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March
2019

SELTRON
SMART HEATING

SGC
Catalogue



Differential controllers
SGC16H | SGC26H | SGC36HV | SGC67HV

They are used to control water heating, fill hot water buffer tanks, manage energy sources, such as: solid fuel boiler, pellet boiler, oil boiler, gas boiler, heat pump or electric heater.

Differential controllers SGC



Presentation

SGC universal solar heating controllers are intended for the regulation of solar systems for hot water production as well as a support system for room heating. Advanced operation algorithms ensure an optimal usage of solar energy and allow for the regulation of energy efficient circulation pumps.
The SGC controllers have integrated preset hydraulic systems that allow a fast and simple installation.

Application

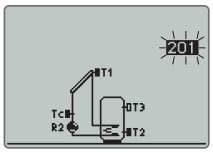
- In hot water production systems with classic or vacuum collectors.
- In hot water production systems with additional heat sources.
- In supply device heating using solar heating system and additional heat sources.
- In pool heating systems.
- Single-stage supply device charging.
- Two-stage supply device charging.

Capacities

- 65 preset hydraulic circuit diagrams.
- 3 free programming outputs.
- Regulation of rotation of 2 classic pumps (RPM).
- Regulation of rotation of 2 energy-saving pumps (PWM, 0–10V).
- Regulation of systems with 2 collector fields.
- Regulation of systems with 3 heat supply devices.
- Possibility of regulation of heating systems using solid fuel boiler.
- Option of using zonal storage filling with quick start function in the case of cold supply device.
- Wizard for an easy and quick device start-up.
- Measurement and display of generated energy.
- Solar heating system protection when collectors are overheating.
- Operational diagnostics featuring error and excessive temperature warnings.
- Remote control with the help of the SeltronHome system.



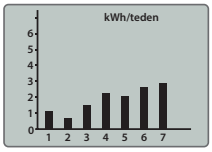
Step 1



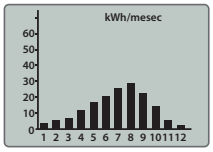
Step 2

Start-up wizard

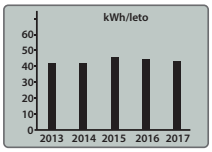
The SGC controller is equipped with a start-up wizard, which takes you through the initial settings of the controller in 2 steps.
Step 1: language selection.
Step 2: hydraulic circuit diagram selection.



Display by days



Display by months



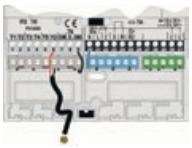
Display by years

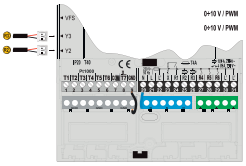
Measurement of the energy obtained

When the solar system is also used for heating water, we want to know how much energy has been obtained from a free-of-charge renewable energy source.

The SGC controllers allow informative and accurate measurement of the generated solar energy and the display of data in weekly, monthly and yearly graphs.

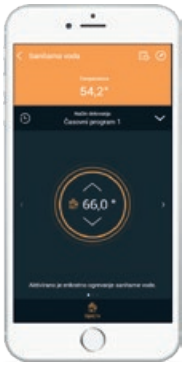
- For the information measurement of the solar energy obtained, the maximum reading of the media from the mechanical meter must be entered in the controller settings.
- For accurate measurements of the solar energy generated, a flow meter with a pulse generator or a Vortex flowmeter (VFS) must be installed in the solar system.


SGC16H, SGC26H


SGC36HV, SGC67HV

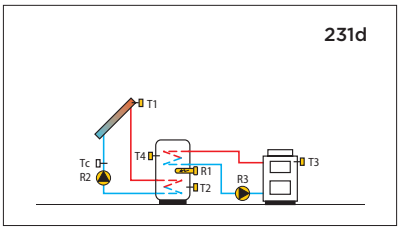
Connection of an energy-saving circulation pump with external controlled signal

The SGC controller allows the regulation of rotation of energy-saving circulation pumps with external controlled signal PWM or 0–10V. This type of regulation of rotation is allowed with R2 and R3 relay outputs. All SGC controllers have the R2 relay output, while the SGC36HV and SGC67HV controllers have the R3 relay output.



