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Life Is On

Schneider
Electric

Get maximum control panel performance and reliability

Thermal management solutions for critical electrical and electronic enclosures

schneider-electric.com/enclosures





Thermal conditions a hot topic for enclosures

Temperature, humidity, and dew point all affect the performance of your electrical and electronic enclosures. Problem is, unless these environments are sized properly, thermal conditions will compromise reliability, safety, and efficiency, as well as the lifetime of your panels.

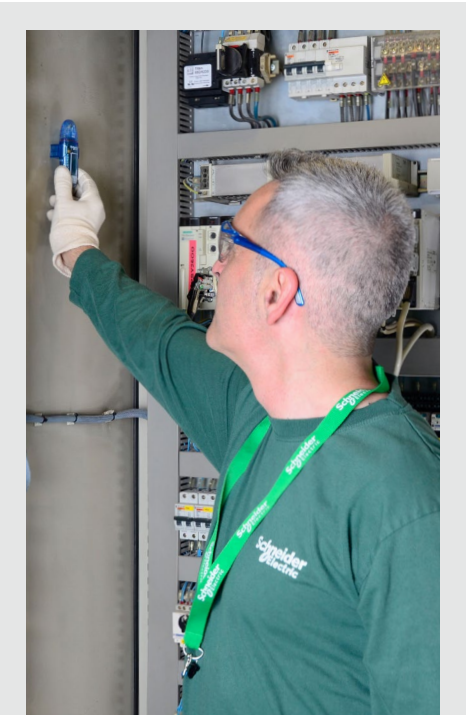
Threats to performance arise when:

Minimize sizing errors, optimize thermal management

Schneider Electric now offers you a simple and effective way to precisely assess thermal conditions around your electrical installations.

Introducing ClimaSys Diagnostic Tools (DT)

With ClimaSys DT dataloggers and EffiClima software, you can know with maximum accuracy the temperature evolution, humidity levels, and dew points inside and outside your control panels. This data can then be analyzed with ProClima thermal software to determine the optimal thermal solution for each of your control panel installations.



ClimaSys DT advantages

You can:

- Size properly
- Optimize performance
- Avoid local thermal issues

A reliable tool for the right diagnosis

The ClimaSys DT solution provides you with a reliable diagnostic tool for both your new (Greenfield) and existing (Brownfield) installations.

A reliable tool for the right diagnosis

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▶ New Installations



New Installations

Answer critical questions for Greenfield installations with ClimaSys DT and EffiClima software:

- What is the external temperature?
- What are the conditions?
- What is the relative humidity?
- Is there a condensation risk?
- Can I ventilate correctly?
- Can I use cooling units?
- Do I need a heater?
- Are there other solutions I should consider?



A reliable tool for the right diagnosis

The ClimaSys DT solution provides you with a reliable diagnostic tool for both your new (Greenfield) and existing (Brownfield) installations.

▶ Existing Installations



Existing Installations

Answer critical questions for Brownfield installations with ClimaSys DT and EffiClima software:

- What are the total dissipating losses of my devices?
- Are my electronic devices working properly?
- What is my risk for condensation?
- Do I have hotspots?
- Are there temperature variations within my control panel?



A reliable tool for the right diagnosis

The ClimaSys DT solution provides you with a reliable diagnostic tool for both your new (Greenfield) and existing (Brownfield) installations.

▶ How-to Guide



How to use ClimaSys DT: Connect to PC, check in EffiClima, analyze in ProClima.

Installation	What do you want to do?		Variables to measure	How many dataloggers needed?	Model(s)	Recommended installation	
Greenfield		New Project	Determine enclosure sizing needs and the correct thermal solution	T outside RH outside	1	DTH	
Brownfield		Power Dissipation Test	Measure the dissipation power of the installation in watts (enclosure without thermal solution installed)	T outside T inside	2	DTT or DT Mini	
		Electronics Health Test	Verify that there are no hot/cold spots	T inside	1	DTT or DT Mini	
		Thermal Solution Test	Measure the efficiency of the existing thermal solution in a certain period of time	T outside T inside	2	DTT or DT Mini	
		Humidity/Condensation Test	Measure the risk of high humidity or condensation inside the enclosure	T inside T outside HR inside/ outside	2	DTH	

T: temperature, RH: humidity level



Capture thermal data to find the right thermal solutions

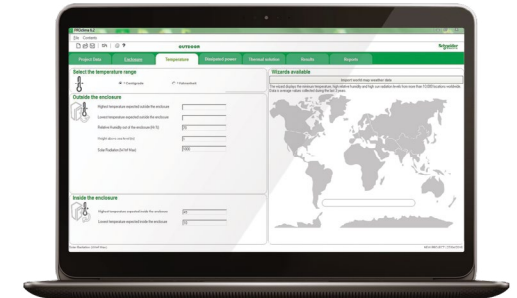
1 **ClimaSys DT dataloggers** measure and track thermal data.



