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CONNECTORS AND SERVICE PLUGS FOR USE WITH ON-BOARD
ELECTRICAL VEHICLE (EV) CHARGING SYSTEMS

Issue No. 3

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The First and Second Issues were titled the Outline of Investigation for Connectors for Use with On-Board Electrical Vehicle (EV) Charging Systems.

Summary of Topics

This is the Third issue of the Outline of Investigation for Connectors and Service Plugs for Use with On-Board Electrical Vehicle (EV) Charging Systems. This issue expands the scope to also cover on-board electric vehicle (EV) service plugs.

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INTRODUCTION

1 Scope

1.1 This outline covers connectors of an on-board electric vehicle (EV) charging system. Connectors are intended to interconnect both communication and power circuit conductors rated up to 30 amperes and up to 600 volts ac or dc, within an on-board vehicle charging system.

1.2 This outline also covers on-board electric vehicle (EV) service plugs. Service plugs are not intended for operation under load, and are rated 400 amperes or less, maximum 600 V ac/dc. The pilot contacts incorporated in a service plug are intended for use in the control circuit of magnetic motor controllers and similar devices, and are rated to switch control circuit loads with continuous current ratings of 10 amperes or less, maximum 600 V ac/dc.

1.3 For the purpose of this outline, connectors consist of mating devices intended for factory assembly to copper or copper alloy conductors.

1.4 These devices are intended to be mounted internal to the vehicle and are not accessible to the operator or in locations where they may be subjected to mechanical abuse.

1.5 A service plug is intended for EV service personnel use only.

1.6 This outline does not cover:

- a) Plugs, receptacles, and couplers for electric vehicles covered by the Standard for Plugs, Receptacles and Couplers for Electric Vehicles, UL 2251;
- b) Plugs, receptacles, and cable connectors, of the pin and sleeve type covered by the Standard for Plugs, Receptacles, and Cable Connectors, of the Pin and Sleeve Type, UL 1682;
- c) Devices molded integrally with flexible cord or cable that are covered by the Standard for Cord Sets and Power-Supply Cords, UL 817;
- d) Attachment plugs, cord connectors, and receptacles that are covered by the Standard for Attachment Plugs and Receptacles, UL 498;
- e) Single and multi-pole connectors, which may include 3 or more pilot contacts, intended for connection to copper conductors, for use in data, signal, control and power applications within and between electrical equipment, where exposed, that are covered by the Standard for Component Connectors for Use in Data, Signal, Control and Power Applications, UL 1977;
- f) Devices intended for use in hazardous (Classified) locations that are covered by the Standard for Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations UL 1203;
- g) Devices consisting of wiring terminals and supporting blocks intended for the connection of wiring that are covered by the Standard for Terminal Blocks, UL 1059;
- h) Devices such as modular jacks and plugs that are intended for use with telecommunications networks, that are covered by the Standard for Information Technology Equipment Safety - Part 1: General Requirements, UL 60950-1, and the Standard for Communications-Circuit Accessories, UL 1863;

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