THIS SERIES IS NOT recommended for new design-ins and this series is discontinued

Recommended alternative: 480ACDRH_SC series

Please click here for the datasheet.

480ACDR_SC Series

480W - Single Output AC-DC Converter - Universal Input - Isolated & Regulated Industrial DIN Rail Power Supply

AC-DC Converter 480 Watt

- High efficiency up to 94%
- Universal AC input range (85~264VAC)
- Support 1+1 or N+1 redundant system
- Built-in current sharing function
- Built-in current limiting circuit
- Over voltage protection (OVP)
- Over load protection (OLP)
- Short circuit protection (SCP)
- Over temperature prot. (OTP)
- Wide operating ambient temperature (-25°C~70°C)
- 150% (720W) peak load capacity
- 100% full load burn-in test

The 480ACDR_SC series features standard rail mounting, energy efficiency and is highly cost-effective. The series offers stability and high noise immunity especially for industrial control equipment, machinery and other demanding environments for industrial equipment. This converter offers a compact and light weight design with and standard rail installation (35mm). Furthermore this series offers Easy Fuse Tripping due and a built-in DC OK relay contact. The converter can be installed on TS-35/7.5 or TS-35/15.

UL-60950-1 (E347551)

Common specifications

Short circut protection:	Continuous, automatic recovery
Temperature rise at full load:	40°C MAX
Cooling:	Free air convection
Operation temperature range:	-25°C~+70°C
Storage temperature range:	-40°C ~+85°C
Storage humidity range:	< 95%
Temperature coefficient:	0.03%/°C MAX
MTBF (using MIL-HDBK-217F):	+25°C >300,000 hours
Power boost:	150% of rated current
Parallel function:	support
DC-OK:	V On: when output voltage is up to 90% of rated output voltage V Off: when output voltage is down to 80% of rated output voltage
DC-OK relay contact rating:	Max 30V/1A or 60V/0.3A or 30Vac/0.3A Resistive load
Case material:	Heat-resistant Plastic (UL94-V0) and metal
Dimensions:	70*124*127mm
Weight:	1300g

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Withstand voltage*	• Primary-Sec.: 10mA • Primary-PG: 10mA • Secondary-PG: 20mA	3000 2500 500			VAC
Isolation resistance		10			MΩ

* Input-Output, tested for 1 minute, 500VDC and leakage current less than 1mA

Input specifications

Input voltage range		85~264VAC	
Input frequency		47~63Hz	
Power factor		110VAC • 0.99 (typ)	230VAC • 0.95 (typ)
AC current		110VAC • 6A (max)	230VAC • 3A (max)
Inrush current	Cold start	110VAC • 20A (typ)	230VAC • 40A (typ)
Leakage current	Input—output: <0.25mA Input—PG: <3.5mA		

Output specifications

Item	Test conditions	Min	Typ	Max	Units
Output voltage accuracy	Full load			±3	%
Voltage adjustment range	• 24V: 24~28V • 48V: 48~56V				
Line regulation	Vin= min. to max. at full load			±0.5	%
Load regulation	0% to 100% load			±1	%
Ripple + Noise*	see model specifications table				
Set-up time	@230VAC			3	s
Hold-up time			25		ms
Overshoot and undershoot				5	%
Switching frequency			100		KHz

Note:

1. All parameters NOT specially mentioned are measured at rated input, rated load and 25°C of ambient temperature.

Example:
480ACDR_24SC

480 = 480 Watts
AC = AC/DC
DR = Din Rail
24 = Vout
S = Single Output
C = PFC (Power Factor Correction)

Protection specifications

Over-load protection	110%~150% of rated current, constant current limiting for some time (150% of rated current, last 3S) then PS stop working for 7S, after 7S, if the load <=rated current, PS will work normally, auto recovery
Over-voltage protection	• 24V: 28.8~33V, constant voltage, auto recovery • 28V: 58~63V, constant voltage, auto recovery
Over-temperature protection	115±5°C, detect on temperature controller; shut down O/P, auto recovery after temperature goes down.

