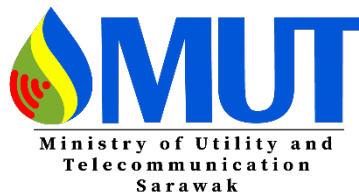




GUIDELINES FOR SOLAR PHOTOVOLTAIC (PV) INSTALLATION AND REGISTRATION



MINISTRY OF UTILITY AND TELECOMMUNICATION SARAWAK ELECTRICAL INSPECTORATE UNIT (EIU)

Level 8, LCDA Tower,
Lot 2827, The Isthmus, Off Jalan Bako,
93050 Kuching,
Sarawak Malaysia
Tel: 082-551008

Website: <https://mut.sarawak.gov.my>

All rights reserved. No part of this publication may be reproduced, distributed, transmitted in any form or by any means without permission from the Ministry of Utility and Telecommunication Sarawak.

Published by:
Ministry of Utility and Telecommunication Sarawak
1st, 7th-10th Floor, LCD A Tower,
Lot 2879, The Isthmus, Off Jalan Bako,
93050 Kuching,
Sarawak, Malaysia.
Tel : 082-551000
Fax : 082-551010

TABLE OF CONTENTS

1. INTRODUCTION	2
2. APPLICATION OF THESE GUIDELINES	2
3. SCOPE	3
4. OBJECTIVE OF THE GUIDELINES	3
5. INTERPRETATION	3
6. GENERAL REQUIREMENTS	4
6.1 Process for installation of solar PV system.....	4
6.2 Obligation of Consumer.....	6
6.3 Submission of proposal and approval by Distribution Licensee.....	7
6.4 Electrical Contractor	7
6.5 Solar PV Design	7
6.6 Installation.....	8
6.7 Testing and Commissioning.....	12
6.8 System Impact Study (SIS)	12
6.9 Registration of Installation.....	12
6.10 Proper Maintenance and Periodic Inspection	13
6.11 Renewal of the registration of Installation.....	14
6.12 Cancellation of the registration of installation.....	14
6.13 Registration of Installation Fee.....	14
6.14 Safety Labelling.....	14
7. ARBITRATION ON TECHNICAL MATTERS.....	16
8. AMENDMENT AND VARIATION.....	16
9. EFFECTIVE DATE	16
Appendix 1: Process for Solar PV Installation and Registration	17
Appendix 2: Fees	18

1. INTRODUCTION

- 1.1 Solar photovoltaic (PV) systems are increasingly deployed across residential, commercial, and industrial premises in Sarawak. These systems provide a renewable source of electricity, reduce dependency on grid supply, and support environmental sustainability.
- 1.2 These Guidelines set out the regulatory, technical, and procedural requirements for the installation, testing, commissioning, operation, and registration of grid-connected solar PV systems in Sarawak.
- 1.3 A solar PV installation refers to a system that converts sunlight into electrical energy using photovoltaic technology and includes, but is not limited to, solar modules, inverters, mounting structures, DC and AC cabling, protection devices, isolators, and associated electrical equipment.
- 1.4 The Electrical Inspectorate Unit (EIU), under the Ministry of Utility and Telecommunication Sarawak, is the regulator of the electricity industry in Sarawak and is responsible for safeguarding public safety. All solar PV installations shall therefore be designed, installed, operated, and maintained by competent persons in compliance with the Electricity Ordinance and Electricity Rules.
- 1.5 Registration of solar PV installations is mandatory to ensure that installations are executed and maintained by registered and competent electrical contractors and persons authorised by the EIU.

2. APPLICATION OF THESE GUIDELINES

- 2.1 These guidelines shall apply to:
 - a) Any person who installs, operates, or maintains a grid-connected solar PV system in Sarawak, whether for self-consumption or under approved schemes such as NEM,
 - b) Any person who installed a solar PV system prior to the introduction of these Guidelines,
 - c) The Distribution Licensee whose network is connected to a solar PV system,
 - d) Any implementing agency appointed by the Sarawak Government,
 - e) The owner or management of a solar PV installation

3. SCOPE

3.1 These guidelines shall apply to all solar PV installations in Sarawak other than the following:

- a) Installations granted written exemption by the Director,
- b) Stand-alone integrated systems such as solar streetlights,
- c) Larger-scale solar PV installations exceeding 10 MW,
- d) Any other solar PV installations excluded by the Director.

4. OBJECTIVE OF THE GUIDELINES

4.1 These Guidelines prescribe the technical requirements, safety provisions, and registration procedures for solar PV installations. They shall be used by installation owners, prosumers, and electrical contractors as a reference for:

- a) Compliance with statutory and technical requirements,
- b) System design, installation, testing, and commissioning; and
- c) Registration and inspection obligations;

5. INTERPRETATION

5.1 In these guidelines, the following terms shall bear the following meanings:

Director	means the Director of Electricity Supply, and includes any person who is acting or temporarily discharging the duties of that office.
Distribution Licensee (the Licensee)	means Syarikat SESCO Berhad (SESCO), who is the holder of a license to generate, transmit, distribute and supply electricity in Sarawak issued under the Electricity Ordinance (Chap. 50) and any subsequent amendments thereof.
Competent person	means a person who holds a certificate of competency issued by the Director pursuant to rules made under section 36(1) to perform or execute work in accordance with terms, conditions, and restrictions stipulated in the certificate.

