

User Manual ADC4890



INPUT

Voltage	$U_{in \text{ rms nom}} = 230\text{VAC}$	184...264VAC
Frequency f_{in}		45...65Hz
Efficiency	$U_{in} = 230\text{V}, P_{out} = P_{nom}$	87%
Safety		According to EN60950, Class I
Hold up time	$U_{in} = 230\text{VAC}$	10ms
Isolation		
Input / ground		3000VDC
Input / outputs		3000VDC
Output / ground		500VDC
EMC Emissions		EN 50081-1
Immunity		EN 50082-2
Radio Interference		EN 55022B
Electrostatic Discharge Immunity		EN 61000-4-2
Radiated Electromagnetic Field Immunity		EN 50140 and EN 50204
Electrical Fast Transient Immunity		EN 61000-4-4
RF common mode		EN 50141
Protection:		
Inrush current		resistor, 220R
Input current		fuse T8AH, both input lines

OUTPUT 48VDC / 12,5A

Voltage	U_{adj}	48VDC
Setting accuracy		48V +/- 1 %
Adjustment range	Front panel trimmer potentiometer	40...60V
Ripple voltage	$U_{out \text{ pp}}$	< 100mV
Load regulation	$I_{out} = 0...100\%$	+2% / - 1%
Line regulation	$U_{in} = U_{in \text{ min}}...U_{in \text{ max}}$	+/- 0.1 %
Recovery time	10 to 90% or 90 to 10%	<5ms
Temperature coefficient		< 0.025 % / °C
Current $I_{out \text{ nom}}$	$U_{out} = 48\text{V}$	12,5A
Short circuit protection		15A magnetic circuit breaker
Serial diode on positive output line		

CONTROLS

Input ON/OFF switch		Mounted on front panel
Output ON/OFF switch (MCB)		Mounted on rear panel
Remote control for output voltage		0.5...5.0V aux control voltage
0.5V control voltage:	40V output	
5V control voltage:	60V output	
<0.2V control voltage:	Internal reference i.e. potentiometer setting	

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INDICATIONS

Output healthy	Green LED on front panel
Output high voltage alarm	Red LED on front panel
Output low voltage alarm	Red LED on front panel
Module failure	Red LED on front panel

ALARMS

Output high voltage alarm	Relay contact
Output low voltage alarm	Relay contact
Module failure (input or output fails or MCB trips)	Relay contact

There are two options of alarm relay output configuration:

1. Individual Normally open contacts closing on alarm activation. Shared common connection
2. Common changeover contacts, activated by any alarm, either Normally open or Normally closed

The alarm configuration is programmed by means of internal jumper.

Overvoltage protection: The rectifier module is shutdown when the output voltage reaches an excessive level. This shall produce an module alarm.

Over temperature protection: The output power of the rectifier will be derated under excessive working temperatures. This will initiate a module alarm if the unit is derated below a certain level

METERING

Test points for output voltage and current, located on front panel.

APPROVALS

CE marked for EMC directive

MECHANICAL

Construction	Rack mounted
Dimensions	
Width	19" (482mm)
Height	2U (88mm)
Depth	255mm
Weight	5.5 kg
Enclosure	IP20

CONNECTORS

Input	IEC320
Output	10 pin Weidmuller plug STV2/10LS
1	Module alarm - common
2	Voltage adjust input
3	Positive output
4	Postitive output
5	Negative output
6	Negative output
7	Earth (PE)
8	Low battery alarm
9	High voltage alarm
10	Module alarm

ENVIROMENTAL

Temperature range	
Storage	-40°C...+70 °C
Operation	-25°C...+55 °C
Cooling	Natural convection

Quick guide to use test connectors

1. Test connectors for output voltage and current are located on front panel.
2. Each test connector consists of 2 pins. The negative pin is located on top and the positive one is the bottom one.
3. To measure the output voltage, connect voltage meter to pins above voltage-label in the front panel and measure the voltage.

ADC4000: 27,3V
ADC4010: 54,6V
ADC4890: 48V

4. To measure the output current, connect voltage meter to pins above current-label in the front panel and measure voltage. You can determine the output current from following schemes:

ADC4000: $2,5V = 20A \Rightarrow 1V = 8A$ (max. 20A)
ADC4010: $2,5V = 10A \Rightarrow 1V = 4A$ (max. 10A)
ADC4890: $2,5V = 12,5 A \Rightarrow 1V = 5A$ (max. 12,5A)

ATTENTION!! 0V = 0A!!

ALARM LIMIT VALUES

ADC4000/4890: HIGH BATTERY = 56,7V
LOW BATTERY = 44,0V

ADC4010: HIGH BATTERY = 28,3V
LOW BATTERY = 22,0V

