



# Acumen EMS™ Control Center

## ALL-IN-ONE ENCLOSURE

## ACUMEN EMS

Intelligent energy storage controls software that utilizes AI and machine learning to forecast and optimally discharge energy storage systems operating in the field. Best-in-class technology coupled with industry-leading domain expertise.

## ACUMEN EMS CONTROL CENTER

Our turnkey, fully wired enclosure houses all of the necessary hardware components in a single box, enabling a streamlined installation and commissioning. Preconfigured for the specific project and application.

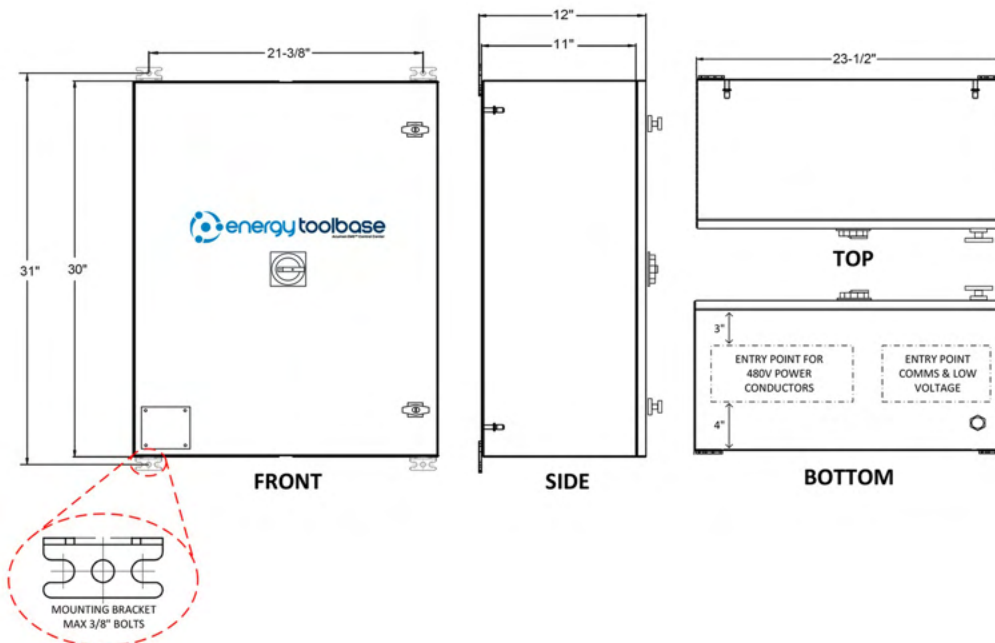
## FEATURES

- ✓ **Turnkey**  
Preconfigured for your project and ready for operation. Simple installation and connectivity.
- ✓ **Rugged**  
NEMA 4 rated, robust design to withstand the elements and extreme environments.
- ✓ **Proven**  
Utilizing best-in-class hardware components to ensure reliability and maximum uptime.

# Technical Specifications

Part Number	ETB-EMS-ACP-480-STD	ETB-EMS-ACP-480-LTE	ETB-EMS-ACP-280-STD	ETB-EMS-ACP-280-LTE
Mechanical Data				
Dimensions	23.5" X 30" X 12" (WxHxD) / 596.9 mm x 762 mm x 304.8 mm (WxHxD)			
Weight	97 lb/43.9 kg	99 lb/44.9 kg	97 lb/43.9 kg	99 lb/44.9 kg
Environmental				
Enclosure Rating	NEMA 4			
Storage Temperature	-40°C to 70°C			
Operating Temperature	-20°C to 45°C			
Max Ambient Temperature	45°C with 50% shade coverage			
Power Ratings				
Input Voltage	277/480VAC 3-Phase 4-Wire		120/208VAC 3-Phase 4-Wire	
Input Current	1A (Max 15A overcurrent protection required)			
System Frequency	60hz			
Output Voltage	24V			
SCCR	5kA			
Compliance Standards				
Enclosure	UL508A			
Metering	ANSI C12.2 - 0.5%			
Controls	Sunspec IEEE 2030.5			
Communications				
Internet Connectivity	Wired Ethernet	Embedded LTE	Wired Ethernet	Embedded LTE
Device Communications	Modbus TCP, Modbus RTU (RS485), CAN bus, SunSpec 2030.5			

