

Features

Compact, High-efficiency

Universal Input:
85~264V AC (120~370V DC)

Operating Altitude: up to 5,000m

Operating Temp: -40°C to +85°C

Low Leakage Current:
<500µA @ 240 V AC (ground leakage current),
<70µA @ 240 V AC (contact leakage current)

No Load: <0.5W, 150% peak power at 3s universal AC input

Approved to CE, CCC, CB, RoHS, REACH*

SCP

Auxiliary Power Source:
12V @ 0.5A fan drive (23 CFM) /
12V @ 0.2A fanless unit

Open Frame: 4 x 2"

10LOH-200-XX(-C)

200W Open Frame/Enclosed AC/DC Power Supply Series



The 10LOH-200-XX(-C) open frame 4 x 2" and enclosed power supply series offer a 25.4mm and 41.3mm ultra-thin profile retrospectively, universal AC input, and natural convection cooling for efficient thermal performance. It supports operation from -40°C to +85°C and provides high isolation, reliable performance, and a compact lightweight design. Safety and EMC specifications align with international standards including CB IEC 60601-1 + A1 + A2 and GB 4943.1. Suitable applications include industrial control, energy storage, charging infrastructure, LED systems, security, telecommunications, and smart home equipment.

Models

Model Number	Input Voltage (V)	Output Voltage (V DC)	Output Voltage Range (V DC)	Output Current (A)	Rated Power (W)	Efficiency (%)	Ripple & Noise(max.) (mVp-p)
10LOH-200-12	85~264V AC 120~370V DC	12	11.4~12.6	11.7 16.7	140.4 200.4	93.0	120
10LOH-200-15		15	14.3~15.8	9.4 13.4	141.0 201.0	93.0	150
10LOH-200-18		18	17.1~18.9	7.8 11.1	140.4 199.8	93.5	180
10LOH-200-24		24	22.8~25.2	5.9 8.4	141.6 201.6	94.0	200
10LOH-200-27		27	25.6~28.4	5.3 7.5	143.1 202.5	94.0	200
10LOH-200-36		36	34.2~37.8	3.9 5.6	140.4 201.6	94.0	250
10LOH-200-48		48	45.6~50.4	3.0 4.2	144.0 201.6	94.0	250
10LOH-200-54*		54	52.0~58.0	2.7 3.8	145.8 205.2	94.0	250

1. Figures displayed in **blue italics** illustrate natural/convection rates

2. Product with housing series: 10LOH-200-xx-C

*54V(-C) models not yet certified

Input Specifications

Parameter	Specification
Rated input voltage	100~240V AC
Input voltage range	85~264V AC (120~370V DC)
Rated input frequency	50~60 Hz
Input frequency range	47~63 Hz
Input current	2.5A Typ. @ 115V AC, 1A Typ. @ 230V AC
Power factor	0.95 / 230V AC & 0.98 / 115V AC
Maximum surge current	Cold start, 80A type / 230V AC @ 40A / 115V AC
Leakage current	<500µA @ 240V AC (ground leakage current), <70µA @ 240V AC (contact leakage current)

Functional Characteristics

Parameter	Specification
Auxiliary Power Source	12V @ 0.5A fan drive (23 CFM) / 12V @ 0.2A fanless unit (under the condition that the main output is 20% of the rated load, the voltage accuracy ranges from -15% to +15%)

Output Specifications

Parameter	Specification
Output Connector	JST PHR-2 or equivalent
Line Regulation	±0.5% Max
Load Regulation	±0.1% Max
Rise time	30ms Typ. @ 115V AC & 230V AC
Available machine time	1500ms Typ. @ 115V AC & 230V AC
Hold-up time	16ms Typ. @ 140W, 8ms Typ. @ 200W
Capacitive load startup (Max.)	12V: 6,000µF, 15V: 5,000µF, 18V: 3,200µF, 24V: 3,200µF, 27V: 2,400µF, 36V: 2,000µF, 48V: 1,600µF, 54V: 1,000µF

