

# ETE RETROFIT

Replacement of Control and Motion Systems for Solar Trackers



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## RETROFIT



### **Pioneering Technology**

- Advanced systems controlled by computer
- No need for sensors, relays, or switches
- Reduced cost, increased efficiency, and guaranteed durability



For Single-Axis and Dual-Axis Trackers



Hardware

## STS

### **Digital Platform**

- Manage your park remotely from anywhere
- Real-time performance monitoring and updates
- Seamless software upgrades for continuous improvement



### Real-Time Digital Platform

## **OBSERVE-X**

## MOTION CONTROL SYSTEM



supply, and switches.

- length, and 20 cm width.

### Hardware:

- 1. Master Controller
- 2. Slave Controllers
- 3. Inclinometer
- 4. Wind Sensors
- 5. Power Supply 220V-AC / 24V-DC 240 Watt

### Master Controller:

The central controller operates as a field master controller, independently managing the motion of up to two trackers. Additionally, it can function as a standalone controller for a single tracker or as the main controller for a photovoltaic station (Field Master Controller) with the capability to connect up to 25 additional controllers (Slave Controllers).

### **Slave Controller:**

A Slave Controller has the capability to **independently** control up to three trackers.

**Controller Communication:** disruption.

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The Motion Control System includes an electrical box that houses the controller, power

• The electrical box is rated IP66 for protection and has dimensions of 45 cm height, 30 cm

• It is installed on the central movement pole at a height of 120 cm from the ground (at the lower part), either on the north or south side of the pole.

• The anemometer is positioned at the highest point of the photovoltaic park.

All controllers communicate with each other either through wired or wireless connections. However, they are capable of operating independently in the event of a communication



# KEY FEATURES OF CONTROLLERS



### **Master Controller**

- connection.
- external sensors.
- Remote Management:
  - platform.

### **Slave Controller**

- external inclinometers and motion motors.
- the Central Controller.
- User-Friendly Onsite Control:
  - SERVICE
  - RESET
  - CALIBRATION
  - MOVE EAST/WEST

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• **Control**: up to 77 trackers per Central Controller via parallel, wired, or wireless

• **Connectivity**: Support for Ethernet, MODBUS TCP, built-in inclinometer, and

• Configuration, software upgrades, and real-time data monitoring via a digital

• Ensures efficient operation and rapid problem resolution.

• Management of Multiple Trackers: Independently controls up to 3 trackers with

• Autonomous Operation: Operates independently in case of connection loss with

### **OBSERVE-X**

## SYSTEM SETTINGS

### **System Configuration**

- Location, time, and tracker movement limits.
- Safety positions (storm, cleaning, parking).
- Settings for the anemometer, reactions, and motor operation.
- Shading Avoidance (Backtracking): Prevents shading by adjusting tracker angles for maximum energy efficiency.

### **Automated Control**

• Advanced Error Analysis and Management

### **Remote Commands**

- Configuration of safe positions, calibration, and sending troubleshooting commands.
- Software updates installation and configuration of new features.

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# REMOTE MONITORING

### **Real-Time Performance Monitoring**

- Performance Charts (daily, monthly, yearly)
- Analysis of tracker movement, power supply (Volt/Amps), and wind speed
- System Status and Overall Efficiency Reports

### **Management System**

- Remote or Local Commands, including calibration, reset, and movement to safe positions
- Software updates and configuration for the integration of new features

### Maintenance

- Detailed error reports with event logs for troubleshooting
- Maintenance logs recording all actions and repairs
- Alerts for Potential Issues
- Predictive maintenance through monitoring of temperatures and currents (amps) of tracker motion motors

### **Data Export and Analysis**

• Data export in CSV or Excel formats for in-depth analysis and decision-making





## **System Advantages**

### **Superiority in Performance Monitoring:**

Our platform provides detailed real-time performance monitoring with daily, monthly, and yearly charts, along with comprehensive analyses. It incorporates advanced features such as predictive maintenance, offering clear advantages over the basic monitoring functions of competitors.

### **Remote Control & Management Flexibility:**

Remote commands, software updates, and the ability to integrate new features provide a level of flexibility not found in traditional automation systems offered by competitors.

### **Continuous Innovation through Software:**

Our software is computer-controlled, enabling us to continuously program innovative features and provide new capabilities to our customers. This sets our solution apart from traditional automation systems, which have limited development potential.

### After Sales Support:

We are here for our customers with online support to quickly resolve any issues that arise, ensuring the continuous and seamless operation of the systems.

### **Maintenance Cost Reduction:**

The use of innovative systems without sensors and relays significantly reduces maintenance costs, while ensuring increased efficiency and durability, surpassing the capabilities of competitive solutions.

## STS





# STEPS FOR UPGRADE

### Send us the details of your park

- Number of trackers in your solar park
- Details about the existing systems

### **Customized Proposal**

We will recommend the ideal number of controllers and the optimal configuration for your system, tailoring our solutions to meet your specific needs and requirements.

### **Seamless Implementation**

Fast and efficient installation with minimal downtime.

### **Advantages and Profitability**

Improved performance, reduced maintenance costs, and continuous updates through our digital platform, maximizing profitability.

## STS









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