DC Quick Charger for electric vehicles

Overview

As the demand for electric vehicles (EV) grows, there is increased demand for robust and accessible EV charging infrastructure. Eaton meets this demand with a full family of charging solutions designed to fit seamlessly into a busy lifestyle, whether the needs require residential, commercial, or quick EV charging.

Product description

Eaton's DC Quick Charger (DCQC) is the ultimate in EV rapid charging. Housed in a floor-mounted NEMA® 3R enclosure, the DCQC communicates with the EV's battery management system to provide direct current flow to charge the battery. This gives the ability to charge an EV battery to 80% capacity in as few as 30 minutes. The 50 kW charger housing consists of five individual 10 kW power drawers, giving the flexibility to offer a 20 kW, 30 kW, 40 kW, or 50 kW configuration. In addition, at each output level, the DCQC has N-1 capability, which allows the charger to remain operational at a reduced output with the loss of one power drawer. Eaton's DC Quick Charger is available with additional options for revenue collection and networking as well as the option for the SAE™ combined charging connector ①, making it easy to adapt to meet a buyer's needs.

① Please consult the manufacturer for availability.

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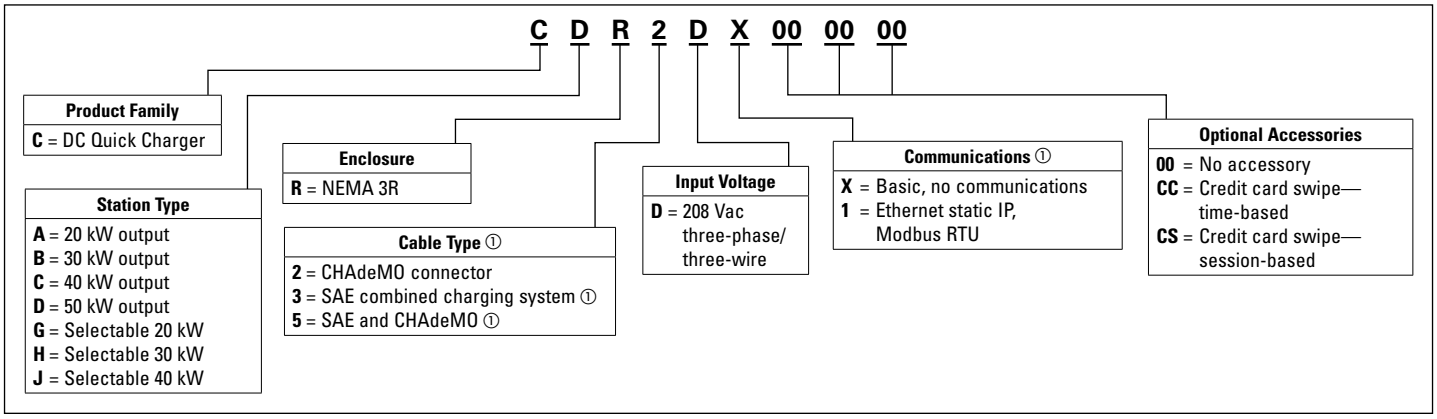
Standard features

- Up to 50 kW output DC charging
- NEMA 3R exterior enclosure
- Full-color touch screen display
- Key-lockable connector for security
- Eaton's standard one-year warranty on all electrical components and housing per Selling Policy 25-000

Standards compliance

- CHAdeMO version 0.9
- NFPA® 70 National Electrical Code,® Article 625 Electric Vehicle Charging System
- UL® 2202—Safety for Electric Vehicle (EV) Charging System Equipment
- UL 2231—Personnel Protection Systems for EV Charging Circuits
- UL 2594—EV Supply Equipment (Outline of Investigation)
- UL 991—Safety-Related Controls Employing Solid-State Devices
- FCC compliant
- CSA® C22.2 #107

Table 1. Catalog Numbering System—DC Quick Charger



① Refer to Communications Guide PA191003EN for more details.

② Consult manufacturer for availability.

