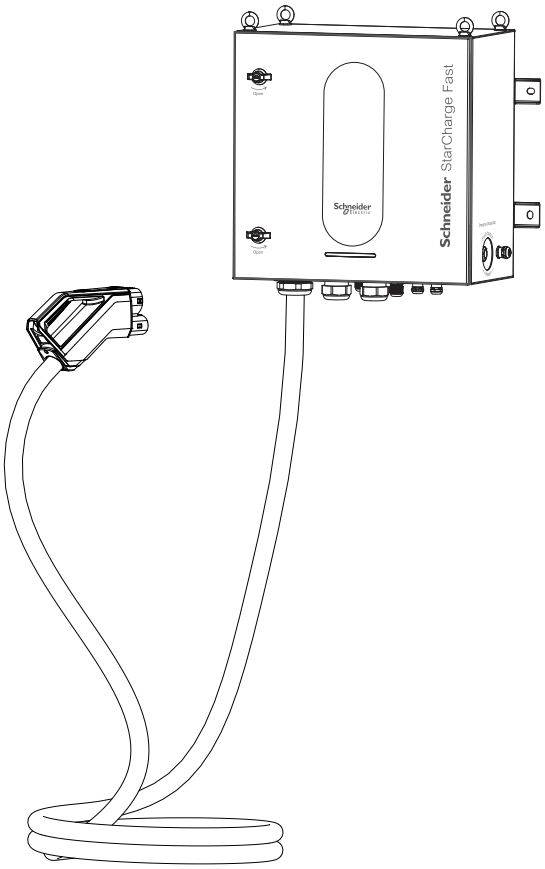
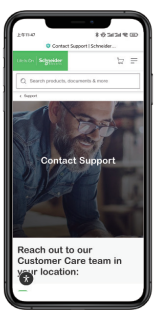
en Owners Guide

Schneider StarCharge Fast 720 Overhead Dispenser



Customer Care Center



Schneider Electric

Legal Information

General

Warning Symbols Definitions

The following safety messages may appear throughout this guide or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of this symbol to a “Danger” or "Warning" safety message indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol.
It is used to alert you to potential personal injury hazards.
Obey all safety messages with this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this signal word.

Safety Instructions

⚠ ⚠ DANGER

HAZARD OF ELECTRICAL SHOCK, EXPLOSION OR ARC FLASH

- Read and follow all warnings and instructions before installing and operating the Schneider StarCharge Fast 720 Charging Station. Install and operate only as instructed. Failure to do so may lead to death, injury, or property damage, and will void the Limited Warranty.
- The product must be installed according to the specifications and requirements as defined by Schneider Electric. No responsibility is assumed by Schneider Electric if these requirements are not respected.
- Always inspect the Charging Station for proper installation before use.
- Always ground the Schneider StarCharge Fast 720 Charging Station. Failure to ground the Charging Station can lead to risk of electrocution or fire. The Charging Station must be connected to a grounded,metal, permanent wiring system, or an equipment grounding conductor shall be run with circuit conductors and connected to the equipment grounding terminal.
- Install the Schneider StarCharge Fast 720 Charging Station on a concrete pad according to the Schneider Electric approved method. Failure to install on a surface that can support the full weight of the Charging Station can result in death, personal injury, or property damage.
- This Charging Station is not suitable for use in or around hazardous locations, such as near flammable, explosive, or combustible materials.
- Do not install the Schneider StarCharge Fast 720 Charging Station until all construction work has been completed and the installation area has been cleared & cleaned.
- Do not use this product if the enclosure, Electric vehicle cable, or the Electric vehicle connector is broken, cracked, open, or shows any other indication of damage.
- Do not put fingers into the electric vehicle connector.

Failure to follow these instructions will result in death or serious injury.

⚠ CAUTION

HAZARD OF DEGRADATION OF EQUIPMENT PERFORMANCE

- Under no circumstances will compliance with the information in this guide relieve the user of his/her responsibility to comply with all applicable codes or safety standards.
- Schneider Electric is not responsible for any damages that may result from custom installations that are not described in this document or for any failure to adhere to installation recommendations.

Failure to follow these instructions can result in injury or equipment damage.

NOTICE

RISK OF DAMAGING

- Before installing the Schneider StarCharge Fast 720 Charging Station, consult with a licensed contractor, such as a licensed electrician, and use a trained installation expert to ensure compliance with local building and electrical codes and standards, climate conditions, safety standards, and all applicable codes and ordinances.
- A qualified person is one who has the skills and knowledge related to the construction, installation and operation of electrical eduipment and has received safety training to recognize and avoid the hazards involved.

Failure to follow these instructions can result in equipment damage.

Preface

This guide describes the operation and maintenance of the Schneider StarCharge Fast 720 Overhead Dispenser.
The Schneider StarCharge Fast 720 Charging Stations are easy to install DC fast Charging Stations for electric vehicles. Fast Charging Stations are electrical installations with high electric currents.
Therefore, any maintenance must be planned carefully, and must be done by certified personnel only (according to local standards).

Document Application

This document serves:
Site operators responsible for the charger's operation on site, performing regular inspection and maintenance activities and who are able to perform simple maintenance activities.
The Electric Vehicle drivers who will mainly use the charger.

