

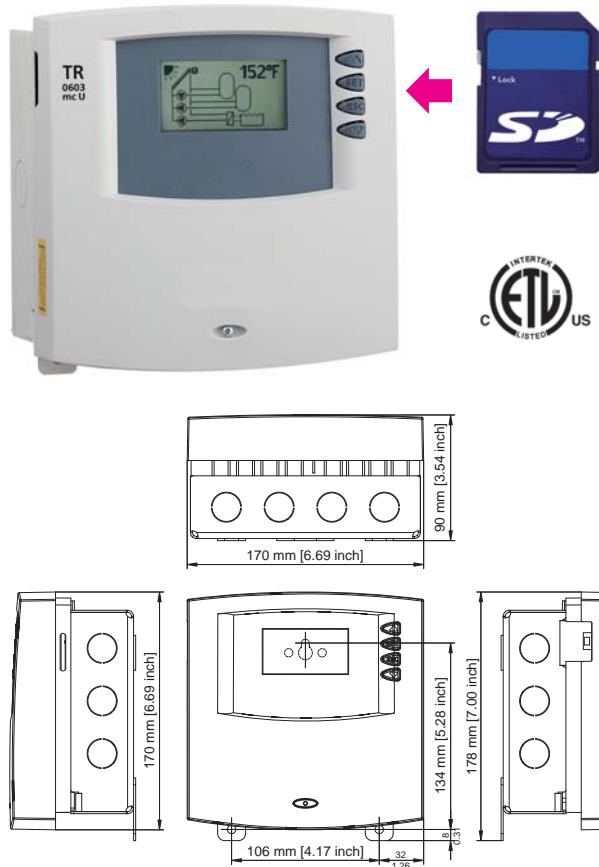
TR0603mc U Solar Controller

Engineering
Submittal
Sheet



BOSCH

Controller Dimensions and Functions



Functions

- Data logger on SD card
- Heat quantity (Grundfos Direct Sensor™, pulse generator, determination)
- Heating return increase
- Reduction of stagnation phases
- Vacation (storage tank recooling)
- Circulation (controlled by temperature / time / pulse)
- Back-up heating
- Solid fuel boiler
- Storage tank quick charge
- Bypass
- Thermostat
- Differential thermostat
- Timer
- Interval / vacuum tube collector
- Anti-freeze
- Anti-legionella cyclical storage tank heating
- Display storage tank top
- Alarm output
- Two loading zones

Controller Specifications

The following shall be the specifications for the solar controller:

For a controller, the system shall use the TR0603mc U controller with 6 PT-1000 sensor inputs and 3 outputs. The controller shall be ETL certified for both USA and Canada. The unit shall be microprocessor controlled with date and time, data logging capability with data stored on an SD card, electronic pump speed control on 2 outputs, 1 relay output, and animated multi-function LCD display.

The controller shall have 40 pre-programmed systems and numerous additional functions for meeting customer specific applications.

The solar controller shall have an input for a Grundfos Direct Sensor which allows flow rate measurement convertible to BTU and kWh and suitable for energy monitoring.

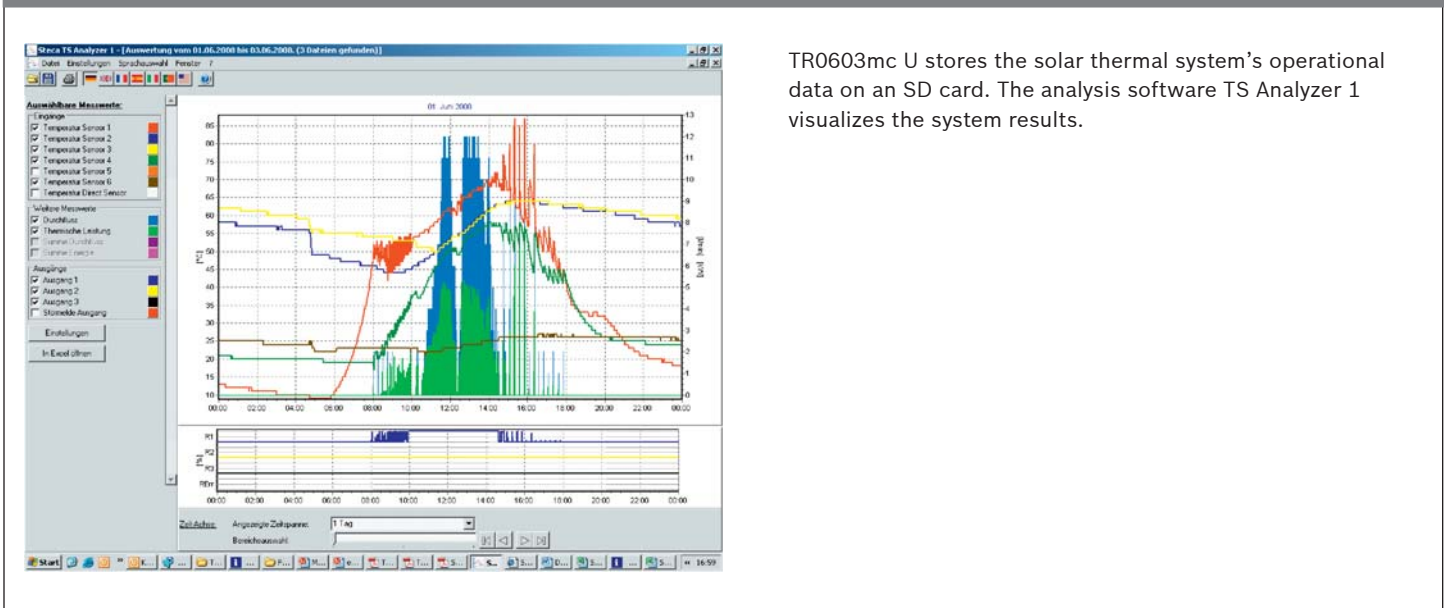
The controller shall utilize the TS-Analyzer software to evaluate the data on the SD-card.

