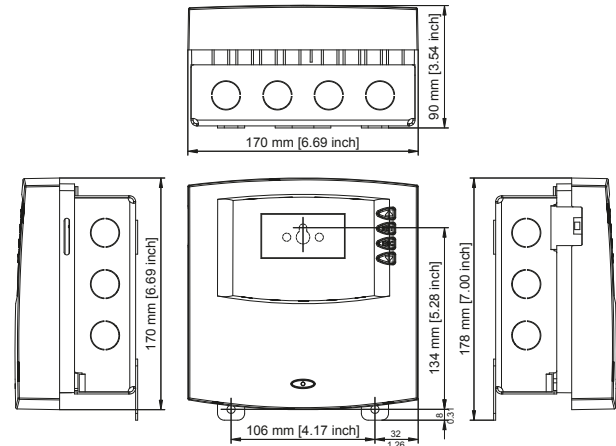


# TR 0603mc U Solar Controller

Part #8718572810

Engineering  
Submittal  
Sheet



## 6 inputs, 3 outputs

The TR 0603mc U controller was specially developed for North America. With its special certification (ETL label) from a Nationally Recognized Testing Laboratory (NRTL) in the U.S., the controller meets the safety standards and requirements of the United States and Canada.

The TR 0603mc U stores the system's operational data on an SD card. The 40 pre-programmed systems and numerous additional functions allow universal use of the controller. The large graphic display shows the animated control circuits, which allows viewing the operating status of each system. The TR 0603mc U has six inputs for recording temperatures or pulse valves, as well as an extra Grundfos Direct Sensors™ input for combined temperature and flow rate measurement. Pumps and switching valves are controlled using three outputs, some of which can be speed controlled.

## Product Features

- Compact, designer casing
- Electronic speed control
- High level of operational safety through fault diagnosis
- Hours-of-operation logger
- Software update possible
- Storage tank target temperature loading
- Seasonal systems (loading of pool / storage tank according to the time of the year)
- Daily pump start
- Plug & play for 120 V AC mains and pump connections in installation casing
- Terminal connections facilitate fast sensor installation
- Integrated TPC 1 bus

## Displays

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

## Operation

- Multilingual menu navigation
- Side switch for manual, auto, off

## Options

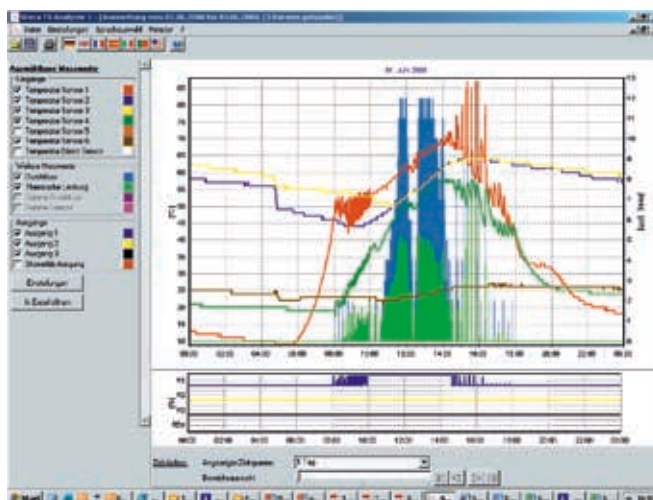
- Installation casing with ½ inch cut-outs as an alternative to NEMA 3-prong cable

TR 0603mc U	
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)... +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

### Functions

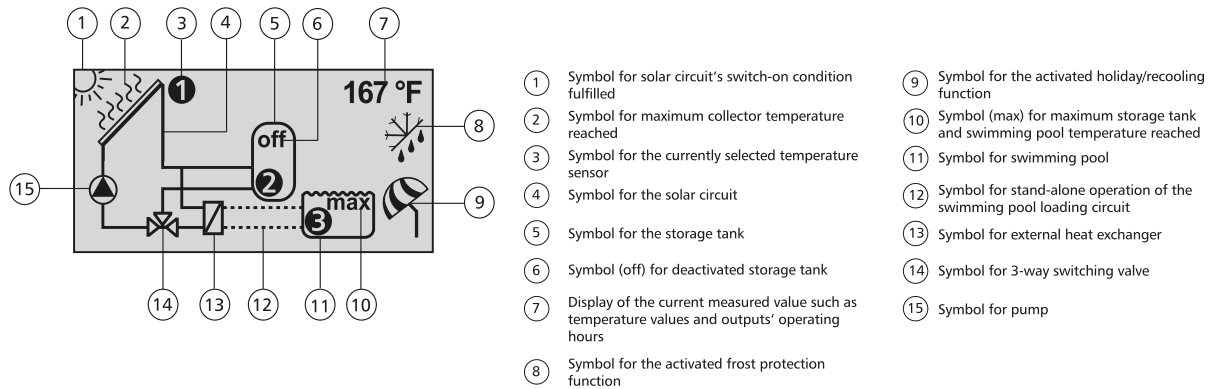
- Data logger on SD card
- Heat quantity (Grundfos Direct Sensor™, pulse generator, determination)
- Heating return increase
- Reduction of stagnation phases
- Vacation (storage tank recooling)
- Circulation (controlled by temperature / time / pulse)
- Back-up heating
- Solid fuel boiler
- Storage tank 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



