

User Guide

EV Charging Station

TurboDX



English

Manufacturer's Information

© 2018 Webasto Charging Systems, Inc. All rights reserved.

Webasto Charging Systems, EV Solutions, and the Webasto logo are trademarks of Webasto Charging Systems, Inc.

Corporate names, trademarks, registered trademarks, service marks, symbols, and logos stated herein are property of their respective companies.

Specifications are subject to change without notice. Images of the Dual voltage charger are representative; production models may vary. Dual voltage charger may be branded under different names.

No portion of these materials may be duplicated, used or disclosed without prior written permission from Webasto Charging Systems, Inc.

Disclaimer: This user guide includes the latest information available at the time of printing. Webasto Charging Systems, Inc. reserves the right to make changes to this user guide and/or product without further notice. Changes or modifications to this product not completed by an authorized service provider could void the product warranty.

Corporate Headquarters

Webasto Charging Systems, Inc.
EV Solutions™

800 Royal Oaks, Suite 210
Monrovia, CA 91016

Phone: 888-833-2148

Website: www.evsolutions.com

OWNER'S RECORD

model:

TurboDX EV Charging Station
.....

serial number (s/n):

.....

purchase date:

.....

A NOTE ON CUSTOMER SUPPORT

Write down the serial number of your charger in the "Owner's Record" above. The serial number can be found on the side of the charger's module.

To ensure proper service, please take note of the serial number when contacting Customer Service.

SAVE THESE INSTRUCTIONS!

This manual contains important instructions for the TurboDX EV Charging Station that shall be followed during installation, operation, and maintenance of the unit.

To download the Installation Guide,
visit www.evsolutions.com/ev-charging-product-resources

Customer Support
1-888-833-2148

SAVE THESE INSTRUCTIONS!

This manual contains important instructions for the TurboDX EV Charging Station that shall be followed during installation, operation and maintenance of the unit.

TABLE OF CONTENTS

SECTION 1: INTRODUCTION	1
Symbol Usage	2
About Your TurboDX EV Charging Station	3
Packaging Components	5
Installation Preparation	5
SECTION 2: USING YOUR EV CHARGING STATION	6
Know Your Indicator Lights.....	7
Charging Your Vehicle	8
Manual Stop & Manual Restart	9
SECTION 3: TROUBLESHOOTING	10
APPENDIX.....	13
Specifications.....	15
High Voltage Warning	16
State of California Proposition 65 Warnings	16
FCC Information	17
Safety Features	17
Limited Warranty	19

SECTION 1

INTRODUCTION

SYMBOL USAGE

DANGER



Indicates information about safety practices which, if not followed, may result in serious injury or death.

WARNING



Indicates information about safety practices which, if not followed, could result in personal injury or are necessary to prevent fire or equipment overheating.

NOTE



Indicates helpful information for installation or usage, but does not contain personnel or equipment safety related information.

REGULATORY AGENCIES

Regulatory agencies set standards and regulations for products used in their respective geographical areas. This table shows those agencies for the following areas. Where appropriate, the agencies are listed where product differences arise.

REGION	AGENCY
China	GB/T
Europe	IEC
North America	SAE

ACRONYM LIST

ACRONYM	DESCRIPTION
A	Amp
AC	Alternating Current
CQC	China Compulsory Certification
CE	Conformité Européene (European Conformity)
IEC	International Electrotechnical Commission
FCC	Federal Communications Commission
GB/T	Guobiao/T recommended standards of the Chinese National Committee of ISO & IEC
GFI or GFCI	Ground Fault Circuit Interruption
GND	Ground
LED	Light-Emitting Diode
RFI	Radio Frequency Interference
SAE	Society of Automotive Engineers (United States)
UL	Underwriters' Laboratories
VAC	Volts Alternating Current

ABOUT YOUR TURBODX EV CHARGING STATION

Thank you for purchasing the TurboDX EV Charging Station for your electric vehicle's on-board charger. TurboDX supplies and manages AC power to your electric vehicle and is compatible with a variety of battery electric and plug-in hybrid electric vehicles. To avoid unauthorized use, it is recommended that you mount a usage switch in a secured or controlled location.

In case of malfunction, please refer to the "Troubleshooting" guide in Section 3 of this document. If the guide cannot sufficiently help to solve the issue, please contact Customer Service to find an authorized electrician for further investigation.

