- Designed for:
  - Process Control
  - Factory Automation
  - General Industrial Applications

- All Round Protection:
  - Short Circuit
  - Over Voltage
  - Over Current
  - Over Temperature

- Cooling by free air convection - no fans

Features

- DIN Rail Mounted
- Universal Input 90-264Vac
- Adjustable 24Vdc Output

- LED Indicator for DC Power On and DC Low
- 100% Full Load Burn-in Test
- 3 Year warranty

Overview

The POWERTERM "P" range of DIN rail mount 24Vdc power supplies is specifically designed for industrial instrumentation applications. Use of carefully selected long-life components and conservative design parameters ensure increased reliability even in harsh conditions.

The POWERTERM P15-24 is part of the range POWERTERM industrial power supplies and battery chargers from Omniflex.

This third-generation family of power supplies uses the latest switch-mode supply technology to reduce cost, increase reliability and meet international safety and compatibility standards.

Connection Diagram
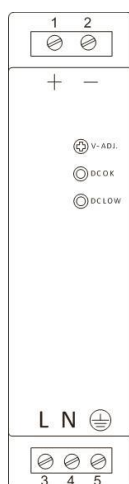
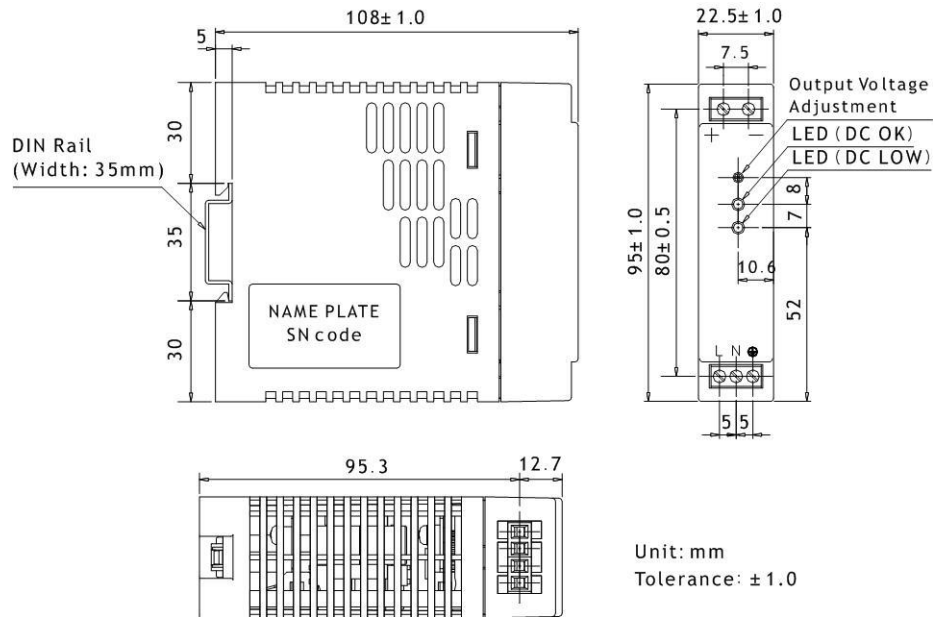| Marking	No.	Description
+	1	DC (+) Output Terminal
−	2	DC (-) Output Terminal
L	3	AC (L) Input Terminal
N	4	AC (N) Input Terminal
⏚	5	AC (E) Earth Terminal
V-ADJ.	/	DC Output voltage adjustment trimmer
DC OK	/	DC Output OK indication LED (Green)
DC LOW	/	DC Output Low indication LED (Red)

Mechanical Detail

108±1.0
5
30
35
30

DIN Rail
(Width: 35mm)

