AcuDC 240 Series

DC Power and Energy Meters

FEATURES

- DC Energy Management Systems
- Power Distribution for Telecommunication Room
- Solar Photovoltaic Systems
- Wind Power Generation
- DC Excitation System
- Industrial DC Control Systems
- Metallurgy and Electroanalysis Industries
- EV Charging Monitoring
- Data Center
- Cellular Tower Energy Monitoring

ISO9001 Certified

ACCUENERGY

AcuDC 240 Series DC Power Meter

INTRODUCTION

AcuDC 240 series 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. It supports bi-directional current measurement, 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 voltage and current can be converted to smaller signal using analog output. All data in the meter is accessible via RS485 using open Modbus RTU protocol. The large 3 line LCD display also provides easy to read real-time data directly on the meter front.

APPLICATIONS

- DC Energy Management Systems
- Power Distribution for Telecommunication Room
- Solar Photovoltaic Systems
- Industrial DC Control Systems
- Metallurgy and Electroplating Industries
- Wind Power Generation
- DC Excitation Systems
- Light Rail Transit Systems
- EV Charging Monitoring
- Data Center
- Cellular Tower Energy Monitoring

FEATURES

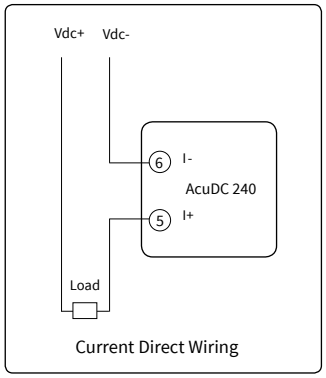
- DC power system metering
- Monitor and control power switches
- Alarming and analog output
- Standard 72x72mm, allows for drawer type panel installation
- Three line high-definition LCD display
- Accessible with SCADA, PLC systems
- Easy installation, simple wiring
- Data Logging: Offers 3 assignable historical logs where the all of the metering parameters can be recorded.
- The onboard memory is up to 4 MB and each log size is adjustable.

SPECIFICATIONS

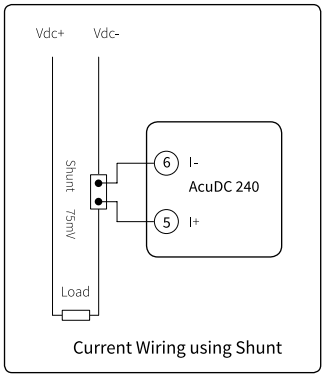
Function			AcuDC 241	AcuDC 242	AcuDC 243
METERING	Voltage	V	●		●
	Current	I		●	●
	Power	P			●
	Energy	E			●
	Ampere-hour	Ah			●
I/O	2DI+2AO	Support DI count	⊙	⊙	⊙
	2DI+2RO		⊙	⊙	⊙
	2DI+2DO		⊙	⊙	⊙
	2DI+ ±15Vdc		⊙	⊙	⊙
DATALOGGING	All metering parameters can be recorded (Voltage, Current, Power, Energy, Ampere-hour, DI Count); Interval 1 minute; Can record 4 months				⊙
COMMUNICATION	RS485 , Modbus RTU		⊙	⊙	⊙
DISPLAY	LCD		●	●	●
DIMENSIONS	72×72×64.5mm (Cutout: 68×68 mm) / 2.835×2.835×2.539 inch (Cutout: 2.677×2.677 inch)				

Note: ●Standard; ⊙ Optional Blank: Not Available

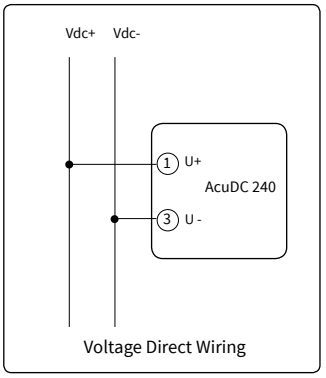
TYPICAL WIRING



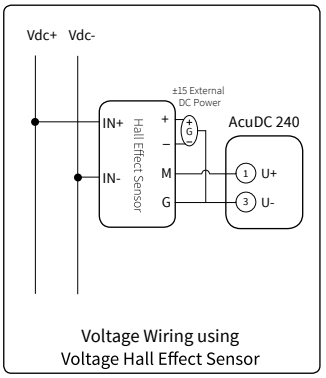
Current Direct Wiring



Current Wiring using Shunt

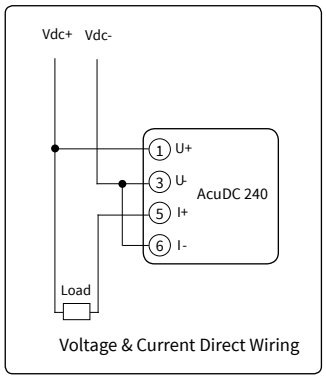


Voltage Direct Wiring

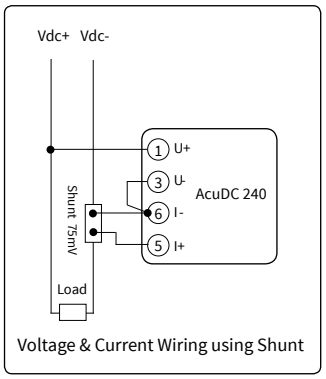


Voltage Wiring using Voltage Hall Effect Sensor

NOTE: Hall effect sensor can also be powered using the ±15V power supply from the X5 module.