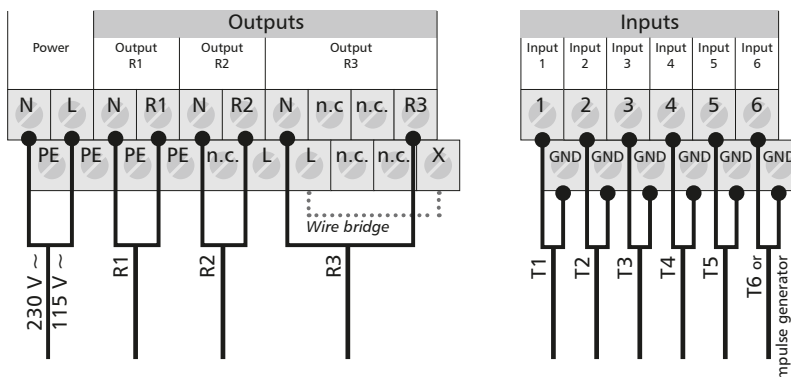
### Datalogging on SD card and analysis software

TR 0603mc U stores the solar thermal system's operational data on an SD card. The analysis software TS Analyzer 1 visualises the system results.

### Display Overview



### 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

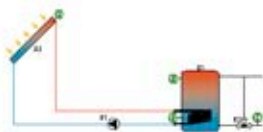
- Inputs 1 - 5: for Pt1000 temperature sensor
- Input 6: for Pt1000 temperature sensor or impulse generator e. g. for measuring heat quantities

### Systems with one storage tank

#### 1 collector array



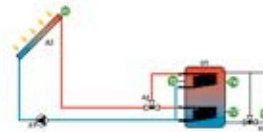
Internal heat exchanger, intelligent pump control



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

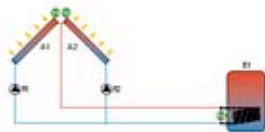


External heat exchanger, intelligent pump control, heating return increase

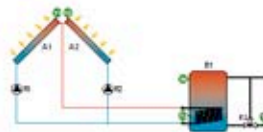


External heat exchanger, zone loading, intelligent valve control

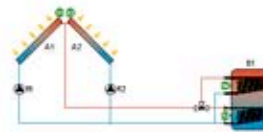
#### 2 collector arrays (east/west roof)



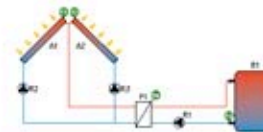
Internal heat exchanger, intelligent pump control



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

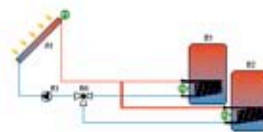
#### 1 collector array



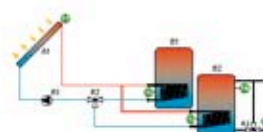
Internal heat exchanger, intelligent pump control



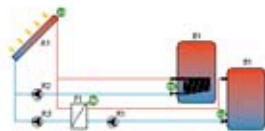
Internal heat exchanger, intelligent pump control, heating return increase



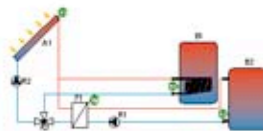
Internal heat exchanger, intelligent valve control



Internal heat exchanger, intelligent valve control, heating return increase



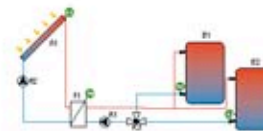
Internal/external heat exchanger, intelligent pump control



Internal/external heat exchanger, intelligent valve control

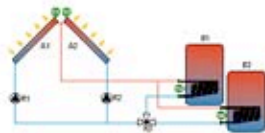


External heat exchanger, intelligent pump control

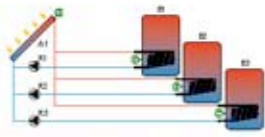


External heat exchanger, intelligent valve control

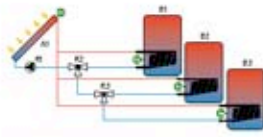
#### 2 collector arrays (east/west roof)



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**

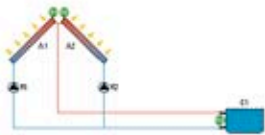
Direct flow-through, intelligent pump control



External heat exchanger, intelligent pump control



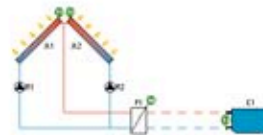
Stand-alone operation of the external heat exchanger, intelligent pump control

**2 collector array**

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 tank and a swimming pool****1 collector array**

External heat exchanger, intelligent pump control



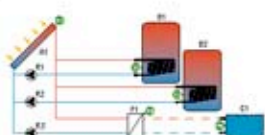
External heat exchanger, intelligent valve control



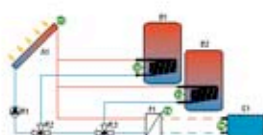
Stand-alone operation of the external heat exchanger, intelligent pump control



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

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