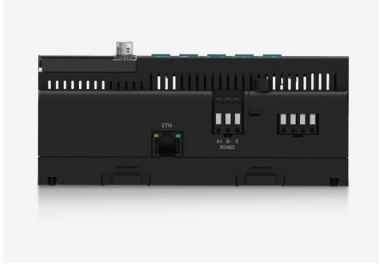
AcuDC-262

Advanced DC Power
and Energy Meter Datasheet









DESCRIPTION

AcuDC-262 is a direct connected DC power and energy meter designed for billing system solutions that requires IEC 62053-41 Class 0.5 revenue grade accuracy measurements. The meter is UL Recognized and used in DC metering solutions for improved monitoring and analysis in highly accurate billing applications. Ideal for industries like EV charging stations, OEM design, data centers, and renewable energy storage.

FEATURES

+ Measures one DC Voltage input and two DC Current inputs
+ Direct connected voltage measurement, at 0.1% accuracy from 12V to 1000V
+ Current measurement at 0.2% accuracy
+ Flexible current measurement via Hall sensor or shunt
+ Bidirectional energy measurement for each current input and system total
+ Cable loss compensation for true energy measurement and billing
+ Three independent configurable data loggers and one trend logger to record readings
+ Communication via Modbus RTU over RS485, and Modbus TCP/IP via Ethernet, for data query and configuration
+ UL Recognized certification and CE conformity

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KEY FEATURES

Revenue Grade Accuracy

+ IEC 62053-41 Class 0.5 rated revenue grade accuracy.
+ 0.1% voltage accuracy, 0.2% accuracy on current, 0.5% accuracy for power, energy, charge, and demand.
+ Complies with NIST Handbook 44 and OCPP requirement of 0.1Wh resolution.

Data Logging

+ Three independent configurable data loggers for power, energy, voltage, current, and amp-hour parameters are recorded.
+ One dedicated trend logger.
+ 1-minute interval records up to 16 months of continuous data.

Multi-Protocol Support

+ Industry standard Modbus RTU via built-in RS485 communication port for data query and acquisition.
+ Modbus TCP/IP via 100 Mbps Ethernet Port.

Anti-Tampering Seals

+ Electronic metrology seal detects and prevents unauthorized configuration changes.
+ Tamper-proof physical seal protects against unapproved opening.

Cable Loss Compensation

+ Corrects for energy reading measurement deviations caused by long cable runs, ensuring precise and reliable power and energy measurements.

Dual Channel and Direct Voltage Input

+ Monitor two port connectors with a single meter.
+ Measurements for DC electrical parameters from one voltage input and two current inputs.
+ Two DC current input via hall sensor or shunt at 0.2% accuracy.
+ Direct connected voltage measurement at 0.1% accuracy from 12V to 1000V.

Global Market Compliance

+ Certification for North American, European and international markets.
+ Meets or exceeds requirements for CTEP, NTEP, Eichrecht, LNE.
+ UL Recognized Certification.



APPLICATIONS

+ DC Fast Electric Vehicle Charging Stations
+ Data Centers
+ Renewable Energy Generation & Storage
+ Solar PV
+ Wind Turbine Power Generation
+ DC Energy Management Systems
+ Power Distribution Systems
+ Industrial DC Control Systems
+ DC Grids
+ Light Rail Transit (LRT) Systems
+ Cellular Tower Monitoring

SPECIFICATIONS

Metering

PARAMETERS	ACCURACY	RESOLUTION	STANDARD	UPDATE RATE	RANGE
Voltage	0.1%	0.01V		20ms & 100 ms	12.00 ~ 1000.00V
Current	0.2%	0.001A		20ms & 100 ms	AcuDC-262-1000V-A1-P2: -100 ~ 100mV AcuDC-262-1000V-A2-P2: 4 ~ 20mA AcuDC-262-1000V-A3-P2: -5 ~ 5V
Power	0.5%	1W		20ms & 100 ms	-9999.999~9999.999 kW
Energy	0.5%	0.1Wh	IEC 62053-41	100 ms	-999999999999.999~999999999999.999 kWh
Charge	0.5%	0.0001Ah		100 ms	-999999999999.999~999999999999.999 Ah
Current Demand	0.5%	0.001A		Configurable	AcuDC-262-1000V-A1-P2: 0.000 ~ 50000A AcuDC-262-1000V-A2-P2: 0.000 ~ 50000A AcuDC-262-1000V-A3-P2: 0.000 ~ 50000A
Power Demand	0.5%	1W		Configurable	-9999.999~9999.999 kW
Ripple Factor	N/A	0.001%		100 ms	0.000~100.000%

Input

CURRENT INPUTS *(Secondary)*	
Rated Current input	A1: Input range -100~100mV A2: Input range 4~20mA A3: Input range -5~5V
Withstand	30 x Imax for 0.5 Second
Pickup Current	A1/A2/A3: Irated * 0.1%
Accuracy	0.2%

VOLTAGE INPUTS	
Metering Range	0~1000V
Accuracy	0.1% (12V ~ 1000V)
Extended Metering Range	Measure from 1000V to 1200V without Specific Accuracy Requirements.
Withstand	5.0kV RMS Isolation for 1 Minute.
Pickup Voltage	10V

ENERGY ACCURACY	
Energy	IEC 62053-41 Class 0.5
Charge	0.5%

Statistics

MAX/MIN with Time Stamp	For each Voltage/Current/Power/ Ripple Factor, with Timestamp Max for each Demand with Timestamp.

