

Autonics High Accuracy PID Temperature Controller TK4 SERIES INSTRUCTION MANUAL



Thank you for choosing our Autonics product. Please read the following safety considerations before use.

Safety Considerations

Please observe all safety considerations for safe and proper product operation to avoid hazards. Failure to follow these instructions may result in fire, personal injury, or economic loss.

- Warning: Failure to follow these instructions may result in serious injury or death.
Caution: Failure to follow these instructions may result in personal injury or product damage.

Warning

- 1. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.
2. Install on a device panel to use.
3. Do not connect, repair, or inspect the unit while connected to a power source.
4. Check 'Connections' before wiring.
5. Do not disassemble or modify the unit.

Caution

- 1. When connecting the power input and relay output, use AWG 20 (0.50mm²) cable or over and tighten the terminal screw with a tightening torque of 0.74~0.90Nm.
2. Use the unit within the rated specifications.
3. Use dry cloth to clean the unit, and do not use water or organic solvent.
4. Do not use the unit in the place where flammable/explosive/corrosive gas, humidity, direct sunlight, radiant heat, vibration, impact, or salinity may be present.
5. Keep metal chip, dust, and wire residue from flowing into the unit.

Ordering Information

TK 4 N - 1 4 R N
OUT2 control output, OUT1 control output, Power supply, Input/Output option, Size, Digit, Item

- 1. In case of TK4N/SP Series, option control selection and digital input will be limited due to number of terminals.
2. 'S' represents SSR drive output support models which SSR function (standard ON/OFF, cycle, phase) control are available.
3. Select 'R' or 'C' type in case of using heating/cooling control and 'N' type in case of using standard control.

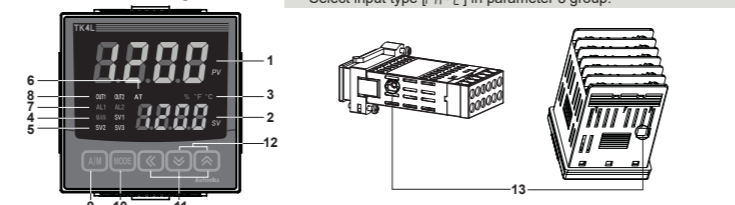
Shaded descriptions are upgraded or added functions from the before TK Series. The above specifications are subject to change and some models may be discontinued without notice. Be sure to follow cautions written in the instruction manual, user manual and the technical descriptions (catalog, homepage).

Specifications

Table with columns: Series, Power supply, Allowable voltage range, Power consumption, Display method, Character size, Input type, Display accuracy, Control output, Alarm output, Option output, Option input, Control method, Hysteresis, Proportional band, Integral time, Derivative time, Control period, Manual reset value, Sampling period, Dielectric strength, Vibration, Relay life cycle, Insulation resistance, Noise immunity, Memory retention, Environ -ment, Protection, Insulation type, Approval, Weight.

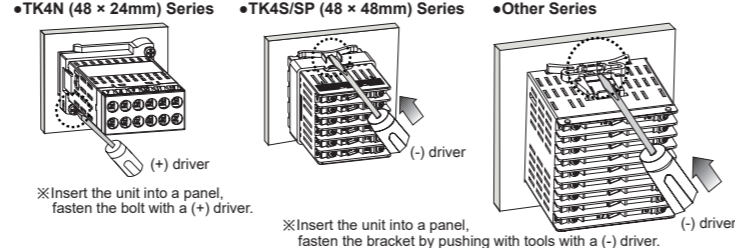
At room temperature range (23°C±5°C): Thermocouple K, J, T, N, E type, below -100°C / Thermocouple L, U, PLII, Cu50Ω, DPT 50Ω; Thermocouple R, S, B, C, G type; PV ±0.5% or ±5°C, select the higher one ±1-digit; Thermocouple C, G, R, S type, below 200°C; (PV ±0.3% or ±3°C, select the higher one) ±1-digit; Thermocouple B type, below 400°C; there is no accuracy standards.