480ACDR_SC Series

480W - Single Output AC-DC Converter - Universal Input - Isolated & Regulated
Industrial DIN Rail Power Supply

EMC specifications		
EMC / Emission	Compliance to EN55022, EN55024, FCC PART 15 Class B	
EMC / Harmonic current	Compliance to EN61000-3-2, CLASS A	
EMC / Immunity	Compliance to EN61000-4-2, -3, -4, -5, -6, -8, -11; heavy industry level	perf. Criteria B

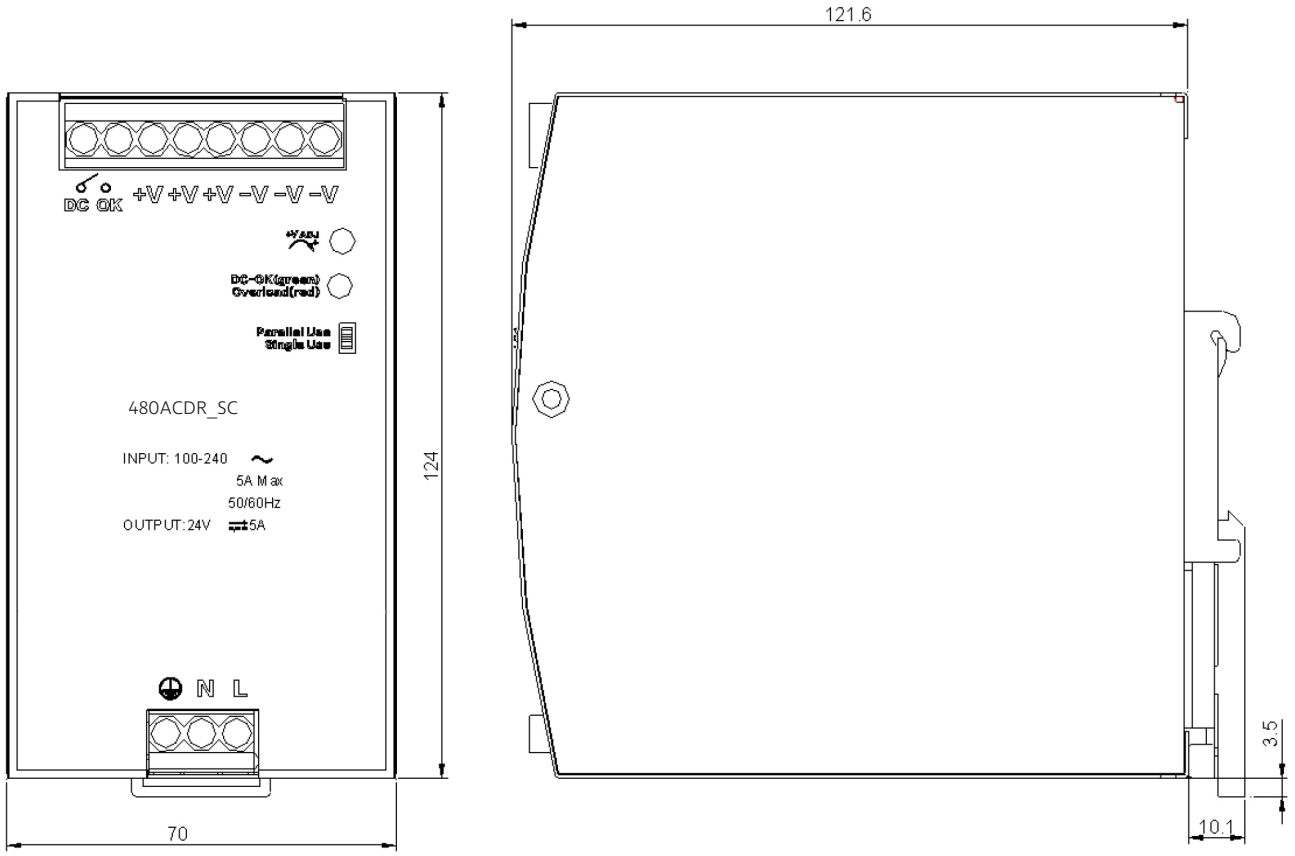
The power supply is considered as a component which will be installed into a final equipment.
The final equipment must be re-confirmed that it still meets EMC directives.

Approval	Model	Power [W]	Output [Vo, VDC]	Rated Current [A]	Current Range [A]	Ripple&Noise* [mV, max] 0~70°C	-25°C	Efficiency [%, typ]
UL	480ACDR_24SC	480	24	20	0~20	240	480	94
UL	480ACDR_48SC	480	48	10	0~10	480	480	94

* Measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 uF & 10uF parallel capacitor.

