## Tesla Universal Wall Connector (NA) Daisy-Chained Configuration Application Note

## Abstract

The purpose of this document is to provide technical justification for the allowance of daisy-chained configuration of Gen 3.0 Universal Wall Connector, per NEC 625.40: 2017-2023

### Discussion

#### Introduction

Universal Wall Connectors in a "daisy-chained" configuration can be viewed as a "single" EVSE (Electric Vehicle Supply Equipment), rated for a maximum of 48A. This configuration allows greater access to EVSEs for up to 6 users to safely charge their EVs simultaneously while simplifying installation requirements due to their built in "load management" features.

The Universal Wall Connectors wirelessly communicate with other Wall Connectors within its cluster regarding the operating status. Based on this, they adjust their maximum charge rate, such that the sum of current drawn will not exceed a max of 48A, or lower limit when one or more Wall Connectors is actively charging.

In this configuration, a cluster of 2 or more (max. 6) Universal Wall Connectors are "daisy-chained" together as shown in the diagram below.



# Installation Requirement per NEC 2017-2023

2017-2020 NEC Section 625.40 states that each *outlet* installed for the purpose of charging electric vehicles "shall be supplied by an individual branch circuit. Each circuit shall have no other *outlets.*"

#### 625.40 Electric Vehicle Branch Circuit. Each outlet

installed for the purpose of charging electric vehicles shall be supplied by an individual branch circuit. Each circuit shall have no other outlets.

Figure 3: 2017 and 2020 NEC 625.40 requirement

Similarly, 2023 NEC Section 625.40 states that each *outlet* installed for the purpose of supplying EVSE "shall be supplied by an individual branch circuit."

**625.40 Electric Vehicle Branch Circuit.** Each outlet installed for the purpose of supplying EVSE greater than 16 amperes or 120 volts shall be supplied by an individual branch circuit.

Figure 4: 2023 NEC 625.40 requirement

The cluster of Universal Wall Connectors, in daisy-chained configuration, is an (one) equipment for the purpose of charging electric vehicles, and when fully installed, is completely closed with no access to its terminal block for any other outlets. As such, when the daisy-chained cluster of Universal Wall Connectors is supplied by an individual branch circuit, it is in compliance with the requirement stated in NEC 625.40 (2017 and 2023).