

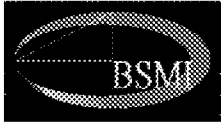


NOTIFICATION

The following notification is being circulated in accordance with Article 10.6

1. Notifying Member: THE SEPARATE CUSTOMS TERRITORY OF TAIWAN, PENGHU, KINMEN AND MATSU If applicable, name of local government involved (Article 3.2 and 7.2):
2. Agency responsible: Bureau of Standards, Metrology and Inspection (BSMI) No.4, Sec. 1, Jinan Rd. Zhongzheng Dist., Taipei City 100, Taiwan Tel: (886-2)23963360 Fax: (886-2)23970715 Email: pj.tseng@bsmi.gov.tw Name and address (including telephone and fax numbers, email and website addresses, if available) of agency or authority designated to handle comments regarding the notification shall be indicated if different from above:
3. Notified under Article 2.9.2 [], 2.10.1 [], 5.6.2 [X], 5.7.1 [], OTHER:
4. Products covered (HS or CCCN where applicable, otherwise national tariff heading. ICS numbers may be provided in addition, where applicable): Electric Vehicle Supply Equipment ELECTRICAL MACHINERY AND EQUIPMENT AND PARTS THEREOF; SOUND RECORDERS AND REPRODUCERS, TELEVISION IMAGE AND SOUND RECORDERS AND REPRODUCERS, AND PARTS AND ACCESSORIES OF SUCH ARTICLES (HS:85)
5. Title, number of pages and language(s) of the notified document: Draft of Technical Specification for Verification and Inspection of Electric Vehicle Supply Equipment (6 page(s), in English; 5 page(s), in Chinese)
6. Description of content: Along with the proposal for regulating electric vehicle supply equipment (EVSE) as a legal measurement instrument, the Bureau of Standards, Metrology and Inspection drafted the technical specification for verification and inspection of EVSE. The draft text includes inspection of structure, accuracy test, repeatability test and time accuracy. The technical specification will apply to EVSE, domestically manufactured or imported, after its adoption.
7. Objective and rationale, including the nature of urgent problems where applicable: Quality requirements
8. Relevant documents: The Weights and Measures Act; Enforcement Rules of the Weights and Measures Act.

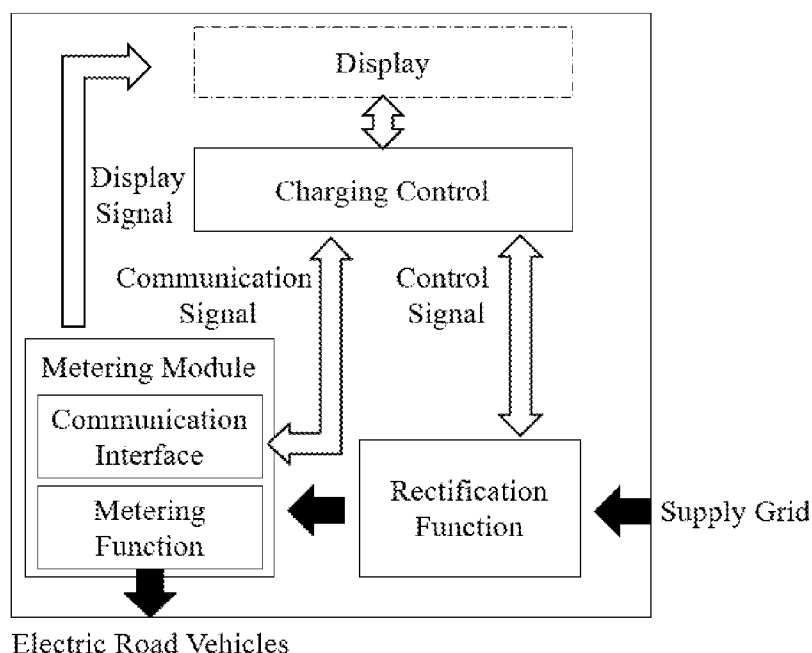
9.	Proposed date of adoption:	To be determined
	Proposed date of entry into force:	1 January 2023
10.	Final date for comments:	60 days from notification
11.	Text available from: National enquiry point [], or address, telephone and fax numbers, e-mail and web-site addresses, if available of the other body: WTO/TBT Enquiry Point	
	Bureau of Standards, Metrology and Inspection (BSMI)	
	No.4, Sec.1, Jinan Rd.	
	Zhongzheng Dist., Taipei City 100, Taiwan	
	Tel: (886-2)33435191	
	Fax: (886-2)23431804	
	E-mail: tbtenq@bsmi.gov.tw	
	2 file(s) attached	

