

GE Energy

# WattStation™ Wall Mount

## Application Guide



imagination at work

# WattStation Wall Mount

## Overview

Over the next few years, virtually every automobile manufacturer plans to introduce a plug-in hybrid or battery electric vehicle. GE, with more than 100 year experience in the design and manufacturing of electrical distribution products, will supply the charging station infrastructure to support this industry change, starting with the WattStation.

The WattStation Wall Mount design is suitable for various commercial and residential locations. This product offers Level II charging, which is capable of reducing charge time from 12-18 hours to 4-8 hours, with service needs of 208-240VAC at 40A, assuming a 24kWh battery and a full-cycle charge.

## Product Features and Benefits

- The WattStation has a wide variety of features that make it reliable and beneficial to users in many different contexts.
- Sleek and modern design
- Wall mounted application
- The cord wraps conveniently around the unit keeping it organized and off of the ground
- Features a NEMA 3R plastic exterior
- Option for hardwired unit or plug-in unit
- A power button allows for zero energy consumption when the unit is not in use
- A green backlit charging icon will illuminate to signal that the vehicle is charging, and a red backlit icon illuminates to signal a fault has been detected
- An LED light surrounds the connector inlet and will illuminate white when the charging station is powered on
- Two piece mounting bracket designed for single person installation and removal
- An enclosure lock is featured on the mounting brackets to prevent unwanted removal of the enclosure from the wall
- Nuisance tripping avoidance and auto re-closure
- Vehicle Ground monitoring circuit

# GE WattStation- A closer look

## Control Unit

- Performs CCID20 ground fault protection per UL 2231
- Handles SAE J1772 functions

## Contactors

- Responsible for energizing and de-energizing the connector
- Operates in conjunction with controller to meet UL and NEC requirements

## Connector

- Compliant with SAE J1772 standard
- UL listed for EVSE applications

## Fuses

- Provides overload and short circuit protection

## Specifications

SAE Compliant	Level II per J1772
Vehicle Interface	SAE J1772 EV connector
Cable Length	16' cable
AC Charging Power Output	7.2kW
Voltage and Current Rating	208-240VAC @ 30A
AC Power Input	208-240VAC requiring only Line 1, Line 2, and Earth ground
Power Supply Connection	Hardwired, optional 1ft. cord with NEMA 6-50P plug (250VAC, 50A)
Recommended Service Panel Breaker	2-pole 40A breaker on dedicated circuit
Ground Fault Protection	Internal 20mA CCID with auto re-closure, does not require a GFCI in service panel
User Indicators	LED
User Interface	Push button: standby mode (idle until connected to the EV), and off mode (completely de-energizes the unit)
Standby Power	5W typical
Enclosure	NEMA 3R Indoor/Outdoor rated
Safety Compliance	UL 2594, NEC 625, SAE J1772, cUL 2594
Surge Protection	6kV @ 3,000A
EMI Compliance	FCC Part 15 Class A
Operating Temperature	-30°C to +50°C ambient
Operating Humidity	Up to 95% non-condensing
Approximate Shipping Weights	33 lbs (14.969 Kg)
Dimensions	16"W x 24"H x 6"D (40.62cm x 60.96cm x 15.24cm)



The control unit will integrate SAE J1772 Functions, Metering, Overload monitoring and will manage HMI and all local monitoring.

The SAE J1772 functions include the following:

- Energization and De-energization of the system
- Verification of vehicle connection; the EVSE de-energizes output when the connector is uncoupled
- Continuous monitoring of ground connection between the EV and the EV Charging Station
- Automatic De-energization of the cable in case of rupture or separation of the cable
- Continuous monitoring of EVSE current capacity with supply rating recognition by PWM 1kHz signal

The proximity detection feature, which is part of the SAE J1772 connector, enables the coupler to communicate the presence of the connector when it is inserted into the EVSE coupler.