Consumer	means a valid registered consumer of electricity from a Licensee
EIU	means Electrical Inspectorate Unit
Electricity Ordinance,	means the Electricity Ordinance (Cap 50) 2007 and any subsequent amendments thereof
Electricity Rules	means the Electricity Rules, 1999 and any subsequent amendments thereof.
Solar Photovoltaic (PV) system	is a system of generating electrical power by converting sunlight into electricity through the photovoltaic effect.

5.2 Unless otherwise stated, terms used in these Guidelines shall have the same meaning as defined in the Electricity Ordinance (Cap. 50) and the Electricity Rules, 1999.

5.3 Where any inconsistency arises, the provisions of the Electricity Ordinance and Electricity Rules shall prevail.

6. GENERAL REQUIREMENTS

6.1 Process for installation of solar PV system.

6.1.1 The solar PV installation process generally involves several processes below:

a) Appointment of a registered contractor;

The solar PV installation owner shall appoint an Electrical Installation Contractor (EIC) who is duly registered with EIU. The appointed EIC shall be competent to undertake solar PV works in accordance with Electricity Ordinance and Electricity Rules, and technical standards in Sarawak.

b) Submission of proposal to the Distribution Licensee and the Ministry of Utility and Telecommunication, Sarawak;

i. Grid-Connected Solar PV System

A complete proposal shall be submitted to the Distribution Licensee for review and approval. The proposal shall include, but not be limited to, system design details, capacity, single-line diagrams, protection schemes, equipment specifications, and any other documents required by the Distribution Licensee.

ii. Off-Grid Solar PV System

For a purely off-grid Solar PV system, the applicant shall submit a **Letter of Intent** and technical proposal to the Ministry of Utility and

Telecommunication and the Distribution Licensee for review and recommendation. The proposal will be assessed to ensure regulatory compliance, safety standards, and confirmation that the system has no interconnection with the public grid before the design is finalised. Installation may only proceed after the applicant incorporates all comments and obtains the necessary confirmation from the Ministry and Licensee.

c) Approval and, where required, System Impact Study;

Upon submission, the Distribution Licensee shall assess the proposal for technical compliance and network suitability. Where applicable, a System Impact Study may be needed by the Distribution Licensee to evaluate the potential effects of the proposed solar PV system on the existing distribution network.

d) Installation works;

Installation works shall be carried out strictly in accordance with the approved design, relevant electrical codes, standards, and manufacturer's specifications. All materials and equipment used shall be of approved type and rating. Any deviation or modification from the approved design shall be subject to prior approval and re-endorsement by the relevant competent person and authorities.

e) Testing and Commissioning;

Testing and commissioning shall be conducted by a competent person duly authorised by EIU to carry out testing and commissioning activities. This stage shall include verification of system performance, protection devices, isolation functions, earthing, and anti-islanding protection. All test results shall be properly recorded, certified by the competent person and made available during an audit.

f) Registration of installation with EIU;

Upon successful testing and commissioning, the solar PV installation shall be registered with EIU. Relevant documents, including testing and commissioning reports, and as-built drawings, shall be submitted for record and regulatory compliance.

g) Periodic inspection and renewal.

The solar PV installation shall be subject to periodic inspection at intervals specified by the EIU to ensure continued safety, reliability, and compliance with prevailing standards. Renewal of registration or certification shall be carried out within the prescribed timeframe, and any identified non-compliances shall be rectified promptly.

6.2 Obligation of Consumer

6.2.1 The Consumer are advised to exercise due diligence before deciding to install a solar PV system on their premises. The following factors should be considered prior to making the decision to proceed with the installation.

a. **Assessment of Electricity Usage**

Assess the electricity consumption of the premises based on historical billing records, preferably covering a minimum period of six (6) months, to determine an appropriate solar PV system capacity and to avoid over-sizing or under-sizing of the installation.

b. **Understanding of Tariffs and Schemes**

Understand the applicable electricity tariffs, approved schemes such as Net Energy Metering (NEM) or Self-Consumption (SELCO), and any conditions imposed by the Ministry, the Distribution Licensee, or other relevant authorities, including limitations on export capacity and financial implications.

c. **Regulatory Compliance**

Ensure that the proposed solar PV installation complies with the Electricity Ordinance, Electricity Rules, these Guidelines, and any other written circulars or directives issued by the Director or the Distribution Licensee.

d. **Engagement of Registered Contractor and Competent Persons**

Engage only Electrical Installation Contractors and competent persons who are duly registered with the Electrical Inspectorate Unit and hold valid certificates of competency appropriate to the scope of work, including system design, installation, testing, and commissioning.

e. **Product Selection and Workmanship Assurance**

Survey and make comparison on the products to be purchased and workmanship guarantees since there is a diverse range of products on the market; and

f. **Liaison with Distribution Licensee**

Liaise with the Distribution Licensee at an early stage to obtain the necessary information on scheme such as NEM, approvals for grid connection, system capacity, protection requirements, metering arrangements, and any System Impact Study that may be required.