The TurboDX EV Charging Station operates from 208 to 240 VAC 50/60 Hertz.

KEY FEATURES

- Compact design
- Overheating protection
- Network flexibility (select models)
- Quick-read status indicators
- Underwriters Laboratories (UL) listed
- SAE J1772 compliant
- Auto-restart in event of ground fault or power outage

Operation: The TurboDX EV Charging Station requires either a 240 VAC split phase or a 208 VAC three phase (two legs) or 230 VAC phase-ground circuit. It draws a maximum of 16 amps (IEC or GB/T) continuous current and requires a 20 amp rated circuit breaker, or 32 amps (SAE) continuous current and requires a 40 amp rated circuit breaker.

WARNING



The TurboDX EV Charger must be installed by a licensed, qualified electrician. To avoid serious injury or death, installation must comply with the provisions of local codes.

WARNING



This product must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. The unit detects the presence of a good ground (GND) connection and will not operate if GND is disconnected.

WARNING



Improper connection of the electrical grounding conductor might result in a risk of electric shock. FOR PLUG-IN MODELS ONLY: Do not modify the plug provided with the product if it does not fit in the outlet. Have a proper outlet installed by a qualified electrician.

WARNING



Do NOT DROP coupler.

DANGER



If the output cable becomes separated from the TurboDX EV Charging Station module or the charge coupler, DO NOT ATTEMPT TO REPAIR THE CABLE YOURSELF. Contact Customer Service for assistance.

WARNING



If there is any physical damage to the unit, discontinue use immediately and contact Customer Service.

WARNING



When using your TurboDX EV Charging Station, basic precautions should always be followed, including the following:

- Read the warning label on TurboDX unit before operating the unit the first time. Read all instructions in this guide before using this product.
- Children should be supervised when in the vicinity of the charger while plugged in.
- Do not put fingers into the electric charge coupler.
- To reduce the risk of fire, connect only to a circuit provided with 20 amps (IEC or GB/T) maximum branch circuit overcurrent protection or 40 amps for SAE applications.
- Do not use in a commercial garage classified for internal combustion engine vehicles due to vapors of flammable liquids (gasoline) being present.

NOTE



The TurboDX EV Charging Station detects the presence of a good ground (GND) connection and will not operate if GND is disconnected.

REQUIRED FOR INSTALLATION PREPARATION

WARNING



Any electrical installation should be performed and checked by a licensed, qualified electrician.

NOTE



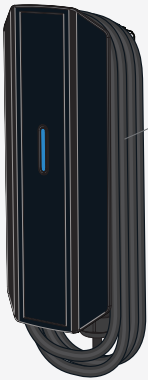
A dedicated 240 VAC split phase circuit or a 208 VAC three phase (two legs) or 230V phase-ground circuit are required. A 20 amp rated circuit breaker for IEC or GB/T, or 40A rated circuit breaker for SAE are required.

WARNING



Avoid contact with exposed electronics during handling of charger.

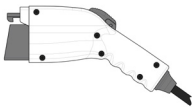
TURBODX EV CHARGING STATION - COMPONENTS



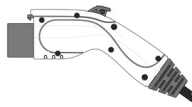
Charge Cable or Cord

The TurboDX EV Charging Station has an integral cord hanger. Wrap the cord around the unit to keep it off the ground.

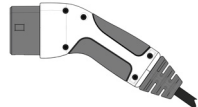
SAE Charge Coupler



GB/T Charge Coupler



IEC Charge Coupler



SECTION 2

USING YOUR EV CHARGING STATION

KNOW YOUR INDICATOR LIGHTS

On the front cover of the TurboDX EV Charging Station, an indicator light is used to communicate the status of your charger. It is important to understand how to interpret the color and pattern of the indicator light; the following provides a simple explanation of the indicators:



Indicator Lights

BLUE: STATUS

When the charging station is connected to a vehicle, the BLUE STATUS indicator illuminates to communicate the unit is ready for use.

RED: TROUBLE

The RED TROUBLE indicator illuminates when the charging station has detected an error. If the RED TROUBLE Indicator is illuminated, the charging station will not deliver power to the vehicle. The error must be corrected before a charging cycle can begin or continue. Refer to the Troubleshooting Guide in Section 3 for more information.