Mechanical dimensions

Unit: mm



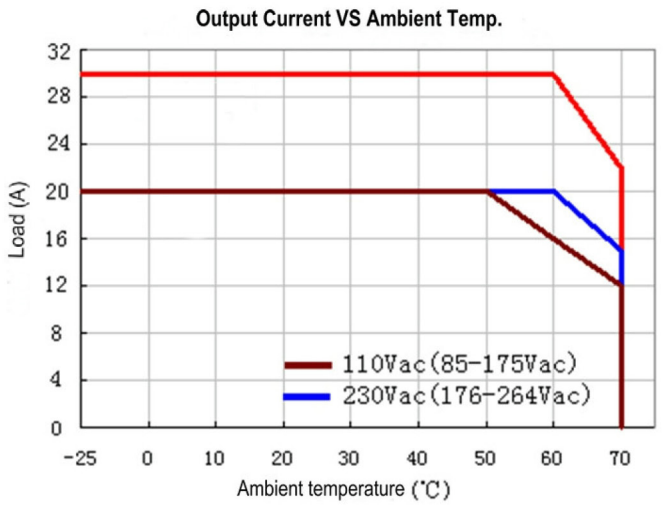
AC terminal blocks installation information		
Terminal No.	Function	Specs
1	PG	6.35mm, 3pin screw terminal blocks
2	N	
3	L	

DC terminal blocks installation information		
Terminal No.	Function	Specs
1	DC	6.35mm, 3pin screw terminal blocks
2	OK	
3~5	V+	
6~8	V-	

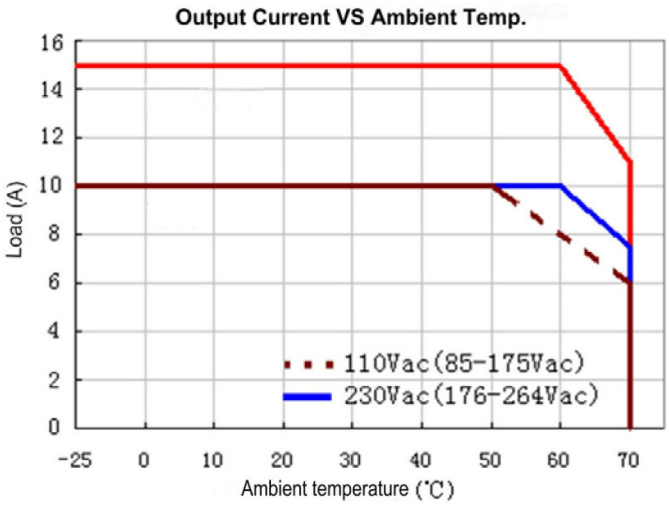
AC/DC terminal	
Type	Screw terminal blocks
Solid wire	0.5-6mm^2
Strand wire	0.5-4mm^2
Wire Spec	AWG20-10 (PG wire >18AWG)
Max wire diameter	2.8mm
Recommended stripping length	7mm
Screwdriver	3.5mm Straight or Cross Screwdriver
Recommended torque	1NM

Typical characteristics

480ACDR_24SC



480ACDR_48SC

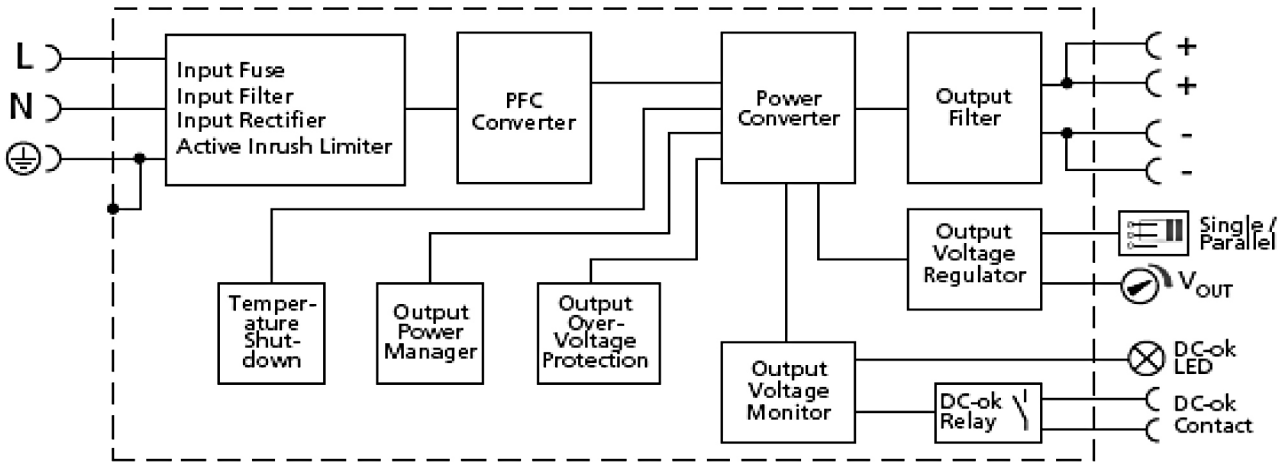


short time working, 3s.