6.3 Submission of proposal and approval by Distribution Licensee

- 6.3.1 All grid connected and off-grid solar PV installations shall obtain prior written approval from the Distribution Licensee. Installation works shall not commence without such approval.

6.4 Electrical Contractor

- 6.4.1 All installation, testing, and commissioning works shall be carried out by an Electrical Installation Contractor registered with the EIU and holding valid certificates of competency.

6.5 Solar PV Design

6.5.1 Solar PV System Design (DC and Associated AC Components)

The design of the solar PV system, including the DC side and all AC components forming part of the solar PV system up to the point of grid interconnection, shall be carried out and endorsed by a Competent Person in Solar PV Design holding a valid Certificate of Competency issued by the EIU.

6.5.2 Non-PV AC Electrical Installation

The design of electrical systems that are not part of the solar PV system, including modifications to existing internal wiring, distribution boards, protection devices, or other consumer electrical installations beyond the PV system interface, shall be carried out and endorsed by a Competent Person of the appropriate category or by a Professional Electrical Engineer holding a valid Practicing Certificate issued by the Board of Engineers Malaysia.

6.5.3 Amendment to Approved Design

No amendment, modification, or deviation shall be made to any approved design unless such amendment has been reviewed and re-endorsed by the same category of competent person or engineer responsible for the original endorsement.

6.5.4 Compliance with Other Authorities' Requirements

The design and location of solar PV systems shall comply with all applicable written laws, regulations, and guidelines issued by other relevant authorities, including but not limited to BOMBA, local authorities, land and survey departments, building ordinances, and the State Planning Authority.

6.6 Installation

6.6.1 All solar PV installations shall:

- a) Be installed in accordance with approved designs;
- b) Comply with the Electricity Ordinance, Electricity Rules 1999, MS IEC 60364, and MS 1837;
- c) Shall be completed within the timeframe specified by the Distribution Licensee from the date approval is granted.

6.6.2 The installation of GCPV shall be in accordance to Figure 1 – 6.

6.6.3 Isolator and Disconnection

- a) Every grid-connected solar PV system shall be provided with an accessible isolator to allow the Distribution Licensee to disconnect the system from the grid.
- b) The isolator shall isolate all live conductors, be clearly labelled, and comply with applicable MS IEC standards.
- c) The isolator shall be kept accessible at all times for maintenance or emergency purposes.

6.6.4 Anti-Islanding Protection

- a) All grid-connected solar PV systems shall be equipped with effective anti-islanding protection.
- b) The system shall automatically cease to energise the grid upon loss of supply.
- c) Verification of anti-islanding protection shall be included in testing and commissioning.
- d) Any unauthorised islanding operation shall render the installation unsafe.

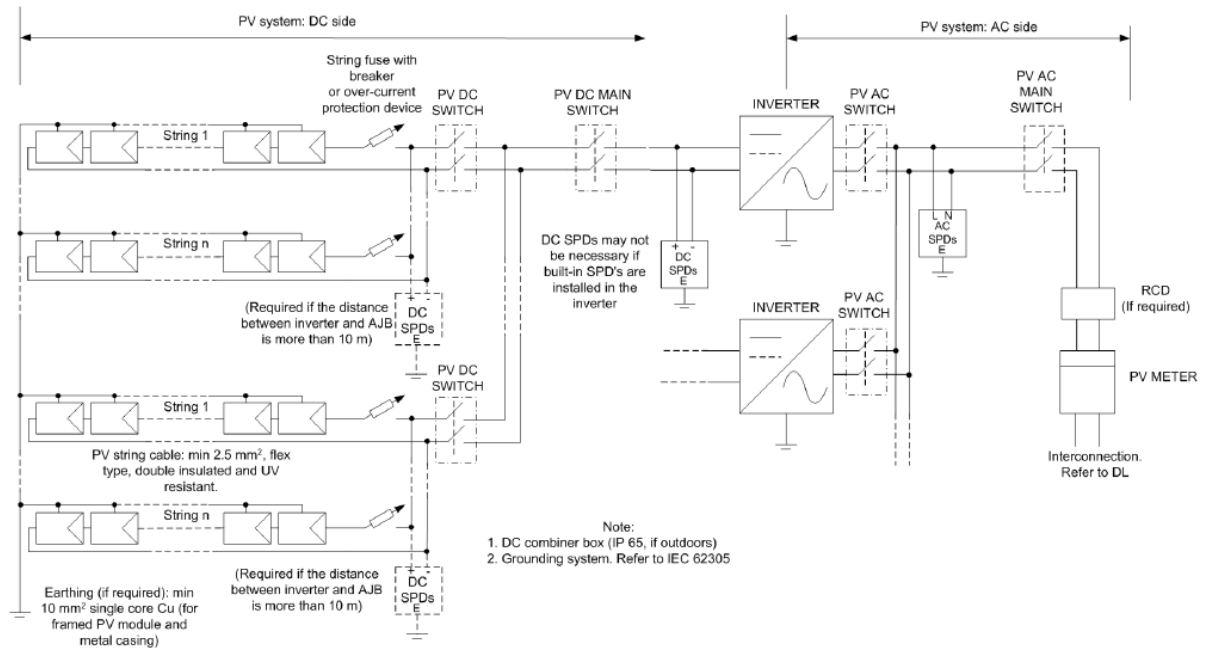


Figure 1: Schematic diagram of a single-phase grid-connected PV system with single MPPT inverter*

