

# AcuDC 210/220 Series DC Power and Energy Meters



ISO9001 Certified



# AcuDC 210/220 Series DC Power Meter



## INTRODUCTION

AcuDC 210/220 series DC power meter can be used for monitoring and controlling in DC systems. These meters can measure a wide range of parameters such as voltage, current, power and energy. There are digital inputs for switch monitoring and relay outputs for remote controlling as well as an over-range alarming feature for voltage and current. Large signals, such as current and voltage can be converted to smaller signals using AO output. All data in the meter is accessible via RS485 using open Modbus RTU protocol.

## APPLICATIONS

- Solar and wind energy systems
- Industrial control systems
- DC energy management systems
- Large UPS systems

## FEATURES

- DC power system metering
- Monitor and control power switches
- Alarming and analog output
- Standard DIN sizing (96x48mm) allows for easy panel installation
- Can be used in SCADA, PLC systems
- Large character LCD display with vivid blue backlight
- Wide operation temperature range

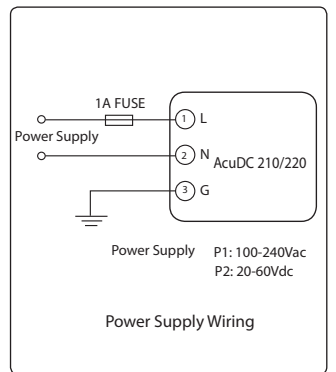
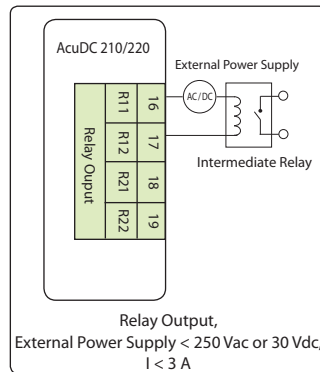
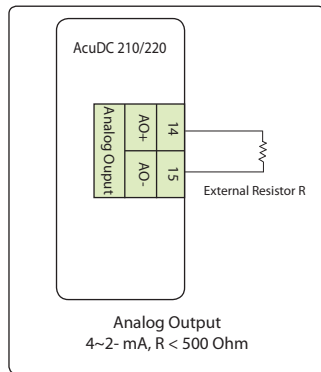
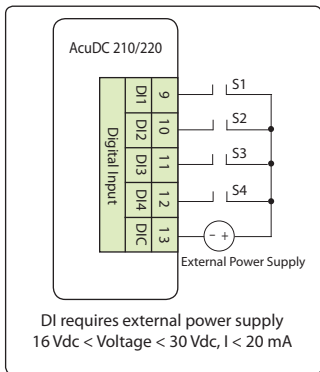
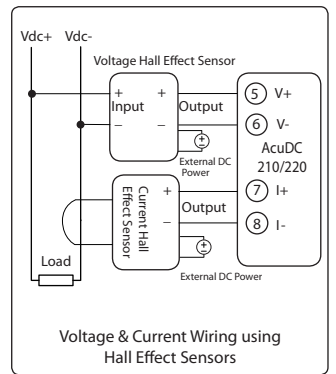
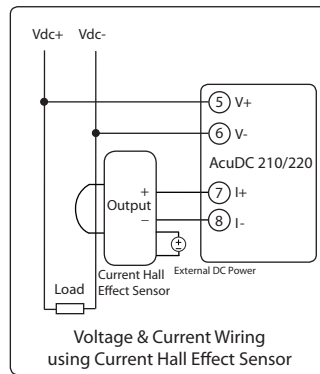
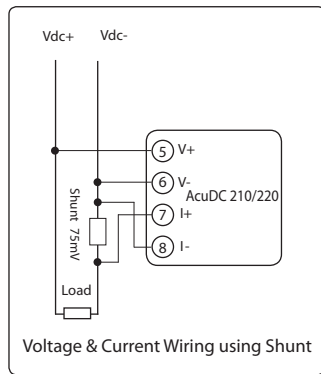
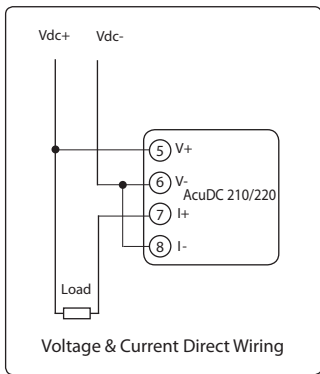
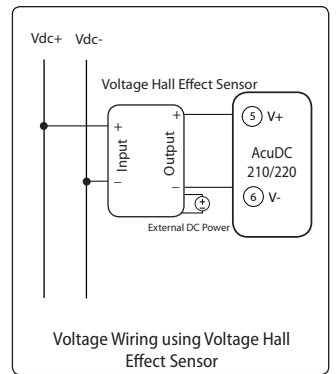
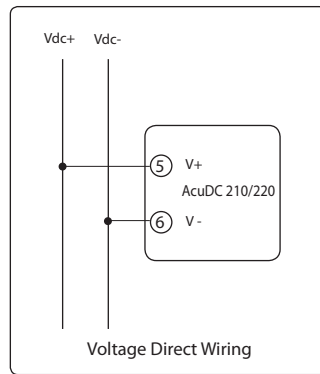
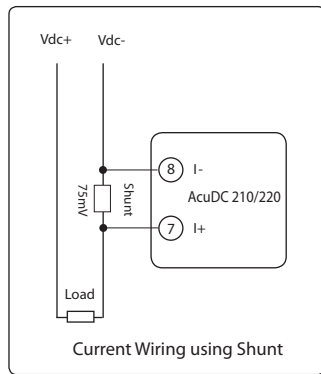
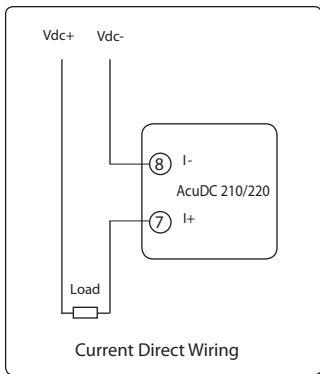