Environmental Characteristics

Parameter	Condition	Specification
Ambient Temperature	Operating	-40°C to +85°C (cold start at -40°C)
	Storage	-40°C to +85°C
Power Derating	Temperature	Please refer to the temperature derating curve later in this document
	Voltage	<115 V AC power reduction: 0.85% / V AC
Operating	Humidity	20 to 90% RH (no condensation)
	Altitude	0 to 5,000m (0 to 16,400 ft)
Impact Test	Non-operational	IEC 60068-2-27, half-sine wave: 50G for 11ms; 3 times in each direction, totalling 9 times
	Operational	IEC 60068-2-27, half-sine wave: 10G for 11ms; X-axis 1 cycle
Vibration Test	Non-operational	IEC 60068-2-6, random: 5Hz~500 Hz (2.09G); 20 minutes in all X, Y & Z
	Operational	IEC 60068-2-6, sine wave: 10Hz~500 Hz @ 19.6 m/s ² (2G peak); 10 minutes 1 cycle, X direction 60 minutes
Overvoltage Category	—	II (compliant with EN 62477-1 OVC III standard for 2000-meter altitude elevation)

Protection

Parameter	Specification
Overvoltage	12V: <15.6V, 15V: <19.5V, 18V: <23.4V, 24V: <31.2V, 27V: <35V, 36V: <46.8V, 48V: <62.4V, 54V: <67.5
Overload / Overcurrent	105~150% of the rated load current, hiccup mode, non-lockout (automatic recovery)
Over Temperature	Automatic recovery
Short Circuit	Hiccups mode, unlocked (automatically restored after fault resolution)
Electrical Shock	Connect PE*4 to achieve Class I

Reliability Requirements

Parameter	Specification
MTBF	Telcordia SR-332: > 300,000hrs, Input: 115V AC & 230V AC, Output: 100% load, Temperature: 25°C
Warranty	5 years

Regulatory Compliance

Parameter	Specification
Safety Entry Low Voltage	Safety Entry Low Voltage — SELV
Approvals	CE, CCC, CB, RoHS, REACH (excl. 54V models)
Standards	CB IEC 60601-1 + A1 + A2, GB 17625.1, GB 4943.1, GB/T 9254.1, EN IEC 62368-1 + A11
Isolation Voltage	Input–Output: 4000V AC
	Input–Ground: 2000V AC
	Output–Ground: 1500V AC

EMC

Parameter	Specification
EMC Standards	EN 55032 + A11 + A1, EN 55035 + A11, EN IEC 61000-3-2 + A1 + A2, EN 61000-3-3 + A1
Electrostatic Discharge	IEC 61000-4-2: Level 4 Criteria A1, Air discharge: 15kV: Contact discharge: 8kV
Radiated Immunity	IEC 61000-4-3: Level 3, Criteria A1, 80MHz~1GHz, 10V/m, 1kHz, 80% modulation: Class B
EFT/Burst	IEC 61000-4-4: Level 3, Criteria A1, ±2kV
Surge Immunity	IEC 61000-4-5: Level 4, Criteria A1, Common mode 4: ±4kV, Differential mode 5: ±2kV
Conducted Immunity	IEC 61000-4-6: Level 3, Criteria A1, 150kHz~80MHz, 10Vrms: Class B
Magnetic Field Immunity	IEC 61000-4-8: Level 4, Criteria A1, 30A/meter
Voltage Dips & Interruptions	IEC 61000-4-11: 0% sudden drop: 1 cycle, Criteria B2: 40% sudden drop 10 cycles, Criteria C3: 70% sudden drop 25 cycles
Harmonic Current	IEC/EN/BS EN 61000-3-2: Class A