continuous working

Functional block diagram

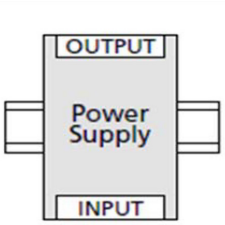
Functional diagram

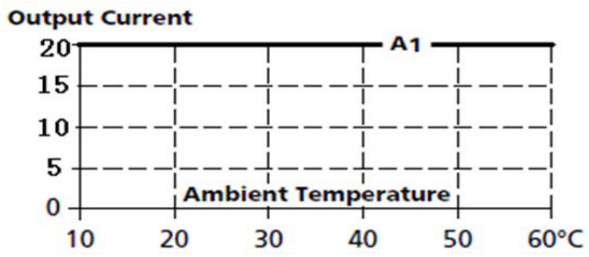


Mounting method instruction

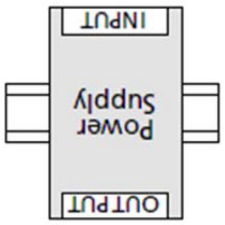
A1 is recommended output current.
A2 is the allowed max output current (PSU lifetime is around half of A1).
Below curves are tested under 230Vac (179~264Vac), when 110Vac input (85~175Vac), all derating points drop 10°C.

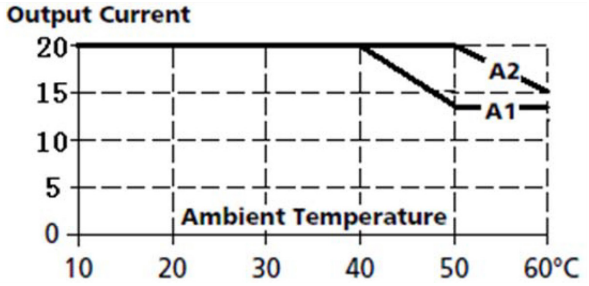
480ACDR_24SC



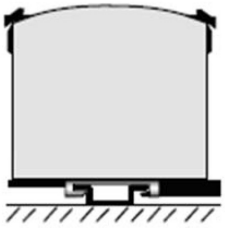


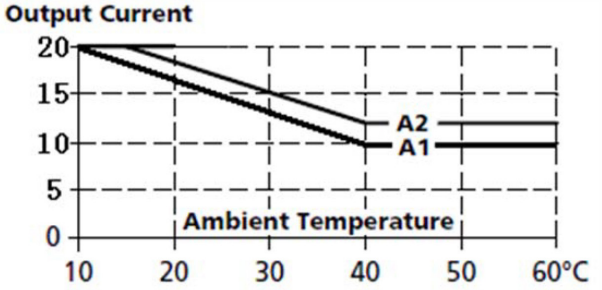
