

AUTONICS TX4S-A4S

TX4S-A4S Temperature Controller User Manual

Model: TX4S-A4S | Brand: AUTONICS

1. INTRODUCTION

The AUTONICS TX4S-A4S is a high-performance 1/16 DIN PID temperature controller designed for precise temperature regulation in various industrial applications. Featuring a clear 4-digit LCD display, it offers advanced control capabilities including SSR drive output, two alarm outputs, and PV transmission output. This manual provides essential information for the safe and efficient installation, operation, and maintenance of your TX4S-A4S unit.

2. SAFETY INFORMATION

Please read and understand all safety precautions before installing or operating the device. Failure to follow these instructions may result in electric shock, fire, or product damage.

- Ensure the power supply voltage is within the specified range (100-240 VAC, 50/60Hz).
- Disconnect all power before performing any wiring or maintenance.
- Do not touch the terminals while power is applied.
- Install the unit in an environment free from excessive dust, moisture, corrosive gases, or direct sunlight.
- Use appropriate personal protective equipment (PPE) when working with electrical systems.
- This device is intended for industrial control applications. Do not use it for purposes other than its intended use.

3. PRODUCT OVERVIEW

3.1 Features

- 1/16 DIN standard size for easy panel mounting.
- Bright 4-digit LCD display for clear process value (PV) and set value (SV) indication.
- Advanced PID control algorithm for stable and precise temperature regulation.
- SSR (Solid State Relay) drive output for fast and accurate control.
- Two independent alarm outputs for process monitoring.
- PV (Process Value) transmission output for external monitoring or data logging.
- Universal input for various temperature sensors (thermocouple, RTD).

3.2 Components

The TX4S-A4S unit consists of a front panel with display and operation buttons, and a rear panel with terminal connections for power, sensor input, and outputs.



Figure 1: Front view of the Autonics TX4S-A4S Temperature Controller. The display shows the Process Value (PV) and Set Value (SV), along with indicators for output status and mode.

- **LCD Display:** Shows Process Value (PV), Set Value (SV), and various parameters.
- **MODE Button:** Used to switch between display modes and enter parameter setting modes.
- **Arrow Buttons (Up/Down/Left/Right):** Used for navigating menus and adjusting parameter values.
- **Output Indicators:** LEDs (e.g., OUT1) to show the status of control outputs.

4. SETUP AND INSTALLATION

4.1 Mounting

The TX4S-A4S is designed for panel mounting. Ensure a proper cutout is made in the control panel according to the dimensions provided in the specifications section. Secure the unit using the supplied mounting brackets.

- Ensure adequate ventilation around the unit to prevent overheating.
- Avoid mounting near strong magnetic fields or sources of vibration.

4.2 Wiring

All wiring should be performed by qualified personnel with power disconnected. Refer to the wiring diagram typically found on the side or rear of the unit, or in the full product datasheet.

- **Power Supply:** Connect 100-240 VAC, 50/60Hz to the designated power terminals. Ensure correct polarity if applicable.
- **Sensor Input:** Connect your temperature sensor (thermocouple or RTD) to the input terminals. Observe correct polarity for thermocouples and proper wiring for RTDs (2-wire, 3-wire, or 4-wire).
- **SSR Drive Output:** Connect the SSR drive output terminals to the control input of an external Solid State Relay.
- **Alarm Outputs:** Connect external alarm devices (e.g., buzzers, indicator lights) to the two alarm output terminals.
- **PV Transmission Output:** Connect this output to a data logger, PLC, or other device requiring an analog signal representing the process value.
- Use appropriate wire gauges for all connections to prevent overheating and ensure reliable operation.

5. OPERATING INSTRUCTIONS

5.1 Basic Operation

1. **Power On:** After completing all wiring, apply power to the unit. The display will illuminate, showing the current Process Value (PV) and Set Value (SV).
2. **Set Value (SV) Adjustment:** In normal operating mode, press the **MODE** button briefly to enter SV adjustment mode. Use the **Up/Down** arrow buttons to change the SV. Press **MODE** again to confirm and exit.
3. **Monitoring:** The upper display shows the PV (current temperature), and the lower display shows the SV (target temperature).

5.2 Parameter Settings

To access advanced parameters (e.g., PID constants, input type, alarm settings), a specific key combination or prolonged press of the **MODE** button is usually required. Refer to the detailed programming manual (often separate or part of the full datasheet) for specific parameter codes and adjustment procedures.

- **Input Type Selection:** Configure the controller to match your sensor type (e.g., K-type thermocouple, Pt100 RTD).
- **PID Auto-tuning:** The unit may feature an auto-tuning function to automatically calculate optimal PID parameters for your specific process.
- **Alarm Settings:** Set alarm types (e.g., high, low, deviation) and their respective setpoints.
- **Output Configuration:** Adjust output modes (e.g., heating, cooling, ON/OFF control).

6. MAINTENANCE

Regular maintenance ensures the longevity and accuracy of your TX4S-A4S controller.

- **Cleaning:** Gently wipe the front panel with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Inspection:** Periodically check wiring connections for looseness or signs of damage. Ensure the unit is free from dust accumulation, especially around ventilation openings.
- **Calibration:** If accuracy issues are suspected, consult a qualified technician for recalibration.

7. TROUBLESHOOTING

This section provides solutions to common issues. For problems not listed here, contact technical support.

Problem	Possible Cause	Solution
Unit does not power on.	No power supply; incorrect wiring; blown fuse.	Check power connections; verify voltage; inspect internal fuse (if accessible and user-serviceable).
Incorrect temperature reading (PV).	Sensor wiring error; incorrect input type setting; damaged sensor.	Verify sensor wiring polarity/connections; check input type parameter; replace sensor if damaged.
Output (OUT1) not activating.	SV not reached; control mode error; external SSR issue.	Check SV vs. PV; verify control mode (heating/cooling); test external SSR.
Alarm not triggering.	Incorrect alarm settings; alarm type mismatch; external alarm device issue.	Verify alarm setpoints and type; check external alarm device wiring.

8. SPECIFICATIONS

Parameter	Value
Model	TX4S-A4S
Display Type	4-Digit LCD
Control Method	PID Control
Main Output	SSR Drive Output
Alarm Outputs	2 Alarm Outputs
Additional Output	PV Transmission Output
Power Supply	100-240 VAC, 50/60Hz
Dimensions	1/16 DIN Standard (approx. 48x48mm front panel)
Item Weight	1 pound (approx. 0.45 kg)
Manufacturer	AUTONICS USA

9. WARRANTY AND SUPPORT

AUTONICS products are manufactured under strict quality control. Specific warranty terms and conditions are typically provided with your purchase documentation or can be found on the official AUTONICS website. Please retain your proof of purchase for warranty claims.

For technical assistance, troubleshooting beyond this manual, or service inquiries, please contact AUTONICS customer support or your authorized distributor. Contact information can usually be found on the manufacturer's official website.

Note: Specifications and features are subject to change without prior notice for product improvement.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question