

AUTONICS TK4W-14RR

AUTONICS TK4W-14RR Temperature Controller User Manual

1. INTRODUCTION

This manual provides essential information for the safe and effective operation of the AUTONICS TK4W-14RR Temperature Controller. The TK4W-14RR is a high-performance PID temperature controller designed for precise heating and cooling applications. It features a DIN W96xH48mm panel size, dual relay contact outputs, and operates on 100-240VAC power.

2. SAFETY PRECAUTIONS

Read these safety precautions carefully before installing or operating the unit. Failure to follow these instructions may result in injury or product damage.

- Ensure the power supply voltage is within the specified range (100-240VAC).
- Do not connect, inspect, or repair the unit while power is applied.
- Install the unit in an environment free from excessive dust, moisture, corrosive gases, or direct sunlight.
- Avoid installing the unit in areas subject to strong vibration or shock.
- Use appropriate wires and terminals for connections to prevent fire or malfunction.
- This unit is not intended for use in applications where human life is at stake.

3. PRODUCT OVERVIEW

The AUTONICS TK4W-14RR features a clear front panel display and intuitive controls for monitoring and adjusting temperature parameters.



Figure 1: Front panel of the AUTONICS TK4W-14RR Temperature Controller. The image displays the dual digital display, with the upper red display showing the Process Value (PV) and the lower green display showing the Set Value (SV). Indicators for OUT1, OUT2, AL1, AL2, MAN, SV1, SV2, SV3, AT, %°F, and °C are visible. Control buttons for up, down, left/right arrow, and A/M MODE are located on the right side.

3.1. Front Panel Components

- **PV Display (Red):** Shows the current process value (measured temperature).
- **SV Display (Green):** Shows the set value (target temperature).
- **Output Indicators (OUT1, OUT2):** Illuminate when the respective relay outputs are active.
- **Alarm Indicators (AL1, AL2):** Illuminate when alarm conditions are met.
- **Control Buttons:** Used for navigating menus, adjusting values, and changing operating modes.

4. SPECIFICATIONS

Key technical specifications for the AUTONICS TK4W-14RR Temperature Controller:

Specification	Value
Model Number	TK4W-14RR
Brand	AUTONICS
Control Type	PID Temperature Heating & Cooling Control
Panel Size	DIN W96xH48mm (1/8 DIN H)
Alarm Output	1 Alarm output
Control Outputs	Relay OUT1 & Relay OUT2
Power Supply	100-240VAC
Item Weight	14.4 ounces

5. SETUP

5.1. Installation

1. Cut a panel cutout of W92xH45mm for mounting.
2. Insert the TK4W-14RR into the cutout from the front.
3. Secure the unit using the provided mounting brackets from the rear.

5.2. Wiring

Refer to the wiring diagram provided with your unit for specific terminal connections. Ensure all connections are secure and correctly polarized.

- **Power Supply:** Connect 100-240VAC to the designated power terminals.
- **Sensor Input:** Connect your temperature sensor (e.g., RTD, Thermocouple) to the input terminals. Ensure correct polarity for thermocouples.
- **Control Outputs (OUT1, OUT2):** Connect your heating/cooling elements or other control devices to the relay output terminals. Observe maximum current ratings.
- **Alarm Output (AL1):** Connect external alarm devices if required.

6. OPERATING

6.1. Power On

Once wired correctly, apply power to the unit. The PV display will show the current temperature, and the SV display will show the last set target temperature.

6.2. Setting the Set Value (SV)

1. Press the **MODE** button briefly to enter SV setting mode. The SV display will flash.
2. Use the **Up** and **Down** arrow buttons to adjust the SV to your desired temperature.
3. Use the **Left/Right** arrow button to move the cursor for faster adjustment of individual digits.
4. Press the **MODE** button again to confirm the new SV and return to normal operation.

6.3. Auto-Tuning (AT)

The Auto-Tuning function automatically calculates optimal PID parameters for your specific process. This is recommended for initial setup or if process characteristics change significantly.

1. Ensure the SV is set to the desired operating temperature.
2. Refer to the detailed parameter manual for entering the parameter setting mode.
3. Locate the Auto-Tuning (AT) parameter and activate it. The AT indicator will flash.
4. The controller will cycle the output to determine the process characteristics. This may take some time.
5. Once complete, the AT indicator will turn off, and the newly calculated PID parameters will be applied.

7. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your TK4W-14RR controller.

- **Cleaning:** Wipe the front panel with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Inspection:** Periodically check wiring connections for looseness or damage.
- **Environment:** Ensure the operating environment remains within specified temperature and humidity

ranges.

8. TROUBLESHOOTING

This section addresses common issues you might encounter with the TK4W-14RR.

Problem	Possible Cause	Solution
PV display shows 'HHHH' or 'LLLL'	Sensor open circuit or short circuit; sensor input out of range.	Check sensor wiring and connections. Verify sensor type matches controller settings.
Controller not heating/cooling	Output relay not activating; wiring issue to heater/cooler; SV set incorrectly.	Check OUT1/OUT2 indicators. Verify wiring to load. Adjust SV. Check output parameters.
Temperature oscillates widely	PID parameters are not optimized.	Perform Auto-Tuning (AT) or manually adjust PID parameters.
Display is blank	No power supply; incorrect wiring.	Check power connections and voltage. Ensure power is applied.

9. WARRANTY AND SUPPORT

The AUTONICS TK4W-14RR Temperature Controller is covered by the manufacturer's standard warranty. For detailed warranty terms, technical support, or service inquiries, please refer to the official AUTONICS website or contact your authorized distributor.

For further assistance, please visit the [AUTONICS official website](#).

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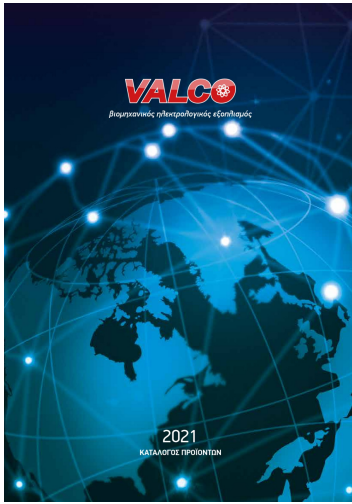
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