

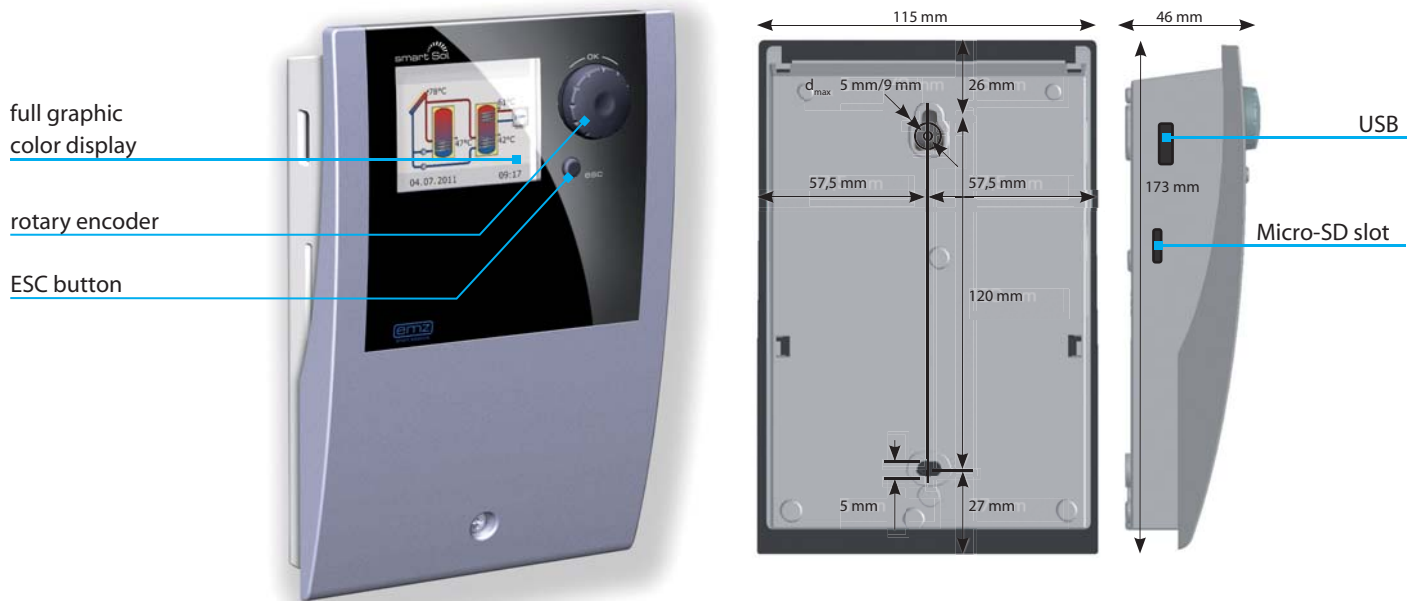
smart Sol

for more efficiency.

get the most solar energy.



Differential Temperature Controller
for solar thermal plants
for drinking water heating und heating support



Benefits >>

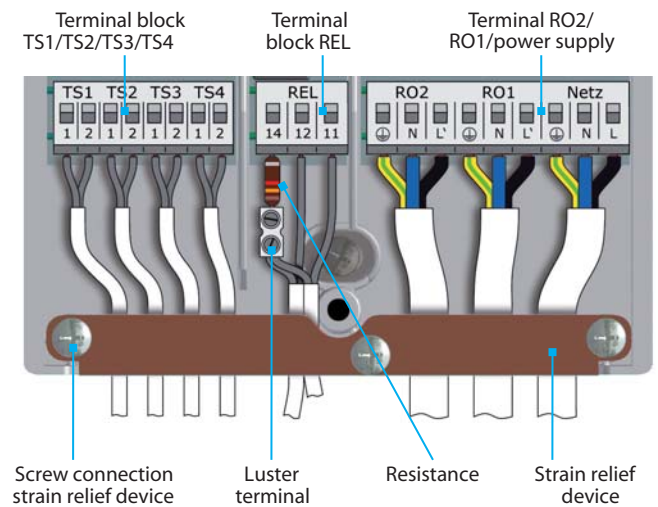
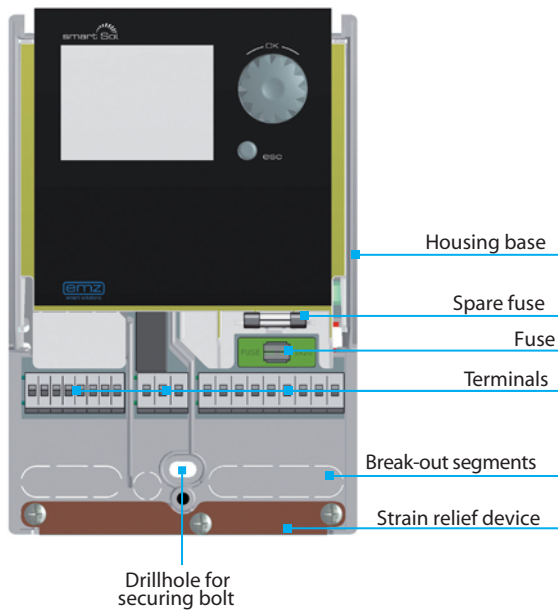
- sophisticated efficiency functions increase efficiency by approx. 15% (calculated via solar plant research and testing center, University of Stuttgart)
- combining smart Sol and a water softening system guarantees calcium-free heat exchangers
- the installation and service wizard ensures safe commissioning as well as targeted customer service
- the time saving wiring concept permits accurate connection of both sensors and actors
- continuously safe plant operation guaranteed by protection and monitoring features
- overview of plant performance and solar yield by data records

