AcuPanel 9104X

Pre-Wired Power & Energy Control Panel Datasheet





DESCRIPTION

The AcuPanel 9104X is a convenient, pre-configured meter enclosure that delivers streamlined meter deployment in OEM or retrofit projects. It is ideal for when installation inside an electrical distribution panel is unavailable, in harsh environments to safeguard instrumentation against the elements, or to limit the time and complexity of installation. Each AcuPanel undergoes rigorous quality testing to ensure years of dependable service.

FEATURES

+ NEMA 4X rated polycarbonate enclosure suitable for both indoor and outdoor use.
+ The lockable, plug-and-play housing provides protection against unwanted tampering and the elements.
+ Clean, factory pre-wiring for fast, reliable installation. All necessary fuses, shorting blocks, & terminal blocks are pre-installed and labeled.
+ Self-powered panel does not require a separate power supply.
+ Wires can be run through pluggable, pre-cut holes.
+ Simple grounding is included inside each enclosure.
+ No control transformer needed.
+ Compatible with the Acuvim II, Acuvim L and AcuRev 1310 Series meters.

Mod-Tronic | www.mod-tronic.com | sales@mod-tronic.com | 1-800-794-5883

KEY FEATURES

Revenue Grade Metering

+ Comes with Acuvim II Acuvim L or AcuRev 1310 Meters.
+ Acuvim L compliant with ANSI C12.20 class 0.2 & IEC62053-22 class 0.2s.
+ Acuvim II compliant with ANSI C12.20 class 0.1 & IEC 62053-22 class 0.1s.
+ AcuRev 1310 compliant with ANSI C12.20 class 0.5 & IEC 62053-22 class 0.5s.

Basic Power Quality Monitoring

+ Acuvim II comes with IEC 61000-4-30 Class S compliant power quality event measurements.
+ Measures 2nd to 63rd harmonics.
+ IEC 61000-4-30 Class S compliant waveform capture for voltage sag, voltage swell, voltage interrupt, and current swell.

NEMA 4X Rated Enclosure

+ Built with NEMA 4X rated polycarbonate enclosure.
+ Offering protection against dust, water, extreme temperature, and harsh environmental conditions.
+ Suitable for both indoor and outdoor uses.
+ Superior protection to metering equipment.

UL Certified

+ UL Listed certifies that the AcuPanel 9104X control panel has been rigorously tested and meets UL safety standards for its intended use and environment.
+ UL 508A Certified confirms the panel is properly designed and assembled using UL-approved components to minimize electrical hazards.
+ Every AcuPanel 9104X unit is tested to ensure dependable long-term performance.

Self-Powered Design

+ No separate power source required for AcuPanel 9104X control panel.
+ Supports direct line-to-line connection for simplified wiring.
+ Reduces installation time for faster deployment.
+ Ideal for OEM projects that requires efficient, quick setup.

Custom OEM Solutions

+ Display your logo with personalized branding.
+ Integrate custom OEM components like gateways, cellular modems, or power supplies.
+ Adjust panel dimensions to meet specific space or equipment needs.
+ Consult our energy metering specialists for a customized panel solution tailored to your unique application.

Pre-Wired & Pre-Configured

+ All components are pre-wired and pre-configured.
+ Colour-coded and clearly labelled for easy identification and installation.
+ Minimizes wiring errors and simplifies future maintenance.
+ Speeds up installation and deployment while ensuring long-term reliability.

Secure Design

+ Featuring a lockable enclosure to prevent unauthorized access.
+ Protected with metrology seals against tampering.
+ Ensures data integrity and extend the lifespan of critical metering devices.

APPLICATIONS

+ Submetering
+ Energy Storage, Microgrids, and VPPs
+ Power Generation
+ SCADA Systems
+ Building Automation and IoT
+ PDUs and Data Centers
+ Energy Management Systems
+ Substation and Distribution Systems
+ Transformer Monitoring
+ Measurement & Verification