## SPECIFICATIONS

Function		AcuDC 211	AcuDC 212	AcuDC 213	AcuDC 221	AcuDC 222	AcuDC 223
Metering	Voltage V (Volt)	●		●	●		●
	Current I (Amp)		●	●		●	●
	Power P (W)			●			●
	Energy E (kWh)			●			●
IO	DI				⊙	⊙	⊙
	RO				⊙	⊙	⊙
AO	4~20mA	⊙	⊙	⊙	⊙	⊙	⊙
	0~5V						
Alarming	Over /Under Limit Alarm				⊙	⊙	⊙
Communication	RS485, Modbus				●	●	●
Display	LCD	●	●	●	●	●	●
Dimensions	96x48x71mm						

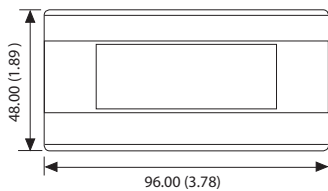
Note: ● Function ⊙ Option Blank NA

## TYPICAL WIRING

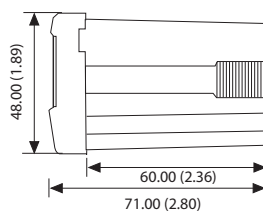


## DIMENSIONS

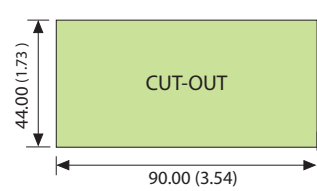
Unit: mm (inch)



FRONT



SIDE



PANEL CUTOUT

## TECHNICAL SPECIFICATIONS

Metering			
Parameters	Accuracy	Resolution	Range
Voltage	0.2%	0.01V	0~1200V
Current	0.2%	0.005A	0.005~9999A
Power	0.5%	0.01W	0.01~12,000,000W
Energy	0.5%	0.1kWh	0.1~99999.9kWh

Drift with Temperature: <100ppm/°C  
Stability: 0.5%/year

Voltage	
Input Range	Direct Input: 0~600V (Use Voltage Hall Effect Sensor: 0~1000 V)
Input Impedance	2MΩ
Load	<0.2W
Accuracy	0.2%

Current	
Input Range	0~10A (Direct input) 0~9999A (Extra current shunt or Hall Effect element, with programmable range)
Shunt	50~100mV (programmable)
Hall Effect Sensor	0~5V, 0~4V, 0~20mA, 4~20mA
Power Consumption	2W (max)
Accuracy	0.2%

