A / 230VAC	2.6A / 115VAC, 1.3A / 230VAC	1.8A / 115VAC, 0.9A / 230VAC
Line Frequency	47 to 63Hz / -				
Inrush Current (Cold Start)	30A / 115VAC, 60A / 230VAC				
Output Specifications					
Output Voltage Accuracy	±1%			±2%	
Output Voltage Adjustment	23.5 to 24.5V			23 to 28V	21 to 28V
Line Regulation	1%			2%	1%
Load Regulation	1%			3%	1%
Turn-On Delay	100ms / 115VAC, full load		560ms / 115VAC, full load		3600ms / 115VAC, full load
Hold Up Time	20ms / 115VAC				
Temperature Coefficient	± 0.03% / °C (0 to 50° C)				
Ripple & Noise	15mV	46mV	120mV		1%Vo mVp-p
Indicator DC OK	LED (green)				
Indicator DC Low	LED (red)				
Control & Protection					
Rated Overload Protection	0.9A	2.2A	4A	6.6A	8.3A
Over Voltage Protection	30V			33V	
Output Short Circuit	Hiccup mode, it will recover automatically after fault condition is removed		Shut off output voltage, the power supply will recover after the power is turned on again		See BPS-1-240-24DC
Over Temperature Protection	100 ± 10°C				
Safety	Design refer to UL60950-1, EN60950-1				
EMC Standards	EN 55022: 2010 + AC:2011 (CISPR 22:2008) Class B; EN 61000-2-2:2014 (IEC 61000 -3-2:2014); EN 61000-3-3:2013 (IEC61000-3-3:2013); EN55024:2010 (CISPR 24:2010)				



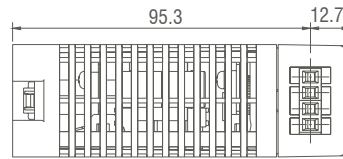
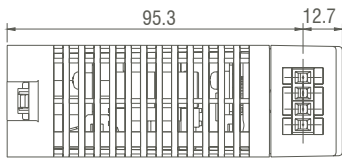
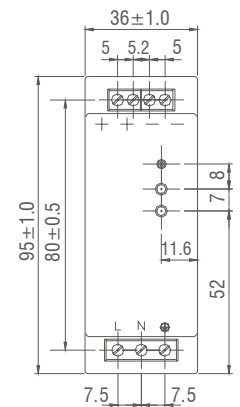
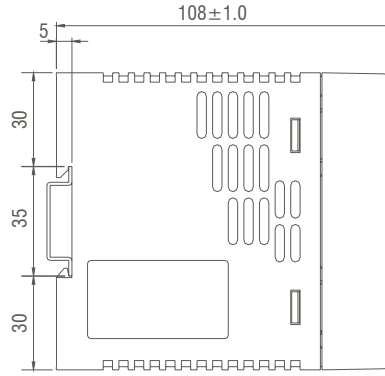
BPS-1-240-24DC	BPS-1-480-24DC	BPS-1-15-12DC	BPS-1-30-12DC	BPS-1-60-12DC	BPS-1-100-12DC
240W	480W	15W	30W	60W	100W
24VDC			12VDC		
10A	20A	1.2A	2.5A	5A	8A
90%	94%	80%	83%	84%	82%
7W / 230VAC	5W / 230VAC	1.7W / 230VAC	1W / 230VAC	4W / 230VAC	
2kV		2kV			
0.98 ≤ / 115VAC, 0.96 ≤ / 230VAC		0.99 ≤ / 115VAC, 0.97 ≤ / 230VAC			
cURus, CE, CB, FCC					
I/P-O/P: 3kVAC, I/P-FG: 1.5kVAC, O/P-FG: 500VAC		I/P-O/P: 3000VAC, I/P-FG: 1500VAC, O/P-FG: 1500VAC			
100MΩ max. / 500VDC					
-25 to +70°C					
20 to 95% RH					
-40 to +85°C, RH 5 to 95%					
min. 230khrs / 220VAC / 25°C			min. 200khrs / 220VAC / 25°C		
Free air convection (Fanless)					
0.7 - 0.8Nm	1.0Nm	0.5Nm		0.7 - 0.8Nm	
L130 x W60 x D125	L130 x W60 x D125	L95 x W22.5 x D108	L95 x W36 x D108	L130 x W33 x D125	L130 x W40 x D125
1000g	1000g	200g	250g	650g	800g
Metal		Plastic		Metal	
90 to 264VAC, 127 to 370VDC					
2.6A / 115VAC, 1.3A / 230VAC	5.0A / 115VAC, 2.5A / 230VAC	0.28A / 115VAC, 0.15A / 230VAC	0.65A / 115VAC, 0.35A / 230VAC	1.6A / 115VAC, 0.8A / 230VAC	2.6A / 115VAC, 1.3A / 230VAC
47 to 63Hz / -					
35A / 115VAC, 65A / 230VAC		40A / 115VAC, 80A / 230VAC		30A / 115VAC, 60A / 230VAC	
±2%		±1%		±2%	
22 to 28V		11.6 to 12.3V		11 to 14V	
2%		1%		2%	
3%		1%		3%	
3600ms / 115VAC, full load		100ms / 115VAC, full load		560ms / 115VAC, full load	
20ms / 115VAC					
± 0.03% / °C (0 to 50° C)					
1%Vo mVp-p		12mV	42mV	100mV	
LED (green)					
LED (red)					
11A	TBC	1.8A	4A	8A	10A
33V	TBC	18V	16V	20V	
Hiccup mode, it will recover automatically after fault condition is removed				Shut off output voltage, the power supply will recover after the power is turned on again	
110 ± 10°C					
Design refer to UL60950-1, EN60950-1					
EN 55022: 2010 + AC:2011 (CISPR 22:2008) Class B; EN 61000-2-2:2014 (IEC 61000 -3-2:2014); EN 61000-3-3:2013 (IEC61000-3-3:2013); EN55024:2010 (CISPR 24:2010)					

Dimensions (mm)

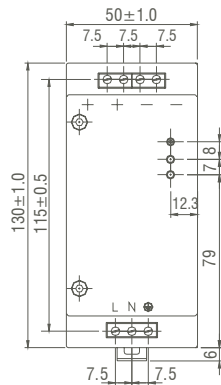
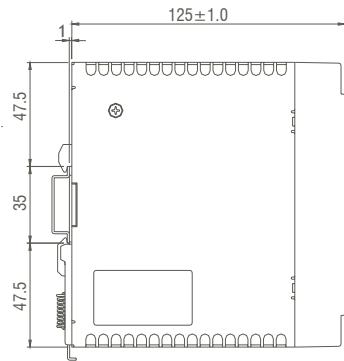
BPS-1-15-12DC & BPS-1-15-24DC



