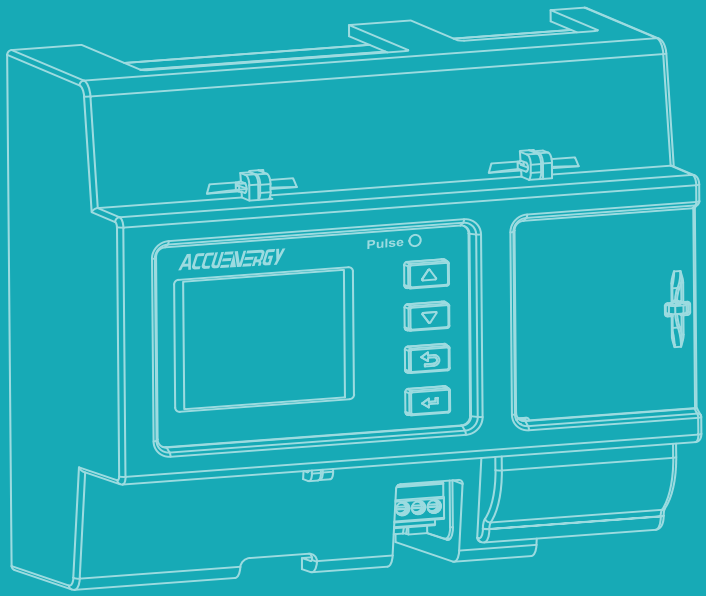
AcuRev 1320

DIN-Rail Revenue-Grade Energy Meter & Power Quality Analyzer

QUICK SETUP GUIDE



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MODELS			
	AcuRev-1321-mA	AcuRev-1321-mV-MD	AcuRev-1322-mA-MC
	AcuRev-1321-mV	AcuRev-1321-mV-CP	AcuRev-1322-mA-MD
	AcuRev-1321-mA-MC	AcuRev-1322-mA	AcuRev-1322-mV-MD
	AcuRev-1321-mA-MD	AcuRev-1322-mV	AcuRev-1322-mV-CP

Important Safety Notice

Accuenergy is not responsible or liable for any damage or injuries caused by improper meter installation and/or operation.

The following symbols can be found either in this document or on the product.

ELECTRIC HAZARD: Indicates information about procedures which must be followed to reduce the risk of electric shock and danger to personal health.

WARNING ALERT: Indicates a hazardous circumstance which may result in severe injury or death.

INFO: Provides additional information before an action shall be taken by the user.

WARNING ALERT

Installation must be performed by qualified personnel in accordance with local electrical codes.

Safety Requirements

- De-energize and ground all circuits before installation
- Use appropriate PPE (insulated gloves, arc-flash protection, etc.)
- Install a disconnect device within reach of the operator
- Install inside a certified electrical enclosure

Legal Notice

This AcuRev 1320 quick setup guide provides informational and operational guidance regarding the use of the meter. While effort has been made to ensure the accuracy, reliability, and completeness of the information at the time of publication, Accuenergy assumes no responsibility for any errors, omissions, or misunderstandings in this document and reserves the right to modify its content at any time without prior notice.

Users should verify with Accuenergy or their authorized local representative that the document in use is the latest version and strictly adhere to the installation, operation, and maintenance procedures specified herein. Accuenergy shall not be held liable for any damages or consequences resulting from improper use or failure to comply with the provisions of this document. This quick setup guide may not be altered or reproduced in whole or in part by any means without the expressed written consent of Accuenergy.

1. Overview

The AcuRev 1320 Series is a DIN rail, three-phase AC power and energy meter ideal in panel enclosure builds.

Follow these high-level steps to commission the AcuRev 1320:

1. Mount the AcuRev 1320 Series meter on DIN rail
2. Connect the power supply
3. Wire the voltage inputs
4. Wire the current transformers (CTs)
5. Configure the wire mode
6. Configure Ethernet or RS485 communications
7. Apply power and verify measurements
8. Connect to monitoring software or system

The default settings allow for immediate communication after installation.

2. Appearance and Dimensions

The AcuRev 1320 is a DIN-rail mounted multifunction power meter.