Available Documentation

Schneider StarCharge Fast 720 Overhead Dispenser available documents for each phase of the project:

Document	Reference	Content	Audiences
Schneider StarCharge Fast 720 Datasheet	998-24285450	Full specifications	Site designer, installer, and station operator
Schneider StarCharge Fast 720 Overhead Dispenser Installation Manual	JPU0103001	Civil, mechanical, and electrical installation guidelines	Site engineer or installer/contractor
Schneider StarCharge Fast 720 Overhead Dispenser Owners Guide	D4075320	Operation and maintenance guidelines	Site operator and end user
Schneider StarCharge Fast 720 Overhead Dispenser Commissioning Guide	D4075319	Electrical and Communication guidelines	Site engineer or installer/contractor/station operator
Schneider StarCharge Fast 720 OCPP Guide	D3999127	Integration rule of charger for Charge Point Operator	Charge Point Operator/Contractor
Schneider StarCharge Fast 720 Modbus Protocol Connectivity Guide	D4082297	Modbus connectivity guidelines for energy management system intergration	Charge Point Operator/Contractor
Schneider StarCharge Fast 720 Cybersecurity Guide	D3999124	Cybersecurity rules and guidelines	Charge Point Operator/Contractor

Owner Responsibilities

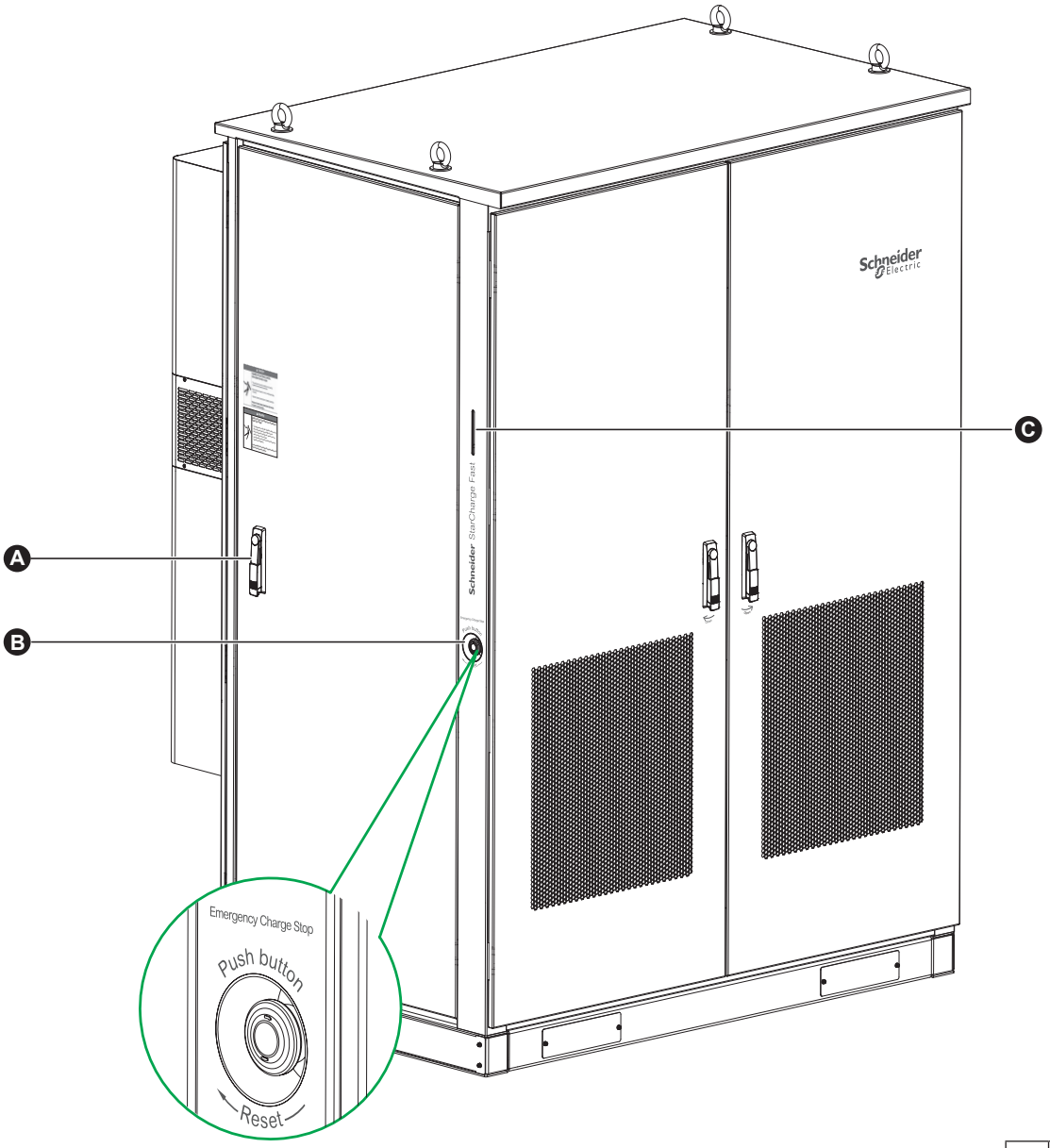
The owner and/or site operator are required:

- To ensure the site where the Charging Station will be installed, is in accordance with the requirements described in the Installation guide.
- To ensure enough space around the Charging Station to carry out maintenance work.
- To ensure all protection devices are correctly installed after carrying out installation or maintenance.
- To operate the Charging Station with the protection devices installed.
- To write an emergency plan that instructs users what to do in case of emergency.
- To appoint a person responsible for the safe operation of the Charging Station and for the coordination of all work. This person should be properly trained by Schneider Electric.
- To contact Schneider Electric Services for the periodic maintenance of the Charging Station at least once a year if not subscribed to a service plan.