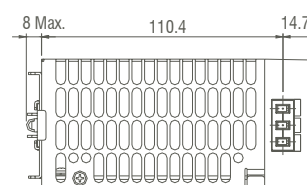
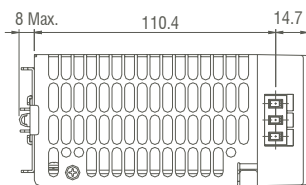
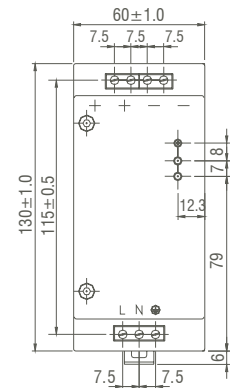
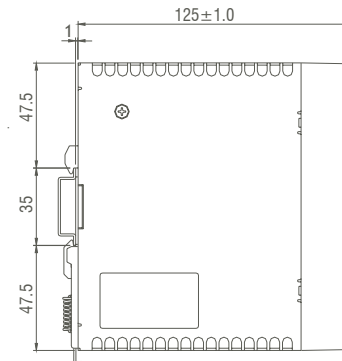
BPS-1-30-12DC & BPS-1-30-24DC



BPS-1-180-24DC

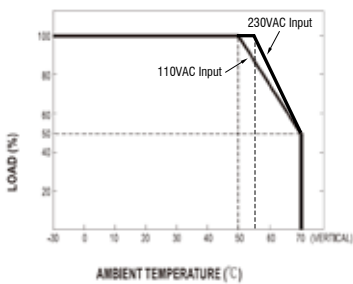


BPS-1-240-24DC & BPS-1-480-24DC

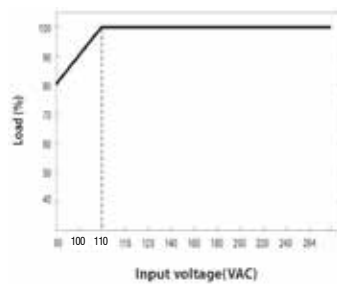


Derating Graphs

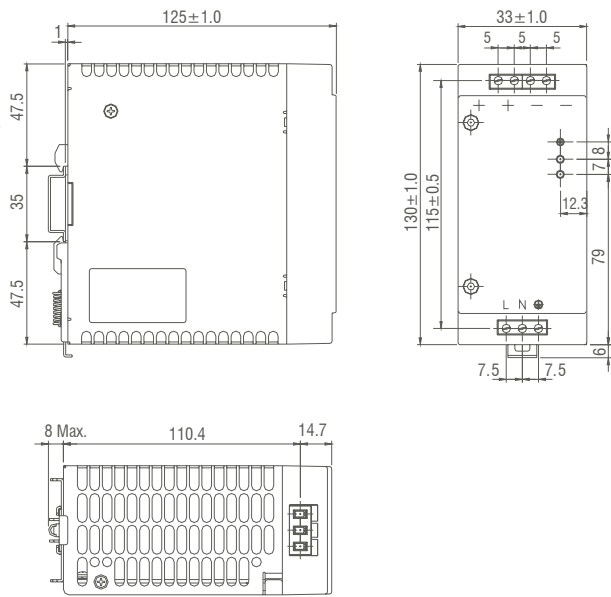
Temperature Derating - All Models



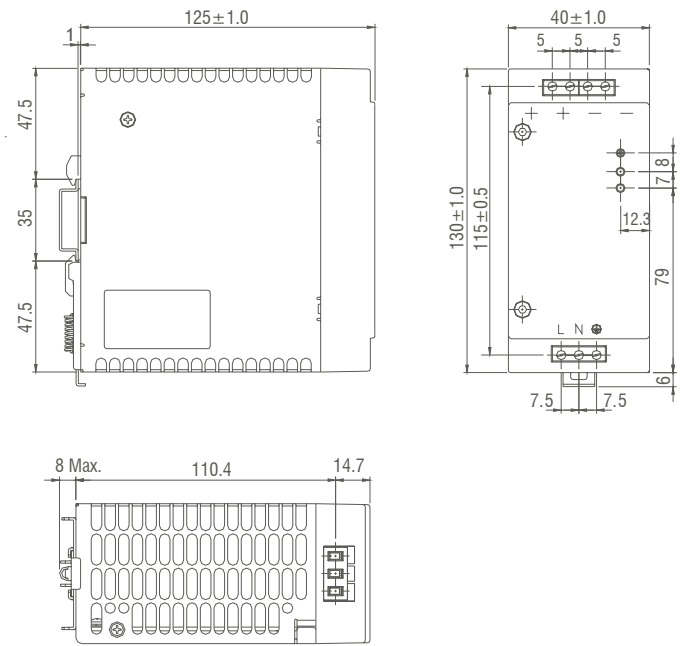
Output Derating - All Models



BPS-1-70-12DC & BPS-1-70-24DC

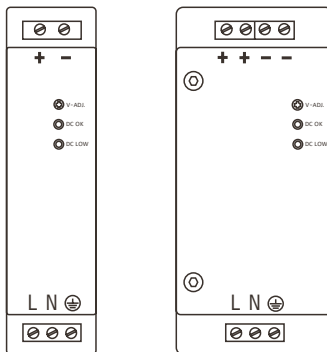


BPS-1-120-12DC & BPS-1-120-24DC



Terminal Assignment

BPS-1-15DC BPS-1-30DC to BPS-1-480DC



Marking	Assignment
+	DC (+) output terminal
-	DC (-) output terminal
L	AC (L) input terminal
N	AC (N) input terminal
⊕	AC grounding terminal
V-ADJ.	DC output voltage adjustment trimmer
DC OK	DC output OK indication LED (green)
DC LOW	DC output Low indication LED (red)

LPS Series

Single Phase 10W-90W AC-DC DIN Rail Power Supplies

Key Features

- 5, 12 & 24 VDC
- Universal Input: 85-264VAC / 120-370VDC
- High Efficiency
- Short Circuit Protection
- Internal Input Filter
- IP20 Protection Rated
- Class 2



Technical Specification

Model	LPS-1-010-24DC	LPS-1-024-24DC	LPS-1-030-5DC	LPS-1-040-12DC
Input Voltage	85-264VAC / 120-370VDC			
Output Wattage	10W	24W	30W	40W
Output Voltage	24VDC	24VDC	5VDC	12VDC
Output Current	0.42A	1A	6A	3.33A
Efficiency	84%		78%	86%
General Specification				
Approval	cURus - Class 2			
Isolation Voltage	3000VAC/4242VDC			
Isolation Resistance	100MΩ @ 500VDC			
Ambient Temperature	-30 to +70°C (refer to derating curve)			
Derating	(50 to 70°C) 2.5%/°C			
Storage Temperature	-40 to +85°C			
Relative Humidity	20 to 95% RH			
Cooling	Free air convection (Fanless)			
Tightening Torque	0.5Nm			
Dimensions	92 x 23 x 100mm		92 x 41 x 100mm	
Weight	140g	150g	280g	
Case Material	Plastic			
Input Specifications				
Rated Input Voltage	85-264VAC / 120-370VDC			
Line Frequency	50/60Hz			
Inrush Current (115 / 230VAC)	35 / 70A		30 / 60A	
Output Specifications				
Output Voltage Accuracy	+1%			
Minimum Load	0%			
Line Regulation	±1%			
Load Regulation	±5%			
Turn On Time	500ms			
Voltage Fall Time	150ms			
Voltage Rise Time	30ms			
Hold Up Time (115 / 230VAC)	30 / 30ms			
Ripple & Noise	150mVp-p	80mVp-p		120mVp-p
Voltage Trim Range	21.6-28.8VDC	4.5-5.75VDC		21.6-28.8VDC
DC ON & LOW Indicator (Green & Red LED)	18-21.6VDC	3.5-4.5VDC		18-21.6VDC
DC OK Relay	30V / 1A Resistive Load			
Control & Protection				
Rated Overload Protection	>105%-150%			
Over Voltage Protection	27.6-32.4VDC	6.25-7.25VDC		15.6-18VDC
Output Short Circuit	Hiccup Mode			