ACUPANEL SPECIFICATIONS

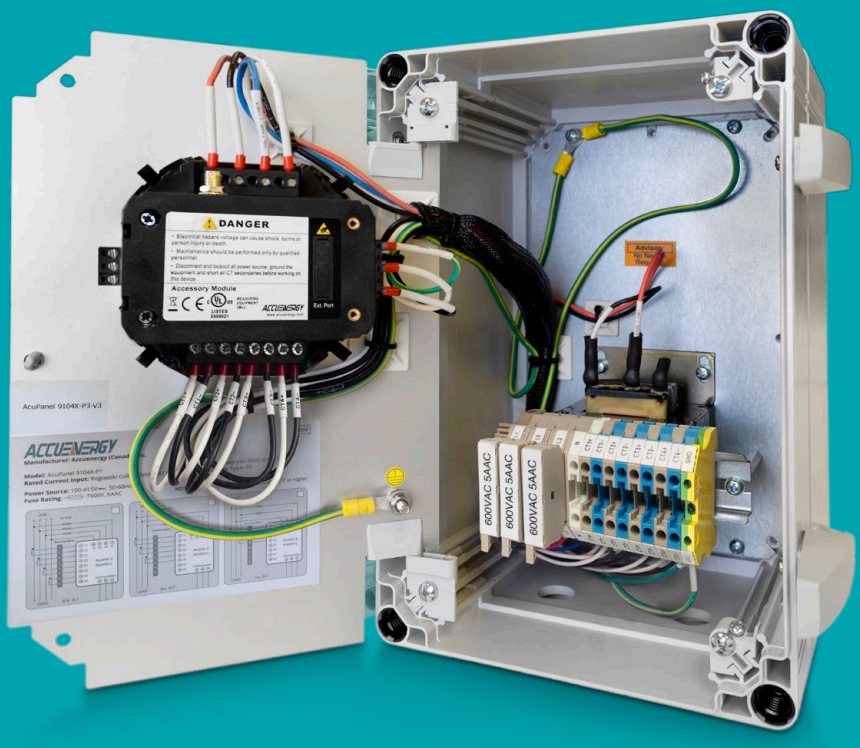
AcuPanel 9104X



Compatible Meters	 Acuvim II  Acuvim L  AcuRev1310
Application	Indoor or outdoor installations that require exceptional environmental protection and weather resistance
Safety Certifications	UL508A, UL61010-1
NEMA Rating	NEMA 4X
Material	Polycarbonate
Direct Sunlight Protection	Opaque Cover Option The ultimate meter LCD protection against direct UV radiation.
Anti-Corosive	•
Dust Proof	•
Suitable for Indoor Use	•
Suitable for Outdoor Use	•
Pre-Wired	•

EACH STANDARD, PRE-WIRED ENCLOSURE INCLUDES:

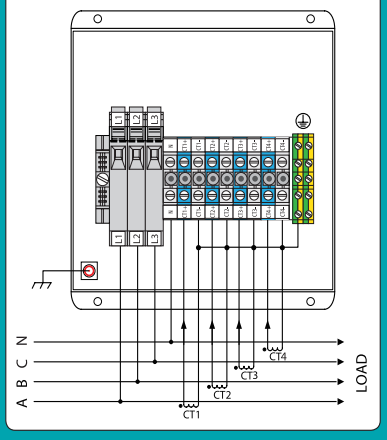
+ Terminal blocks for current transformer input
+ Shorting blocks for current transformers
+ Terminal blocks for voltage inputs
+ Three industrial-grade fuses



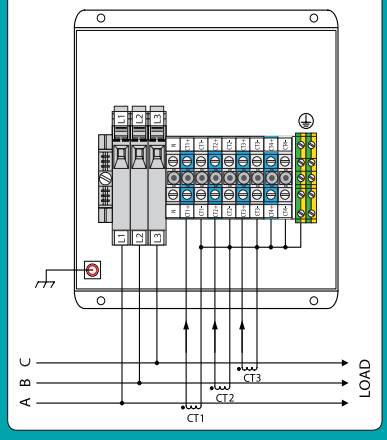
WIRING DIAGRAMS

Typical Wiring with 5A/1A Current Input

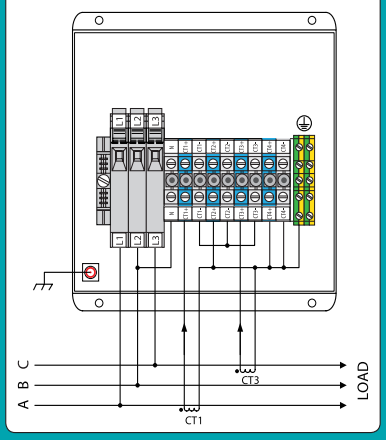
3 Element 4 Wire Wye: 3LN, 3CT**
(V < 400LN/690LL)