2 **EffiClima software** translates data into a report on temperature, humidity, and dew point



3 **ProClima software** proposes the right thermal management solution based on the data variables.



Solutions for OEMs to end users, existing installations to new

Why do they love ClimaSys DT?



Solutions for OEMs to end users, existing installations to new

Why do they love ClimaSys DT?

▶ OEMs



OEMs



Innovative ClimaSys DT allows OEMs to:

- Check and validate the thermal specifications for indoor and outdoor global projects
- Support technical discussions before making maintenance decisions linked to temperature effects
- Register the temperature evolution of your control panels in the commissioning phase and in brownfield installations
- Know in advance the external conditions — temperature, humidity, dew point — in indoor and outdoor ambients to achieve machine optimisations
- Focus on the hotspots of specific critical devices to avoid any technical breakdown and increase the reliability and lifetime of the machine or process
- Validate the efficiency of the installed thermal solution or determine a need to improve it
- Determine the dissipate power values (W) of the control panel's electrical/electronic components and ensure a robust thermal field calculation
- Create a complete and accurate tracking report of thermal conditions — temperature, humidity, dew point — for your machine or process and environment
- Provide accurate temperature data to ProClima calculation software to determine the optimal thermal solution



Solutions for OEMs to end users, existing installations to new

Why do they love ClimaSys DT?

▶ Panel Builders



Panel builders



Innovative ClimaSys DT allows panel builders to:

- Register the temperature evolution of control panels in the commissioning phase and in brownfield installations
- Focus on the hotspots of specific critical devices to avoid any technical breakdown and increase the reliability and lifetime of the machine or process
- Validate a control panel's thermal architecture prior to final installation
- Create a complete and accurate tracking report of thermal conditions — temperature, humidity, dew point — for your machine or process and environment
- Provide accurate temperature data to ProClima calculation software to determine the optimal thermal solution



Solutions for OEMs to end users, existing installations to new

Why do they love ClimaSys DT?

▶ System Integrators



System integrators



Innovative DT allows system integrators to:

- Support technical discussions before making maintenance decisions linked to temperature effects
- Follow up on the most critical thermal variables affecting sensitive electronic components
- Know in advance the external ambient conditions — temperature, humidity, dew point — at the installation site in order to prevent any thermal weaknesses in sensitive equipment
- Validate a control panel's thermal architecture prior to final installation
- Create a complete and accurate tracking report of thermal conditions — temperature, humidity, dew point — for your machine or process and environment
- Provide accurate temperature data to ProClima calculation software to determine the optimal thermal solution



Solutions for OEMs to end users, existing installations to new

Why do they love ClimaSys DT?

▶ Facility Managers



Facilities managers



Innovative ClimaSys DT allows facilities managers to:

- Manage existing installations in global projects — detect hot spots, cycles, peaks, extreme temperatures, sun radiation effects, etc.
- Support technical discussions before making maintenance decisions linked to temperature effects
- Create a complete and accurate tracking report of thermal conditions — temperature, humidity, dew point — for your machine or process and environment
- Provide accurate temperature data to ProClima calculation software to determine the optimal thermal solution



Solutions for OEMs to end users, existing installations to new

Why do they love ClimaSys DT?

▶ End Users



End users



Innovative ClimaSys DT allows end users to:

- Manage existing installations in global projects — detect hot spots, cycles, peaks, extreme temperatures, sun radiation effects, etc.
- Support technical discussions before making maintenance decisions linked to temperature effects
- Register the temperature evolution of control panels in the commissioning phase and in brownfield installations
- Create a complete and accurate tracking report of thermal conditions — temperature, humidity, dew point — for your machine or process and environment
- Provide accurate temperature variables data to ProClima calculation software to determine the optimal thermal solution



Solutions for OEMs to end users, existing installations to new

Why do they love ClimaSys DT?

