

TL326-EV ELECTRIC VEHICLE CHARGER ADAPTER

INSTRUCTION MANUAL



MARTINDALE
● ● ● ELECTRIC

Keeping You Safe

ALWAYS READ THESE INSTRUCTIONS BEFORE PROCEEDING

Thank you for using one of our products. For safety and full understanding of its benefits please read this manual before use. Technical support is available from +44 (0)1923 441717 and support@martindaleelectric.co.uk

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1 SAFETY INFORMATION

REMEMBER: SAFETY IS NO ACCIDENT

These instructions contain both information and cautions that are necessary for the correct operation and maintenance of this product. It is recommended that you read the instructions carefully and ensure that the contents are fully understood. Failure to understand and to comply with the warnings and instructions can result in serious injury, damage or even death.

Particular attention should be paid to the precautions and technical specification.

If the equipment is used in a manner not specified by Martindale Electric, the protection provided by the equipment may be impaired.

Please keep these instructions for future reference.

Updated instructions and product information are available at:
www.martindale-electric.co.uk

1.1 Meaning of symbols and markings



Caution - risk of danger & refer to instructions



Caution - risk of electric shock



Equipment protected by double or reinforced insulation (Class II)

CAT II (Measurement Category II) is applicable to test and measuring equipment directly to utilisation points (socket outlets and similar points) of the low-voltage MAINS installation. For further information on measurement categories refer to page 15 or visit www.martindale-



electric.co.uk/measurement_categories.php

Equipment complies with relevant directives



Equipment complies with relevant UK conformity assessed marking



End of life disposal of this equipment should be in accordance with relevant directives

1.2 Precautions

This product has been designed with your safety in mind, but please pay attention to the following warnings and cautions before use.



Warnings

In order to avoid the danger of electrical shock, it is important that proper safety measures are taken when working with voltages exceeding the extra low voltage (ELV) limit of 50V (25V) RMS AC or 120V (60V) DC. The values in brackets apply to restricted voltage ranges (for example in the medical or agricultural sector).

Where applicable other safety measures such as use of protective gloves, goggles etc. should be employed.

The TL326-EV tester must only be used by a skilled and competent person who is familiar with the relevant regulations, the safety risks involved and the consequent normal safe working practices, and under the conditions and for the purposes for which it has been constructed and specified.

Before each use the TL326-EV plug, connectors and leads should be examined for damage, cracks, cuts and scratches. Do not use the TL326-EV assembly if the lead wear indicator has become visible. This can be identified by the white coloured inner lead insulation becoming visible. The lead is double insulated with a differing-coloured outer insulation.

Make sure the TL326-EV assembly is dry, clean and free from dust, grease and moisture while in use to avoid the danger from electric shock due to surface leakage.

The TL326-EV must only be used on CAT II installations up to 300V to earth. Avoid severe mechanical shock or vibration and extreme temperature.

2. INTRODUCTION

2.1 Inspection

Examine the shipping carton for any sign of damage. Inspect the unit and any accessories for damage. If there is any damage then consult your distributor immediately.

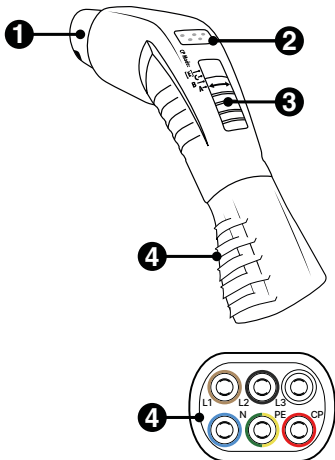
2.2 Description

The Martindale TL326-EV Test Lead is an accessory to allow connection to an EVSE charging point Type-2 connector to relevant test equipment using standard 4mm jack plugs. When used with a Multifunction Tester (MFT) it will allow the MFT to support all relevant measurements via the standard measurement inputs.

The following connections of the charging connector are available: L1, L2, L3, N, CP and PE. This allows the performance of typical MFT measurements: Voltage, frequency, phase indication, phase sequence, various RCD tests and measurements, insulation resistance, low ohm measurements, line and loop impedances.

Switches and connectors

1. Type-2 Electric Vehicle charger plug
2. LED status indicators for CP, L1,L2,L3
3. Slider switch for CP Mode selection
4. 4mm sockets for instrument connection to L1, L2, L3, N, CP and PE



3. OPERATION

3.1 Test procedure

- Connect the 4mm test leads from the MFT to the Martindale TL326-EV.
- Select CP Mode “A” with the slider switch.
- Connect Martindale TL326-EV test plug to the Type 2 connector of the charging point.
- Select CP Mode “B” with the slider switch, the charging point should show “ready to charge”. LED B should illuminate.
- Select CP Mode “C” with the slider switch, the charging point starts charging. LED C should illuminate along with the relevant phase indicator (see table below)
- Perform all measurements while the charging point is active (voltage and similar).
- CP mode “E” is a fault simulation position which induces failure of the CP signal. This should cause the EV charger to stop charging.
- After completion of all measurements select CP Mode “A” with the slider switch to stop charging.
- Unplug Martindale TL326-EV test plug from the charging point.