Charge Point Operator Responsibilities

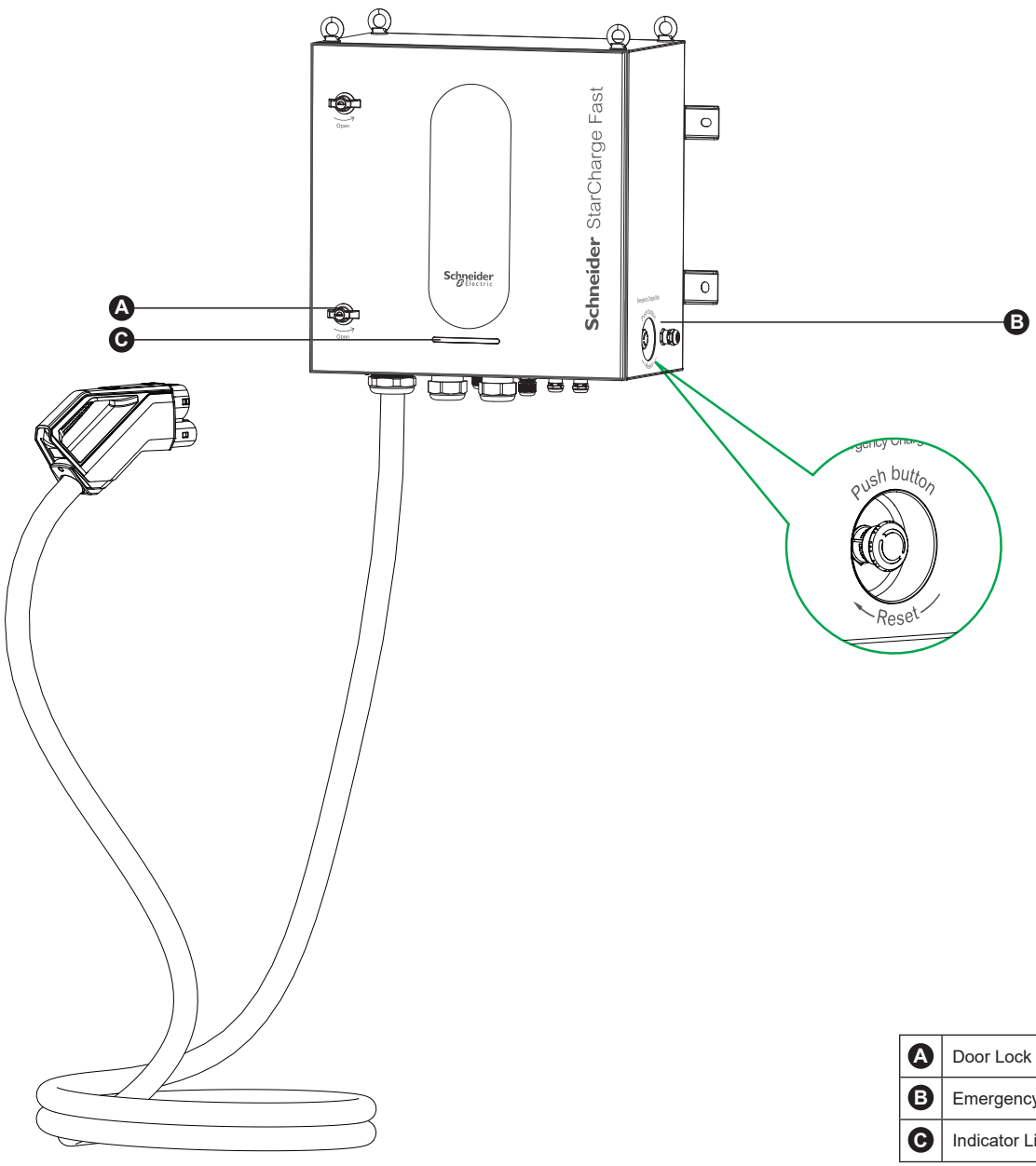
- A temporary buffer storage is available in the Charging Station, e.g. to temporarily store data package during a connection break. In general, the backend is responsible for the permanent storage of the data package in accordance with the Charge Point Operator, and the end customers will be able to access the charging data stored from the backend. The different operators with their owned backend will be informed of these requirements for complying.