LPS-1-040-24DC	LPS-1-060-12DC	LPS-1-060-24DC	LPS-1-090-12DC
85-264VAC / 120-370VDC			
40W	60W	60W	90W
24VDC	12VDC	24VDC	12VDC
1.7A	5A	2.5A	7.5A
88%	86%	88%	83%
cURus - Class 2			
3000VAC/4242VDC			
100MΩ @ 500VDC			
-30 to +70°C (refer to derating curve)			
(50 to 70°C) 2.5%/°C			
-40 to +85°C			
20 to 95% RH			
Free air convection (Fanless)			
0.5Nm			
92 x 41 x 100mm		92 x 55 x 100mm	
280g		400g	
Plastic			
85-264VAC / 120-370VDC			
50/60Hz			
30 / 60A			
+1%			
0%			
±1%	±5%		±1%
±2%			
±1%			
500ms			
150ms			
30ms			
30 / 30ms			
150mVp-p	120mVp-p	150mVp-p	120mVp-p
21.6-28.8VDC	10.8-13.8VDC	21.6-28.8VDC	10.8-13.8VDC
18-21.6VDC	9-10.8VDC	18-21.6VDC	9-10.8VDC
30V / 1A Resistive Load			
>105%-150%			
31.2-36VDC	15.6-18V	31.2-36VDC	15.6-18V
Hiccup Mode			

LPS Series

Single Phase 120W-480W AC-DC DIN Rail Power Supplies

Key Features

- 12, 24 & 48 VDC
- Universal Input: 90-264VAC / 120-375VDC
- High Efficiency
- Short Circuit Protection
- Internal Input Filter
- IP20 Protection Rated



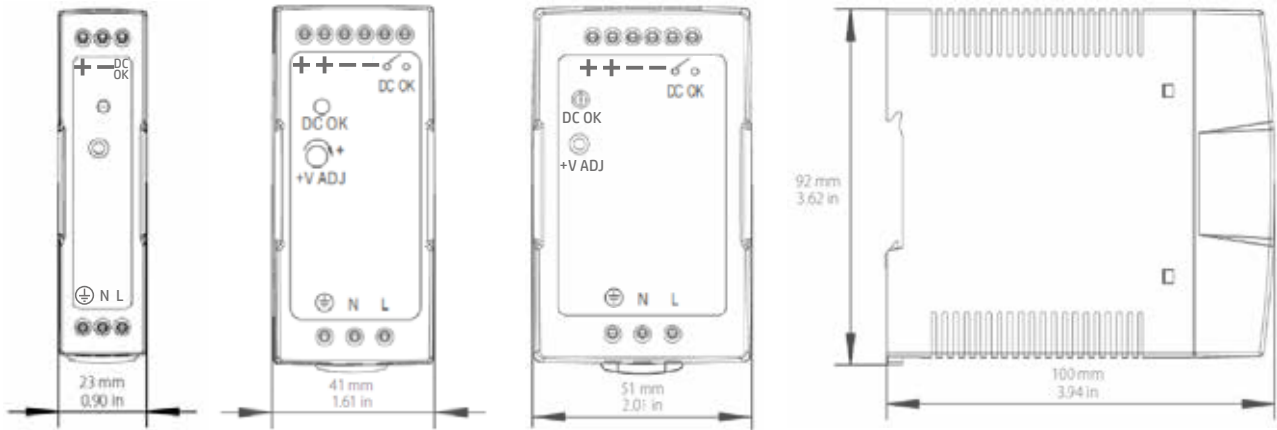
Technical Specification

Model	LPS-1-120-12DC	LPS-1-120-24DC	LPS-1-120-48DC
Input Voltage	90-264VAC / 127-375VDC		
Output Wattage	120W		
Output Voltage / Power Dissipation	12VDC / 24W	24VDC / 20W	48VDC / 19W
Output Current	10A	5A	2.5A
Efficiency	85.5%	88%	89%
General Specification			
Approval	cURus		
Isolation Voltage	3000VAC/4242VDC		
Isolation Resistance	100MΩ @ 500VDC		
Ambient Temperature	-20 to +70°C		
Derating	(61 to 71°C) 2.5%/°C		
Storage Temperature	-40 to +85°C		
Relative Humidity	10 to 95% RH		
Cooling	Free air convection		
Tightening Torque	0.8Nm		
Dimensions	L125 x W40 x D113 (126.5 inc. DIN rail mount) mm		
Weight	600g		
Case Material	Metal		
Input Specifications			
Rated Input Voltage	115 - 230VAC (auto select)		
Input Voltage Range	90-264VAC, 127-375VDC		
Line Frequency	50/60Hz		
Power Factor @ 115VAC	0.55 Typical (0.58 Measured)		
Power Factor @ 230VAC	0.55 Typical (0.58 Measured)		
Inrush Current (115 / 230VAC)	20 / 35A		
Output Specifications			
Output Voltage Accuracy	±1%		
Minimum Load	0%		
Line Regulation	±0.5%		
Load Regulation	±1%		
Turn On Time	1000ms after AC applied to input at full resistive load		
Voltage Fall Time	150ms		
Voltage Rise Time	150ms		
Hold Up Time (115 / 230VAC)	10 / 16ms		
Temperature Coefficient	±0.03%/°C		
Ripple & Noise	120mVp-p		
Voltage Trim Range	11.4 ~ 14.5VDC	22.5 ~ 28.5VDC	45 ~ 55VDC
DC ON & LOW Indicator (Green & Red LED)	10 ~ 11.2VDC	17.6 ~ 19.4VDC	37 ~ 43VDC
DC OK Relay	n/a	n/a	n/a
Control & Protection			
Rated Overload Protection	105-130%		
Over Voltage Protection	14-17VDC	29-33VDC	50-65VDC
Output Short Circuit	Fold Forward		



LPS-1-240-24DC	LPS-1-240-48DC	LPS-1-480-24DC
	90-264VAC / 120-375VDC	
240W	240W	480W
24VDC / 35W	48VDC / 32W	24VDC / 63W
10A	5A	20A
85.5%	90%	92%
cURus		
3000VAC/4242VDC		
100MΩ @ 500VDC		
-20 to +70°C		
(55 to 70°C) 2.5%/°C		
-40 to +85°C		
10 to 95% RH		
Free air convection		
0.8Nm		1.0Nm
L125 x W63 x D113.5 (127 inc. DIN rail mount) mm		L125 x W85.5 x D129 (142 inc. DIN rail mount) mm
1000g		1500g
Metal		
115-230VAC		
90-264VAC, 127-375VDC		
50/60Hz		
0.6 Typical (0.61 Measured)		0.99 Typical (0.99 Measured)
0.75 Typical (0.77 Measured)		0.97 Typical (0.97 Measured)
20 / 35A		
±1%		
0%		
±0.5%		
±1%		
1000ms after AC applied to input at full resistive load		
150ms		
150ms		
10 / 16ms		25 / 30ms
±0.03%/°C		
150mVp-p		
22.5-28.5VDC	47-56VDC	22.5-28.5VDC
n/a	n/a	n/a
n/a	n/a	60VDC / 0.3A; 30VDC / 1A; 30VAC / 0.5A
105-130%		
29-33VDC	56-65VDC	29-33VDC
Shutdown Output Voltage with Auto Recovery		

