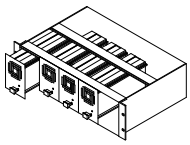
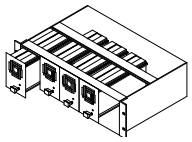
ADC7181R / ADC7180R SERIES

800W Plug-in Rectifiers for Telecom and Industrial Applications

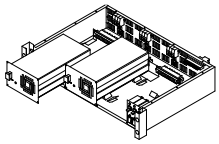
Compact size, 800W in 3U, 14TE or 17TE
All voltages available 0…144VDC
Voltage and current adjustable from 0 to max value
Analog controllable models by external 0-5VDC voltage
Modules plug-in types and hot-swappable
Module fail relay alarm for remote monitoring
Both vertical 3U and horizontal 2U installation
Optional Temperature compensated battery charging
Note! External series diode is needed for redundant systems



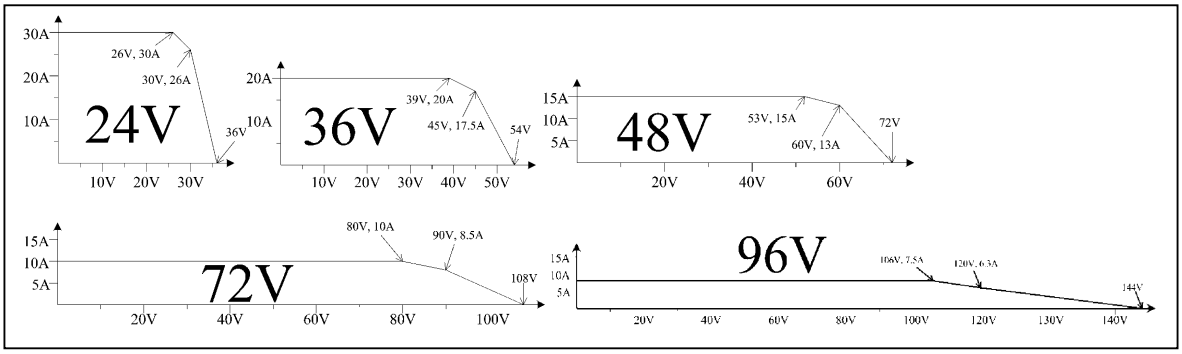
MSR7650
19” 3U subrack
4800W / 6 modules



MSR7170
19” 3U subrack
3200W / 4



MSR7110
19” 2U subrack
2400W / 3 modules



RECTIFIER MODULES, trimmer adjustable and analog controllable units								
Type Trimmer adj (Refer curves above)	Type Analog control	Input voltage *)	Nominal output voltage	Voltage setting range	Max output current	Current limit setting	Max power	Mechanics (w x h x d)
ADC7181R/24	ADC7181R/24AI	55-264VAC / 78-340VDC	24 VDC	0-36VDC	30 A	0-30A	800W	14TE / 3U / 230mm
ADC7181R/36	ADC7181R/36AI	55-264VAC / 78-340VDC	36 VDC	0-54VDC	20 A	0-20A	800W	14TE / 3U / 230mm
ADC7181R/48	ADC7181R/48AI	55-264VAC / 78-340VDC	48 VDC	0-72VDC	15 A	0-15A	800W	14TE / 3U / 230mm
ADC7181R/72	ADC7181R/72AI	55-264VAC / 78-340VDC	72 VDC	0-108VDC	10 A	0-10A	800W	14TE / 3U / 230mm
ADC7181R/96	ADC7181R/96AI	55-264VAC / 78-340VDC	96 VDC	0-144VDC	7.5A	0-7.5A	800W	14TE / 3U / 230mm
ADC7180R/24	ADC7180R/24AI	55-264VAC / 78-340VDC	24 VDC	0-36VDC	30 A	0-30A	800W	17TE / 3U / 230mm
ADC7180R/36	ADC7180R/36AI	55-264VAC / 78-340VDC	36 VDC	0-54VDC	20 A	0-20A	800W	17TE / 3U / 230mm
ADC7180R/48	ADC7180R/48AI	55-264VAC / 78-340VDC	48 VDC	0-72VDC	15 A	0-15A	800W	17TE / 3U / 230mm
ADC7180R/72	ADC7180R/72AI	55-264VAC / 78-340VDC	72 VDC	0-108VDC	10 A	0-10A	800W	17TE / 3U / 230mm
ADC7180R/96	ADC7180R/96AI	55-264VAC / 78-340VDC	96 VDC	0-144VDC	7.5A	0-7.5A	800W	17TE / 3U / 230mm