Overload monitoring is provided by the control unit, which features protection above 125% nominal current. This threshold limit will be below the breaker protecting the EVSE's limit to avoid local maintenance of the system during an overload event. The control unit will include a 15-20 mA ground fault protection according to UL2231. The control unit also performs monitoring of the contactor to ensure the contactor is in the correct state when charging or not charging.

## User Interface

The WattStation features three types of visual interfaces: standby/off button, back-lit charging and fault icons, and an LED ring around the plug inlet.

### Power Button

A power button is featured on the front of the WattStation. This allows the user to completely de-energize the unit, resulting in shutting off power to the energy consuming components (i.e. controller and LEDs). The user can opt to leave the unit in standby mode, in which the EVSE will remain idle until it is connected to an EV.



### Back-lit Charging and Fault Icons

The charging icon will illuminate green when the WattStation is plugged into the EV and charging. It will turn off when the EV has completed its charge, or the WattStation has been unplugged from the vehicle. The fault icon will illuminate red when the WattStation has detected that a fault has occurred and will turn off when the fault has been cleared.



### LED Ring

An LED ring surrounds the inlet where the plug is held on the WattStation. When the WattStation is powered on (or in standby mode) it will illuminate white.

## Mounting

The WattStation wall unit comes with a sturdy mounting plate, which is affixed to the wall with heavy-duty screws. Once the mounting plate is installed the WattStation slides over the plates and locks into place with a secure key lock.

2 wiring options are featured with the WattStation Wall Mount:

- Hardwired with 3 different possible entry points: top, bottom, and rear. Each entry point is pre-cut and covered with a sealed cap.
- 1ft. power cord with NEMA 6-50P plug