Digital Input (DI)	
Optical Isolation	2500Vac rms
Input Form	Contact with Power Supply
Input Resistance	2KΩ (typical)
Input Voltage Range	16~30Vdc
Close Voltage	>16Vdc
Max Input Current	20mA

Analog Output (AO)	
Output Range	4~20mA or 0~5V
Resolution	12bit
Output Capability	4~20mA Max Resistance: 500Ω 0~5V Max Current: 20 mA

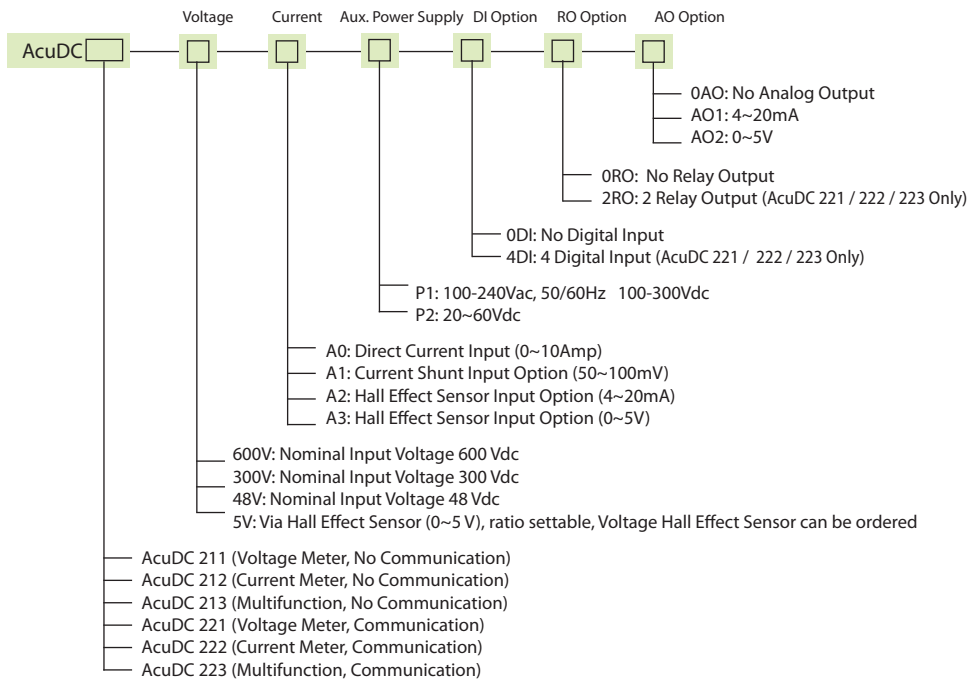
Communication	
Type	RS485, Half Duplex, Optical Isolated
Protocol	Modbus RTU
Baud Rate	1200~19200bps
Isolate Voltage	2500Vac

Relay output (RO)	
Output Form	Mechanical Contact, Form A
Max Load Voltage	250Vac/30Vdc
Max Load Current	3A
On Resistance	100MΩ (Max)
Isolate Voltage	4000Vac
Mechanical Endurance	5×10 <sup>6</sup> cycles

Power Supply	
Input	(P1) 100-240Vac, 50/60Hz 100-300Vdc (P2) 20~60Vdc
Power Consumption	2W

Operating Environment	
Operation Temp	-25°C~+70°C
Storage Temp	-40°C~+85°C
Humidity	5%~95% Non-condensing
Altitude	2000m

## ORDERING INFORMATION



AcuDC Series Meter Ordering Example: AcuDC 223 - 300V - A2 - P1 - 4DI - 2RO - AO1

### Voltage Hall Effect Sensor Ordering Information (0~5V output)

Special Order  
Please contact your local Accuenergy Representative for further details

### Current Hall Effect Sensor Ordering Information (4~20mA output)

Special Order  
Please contact your local Accuenergy Representative for further details

### Note:

1. When the input voltage is above 600V, or the system design requires an isolation sensor, the voltage input can be selected as Via Hall Effect Sensor (0~5 V). The Voltage Hall Effect Sensor output range requires 0~5 V.



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