NAME PLATE
SN code

22.5±1.0
7.5

Output Voltage
Adjustment
+ —
LED (DC OK)
LED (DC LOW)
8
7
10.6
52

95±1.0
80±0.5

L N ⏚
5 5

95.3
12.7

Unit: mm
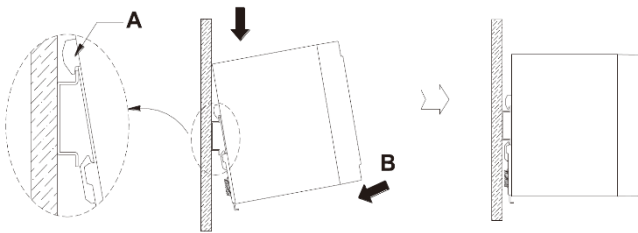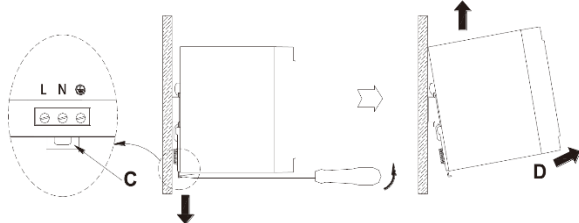Tolerance: ±1.0

Power Supply Installation

Installing:
First hang the power supply by the clip A on the top of the rail as shown below, then push the power supply in direction B until securely clipped to the DIN rail
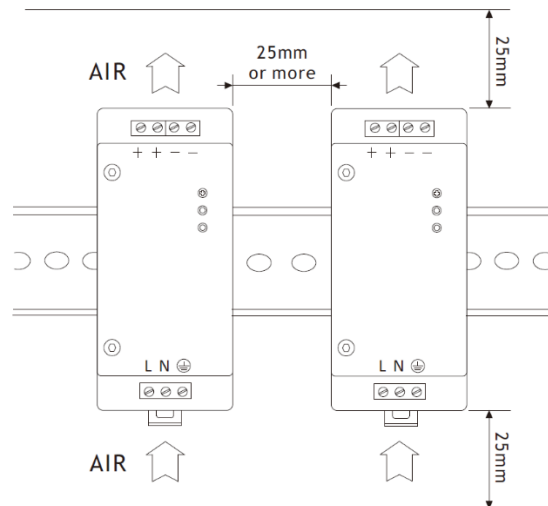

A

B

Removing:
Pull clip C down with a flat screwdriver then left the bottom of the powe supply away from the DIN rail in direction D
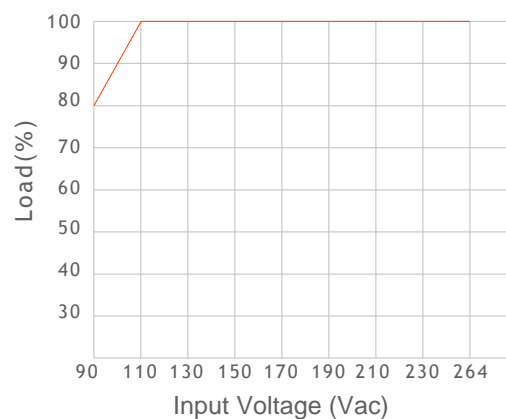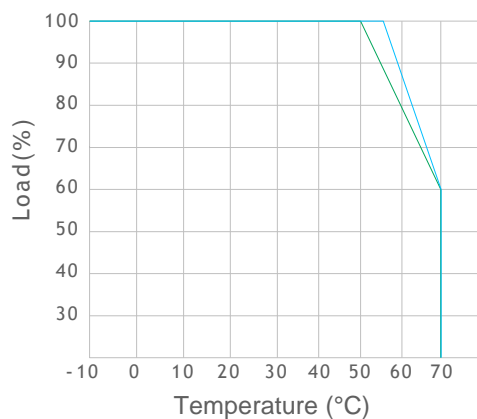