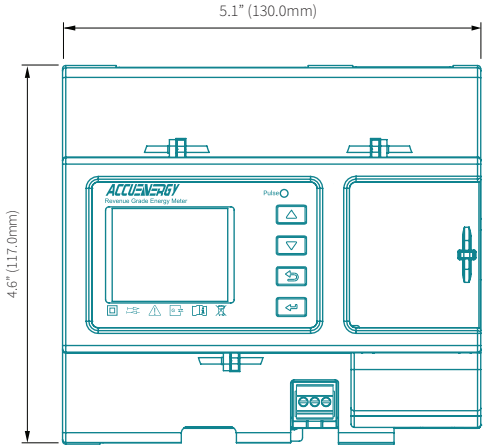
Key Features

- Compact DIN rail design
- Integration display and navigation keys
- Dual Ethernet and RS485 communication

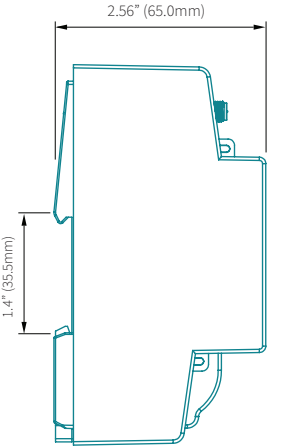
Dimensions

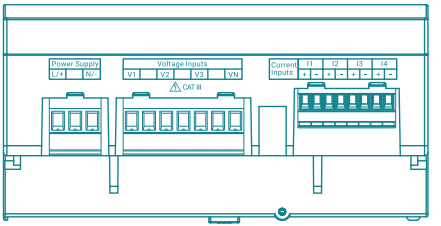
- Meter: 117mm x 130mm x 65mm

FRONT VIEW

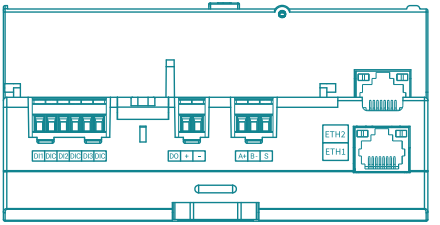


SIDE VIEW





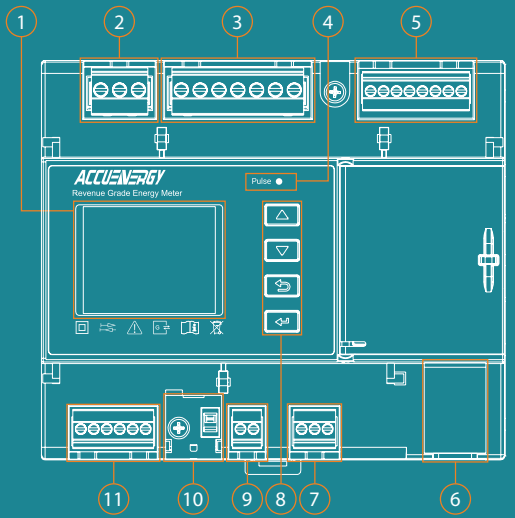
TOP VIEW



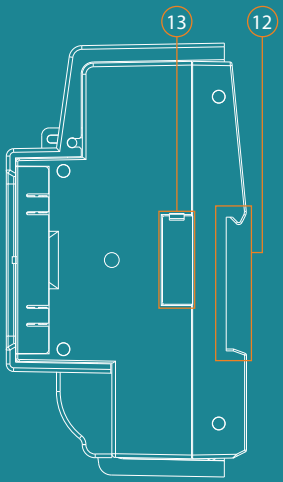
BOTTOM VIEW

PART NAME	DESCRIPTION
1. LCD Screen	On-Board Full Colour Display
2. Power Supply Terminal	Control Power Input
3. Voltage Input Terminal	3 Voltage Inputs and Neutral Input
4. Pulse LED Indicator	Pulse Indication
5. Current Input Terminal	4-Channel Current Input
6. Ethernet Ports	Dual RJ45 Ethernet Ports
7. RS485 Terminal	Modbus RS485 Communication Port
8. Navigation Keys	Four Buttons Used to Select Settings
9. Digital Output	1-Channel DO Port
10. Seal Switch	Enable and Disable the Seal Status
11. Digital Input	3-Channel DI Port
12. DIN Rail	Used on 35 mm DIN Rail Mount
13. Expansion Module	Communication Expansion Module

FRONT VIEW



SIDE VIEW



3. Operating Environment

SAFETY WARNING

Ensure the following specifications are met. Failure to do so may affect accuracy, impair system function, damage hardware, or pose safety risks.