*) Reduced power 55…200VAC or 78…200VDC, see curves at next page, max power 600W with DC input
ADC7181R modules with 14TE front panel can be installed in standard 19” sub-rack or in MSR7650 sub-rack
ADC7180R modules with 17TE front panel to be used with sub-racks MSR7110 or MSR7170

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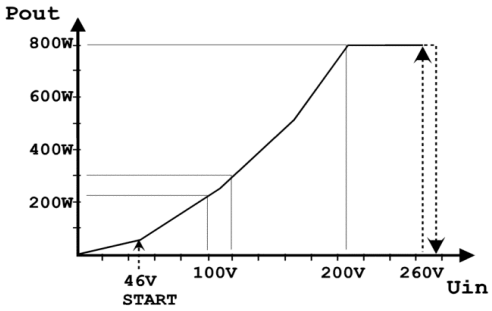
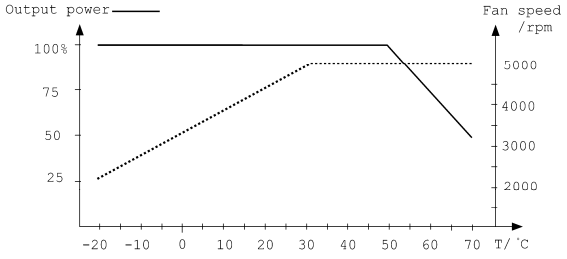
TECHNICAL DATA

INPUT VOLTAGE:		55…264 VAC (55…200VAC reduced power, see curve below) 78…340 VDC/max 600W (78…200VDC reduced power)
MAX. INPUT CURRENT:		4,5A
INRUSH CURRENT:		Soft start limited <4.5A, except 7A 10ms peak during the start up
INPUT OVER VOLTAGE PROTECTION:		Switch off Uin > 270VAC, switches on when Uin < 270VAC
POWER FACTOR:		Electrically corrected to 1
MAX. POWER OUTPUT:		800W (250W @ 110VAC input)
EFFICIENCY:		85…90%
SWITCHING FREQUENCY:		> 100kHz
LINE REGULATION:		± 0.1%
LOAD REGULATION:		± 0.5%
RIPPLE VOLTAGE:		< 50mVrms
STATUS LED INDICATION		OK Green LED Low voltage -25% of adjusted voltage -> Red LED High voltage +10% of adjusted voltage -> Red LED
ISOLATION:		3750V AC between INPUT/OUTPUT 1500V AC between INPUT/CASE 500V AC between OUTPUT/CASE
COOLING:		Temperature controlled FAN in front panel, air flow front to rear
OPERATING TEMPERATURE:		Full power typically -25ºC...+50ºC Reduced power +50…+ 70ºC, see curve below
WEIGHT:		1.3kg
DIMENSIONS WxHxD		ADC7181R 14TE x 3U x 230mm, 6 modules per 19" 3U sub-rack ADC7180R 17TE x 3U x 230mm, both 19" 3U and 2U assembly 4 modules per 3U sub-rack or 3 modules per 2U sub-rack
PROTECTION CLASS:		Mechanical IP 20 Electrical 1
APPROVALS:	Safety	EN60950-1, EN 60 335-2-29 (1991) + A2 (1993)
	EMC emissions	Commercial and light-industrial environment EN61000-6-3, EN55022 Class B ,
	EMC Immunity	Industrial environment EN61000-6-2
	Harmonics	EN61000-3-2
	Flickering	EN61000-3-3
OTHER:		Hot swapping allowed, Module fail relay Analog control by 0-5VDC voltage (separate models)

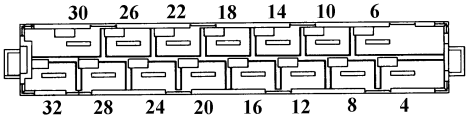


Output power / input voltage de-rating curve



Output power (typical) and fan speed vs ambient temperature

H15 connector's pin configuration:



Pin number	Function
4	Module alarm relay, NO
6	Module alarm relay, COMMON
8	Module alarm relay, NC
10	Not in use
12	Negative output
14	Negative output
16	Negative output
18	Positive output
20	Positive output
22	Positive output
24	Earth
26	Not in use
28	Phase L
30	Phase N
32	Earth (PE)

INSTALLATION

↑ This module can be used either in 3U rack (vertical) or 2U rack (horizontal).