1 System Overview



A	Door Handle with Lock
B	Emergency Charge Stop
C	Indicator Lights

1 System Overview



A	Door Lock
B	Emergency Charge Stop
C	Indicator Light

Wiring diagram (taking 720kW Power Cabinet and copper conductor cable as an example):

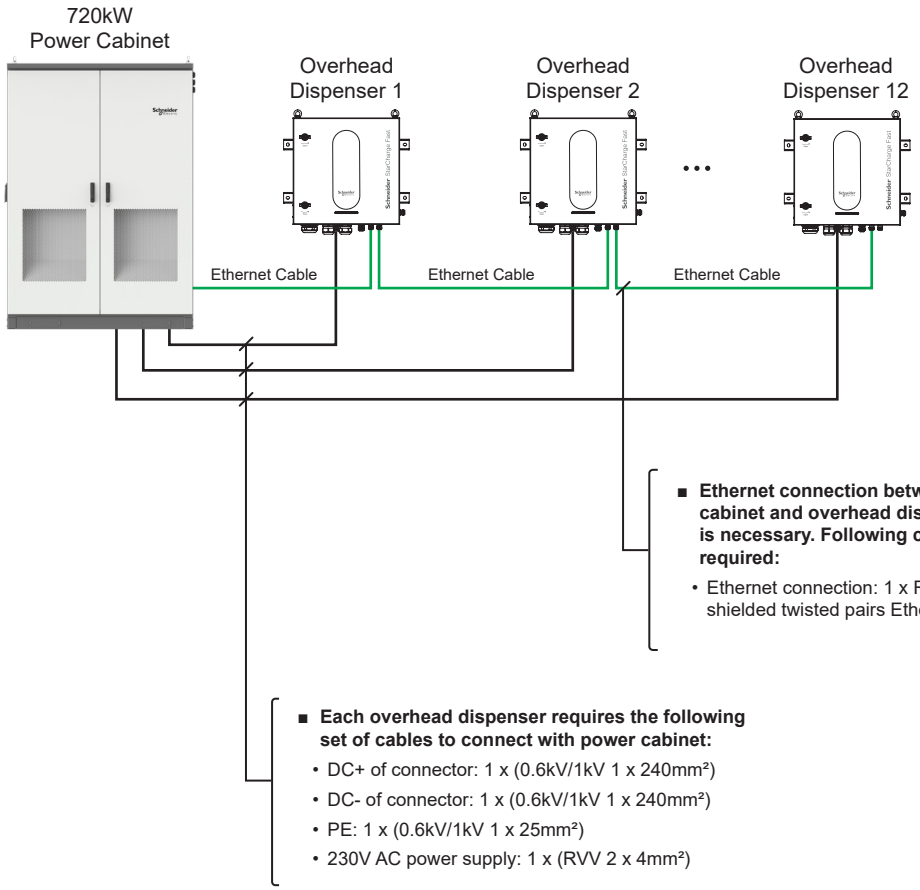
Ethernet cable connections between Overhead Dispensers and Power Cabinet support star topology, daisy-chain topology, and mixed star and daisy-chain topology.

1. Star topology: Supports connection of up to 6 Overhead Dispensers.

2. Daisy-chain topology: Supports connection of up to 12 Overhead Dispensers.

3. Mixed star and daisy-chain topology: Supports connection of up to 12 Overhead Dispensers.

Ethernet cable connection method 1: Daisy chain topology

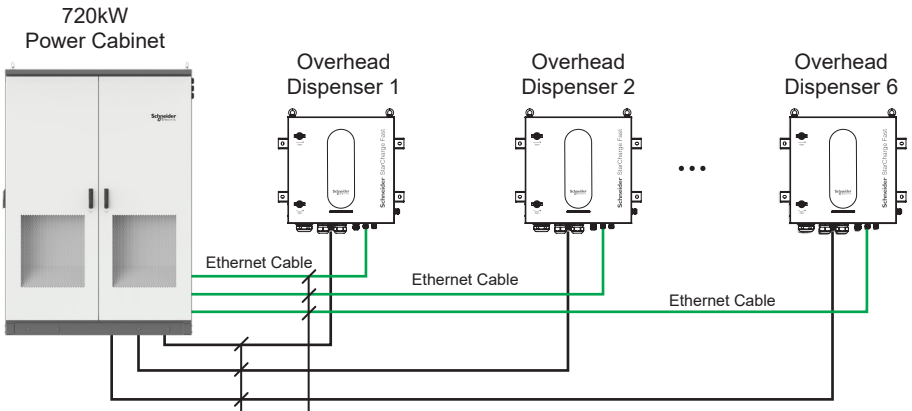


- **Ethernet connection between power cabinet and overhead dispensers is necessary. Following cable is required:**
  - Ethernet connection: 1 x RJ45 CAT 6 shielded twisted pairs Ethernet cable

- **Each overhead dispenser requires the following set of cables to connect with power cabinet:**
  - DC+ of connector: 1 x (0.6kV/1kV 1 x 240mm²)
  - DC- of connector: 1 x (0.6kV/1kV 1 x 240mm²)
  - PE: 1 x (0.6kV/1kV 1 x 25mm²)
  - 230V AC power supply: 1 x (RVV 2 x 4mm²)