Remote control with the help of the SeltronHome system

The SGC controllers may be connected to the SeltronHome platform, which allows remote control of the heating using a smartphone or tablet.
Remote control is enabled through the CLAUSIUS application for the final user, and the KELVIN application for the service personnel.
The application allows you, for example, to switch on the one-off hot water preparation outside the time program.



Typical hydraulic circuit diagram

Hot water preparation with solar collectors and solid fuel boiler with the possibility of additional heating using electric heater.

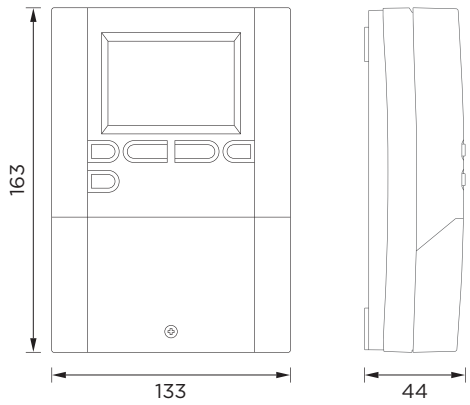
Example: hydraulic circuit diagram 231d.

Application	SGC16H	SGC26H	SGC36HV	SGC67HV
In hot water production systems with classic or vacuum collectors	●	●	●	●
In hot water production systems with additional heat sources	●	●	●	●
In supply device heating using solar heating system and additional heat sources	—	●	●	●
In pool heating systems	—	●	●	●
Single-stage supply device charging	—	—	●	●
Two-stage supply device charging	—	—	—	●
Technical characteristics				
No. of preset hydraulic circuit diagrams	5	22	53	65
No. of mechanical relays	—	1	1	4
No. of solid state relays	1	1	2	2
No. of temperature sensor inputs	6	6	6	7
Number of collector fields	1	2	2	2
No. of supply devices	1	2	3	3
Measurement of the energy obtained (kW/h)	●	●	●	●
Option for pulse gauge flow measurement (l/min)	●	●	●	●
Regulation of rotation for energy-saving pumps (PWM, 0–10V)	1 pump	1 pump	2 pumps	2 pumps
Regulation of rotation of classic pumps (RPM)	1 pump	1 pump	2 pumps	2 pumps
Free programming option	—	1 output	2 outputs	3 outputs
Possibility to make an interconnection between several SGC controllers and also other Seltron controllers with a BUS connection	●	●	●	●
Regulation of heating systems				
Using collector fields	1	2	2	2
With heat supply devices	1	up to 2	up to 3	up to 3
Solar hot water heating and an additional heat source	—	●	●	●
Heating support	—	●	●	●
Swimming pool heating	—	●	●	●
Using solid fuel boiler	—	—	—	●
Using zonal storage filling with quick start function in the case of cold supply device	—	—	—	●
Heat source control				
Classical or vacuum collectors	●	●	●	●
Solid fuel boiler	●	●	●	●
Solid fuel boiler with pellet heater	—	●	●	●
Liquid fuel boiler	—	●	●	●
Combined boiler	—	●	●	●
Gas flow boiler	—	●	●	●
Heat pump	—	●	●	●
Heat supply device	●	●	●	●
Additional heating using electric heater	—	●	●	●
Options for switching on additional energy sources				
The controller has an option for setting up whether an additional source is used to heat water up to a minimum temperature	●	●	●	●
The option for setting up whether the primary source of energy is switched on immediately or only when the water cannot be heated in a certain period of time	—	●	●	●
The option for setting up the time during which we allow water heating only by using collectors – the controller will not switch on the primary heat source if the calculations show that the water may be heated only by collectors	—	●	●	●