Dimensions (mm)



LPS-1-010-24DC
LPS-1-024-24DC

LPS-1-030-5DC
LPS-1-040-12DC
LPS-1-040-24DC
LPS-1-060-12DC
LPS-1-060-24DC

LPS-1-090-12DC

Terminal Assignment (Metal Bodies Only)

	Pin No.	LPS-1-120-xxDC	LPS-1-240-xxDC & LPS-1-480-24DC
Input		FG \oplus	FG \oplus
	N	AC / N	AC / N or DC-
	L	AC / L	AC / L or DC+
Output	-V	DC OUTPUT V-	DC OUTPUT V-
	+V	DC OUTPUT V+	DC OUTPUT V+

Installation

Ventilation / Cooling

Normal convection
All sides 25mm free space
For cooling recommended

Connector Size Range

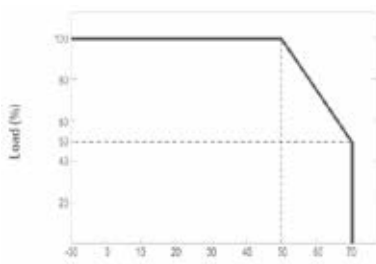
AWG24-10 (0.2 ~ 4mm²) flexible / solid cable,
8 m/m stripping cable end recommends
Use copper conductors only, 60 / 75°C

Construction

Easy snap-on mounting onto the DIN-Rail (TS35/7.5 or TS35/15), unit sits safely and firmly on the rail.

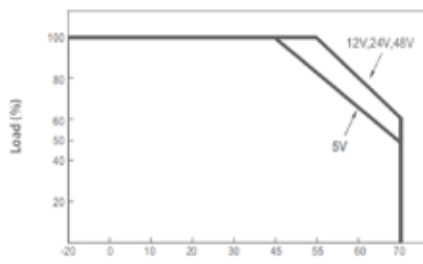
Derating Graphs

Temperature Derating



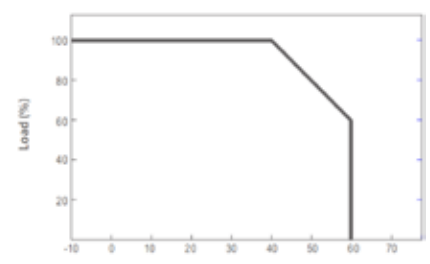
Environment temperature(°C)

LPS-1-010-xxDC to LPS-1-040-xxDC



Environment temperature(°C)

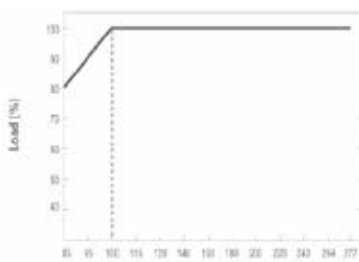
LPS-1-060-xxDC



Environment temperature(°C)

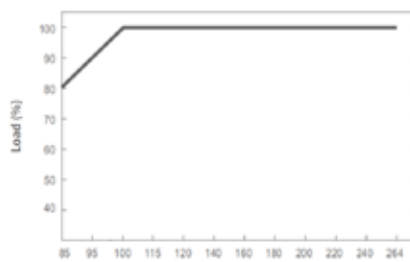
LPS-1-090-xxDC

Output Derating



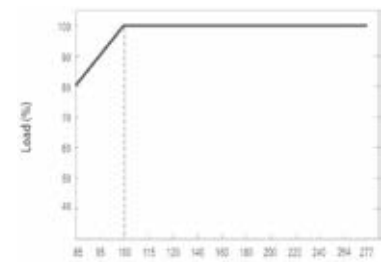
Input voltage(VAC)

LPS-1-010-xxDC to LPS-1-040-xxDC



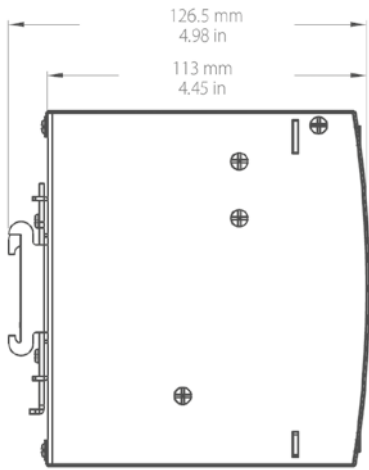
Input voltage(VAC)

LPS-1-060-xxDC

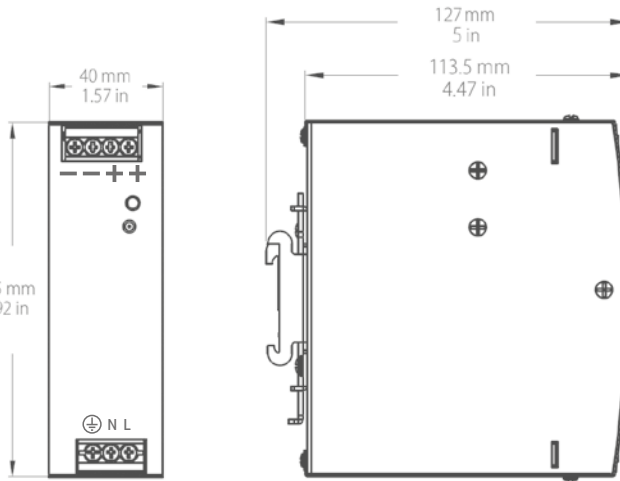


Input voltage(VAC)

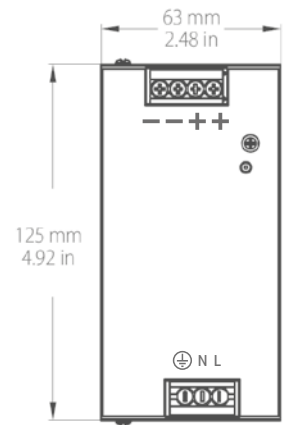
LPS-1-090-xxDC



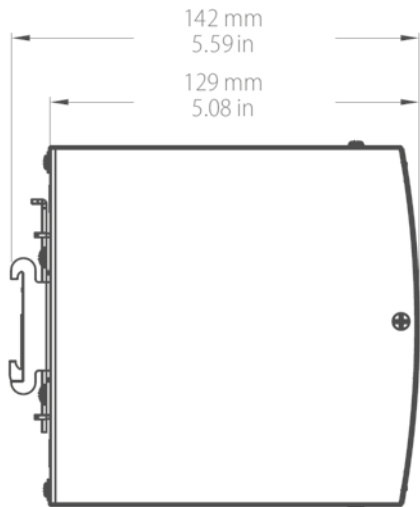
LPS-1-120-xxDC



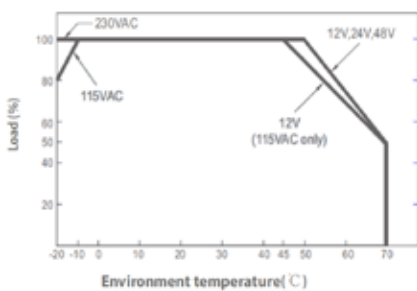
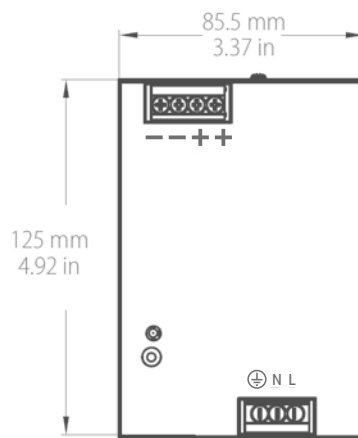
LPS-1-240-xxDC