▶ Design Offices



Design offices

Innovative ClimaSys DT allows design offices to:

- Check and validate the thermal specifications for indoor and outdoor global projects
- Support technical discussions before making maintenance decisions linked to temperature and humidity effects



Real-time accuracy, longtime reliability

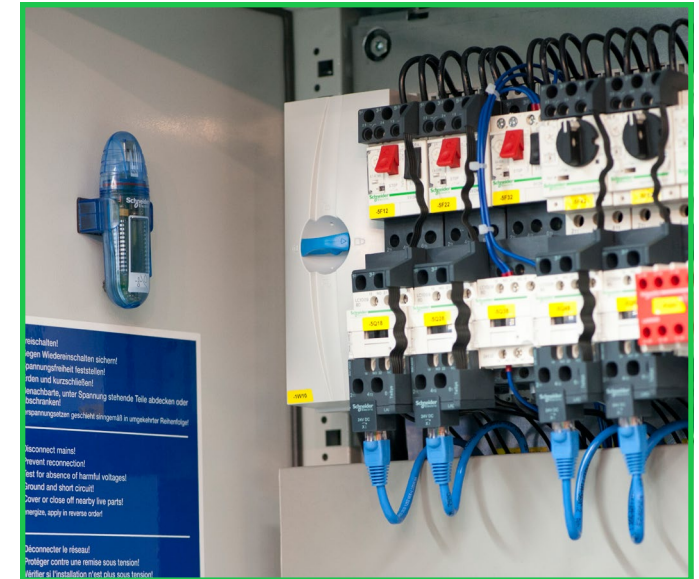
ClimaSys DT dataloggers are an easy-to-use solution that enables users to:

- Access accurate and reliable thermal measurement data in design, commissioning, and exploitation phases
- Track fast or slow measurements
- Maintain continuity of service
- Optimize installations
- Detect hot and cold spots, and avoid condensation problems
- Determine if ventilation/cooling is possible
- Install and operate with ease

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▶ Temperature Model 1



ClimaSys DTT Specifications

- 32K sample memory
- Range: -40 to 80°C
- Accuracy: $\pm 0,3^{\circ}\text{C}$
- Resolution: 0.03°C
- Dimensions: 11 x 3.9 x 2.6cm
- IP67

ClimaSys DTT Advantages

- Time stamp/start/stop with magnet key
- Low power consumption for extended two-year battery life
- Easy data download to PC via USB connection
- USB firmware update
- QR code on dataloggers for easy online access to data sheets, videos, and other technical information

Real-time accuracy, longtime reliability

ClimaSys DT dataloggers are an easy-to-use solution that enables users to:

- Access accurate and reliable thermal measurement data in design, commissioning, and exploitation phases
- Track fast or slow measurements
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- Optimize installations
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- Determine if ventilation/cooling is possible
- Install and operate with ease



▶ Temperature Model 2



ClimaSys DTMinilog Model (single use) Specifications

- 16K sample memory
- Range: -40 to 80°C
- Accuracy: $\pm 0.5^\circ\text{C}$
- Resolution: 0.1°C
- Dimensions: 7.4 x 3 x 1.3 cm
- IP68

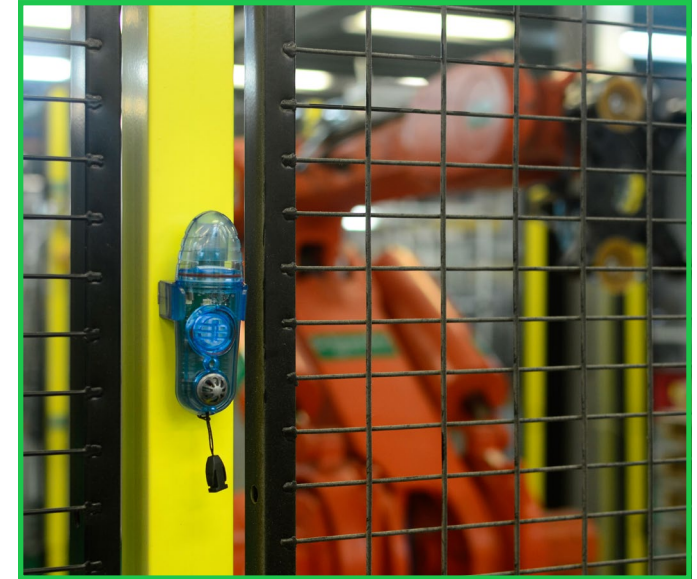
ClimaSys DTMinilog Model (single use) Advantages

- Activation button to start logging and mark time stamps
- Low power consumption for extended six-month battery life
- Easy data download to PC via USB connection
- USB firmware update
- Compact and easy to use
- QR code on dataloggers for easy online access to data sheets, videos, and other technical information

Real-time accuracy, longtime reliability

ClimaSys DT dataloggers are an easy-to-use solution that enables users to:

- Access accurate and reliable thermal measurement data in design, commissioning, and exploitation phases
- Track fast or slow measurements
- Maintain continuity of service
- Optimize installations
- Detect hot and cold spots, and avoid condensation problems
- Determine if ventilation/cooling is possible
- Install and operate with ease