NOTE



A momentary blink of the RED TROUBLE indicator at first power-up is normal and functions as a startup safety check. This momentary blink is followed by the solid BLUE STATUS indicator and the RED TROUBLE indicator turns off.

WARNING



A constant or blinking RED TROUBLE indicator indicates an actual problem. Please refer to Section 3: Troubleshooting.

CHARGING YOUR VEHICLE

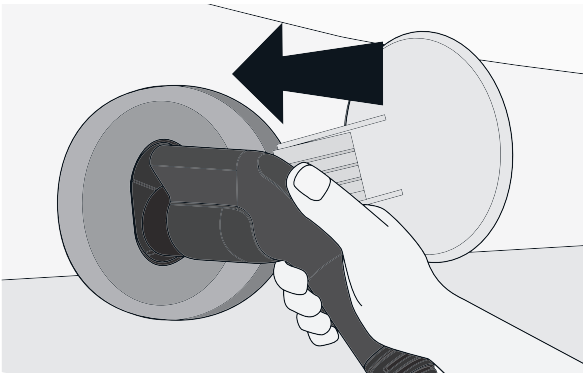
Your charger is designed for easy charging at 208/240 VAC.

NOTE



The charging capacity is dependent on the ambient temperature.

1. Make sure the vehicle is in park and is turned off.
2. Verify the TurboDX EV Charging Station is powered on; if not, turn on power.
3. During startup of the charger, the system will perform a self-test to ensure correct operation. During this test, the indicator light will briefly flash red to blue to confirm that the self-test is complete and the unit is ready for operation. The BLUE STATUS indicator light will stay solid indicating that the charger is receiving AC power and is ready to charge.
4. Plug the charge coupler into the vehicle's charging inlet until it clicks (IEC couplers will not click). Once latched, the charge coupler will not disengage unless the release button is pressed manually (SAE or GB/T couplers only). A latching detent ensures engagement for IEC couplers.



5. Automatic charge begins. Power will be delivered in accordance with the vehicle's demand. While the vehicle is charging, the BLUE STATUS indicator will pulse approximately every two seconds. Always verify that the vehicle charging status indicator agrees.
6. When fully charged, the BLUE STATUS indicator light illuminates solid blue. Verify with the vehicle's "dashboard gauge" that the vehicle is fully charged. Refer to the vehicle owner's manual to find the gauge location on the dashboard.
7. Disconnect when the charge is complete by pressing the release button on the charge coupler (IEC and GB/T only) and remove it from the vehicle.

NOTE



The RED TROUBLE indicator will illuminate if the unit is not charging. The unit will turn off if the upstream breaker is tripped.

MANUAL STOP

To safely stop charging at any time before charge completing, press the charge coupler release button and remove coupler from the vehicle. IEC couplers will have not released button; simply pull the charge coupler to remove it from the vehicle. Check the vehicle's instructions on how to remove the coupler, e.g. unlock the vehicle.

Charging will automatically, and safely, stop.

MANUAL RESTART (IEC, GB/T ONLY)

If a GFI event occurs, the charger must be power cycled to reset the GFI Fault. If the fault persists, do not continue to attempt to charge your vehicle. Contact Customer Service for further assistance.

A NOTE ON AUTO-RESTART (SAE ONLY)

The auto-restart feature helps ensure that your vehicle will be charged and ready for use when needed. A charge may be interrupted if an error is detected. Charging will resume once the error is no longer detected. The RED TROUBLE indicator illuminates during the error condition.

The exception to immediate auto-restart is when the interruption is due to a charger GFCI event. The charger will attempt to restart 20 seconds after a GFCI event.

If the fault persists, do not continue to attempt to charge your vehicle. Contact Customer Service for further assistance.

CHAPTER 3

TROUBLESHOOTING

TROUBLESHOOTING

Please refer to this Troubleshooting Guide for possible solutions to common errors or difficulties with charging your vehicle using your portable charger.

NOTE



Do not attempt to repair or service the charger yourself. There are no user serviceable parts inside.

A RED TROUBLE indicator may be triggered by several sources, including the charger, the utility service, or the vehicle. See troubleshooting tips below.

The RED TROUBLE indicator turns on when the charger detects an error whether it is connected to your vehicle or not. With the RED TROUBLE Indicator on, the charger will not deliver power to the vehicle. The error must be corrected before charging begins or resumes.

