



**PRODUCT SPECIFICATION**

Product Line: **EVSE**

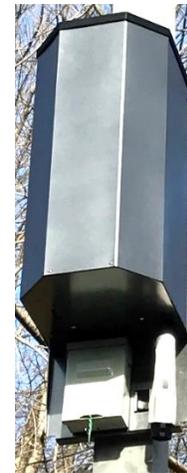
Product #: **3704** Version #: **A04xx**

**Smart Level 2 EVSE with Automatic Cable Management, Single Utility Pole**

The Model 3704-A04xx Series electric vehicle charger provides 208 - 240V AC up to 30A. Designed as per the SAE J1772 requirements to meet or exceed all safety codes specified by UL and NEC, the unit is engineered for exterior utility pole mounting, while meeting or exceeding all NEMA 3R specifications. The charger receives power from the utility pole, removing the need for trenching, conduits, long runs, etc. In addition, a power disconnect box is installed on the 5068-050 Mounting Frame to easily remove input power to the charger for pre-wiring or for any maintenance or cycle testing.

The charger is equipped with a state-of-the-art cable management system, which fully retracts and protects both the cable and the connector from harsh weather and vandals. The cable management system is ADA compliant and eliminates tripping hazards.

Modular in design, the charger can be configured for ID card and credit/debit processing through the addition of an RFID Card Reader, and a QR Code Reader that communicates with fobs or cellphones via mobile applications. Communication options are available for facilitating communication between the 3704 and host network for data collection purposes.



Description: The Model 3704 is a 7.2 KW utility pole-mounted EVSE charger with AutoCoil™ cable retraction, capable of providing up to 30A at 208-240VAC, single phase at 50/60 Hz. This unit complies with the SAE J1772 specifications for supplying electrical power to a J1772-compatible Electric Vehicle (EV). When the 3704 has been activated for a charge cycle via either an ID card or QR Code, the cable drops to the ADA height of 48 inches and the user simply pushes the button on the J1772 connector to walk the cable to the vehicle for charging.

Data Router: The charger is equipped with a Data Router providing five LEDs indicating the status of the charger.

Cable Management: The J1772 power cable and connector are stored high above when not in use, and locked in place for protection from vandals. When a valid charge activation is received, the connector drops to an ADA height of 48 inches and the user simply pushes the button on the J1772 connector to walk the cable to the vehicle for charging.

When the button is released, the cable stops. Before plugging into the vehicle, the button can be depressed again if more cable is required. When the connector is removed from the vehicle, the cable automatically retracts to the stored position.

Power Management: The charger provides up to 7.2 kW (208/240 VAC @ 30 A) to the electric vehicle when activated. Power is continually monitored and the charger disconnects power to the vehicle if the voltage deviates from the acceptable range, or if the load current exceeds the maximum level. The charger can also receive *Load Shed* commands via host communication networks, signaling it to reduce power by either percent of total or to designated current levels, including simulated Level 1 (7A).

The 3704 also includes a Random Start feature. In the event of a deep voltage sag or momentary power outage, it delays its restart for a random time period of between two to five minutes after the power has been restored. Once the charger restarts, it *ramps up* to the required maximum power at a rate of 1A/second. This prevents power surges when restoring power to multiple chargers.

Communication Options: A Gateway Module with a cellular host connection can be installed internally to facilitate two-way communication with the host network. The 3704 communicates to the internal Gateway directly, or multiple chargers can use ZigBee to talk to one charger/Gateway using the ZigBee Mesh protocol, allowing wireless connections. ZigBee networks are secured by 128-bit symmetric encryption keys, so security is assured.

The Gateway Module then connects to an external network via a Cellular modem. The Cellular modem securely transmits encrypted payment data to and receives authorizations from external PCI-compliant processors. Communication can also link the EVSE network with third-party network management providers for reporting and call center support.

Label Description: **3704 EVSE for Utility Poles**

Product Code: **3704-A04xx**

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Engineering: GC

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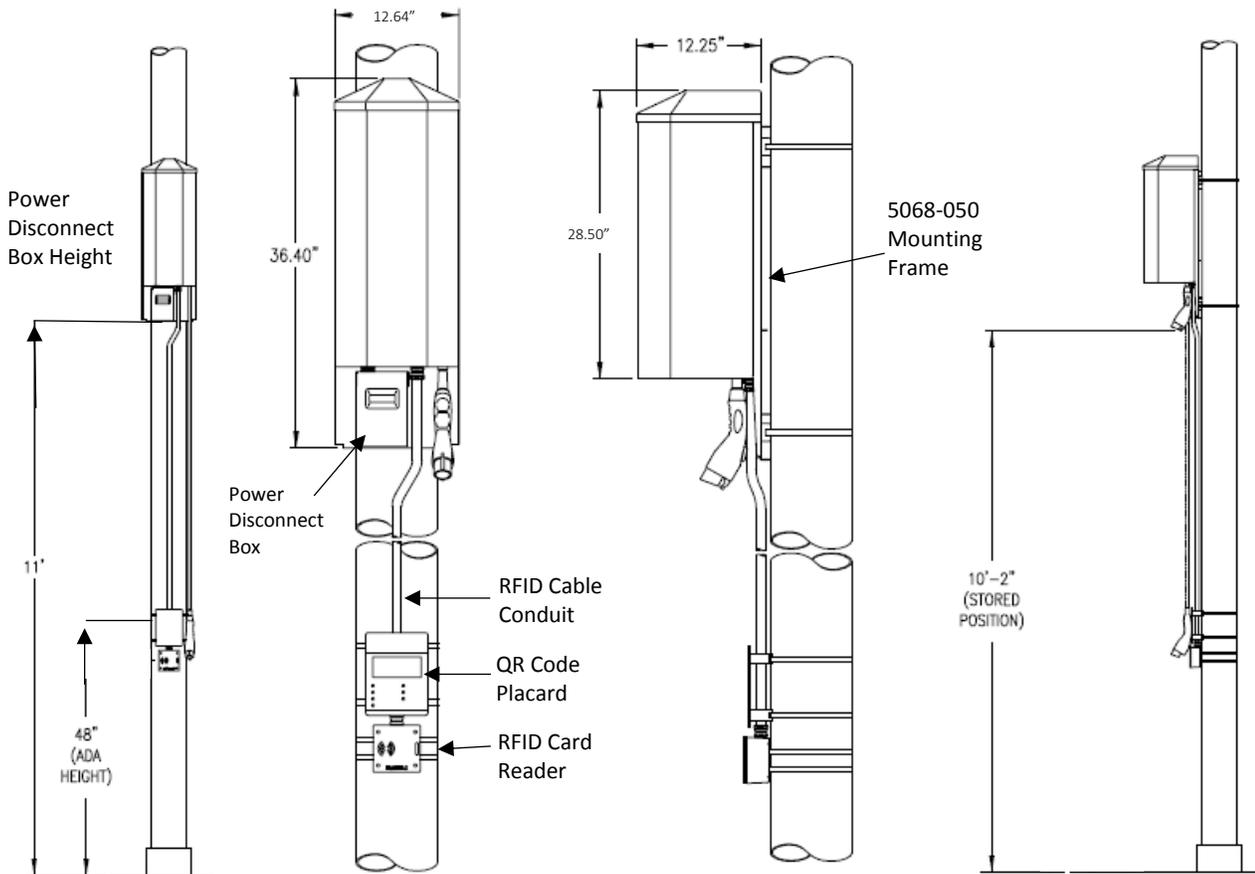
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Safety:

- Tamper Resistant** - The J1772 power cord and connector are stored 11 feet above and are locked mechanically in the storage position.
- Extension** - The cable initially lowers to an ADA height, and by pressing the switch on the J1772 connector, the cable is driven out to the desired length.
- Jam Resistant** - If you pull the charging cable while it is retracting or if the cable gets caught on anything, cable retraction will stop. The cable will make one additional attempt to retract. Thereafter, pressing and releasing the switch on the J1772 connector will restart the cable retraction process.
- Spark Resistant** - Electrical power is not applied to the power connector until the J1772 connector is fully inserted into the power inlet on the Electric Vehicle and communication between the vehicle and charger has been established. When the switch is pressed on the J1772 connector, voltage is removed.
- Shock Resistant** - The Model 3704 EVSE is equipped with a Ground Fault Circuit Interrupter (GFCI) which will disconnect the electrical voltage from the power cord and connector, should current leakage to ground exceed 20 mA. The GFCI circuit is automatically tested at the start of each charge sequence. The GFCI will attempt three re-closures to see the ground fault cleared before reporting a problem.
- Over Current** - The Model 3704 EVSE, when in use, continuously monitors the current being delivered to the EV. Should the current exceed 32A for 15 seconds, the Model 3704 EVSE will disconnect the power to the EV before the breaker trips. After disconnecting, the 3704 will auto-reset.
- Low-Line** - The source voltage to the Model 3704 EVSE is continuously monitored while in use. Should the voltage drop below 180 VAC, the EVSE will disconnect the voltage to the EV to prevent damage to the EV's electronic circuits. When the voltage returns to above 200 VAC, the power will be restored to the EV.
- Cold Load Start** - If power fails while the Model 3704 EVSE is connected and charging an EV, charging will automatically resume when power is restored. No user intervention is required. The charging will however, be randomly delayed from 2 to 5 minutes to prevent the power grid from incurring a large power surge.
- Plug-Out Detection** - The model 3704 EVSE is equipped with a Plug Out Detection circuit that identifies when the connector is attached to the electric vehicle. This allows the EVSE to immediately remove electric power from the electric vehicle before the connector is totally removed from the vehicle inlet.
- Disconnect Switch** - The 5068-050 Mounting Frame is equipped with a disconnect switch for locally shutting off power in the event the unit needs to be serviced or inspected.

3704 Mechanical Drawings:



SpecificationsElectrical Input:

Power Input:	7.2 kW
Voltage Input:	208-240 VAC 50/60Hz
Current Input:	30A
Stand By Power:	Less than 10W typical

Electrical Output:

Power Output:	7.2 kW
Voltage Output:	208-240 VAC
Current Output:	30A
Charging Connector:	SAE J1772 EV Connector on an 25' retractable cord

Safety:

Compliance:	IEC/UL/CSA C22.2 NO. 61010-1, UL2594, UL2231-1&2, NEC Article 625, SAE J1772
EMC Compliance:	FCC Part 15 Class A, Canadian ICES-003
Surge Protection:	6KV @ 3000A
Ground Fault:	Internal 20 MA CCID with auto re-closure (three attempts)
Ground Wire Detection:	Continuous Monitoring
Over Current Protection:	32A
Plug Out Detection:	Power terminates as per SAE J1772

Communications:

Cellular (Host)	FCC ID: RI7LE910NAV2, IC: 5131A-LE910NAV2
Zigbee (Charger to Charger)	FCC ID: MCQ-PS2CTH, IC: 1846A-PS2CTH

Environmental:

Enclosure:	NEMA 3R
Vandal Proof:	Cable is locked when stored and mounted 11 feet up on the pole
Operating Temp:	-22°F to 122° F (-30° C to 50° C)
Operating Humidity:	Up to 95% non-condensing

General:

Dimensions	28.50 in (h) x 12.64 in (w) x 12.25 in (d)
Weight	33 lbs.
Mounting	Use 5068-050 Mounting Frame