The controller shall be equipped with troubleshooting tools that spell out error messages in full text.

Controller Specifications	
Part Number	8718572810
System voltage	120 V AC, 60 Hz optional 240 V AC, 60 Hz
Own consumption	≤ 2 W (0.003 HP)
Inputs	6 5 x temperature (Pt1000) 1 x temperature (Pt1000) or pulse
Additional input	1 x Grundfos Direct Sensors™ (Temperature/flow rate)
Outputs	3 2 x triac for speed control (R1, R2), max. 130 W / 0.17 HP (120 V AC) 1 x switch output relay (R3), max. 400 W / 0.5 HP (120 V AC) or R3 dry contact
Additional output	1 x alarm output
Power cord	75 inch, 3 x 18 AWG at 221°F
Hydraulic schemes	40
Ambient temperature	0°C (+32°F) through 45°C (+113°F)
Interfaces	SD card, RS232, RS485 (Steca TPC 1 bus)
Data logging	SD card
Degree of protection	IP 20 / DIN 40050
Dimensions (X x Y x Z)	170 x 178 x 90 mm (6.69 x 7.0 x 3.54 inch)
Weight	1.5 kg (48.23 oz.)

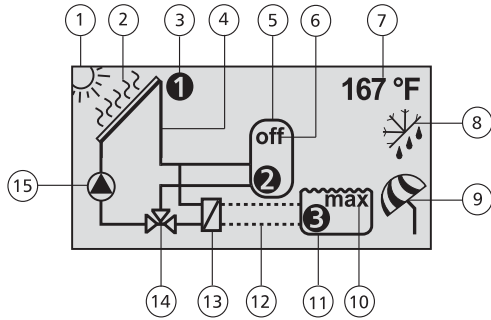
Technical data at 25°C/77°F

Datalogging on SD Card and Analysis Software



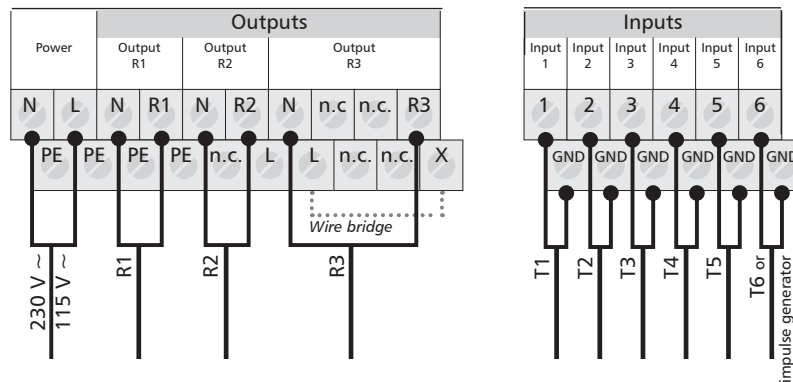
TR0603mc U stores the solar thermal system's operational data on an SD card. The analysis software TS Analyzer 1 visualizes the system results.