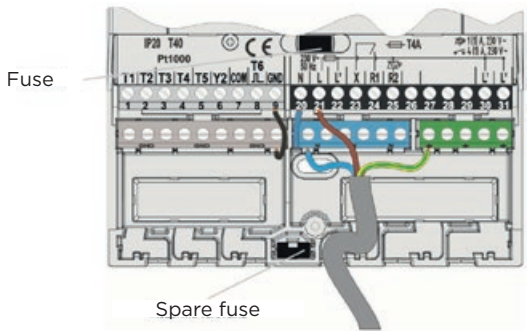
Operation mode with several supply devices	SGC16H	SGC26H	SGC36HV	SGC67HV
Constant operation in the “OPTIMUM” mode means an optimum use of solar energy for heating all of the supply devices taking into account the preferred supply device	—	●	●	●
The "AUTO" mode automatically switches between winter and summer modes and according to a preset calendar	—	●	●	●
Constant operation in the “SUMMER” mode means the heating of only the preferred supply device, the other supply devices are heated only when the preferred one reaches the desired temperature	—	●	●	●
Continuous operation in “WINTER” mode means alternating parallel heating of all hot supply devices	—	●	●	●
Heating of all the supply devices	—	●	●	●
User functions				
Hot water heating according to the time program	●	●	●	●
Holiday operating mode	●	●	●	●
One-off – instantaneous switching on of hot water heating	●	●	●	●
Heating system protection				
Protection against Legionella bacteria (at the controlled energy source)	●	●	●	●
Protection against the freezing of collectors	●	●	●	●
Forced pump start with the highest collector temperature	●	●	●	●
Switching off of the collectors when the safety temperature has been exceeded	●	●	●	●
Solar heating system protection when collectors are overheating	●	●	●	●
Supply device protection when overheating	●	●	●	●
Supply device re-cooling to the desired temperature	●	●	●	●
Periodic starting up of pumps during a period of inactivity	●	●	●	●
Data display				
A comprehensive overview of the heating system operation	●	●	●	●
Graphic display of temperatures according to days of the last week	●	●	●	●
Detailed display of temperatures for the current day	●	●	●	●
Archiving and graphic display of generated solar energy	●	●	●	●
Operational self-diagnostics featuring error warnings and notifications regarding excessive temperatures	●	●	●	●
Remote access				
Possibility of USB connection with PC	●	●	●	●
Connectivity with the SeltronHome platform allowing remote control using a smartphone or tablet	●	●	●	●
Setup and assembly				
The controller is “ERP ready”	●	●	●	●
Wizard for an easy and quick device start-up	●	●	●	●
13-language user interface Languages: EN, DE, FR, NL, PL, ES, SL, IT, CS, LT, GR, HU, HR	●	●	●	●
Setting up the operation by selecting the hydraulic circuit diagram	●	●	●	●
“Help” button for quick help with settings	●	●	●	●
Graphically adjustable time programs	●	●	●	●
The option for simulating system operation	●	●	●	●
Logging and display of changes made to settings	●	●	●	●
Option for retrieval of basic settings in the event of data loss or unwanted changes	●	●	●	●
Keeping operational statistics for solar heating system performance optimisation	●	●	●	●
Option for programming free outputs	●	●	●	●
Possibility of mounting to a wall or DIN rail	●	●	●	●
Simple installation and connection	●	●	●	●

Technical specifications	SGC 16H	SGC 26H	SGC 36HV	SGC 67HV
Illuminated graphic display	●	●	●	●
Operating hours meter	●	●	●	●
Weekly program clock	●	●	●	●
Mains voltage	230V ~, 50Hz			
Own consumption	2.5VA			
Energy consumption in stand-by	Max. 0.5VA			
No. of inputs	6 temperature sensors (Pt 1000) 1 pc pulse input			7 temperature sensors (Pt 1000) 1 pc pulse input
Additional inputs	–		1 Grundfos VFS flowmeter	
No. of outputs	1 Triac for regulation of rotation (R2)	1 Triac for regulation of rotation (R2) 1 PWM or analogue 0–10V (Y2)	1 Triac for regulation of rotation (R2) 1 relay (R1) 1 PWM or analogue 0–10V (Y2)	2 Triac for regulation of rotation (R2, R3) 4 relays (R1, R4, R5, R6) 2 PWM or analogue 0–10V (Y2, Y3)
Relay outputs	4 (1)A ~, 230V ~			
Triac output	1 (1)A ~, 230V ~			
Hour power supply	Battery CR2032 (Li-Mn) 3V			
Clock accuracy	+/- 1s (24h) at 20°C			
Protection grade	IP20/EN60529			
Protection class	I according to EN 60730-1			
Operation mode	1B according to EN 60730-1			
Type of temperature sensors	Pt1000 or KTY10			
Housing material	ASA – thermoplastic			
Permissible ambient temperature	0–40°C			
Storage temperature	-20°C up to +65°C			
Weight	399g	401g	404g	412g
No. of pieces in the packaging unit	12 pcs			