▶ Temp/Humid/Dew Point Model



ClimaSys DTH Specifications

- 32K sample memory
- Range:
 - » Temp: -40 to 80°C
 - » RH: 5 to 95%
- Accuracy:
 - » Temp: $\pm 0.3^{\circ}\text{C}$
 - » RH: $\pm 2\%$
- Resolution:
 - » Temp: 0.01°C
 - » RH: 0.05%
- Dimensions: 11 x 3.9 x 3cm
- IP54

ClimaSys DTH Advantages

- Time stamp/start/stop with magnet key
- Dew point reading on LCD and software
- Fast response time for RH sensor
- USB firmware update
- Low power consumption for extended battery life (up to two years)
- QR code on dataloggers for easy online access to data sheets, videos, and other technical information

Product security, application control

EffiClima software provides security for your products by enabling you to monitoring and control your entire application environment.

Data View Features

- Real-time data in multiple displays — graph, table, statistics
- Three levels of reporting available:
 1. **Automatic pop-up report** provided when datalogger is connected after field measurement
 2. **Boomerang report** provided when datalogger is configured to automatically create and email a PDF data report upon PC connection — users simply enters their email address to receive
 3. **Advanced report** provided when users personalize the data desired, including report format — Excel or PDF

Alarm Features

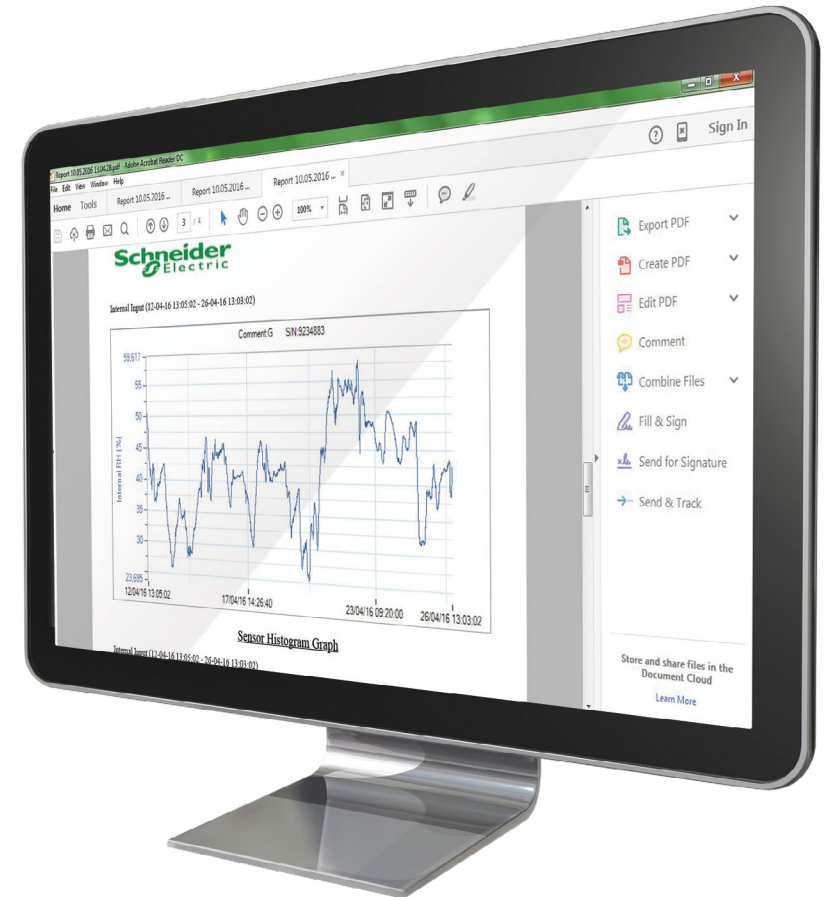
Multi-alarm level setup with email

Report Module Features

Intuitive interface for generating comprehensive data reports with automatic email distribution in PDF and Excel files — users are able to save reports and review them as often as they wish

Temperature/Humidity/Dew Point Evolutions

Statistical tracking with export to Excel and CSV formats



Processing data to protect your devices

ProClima software processes a range of specified thermal data to propose the thermal management solution that will optimize the environment and electrical/electronic devices in your control panel.

New algorithms allow for more accurate and precise calculations. Discover the software's five new functions and get the right thermal solution for your installations.

ProClima Thermal Calculations

- Temperature
- Humidity
- Sun radiation
- Indoor and outdoor settings

The program draws up a heat balance and defines the best ventilation, control, heating, and cooling solution to match your installed equipment.

For optimal results, we recommend the use of ClimaSys DT dataloggers and EffiClima software to ensure your ProClima thermal calculations are based on accurate and reliable data.



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