- Indoor installation within an enclosure
- Temperature: -25°C to +70°C (–13°F to 158°F)
- Humidity: 0 - 95%, non-condensing
- Altitude: ≤ 2000m
- Pollution Degree: 2

Installation outside of these limits may affect accuracy and safety.

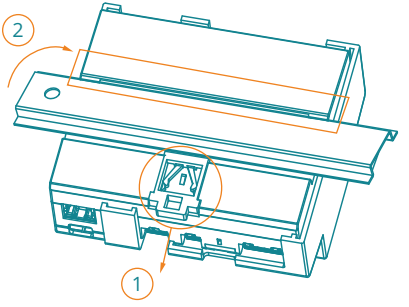
4. Installation Method

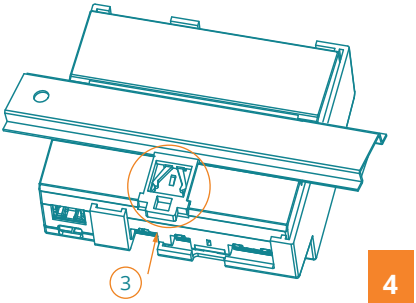
4.1 Cabinet Installation

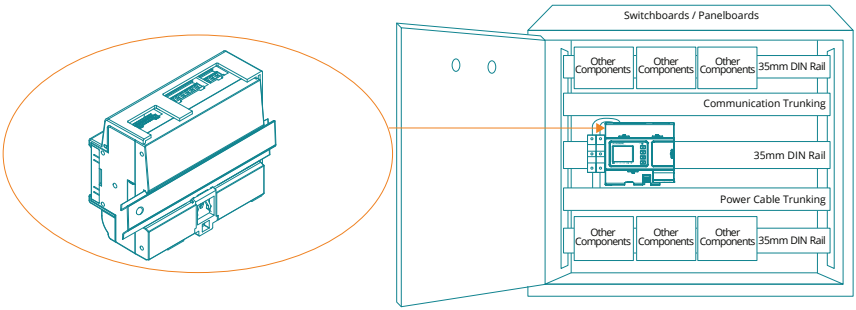
The AcuRev 1320 is designed to be installed on a standard 35mm DIN rail.

1. From the back of the meter, pull down the mounting clips ①.
2. Align and position the top of the meter onto the top ② of the DIN rail.
3. Press the meter into place and release the clip lock ③ until locked.
4. Ensure the meter is firmly secure onto the DIN rail.

Ensure clearance for wiring and removal.







INFO

Power cables and communication cables must not be routed in the same trunking to prevent EMI.

4.2 Flush Panel Installation

In the flush panel (embedded) installation method, the AcuRev 1320 is mounted on a standard 35mm DIN rail inside an enclosure. A cut-out on the cabinet door or panel surface, sized to expose the display and four keypad buttons, allows the meter to be read and operated from outside without opening the door.

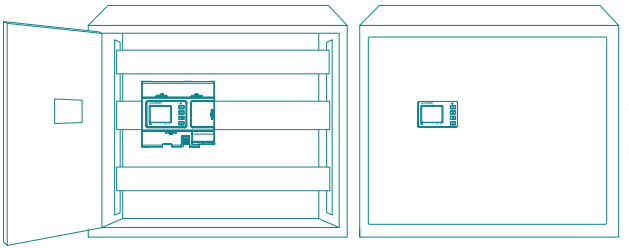
1. Cut an opening in the cabinet door or panel surface to the dimensions specified. Ensure cut-out edges are smooth and free of burrs.

2. From the back of the AcuRev 1320, simultaneously pull down the clip locks in unison, as shown in ① of the figure above.

3. Position the back of the AcuRev 1320 so it is facing the DIN rail. Place the AcuRev-1320 two upper mounting brackets over the DIN rail groove. Fit the AcuRev-1320 onto the bottom mounting bracket ② as illustrated in the figure above.

4. Push the two clips ③ back up until a click sound is heard, indicating the AcuRev-1320 is securely locked onto the DIN rail.