	Draft Technical Specification for the Verification and Inspection of Electric Vehicle Supply Equipment	S/N	CNMV 207										
		Rev.	1										
<p>1. This technical specification is developed pursuant to the stipulations in Paragraph 2 of Articles 14 and Paragraph 2 of Articles 16 in the Weights and Measures Act.</p> <p>2. The date of promulgation, document number, date of enforcement and content of amendment are listed as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Rev.</th> <th style="text-align: center;">Date of Promulgation (Ching-Piao-Szu-Tsu)</th> <th style="text-align: center;">Document No.</th> <th style="text-align: center;">Date of Enforcement</th> <th style="text-align: center;">Content of Amendment</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">2022-00-00</td> <td style="text-align: center;">No. 11140000000</td> <td style="text-align: center;">2023-01-01</td> <td></td> </tr> </tbody> </table> <p>3. This specification is formulated with reference to the following international regulations and specifications:</p> <ol style="list-style-type: none"> (1) IEC 62052-11:2020 Electricity metering equipment – General requirements, tests and test conditions – Part 11 : Metering equipment. (2) IEC 62053-21:2016 Electricity metering equipment (a.c.) – Particular requirements –Part 21 : Static meters for active energy (classes 1 and 2). (3) IEC 62053-41:2020 Electricity metering equipment – Particular requirements –Part 41 : Static meters for DC energy (classes 0,5 and 1). (4) National Institute of Standards and Technology Handbook 44, §3.40, 2019. (5) PTB-A 50.7 Anforderungen an elektronische und softwaregesteuerte Messgeräten und Zusatzeinrichtungen für Elektrizität, Gas, Wasser und Wärme. (6) CNS 15511-1:2021 Electric vehicle conductive charging system – Part 1: General requirements + Amendment 1 (7) CNS 14607:2017 Static electricity meters 				Rev.	Date of Promulgation (Ching-Piao-Szu-Tsu)	Document No.	Date of Enforcement	Content of Amendment	1	2022-00-00	No. 11140000000	2023-01-01	
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1	2022-00-00	No. 11140000000	2023-01-01										
Date of Promulgation 2022-00-00	Bureau of Standards, Metrology and Inspection, Ministry of Economic Affairs	Date of Enforcement 2023-01-01											

NO GUARANTEE ON THE TRANSLATION

In case of discrepancies between the English translation and Chinese text, the Chinese text shall govern.

1. Scope: This technical specification applies to electric vehicles (EV) supply equipment for charging electric vehicles, with a rated supply voltage up to 1,000 V_{ac} or 1,500 V_{dc} and a rated output voltage up to 1,000 V_{ac} or 1,500 V_{dc} that shall be subject to verification and inspection. The structure diagram of electric vehicle supply equipment is as follows. Electric vehicles cover all road vehicles, including plug-in hybrid electric vehicles (PHEV), that derive all or part of the energy from on-board rechargeable energy storage systems (RESS). This technical specification also applies to electric vehicle supply equipment supplied from on-site storage systems (e.g. buffer batteries).



Note: The display can be installed externally or internally in the electric vehicle supply equipment.

2. Definition

2.1 Electric vehicles (EV) supply equipment

Equipment or a combination of equipment, providing dedicated functions to supply electric energy from a fixed electrical installation or supply network to an electric vehicle for the purpose of charging.

2.2 AC electric vehicles supply equipment (AC EV supply equipment)

Electric vehicles supply equipment that supplies alternating current to an electric vehicle.

2.3 DC electric vehicles supply equipment (DC EV supply equipment)

Electric vehicles supply equipment that supplies direct current to an electric vehicle.

2.4 Charging

Adjusting all functions of voltage and/or current provided by the AC or DC supply network to assure the energy supply to the rechargeable energy

storage systems (RESS).

