



Manuals.plus /

- › Keenso /
- › Keenso REX-C700 PID Intelligent Temperature Controller User Manual

Keenso REX-C700

Keenso REX-C700 PID Intelligent Temperature Controller User Manual

Model: REX-C700FK02-MY*AN

INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the Keenso REX-C700 PID Intelligent Temperature Controller. This device is designed for precise temperature control in various industrial applications, including mechanical, chemical, ceramic, light industry, metallurgy, petrochemical, and heat treatment processes.

The REX-C700 features an intelligent double-row digital display for simultaneous viewing of measured and set values, PID control capabilities, and a user-friendly interface with 12 alarm functions.

PRODUCT OVERVIEW



Figure 1: Keenso REX-C700 PID Temperature Controller with included mounting brackets.



Figure 2: Front panel displaying PV (Process Value) and SV (Set Value) with control buttons.

The Keenso REX-C700 is a compact and robust temperature controller. Its front panel features two digital displays: the upper display (PV) shows the current measured temperature, and the lower display (SV) shows the set target temperature. Below the displays are indicator lights for output (OUT1, OUT2), auto-tuning (AT), and alarms (ALM1, ALM2). Control buttons include SET for parameter configuration, and arrow keys for value adjustment. The controller supports various input types and utilizes both two-position (ON/OFF) and PID control methods for precise temperature regulation.

SPECIFICATIONS

Feature	Specification
Model	REX-C700FK02-MY*AN
Measurement Accuracy	$\pm(0.5\%FS + 1 \text{ digit})$
Cold End Compensating Error	$\pm 2^{\circ}\text{C}$ (software correction within 50-100°C)
Resolution	14 bits
Sampling Period	0.5 seconds
Power Supply	AC100-240V, 50Hz
Control Mode	PID control, Two-position (bit) control
Insulation Resistance	$> 50\text{M}\Omega$ (500VDC)
Insulation Strength	1500VAC/min
Power Consumption	$< 10\text{VA}$
Operating Environment	0 to 50°C, 30 ~ 85% RH (non-corrosive gas)
Overall Dimensions	72 x 72 x 110mm (2.83 x 2.83 x 4.33 inches)
Opening Size	$(67+1) \times (67+1) \times 110\text{mm}$
Weight	245g (approx. 8.6 oz)
UPC	746771492483

SETUP AND INSTALLATION

Proper installation is crucial for the safe and accurate operation of the temperature controller. Ensure all power is disconnected before proceeding with installation.

Mounting

1. Cut an opening in the control panel with dimensions of $(67+1) \times (67+1)$ mm.
2. Insert the REX-C700 controller into the opening from the front.
3. Secure the controller using the provided mounting brackets on the sides. Tighten the screws to hold the unit firmly in place.

Wiring

Refer to the wiring diagram below for correct connections. Ensure all connections are secure and comply with local electrical codes.

