



# SUN EARTH

## Steca TR A502 TT U

5 inputs, 2 outputs

The Steca TR A502 TT U controller is an ideal solution for all double-circuit systems. It monitors and controls solar thermal systems with up to two differently aligned collector arrays or a maximum of two domestic hot water or buffer storage tanks.

The Steca TR A502 TT U is also distinguished by the compact casing, which is typical for this series of devices. It can be superbly integrated into solar stations, but of course it can also be installed on walls or top-hat rails. The variable input voltage range allows universal use of the device worldwide.

The solar controller has five inputs for acquisition of temperature and pulse information and two outputs. These can also be used for controlling (0 -10 V / PWM on request) high-efficiency pumps. The device is equipped with an additional alarm output. The operating states are visualized on an animated, clearly arranged display.

Together with an external pulse encoder, the integrated calorimetry system allows the acquisition of numerical information on the solar yields of the system.

The controller can be used in a wide range of applications and is exceptionally easy to configure and operate: 11 system configurations are pre-programmed. The inputs and outputs are already defined and you can see what is connected at a glance. Installers only need to set the boundary parameters. The system setting "0.1" allows free selection of the controller functions to suit the system type and operating requirements. The ability to be mounted on a wall or top-hat rail emphasizes the flexible range of uses for the device.

The specially constructed switching power supply in the Steca TR A502 TT U, which is used in all controllers of this series, ensures the maximum possible efficiency and economic operation.



The new electronic load control system protects the device from overloading and installation errors. This ensures long-term, safe and reliable operation of the entire solar system.

The Steca TR A502 TT U also provides important system monitoring and safety functions. This ensures long-term, safe and reliable operation of the entire solar system. For rapid correction of system malfunctions special error displays are shown.

### Product features

- Compact, multipart designer casing
- Installation versions: Solar pump stations, wall installation, mounting rails
- Wave packet (Triac) and 1-10 V control signal (PWM control signal on request) ensure electronic RPM control
- High level of operational safety through fault diagnosis
- Hours-of-operation logger
- Software update possible
- Daily pump start
- Screw terminals allow universal and rapid installation
- Low power consumption thanks to universal and widerange switched-mode power supply
- Variable input voltage range for worldwide controller deployment
- Electronic overloading control and protection

### Displays

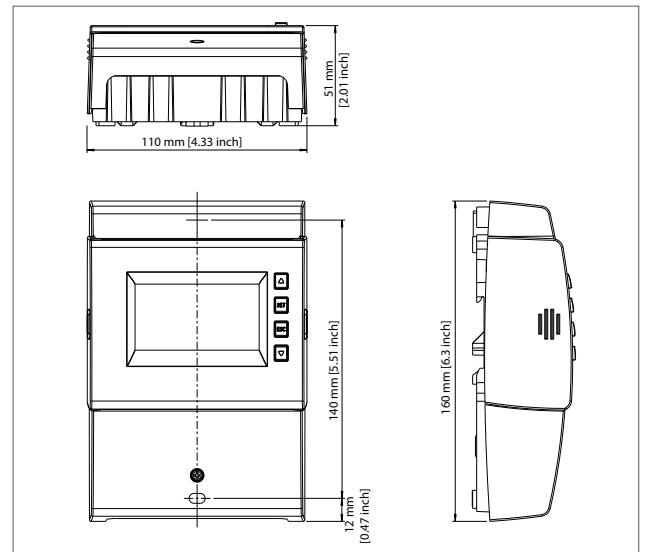
- Multifunction graphical LCD display with backlighting
- Animated representation of the systems and operating states

### Operation

- Non-verbal menu navigation
- Manual switch for manual, auto, off

### Functions

- Heat quantity (pulse generator, determination)
- Display showing CO<sub>2</sub> savings
- Drain back
- Reduction of stagnation phases
- Active cooling (e.g. to avoid stagnation)
- Holiday (storage tank recooling)
- Circulation (controlled by temperature / time)
- Back-up heating
- Solid fuel boiler
- Storage tank quick charge
- Thermostat
- Differential thermostat
- Interval / tube collector
- Anti-freeze
- Display storage tank top
- Alarm output



	TR A502 TT U
System voltage	115 V AC ... 230 V AC, 50 Hz / 60 Hz
Own consumption	≤ 0.8 W [≤ 0.001 HP]
Inputs	5 4 x temperature (Pt1000) 1 x temperature (Pt1000) or pulse
Outputs	2 2 x triac for speed control (R1, R2), max. 250 W (230 V) or PWM control signal for pump speed (PWM R1, PWM R2) max. 130 W / 0.17 HP (120 V AC) or 0 - 10 V control signal for pump speed (0 - 10 V R1, 0 - 10 V R2) / PWM control signal on request
Additional output	1 x potential-free switching output for the safety extra-low voltage
Hydraulic schemes	11
Ambient temperature	0 °C [+32 °F] ... +50 °C [+122 °F]
Degree of protection	IP 22 / DIN 40050 [without front panel: IP 20]
Dimensions (X x Y x Z)	110 x 160 x 51 mm [4.33 x 6.3 x 2.01 inch]
Weight	350 g [12.35 oz]

Technical data at 25 °C / 77 °F

Areas of application:



inputs/outputs:

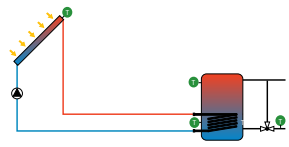


Systems with one storage tank

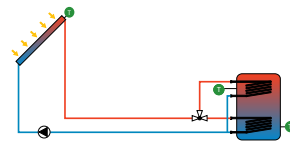
1 collector array



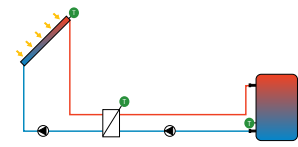
Internal heat exchanger, intelligent pump control



Internal heat exchanger, intelligent pump control, heating return increase



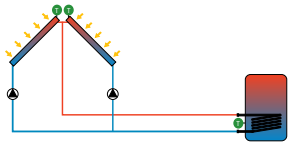
Internal heat exchanger, zone loading, intelligent valve control



External heat exchanger, intelligent pump control

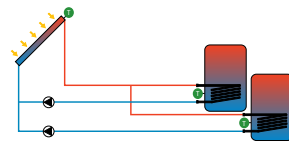
Systems with two storage tanks

2 collector arrays (east/west roof)

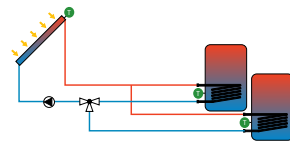


Internal heat exchanger, intelligent pump control

1 collector array



Internal heat exchanger, intelligent pump control



Internal heat exchanger, intelligent valve control

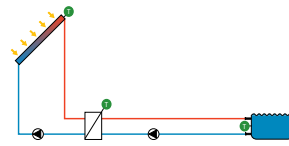


Systems with a swimming pool

1 collector array



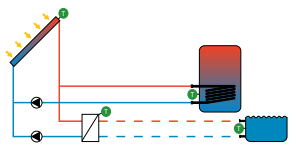
Direct flow-through, intelligent pump control



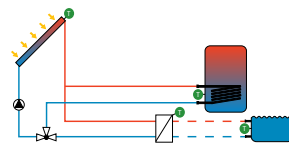
External heat exchanger, intelligent pump control

Systems with one storage tank and a swimming pool

1 collector array



Stand-alone operation of the external heat exchanger, intelligent pump control



Stand-alone operation of the external heat exchanger, intelligent valve control