Power Cable Ethernet Cable

Ethernet cable connection method 2: Star topology



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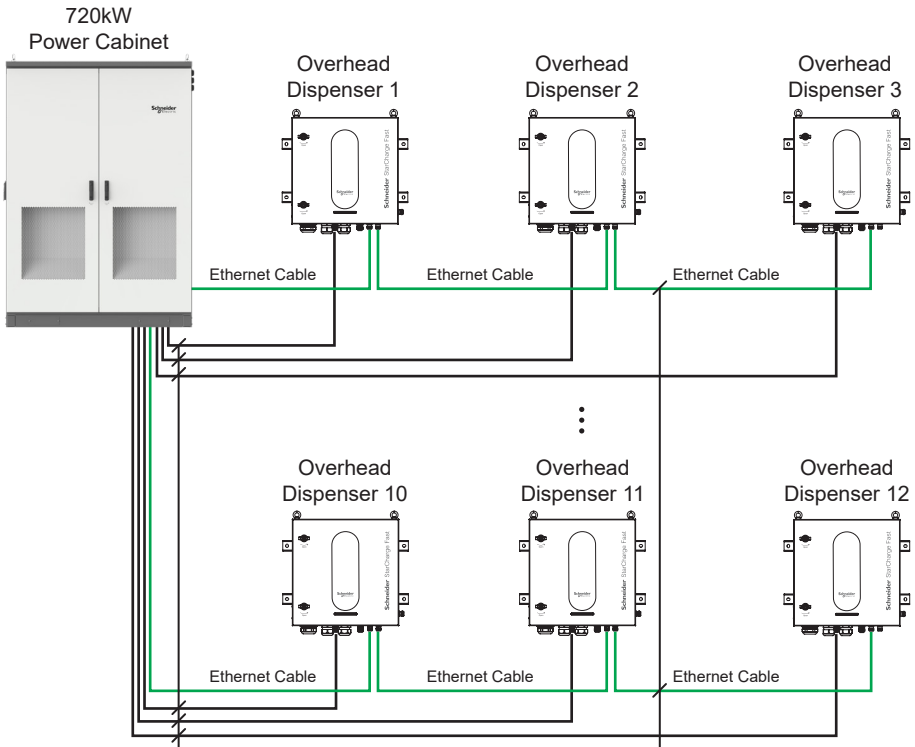
  - PE: 1 x (0.6kV/1kV 1 x 25mm²)
  - 230V AC power supply: 1 x (RVV 2 x 4mm²)

Power Cable Ethernet Cable

Ethernet cable connection method 3: Grouped daisy chain topology



- **Each overhead dispenser requires the following set of cables to connect with power cabinet:**
  - DC+ of connector: 1 x (0.6kV/1kV 1 x 240mm²)
  - DC- of connector: 1 x (0.6kV/1kV 1 x 240mm²)
  - PE: 1 x (0.6kV/1kV 1 x 25mm²)
  - 230V AC power supply: 1 x (RVV 2 x 4mm²)

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  - Ethernet connection: 1 x RJ45 CAT 6 shielded twisted pairs Ethernet cable

Power Cable Ethernet Cable

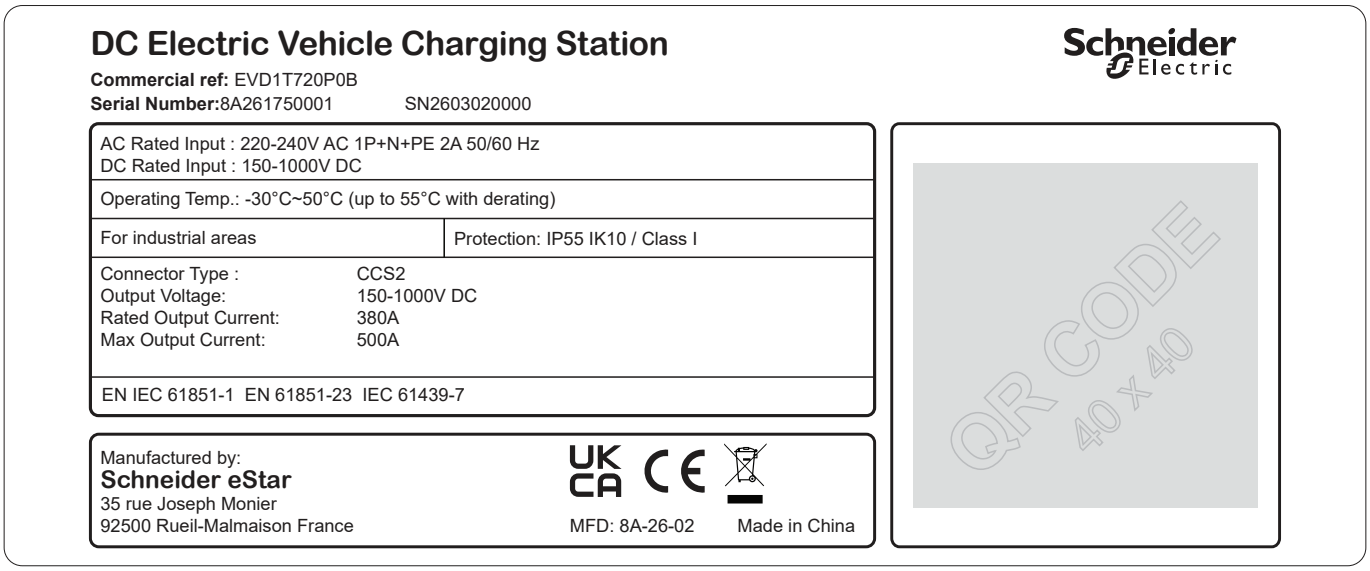
1 System Overview

1.1 Charging Stations Configurations

Type of equipment applicable to this guide: Schneider StarCharge Fast 720 Overhead Dispenser;
List of references supported are:

Commercial Reference	Nominal Power	Vehicle Connector	Cable Management	Cable Range (m)
EVD1T720P0B	N/A	1 x CCS2	Yes	10

* For more customized commercial reference, please contact Schneider Electric.