Mounting A



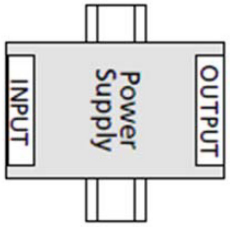


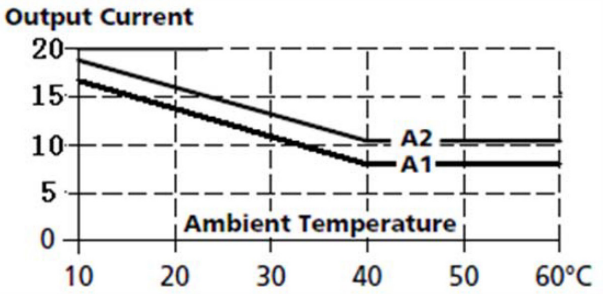
Mounting B



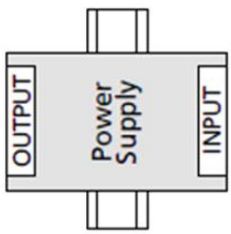


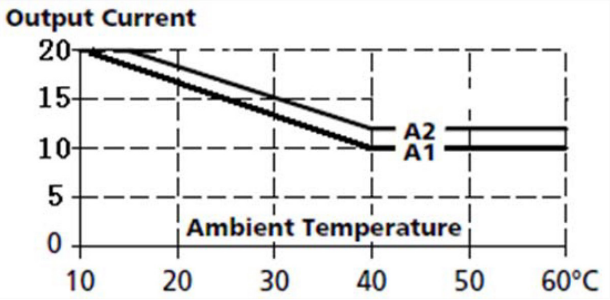
Mounting C





Mounting D

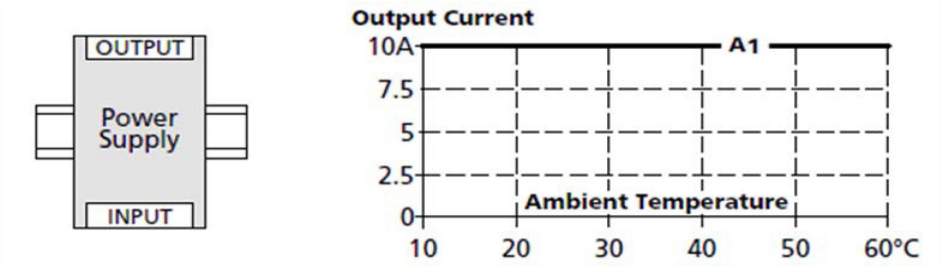




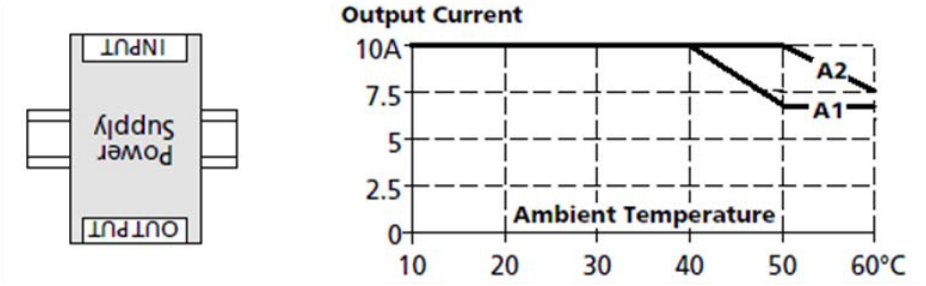
Mounting E

Mounting method instruction

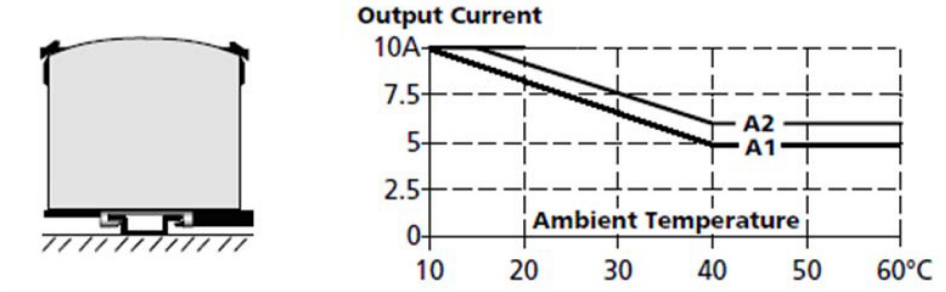
480ACDR_48SC



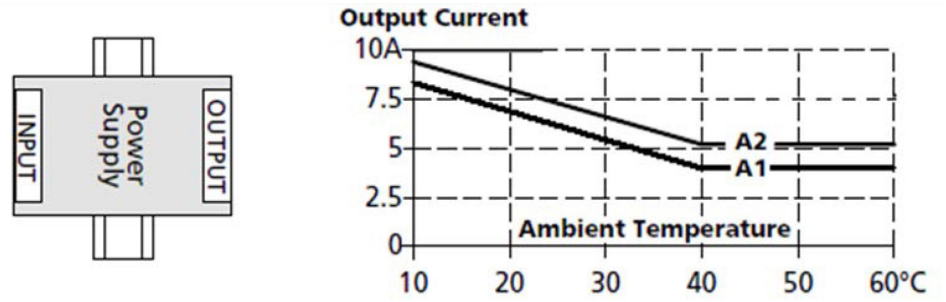
Mounting A



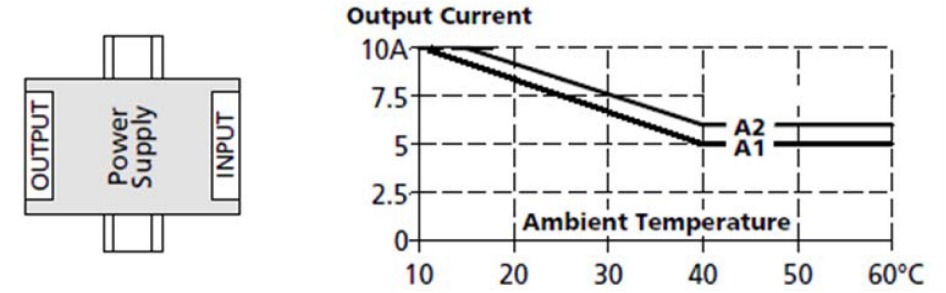
Mounting B



Mounting C



Mounting D



Mounting E