Table 2. Weights

Description	Weight Unpackaged (Packaged) ①
Standard 50 kW DC quick charger; single 15-foot cable	770 (800)
Standard 40 kW DC quick charger; single 15-foot cable	720 (750)
Standard 30 kW DC quick charger; single 15-foot cable	670 (700)
Standard 20 kW DC quick charger; single 15-foot cable	620 (650)

① All weight in lbs.

Specifications

Table 3. Technical Specifications

Description	
Incoming voltage and connections	208 Vac three-phase, three-wire (Line 1, Line 2, Line 3 and earth ground)
Input amperage	156A (any power configuration)
Input frequency	50/60 Hz
Integral overcurrent and GFI protection	200A with 300 mA earth leakage for 40–50 kW configurations 100A with 500 mA earth leakage for 20–30 kW configurations
Upstream protection	Per NFPA 70 National Electrical Code, Article 625.14
Output amperage—maximum continuous	Up to 125A DC
Output voltage	Up to 400V DC
Interlocked power output	Yes
Ground fault	13 mA (UL 2231-1 / UL 2231-2 personnel protection)
De-energization on breakaway	Yes
Surge withstand	Up to 6 kV at 3000A
Conduit entry	Front, rear, side, bottom

Table 4. Physical and Environmental Specifications

Description	
Language	English ①
Cable length	15 feet
Dimensions H x W x D in inches (mm)	66.00 x 44.00 x 17.75 (1676.4 x 1117.6 x 450.9)
Operation	Touch screen interface, start and stop buttons, emergency stop button
Ingress protection / NEMA type	IP14 / 3R
Operating environment	Ambient temperature: –31°F to +104°F (–35° to +40°C)
	Ambient humidity: 5 to 80%
	Altitude: 3281 ft (1000m) or lower
	Atmosphere: containing no corrosive gas

① Consult factory for available options.

Table 5. I/O Specifications

Description	
Permissive run	24 Vdc digital input
HMI upgrade port	USB

Table 6. Optional Features

Description	
Credit card swipe	Time-based: Authorization expires when time runs out
Credit card swipe	Session-based: Authorization expires when car stops charging or car is unplugged
Networking	Requires third-party service provider ①

① Refer to Communications Guide for detail PA191003EN.

Installation

The DC charger's electric requirements and wiring installation procedure can be performed by any qualified electrician. The installation shall follow the requirements of NEC® Article 625. For convenience, the pad specification is shown in **Figure 1**. Additional drawings can be obtained upon request.

See installation guide IM0EV00001E for more details.

For more information, visit www.eaton.com/plugin, call 855-ETN-EVSE (855-386-3873), or call your local Eaton sales office.

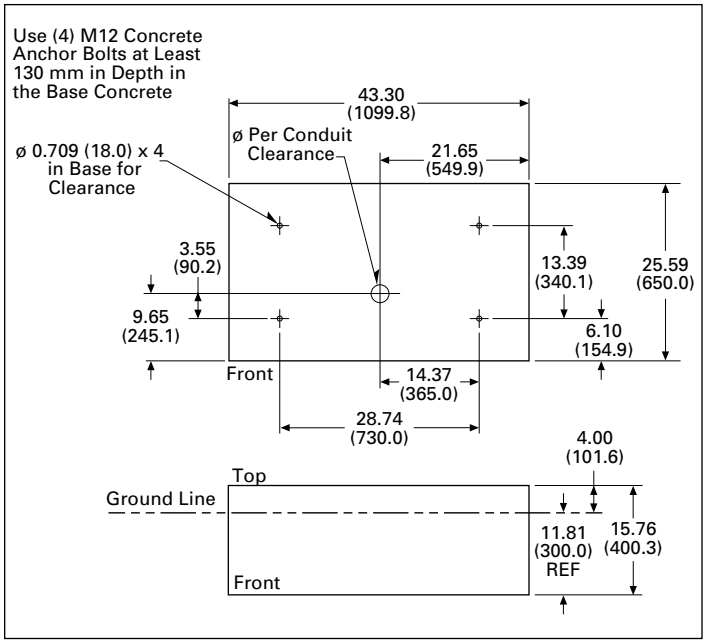


Figure 1. Floor-Mount DC Charger Pad Specification

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