Product Details

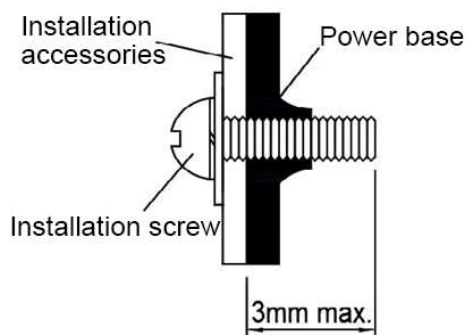
Parameter	Specification
Shell Base	Aluminium
Outer Cover of Housing	SGCC
Size (L × W × H)	Open frame: 101.5 x 51 x 25.4mm, Enclosed: 103.5 x 62.2 x 41.3mm
Weight	0.39kg
Pilot Lamp	Green LED (DC OK)
Cooling Method	Natural convection
Wire	AWG 18–12 (refer to AWG table on next page)
Noise	Sound Pressure Level (SPL) <45dBA

Unless otherwise noted, all parameters are based on an ambient temperature of 25°C and rated AC input.

Assembly & Installation

PVC wire, AWG rated current				
6 AWG	52.5A	20 AWG	6.5A	
8 AWG	37.5A	22 AWG	5.0A	
10 AWG	29.0A	24 AWG	3.5A	
12 AWG	22.5A	26 AWG	2.5A	
14 AWG	16.5A	28 AWG	2.0A	
16 AWG	12.0A	30 AWG	1.5A	
18 AWG	9.0A			

Installation Instructions:



Only M3 screws with a diameter ≤ 3 mm (0.20 inch) are permitted for installation through base drilling to ensure secure fastening of screws to internal components.
Maintain a safe distance
Recommended installation tightening torque:
4~7Kgf.cm (3.47~6.08lbf.in)

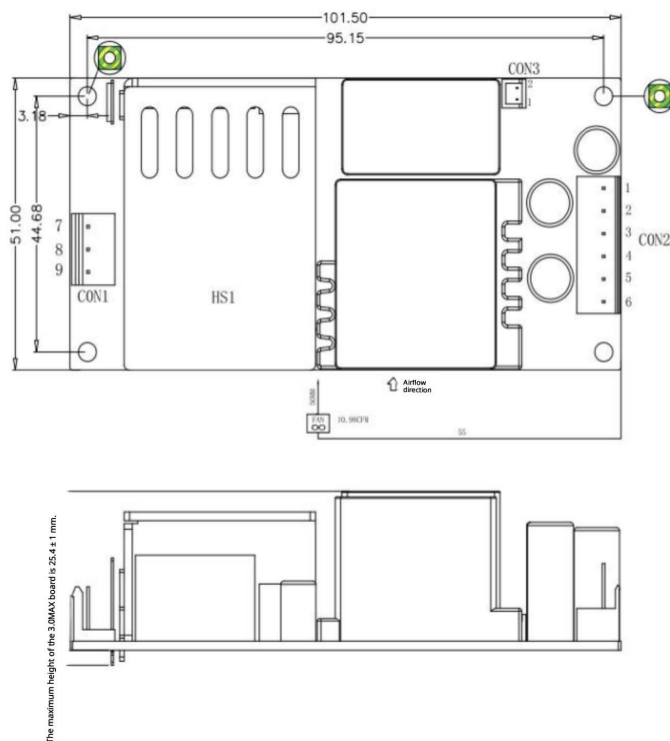
1. If you use the power supply in a non-recommended installation direction, please contact Ideal Power for consultation.
2. Ensure adequate convective cooling. When the power supply is in operation, all external components must maintain a safety distance of ≥ 50 mm (1.97 inch) from the power supply ventilation surface.
3. It is not recommended to install power supplies on surfaces with low thermal conductivity coefficients, such as plastics.
4. Note: The power supply enclosure may overheat depending on ambient temperature and power load. Avoid contact during operation or immediately after shutdown to prevent burns!
5. Do not touch the terminal block under power supply conditions to avoid electric shock.
6. During installation, it is imperative to ensure that no external metals, objects, or conductors enter the power supply to prevent electric shocks, safety hazards, fires, or machine operational failures.
7. The power supply must be installed on a grounded metal surface using metal screws. It is strongly recommended to connect the grounding terminals of the power supply terminal block to the earth.