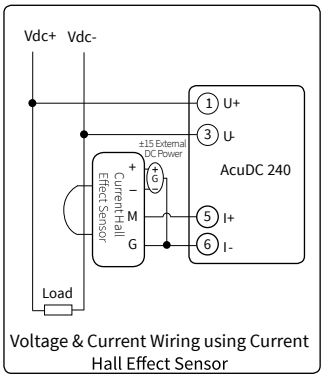


Voltage & Current Direct Wiring



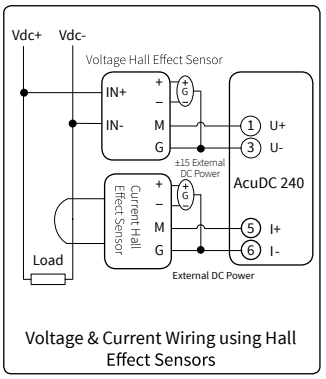
Voltage & Current Wiring using Shunt

NOTE: A physical jumper from terminal 3 to 6 must be connected.



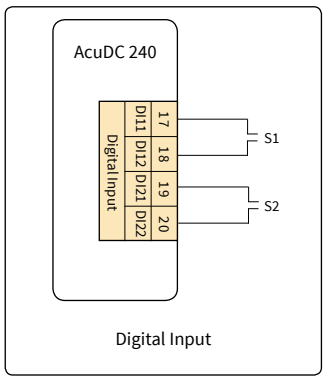
Voltage & Current Wiring using Current Hall Effect Sensor

NOTE: Hall effect sensor can also be powered using the ±15V power supply in the X5 module.

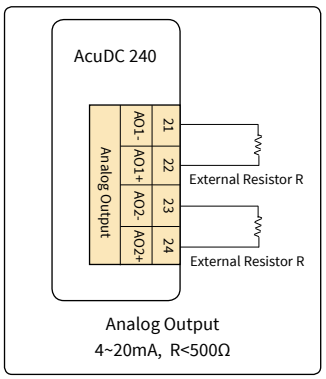


Voltage & Current Wiring using Hall Effect Sensors

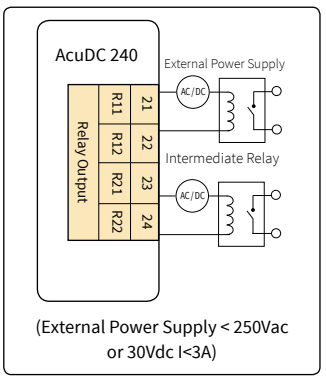
NOTE: Hall effect sensor can also be powered using the ±15V power supply from the X5 module.



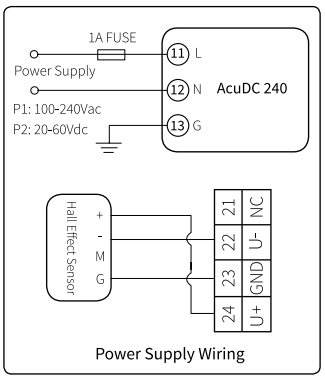
Digital Input



Analog Output
4~20mA, R<500Ω

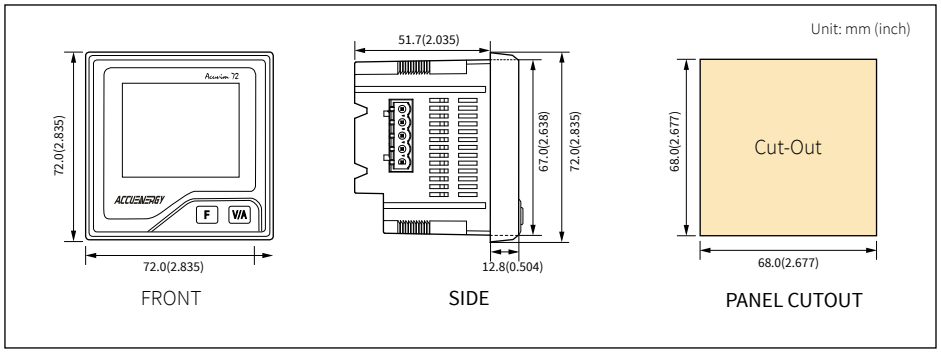


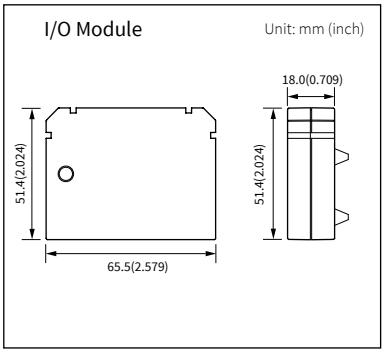
(External Power Supply < 250Vac or 30Vdc I<3A)