Dimensions (W×H×D): 113×163×48mm

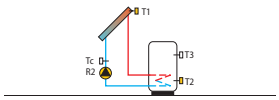


Electrical connection



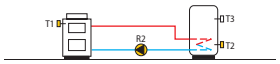
Hydraulic circuit diagrams for SGC16H, SGC26H, SGC36HV, SGC67HV

201



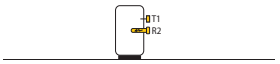
Solar collectors, water heater.

202



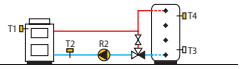
Solid fuel boiler, water heater.

203



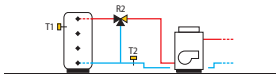
Water heater, electric heater.

204



Solid fuel boiler, heat supply device.

205



Heating support with heat supply device.

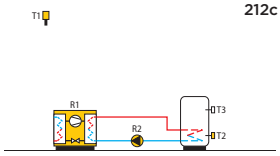
Hydraulic circuit diagrams for SGC26H, SGC36HV, SGC67HV

212b



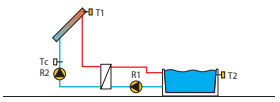
Liquid fuel boiler, water heater.

212c



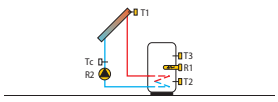
Heat pump, water heater.

213



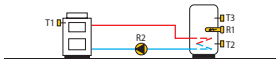
Solar collectors, pool.

214



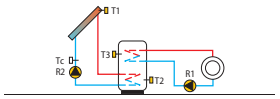
Solar collectors, water heater, additional heating with electricity.

215



Solid fuel boiler, water heater, additional heating with electricity.

216



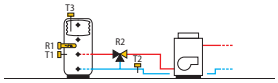
Solar collectors, water heater, removal of excess heat.

217



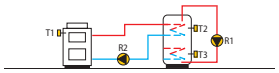
Water heater, R2 heating thermostat, R1 cooling thermostat.

218



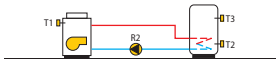
Heating support with heat supply device, additional heating of water with supply device.

219



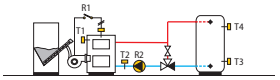
Solid fuel boiler, water heater.

220



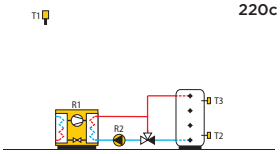
Liquid fuel boiler, water heater.

220b



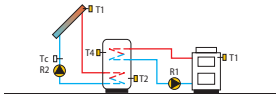
Pallet boiler, heat supply device.

220c



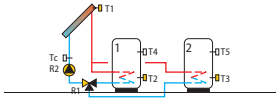
Heat pump, heat supply device.

221



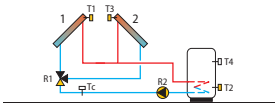
Solar collectors, water heater, solid fuel boiler.

222



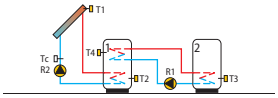
Solar collectors, two water heaters, switch-over.

223



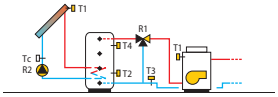
Solar collectors east-west, water heater, switch-over.

224



Solar collectors, two water heaters, heat transfer to water heater no. 2.

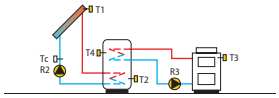
225



Solar collectors, heating support with heat supply device.

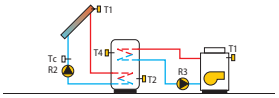
Hydraulic circuit diagrams for SGC36HV, SGC67HV

231



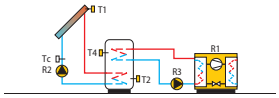
Solar collectors, water heater, solid fuel boiler.

231b



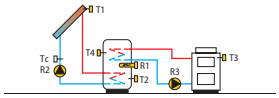
Solar collectors, water heater, liquid fuel boiler.