Here is an example of a Charging Station nameplate.

1.2 Authentication Modes

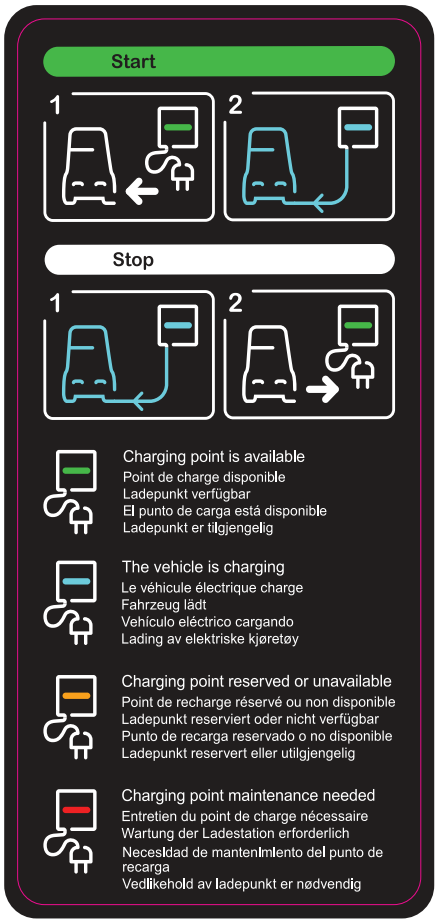
According to the Commissioning parameters, the Schneider StarCharge Fast 720 Overhead Dispenser operation is possible with or without authentication.
Operation with authentication requires a Charging Station connected to an OCPP backend platform.

Authentication modes available:

- Authentication Required, with option:
  - QR code with Mobile APP
  - EV MAC address
  - ISO 15118 Plug n Charge
- Free charging mode without authentication

1.3 LED Status Indicator

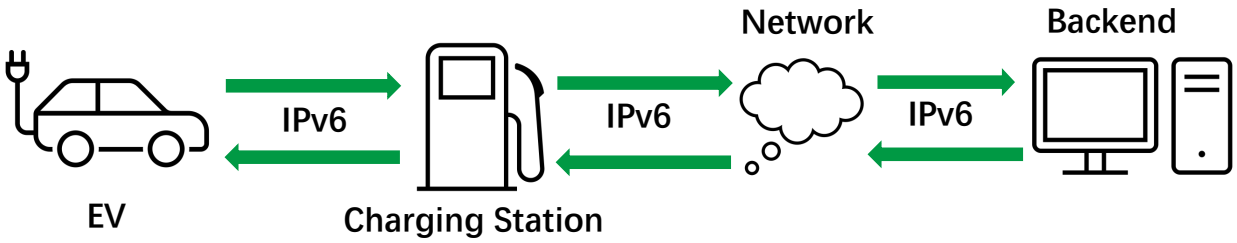
The status of the Schneider StarCharge Fast 720 Overhead Dispenser is indicated via colored LED indicator lights.
Below you will find the definition of each Indicator Light and its corresponding charger status and the basic user guidance: (Sticker provided with the unit)



2 User Instructions

2.1 VDV 261

- VDV 261 is a technical document published by the Association of German Transport Companies that describes how to ensure the data exchange necessary for the preconditioning of vehicles. This means, for example, that the temperature on the bus can be adjusted for passengers even before the bus departs from the charging station. And not just for one bus, but automatically for all buses.
- VDV 261 describes how the value-added services (VAS) of ISO 15118 must be used to automatically precondition vehicles during a charging process. Intelligent charging management enables so-called preconditioning, basically a “preparation” of the buses, via the existing charging infrastructure. There are various options for this, e.g. heating, cooling, ventilating. As soon as the electric bus is connected to a charging station, the data sent can be used to determine precisely whether preconditioning is required and, if so, in what form, so that the vehicle is ideally prepared at departure time. The challenge here lies in smooth communication from the vehicle via the charging station to the charging management, as this communication chain must be encrypted and coordinated with all parties involved.
- The preparation for using VAS is encrypted communication between the vehicle and the charging stations using Transport Layer Security (TLS). This communication must be enabled via an IPv6 network.



The precondition requirements of VDV 261 are as below.

Requirements	Vehicle	Charging Station	Backend
ISO 15118	√	√	
IPv6	√	√	√
Certificate handling	√	√	√
TLS on PLC	√	√	
VAS 443	√		√
Https	√	√	√

- Our DC charging station provides this IPv6 bridge for EV communication with backend by ISO15118 VAS service.
- The VDV261 could be enabled through web commissioning tool according to commissioning guide.

NOTE: Please check the readiness of Vehicle, Charging station and backend for VDV261.