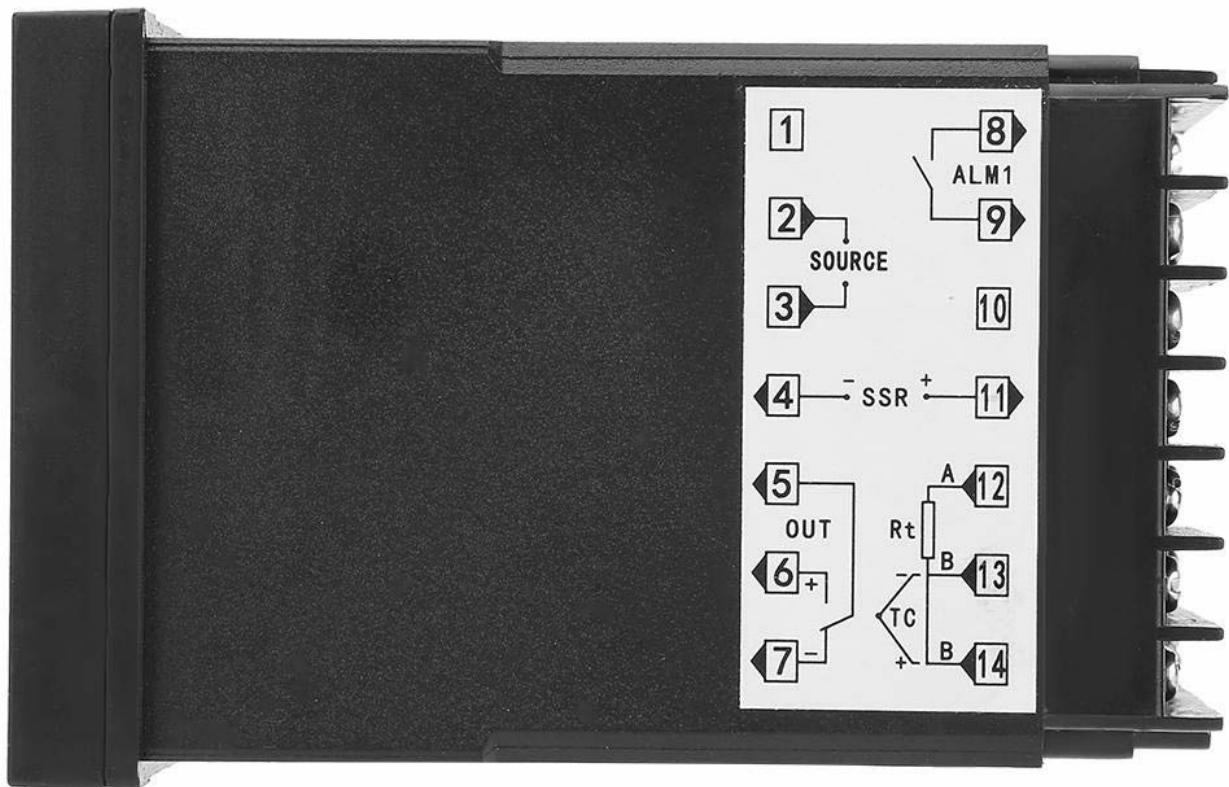


Figure 3: Wiring diagram for the REX-C700 controller.

- **Power Supply (AC100-240V 50Hz):** Connect to terminals 1 and 2.
- **Sensor Input (Source):** Connect your temperature sensor (e.g., K-type thermocouple) to the designated input terminals (e.g., 3 and 4 for thermocouple, or 13 and 14 for RTD). Ensure correct polarity for thermocouples.
- **Output (OUT):** Connect your heating/cooling element or Solid State Relay (SSR) to the output terminals (e.g., 5 and 6 for relay/SSR output).
- **Alarm Output (ALM1, ALM2):** If using alarm functions, connect alarm devices to the respective alarm output terminals (e.g., 8 and 9 for ALM1).

Note: The specific terminal numbers may vary slightly depending on the exact model variant. Always refer to the label on the side of your unit for precise terminal identification.

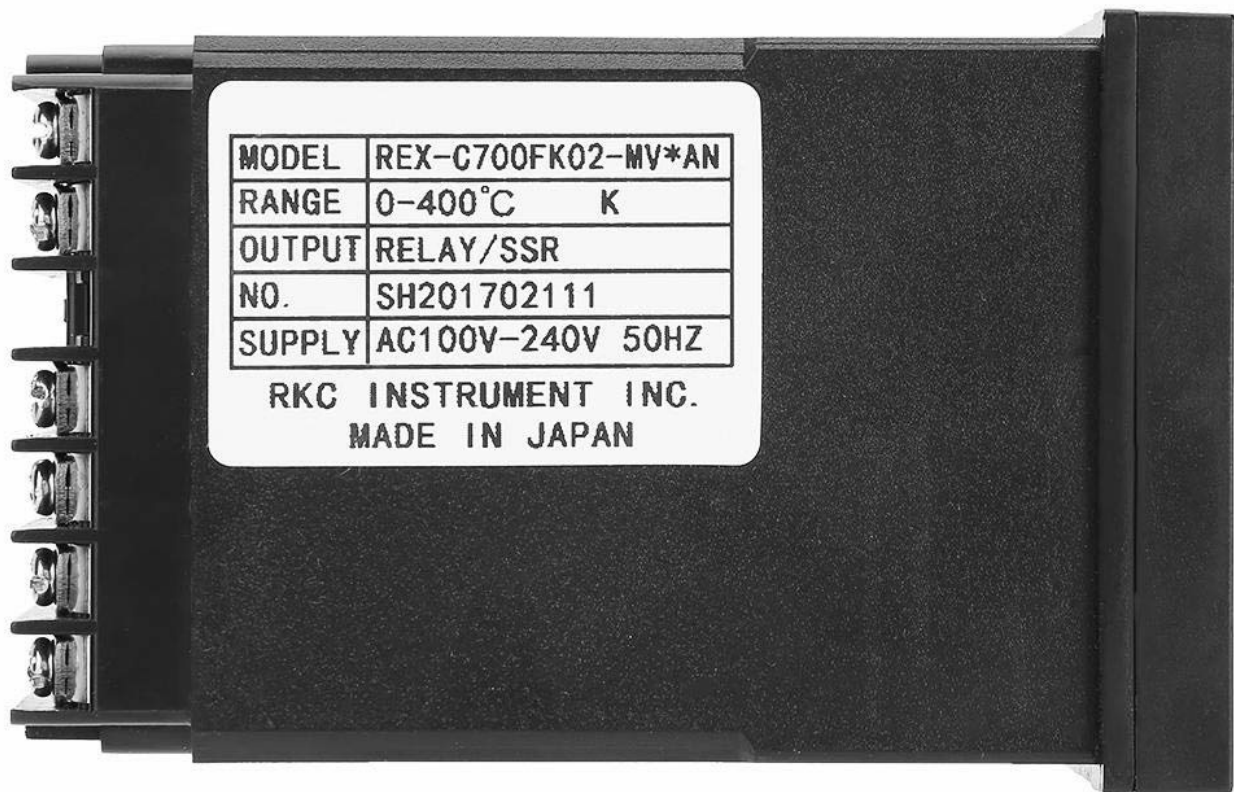


Figure 4: Side label with model and wiring specifications.