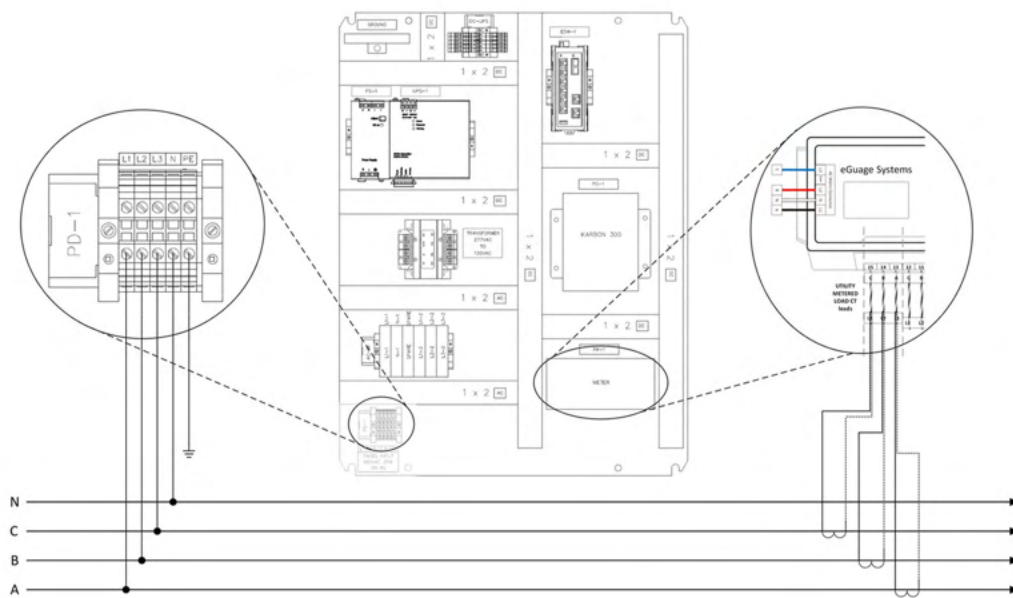
# Dimensional Drawings



## NOTES

- Penetrations for cable & conduit entry must be made on the bottom of the enclosure.
- Acumen EMS Control Center conduit entrances must use properly rated hubs/connectors sealed with fire rated compound to prevent moisture intrusion.
- CT leads should be ran in dedicated conduit, separate from current carrying conductors.
- Enclosure contains serviceable parts and must abide by working clearances per NEC.

# Wiring Diagrams



## NOTES

- CT leads cannot extend beyond 100FT. There are a number of situations where the CT leads must exceed 100FT. In these cases, please consult with Energy Toolbase for further guidance.
- When extending factory leads, use twisted stranded pairs and ensure proper splicing. All CT measurements must be validated with a field test.
- Excess CT leads should be cut and spliced, do not leave bundled coils in the CT lead wiring.
- Acumen Control Center requires a 3-phase, 4 wire connection with NEC compliant equipment ground.

# Hardware Components



## Ruggedized EMS PC

Karbon 300 ruggedized industrial computer.  
Houses Acumen EMS processing and data logging applications.



## Industrial Ethernet Switch

Hirschmann SPIDER III SSL20-8TX Industrial Ethernet Switch.  
8-port unmanaged switch used to connect onsite Modbus device network.



## Energy Meter (ANSI. 06)

EG4015 - 64E (eGauge) eGauge Core energy meter. Direct site energy measurements on ESS, PV and building consumption.



## Uninterruptible Power Supply (UPS)

PULS UC10.241 Dimension UC-Series Capacitor based DC-UPS.  
Backup power supply to rugged PC, industrial Ethernet switch, and cellular modem(if applicable).



## 277V to 120V Transformer

Siemens MT0250A Control Power Transformer, 250VA, 1 Phase.  
Required with 480V connections only.



## Cellular Modem (Optional)

Airlink MP70 offering high power, Gigabit Ethernet, and up to 300 Mbps downlink speeds over LTE-Advanced.

*\*While ETB maintains strict quality control over all components, components may be swapped out for an equivalent product based on availability.*