



THE EASTERN SPECIALTY COMPANY

# EVSE DEVELOPMENTS, STANDARDS AND TESTING

Prepared by Perry Lawton, TESCO  
TESCO Metering



*For North Carolina Meter School  
Wednesday, June 14, 2023 at 1:45 PM*

# TS400 OVERVIEW: HARDWARE

## ISSUE SOLVED

With the growing demand for electric vehicles (EV), there needs to be a simple and accurate method to test EV charging systems.

Test the accuracy of AC and DC voltages and currents with **TESCO's Electric Vehicle Service Equipment (EVSE) Test System TS400**. The **TS400** is a valuable instrument with complete testing capabilities and caters to every possible EVSE charging protocol in the world (AC and DC).

## TS400 TEST LIMITS

### Simulation

- Tesla
- CHAdeMO
- CCS1
- Additional standards available upon request.
- Easy to use – select a site and press “test”
- Extremely fast, full accuracy is achieved in less than five seconds at any power level
- Field ready, and easily transportable
- Performs all accuracy and safety tests automatically without need for operator intervention.
- All information for sites, equipment, test procedures and test results are stored in internal database.
- Compatible with all current EV charging protocols.
- Software for exporting data and creating reports.



TS400 Test System includes the T4000 EVSE Tester and PL4000 Load Emulator to test all AC/DC charging standards.

CAT. TS400

**ELECTRIC VEHICLE SERVICE  
EQUIPMENT (EVSE) TEST SYSTEM**



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# TS400 OVERVIEW: HARDWARE

## T4000 SPECIFICATIONS

**AC:**  
240V \* 80A -> ~19.2kW  
208V \* 80A -> ~16.6kW

**DC:**  
1000V \* 200A -> ~200kW

*Note: The charger is the limit. The T4000 can go to 650V AC, but CCS1\_AC is limited to 240V maximum*

### OPERATING

**TEMPERATURE:** -20°C to 50°C (-4°F to 122°F)

### STORAGE

**TEMPERATURE:** -22°C to 60°C (-22°F to 140°F)

**DIMENSIONS:** 21.2" x 16" x 10.6" (53.8 x 40.6 x 26.9 cm)



## T4000 FEATURES

<b>DISPLAY</b>	7", 1024 x 600, high brightness, daylight readable LCD
<b>ETHERNET</b>	100 BaseT with support for: Web Services, Remote Control, Database Access
<b>USB</b>	2X USB Type A with support for: Device, External Memory Storage, WiFi, Keyboard, Mouse; 1X USB Type B connection to computer
<b>GPS</b>	Integrated GPS system provides location information for automatic determination of test site and data base access
<b>GFCI</b>	Provision is provided to test the GFCI functionality of the EVSE (0-200ma)
<b>BATTERY</b>	99.6Whr Li-ion removable battery
<b>PL INTERFACE</b>	Provides communications and power to any Programmable Load (PL Series)
<b>PC SIGNAL</b>	Frequency +/- 1Hz, Duty Cycle +/-0.5%, Wave form amplitude +/- 0.3%
<b>CASE</b>	Watertight, crushproof, and dustproof Pelican <sup>TM</sup> Storm Case <sup>TM</sup>

## PL4000 SPECIFICATIONS

**AC:**  
240V \* 58A -> ~14kW  
208V \* 50A -> ~10.4kW

**DC:**  
240V \* 58A -> ~14kW  
500V \* 28A -> ~14kW

*Note: The PL4000 is the limit. CCS1\_AC can go to 80A, but the PL is limited to 58A*

### OPERATING

**TEMPERATURE:** -20°C to 50°C (-4°F to 122°F)

### STORAGE

**TEMPERATURE:** -22°C to 60°C (-22°F to 140°F)

**DIMENSIONS:** 16.9" x 16.3" x 26" (42.9 x 41.4 x 66 cm)

**WEIGHT:** Approx. 46 lbs.



Ask about TESCO's Cat. 1060 UtiliCart<sup>®</sup> to easily transport and hold your equipment in the field.

Charging Station not included.