Power Supply Component Description

Figure 1) Open-Frame Model Diagram (10LOH-200-xx):

Number	Function	Connector	Terminal
1	DC-COM	JST PHR-2 or equivalent product	JST PRH-002TP1.1
2	+12V		or equivalent product

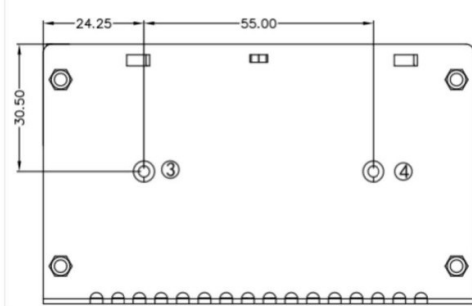
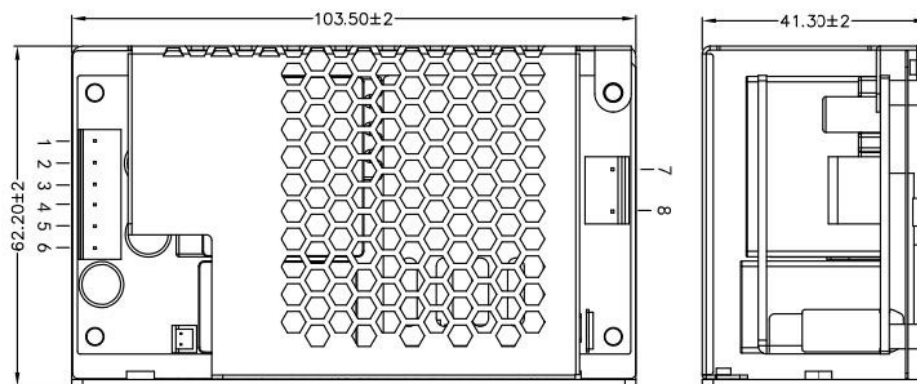
Pin Configuration	
Pin	Function
1	+Vo
2	+Vo
3	+Vo
4	-Vo
5	-Vo
6	-Vo
7	AC (L)
8	NC
9	AC (N)



Unless otherwise specified, the dimensional tolerance is ± 0.5 .

Power Supply Component Description

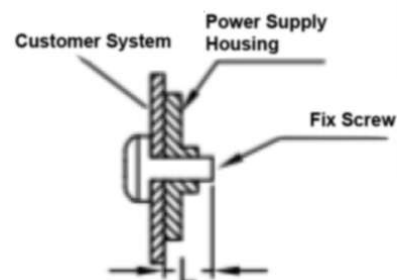
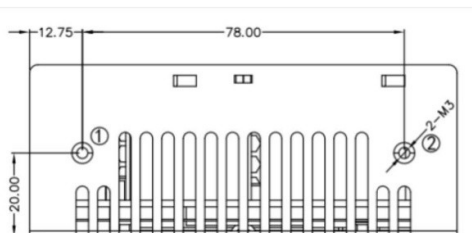
Figure 2) Enclosed Model Diagram (10LOH-200-xx-C):



Pin Configuration

Pin	Function
1	-Vo
2	-Vo
3	-Vo
4	+Vo
5	+Vo
6	+Vo
7	AC (N)
8	AC (L)

Installation Site	Screw Specifications	1. (Max)
①-②	M3	4. ONM
③-④	M3	4. ONM



Unless otherwise specified, the dimensional tolerance is ± 0.5 .