5. Close the cabinet door and verify that the display and all four buttons are fully visible and accessible through the cut-out opening.



INFO

When installing the meter in switchboards or panelboards, sufficient clearance must be maintained at the front, rear, top, and bottom of the device to facilitate wiring and removal.

INFO

Power cables and communication cables must not be routed in the same trunking to prevent EMI.

5. Power and Wiring Overview

SAFETY WARNING

Use caution when working on voltage and current circuits, including cables and terminal blocks.

- Do not supply input voltage above the rated maximum limit of the meter and devices connected.
- Do not perform high voltage tests or insulation tests on the output, input or communication terminals.
- Use a dry cloth to wipe meter if necessary.

5.1 Terminal Wiring Specifications

The following signals and ports are connected through wires or cables with the following specifications.

To connect and disconnect the wires use a screwdriver 3 x 0.5 mm conforming to DIN 5264.

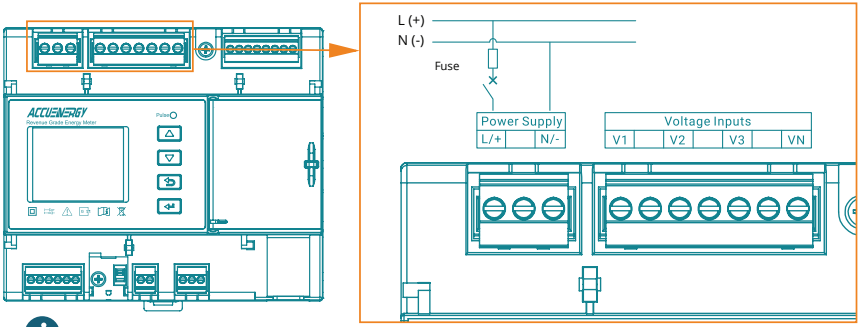
TERMINAL NAME	FUNCTION	TERMINAL TYPE	TERMINAL APERTURE	VOLTAGE & TEMP. RATING	SCREW TORQUE
L/+, N/–	Power Supply	Plug-In Type	3.3 mm² AWG12	600V, 105°C	0.66 N·m (6.0 in-lbs)
Va, Vb, Vc, VN	Three Phase Voltage Input	Plug-In Type	3.3 mm² AWG12	600V, 105°C	0.66 N·m (6.0 in-lbs)
Ia, Ib, Ic, In	4-Channel Current Input	Plug-In Type	1.3 mm² AWG16	300V, 105°C	0.2 N·m (1.7 in-lbs)
DI1, DI2, DI3	3-Channel Digital Input	Plug-In Type	1.3 mm² AWG16	300V, 105°C	0.2 N·m (1.7 in-lbs)
DO1	1-Channel Digital Output	Plug-In Type	1.3 mm² AWG16	300V, 105°C	0.2 N·m (1.7 in-lbs)
A, B, S	RS485 Port	Plug-In Type	1.3 mm² AWG16	300V, 105°C	0.2 N·m (1.7 in-lbs)
ETH1, ETH2	Ethernet Port	Plug-In Type			N/A (RJ45, No Screw)

5.2 Power Supply Terminal Wiring

The AcuRev 1320 supports 100–480 VAC (50/60 Hz) OVC II and 100V-300 VAC (50Hz/60Hz) OVC III power supply options. Contact the manufacturer for other power supply requirements.

Install a 20 A/600 VAC fuse for the power supply connection.

A regulator is recommended where the voltage is not stabilized.



INFO

A fuse (20 A/600 VAC) is mandatory for the AcuRev 1320 power supply.

5.3 Voltage Input Terminal Wiring

The voltage input wiring varies depending on the wiring method used. Refer to the wiring diagrams below for details.

- The meter supports an input range of 69-480VAC (L-N) or 69-830VAC (L-L), CAT III
- Use a 1A/500VAC fuse per phase

5.4 Current Input Terminal Wiring

AcuRev 1320 supports up to four current inputs.

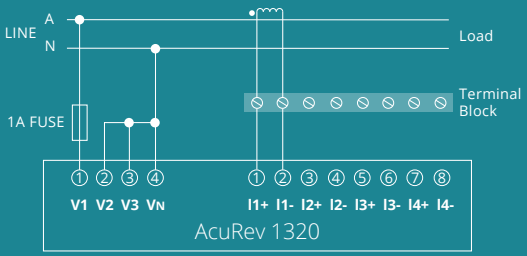
Ensure the correct polarity when wiring the CT leads to the meter current input terminal.