Unit Description



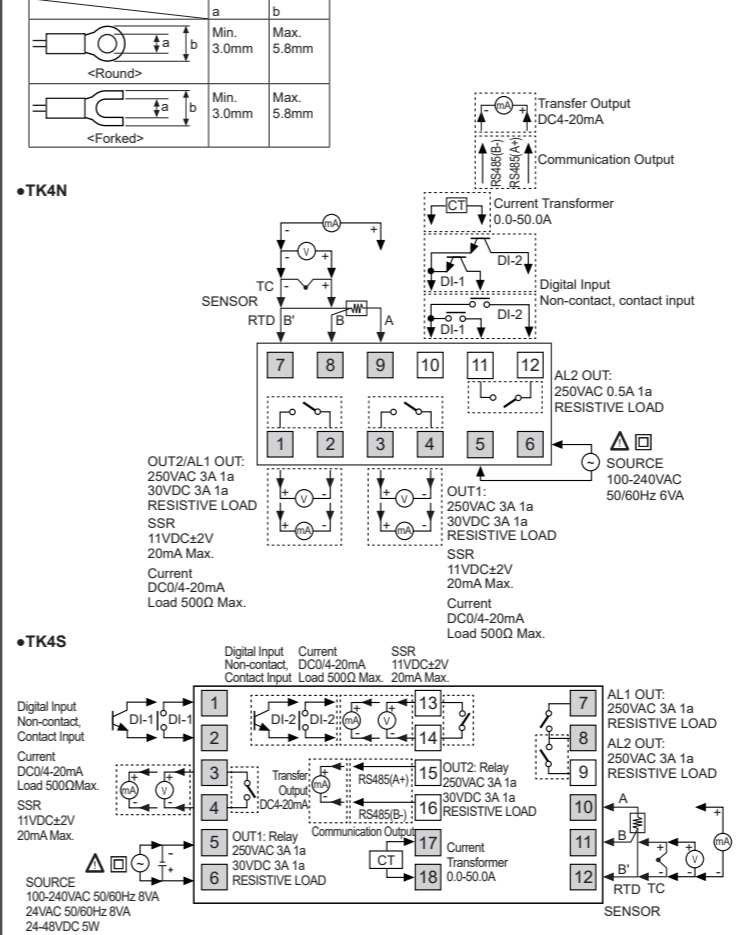
- 1. Measured value (PV) display part: RUN mode: It displays currently measured value (PV). Setting mode: It displays the parameter.
2. Set value (SV) display part: RUN mode: It displays the set value (SV). Setting mode: It displays the set value of the parameter.
3. Manual (C/F/F%) indicator: It displays the unit set at display unit [unit] in parameter 3 group.
4. Unit control indicator: It turns ON during manual controlling.
5. Multi SV indicator: One of SV1 to 3 lamps will be ON in case of selecting multi SV function.
6. Auto tuning indicator: It flashes by 1 sec. when executing auto tuning.
7. Alarm output (AL1, AL2) indicator: It turns ON when the alarm output is ON.
8. Control output (OUT1, OUT2) indicator: It turns ON when the control output is ON.
9. Key: It is used when switching auto control to manual control.
10. Key: It is used when entering parameter groups, returning to RUN mode, moving parameter, saving the set value.
11. Key: It is used when entering the set value changing mode and moving or changing up/down digit.
12. Digital input key: When pressing + keys for 3 sec. at the same time, it operates the function (RUN/STOP, alarm clear, auto tuning) set at digital input key [di - v] in parameter 5 group.
13. PC loader port: It is the PC loader port for serial communication to set parameter with DAQMaster installed in PC. Use this for connecting SCM-US (USB/Serial converter, sold separately).