Problem	Possible Cause	Solution
BLUE COUPLER STATUS Indicator does not illuminate	No power to unit	Check circuit breaker.
	Charger internal failure	Contact Customer Service for assistance.
Vehicle will not charge RED TROUBLE Indicator remains solid	Charge coupler is not inserted into the vehicle	Inspect the charge coupler. Remove the charge coupler from the vehicle, then reinsert it into the vehicle receptacle until it clicks. (No clicks on IEC)
	Vehicle is not in a state to accept a charge	Verify vehicle charge timer is set to permit charging. Refer to the vehicle owner's manual for charge timer instructions.
	Communication error between charger and vehicle	Contact Customer Service for assistance.

Problem	Possible Cause	Solution
<p>RED TROUBLE Indicator is blinking rapidly</p>	<p>Utility fault</p>	<ol style="list-style-type: none"> 1. Power cycle charger at breaker box. 2. If the condition persists, have a qualified electrician inspect the wall outlet ground circuit integrity. 3. Repair as required.
	<p>Above temperature limit Cases:</p> <ul style="list-style-type: none"> • Temperature is too high. The charger will restart charging when it cools down. 	<ol style="list-style-type: none"> 1. Inspect charger module for overheating (hot to the touch). <ol style="list-style-type: none"> a. Carefully unplug vehicle coupler and allow to cool. b. If the condition persists, contact Customer Service for assistance. 2. Remove power to the Wallbox at the circuit breaker. 3. Have a qualified electrician inspect the installation. <ol style="list-style-type: none"> a. Repair as required.
<p>RED TROUBLE Indicator is on solid when connected to vehicle RED TROUBLE Indicator is off and BLUE STATUS Indicator is on when you unplug from vehicle</p>	<p>Vehicle problem</p>	<p>Contact Customer Service for further assistance.</p>
<p>RED TROUBLE Indicator is on solid NOT connected to vehicle</p>	<p>Charger internal failure</p>	<p>Contact Customer Service for assistance.</p>
<p>RED TROUBLE Indicator and BLUE STATUS Indicator are flashing red and white.</p>	<p>Charger trying to resolve internal error</p>	<p>Charger will return to normal operation within 1 minute. If problem persists, contact Customer Service for assistance.</p>

APPENDIX

SPECIFICATIONS

Model	EVSE-DX
Line input power:	208/240 VAC
Output power:	16 amps continuous @ 240/208 VAC 32 amps continuous @ 240/208 VAC
Circuit breaker rating:	20 amps @ 240/208 VAC 40 amps @ 240/208 VAC
Frequency:	50/60 Hz
Power draw at idle:	< 2 watts
Power draw during charging:	< 4 watts
Cable length:	approximately 7m (23 ft.)
Weight: SAE IEC / G/BT	7.6 kg (16.75 lb.) 5.8kg (12.75 lb.)
Temperature – operating:	-40°C to +55°C (-40°F to +131°F)
Temperature – storing and transporting:	-40°C to +80°C (-40° F to +176° F)
Environmental rating:	IP66 (watertight)
Vehicle – charger communication protocol:	SAE J1772 IEC 61851 GB/T 18487
Direction of charge:	Grid to vehicle

Specifications are subject to change without notice.

HIGH VOLTAGE WARNING



High voltage is present in your electric meter housing and power distribution service panel. Contact with high voltage can cause death or serious personal injury.

.....

.....



DO NOT operate your charger with a damaged output cable, charge coupler, or module. Visually inspect the output cable, charge coupler, and charger module for damage before each use. If you detect any damage, stop using the charger and contact Customer Service for assistance.

.....

.....



ALWAYS position the charger output cable so that it will not be driven over, stepped on, tripped over, or otherwise damaged or stressed.

.....

.....



Use the charger only to supply power to electric vehicles equipped with an SAE J1772 , IEC or GB/T Type 1, or SAE Type 2 compliant vehicle receptacle. For more information, refer to the vehicle owner's manual.

.....

.....



Disconnect the charger from the wall outlet before cleaning it. To clean the charger, wipe it with a clean cloth dampened with water or a mild detergent solution suitable for use on automobile paint. Do not use chemicals or solvents. Do not submerge the charger.

STATE OF CALIFORNIA PROPOSITION 65 WARNINGS



This product contains a chemical known to the State of California to cause cancer or birth defects or other reproductive harm.