Engineering Data

Figure 1) Temperature Derating / Output Load Derating Corresponding to Ambient Temperature

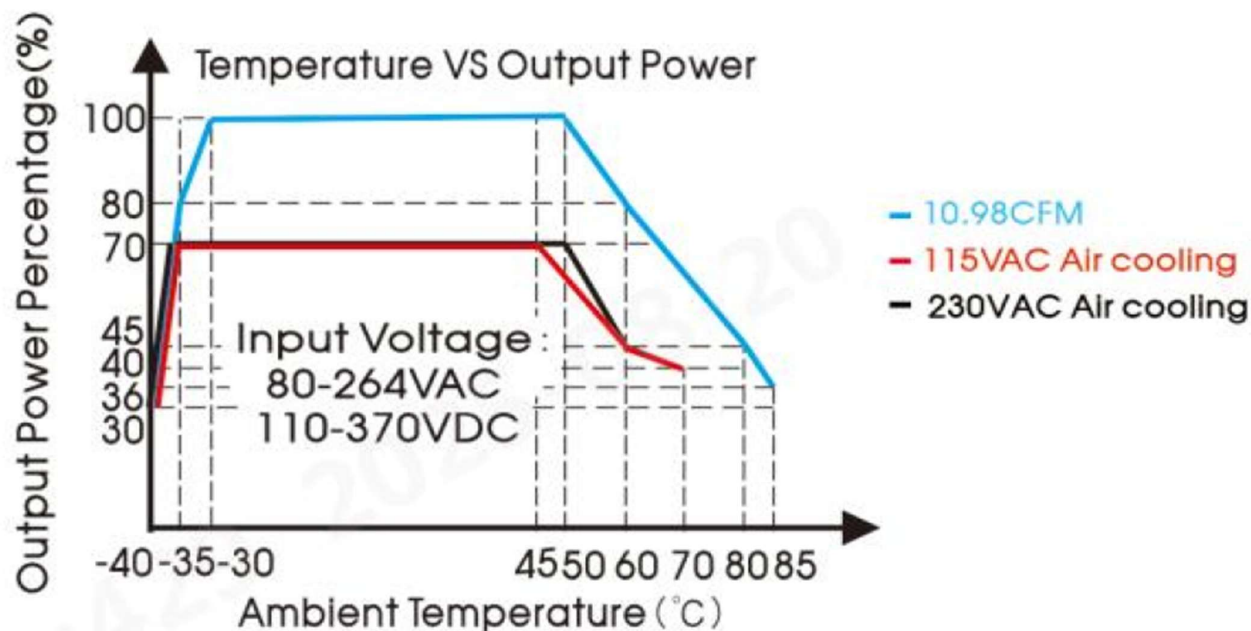
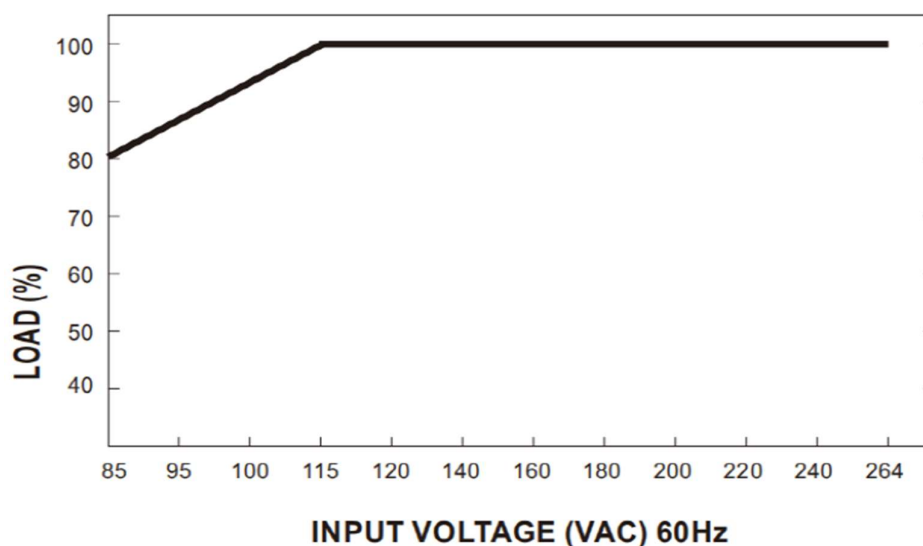