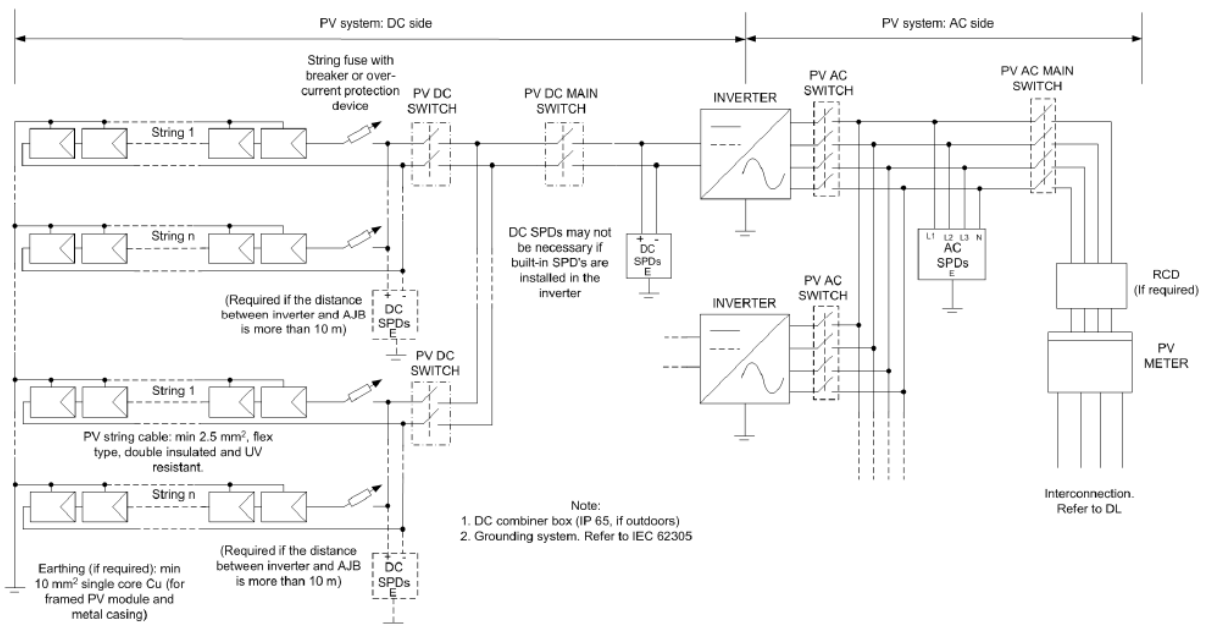


Figure 2: Schematic diagram of a three-phase grid-connected PV system with single MPPT inverter*

* Standard Malaysia MS 1837:2018

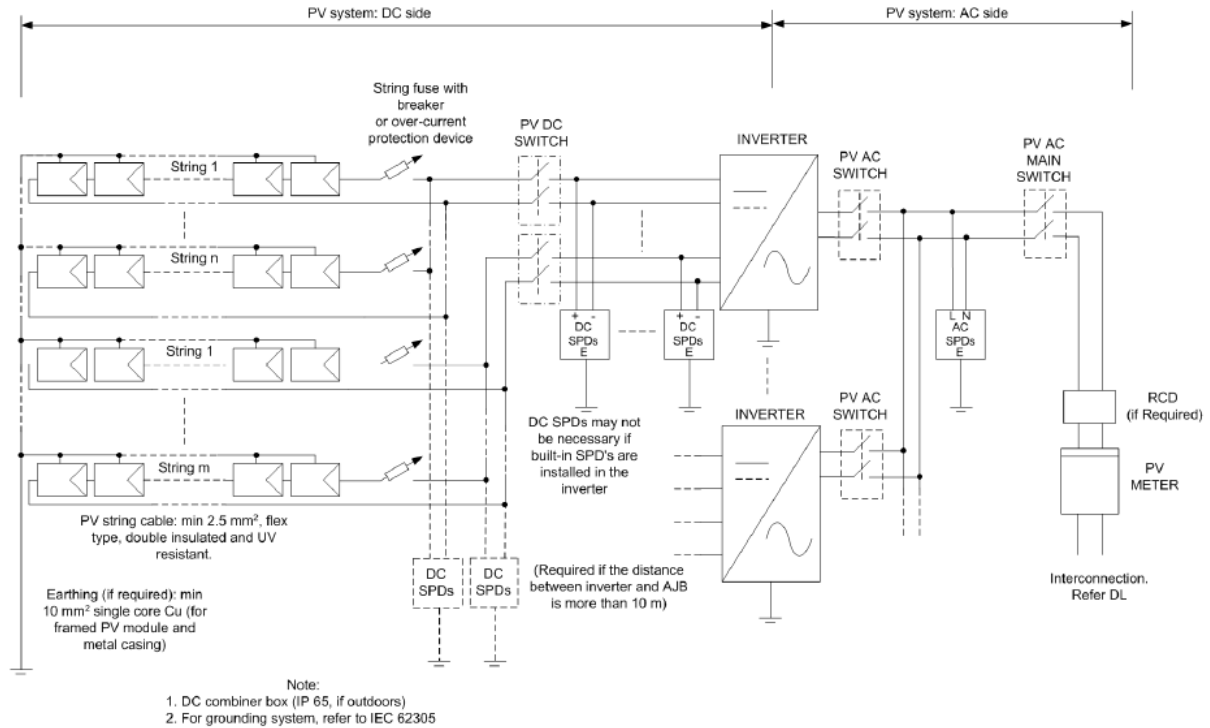


Figure 3: Schematic diagram of a single-phase grid-connected PV system with multiple MPPT inverter*