Display Overview



- | | |
|---|--|
| <ul style="list-style-type: none"> ① Symbol for solar circuit's switch-on condition fulfilled ② Symbol for maximum collector temperature reached ③ Symbol for the currently selected temperature sensor ④ Symbol for the solar circuit ⑤ Symbol for the storage tank ⑥ Symbol (off) for deactivated storage tank ⑦ Display of the current measured value such as temperature values and outputs' operating hours ⑧ Symbol for the activated frost protection function | <ul style="list-style-type: none"> ⑨ Symbol for the activated holiday/recooling function ⑩ Symbol (max) for maximum storage tank and swimming pool temperature reached ⑪ Symbol for swimming pool ⑫ Symbol for stand-alone operation of the swimming pool loading circuit ⑬ Symbol for external heat exchanger ⑭ Symbol for 3-way switching valve ⑮ Symbol for pump |
|---|--|

Terminal Plan



Power connection

- Please note the type of power supply required from the type plate on the case of the device
- The protective conductor must also be connected
- Cables conforming to at least type H05 VV-... (NYM...) must be used

Outputs

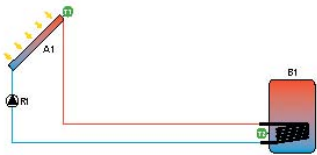
- R1: Semiconductor relays (Triac), also suitable for RPM control max. switching current: 1 A
- Output R2: Semiconductor relays (Triac), also suitable for RPM control max. switching current: 1 A
- Output R3: electromagnetic relays, available with
 - Potential free contact (without wire bridge) or
 - Switched output 230 / 115 V ~ (with wire bridge), Max. switching current 3.5 A

Inputs

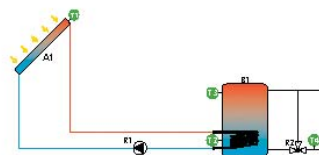
- Inputs 1 - 5: for Pt1000 temperature sensor
- Input 6: for Pt1000 temperature sensor or impulse generator e. g. for measuring heat quantities

Systems with One Storage Tank

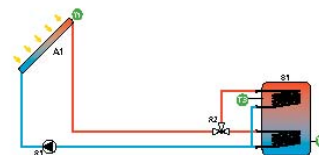
1 collector array



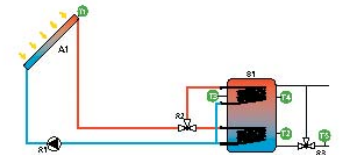
Internal heat exchanger, intelligent pump control



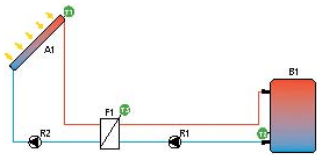
Internal heat exchanger, intelligent pump control, heating return increase



Internal heat exchanger, zone loading, intelligent valve control



Internal heat exchanger, zone loading, intelligent valve control, heating return increase



External heat exchanger, intelligent pump control

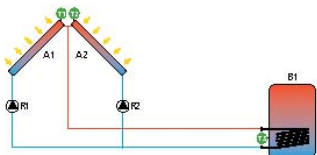


External heat exchanger, intelligent pump control, heating return increase

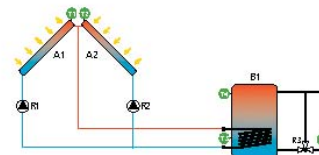


External heat exchanger, zone loading, intelligent valve control

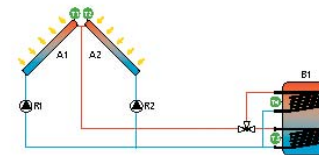
2 collector arrays (east/west roof)



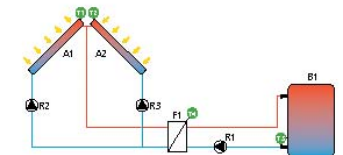
Internal heat exchanger, intelligent pump control



Internal heat exchanger, intelligent pump control, heating return increase



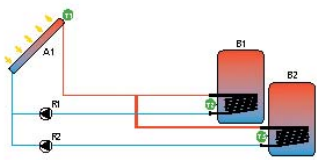
Internal heat exchanger, zone loading, intelligent valve control



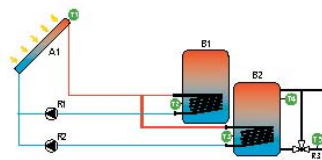
External heat exchanger, intelligent pump control

Systems with Two Storage Tanks

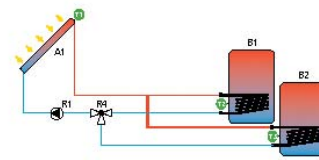
1 collector array



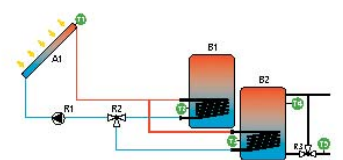
Internal heat exchanger, intelligent pump control



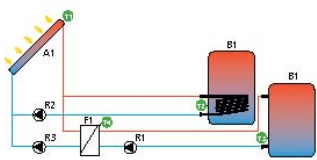
Internal heat exchanger, intelligent pump control, heating return increase



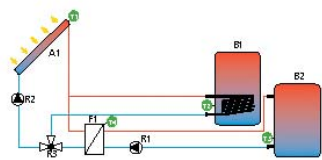
Internal heat exchanger, intelligent valve control