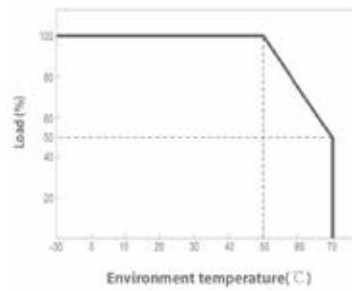
LPS-1-480-24DC



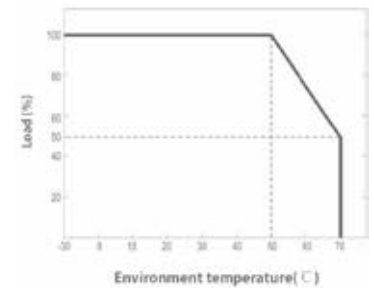
LPS-1-480-24DC



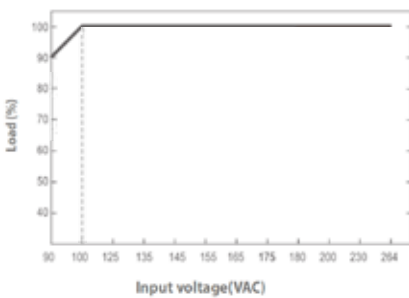
LPS-1-120-xxDC



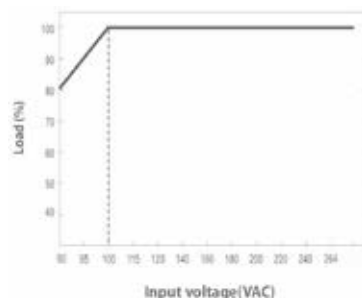
LPS-1-240-xxDC



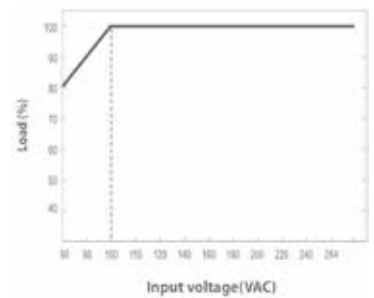
LPS-1-480-xxDC



LPS-1-120-xxDC



LPS-1-240-xxDC



LPS-1-480-xxDC

LPS Series

Three Phase 240W-480W AC-DC DIN Rail Power Supplies

Key Features

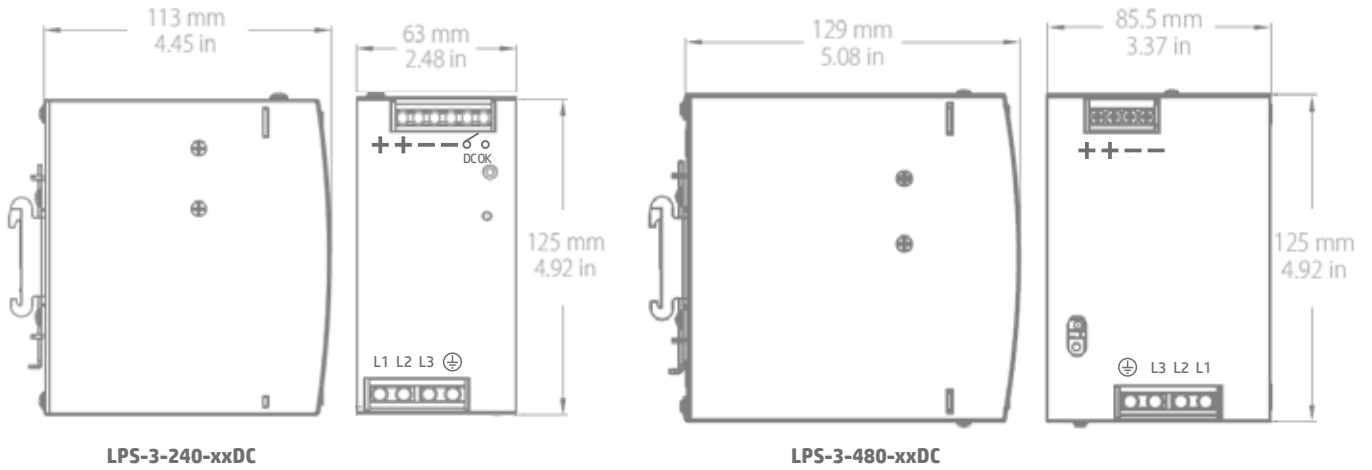
- 24 VDC
- 3 Phase Input: 340-550VAC / 480-780VDC
- Accepts Bi-Phase Input
- High Efficiency
- Short Circuit Protection
- Internal Input Filter
- IP20 Protection Rated



Technical Specification

Model	LPS-3-240-24DC	LPS-3-480-24DC
Input Voltage	340-550VAC / 480-780VDC	
Output Wattage	240W	480W
Output Voltage / Power Dissipation	24VDC / 35W	24VDC / 63W
Output Current	10A	20A
Efficiency	90%	92%
General Specification		
Isolation Voltage	3000VAC/4242VDC	
Isolation Resistance	100MΩ @ 500VDC	
Ambient Temperature	-30 to +70°C	
Derating	(60 to 70°C) 2.5%/°C	
Storage Temperature	-40 to +85°C	
Relative Humidity	10 to 95% RH	
Cooling	Free air convection (Fanless)	
Tightening Torque	1.0Nm	
Dimensions	L125 x W63 x D113 (126.5 inc. DIN rail mount) mm	L124 x W85 x D129 (142.5 inc. DIN rail mount) mm
Weight	1000g	1510g
Case Material	Metal	
Input Specifications		
Rated Input Voltage	115 - 230VAC (auto select)	
Input Voltage Range	340-550VAC, 480-780VDC	
Line Frequency	50/60Hz	
Power Factor @ 400VAC	0.53 Typical	
Power Factor @ 500VAC	0.52 Typical	
Inrush Current (400VAC)	Cold Start 50A	
Output Specifications		
Output Voltage Accuracy	±1%	
Minimum Load	0%	
Line Regulation	±0.5%	
Load Regulation	±1%	
Turn On Time	1000ms after AC applied to input at full resistive load	
Voltage Fall Time	150ms	
Voltage Rise Time	150ms	
Hold Up Time (400VAC)	20ms	
Temperature Coefficient	±0.03%/°C	
Ripple & Noise	100mV	
Voltage Trim Range	22.5-28.5VDC	
DC ON & LOW Indicator (Green & Red LED)	17.6-19.4VDC	
DC OK Relay	60VDC / 0.3A; 30VDC / 1A; 30VAC / 0.5A	
Control & Protection		
Rated Overload Protection	105-130%	
Over Voltage Protection	30-36VDC	
Output Short Circuit	Hiccup Mode	Fold Forward

Dimensions (mm)