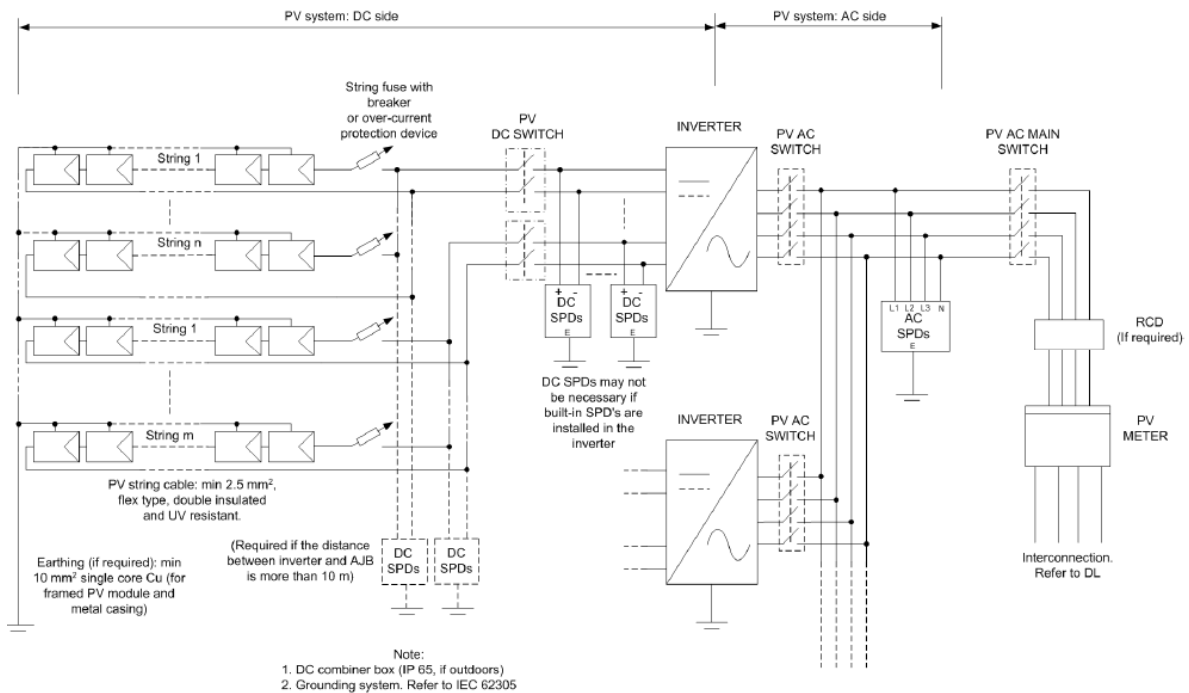


Figure 4: Schematic diagram of a three-phase grid-connected PV system with multiple MPPT inverter*