ELECTRIC HAZARD

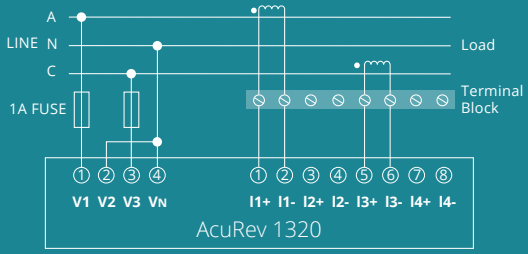
Ensure all CT secondary connections are secure to prevent hazardous voltages, electric shock, and equipment damage.

The AcuRev 1320 supports six different current input wiring methods.

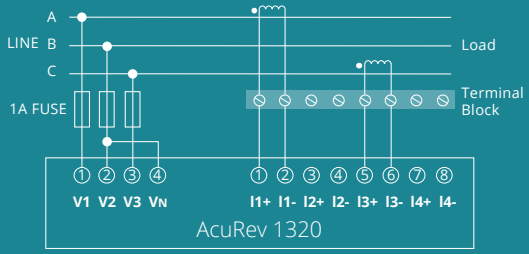
1 Element 2 Wire (1LN, 1CT)



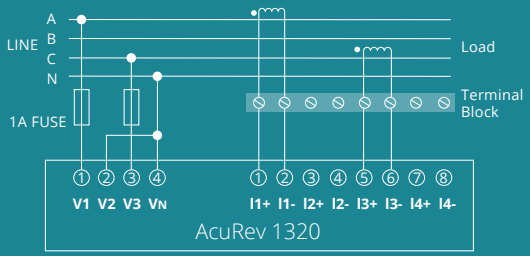
2 Element 3 Wire 1 Phase (1LL, 2CT)



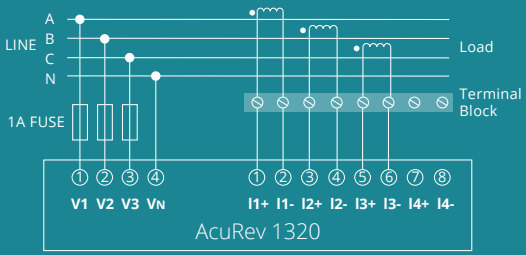
2 Element 3 Wire Delta (2LL, 2CT)



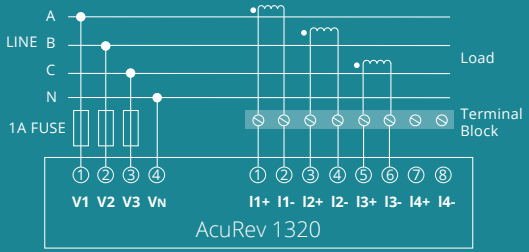
2 Element 3 Wire Network (2LN, 2CT)



3 Element 4 Wire Wye (3LN, 3CT)



3 Element 4 Wire Delta (3LL, 3CT)



6. Communication

6.1 Ethernet Ports

The AcuRev 1320 includes dual Ethernet ports which support both Modbus TCP and BACnet/IP.

INFO

The two Ethernet ports are not independent and will share the same IP configuration.

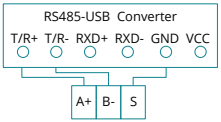
DEFAULT ETHERNET NETWORK SETTINGS	
IP Address	192.168.1.254
Subnet	255.255.255.0
Gateway	192.168.1.1

6.2 RS485 Port

The AcuRev 1320 supports Modbus RTU and BACnet MS/TP over RS485 communication. Use a shorter cable when connecting multiple devices to the same network or use higher baud rate. When connecting to a personal computer use a USB-RS485 converter cable.

The terminals are denoted A+, B-, and S.