L N ⏚

C

D

Allow space when mounting for ventilation:
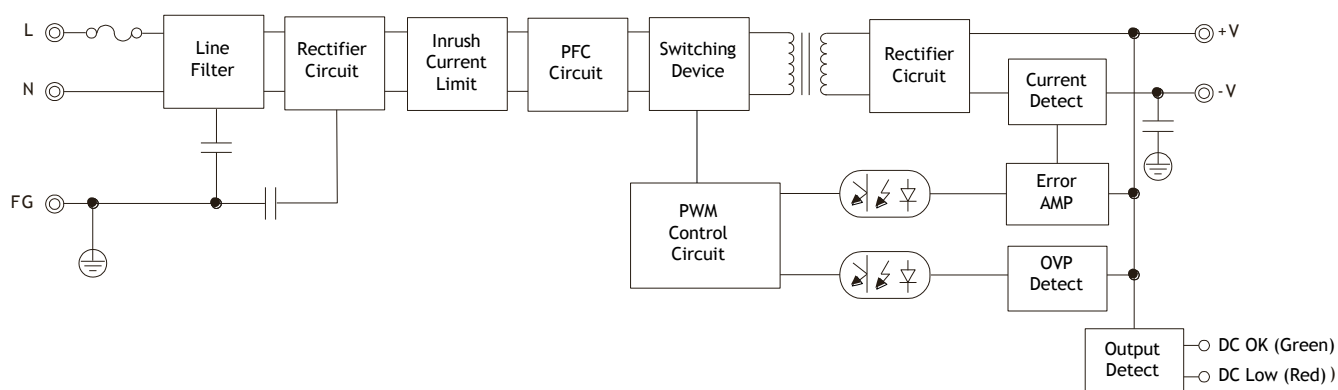
AIR

25mm
or more

25mm

+ + – –

+ + – –

L N ⏚

L N ⏚

AIR

25mm

www.omniflex.com/C2203A

SGS

Omniflex
REMOTE MONITORING SPECIALISTS

Derating Curve

Load(%) vs Temperature (°C)

230Vac Input
110Vac Input

Load(%) vs Input Voltage (Vac)

Block Diagram

L — Line Filter — Rectifier Circuit — Inrush Current Limit — PFC Circuit — Switching Device — Rectifier Cicruit — Current Detect — +V

N — -V

FG

PWM Control Circuit — Error AMP — OVP Detect

Output Detect — DC OK (Green) — DC Low (Red))

www.omniflex.com/C2203A

Omniflex
REMOTE MONITORING SPECIALISTS

Specifications

AC Input

AC input voltage range	90-264Vac
AC input frequency	47-63 Hz
Input current at full load	<0.28A rms at 115Vac <0.15A rms at 230Vac
Cold Start switch-on inrush current	30A at 115Vac 60A at 230Vac

Notes:
1. This product has built in inrush current limiting to protect the circuit from surge current damages when the power is turned on. Malfunction can occur by turning the input voltage on and off rapidly. Therefore sufficient interval should be given between turning on and off the power.

Surge withstand	1.5kA 8/20us pulse 40 joules max
Fast Transients	2 kV

DC Outputs (Terminals 1,2 and 3,4)

Output Voltage Range	23.5-24.5Vdc (adjustable)
Output Current Range	0-0.65A
Maximum Continuous Power	15 Watts at 50°C ambient (see de-rating curve up to 70°C)
Minimum load	0A
AC line regulation	1% max from 100-240Vac
Load Regulation	1% max over 0-100% of total load
Output Ripple	15mV (typical)
Efficiency	83% at full load
Turn on delay time	100ms at full load (Vin=115Vac)
Hold up time	20ms at full load (Vin=115Vac)

Indicator Lights

DC OK (Green)	ON during normal operation
DC LOW (Red)	ON when: 1. Output voltage < 85%(±2.5%) from the rated output voltage; 2. Either over voltage, over current, over temperature and short circuit fault
DC LOW (Red)	DC Output Low when ON when: (1) Output voltage is below 85%(±2.5%) from the rated output voltage; (2) Either over voltage, over current, over temperature and short circuit fault

Protection

Short circuit	Shut off output voltage, the power supply will recover after the power is turned on again
Over Voltage (See note 1 & 2)	Over voltage protection value 30V
Over Current (See note 3 & 4)	Over current protection value 0,9A
Over Temperature (note 5 & 6)	Over temperature value: 100±10°C