Product Features >>

- control of solar thermal plants with up to 2 collector arrays or 2 storage tanks
- max. 4 measuring inputs for sensors and incremental encoders
- max. 2 speed-controlled outputs for pumps and valves
- calcination protection for heat exchanger via activation of a water softening system
- operation of an external heat exchanger for hygienic fresh water heating
- integrated real-time clock and service hour counter for relay outputs
- heating support
- wall mounting or installation in pump group or tank

Operation · Visualisation >>

- high-contrast full graphic color display with backlight
- rotary encoder with push, ESC button
- operating levels for each OEM, heating installer and end user
- self-explanatory menu/user guidance and animated hydraulic systems
- plain text displays, symbols, multilingual, even Asian characters available



Wiring >>

- easy access to terminal compartment
- spring-type terminals
- visualized wiring diagram
- convenient, intersection-free wiring
- strain relief device
- floating relay contacts for the disable recharge feature

Installation and Service Wizard >>

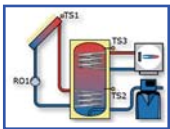
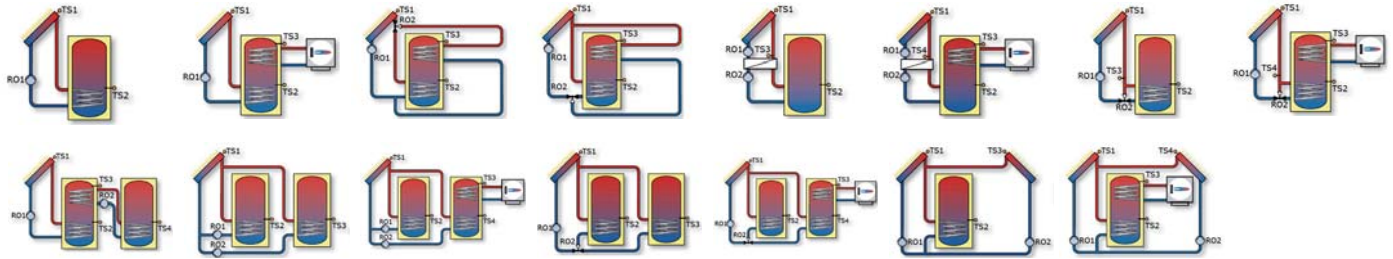
- just a few settings and the system is ready to operate
- targeted information allows the heating installer to easily eliminate a malfunction and perform the maintenance
- helps the end user to assess a preliminary diagnosis

Options >>

Various additional options can be provided on demand, e.g.:

- relay output for disable the storage tank recharge
- power reserve for real-time clock (approx. 8 hours)
- SD or micro-SD for data logging and USB for PC connection
- input for volumetric flow sensor (increment/impeller or analog/Grundfos)
- analog or PWM output for the activation of high-efficiency pumps
- module for operating or visualizing the water softening system "AQA solar" (BWT Wassertechnik GmbH)

Hydraulic Systems



with the option „water softening system AQA solar“;

- can be added to each of the 15 hydraulic systems

with the option “disable recharge“;

- can be added to each hydraulic system with integrated boiler



Operation Functions

- differential temperature control
- fixed temperature control
- disable tank recharge
- heat quantity balancing
- CO₂ savings
- priority charging
- low-flow function
- tube collector function
- thermostat function
- operation of high-efficiency pumps
- collector defrosting
- holiday function
- automatic summer/winter time changeover
- collector minimum temperature
- overtravel time for relay outputs
- quick-charging

» Protective Functions

- collector emergency OF
- collector cooling
- antifreeze
- tank maximum temperature limitation
- tank temperature limit cut-out
- anti-blocking protection
- soft charge
- tank cooling

» Monitoring Functions

- sensor monitoring
- monitoring the output states
- sensor balancing
- service hour counter
- data logging

Technical Data



Supply	Mains voltage	230VAC, 50Hz	
Output RO1, RO2	Output current	max. 1A	per output
Output REL	Output disable recharge	max. 250V, max 4A	floating contact
High-efficiency pump	Analog output	0 ... 10V, max 10mA	adjustable via menu
	PWM output	100Hz ... 10kHz	adjustable via menu
	Signal output	TS4	as a hardware version
Input TS1 ... TS4	Sensor type	PT1000	
	Resolution	0.1K	
	Sampling rate	5Hz ... 1kHz	
Input UI1 (Grundfos sensor)	Supply voltage	5V	
	Resolution temperature	0,1K	input circuit
	Resolution volumetric flow	0.1l/min	input circuit
	Sampling rate	5Hz ... 1kHz	
	Option	pin connector	
Device	Storage temperature	0 ... 40°C	condensation not admissible
	Service temperature	0 ... 40°C	condensation not admissible
	Protection class	II	
	Type of protection	IP20	