Installation

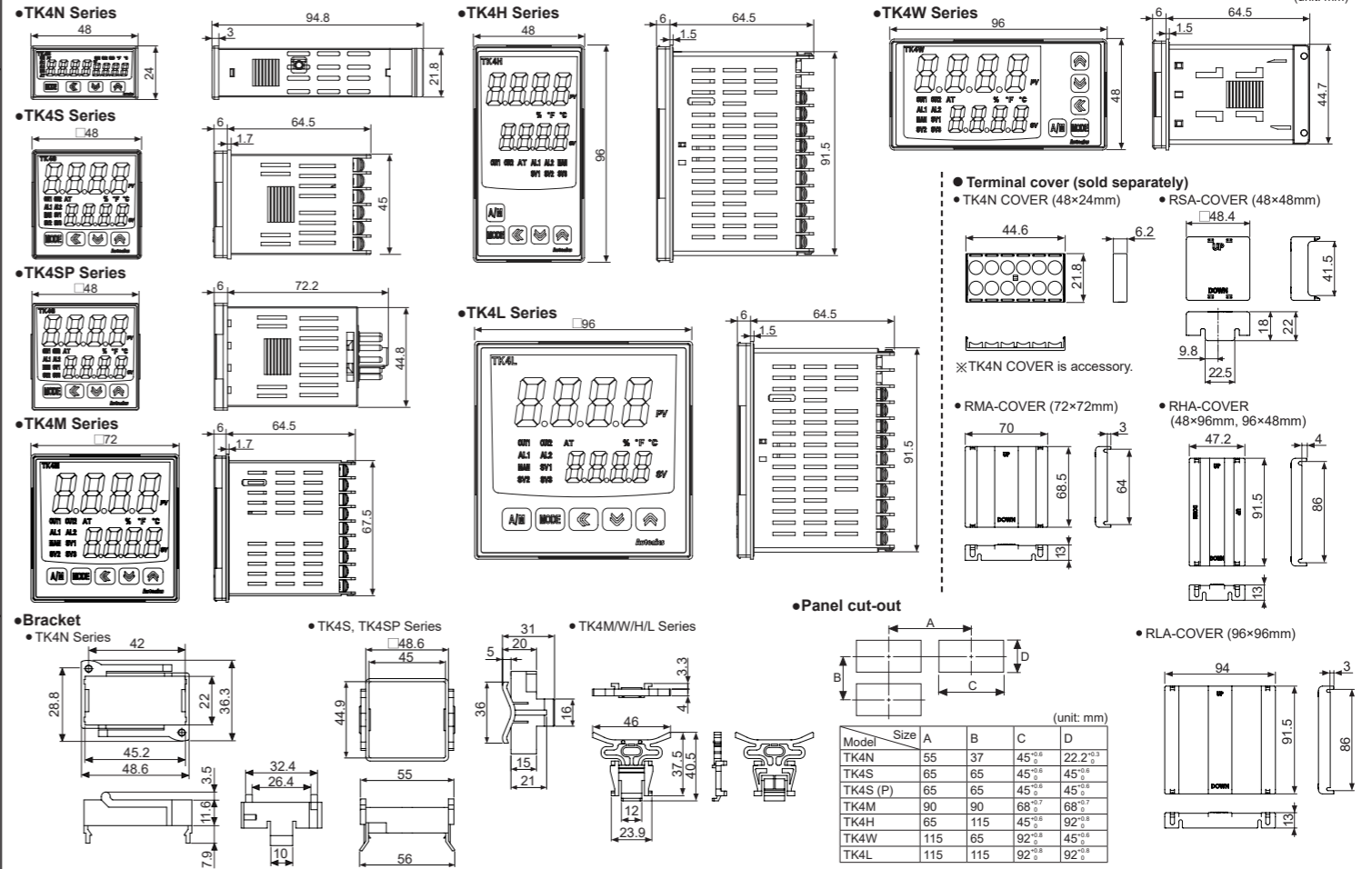


Connections

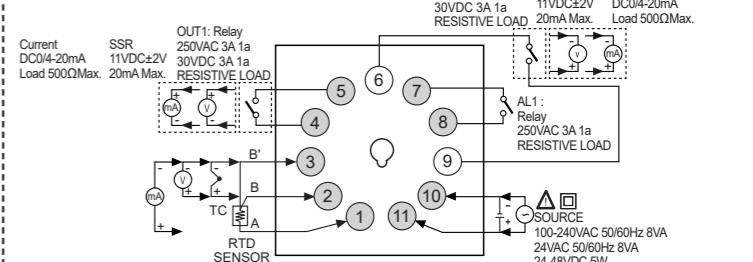
Standard model has shaded terminals only. When the operation mode of heating/cooling OUT2 relay output model is heating or cooling control, the OUT2 is usable as alarm output 3 (except TK4N Series). When the operation mode of heating/cooling OUT2 current output model is heating or cooling control, the OUT2 is usable as transmission output 2.



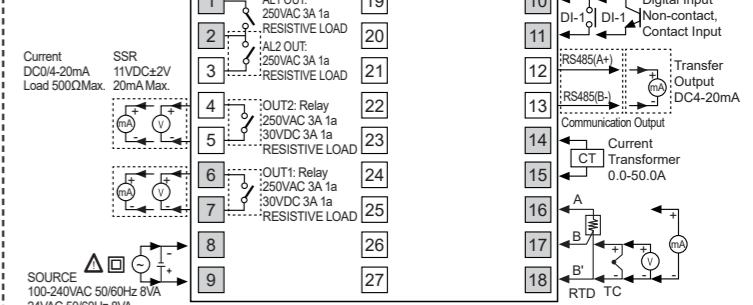
Dimensions



TK4SP



TK4M



TK4H, TK4W, TK4L