2.2 Wake-up

- Sleep mode and standby mode are operating modes of the charging station or vehicle designed for reducing energy consumption when a communication session is not occurring.
- The charging station enters a “standby mode” if the vehicle proactive pause the charge session. Before pulling out the connector from vehicle, the vehicle may restart digital communication with Charging Station and restore the charge session by using a B1-C1-B1 toggle according to IEC 61851-1 and ISO 15118-3.
- The support of standard BCB wake-up toggle, as per IEC 61851-1 and ISO15118-3, is default enabled. Meanwhile, there is a parameter in web page for enable/disable a non-standard (Not triggered by EV pause.) BCB wakeup for specific vehicles (Renault / Volvo / Scannia truck are part of these specific vehicles).

NOTE: Please check the readiness of Vehicle and Charging station for wake-up.

2.3 Boost Charging

- Boost is a feature that enables the charging station to deliver a higher current to the vehicle than the rated current normally permitted by its output cable
- The boost function can only be guaranteed for a limited period of time at maximum charging current, depending on the ambient temperature. There is only one opportunity entering boost charging for each charging session, at the beginning of the charging session.
  - Here are the values indicating the capability the charging station can sustain during the boost period:
    - Boost current: 500A
    - Boost time: 5min
    - Maximum ambient temperature: 50°C
- Boost charging function is enabled by default, could be disabled through web commissioning tool.

2.4 ISO15118 Plug and Charge

- ISO15118 is an international standard and that facilitates communication between charging stations and electrical vehicles. It aims to improve interoperability, enhance user experience, and enable smart charging solutions. The standard includes various functionalities, including the Plug and Charge (PnC feature), which simplifies the charging process for users.
- PnC allows EVs to connect to charging stations and automatically handle the authentication, authorization and billing processes without requiring the user to swipe a card or use a mobile app. This is achieved through secure communication protocols that exchange identity and certificates between the vehicle and the platform via charging station.
- The PnC authentication support of this charging station is implemented following "Using ISO 15118 Plug & Charge with OCPP 1.6" and ISO15118-2. The requirements to have the ISO15118 to work effectively with the charging station it requires:
  - Configure the ISO15118 Plug & charge authorize mode within the charging station.
  - PnC been supported EV.
  - PnC has been supported by CSMS.
  - certificates ready at both CSMS and EV sides
- The PnC charge attempt will be performed when the connector is plugged into EV.

NOTE:
The product is qualified by Hubject.
Please check the readiness of Vehicle, Charging station and backend for ISO15118 PnC.

2 User Instructions

2.5 Basic Charging Steps

To charge an Electric Vehicle(EV):

A • Park the Electric Vehicle with the charge inlet within reach of the vehicle connector suitable for your Electric Vehicle.
B • Confirm the Charging Station status is normal and the status indicator is steady green.

⚠ CAUTION

HAZARD OF DAMAGING A LOCKED VEHICLE CONNECTOR.

- In CCS charging the Electric Vehicle locks the vehicle connector.
- If the user wants to unplug the vehicle connector from the car, it may be necessary to unlock all doors of the Electric Vehicle or use the "unlock charge connector button" on the car key, if present.
- Do not apply force to a locked vehicle connector during charging. This might damage the inlet and locking mechanism in the car or damage the Charging Station.
- Always handle cables and connectors with care & always place them back in their respective holders.
- Only insert a vehicle connector into a suitable car inlet.

Failure to follow these instructions can result in injury or equipment damage.

PLEASE NOTE

- Always Ensure that the vehicle connector is properly plugged in the Electric Vehicle.
- Always Ensure that the vehicle connector openings are clean and clear of any foreign bodies, dust, sand, leaves, etc.

2.6 Charging Authentication Modes

Depending on the authentication methods configured below, the instructions for the EV driver's use of the charger may vary.

NOTE: The "Charging Authentication Mode" needs to be configured in web page during commissioning (please refer to Commissioning Guide).

1. QR code with Mobile APP

A • **All the following scenarios are available.**

Scenario1:
- Remove the connector cap on the vehicle connector. Insert firmly it into the corresponding charging port of the vehicle.
- Scan the QR code to start the charging session and follow the instruction given by the Charge Point Operator to start and stop charging session.

Scenario2:
- Scan the QR code to start the charging session and follow the instruction given by the Charge Point Operator to start and stop charging session.
- Remove the connector cap on the vehicle connector.Insert firmly it into the corresponding charging port of the vehicle.

B • **To stop the charging session, either of the following methods can be used:**
- The connector unlock feature on the electric vehicle.
- Follow the instructions given by the Charge Point Operator.

C • **Put the connector cap back on the vehicle connector.**

NOTE: QR code ought to be provided by Charge Point Operator.

2. Authentication with EV MAC address

A • Remove the connector cap on the vehicle connector and insert firmly it into the corresponding charging port of the authorized vehicle to authenticate.
B • Stop charging: Stop charging from the electric vehicle or follow the instructions given by the Charge Point Operator.
C • Put the connector cap back on the vehicle connector.

3. Authentication with Plug and Charge

A • Remove the connector cap on the vehicle connector and insert firmly it into the corresponding charging port of the authorized vehicle to authenticate.
B • Stop charging: Stop charging from the electric vehicle or follow the instructions given by the Charge Point Operator.
C • Put the connector cap back on the vehicle connector.