Power Supply Wiring

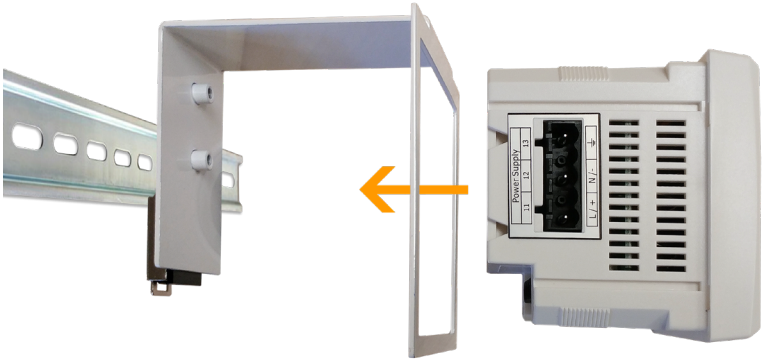
DIMENSIONS

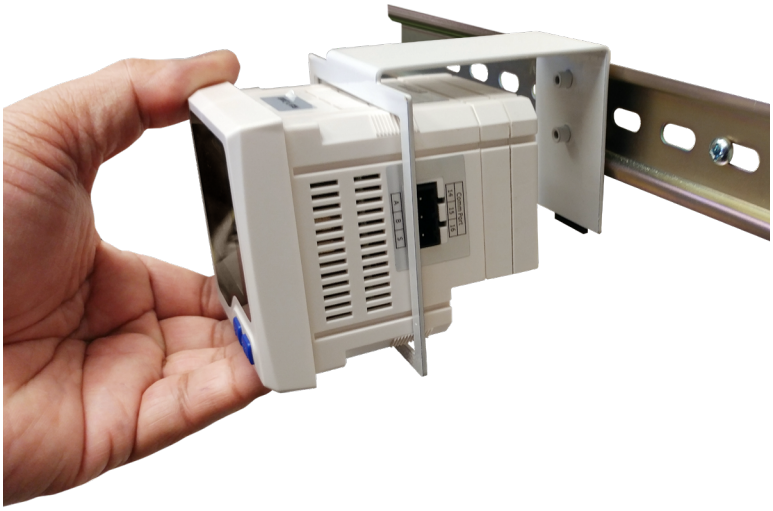




AcuDC 240 Series DIN Rail Mounting Adapter

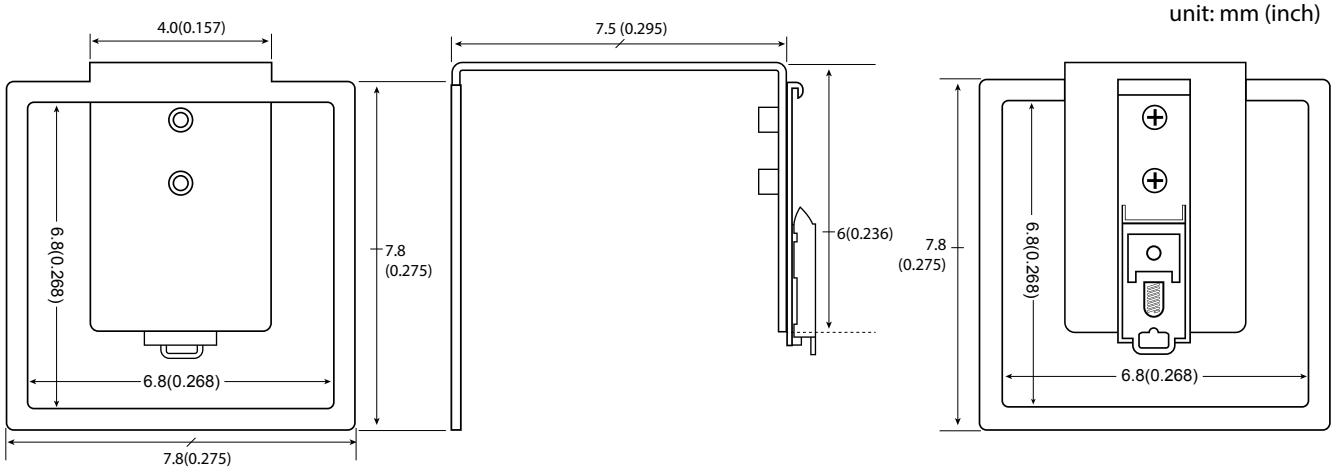
AcuDC 240 Series DIN Rails adapter provide easy installation of panel-mount AcuDC 240 series meter on DIN rail in all models and IO options.