231c



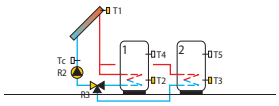
Solar collectors, water heater, heat pump.

231d



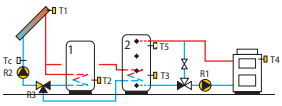
Solar collectors, water heater, solid fuel boiler, additional heating with electricity.

232



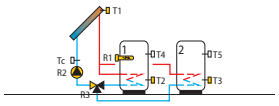
Solar collectors, two water heaters, switch-over.

232b



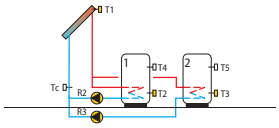
Solar collectors, water heater, heat supply device, solid fuel boiler.

232c



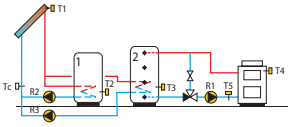
Solar collectors, two water heaters, switch-over, electric heater.

233



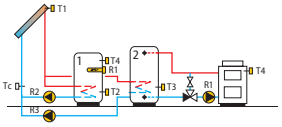
Solar collectors, two water heaters, two pumps.

233b



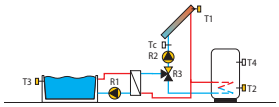
Solar collectors, water heater, heat supply device, solid fuel boiler.

233c



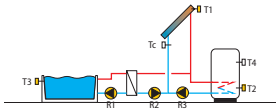
Solar collectors, water heater, heat supply device, switch-over, electric heater, solid fuel boiler.

234



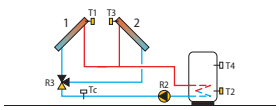
Solar collectors, water heater, pool, switch-over.

234b



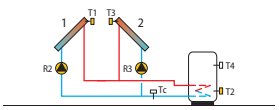
Solar collectors, water heater, pool, two pumps.

235



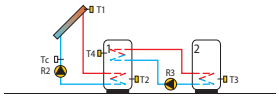
Solar collectors east-west, water heater, switch-over.

236



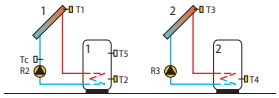
Solar collectors east-west, water heater, two pumps.

237



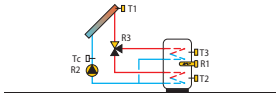
Solar collectors, two water heaters, heat transfer to water heater no. 2.

238



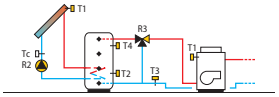
Solar collectors, water heater, two separate circuits.

239



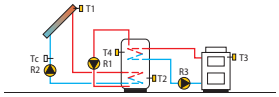
Solar collectors, water heater, switch-over up/down, additional heating with electricity.

240



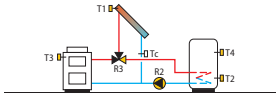
Solar collectors, heating support with heat supply device.

241



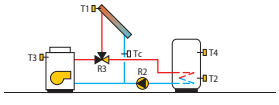
Solar collectors, water heater, solid fuel boiler.

243



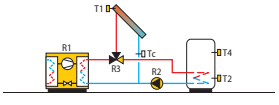
Solid fuel boiler, solar collectors, water heater, switch-over.

243b



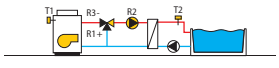
Liquid fuel boiler, solar collectors, water heater, switch-over.

243c



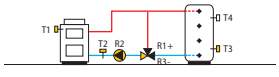
Heat pump, solar collectors, water heater, switch-over.

244



Pool heating regulation.

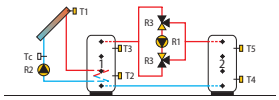
245



Solid fuel boiler, return line regulation.

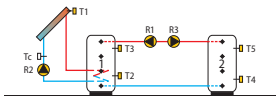
Hydraulic circuit diagrams for SGC36HV, SGC67HV

246



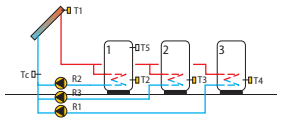
Reversible heat transfer between main and auxiliary heat supply device, switch-over.