A+	Positive Differential
B-	Negative Differential
S	Shield Connection



DEFAULT RS485 SETTINGS	
Slave ID	1
Baud Rate	19,200
Parity	None1 (No Parity, One Stop Bit)

Guidelines to Improve RS485 Communication Quality

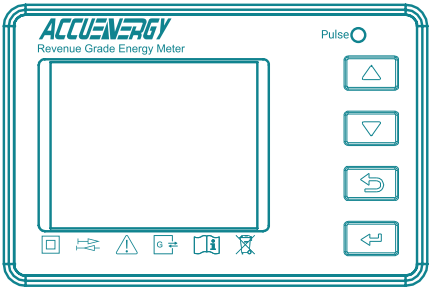
- Max cable length: 1200m

- Use shielded twisted pair cable
- Avoid star or T type topology
- Keep communication cable away from possible noise sources
- Add termination resistor for long networks, typical 120-300Ω, 0.25W

7. Operation and Basic Configuration

7.1 Display and Navigation

AcuRev 1320 front panel is designed with four function keys for easy access to the display screen.



KEY		FUNCTION
▲	Up	• Increment number values (edit mode). • Navigate between menu items. • Switch to the previous screen.
▼	Down	• Decrement number values (edit mode). • Navigate between menu items. • Switch to the next screen.
↩	Return	• Return to the previous menu.
↵	Confirm	• Confirms the selected setting. • Advances to next menu level • Enters edit mode.

7.2 Accessing Settings Screen

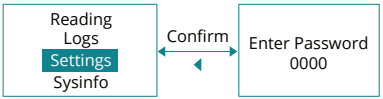
Home > Settings

When the meter is booted, the LCD display will start at the Home screen.

1. Press the **Up** and **Down** keys to select the **Settings** option, then press Confirm key to enter into Setting screen.

2. Enter Password prompt to input a four-digit password to access Settings will appear.

3. Use **Up/Down** function keys to enter password, then press **Confirm** key to submit the correct password to access the Settings. By default, the password is 0000.



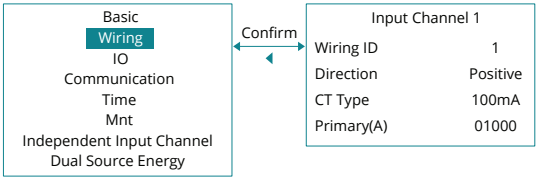
7.3 Wiring Settings

Home > Settings > Wiring

Select the Wiring option to set the Input Channel and User Channel configurations. Ensure correct configurations are set according to the CT ratio, current channels, and sampling voltage.

1. To access the Wiring configuration screen, navigate to the **Settings** screen. Select the **Wiring** option and press the **Confirm** key.

2. Use the function keys to navigate between different wiring options and press the **Confirm** key to start configuring the selected option.



INFO

The AcuRev 1320 is compatible with 80mA, 100mA, 333mV, and Rogowski coil (RCT) current transformers.

INFO

The meter supports both **forward** and **reverse** current input directions. If the input is wired in reverse, set the current direction to **negative** using the **Acuview 2** software or directly from the meter display settings. Otherwise, the power and energy readings will appear **negative.**

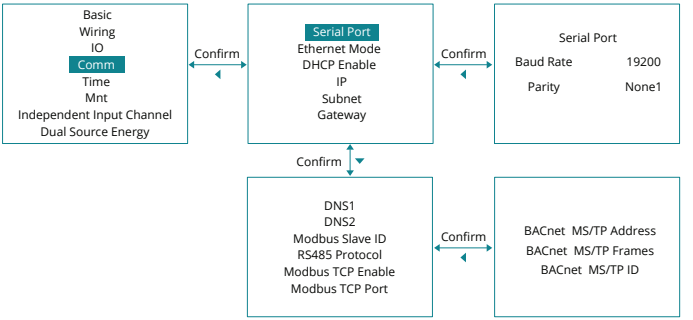
7.4 Communication Settings

Home > Settings > Comm

The Communication settings allows users to configure the Modbus TCP via Ethernet; Modbus RTU and BACnet MS/TP via RS485 connection.

1. To access the Communication configuration screen, navigate to the Settings screen. Select the **Comm** option and press the **Confirm** key.

2. Use the **Up/Down** keys to navigate between different communication options and press the **Confirm** key to start configuring the selected option.