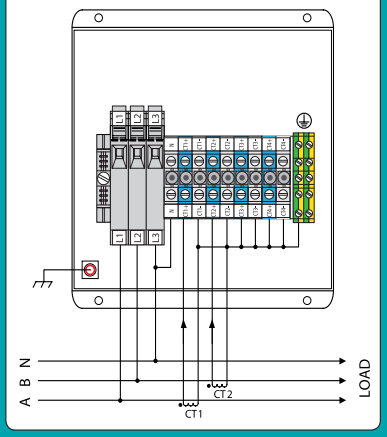
3 Element 4 Wire Delta: 3LL, 3CT
(V < 400LN/690LL)



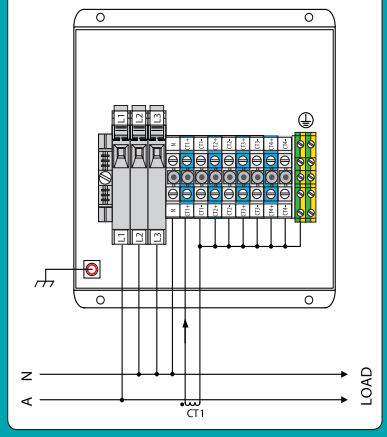
2 Element 3 Wire Delta: 2LL, 3CT
(V < 690LL)



2 Element 3 Wire 1 Phase: 1LL, 2CT
(100-415VAC LN)



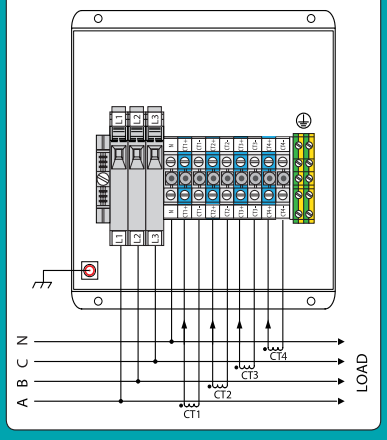
1 Element 2 Wire: 1LN, 1CT
(100-415VAC LN)



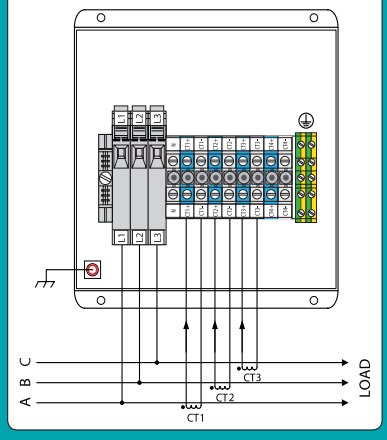
*Note: **Neutral CT is optional*

Typical Wiring with RCT/mV/mA Current Input

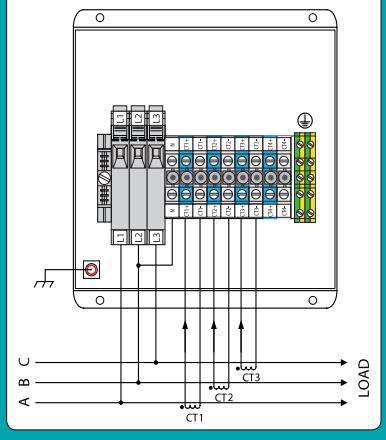
3 Element 4 Wire Wye: 3LN, 3CT**
(V < 400LN/690LL)



3 Element 4 Wire Delta: 3LL, 3CT
(V < 400LN/690LL)



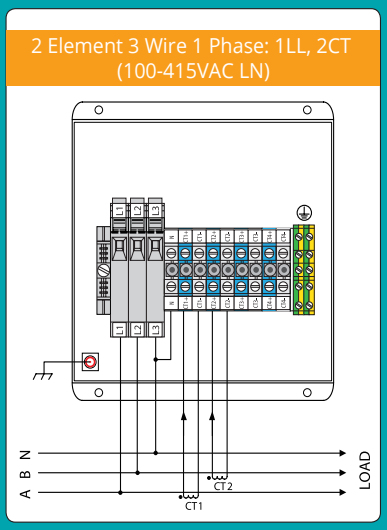
2 Element 3 Wire Delta: 2LL, 3CT
(V < 690LL)