Communication

Modbus RTU	Modbus RTU via RS485 Port 2-Wire Shielded Twisted Pair Cable Connection 2400~115200bps
ETHERNET	Ethernet 10M/100M BaseT Modbus TCP/IP

DC CONTROL POWER	
Operating Range	12V~48V SELV
Burden	<3W

Operating Environment

Operating Temperature	–25°C to +70°C (–13°F to +158°F)
Storage Temperature	–40°C to +85°C (–40°F to +185°F)
Rated Operating Relative Humidity	0% to 75% RH
Operation Limit Relative Humidity	0% to 95% RH
Storage and Shipping Limit Relative Humidity	0% to 95% RH
Altitude	0~2000m
OVC Category	OVC II
Pollution Degree	PD 2

Mechanical

Dimensions	174.0mm x 96.0mm x 66.5mm (6.85" x 3.78" x 2.82")
IP Degree or Protection	IP30 Recommended to Install in a Cabinet or Enclosure with an IP54 Rating or Higher.
Environment	Indoor and Dry

Standard Compliance & Certifications

Measurement Standard	IEC 62053-41
EMC Standard	EN55032 Class A, FFC Part 15 Class A
Safety Standard	UL 61010-1, UL 61010-2-30 Measurement Category II for Measuring Input Circuits, Overvoltage Category II for Mains Circuits.

FUNCTION LIST

Function	Parameters
REAL-TIME MEASURING	
Basic	Voltage, ISum, I1, I2, PSum, P1, P2, Ripple Factor U, Ripple Factor I1, Ripple Factor I2,
Demand	Demand I Sum, Demand I1, Demand I2, Demand P Sum, Demand P1, Demand P2,
REAL-TIME ENERGY	
Energy	Import Energy1, Import Energy2, Import Energy Sum, Export Energy1, Export Energy2, Export Energy Sum, Net Energy1, Net Energy2, Net Energy Sum, Total Energy1, Total Energy2, Total Energy Sum,
Charge	Import Charge1, Import Charge 2, Import Charge Sum, Export Charge1, Export Charge2, Export Charge Sum, Net Charge 1, Net Charge 2, Net Charge Sum, Total Charge 1, Total Charge 2, Total Charge Sum,
CABLE LOSS COMPENSATION	
Voltage	V Measure, V Compensated 1, V Compensated 2,
MAX/MIN WITH TIMESTAMPS	Voltage_max, Voltage_min I1_max, I1_min I2_max, I2_min ISum _max, ISum _min P1_max, P1_min P2_max, P2_min PSum _max, PSum _min Ripple Factor U _max, Ripple Factor U _min Ripple Factor I1_max, Ripple Factor I1_min Ripple Factor I2_max, Ripple Factor I2_min I1 (Demand) _max, I2 (Demand) _max, ISum (Demand) _max, P1 (Demand) _max, P2 (Demand) _max, P Sum (Demand) _max,
DATA LOGGING	
Data Logging 1 Data Logging 2 Data Logging 3	Voltage (float), I1 (float), I2 (float), ISum (float), P1 (float), P2 (float), Psum (float), Ripple Factor U (float), Ripple Factor I1 (float), Ripple Factor I2 (float), Demand I1 (float), Demand I2 (float), Demand I Sum (float), Demand P1 (float), Demand P2 (float), Demand P Sum (float), Volts(int), I1 (int), I2 (int), ISum (int), P1(int), P2(int), Psum(int), Ripple Factor U (int), Ripple Factor I1 (int), Ripple Factor I2 (int), Demand I1 (int), Demand I2 (int), Demand I Sum (int), Demand P1 (int), Demand P2 (int), Demand P Sum (int), Import Energy1, Export Energy1, Net Energy1, Total Energy1, Import Energy2, Export Energy2, Net Energy2, Total Energy2, Import Energy Sum, Export Energy Sum, Net Energy Sum, Total Energy Sum, Import Charge1, Export Charge1, Net Charge1, Total Charge1, Import Charge2, Export Charge2, Net Charge2, Total Charge2, Import Charge Sum, Export Charge Sum, Net Charge Sum, Total Charge Sum
TREND LOGGING FOR MAX/MIN/AVERAGE	
Data Logging 4	Voltage (float), I1 (float), I2 (float), ISum (float), P1 (float), P2 (float), Psum (float), Ripple Factor U (float), Ripple Factor I1 (float), Ripple Factor I2 (float), Demand I1 (float), Demand I2 (float), Demand I Sum (float), Demand P1 (float), Demand P2 (float), Demand P Sum (float),
STATISTICS	