- 2.5 Rated current, I_n
The maximum output current of each vehicle connector that can meet the accuracy requirements of this technical specification.
- 2.6 Display
A device that can display the content stored in the memory, and the measured or recorded data can be read easily.
- 2.7 Percentage error
Metering percentage error of supply equipment (%) = $\frac{\text{Indication} - \text{Standard value}}{\text{Standard value}} \times 100\%$
3. Test apparatus of verification and inspection
- 3.1 Test apparatus of verification and inspection including:
- (1) The power analyzer includes current shunt (or current sensor), AC: 1,000 V and greater than or equal to 600 A (200 A for each phase); DC: 1,500 V and greater than or equal to 600 A, accuracy within $\pm 0.1\%$.
 - (2) Timing equipments: resolution of time measurement ≤ 0.1 seconds.
- 3.2 Test apparatus in Section 3.1 shall have traceability and evaluation of uncertainty reports, that the valid calibration documents are traceable to national standards or international standards.
4. Structures
- 4.1 The items marked on the nameplate of the output terminal of the electric vehicle supply equipment are as follows. The nameplate shall be fixed at the position of each output terminal of the electric vehicle supply equipment body:
- (1) The manufacturer's name, initials, trademark or distinctive marking.
 - (2) Type designation or identification number or any other means of identification, making it possible to obtain relevant information from the manufacturer of the electric vehicles supply equipment.
 - (3) Serial number or manufacturing number.
 - (4) Identification of manufacturing date.
 - (5) Type of electric current.
 - (6) Frequency and number of phases in case of alternating current.
 - (7) Rated voltage (input and output respectively, if not the same).
 - (8) Rated current (input and output respectively, if not the same).
- 4.2 The display of the electric vehicles supply equipment shall indicate legibly, definitely, accurately, and easy to read under normal conditions of operation.
- 4.3 Electric vehicles supply equipment may be connected with on external display (wired or wireless), and the display can be used by two or more

electric vehicles supply equipment. Where an external display is being used, the display and the electric vehicles supply equipment are regarded as an integrated equipment and shall not be replaced or removed arbitrarily.

- 4.4 The display shall be installed such that the users can read the indication easily. Moreover, it shall indicate clearly which equipment and vehicle connector has been used.
- 4.5 The unit of electric energy measurement for charging electric vehicles shall be indicated and recorded in kilowatt-hour (kWh) and decimal subdivisions thereof. In addition, time indication shall include year, month, day, hour, minute, and second.
- 4.6 The smallest metering unit of recorded energy delivery by an electric vehicles supply equipment shall be 0.001 kWh.
- 4.7 Electric vehicles supply equipment shall have the function of engineer mode that the output voltage and output current may be adjusted to meet the verification and inspection requirements, and the output of time signal shall be provided for verification and inspection purposes.
- 4.8 The software version of the energy metering software of electric vehicles supply equipment shall be identified.
5. Verification, Inspection, and maximum permissible errors
- 5.1 Initial verification
- 5.1.1 Accuracy test

Accuracy test of electric vehicles supply equipment shall conform to the following requirements of Table 1 and Table 2. The test shall be conducted 3 times under each test conditions, and shall conform to the following requirements of Table 1 and Table 2 every time. However, the electric vehicle supply equipment installed before the implementation date may be tested 3 times under any loading condition, and each test shall be conducted not less than 15 seconds.

Table 1 Maximum permissible errors of electric energy verification for AC electric vehicles supply equipment

Electric vehicles supply equipment output current (A)	Power factor	Maximum permissible errors of verification (%)
0.85 I_n	1	± 1 %
0.1 I_n		± 1 %

Table 2 Maximum permissible errors of electric energy verification for DC electric vehicles supply equipment

Electric vehicles supply equipment output current (A)	Maximum permissible errors of verification (%)
$0.85 I_n$	$\pm 1 \%$
$0.1 I_n$	$\pm 1 \%$

5.1.2 Repeatability test

The accuracy test of electric vehicle supply equipment shall be carried out for 3 times consecutively under the same loading conditions. Percentage error of the minimum value subtracted from the maximum value shall not exceed one-fourth of the maximum permissible errors of verification.