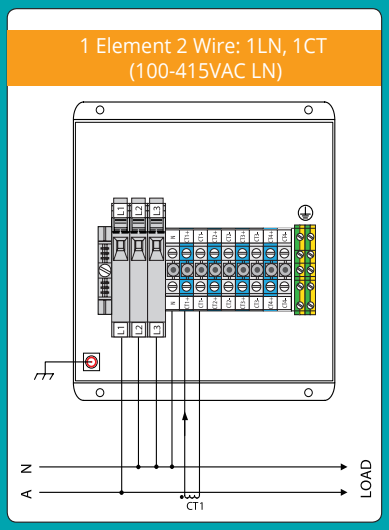
*Note: **Neutral CT is optional*

Typical Wiring with RCT/mV/mA Current Input

2 Element 3 Wire 1 Phase: 1LL, 2CT (100-415VAC LN)



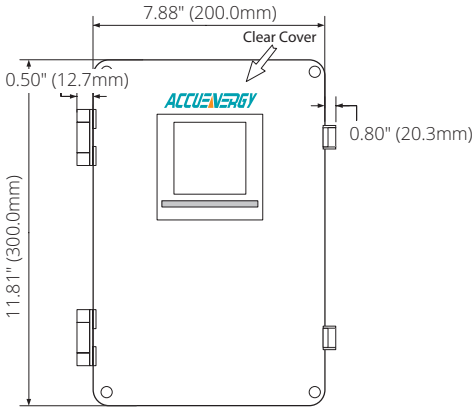
1 Element 2 Wire: 1LN, 1CT (100-415VAC LN)



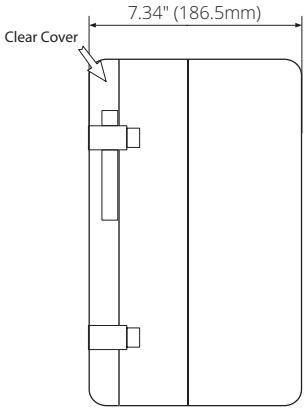
*Note: **Neutral CT is optional*

DIMENSIONS

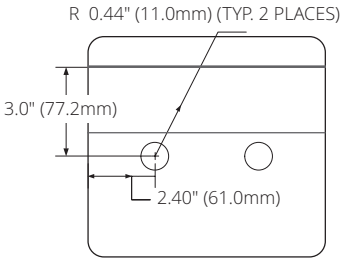
AcuPanel 9104X Waterproof Polycarbonate Panel



Front View



Side View



Bottom View

SOFTWARE INTEGRATION

AcuCloud

Cloud-based energy management platform allows for seamless access to data from Accuenergy meters or other power meters. Equipped with advanced tools to facilitate energy data management by enabling real time data retrieval, comprehensive analysis, and easy integration with external systems for importing and exporting data.



ACCESSORIES & COMPONENTS



AcuPanel 9104X Opaque Cover

The opaque cover is designed to protect the meter screen from potential damage caused by prolonged exposure to direct sunlight. By effectively shielding the screen, it prevents the LCD display from fading, discolouring, or deteriorating over time, ensuring that the meter maintains its visibility and functionality even in the long run.



AC Current Transformers

Our high-accuracy industrial split-core and flexible current transformers deliver top-tier specifications and outstanding performance in the industry.



Test Lead & Voltage Clip

The testing leads are equipped with two banana connectors to ensure a firm connection. The voltage clip is housed in an EPR-insulated casing, providing CAT IV safety certification and a durable alligator clamp for dependable installation.

ORDERING INFORMATION

Pre-Wired Control Panel with Acuvim II

Pre-Wired Panel	- Meter Model	- Current Input	- Power Supply	- Communication Module Option*	- 2nd I/O Option*	- 3rd I/O Option*	- Opaque Cover‡
AcuPanel 9104X: NEMA 4X Indoor / Outdoor Waterproof Polycarbonate Panel	**IIR:** Acuvim II with Data Logging	**5A:** 5A or 1A (Input Field Selectable)	**P1V3:** 100~415Vac, 50/60Hz, 100-300Vdc	**0:** None	**0:** None	**0:** None	**OPAQUE**
	IIW: IIR + Waveform Capture and PQ Event Logging	**mV:** 333mV Input and Rogowski Coil (Input Field Selectable)	**P2V3:** 20-60Vdc	**WEB2:** Modbus-TCP/IP, BACnet-IP, SNMP V3, DNP 3.0 V2, IEC 61850 2nd Edition, SMTP, NTP, HTTP post, HTTPs post, FTP post, sFTP server, HTTPs webserver, dual RJ45, WiFi	**IO1:** 6DI, 2RO, 1 DI Power Supply	**IO1:** 6DI, 2RO, 1 DI Power Supply	
		mA: 80mA / 100mA / 200mA (Input Field Selectable)	**P3V3:** 480Vac	**WEB2-D:** Modbus-TCP/IP, BACnet-IP, SNMP V3, DNP 3.0 V2, IEC 61850 2nd Edition, SMTP, NTP, HTTP post, HTTPs post, FTP post, sFTP server, HTTPs webserver, dual RJ45, Ethernet Port	**IO2:** 4DI, 2AO, 2DO	**IO2:** 4DI, 2AO, 2DO	
			P4V3: 600Vac	**PROFI:** PROFIBUS-DP	**IO3:** 4DI, 2RO, 2AI	**IO3:** 4DI, 2RO, 2AI	
				RS485: Second RS485 Port			
				IO1: 6DI, 2RO, 1 DI Power Supply			
				IO2: 4DI, 2AO, 2DO			
				IO3: 4DI, 2RO, 2AI			