*Standard Malaysia MS 1837:2018

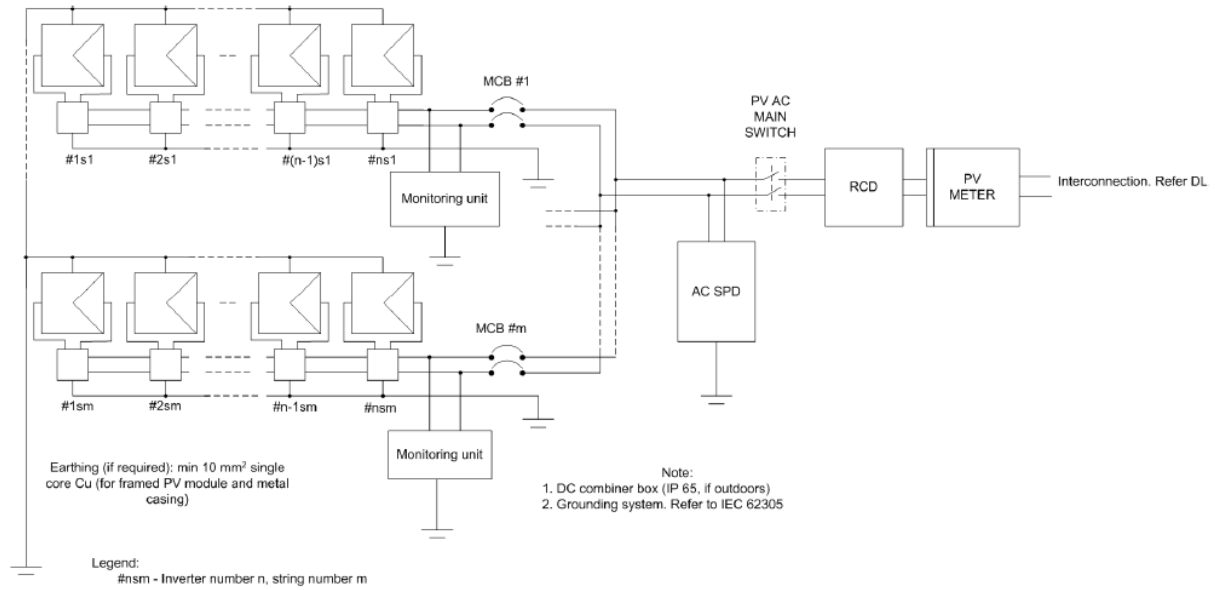


Figure 5: Schematic diagram of a single-phase grid-connected PV system with micro-inverter*

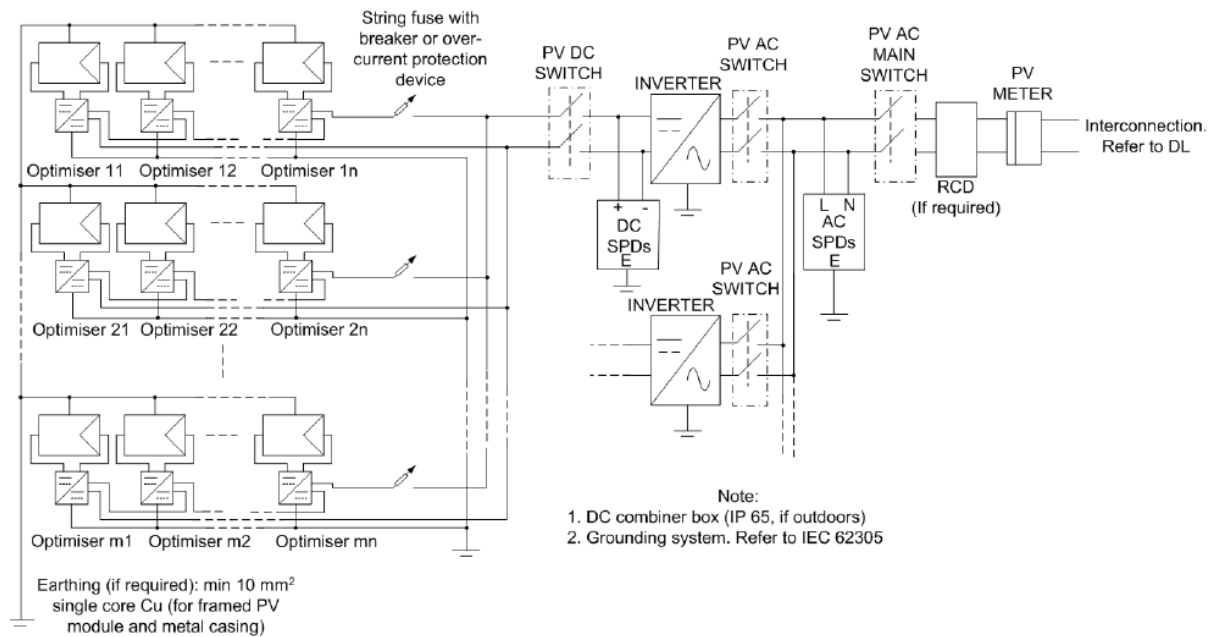


Figure 6: Schematic diagram of a single-phase grid-connected PV system with DC power optimiser*

*Standard Malaysia MS 1837:2018

6.7 Testing and Commissioning

- 6.7.1 Testing and commissioning of a solar PV installation shall be carried out to ensure safety, compliance, and readiness for operation. It shall be performed by a competent person holding a valid EIU Certificate of Competency in the relevant category.

6.8 System Impact Study (SIS)

- 6.8.1 A System Impact Study (SIS) is an engineering assessment conducted to evaluate the potential impact of a proposed solar PV installation on the distribution network. Its purpose is to ensure that the installation does not compromise the safety, reliability, or operational performance of the network.
- 6.8.2 An SIS is generally not required for installations of 30 kW or less, unless specifically directed by the Distribution Licensee. For installations exceeding 30 kW, or for smaller installations in sensitive areas, the Licensee may require an SIS to assess parameters such as voltage fluctuations, power quality, network capacity, and protection coordination.
- 6.8.3 The Distribution Licensee may reject applications if the cumulative generation capacity within a network section exceeds safe limits. The results of an SIS may also be used to determine any network upgrades or operational restrictions that must be implemented before approving grid connection.

6.9 Registration of Installation

- 6.9.1 All solar PV installations as mentioned in this Guidelines must be registered with the Electrical Inspectorate Unit (EIU) within twenty-one (21) days from the date of commissioning. Timely registration ensures that the installation is officially recorded, monitored, and compliant with regulatory requirements.
- 6.9.2 The application for registration of solar PV installations shall be made to the Electrical Inspectorate Unit (EIU) in Form B of the First Schedule, accompanied by Form G from the same schedule, and Testing and Commissioning forms. The fees related to the registration of installations are detailed in **Appendix 2**.

