



# SunEarth

## Steca TR A503 TTR U

5 inputs, 3 outputs

Along with the TR A501 T U and TR A502 TT U controllers, the TR A503 TTR U is the third product in this series, which have a compact designer housing allowing universal use.

The TR A503 TTR U extends the functionality of this series of devices by providing additional system monitoring functions. Data can be stored on standard Micro-SD cards and Internet visualisation is possible via the Steca TK RW2 IFA router. When used in conjunction with an external pressure sensor, the „System pressure monitoring“ controller function provides additional system monitoring. An additional controller output that can be individually customised for additional controller functions is also provided.

As with the other products in this series, a specially constructed switching power supply provides maximum efficiency and economic operation. This reduces own consumption to a minimum. The variable input voltage range allows universal use of the device worldwide.

The TR A503 TTR U has two speed-controllable Triac outputs, that can also be configured as 0-10 V outputs (PWM on request) for controlling high-efficiency pumps and a relay switched output for additional controller functions. The equipment is rounded off by five inputs for recording temperature and pulses.



### 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
- Communication interface for Internet visualisation using a Steca TK RW2 IFA router

### 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

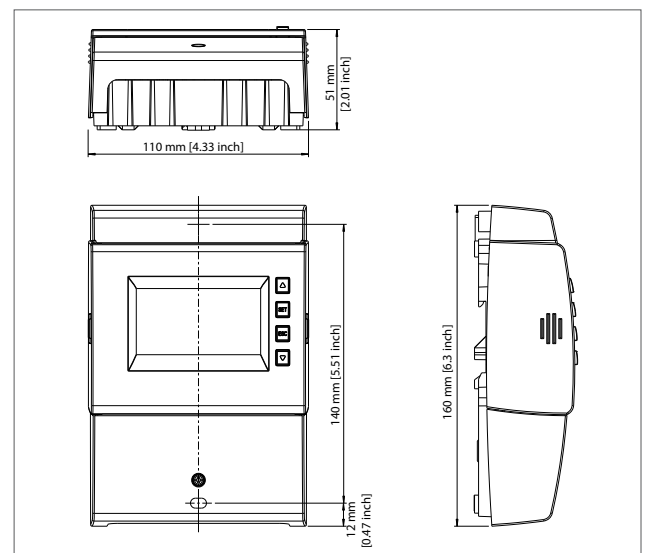
- Data logging to a Micro-SD card
- Heat quantity (Grundfos Direct Sensors™, pulse generator, determination)
- Drain back
- System pressure monitoring (e.g. Grundfos Direct Sensors™)
- Reduction of stagnation phases
- Active cooling (e.g. to avoid stagnation)
- Holiday (storage tank recooling)
- Circulation (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

The integrated calorimetry system allows the acquisition of numerical information on the solar yields of the system. For more demanding requirements, this can of course be expanded using an external pulse encoder or an additional Grundfos Direct Sensors™.

Steca TR A503 TTR U controller monitors and controls solar thermal systems with two differently oriented collector arrays and a maximum of two domestic hot water or buffer storage tanks. The third controller output can be individually customised for additional controller functions.

11 pre-programmed systems enable universal usage. The Steca TR A503 TTR U also provides important monitoring and safety functions such as special error messages to quickly troubleshoot faults.

As with the other products in this series the new constructed electronic overloading control protects the TR A503 TTR U against overloading and installation errors.



Areas of application:



inputs/outputs:

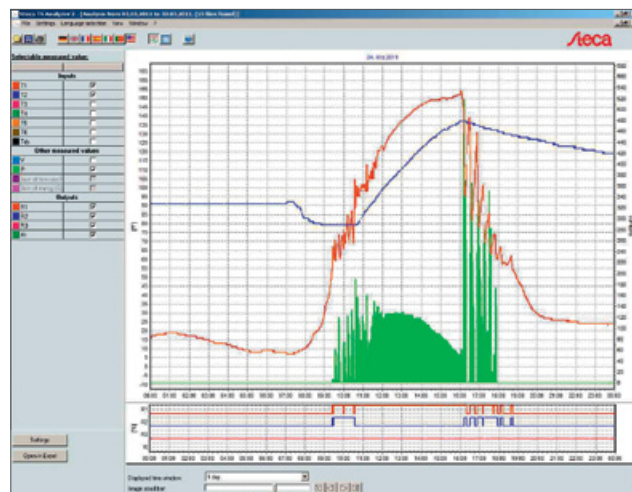


## Datalogging on micro SD card and analysis software Steca TS Analyzer 2



The Steca TR A503 TTR U stores the solar thermal system's operational data on a Micro-SD card. The analysis software TS Analyzer 2 visualises the system results.

Steca TR A503 TTR U solar controller with the Steca TK RW2 IFA router, several WLAN clients and an internet connection



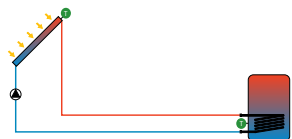
Steca TS Analyzer 2

	TR A503 TTR 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
Additional inputs	2 1 x Grundfos Direct Sensors™ (temperature / flow rate) 1 x Grundfos Direct Sensors™ (temperature / pressure)
Outputs	3 2 x triac for speed control (R1, 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 1 x switch output relay (R3), 2 A, 115 V AC ... 230 V AC
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	370 g [13.05 oz]

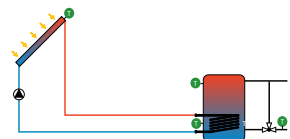
Technical data at 25 °C / 77 °F

### Systems with one storage tank

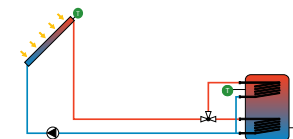
#### 1 collector array



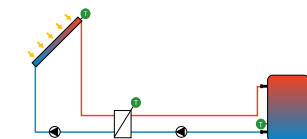
Internal heat exchanger,  
intelligent pump control



Internal heat exchanger, intelligent  
pump control, heating return increase



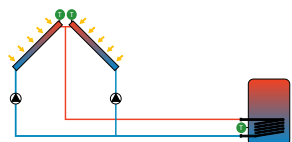
Internal heat exchanger, zone loading,  
intelligent valve control



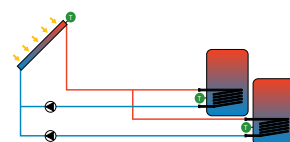
External heat exchanger,  
intelligent pump control

### Systems with two storage tanks

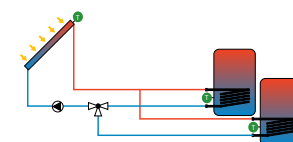
#### 2 collector arrays (east/west roof)



Internal heat exchanger,  
intelligent pump control



Internal heat exchanger,  
intelligent pump control



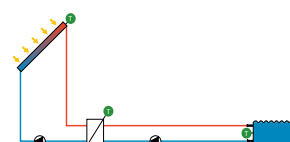
Internal heat exchanger,  
intelligent valve control

### Systems with a swimming pool

#### 1 collector array



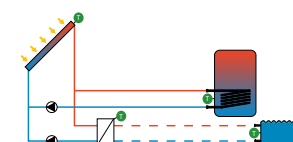
Direct flow-through,  
intelligent pump control



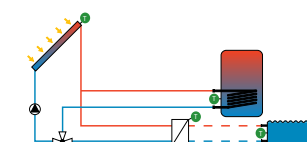
External heat exchanger,  
intelligent pump control

### 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