5.1.3 Time-keeping accuracy

Where the electric vehicles supply equipment and additional equipment have the internal time clock (equipment time clock) for time-keeping, depending on the purpose, there are different requirements as following:

- (1) When the national standard time is used to determine the exact time of registration and transmission of data, for example, the data is stored with a time stamp, the equipment time clock must can be converted to the national standard time. The equipment time clock shall operate synchronized so that its deviation from the national standard time shall less than 3 % of the measurement time, and the maximum value of measurement shall not exceed 27 seconds.
- (2) The time interval of the measurement, for example, when determining the average interval time based on the time stamp, this case only represents the time series of the measurement value, and does not necessarily have to be based on the legal time. The time interval of the measurement shall only deviate from the setting value by less than 1 %.

5.2 Re-verification and inspection

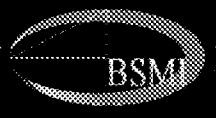
Re-verification or inspection after initial verification may be conducted under any loading condition, and each test shall be conducted not less than 15 seconds. In addition, the test data shall be recorded at least 3 times, and errors shall be less than or equal to twice the maximum permissible errors of initial verification.

6. Verification mark and certificate

- 6.1 The validity period of the verification is starting from the date on which the verification mark is attached to two years after the first day of the month following the month of the date on which the verification mark is

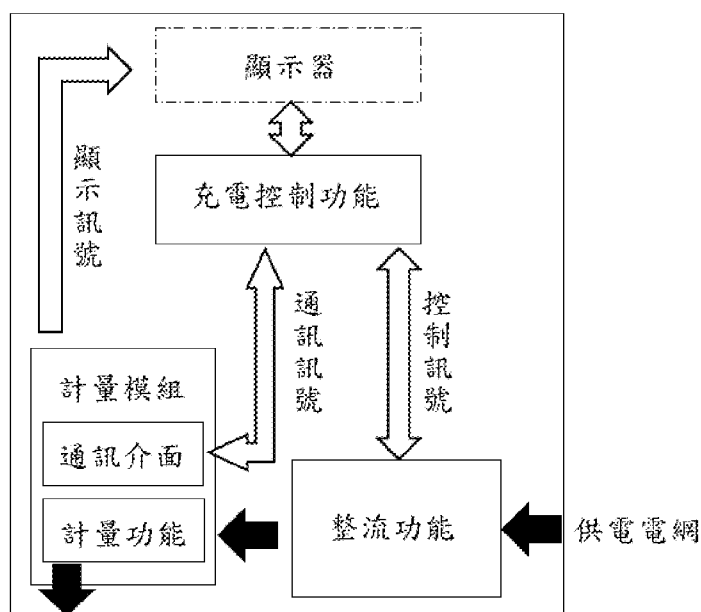
attached.

- 6.2 Electric vehicle supply equipment shall apply for re-calibration if the adjustment of software, hardware or component maintenance affects the measurement results.
- 6.3 Where the electric vehicles supply equipment of multiple vehicle connectors verified under the same verification certificate has been repaired, adjusted or modified, all of the vehicle connectors shall apply for re-verification. After passing the verification, each vehicle connector will be attached with a verification mark. In the case that the original verification certificate of has been removed and some adjustments have been made to the electric vehicles supply equipment, when the verification personnel on-site confirms that the adjustment is only made for a specific vehicle connector, the verification may be performed only for the specific vehicle connector and the verification mark could be attached. When the electric vehicles supply equipment of multiple vehicle connectors using the same verification certificate is unqualified after inspection, its verification mark shall be removed. Besides, a mark of not in service shall be attached, and the shared verification certificate shall not be removed.
- 6.4 The verification mark shall be attached with a physical adhesive tamper-evident on the opening of outer covering of the metering module to prevent tampering with metering functions. The physical adhesive tamper-evident shall be attached to the adequate place depending on the opening method of the equipment, and the verification mark shall be attached on the obvious place on the front of the electric vehicles supply equipment.