- 6.9.3 The installed capacity of the solar PV system shall be measured in kW AC, based on the output rating of the inverter. This standardisation ensures consistency for monitoring, reporting, and network planning purposes. Any solar system initially measured in kW peak (kWp) will be converted to kW AC at a ratio of 1.0(kW):1.2(kWp), unless a different ratio is explicitly indicated on the inverter.

6.10 Proper Maintenance and Periodic Inspection

- 6.10.1 The owner or the management of the installation shall ensure that their solar PV installation undergoes proper maintenance and periodic inspections by a competent person. Regular maintenance and inspection are essential to keep the system in optimal condition, maintain its efficiency, and allow for the prompt rectification of any defects before they lead to safety hazards.
- 6.10.2 The owner or the management of the installation should also be aware that periodic maintenance and inspection by competent persons may incur additional costs to the owner or management of the installation.
- 6.10.3 All solar PV installations shall be inspected by a competent person at least once every twelve (12) months. The Director may instruct more frequent inspections if the installation is found, or is likely, to pose a safety risk. Inspection reports shall be provided to the owner or facility management and made available to the EIU during audits or compliance visits.
- 6.10.4 Periodic inspections of the installation shall be carried out in accordance with Rule 59 of the Electricity Rules, 1999.
- 6.10.5 The competent person responsible for the inspection shall report all findings to the owner or management of the installation. If any issues or defects are identified in the report, the owner or management shall promptly appoint a registered electrical contractor to carry out the necessary rectification works. No person, other than a competent person or someone under their direct supervision, shall undertake any repair or replacement of equipment that forms part of the installation.
- 6.10.6 General maintenance activities, such as cleaning the surface of solar modules or mowing overgrown grass, may be carried out by the owner, management, or an appointed agent. However, all such activities shall be performed in compliance with applicable safety regulations, particularly when working at height or near live electrical equipment.

6.11 Renewal of the registration of Installation

6.11.1 Applications for renewal of registration may be submitted as early as three (3) months before the expiry date of the current registration.

6.11.2 The owner or management of the installation shall appoint a competent person to carry out the required periodic inspection and shall submit the renewal application to the EIU. The application shall be made using Form D in the First Schedule and must be accompanied by Form G of the same schedule.

6.12 Cancellation of the registration of installation

6.12.1 The Director may cancel the registration of installation issued under Rule 9 of the Electricity Rules, 1999 if:

- a) The installation is no longer to be used
- b) The installation is found to be unsafe for use
- c) The owner or management of the installation has contravened or failed to comply with any of the provisions of the Ordinance and these Rules or any written law.

6.12.2 Any person who is not satisfied with the decision of the Director may submit an appeal to the Minister in accordance with the applicable rules.

6.12.3 Any installation that is not registered with the EIU shall be dismantled within one (1) month from the date of the notice issued by the EIU.

6.13 Registration of Installation Fee

6.13.1 Fees for registration of installation and renewal for solar PV system are tabulated in table in Appendix 2 and payable to **Kerajaan Negeri Sarawak**.

6.14 Safety Labelling

6.14.1 All grid-connected solar PV installations shall be properly labelled to ensure that SESCO or the relevant local authorities are aware of the

presence of the system. The owner or management of the installation shall provide labelling at the Connection Point to indicate the presence of the system. The labelling shall be sufficiently robust and securely fixed to remain legible and intact for the entire lifetime of the installation. In addition, all AC and DC disconnection switches shall be clearly labelled to distinguish between them. A sample labelling is provided in **Figure 7**.