DIMENSIONS

unit: mm (inch)



TECHNICAL SPECIFICATIONS

Parameter	Accuracy	Resolution	Range
Voltage	0.2%	0.001V	0~1200V
Current	0.2%	0.001A	0~±50000A
Power*	0.5%	0.001kW	0~±60000kW
Energy*	0.5%	0.01kWh	0~9999999.99kWh
Drift with Temperature	<100ppm/˚C		
Stability	0.5‰/year		

* 0.2% accuracy on Power and Energy available upon request

Voltage

Input Range

Voltage	Direct Input0~1000V; Via Hall Effect Sensor0~1200V
Input Impedence	2MΩ
Load	<0.6W
Accuracy	0.2%

Current

Input Range	0~±10A(Direct Input, pick up current 0.01A) 0~±50000A(Via Shunt or Hall Effect Sensor, programmable range)
Shunt	50~100mV(programmable)
Hall Effect Sensor	0~±5V/0-±4V, 4~20mA/12mA±8mA
Power Consumption	2W(Max)
Accuracy	0.2%

Digital Input

Type	Dry Contact
Isolation Voltage	2500Vac

Communication

Type	RS485, half duplex, Optical Isolated
Protocol	Modbus-RTU
Baud rate	1200~38400bps
Isolation Voltage	2500Vac

Output

Relay Output (RO)

Type	Mechanical contact, Form A
Max Load Voltage	250Vac/30Vdc
Max Load Current	3A
On Resistance	100mΩ (Max)
Isolation Voltage	4000Vac
Mechanical Life	5×10^6 times

Digital Output (Photo-Mos)

Load Voltage Range	0~250Vac/dc
Load Current	100mA(Max)
Max Output Frequency	25Hz, 50% duty cycle
Isolation Voltage	2500Vac

Analog Output (AO)

Range	4-20mA/0~20mA; 0~5V/1-5V
Accuracy	0.5%
Load Capacity	Current type, max load resistance: 750 Ohm Voltage type, max load current: 20 mA

Power Supply

Input	(P1)100-240Vac, 50/60Hz, 100-300Vdc (P2) 20-60Vdc
Consumption	3W (typical value)

Environment

Operation Temperature	-25°C ~ +70°C
Storage Temperature	-40°C ~ +85°C
Humidity	5%~95%Non-condensing

Standard Compliance

Safety Standard	IEC 61010-1
EMC Standard	IEC 55011,IEC 61000-6-2,IEC 61000-3-2 IEC 61000-3-3

ORDERING INFORMATION

AcuDC 240 □ □ □ □ □ □ □

- Datalogging: ND: No Datalogging; D: Datalogging (AcuDC 243 Only)
- Communication: NC: No Communication; C: RS485, Modbus RTU
- I/O Option: X0: No I/O; X1: 2DI+2AO (4~20mA/0~20mA); X2: 2DI+2AO (0~5V/1~5V); X3: 2DI+2RO; X4: 2DI+2DO; X5: 2DI+ ±15Vdc
- Power Supply Option: P1: 100-240Vac 50/60Hz, 100-300Vdc; P2: 20-60Vdc
- Current Option: A0: 0~±10A; A1: Shunt (50~100mV); A2: Current Hall Effect Sensor (4~20mA/12mA±8mA); A3: Voltage Hall Effect Sensor (0~±5V/0~±4V)
- Voltage Option: 1000V: Nominal Input Voltage 1000Vdc; 600V: Nominal Input Voltage 600Vdc; 300V: Nominal Input Voltage 300Vdc; 60V: Nominal Input Voltage 60Vdc; 5V: Via Hall Effect Sensor (0-5V/0-4V), ratio settable
- Model: AcuDC 241: Voltage Meter; AcuDC 242: Current Meter; AcuDC 243: Multifunction

Example: AcuDC 243 - 300 - A2 - P1 - X1 - C - D

VOLTAGE HALL EFFECT SENSOR ORDERING INFORMATION (0~5V output)

0.2% accuracy for Power and Energy

Special Order

Please contact your local Accuenergy representative for further details

CURRENT HALL EFFECT SENSOR ORDERING INFORMATION (4~20 mA output)

Special order

Please contact your local Accuenergy Representative for further details

Note:

When the input voltage is above 1000V, 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.

ORDERING INFORMATIOM	
Model	**DC DIN**

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Make Energy Usage Smarter