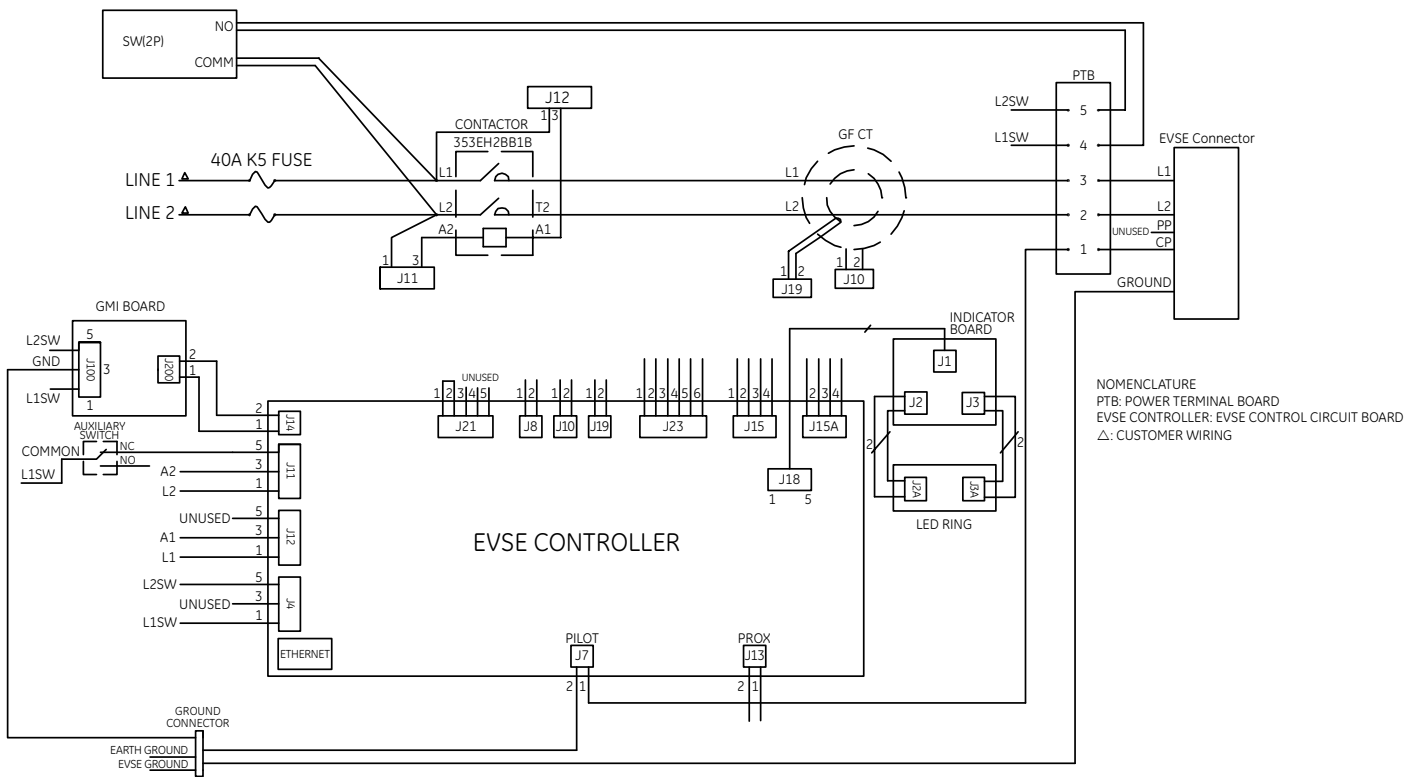
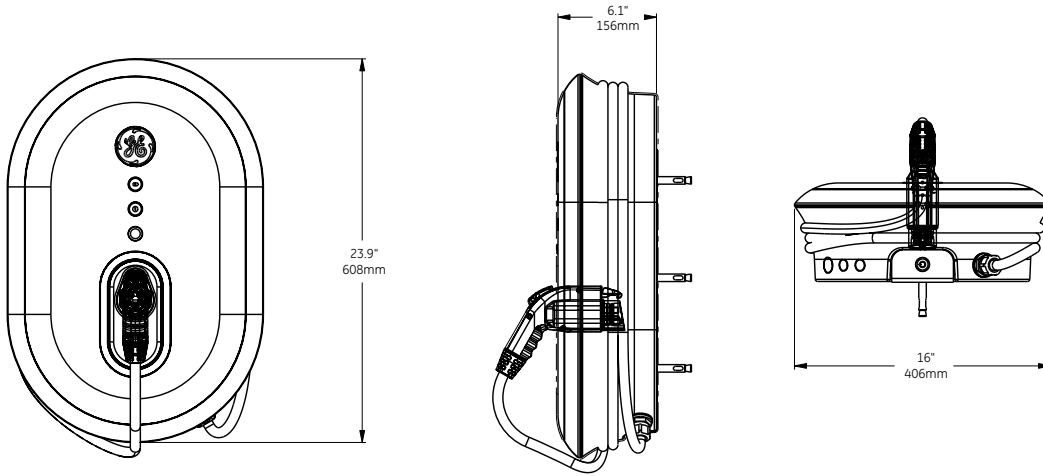
## Safety Features

- Ground Fault Protection
  - 4 automatic retries before station lockout
  - CCID 20; charging circuit interrupting device 20mA per UL2231
- Automatic self-tests of CCID
- Vehicle Ground monitoring per UL 2231
- Contactor monitoring designed to alert the customer when the contactor fails to open or close
- Secondary overload protection to prevent breaker tripping on vehicle faults
- Automatic energizing and de-energizing of charging circuit per NEC 625 and SAE J1772
- Support for personal lock on EVSE connector; enabling driver to lock the connector when charging their EV
- Handle holder securely locks EVSE connector into place when not being used
- Visible LED indicator to communicate a fault event has occurred

## Standards Compliance

- SAE J1772
- NEC 625
- cETL and ETL listed
- UL 2594
- cUL 2594
- NEMA and NIST
- ADA Compliance

# Dimensions and Wiring Diagram



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