Notes:
1. When output voltage exceeds the over-voltage protection value or reverse voltage occurs, the protection will trigger, and the output voltage will be cut off in order to protect the power supply.
2. The power supply will recover after power is turned on again.
3. When output voltage exceeds the over-current protection value, the protection trigger and the output voltage will be cut off in order to protect the power supply;
4. The power supply will recover automatically after the fault condition is removed.
5. When the ambient temperature exceeds the over-temperature protection value, the protection will trigger and go into "hiccup" mode;
6. The power supply will recover automatically after the fault condition is removed

Environment

Operating Temperature	-25 to +70°C (-13 to +158°F) at full load
Relative Humidity	20 to 95%
Storage Temperature	5 – 95% Relative Humidity -40°C – 85°C (+40°F – 185°F)
MTBF at 25°C full load	200,000 hours

Mechanical

Width	22.5mm
Height	95mm
Depth	108mm
Mounting orientation	vertical only
Ventilation Space	25mm minimum above and below

Weight

Unpacked	200gm approx.
Packed	300gm approx.

Compliance to Standards

Safety	UL60950-1, EN60950-1
EMC	EN 55022:2010+AC:2011 (CISPR 22:2008) Class B EN 61000-3-2:2014 (IEC 61000-3-2:2014) EN 61000-3-3:2013 (IEC 61000-3-3:2013) EN 55024:2010 (CISPR 24:2010)
Insulation Resistance (100% tested)	100Mohm at 500Vdc
Insulation Breakdown (100% tested)	I/P-O/P: 3KVac, I/P-FG: 1.5KVac, O/P-FG: 0.5KVac

NOTE: Unless otherwise specified, all the above parameters are measured at ambient temperature of 25 °C and Vin=100Vac to 240Vac.
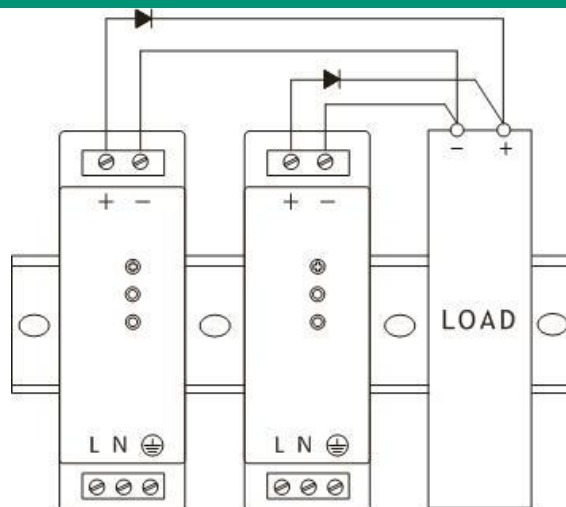
Ordering Information