3.1.1 LED indication

Vehicle State	State description	LED indications
A	No vehicle connected	None
B	Vehicle connected, not ready to charge	B only
C	Electric vehicle connected ready to charge	C & L1 (single phase)
		C & L1, L2, L3 (three phase)
[E] Error	CP Error	None

3.2 Control Pilot (CP) state (vehicle simulation)

With the CP mode slider switch, various vehicle states can be simulated. Vehicle states are simulated with different resistances connected between CP and PE conductors. Correlation between resistance and vehicle states is shown in the table below.

Vehicle State	State description	CP-PE Resistance	CP Terminal Voltage
A	Electric vehicle not connected	Open (∞)	$\pm 12V$ @ 1KHz
B	Vehicle connected, not ready to charge	2.74k Ω	+9V/-12V @ 1KHz
C	Electric vehicle connected ready to charge, ventilation not required	882 Ω	+6V/-12V @ 1KHz
[E] Error	CP Error "E"	0 Ω	0V

3.3 Measuring terminals

Measuring terminals are directly connected to L1, L2, L3, N and PE conductors of the tested charging station, these should be used for measuring purposes only. Under no circumstances should these be used to draw current for supply to any item other than an appropriate measurement instrument.

4. MAINTENANCE

4.1 Cleaning



Prior to cleaning, ensure that the TL326-EV is disconnected from the MFT equipment and any live circuits

If contamination is found, clean with a damp soft cloth and if necessary, a mild detergent or alcohol. Do not use abrasives, abrasive solvents, or detergents which can cause damage to the unit. If a mild detergent is used, the unit should subsequently be thoroughly cleaned with water dampened soft cloth. After cleaning,

dry and allow to remain in a dry environment for 2 hours before use.

4.2 Repair & service

There are no user-serviceable parts. Return to Martindale Electric if faulty. Our service department will quote promptly to repair any fault that occurs outside of the guarantee period.

4.3 Storage conditions

The TL326-EV should be kept in warm dry conditions away from direct sources of heat or sunlight, and in such a manner as to preserve its working life. It is strongly advised that it is not kept in a toolbox where other tools may cause damage to it.

5. WARRANTY AND LIMITATION OF LIABILITY

This Martindale product is warranted to be free from defects in material and workmanship under normal use and service. The warranty period is 2 years and begins on the date of receipt by the end user. This warranty extends only to the original buyer or end-user customer and does not apply to fuses, disposable batteries, test leads or to any product which, in Martindale's reasonable opinion, has been misused, altered, neglected, contaminated, or damaged by accident or abnormal conditions of operation, handling or storage.

Martindale's authorised resellers shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of Martindale.

Martindale's warranty obligation is limited, at Martindale's option to, refund the purchase price, free of charge repair, or replace the defective product which is returned to Martindale within the warranty period.

This warranty is the buyer's sole and exclusive remedy and is in lieu of all other warranties, expressed or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. Martindale shall not be liable for any special, indirect, incidental or consequential damages or losses, including loss of data, arising from any cause or theory.

Since some jurisdictions do not allow limitation of the term of an implied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any part of any provision of this warranty is held invalid or unenforceable by a court or other decision-maker of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision or other part of that provision.

Nothing in this statement reduces your statutory rights.



Specification

TL326-EV Test Lead Adapter

Electrical

Nominal operating voltage: 230V ~ / 400V 3~

Operating frequency: 50/60 Hz

General

Dimensions: approx. Plug 230 x 60 x 55mm

Weight: approx. 300g

Mains socket and lead rating: max. 10 A

PP simulation: Setup internally to 20 A

CP simulation: States A, B, C

Error simulation: CP error "E"

Test connector type: IEC 62196-2 Type 2 male

Environmental

Location: Suitable for indoor and outdoor use in dry weather conditions only

Altitude: up to 2000m

Operating temperature range: 0°C to 40°C

Storage temperature: -0°C to 50°C

Relative humidity range: 0 – 80%RH

Mains supply voltage fluctuations: $\pm 10\%$

Overvoltage category: CAT II 300V

Pollution degree: 2

Safety

Conforms to BS EN 61010-1, BS EN 61010-031

Class II, Reinforced insulation

Check out what else you can get from Martindale:

- 18th Edition Testers
- Accessories
- Cable Locators
- Calibration Equipment
- Continuity Testers
- Digital Clamp Meters
- Digital Multimeters
- Electricians' Kits
- Environmental Products
- Full Calibration & Repair Service
- Fuse Finders
- Labels
- Microwave Leakage Detectors
- Multifunction Testers
- PAT Testers & Accessories
- Phase Rotation Testers
- Proving Units
- Safe Isolation Kits
- Socket Testers
- Specialist Drummond Testers
- Thermometers & Probes
- Test Leads
- Voltage Indicators

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