246b



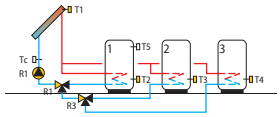
Reversible heat transfer between main and auxiliary heat supply device, two pumps.

247



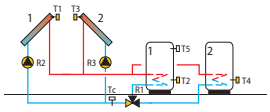
Solar collectors, three water heaters, three pumps.

247b



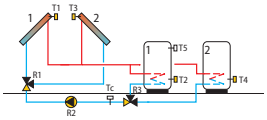
Solar collectors, three water heaters, switch-over.

248



Solar collectors east-west, two pumps, two water heaters, switch-over.

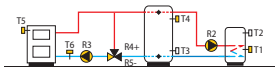
248b



Solar collectors east-west, water heater, two pumps.

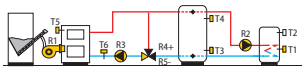
Hydraulic circuit diagrams for SGC67HV

261



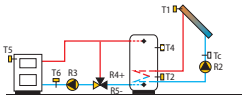
Solid fuel boiler, heat supply device, water heater.

261b



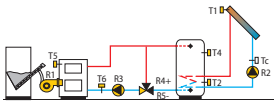
Pallet boiler, heat supply device, water heater.

262



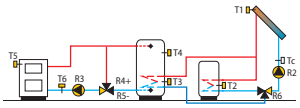
Solid fuel boiler, heat supply device, solar collectors.

262b



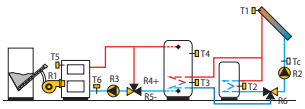
Pallet boiler, heat supply device, solar collectors.

263



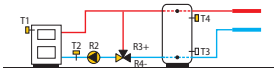
Solid fuel boiler, heat supply device, water heater, solar collectors, switch-over.

263b



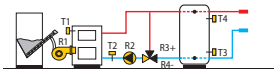
Pellet boiler, heat supply device, water heater, solar collectors, switch-over.

291



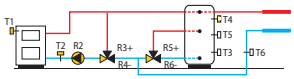
Solid fuel boiler, constant return line temperature regulation, heat supply device.

291b



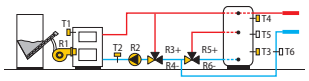
Pellet boiler, constant return line temperature regulation, heat supply device.

292



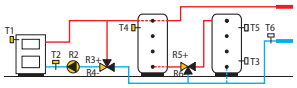
Solid fuel boiler, constant return line temperature regulation, heat supply device – charging in layers.

292b



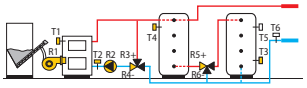
Pellet boiler, constant return line temperature regulation, heat supply device – charging in layers.

293



Solid fuel boiler, constant return line temperature regulation, two heat supply devices – charging in layers.

293b



Pellet boiler, constant return line temperature regulation, two heat supply devices – charging in layers.

Item	Code for ordering	Description
	1SGC16H00-SL0	Differential controller SELTRON SGC16H
	1SGC26H00-SL0	Differential controller SELTRON SGC26H
	1SGC36HV00-SL0	Differential controller SELTRON SGC36HV
	1SGC67HV00-SLO	Differential controller SELTRON SGC67HV
	1SGC16H30-SL0	Differential controller SELTRON SGC16H, with sensors (3×TF/Pt)
	1SGC26H40-SL0	Differential controller SELTRON SGC26H, with sensors (4×TF/Pt)
	1SGC36HV40-SL0	Differential controller SELTRON SGC36HV, with sensors (4×TF/Pt)
	1SGC67HV50-SLO	Differential controller SELTRON SGC67HV, with sensors (5×TF/Pt)
Accessories		
	1TFPT-000	Submersible temperature sensor SELTRON TF/Pt
	1VFPT-000	Contact temperature sensor SELTRON VF/Pt
	AVC0532M210-030	Actuator SELTRON AVC 05, 3-point, 5Nm, 2min, 230V ~, neutral
	1AVC0521M210-030	Actuator SELTRON AVC 05R, 2-point, 5Nm, 1min, 230V ~
	1SVC25+NN0	Pulse flow gauge SVC 25 (up to 2.5m3/h, 40l/min)
	1GWD2-040	Communication module SELTRON GWD2