LPS-3-240-xxDC

LPS-3-480-xxDC

Terminal Assignment

	Pin No.	LPS-3-240-xxDC	LPS-3-480-xxDC
Input	1	AC / L1	PE (⊕)
	2	AC / L2 or DC-	AC / L3
	3	AC / L3 or DC+	AC / L2
	4	FG (⊕)	AC / L1
Output	1, 2	DC OUTPUT V+	DC OUTPUT V+
	3, 4	DC OUTPUT V-	DC OUTPUT V-
	5, 6	DC OK Relay Contact	

Installation

Ventilation / Cooling
 Normal convection
 All sides 25mm free space
 For cooling recommended

Connector Size Range
 AWG24-10 (0.2 ~ 4mm²) flexible / solid cable,
 8 m/m stripping cable end recommends
 Use copper conductors only, 60 / 75°C

Construction

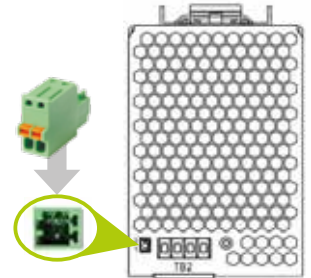
Easy snap-on mounting onto the DIN-Rail (TS35/7.5 or TS35/15), unit sits safely and firmly on the rail.

DC OK Relay Contact (optional for LPS-3-480)

Contact Close	PSU on / DC OK
Contact Open	PSU off / DC Fail
Contact Ratings (max.)	60VDC / 0.3A, 30VDC / 1A, 30VAC / 0.5A resistive load

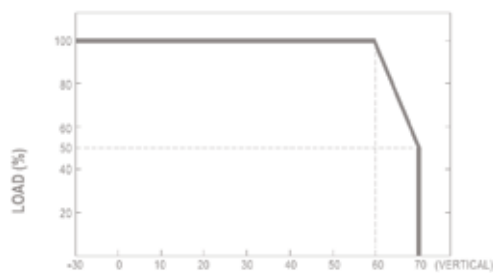
Terminal Block for LPS-3-480 (ONLY)
 DC OK Relay Contact

Wire Diameter:
 0.081-0.517mm² (20-28AWG)

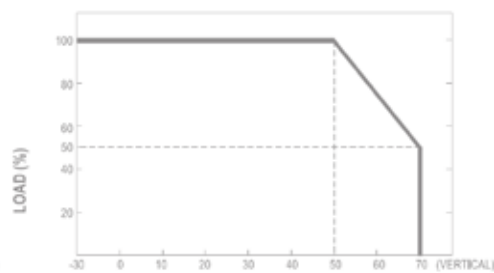


Derating Graphs

Temperature Derating

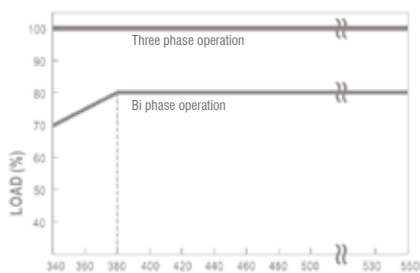


LPS-3-240-xxDC

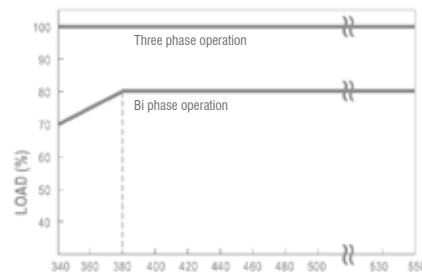


LPS-3-480-xxDC

Output Derating



LPS-3-240-xxDC



LPS-3-480-xxDC

HPS Series Peak Performance

120W-480W AC-DC DIN Rail Power Supplies

Key Features

- 12, 24 & 48 VDC
- Universal Input: 90-264VAC / 120-375VDC
- High Efficiency
- Short Circuit Protection
- Internal Input Filter
- IP20 Protection Rated



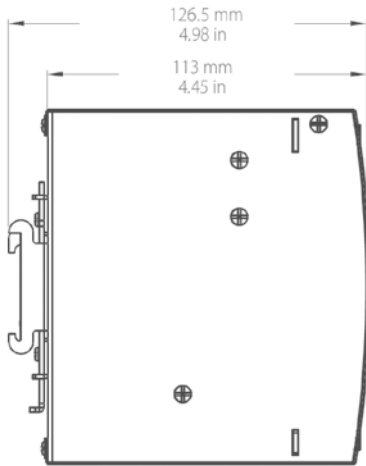
Technical Specification

Model	HPS-1-120-12DC	HPS-1-120-24DC	HPS-1-120-48DC
Input Voltage	90-264VAC / 127-375VDC		
Output Wattage	120W		
Peak Output Wattage	180W (for 3 secs)		
Output Voltage / Power Dissipation	12VDC / 24W	24VDC / 20W	48VDC / 19W
Output Current	10A	5A	2.5A
Efficiency	89%	91%	91%
General Specification			
Approval	cURus		
Isolation Voltage	3000VAC/4242VDC		
Isolation Resistance	100MΩ @ 500VDC		
Ambient Temperature	-25 to +70°C		
Derating	(61 to 71°C) 2.5%/°C		
Storage Temperature	-40 to +85°C		
Relative Humidity	10 to 95% RH		
Cooling	Free air convection (Fanless)		
Tightening Torque	0.8Nm		
Dimensions	L125 x W40 x D113 (126.5 inc. DIN rail mount) mm		
Weight	600g		
Case Material	Metal		
Input Specifications			
Rated Input Voltage	115 - 230VAC (auto select)		
Input Voltage Range	90-264VAC, 127-375VDC		
Line Frequency	50/60Hz		
Power Factor @ 115VAC	0.96 Typical (0.58 Measured)		
Power Factor @ 230VAC	0.93 Typical (0.75 Measured)		
Inrush Current (115 / 230VAC)	35 / 70A		
Output Specifications			
Output Voltage Accuracy	±1%		
Minimum Load	0%		
Line Regulation	±0.5%		
Load Regulation	±1%		
Turn On Time	1000ms after AC applied to input at full resistive load		
Voltage Fall Time	150ms		
Voltage Rise Time	150ms		
Hold Up Time (115 / 230VAC)	10 / 16ms		
Temperature Coefficient	±0.03%/°C		
Ripple & Noise	120mVp-p		
Voltage Trim Range	11.4 ~ 14.5VDC	22.5 ~ 28.5VDC	45 ~ 55VDC
DC ON & LOW Indicator (Green & Red LED)	10 ~ 11.2VDC	17.6 ~ 19.4VDC	37 ~ 43VDC
DC OK Relay	30V / 1A Resistive Load		
Control & Protection			
Rated Overload Protection	110-150%		
Over Voltage Protection	14-17VDC	29-33VDC	50-65VDC
Output Short Circuit	Shutdown Output Voltage with Auto Recovery		

