THE AUTOMATION ACADEMY

SOLAR PV SYSTEMS

TRAINING COURSE OUTLINE

COURSE SUMMARY

This course provides trainees with comprehensive knowledge of solar photovoltaic (PV) systems, from fundamentals to practical installation and maintenance. It covers key system components, design considerations, material sourcing, safety procedures, and risk assessment. Trainees also learn troubleshooting techniques and explore Huawei Energy Storage Solutions as a practical case study.

COURSE OBJECTIVES

At the end of this course the trainee should be able to:

- Understand the fundamentals of solar energy and PV systems.
- Identify and explain the main components of a solar PV system.
- Install and configure solar PV systems safely and efficiently.
- Prepare a bill of quantities, source materials, and conduct risk assessments.
- Troubleshoot common PV system issues and evaluate real-world applications using Huawei Energy Storage Solutions.

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COURSE OUTLINE

- Introduction to Solar PV Systems
  - ✓ Basics of solar photovoltaic (PV) technology
  - ✓ Grid-tied, off-grid, and hybrid system concepts
  - ✓ Key components of a PV system

- Huawei Energy Storage Solutions
  - ✓ Residential ESS: LUNA2000 Smart String ESS
  - ✓ Modular design, flexible expansion, safety features
  - ✓ Commercial & Industrial ESS
  - ✓ Smart String ESS for C&I

- Smart Energy Management (FusionSolar Platform)
  - ✓ Introduction to Huawei FusionSolar app
  - ✓ Monitoring & remote management
  - ✓ AI-powered fault detection
  - ✓ Energy yield optimization & reporting

- System Design & Sizing with Huawei Products
  - ✓ Design considerations (rooftop, ground-mount, C&I)
  - ✓ Matching PV modules with Huawei inverters
  - ✓ Incorporating storage solutions
  - ✓ Safety and protection features
  - ✓ BOQ preparation

- Installation & Commissioning Best Practices
  - ✓ Site preparation and mounting considerations
  - ✓ Electrical connections & safety checks
  - ✓ Commissioning with FusionSolar app
  - ✓ Common mistakes and how to avoid them

- Hands-On Demonstration / Workshop
  - ✓ Inverter setup
  - ✓ Quiz or case study evaluation