	電動車輛供電設備檢定檢查 技術規範		編號	CNMV 207										
			版次	第1版										
<p>一、本技術規範依度量衡法第十四條第二項及第十六條第二項規定訂定之。</p> <p>二、本技術規範歷次公告日期、文號、實施日期及修正內容如下：</p> <table border="1" data-bbox="272 510 1315 647"> <thead> <tr> <th>版次</th> <th>公告日期</th> <th>文號(經標四字)</th> <th>實施日期</th> <th>修正內容</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>111.0.0</td> <td>第○○○號</td> <td>112.01.01</td> <td></td> </tr> </tbody> </table> <p>三、本技術規範參考標準如下：</p> <ol style="list-style-type: none"> 1. IEC 62052-11:2020 Electricity metering equipment – General requirements, tests and test conditions – Part 11 : Metering equipment. 2. IEC 62053-21:2016 Electricity metering equipment (a.c.) – Particular requirements –Part 21 : Static meters for active energy (classes 1 and 2). 3. IEC 62053-41:2020 Electricity metering equipment – Particular requirements – Part 41 : Static meters for DC energy (classes 0,5 and 1). 4. National Institute of Standards and Technology Handbook 44, §3.40, 2019. 5. PTB-A 50.7 Anforderungen an elektronische und softwaregesteuerte Messgeräten und Zusatzeinrichtungen für Elektrizität, Gas, Wasser und Wärme. 6. CNS 15511-1:2021，電動車輛傳導式充電系統－第1部：一般要求+補充增修1 7. CNS 14607:2017，電子式電度表 					版次	公告日期	文號(經標四字)	實施日期	修正內容	1	111.0.0	第○○○號	112.01.01	
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1	111.0.0	第○○○號	112.01.01											
公告日期 111年○月○日		經濟部標準檢驗局		實施日期 112年01月01日										

1. 適用範圍：本技術規範適用於應受檢定、檢查之電動車輛(electric road vehicles, EV)供電設備，其額定供電電壓在1,000 V_{ac}或1,500 V_{dc}以下，且額定輸出電壓在1,000 V_{ac}或1,500 V_{dc}以下，電動車輛供電設備架構如下圖。EV涵蓋所有道路車輛，包括插電式混合動力道路車輛(plug-in hybrid electric road vehicles, PHEV)，其全部或部分能量來自車載可再充電式儲能系統(rechargeable energy storage systems, RESS)。

本技術規範亦適用於由現場儲能系統(例：暫存電池)提供的電動車輛供電設備。



電動道路車輛

註：顯示器可裝設於電動車輛供電設備之本體內部或外部

2. 用詞定義

- 2.1 電動車輛供電設備(EV supply equipment)：提供專用功能自固定之電氣設施或供電網路供應電能至電動車輛(electric road vehicles, EV)，作為充電目的之設備或設備的組合。
- 2.2 交流電動車輛供電設備(AC EV supply equipment)：供應電動車輛交流電之電動車輛供電設備。
- 2.3 直流電動車輛供電設備(DC EV supply equipment)：供應電動車輛直流電之電動車輛供電設備。
- 2.4 充電(Charging)：調節經由 AC 或 DC 供電網路提供電壓及/或電流所需之所有功能，以確保供應車載可再充電式儲能系統(rechargeable energy storage systems, RESS)。
- 2.5 額定電流(Rated current, I_n)：能符合本技術規範準確度要求之各槍最大輸出電流。
- 2.6 顯示器(Display)：係一種可顯示記憶體所儲存內容之裝置，並可容易讀取量測或記錄的計量及數據。
- 2.7 器差(Percentage error)：

$$\text{供電設備計量誤差百分比(\%)} = \frac{\text{器示值} - \text{標準值}}{\text{標準值}} \times 100\%$$