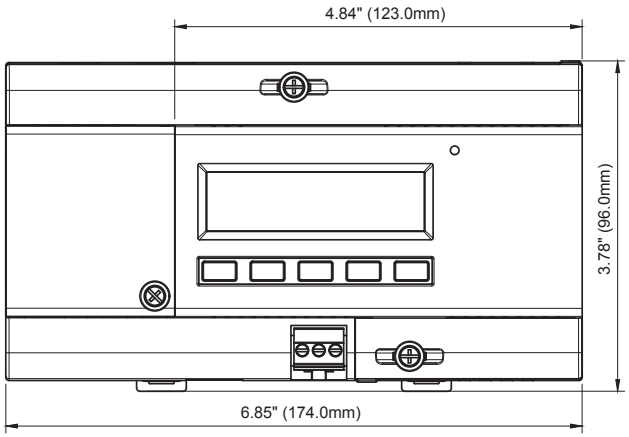
FUNCTION LIST

MAX with Time Stamp MIN with Time Stamp	Voltage, Current, Power, Ripple Factor are timestamped. Max for each demand with timestamp
TIME	
Device Run-Time	Hours
Device Load-Time	Hours
Device Clock	Year-Month-Date-Hour:Minutes:Seconds, Weekdays
ONBOARD MEMORY	
Bytes	16MB
DISPLAY	
LCD	256x64 Pixel

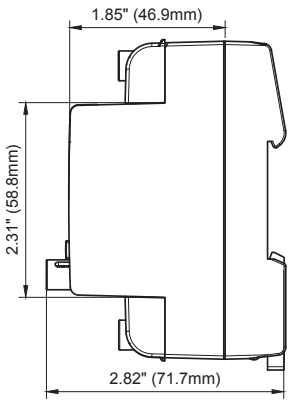
DIMENSIONS

AcuDC-262 Dimensions

Front View

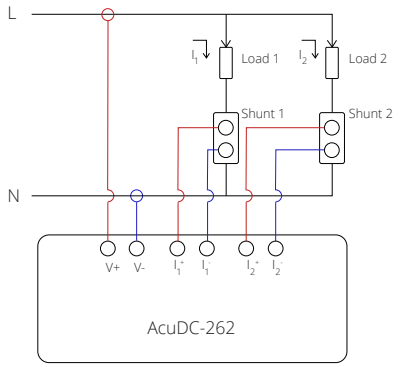


Side View

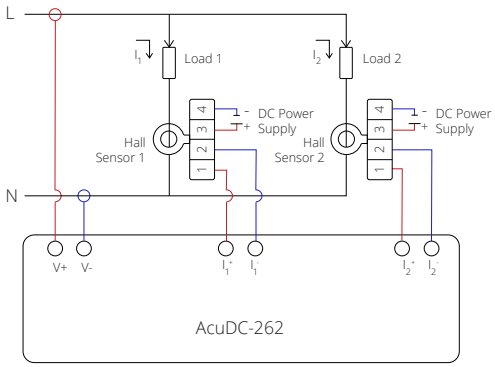


WIRING DIAGRAM

Voltage & Current Wiring Using Shunt



Voltage & Current Wiring Using Hall Sensor



ORDERING INFORMATION

Meter Model	Voltage Input	Current Input	Power Supply
AcuDC-262: DC Power Meter	**1000V:** 1000V Direct Connection	**A1:** External 0-100mV Shunt	**P2:** 12-48Vdc Input
		A2: External 4-20mA Hall Effect Sensor	
		A3: External -5V to 5V Hall Effect Sensor	
Ordering Example:	**AcuDC-262-1000V-A1-P2** **AcuDC-262-1000V-A2-P2** **AcuDC-262-1000V-A3-P2**		

ADDITIONAL SENSORS †

Model	Rated Input	Rated Output/Voltage Drop	Directional
Shunt	**50A**	**75mV**	**N/A**
	100A		
	200A		
	300A		
	400A		
	500A		
	600A		
	1000A		
	2000A		
	4000A		
HAK21/40	**HAK21:** 50A, 100A, 200A	**A2:** 4-20mA	**Blank:** Uni-directional
	HAK40: 400A, 600A, 1000A	**A3:** 0-5V	**B:** Bi-directional
HAB-16555	**1000A**	**A2:** 4-20mA	**Blank:** Uni-directional
	2000A	**A3:** 0-5V	**B:** Bi-directional
	3000A		
	4000A		
	5000A		

Ordering Example:	
Shunt	**Shunt-4000A/75mV**
HAK21/40	**HAK21-100:A2** **HAK21-200:A3-B** **HAK40-400:A2** **HAK40-600A:A3-B**
HAB-16555	**HAB 16555-1000:A2** **HAB 16555-2000:A3-B**

†**Note:** Additional sensors and shunts are sold separately.

MOD-TRONIC INSTRUMENTS LIMITED

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Specs Subject To Change Without Notice.

ACCUENERGY

ISO 9001, 14001
& 45001 Certified

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