6.14.2 Visible Caution Notices shall be affixed at the following locations by SESCO.

- a) Pillar door
- b) Pillar way
- c) Disconnecter Switch – Meter Cutout fuse

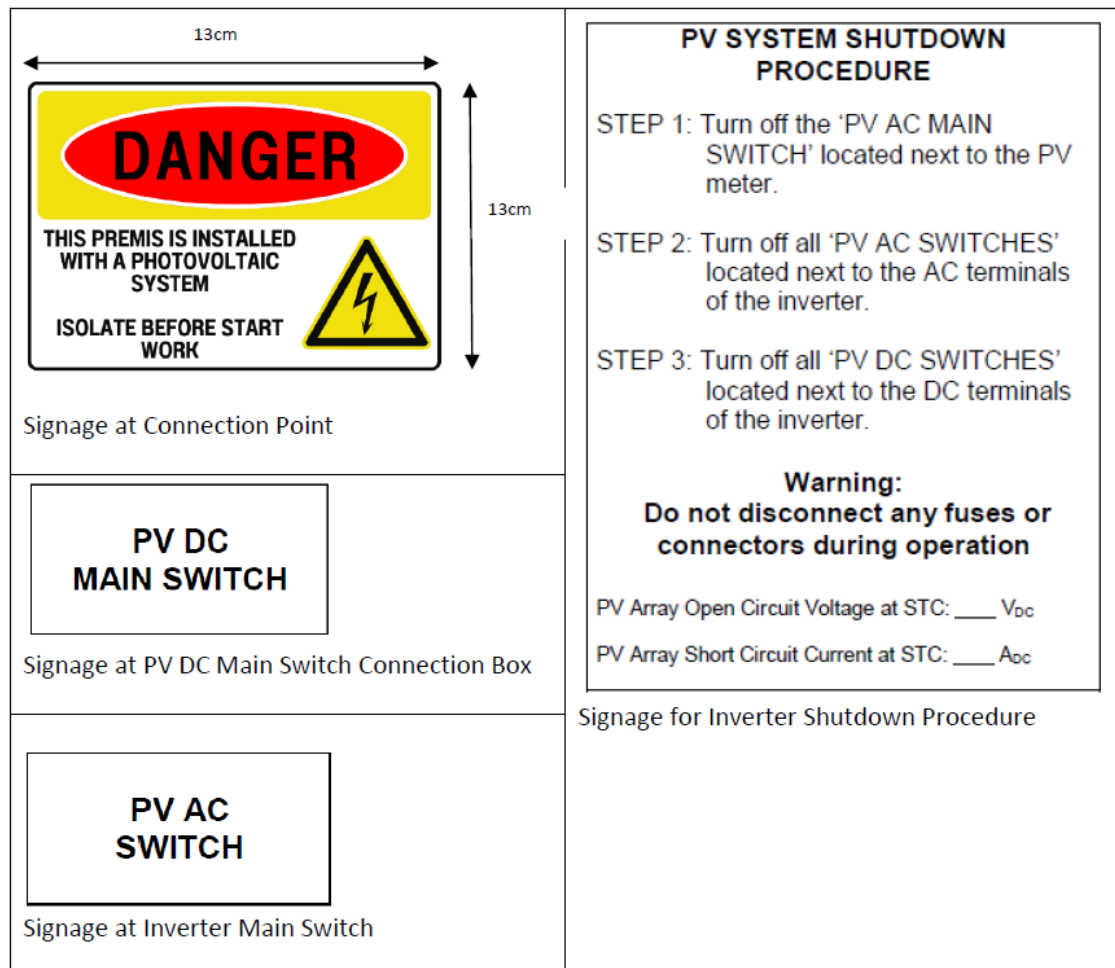


Figure 7: Sample of Safety Labeling for Grid-Connected solar PV

7. ARBITRATION ON TECHNICAL MATTERS

- 7.1 All technical matters, differences, or disagreements whatsoever which may at any time hereinafter arise shall be referred to the Director.

8. AMENDMENT AND VARIATION

- 8.1 The Director may at any time amend, modify, vary or revoke these guidelines.

9. EFFECTIVE DATE

- 9.1 This Guideline will take effect on the date it is signed by the Director of Electricity Supply.



Director of Electricity Supply
Ministry of Utility and Telecommunication
Sarawak

Date : 27 FEBRUARY 2026

Ref. No.:

Appendix 1: Process for Solar PV Installation and Registration

Simple Process for Solar PV Installation & Registration

Consumer Appoints Solar PV Contractor

- Consumer decides to install a solar PV system
- Appoints a registered Solar PV contractor / agent

Approval & Installation

- SEB reviews and approves the proposal
- Contractor installs the solar PV system supervised by a Competent Person

Registration with EIU

- Contractor submits application to EIU for registration of the installation
- EIU reviews the submission (site inspection if required)
- Certificate/Letter of Registration is issued by EIU



System Design & Application

- Contractor conducts site assessment
- Solar PV system is designed by a certified PV Designer
- Contractor submits application and proposal to SEB

Testing & Commissioning

- System is tested and commissioned
- Testing & Commissioning (T&C) report is prepared
- SEB grants to Operate

Appendix 2: Fees

FEES FOR REGISTRATION OF INSTALLATION AND RENEWAL

(Part III Second Schedule of the Electricity Rules, 1999)

Fees according to the following fees shall be payable to Kerajaan Negeri Sarawak for the registration of installation or renewal of registration:

No.	<i>Capacity of Installation</i>	<i>Fees for 12 months</i>
(a)	for each installation of 10 kilowatts or less	RM20
(b)	for each installation above 10 kilowatts to 50 kilowatts	RM50
(c)	for each installation above 50 kilowatts to 100 kilowatts	RM500
(d)	for each installation above 100 kilowatts to 300 kilowatts	RM1,000
(e)	for each installation above 300 kilowatts to 600 kilowatts	RM1,500
(f)	for each installation above 600 kilowatts to 1000 kilowatts	RM2,000
(g)	for each installation above 1000 kilowatts to 2500 kilowatts	RM3,000
(h)	for each installation above 2500 kilowatts to 5000 kilowatts	RM5,000
(i)	for each installation above 5000 kilowatts	RM1.00 per kilowatt

FEES FOR INSPECTION AND TEST OF INSTALLATION

(Part III Second Schedule of the Electricity Rules, 1999)

The following fees shall be charged for inspection and test of the installation:

No.	<i>Capacity of Installation</i>	<i>Fees for inspection and test</i>
(a)	for each installation of 50 kilowatts or lower	RM50
(b)	for each installation above 50 kilowatts to 100 kilowatts	RM100
(c)	for each installation above 100 kilowatts to 300 kilowatts	RM150
(d)	for each installation above 300 kilowatts to 600 kilowatts	RM200
(e)	for each installation above 600 kilowatts to 1000 kilowatts	RM250
(f)	for each installation above 1000 kilowatts	RM300