8. Specifications

CONTROL POWER	
POWER SUPPLY	
Operating Range	100 V – 300 VAC, 50 Hz/60 Hz; OVC III 100 V – 480 VAC, 50 Hz/60 Hz; OVC II
Burden	< 6 W

Withstand	3600 Vac, 50/60Hz for 1 minute
NOTE: 480VAC limited to L-L connections.	

MEASUREMENT INPUT	
VOLTAGE INPUT	
Metering Range	69 - 480 Vac L-N/830 Vac L-L, CAT III
Withstand	4 kVRMS 1 minute
Pickup Voltage	10 Vac
Accuracy	0.1%

CURRENT INPUTS	
Nominal Current	mA models: 80 mA, 100 mA mV models: 333 mV, RCT Rogowski Coil (120 mV)
Range	mA models: 0 - 120 mA mV models: 0 - 400 mV
Pickup	mA models: 0.06 mA mV models: 0.25 mV
Max Voltage	1.2 V
Accuracy	0.1%

3 DIGITAL INPUTS	
Type	Dry Contact
External Power Supply	20~30 VAC / 20~60 VDC
Maximum Frequency	50 Hz with a 50% Duty Cycle (10 ms ON, 10 ms OFF)
SOE Resolution	2 ms
On-State Voltage	15 V
Off-State Voltage	5 V
Isolation Voltage	2500 Vac

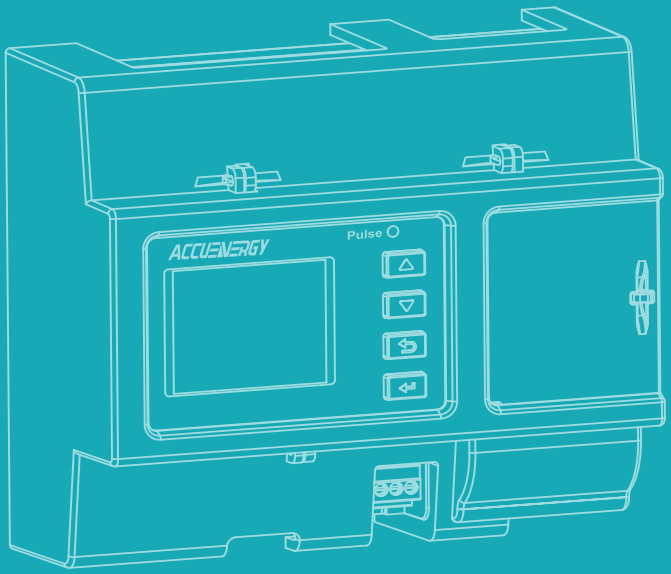
OUTPUT
1 DIGITAL OUTPUT

Type	Photo-MOS
Voltage Range	0 ~ 30 Vac / 0 ~ 60 Vdc
Max Load Current	100 mA
Maximum Frequency	25 Hz with 50% Duty Cycle (20 ms ON, 20 ms OFF)
Isolation Voltage	2500 VAC

COMMUNICATIONS	
RS485	
Baud Rate	9600 – 115200 bps
Protocols	Modbus RTU, BACnet MS/TP
Ethernet	
Type	10/100 Mbps
Protocols	Modbus TCP, HTTPS Web Server, HTTP/HTTPS Data Post

OPERATING ENVIRONMENT	
Location	Indoor
Pollution Degree	2
Rated Operating Temperature Range	–25 °C to +70 °C (-13 °F to +158°F), 0 % to 75 % RH
Operating Temperature Range	–40 °C to +85 °C (-40 °F to +185°F), 0 % to 95 % RH
Storage and Shipping Temperature Range	–40 °C to +85 °C (-40 °F to +185°F), 0 % to 95 % RH
Altitude	0 to 2000 m
IP Rating	IP54: Panel Mount and Touchscreen Display, Front Panel. IP30: Panel Mount Rear, DIN Rail Mount, I/O Modules. Recommended to install in a cabinet or enclosure with an IP54 rating or higher.

STANDARD COMPLIANCE & CERTIFICATIONS	
Measurement	IEC 62053-22 Class 0.1S
CE	LVD (EN61010-1), EMC (EN61326-1), RoHS 2 (EN50581)
Safety	IEC UL 61010-1, IEC 61010-2-30, IEC 62052-31
Certifications	MID (EN50470-3), UL Listed, CTEP, Measurement Canada Approved



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Specs Subject To Change Without Notice.