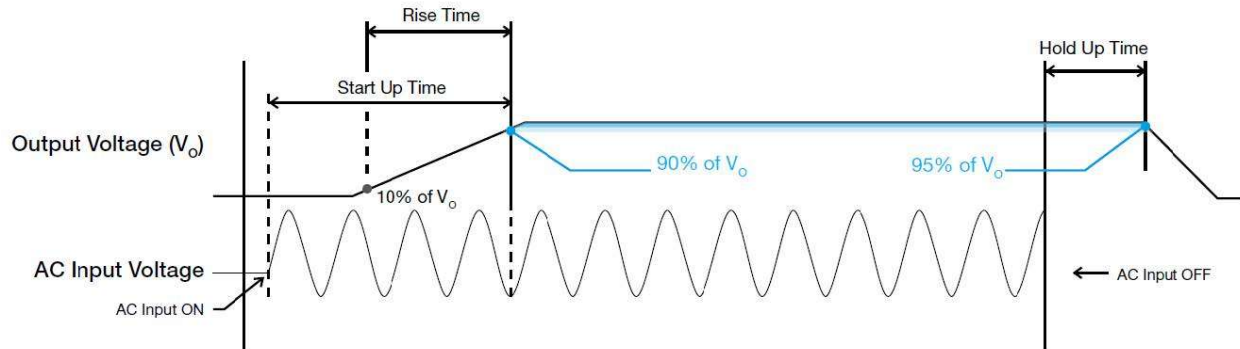
Figure 2) AC Input Voltage Derating / Output Load Derating Versus Input Voltage



1. If the power supply is continuously operated outside the rated power curve, it may lead to component degradation or damage, as shown in Figures 1 and 2.
2. When the ambient temperature is below -30°C, the PSU may enter a hiccupping state upon startup, but the startup duration should not exceed 5 seconds.
3. When the ambient temperature exceeds 50°C, the power supply will activate overtemperature protection if the output power is not reduced. Once activated, the power supply protector will operate intermittently until the ambient temperature decreases or the load returns to its normal operating state. To restart, the input AC voltage must be released or reset.
4. To ensure proper functioning, the power supply must maintain a safe distance from other equipment during operation, as specified in the Safety Guidelines section.
5. Note: Depending on the ambient temperature and the load connected to the power supply, the power supply may overheat.

Function

Figure 1) Diagram of Turn-on Time, Rise Time, and Hold Time


Available Machine Time:

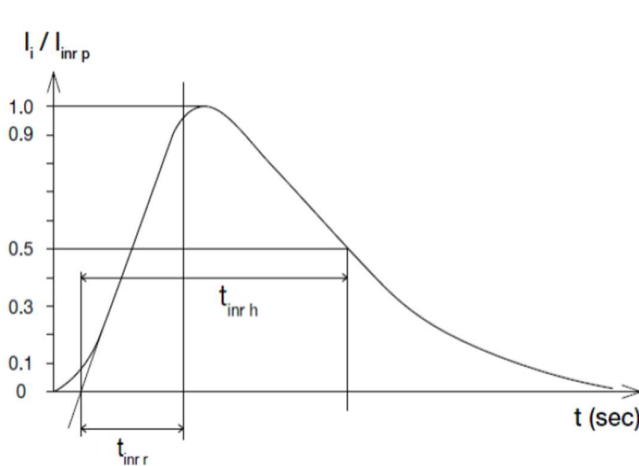
The time required for the output voltage to rise to 90% of the rated value after the input voltage is applied.