← The location must be dry, dust-free indoor use. The acceptable temperature range at full power is -25°C up to +50°C typically. A higher ambient temperature will limit the power, see diagram. The power supply is not waterproof. Keep it dry and away from areas of high humidity to avoid the risk of electrical shock and damage to the power supply.

OUTPUT VOLTAGE AND CURRENT LIMIT ADJUSTMENT

The output voltage and output current limit of the module can be adjusted with the multi-turn potentiometer located on the front panel. Both voltage and current can be adjusted from zero to maximum value.

In analog control versions output voltage can be adjusted by external 0-5 VDC voltage or by using external trimmers and internal 5 VDC power source. Current limit can be adjusted with the multi-turn potentiometer located on the front panel.

LED

During the normal power supply operation / charging process the STATUS light will show a constant green light. Red led indicates fault or High voltage +10% / Low voltage - 25% in the module.

OUTPUT OVERCURRENT PROTECTION

Output of the unit is protected against over current and short circuits by automatic, self-resetting electronic current limit.

SERIES / PARALLEL CONNECTION

Parallel operation: No restrictions, passive load sharing. Series operation: Up to 500V total voltage.

ALARM RELAY

Alarm relay, the potential free alarm indicates if the charger's output is healthy. The alarm signal is activated at AC fail and charger fail cases. Both normally open and normally closed signals are presented.

WARNING!

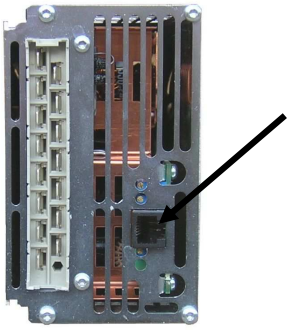
Dangerous voltages, capable of causing death, are present in this equipment. Do not remove the cover. No operator serviceable parts inside. Refer servicing to qualified service personnel.

ANALOG CONTROL MODELS, type number example ADC7180R/24AI

Analog control option allows full control for output voltage and it gives measured voltage and current values. Current limit can be adjusted by trimmer on front panel. There is also available +5V internal power source for logic use. The analog input have 500V electrical insulation to power supply's input and output.

Current limit adjustment by trimmer

Front panel



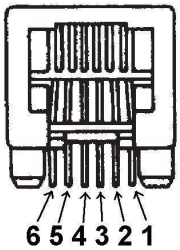
Voltage control by external 0-5VDC voltage

Rear panel

PIN CONFIGURATION, MODULAR CONNECTOR

Interface to analog control card is made through AMP Modular 6 connector. It's part number is 215-876-1. The product specification number is 108-19064 and application number is 114-19019. Part number for cable connector that fits to modular 6 is 737 336-1.

Pin configuration:
1. Ground
2. NC
3. Target value for voltage
4. Measured value for current
5. Measured value for voltage
6. +5V, (max 20mA) output



Analog control wire set 3m is included with the unit

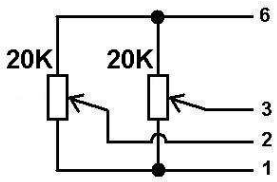
Controlling analog card:

All control voltages must be between 0 and 5 volts. Over 5V steering is not allowed. Logic for steering is positive so 5V in target value means maximum value from power supply and 0V means minimum output. If controlling connector is unplugged from modular connector, the power supply takes its minimum values for output.

Measured values can be read from measured signals. Measured voltages are scaled equal as target values. If power supply lies on its voltage reference, then measured voltage should be equal as target. Same thing on current steering and its measured value. Measured signals (both together) can be loaded only 20mA or proper operation is not guaranteed.

Modular connector is isolated from power supply's input, enclosure and output terminals. That allows serial and parallel connection to separate power supply's so that equal steering voltages are used. Number or connected devices are not limited. Only be sure that 500V insulation voltage is not exceeded

Connection example, using internal +5VDC power source and external potentiometers:



+5V output can be used to feed logic voltages for external circuits. Connection in an example works as a potentiometer controlled power supply. It is important to notice that +5V output is not allowed to load more then 20mA or proper operation is not guaranteed.