ORDER CODE	DESCRIPTION
C2203A	Powerterm P15-24 24V/0.65A Industrial Power Supply

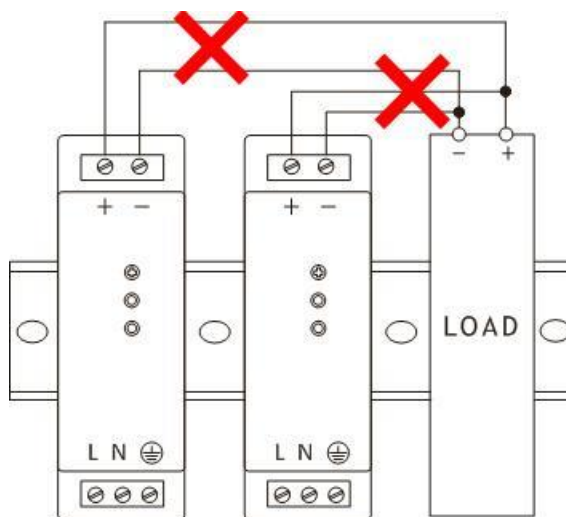www.omniflex.com/C2203A

Omniflex
REMOTE MONITORING SPECIALISTS

Applications: Parallel Operation

RECOMMENDED METHOD OF PARALLEL OPERATION

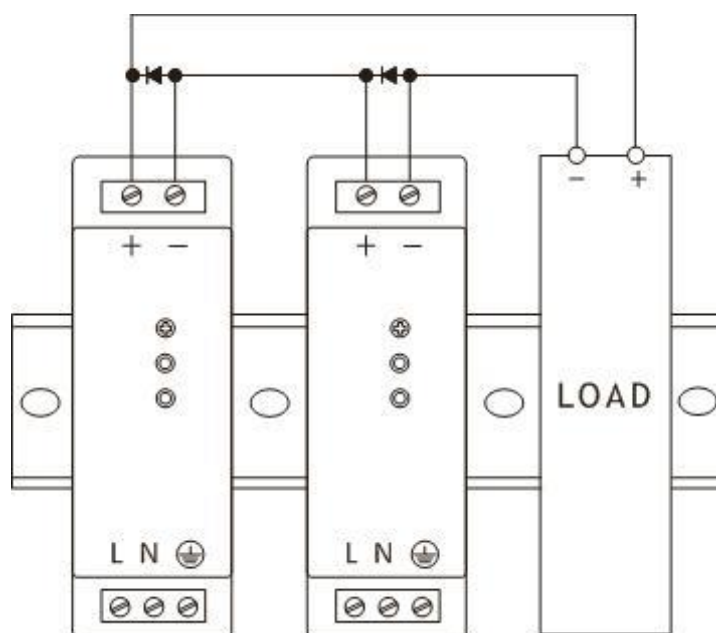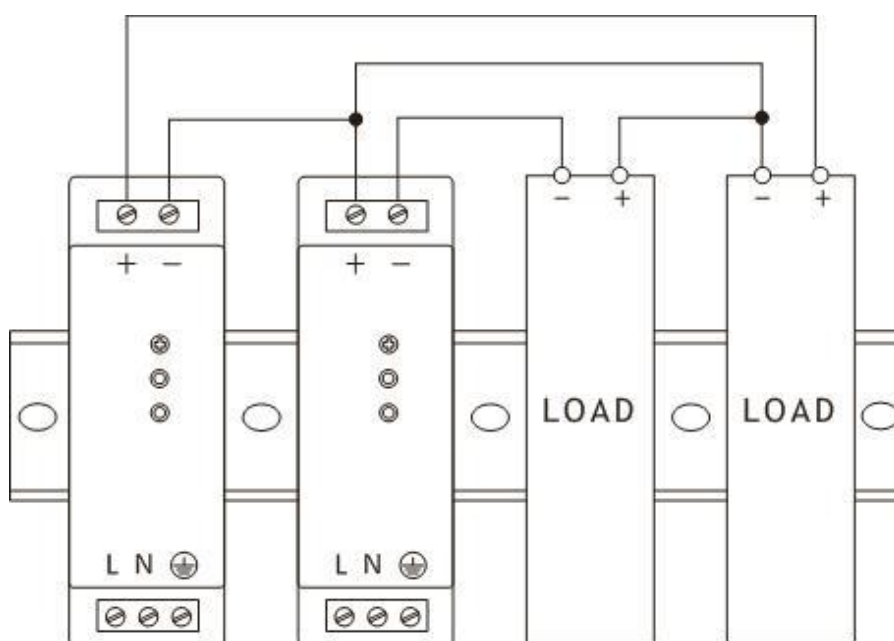NOT ALLOWED

Notes:
1. Parallel operation is recommended for redundancy only. Not for increasing current output capacity.
2. Only use products of the same model number in parallel.
3. Choose diodes for maximum power supply current
4. Take diode volt drop into account when setting load voltage.

Applications: Series Operation

Scheme A: Single 48V load

Scheme B: Two 24V loads in series

Notes:
1. Load current must be no more than the load current of the smallest power supply.
2. It is recommended to use products of the same model number in series.
3. Choose diodes for maximum power supply current

Omniflex
REMOTE MONITORING SPECIALISTS