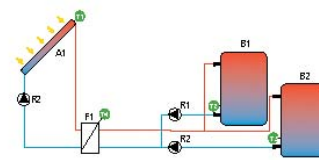
Internal heat exchanger, intelligent valve control, heating return increase



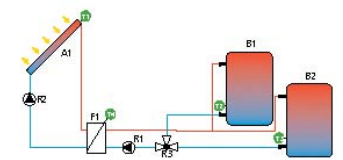
Internal/external heat exchanger, intelligent pump control



Internal/external heat exchanger, intelligent valve control

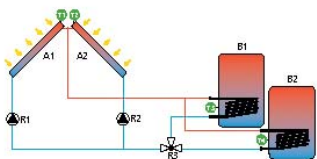


External heat exchanger, intelligent pump control



External heat exchanger, intelligent valve control

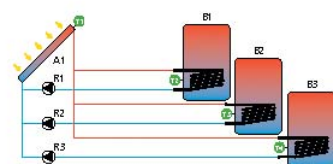
2 collector arrays (east/west roof)



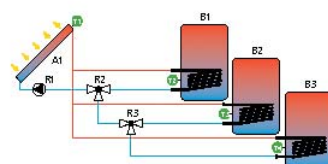
Internal heat exchanger, intelligent valve control

Systems with Three Storage Tanks

1 collector array



Internal heat exchanger, intelligent pump control



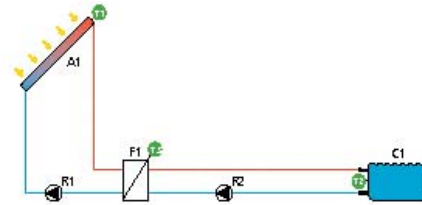
Internal heat exchanger, intelligent valve control

Systems with a Swimming Pool

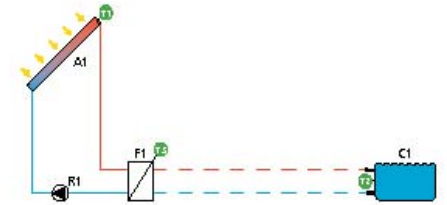
1 collector array



Direct flow-through, intelligent pump control

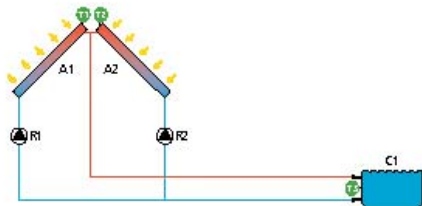


External heat exchanger, intelligent pump control

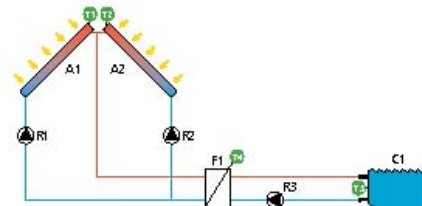


Stand-alone operation of the external heat exchanger; intelligent pump control

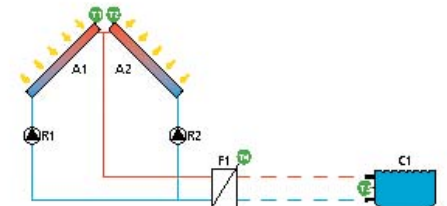
2 collector arrays (east/west roof)



Direct flow-through, intelligent pump control



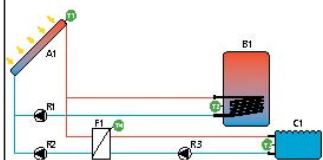
External heat exchanger, intelligent pump control



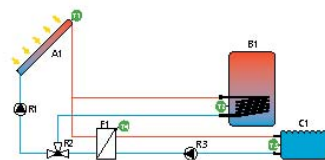
Stand-alone operation of the external heat exchanger, intelligent pump control

Systems with One Storage Tanks and a Swimming Pool

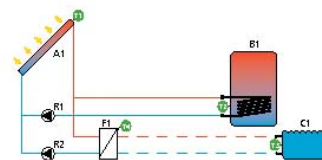
1 collector array



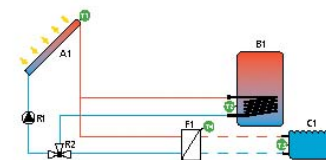
External heat exchanger, intelligent pump control



External heat exchanger, intelligent valve control



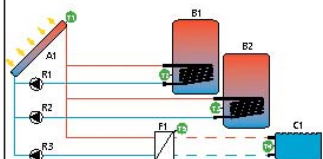
Stand-alone operation of the external heat exchanger, intelligent pump control



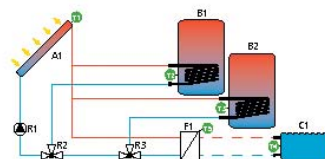
Stand-alone operation of the external heat exchanger, intelligent valve control

Systems with two storage tanks 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