Rise Time:

The time required for the output voltage to change from 10% to 90% of its final steady-state value.

Retention Time:

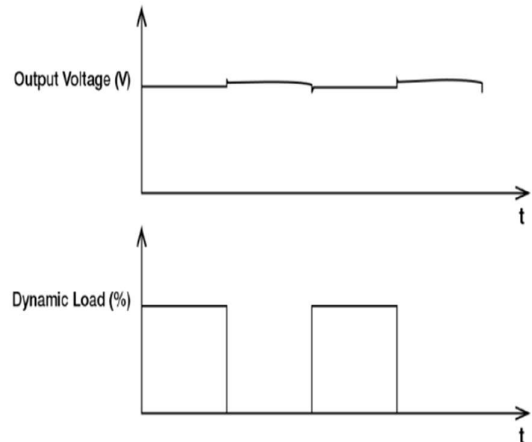
The time interval between the interruption of the AC input voltage and the output voltage dropping below 95% of its final steady-state value.


Surge Current

Surge current refers to the instantaneous peak current generated upon the activation of the input voltage. Under AC input voltage, the maximum surge current occurs during the upper half-cycle of the AC voltage, with its peak value declining exponentially in subsequent cycles.

Overload and overcurrent protection (automatic recovery)

When the output current exceeds 110% of I_o (maximum load), the power supply's overload (OLP) and overcurrent (OCP) protection mechanisms are triggered. In this scenario, V_o begins to decrease; once the power supply reaches its maximum power limit, the protection is activated, and the power supply enters "hiccup mode" (automatic recovery). Once the OLP or OCP failure is resolved and I_o returns to the normal range, power can be restored.

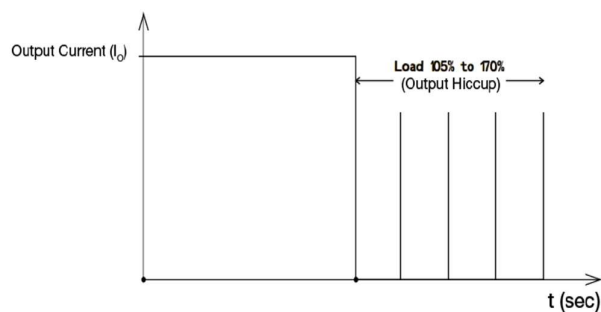

Dynamic Response

When the dynamic load varies dynamically from 10% to 100%, the power supply output voltage maintains a stable regulation rate of $\pm 10\%$.

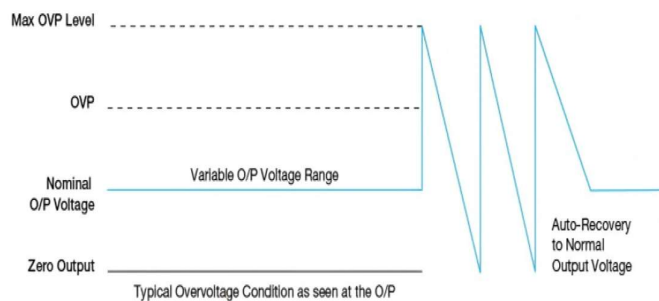
Overvoltage protection (automatic recovery)

When internal feedback fails, the power overvoltage circuit is triggered, and the output voltage must not exceed the range specified in the "Protection" section. The power supply resumes normal operation after protection and fault resolution.

Function


Short-circuit protection (automatic recovery)

The OLP/OCP power output function also provides short-circuit protection. During a short circuit, the output current operates in a "hiccup mode," and the power supply returns to normal operation once the short circuit is resolved.


Overtemperature protection (automatic recovery)

As described in the Load Derating section, the power supply incorporates overtemperature protection (OTP) functionality. If the operating temperature exceeds the specified limits under 100% load conditions, the OTP circuit is triggered, and the output voltage enters a hiccup mode until the temperature returns to the normal operating range recommended by the derating chart.