3. 檢定及檢查設備

- 3.1 檢定、檢查設備應包括：
 - (1) 電力分析儀含電流分流器(或電流感測器)，AC：1,000 V、600 A (每相200 A) 以上；DC：1,500 V、600 A以上，準確度 $\pm 0.1\%$ 以內。
 - (2) 計時設備：時間量測解析度 ≤ 0.1 秒。
- 3.2 第3.1節設備須具追溯性及不確定度評估報告，並具備有效的校正證明文件，可追溯到國家或國際量測標準。
4. 構造
 - 4.1 電動車輛供電設備輸出端銘牌標示項目如下，銘牌應固定於電動車輛供電設備本體之各槍輸出端位置：
 - (1) 電動車輛供電設備製造商之名稱、簡稱、商標或特殊標示。
 - (2) 型式名稱或識別編號或任一其他識別措施，可從電動車輛供電設備製造商獲得相關資訊。
 - (3) 器號或製造號碼。
 - (4) 製造日期之識別措施。
 - (5) 電流種類。
 - (6) 若為交流，頻率及相數。
 - (7) 額定電壓(若輸入與輸出電壓不同)。
 - (8) 額定電流(若輸入與輸出電流不同)。
 - 4.2 電動車輛供電設備顯示器應清晰、明確、準確，並在設備正常運行條件下易於閱讀。
 - 4.3 電動車輛供電設備得以外接(有線或無線)方式連接顯示器，多臺電動車輛供電設備得共用外接顯示器，惟該外接顯示器與電動車輛供電設備視為一體，不得任意更換或移除。
 - 4.4 顯示器應於便利使用者查閱處，並應明確顯示所使用之設備及槍別。
 - 4.5 電動車輛供電設備的計量單位應為千瓦時(kWh)及其十進制細分記錄，時間單位須至少包括年、月、日、時、分、秒。
 - 4.6 電動車輛供電設備電能計量紀錄交付最小單位電量值應為 0.001 千瓦時(kWh)。
 - 4.7 電動車輛供電設備須具備工程模式(Engineer mode)功能，即輸出電壓與電流應能配合檢定、檢查作業要求作調控，並可提供時間訊號輸出，以利檢定、檢查。
 - 4.8 電動車輛供電設備電能計量軟體必須明確標示軟體版本。
5. 檢定、檢查與公差
 - 5.1 初次檢定
 - 5.1.1 準確度試驗

電動車輛供電設備準確度應符合以下表1、表2要求，每測試條件各測試3次，每次需符合表1、表2要求。但實施日期前已安裝之電動車輛供電設備，得於任一負載功率下測試3次，每次測試時間不少於15秒。

表1 交流電動車輛供電設備電能檢定公差

電動車輛供電設備輸出電流(A)	功率因數	檢定公差(%)
0.85 I _n	1	± 1
0.1 I _n		± 1

表2 直流電動車輛供電設備電能檢定公差

電動車輛供電設備輸出電流(A)	檢定公差(%)
0.85 I _n	± 1
0.1 I _n	± 1

5.1.2 重複性試驗

電動車輛供電設備測試必須在相同負載下進行連續3次準確度試驗，以進行重複性測試，器差最大值減最小值的結果不可超過檢定公差的 1/4。

5.1.3 時間準確度

設備和附加設備的某些功能需要設備的內部時鐘(設備時鐘)作計時之用途時，根據使用目的，有以下不同的要求：

- (1) 如果使用國家標準時間來確定註冊和傳輸數據時的確切時間，例如，當資料儲存帶有時間戳記時，其時間必須可以轉換為國家標準時間。設備的時鐘必須以同步方式運作，使其與國家標準時間的偏差小於所測量時間的 3%，最大不得超過27秒。
- (2) 測量的區間時間，例如，根據時間戳記作為確定平均間隔時間時，此情況僅表現測量值的時間序，不一定須基於法定時間。設備時鐘的設計方式必須確保其測量區間時間長度與設定值的偏差小於 1%。

5.2 重新檢定及檢查

對於重新檢定或經檢定合格在使用中之檢查，應於任一負載功率下，每次測試時間不少於15秒，至少記錄3次測試數據，且器差應小於或等於初次檢定公差要求之2倍。

6. 檢定合格印證

6.1 檢定合格有效期間自附加檢定合格印證之日起至附加檢定合格印證月份之次月始日起算2年止。

6.2 電動車輛供電設備若經調整軟體、硬體或元件維修等影響計量結果，應申請重新檢定。

6.3 共用同一封印之多槍電動車輛供電設備，經修理、調整或改造者，應全數申請重新檢定，檢定合格後，各槍並分別加貼檢定合格單。但於拆除原封印及調整時，如有檢定人員在現場確認僅針對特定充電槍做調整時，則可僅針對該特定充電槍執行檢定及加貼檢定合格單。共用同一封印之多槍電動車輛供電設備，經檢查特定充電槍不合格者，應去除其檢定、檢查合格單，並加貼停止使用之標示，但不去除其共用之封印。

6.4 檢定合格印證應使用物理黏合膠條貼附於計量模組之外殼開啟處，以防

篡改設備相關功能，得視設備開啟方式於適當位置加貼黏合膠條，並加貼檢定合格單於電動車輛供電設備正面明顯處。