4. Free charging mode without authentication

A • Remove the connector cap on the vehicle connector and insert firmly it into the corresponding charging port of the vehicle, charge session will start Automatically.
B • To stop the charging session, either of the following methods can be used:
- The connector unlock feature on the electric vehicle.
- Follow the instructions given by the Charge Point Operator.

C • Put the connector cap back on the vehicle connector.

3 Preventive Maintenance

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK

- Any inspection or maintenance activity that requires the Charging Station doors to be opened must only be performed by trained and authorized personnel.
- Contact Schneider Electric services to provide the recommended service plan for your product.

Failure to follow these instructions will result in death, serious injury.

NOTICE

HAZARD OF EQUIPMENT DAMAGE

- Do not apply high-pressure water jets when cleaning the Charging Station as water may leak inside.
- Only use cleaning agents with a pH value between 6 and 8.
- Do not use cleaning agents with abrasive components.
- Do not use abrasive tools.

Failure to follow these instructions can result in equipment damage.

To achieve the best performance out of your Schneider StarCharge Fast 720 Charging Station preventive maintenance plan is required.
The preventive maintenance plan consists of regular maintenance and periodic maintenance.

Regular maintenance aims to offer a regular check for the status of the Charging Station under the condition when shut down is not possible.

Periodic maintenance is to be carried out at least once a year by Schneider Electric services personnel or trained and certified Schneider Electric's eMobility EcoXpert.

Regular Maintenance

Regular maintenance checklist as follow:

Regular Maintenance

Check	Tool	Frequency	Shutdown Required	Status/Action
Visually check whether there are missing parts such as Emergency charge stop, handles, etc.		Weekly	No	
Visually check whether there are deformed or damaged parts on enclosure.		Weekly	No	
Ensure cleanliness of enclosure for stains, stickers, graffiti, grease, signs of rust, signs of burn or water penetration.		Weekly	No	
Check the LED indicator lights.		Weekly	No	
Visually inspect the condition of the connectors and cables for arny foreign objects, damages, or broken insulation.		Weekly	No	
Visually inspect the cable at the connector flange for any pull marks.		Weekly	No	
Inspect and verify the correct operation of the Emergency charge stop.		Weekly	No	
Visually inspect the installation area is well prepared.		Weekly	No	
Visually inspect the canopy/shed for any damages (if applicable).		Weekly	No	
Ensure the installation area is clear of weeds, sand, excessive dust, etc.		Weekly	No	
Visually inspect all safety warning signs visible and clear.		Weekly	No	
Manually inspect the doors and locks for proper operation and keys are secured.		Weekly	No	
Listen whether there is abnormal noise from inside of the charger.		Weekly	No	
Check for abnormal (burning, rodent) smell coming from the charger.		Weekly	No	

4 Recycle

Product Disposal
To comply with Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE), devices marked with this symbol may not be disposed of as part of unsorted domestic waste inside the European Union. Enquire with local authorities regarding proper disposal.
Product materials are recyclable as marked.

Please find below link and enter the product reference number for files: Product Environmental Profile and Product End of Life Instructions

checkaproduct.se.com

Radio Equipment Conformity

EU Declaration of Conformity
Schneider StarCharge Fast 720 Overhead Dispenser is in compliance with the essential requirements and other relevant provisions of Radio Equipment Directive: 2014/53/EU.
The EU declaration of conformity for Schneider StarCharge Fast 720 Overhead Dispenser (EU1008411-0) can be downloaded on: **www.se.com/docs**.

UK Declaration of Conformity
Schneider StarCharge Fast 720 Overhead Dispenser is in compliance with the essential requirements and other relevant provisions. of Radio Equipment Regulations 2017-UK SI 2017 No.1206.
The UK declaration of conformity for Schneider StarCharge Fast 720 Overhead Dispenser (UK1008420-0) can be downloaded on: **www.se.com/uk/docs**.

Standards and Compliance

Low Voltage Directive (LVD): 2014/35/EU	**Electromagnetic compatibility directive (EMC) 2014/30/EU**
RoHS Directive: 2011/65/EU: 2015/863/EU	
Based on following standards:	
EN IEC61851-1: 2019+AC: 2023-12, EN 61851-1:2011, EN 61851-23:2014+AC: 2016-06, EN 61851-24: 2014+AC: 2015, EN 61000-6-2: 2005+AC 2005,	
EN IEC 61851-21-2:2021	
EN IEC 61000-6-4: 2007+A1: 2011, IEC 61439 -7:2018	
EN IEC 63000: 2018	

* The EN IEC 61000-6-2:2019 is not a harmonized standard but the Schneider StarCharge Fast 720 Overhead Dispenser is already compliant with EN IEC 61000-6-2:2019.
** The EN IEC 61000-6-4:2019 is not a harmonized standard but the Schneider StarCharge Fast 720 Overhead Dispenser is already compliant with EN IEC 61000-6-4:2019.
*** The EN IEC 61851-21-2:2021 is not a harmonized standard but the Schneider StarCharge Fast 720 Overhead Dispenser is already compliant with EN IEC 61851-21-2:2021.

NOTE

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