CAT. TS400

## ELECTRIC VEHICLE SERVICE EQUIPMENT (EVSE) TEST SYSTEM

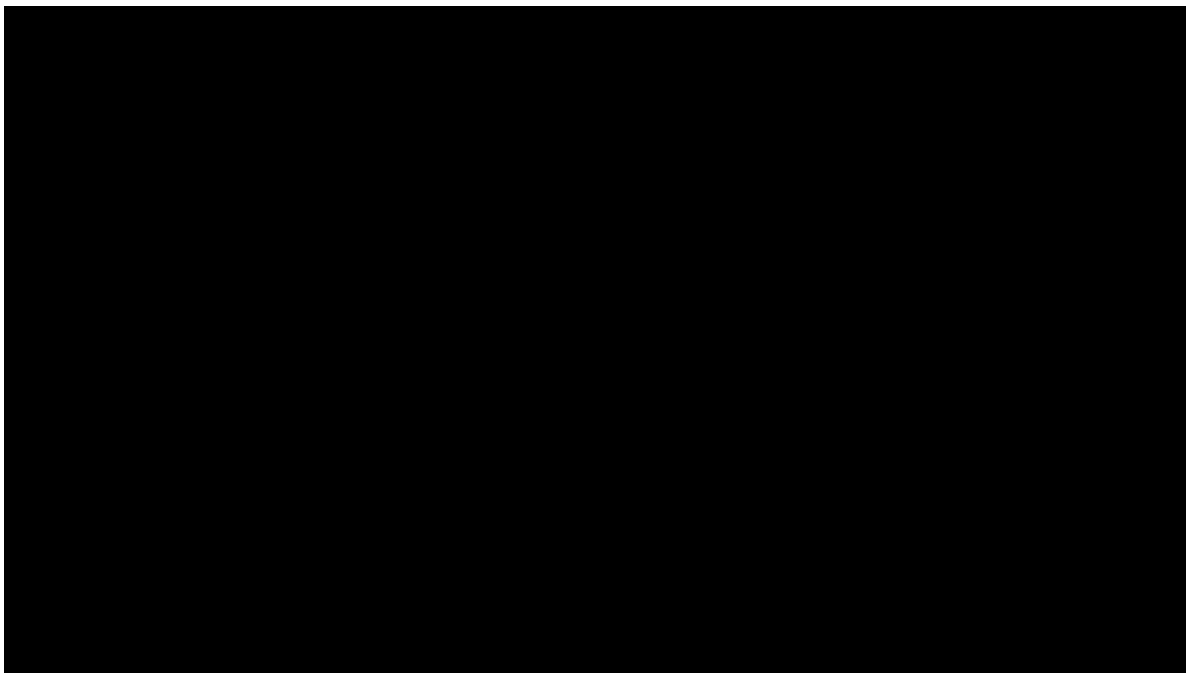


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# TS400 OVERVIEW: VIDEO

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CAT. TS400

**ELECTRIC VEHICLE SERVICE  
EQUIPMENT (EVSE) TEST SYSTEM**



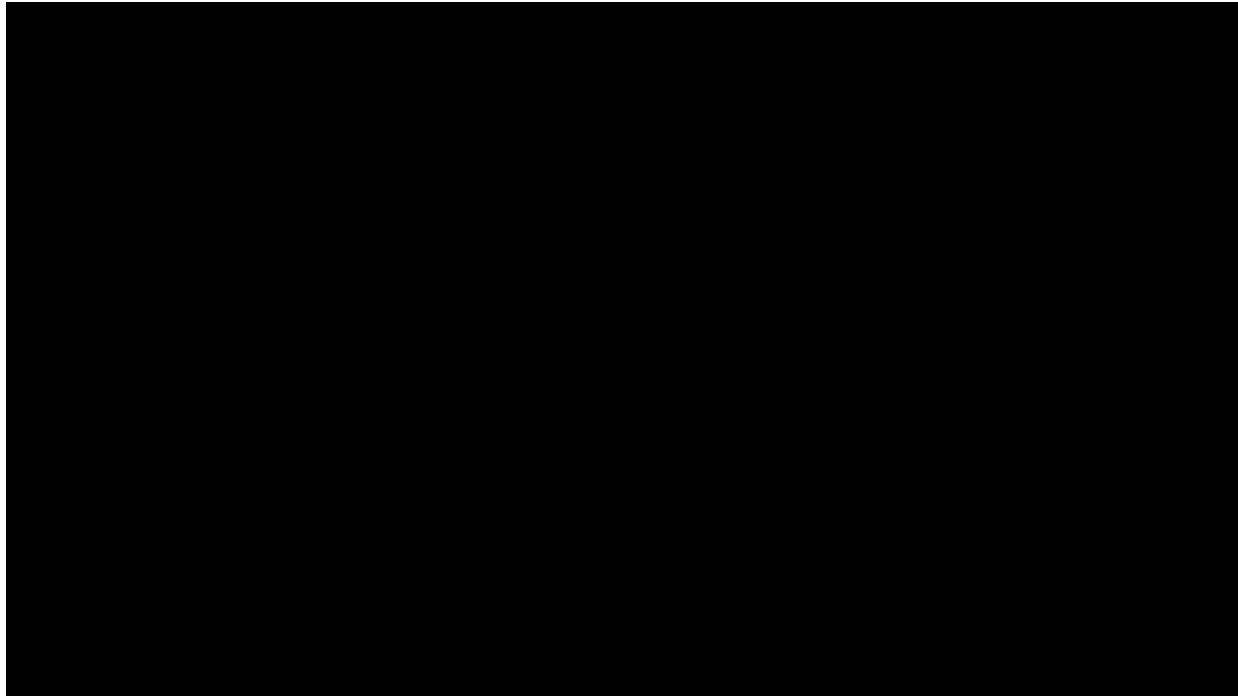
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# TS400 OVERVIEW: SOFTWARE

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## TESCO Device Manager



# TS400 OVERVIEW: HARDWARE

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CAT. TS400

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EQUIPMENT (EVSE) TEST SYSTEM**



# TS400 FUTURE PROOFING

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**ELECTRIC VEHICLE SERVICE  
EQUIPMENT (EVSE) TEST SYSTEM**



# QUESTIONS AND DISCUSSION

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This presentation can also be found under Meter Conferences and Schools on the **TESCO** website: [tescometering.com](http://tescometering.com)

**ISO 9001:2015 Certified Quality Company**  
**ISO 17025:2017 Accredited Laboratory**





# TESCO HOSPITALITY SUITE

# You're invited...

We would like you to join us in the TESCO Hospitality Suite for networking and more discussions about metering. The discussion will not be exclusively metering.....but we love metering and that is the most common topic.

## TESCO Hospitality Suite – Brighton Tower

Monday and Tuesday 8:00 PM – 10:00 PM



**We Hope you Can Join Us!**



tescometering.com