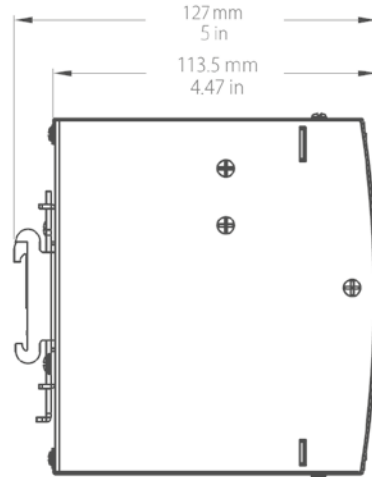


HPS-1-240-24DC	HPS-1-240-48DC	HPS-1-480-24DC
	90-264VAC / 120-375VDC	
240W	240W	480W
	360W (for 3 secs)	720W (for 3 secs)
24VDC / 35W	48VDC / 32W	24VDC / 63W
10A	5A	20A
85.5%	90%	92%
	cURus	
	3000VAC/4242VDC	
	100MΩ @ 500VDC	
	-20 to +70°C	
	(55 to 70°C) 2.5%/°C	
	-40 to +85°C	
	10 to 95% RH	
	Free air convection	
	0.8Nm	1.0Nm
	L125 x W63 x D113.5 (127 inc. DIN rail mount) mm	L125 x W85.5 x D129 (142 inc. DIN rail mount) mm
	1000g	1500g
	Metal	
	115-230VAC	
	90-264VAC, 127-375VDC	
	50/60Hz	
	0.6 Typical (0.61 Measured)	0.99 Typical (0.99 Measured)
	0.75 Typical (0.77 Measured)	0.97 Typical (0.97 Measured)
	20 / 35A	
	±1%	
	0%	
	±0.5%	
	±1%	
	1000ms after AC applied to input at full resistive load	
	150ms	
	150ms	
	10 / 16ms	25 / 30ms
	±0.03%/°C	
	150mVp-p	
22.5-28.5VDC	47-56VDC	22.5-28.5VDC
n/a	n/a	n/a
	30V / 1A Resistive Load	
	105-130%	
29-33VDC	56-65VDC	29-33VDC
	Shutdown Output Voltage with Auto Recovery	

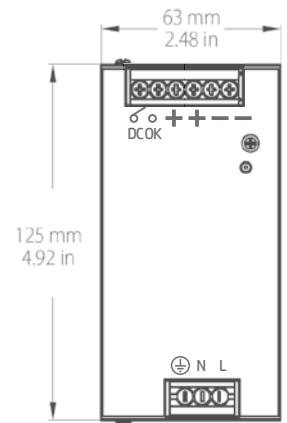
Dimensions (mm)



HPS-1-120-xxDC



HPS-1-240-xxDC



Pin Connections

Input

Pin No.	Description
⊕	Earth
N	AC Neutral
L	AC Live

Output

Pin No.	Description
DC OK	Relay Contact
-	DC OUTPUT V-
+	DC OUTPUT V+

Output (HPS-1-480-24DC)

Pin No.	Description
DC OK	Relay Contact
-	DC OUTPUT V-
+	DC OUTPUT V+
P+	Current Share*
P-	Current Share*

* Current Share up to 3840W (7+1) built-in paralleling.

DC OK Relay Contact

Contact Close	PSU turns on / DC OK
Contact Open	PSU turns off / DC Fail
Contact Ratings (max.)	30V / 1A resistive load

Installation

Ventilation / Cooling

Normal convection
All sides 25mm free space
For cooling recommended

Connector Size Range

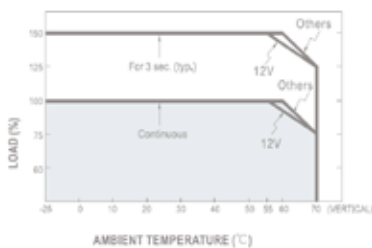
AWG24-10 (0.2 ~ 4mm²) flexible / solid cable,
8 m/m stripping cable end recommends
Use copper conductors only, 60 / 75°C

Construction

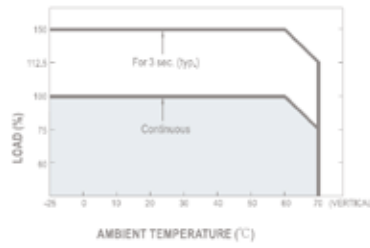
Easy snap-on mounting onto the DIN-Rail (TS35/7.5 or TS35/15), unit sits safely and firmly on the rail.

Derating Graphs

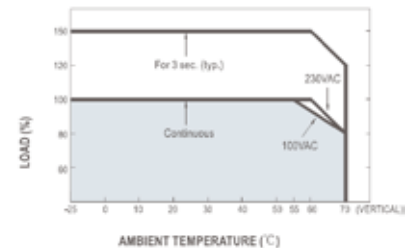
Temperature Derating



HPS-1-120-xxDC

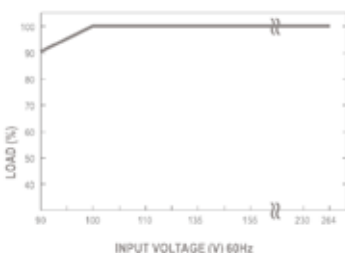


HPS-1-240-xxDC

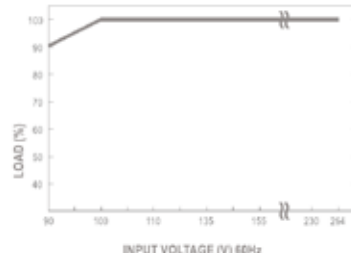


HPS-1-480-xxDC

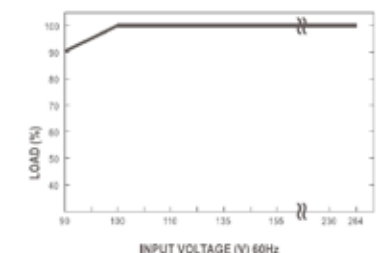
Output Derating



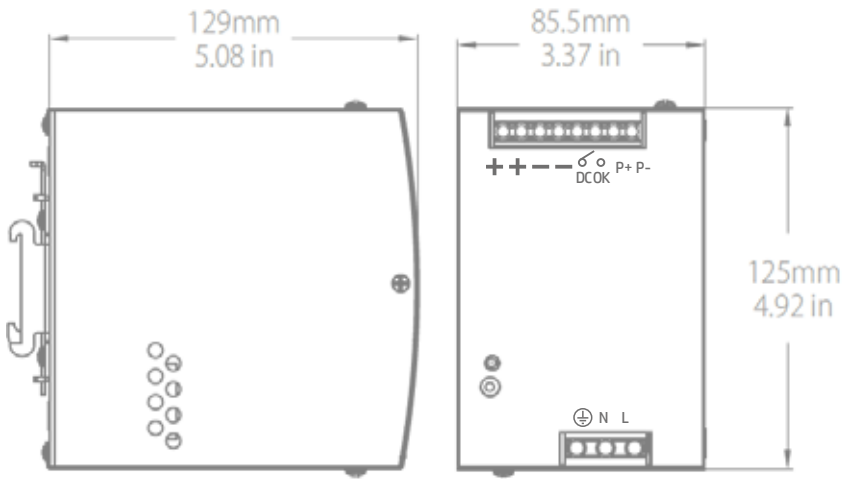
HPS-1-120-xxDC



HPS-1-240-xxDC



HPS-1-480-xxDC



HPS-1-480-24DC

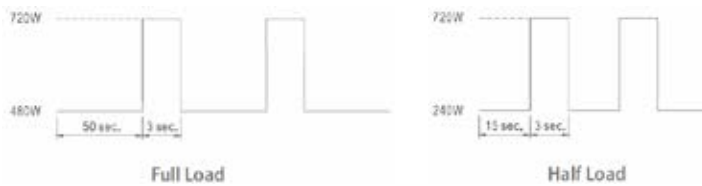
Peak Loading



HPS-1-120-xxDC



HPS-1-240-xxDC



HPS-1-480-xxDC

REDMOD20

Redundant Power Supply Module

Key Features

- Suitable for redundant operation of 24V system
- Max. 20 Amps
- Relay ready contacts
- Decoupling diodes
- LED input alarm indicator
- 2 inputs
- IP20 Protection Rated