Ordering Examples: **AcuPanel 9104X-IIR-5A-P1V3-WEB2-IO1-IO3, AcuPanel 9104X-IIR-MV-P1V3-WEB2-OPAQUE**

Pre-Wired Control Panel with Acuvim L

Pre-Wired Panel	Meter Model	Current Input	Power Supply	Communication Module Option*	2nd I/O Option*	3rd I/O Option*	Opaque Cover†
AcuPanel 9104X: NEMA 4X Indoor / Outdoor Waterproof Polycarbonate Panel	**CL:** General Meter	**5A:** 5A or 1A (Input Field Selectable)	**P1V4:** 100-415Vac, 50-60Hz 100-300Vdc	**0:** None	**0:** None	**0:** None	**OPAQUE**
	EL: CL + TOU and PQ parameters	**mV:** 333mV Input and Rogowski Coil (Input Field Selectable)	**P2V4:** 20-60Vdc	**WEB2:** Modbus-TCP/IP, BACnet-IP, SNMP V3, DNP 3.0 V2, IEC 61850 2nd Edition, SMTP, NTP, HTTP post, HTTPs post, FTP post, sFTP server, HTTPs webserver, dual RJ45, WiFi, Dual Ethernet Port	**IO1:** 6DI, 2RO, 1 DI Power Supply	**IO1:** 6DI, 2RO, 1 DI Power Supply	
			P3V4: 480Vac	**WEB2-D:** Modbus-TCP/IP, BACnet-IP, SNMP V3, DNP 3.0 V2, IEC 61850 2nd Edition, SMTP, NTP, HTTP post, HTTPs post, FTP post, sFTP server, HTTPs webserver, dual RJ45, Ethernet Port	**IO2:** 4DI, 2AO, 2DO	**IO2:** 4DI, 2AO, 2DO	
			P4V4: 600Vac	**PROFI:** PROFIBUS-DP	**IO3:** 4DI, 2RO, 2AI	**IO3:** 4DI, 2RO, 2AI	
				RS485: Second RS485 Port			
				IO1: 6DI, 2RO, 1 DI Power Supply			
				IO2: 4DI, 2AO, 2DO			
				IO3: 4DI, 2RO, 2AI			
Ordering Examples:	**AcuPanel 9104X-EL-5A-P1V4-WEB2-IO1-IO3, AcuPanel 9104X-CL-MV-P2V4-WEB2-OPAQUE**						

Pre-Wired Control Panel with AcuRev 1310

Pre-Wired Panel	Meter Model	Current Input	I/O	Power Supply	Opaque Cover†
AcuPanel 9104X: NEMA 4X Indoor / Outdoor Waterproof Polycarbonate Panel	**1312**	**333:** 333mV input CT	**X0:** Base model (no relay output)	**P1:** 100~415Vac, 50/60Hz, 100-300Vdc	**OPAQUE**
	1313	**RCT:** AcuCT Flex Series Rogowski Coil Input	**X1:** Relay output	**P3:** 480Vac	
	1314	**mA:** 80mA / 100mA / 200mA		**P4:** 600Vac	
		5A: 5A/1A			
Ordering Examples:	**AcuPanel 9104X-1312-333-X0-P3-OPAQUE**				

* *No more than two of the same I/O modules may be attached to the meter (example: Two AXM-IO2).*

† *Include the opaque cover for panel installations where the meter LCD display will be exposed to direct sunlight.*

MOD-TRONIC INSTRUMENTS LIMITED

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Specs Subject To Change Without Notice.

ISO 9001, 14001 & 45001 Certified

ISO 27001 & 50001 Certified