OPERATING INSTRUCTIONS

Basic Operation

1. **Power On:** After completing all wiring, apply power to the controller. The PV and SV displays will illuminate.
2. **Viewing Measured Value (PV):** The upper display (PV) shows the current temperature measured by the sensor.
3. **Viewing Set Value (SV):** The lower display (SV) shows the target temperature.
4. **Adjusting Set Value (SV):**
 - Press the **SET** button once. The SV display will flash.
 - Use the **Up** (▲) and **Down** (▼) arrow buttons to adjust the desired temperature.
 - Press **SET** again to confirm the new value and exit the setting mode.

Parameter Settings

The REX-C700 has various parameters for advanced control. To access these parameters:

1. Press and hold the **SET** button for approximately 3-5 seconds until the first parameter code appears on the PV

display.

2. Use the **SET** button to cycle through different parameter codes.
3. Use the **Up** (▲) and **Down** (▼) arrow buttons to adjust the value of the currently displayed parameter.
4. To save changes and exit, stop pressing buttons for several seconds, or cycle through all parameters until the controller returns to normal operation.

Refer to the full manual (if provided separately) for a complete list of parameter codes and their functions, including input type selection, control mode (PID/ON-OFF), alarm types, and PID constants.

PID Control and Auto-Tuning (AT)

The REX-C700 utilizes PID (Proportional-Integral-Derivative) control for stable and precise temperature regulation. For optimal performance, auto-tuning is recommended after initial setup or if the controlled system characteristics change significantly.

1. Set the desired target temperature (SV).
2. Press and hold the **AT** button (or the button designated for auto-tuning, often the left arrow key) for a few seconds until the **AT** indicator light illuminates.
3. The controller will cycle the output to determine the optimal PID parameters. During this process, the temperature may overshoot or undershoot the set value.
4. Once auto-tuning is complete, the **AT** indicator will turn off, and the controller will operate with the newly calculated PID parameters.

Alarm Functions

The controller supports up to 12 types of alarm functions. These can be configured in the parameter settings to trigger an alarm output when the process value (PV) deviates from the set value (SV) by a specified amount, or when it exceeds/falls below certain thresholds.

- The **ALM1** and **ALM2** indicator lights on the front panel will illuminate when an alarm condition is met.
- Alarm parameters (e.g., alarm type, deviation value) are set within the advanced parameter menu.

MAINTENANCE

The Keenso REX-C700 is designed for reliable operation with minimal maintenance. Follow these guidelines to ensure longevity and performance:

- **Cleaning:** Periodically clean the front panel with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Environmental Conditions:** Ensure the operating environment remains within the specified temperature (0 to 50°C) and humidity (30 ~ 85% RH, non-condensing, non-corrosive gas) ranges.
- **Connections:** Regularly check all wiring connections for tightness and signs of corrosion. Loose connections can lead to inaccurate readings or intermittent operation.
- **Sensor Inspection:** Inspect the temperature sensor for any physical damage or degradation. Replace if necessary.
- **Calibration:** While the unit is factory calibrated, if significant discrepancies are observed over time, professional recalibration may be required.

Always disconnect power before performing any maintenance or inspection.

TROUBLESHOOTING

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

Problem	Possible Cause	Solution
No display / Unit not powering on	No power supply; Incorrect wiring; Blown fuse.	Check power connections and source. Verify wiring according to diagram. Check for internal fuse (if accessible and user-serviceable).
PV display shows "HHHH" or "LLLL"	Sensor open circuit (HHHH); Sensor short circuit or reverse connection (LLLL); Sensor type mismatch.	Check sensor wiring and connections. Ensure sensor type matches controller settings. Replace faulty sensor.
Temperature control is unstable or inaccurate	Incorrect PID parameters; Sensor not properly installed; External interference; Load too large/small.	Perform auto-tuning. Ensure sensor is in good thermal contact with the process. Check for strong electromagnetic fields. Verify load compatibility.
Output not activating	Wiring error; Output setting incorrect; Temperature not reaching set point; Faulty output component.	Check output wiring. Verify control mode and output parameters. Ensure SV is set correctly. Test output component (e.g., SSR).
Alarm not triggering	Alarm parameters incorrect; Alarm output wiring error; Alarm disabled.	Check alarm type and deviation settings. Verify alarm output wiring. Ensure alarm function is enabled.

WARRANTY AND SUPPORT

Keenso products are manufactured to high quality standards. This product comes with a **180-day warranty** from the date of purchase, covering defects in materials and workmanship under normal use.

The warranty does not cover damage caused by improper installation, misuse, unauthorized modification, or natural disasters.

For technical support, warranty claims, or further assistance, please contact your retailer or Keenso customer service. When contacting support, please have your product model (REX-C700) and purchase information ready.

You can visit the [Keenso Store on Amazon](#) for more information or to find contact details.