Technical Specification

Model	REDMOD20
Input Specifications	
Rated Input Voltage	19-29VDC
Number of Inputs	2
Rated Input Current	20A continuous
Output Specifications	
Output Voltage Drop	0.25V
Output Current	20A
Max. Output Current	30A for 5 seconds
Reverse Voltage (max.)	30V
DC ON Indicator	Green LED input OK
General Specifications	
Isolation Voltage	100VDC
Isolation Resistance	100MΩ @ 500VDC
Ambient Temperature	-40 to +80°C
Storage Temperature	-40 to +85°C
Relative Humidity	5 to 95% RH
Cooling	Free air convection
MTBF	792,000 hrs
Tightening Torque	0.5Nm
Dimensions	(H)125 x (W)32 x (D)100 mm
Weight	500g
Case Material	Metal
Pollution Degree	2
Control & Protection	
Power Rdy (OK)	When input is >20V (±5%) or <30V (±5%)
Power Rdy (Fail)	When input is <20V (±5%) or >30V (±5%)
Contact Rating @ 30VDC	1.0A
Approvals & Standards	
	CE, UL, cUL

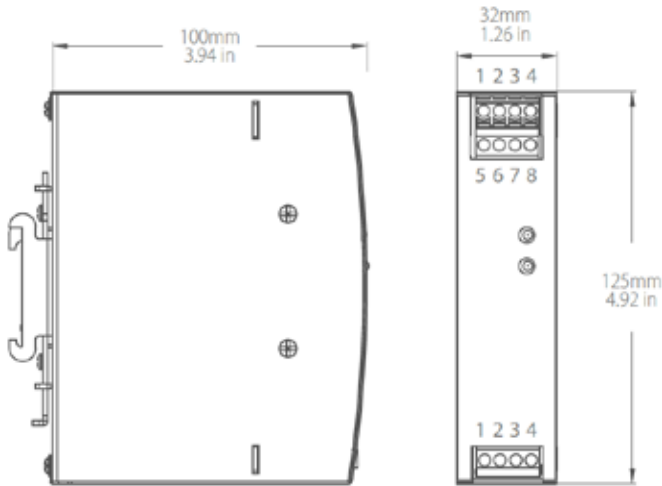
Pin Assignment

Input		Output	
Pin No.	Description	Pin No.	Description
1	DC input +Vin1	1, 2	Alarm1 DC OK
2	DC input - Vin1	3, 4	Alarm2 DC OK
3	DC input +Vin2	5, 6	FG
4	DC input - Vin2	7	DC output +Vout
		8	DC output - Vout

DC OK Relay Contact

Contact Close (DC OK)	PSU turns on
Contact Open (DC Fail)	PSU turns off
Contact Ratings (max.)	30V / 1A resistive load

Dimensions (mm)



Installation

Ventilation / Cooling

Normal convection
All sides 25mm free space
For cooling recommended

Connector Size Range

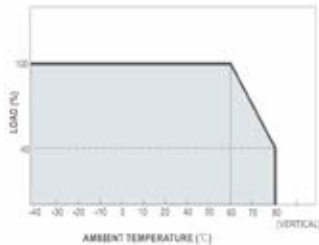
AWG24-10 (0.2 ~ 4mm²) flexible / solid cable,
8 m/m striping cable end recommends
Use copper conductors only, 60 / 75°C

Construction

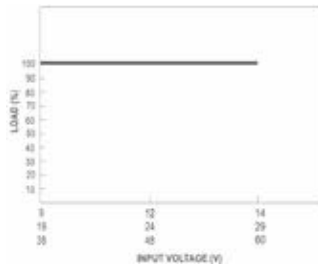
Easy snap-on mounting onto the DIN-Rail (TS35/7.5 or TS35/15), unit sits safely and firmly on the rail.

Derating Graphs

Temperature Derating

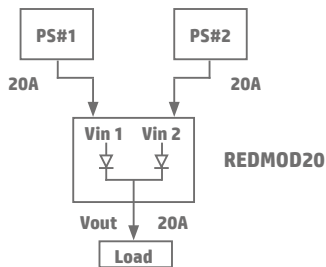


Output Derating

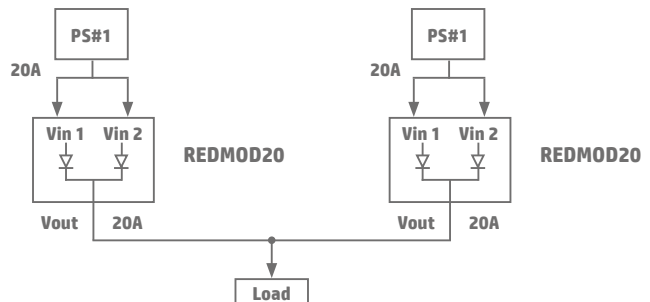


Typical Application Notes

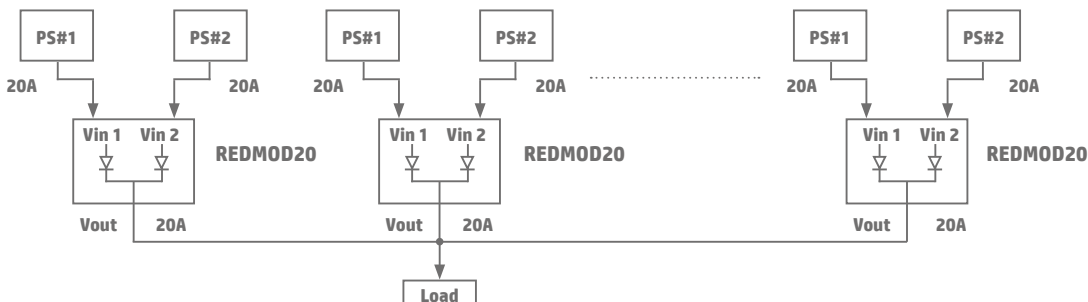
1) 1+1 Redundancy: Using 1 or more AC-DC power supply as the redundant unit



2) Single Use: Connecting only one AC-DC power supply to one REDMOD20 to reduce the stress of the diodes and hence increase the reliability



3) 1+N Redundancy: Using more AC-DC power supplies as the redundant units to increase the reliability



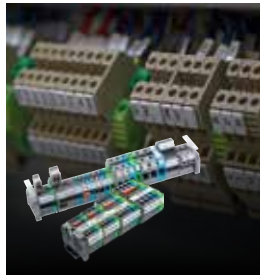
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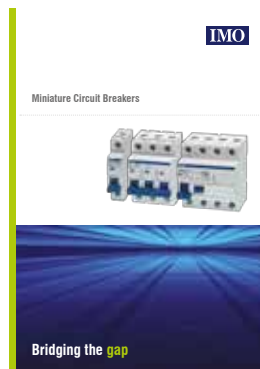
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