FCC INFORMATION

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

This product has been designed to protect against Radio Frequency Interference (RFI). However, there are some instances where high powered radio signals or nearby RF producing equipment (i.e. digital phones, RF communications equipment, etc.) could affect operation.

If you suspect your charger is receiving interference, take the following steps before contacting Customer Support for service:

1. Relocate nearby electrical appliances or equipment during charging.
2. Turn off nearby electrical appliances or equipment during charging.

Important! Changes or modifications to this product by anyone other than an authorized service provider will void FCC compliance.

SAFETY FEATURES

The charger is designed with your safety as the highest priority and includes the following safety features to protect against the risk of electric shock:

- **Service Ground Check:** The charger constantly checks for the presence of a service ground connection. If the service ground ever fails, the charger RED TROUBLE Indicator turns ON and shuts down power to the vehicle.
- **Thermal Event Sensor:** Charger module senses out of ordinary thermal events and will shut the unit down.
- **GFCI Protection:** The charger is equipped with a Ground Fault Circuit Interruption (GFCI) reaction system to protect against electric shock. If the charger module detects an output ground fault, it will shut down power to the output cable and illuminate the RED TROUBLE Indicator.
- **Insulation:** The charger module, adapter, cable assembly and charge coupler are completely insulated (no exposed live parts) to protect against electric shock.
- **Unintentional Disconnection:** The charge coupler is designed to minimize unintentional disconnection. A pilot signal wire in the cable and charge coupler eliminates the possibility of electric shock when not connected to a vehicle or if an unintended disconnect occurs during a charge. Disconnection during charging is safe.

LIMITED WARRANTY

TURBODX CHARGER LIMITED WARRANTY

KEEP RECEIPT FOR WARRANTY CLAIMS.

Products manufactured by Webasto are warranted to the original Customer to be free of defects in material and workmanship for a period of thirty-six (36) months from the date of installation with the exception of the connector which shall be limited to twelve (12) months from the date of installation. If the Product is installed by Webasto or Webasto's authorized installation representatives, Webasto warrants that the installation of the Products shall be free of defects in workmanship for a period of thirty-six (36) months from the date of installation.

THIS IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY WEBASTO WITH RESPECT TO THE PRODUCTS AND INSTALLATION THEREOF, AND IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WHETHER OR NOT THE PURPOSE OR USE HAS BEEN DISCLOSED TO WEBASTO IN SPECIFICATIONS, DRAWINGS OR OTHERWISE, AND WHETHER OR NOT WEBASTO'S PRODUCTS ARE SPECIFICALLY DESIGNED AND/OR MANUFACTURED FOR CUSTOMER'S USE OR PURPOSE.

Webasto's liability under this warranty shall be limited to repairing or replacing defective Products, at Webasto's option, without charge, any Product of Webasto's manufacture. Webasto will not be liable for any costs of removal, disposal, installation, transportation, or any other charges which may arise in connection with a warranty claim. This warranty shall be voided by damage or wear to products caused by abnormal operating conditions (including exposure to acid, chemical fumes, metallic dust or extreme temperatures), accident, abuse, damage, misuse, unauthorized alteration or repair, utility surge, Product installation by a person not certified in writing by Webasto, or if the Product was not operated or maintained in strict compliance with Webasto's printed operating instructions. Any evidence of an attempt to disassemble or reverse engineer the Products will void the warranty. Webasto is the final arbiter of the presence of facts that support a conclusion that the warranty is voided.

To obtain service under this warranty, the defective Product must have: 1) been installed by Webasto or Webasto's authorized installation representative and operated in compliance with Webasto's printed operating instructions, 2) been registered with Webasto by Customer upon installation to activate the warranty, and 3) proof of purchase (including installation date), failure date, supporting installation and operation data.

Mail Card To: Webasto Charging Systems, Inc., 1960 Walker Ave, Monrovia, CA 91016 upon installation to activate warranty. For additional warranty assistance please call 888-833-2148.

Customer Name
Address
.....
Phone #.....
Email.....
Date of Purchase
Serial Number



To download the Installation Guide
visit www.evsolutions.com/ev-charging-product-resources

Webasto Charging Systems Inc.
800 Royal Oaks Dr, Suite 210
Monrovia, CA 91016
United States

www.evsolutions.com