Differential controllers
SGC16H | SGC26H | SGC36HV | SGC67HV

Presentation

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

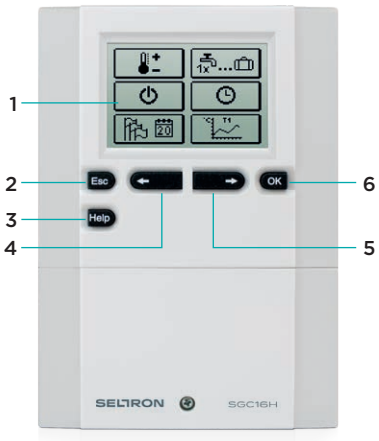
Typical application

- In domestic hot water heating systems with flat or vacuum collectors.
- In domestic hot water heating systems with auxiliary heat sources.
- In storage tank heating systems using a solar system and auxiliary heat sources.
- In pool heating systems.
- For a single-stage storage tank loading.
- For a two-stage storage tank loading.

Features

- Up to 65 preset hydraulic schemes.
- Up to 3 freely programmable outputs.
- Speed (RPM) control of standard pumps.
- Speed control of energy-saving pumps (PWM, 0÷10 V).
- Control of collector field systems.
- Control of storage tank systems.
- Possibility to control heating systems using a solid fuel boiler.
- Option of using stratified storage tank loading with a quick start function in the case of a cold storage tank.
- Wizard for an easy and quick device start-up.
- Measurement and display of generated energy.
- Solar system protection when collectors are overheating.
- Notifications on the activated protection functions and warnings about system failures.
- Possibility to simulate sensors and analyse the system operation.
- Remote control with the help of the SeltronHome system.

Description of settings buttons



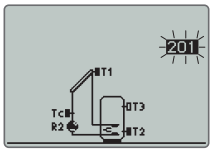
1 – Graphic display.
2 – Esc Move backwards key.
3 – Help Help key.
4 – ← Move left or reduction key.
5 – → Move right or increase key.
6 – OK Menu entry or selection confirmation key.

Typical application	SGC16H	SGC26H	SGC36HV	SGC67HV
In domestic hot water heating systems with flat or vacuum collectors	●	●	●	●
In domestic hot water heating systems with auxiliary heat sources	●	●	●	●
In storage tank heating systems using a solar system and auxiliary heat sources	—	●	●	●
In pool heating systems	—	●	●	●
For a single-stage storage tank loading	—	—	●	●
For a two-stage storage tank loading	—	—	—	●
Technical characteristics				
No. of preset hydraulic schemes	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 storage tanks	1	2	3	3
Measurement of the energy obtained (kWh)	●	●	●	●
Option for pulse meter flow measurement (l/min)	●	●	●	●
Possibility for flow measurement with a Vortex sensor VFS	—	—	●	●
Speed control for energy-saving pumps (PWM, 0÷10 V)	1 pump	1 pump	2 pumps	2 pumps
Speed control for standard pumps (RPM)	1 pump	1 pump	2 pumps	2 pumps
Free programming option	—	1 output	2 outputs	3 outputs
System control				
Collector fields	1	2	2	2
Storage tanks	1	up to 2	up to 3	up to 3
Solar system domestic hot water heating and an auxiliary heat source	—	●	●	●
Heating support	—	●	●	●
Pool heating	—	●	●	●
Using a solid fuel boiler	—	—	—	●
Quick cold storage tank start function	—	—	—	●
Heat source control				
Flat or vacuum collectors	●	●	●	●
Solid fuel boiler	●	●	●	●
Solid fuel boiler with a pellet burner	—	●	●	●
Liquid fuel boiler	—	●	●	●
Combined boiler	—	●	●	●
Gas flow boiler	—	●	●	●
Heat pump	—	●	●	●
Storage tank	●	●	●	●
Auxiliary heating using electric heater	—	●	●	●
Options for switching on auxiliary energy sources				
The controller features the option of an auxiliary source for heating the water to the minimum temperature	●	●	●	●
The option for starting the primary energy source immediately or only when the water cannot be heated in a certain period of time	—	●	●	●
The option for configuring 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 can be heated only by collectors	—	●	●	●

Operation mode with several storage tanks	SGC16H	SGC26H	SGC36HV	SGC67HV
Constant operation in the “OPTIMUM” mode means an optimum use of solar energy for heating all of the storage tanks taking into account the preferred storage tank	—	●	●	●
The "AUTO" operation mode automatically switches between winter and summer modes according to a preset calendar	—	●	●	●
Constant operation in the “SUMMER” mode means the heating of only the preferred storage tank, other storage tanks are heated only when the preferred one reaches the desired temperature	—	●	●	●
Continuous operation in the “WINTER” mode means an alternating parallel heating of all storage tanks	—	●	●	●
Heating of all storage tanks	—	●	●	●
User functions				
Domestic hot water heating according to the time programme	●	●	●	●
Holiday operation mode	●	●	●	●
One-time domestic hot water heating	●	●	●	●
Heating system protection				
Anti-legionella protection (for a controlled energy source)	●	●	●	●
Collector frost protection	●	●	●	●
Forced pump start at the highest collector temperature	●	●	●	●
Switching off of the pump when the safety temperature has been exceeded	●	●	●	●
Solar system protection when collectors are overheating	●	●	●	●
Storage tank overheating protection	●	●	●	●
Storage tank recooling to the desired temperature	●	●	●	●
Periodic starts of pumps during a period of inactivity	●	●	●	●
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 the solar energy obtained	●	●	●	●
Notifications on the activated protection functions and warnings about system failures	●	●	●	●
Possibility to simulate sensors and analyse the system operation	●	●	●	●
Remote access				
Possibility of USB connection to a PC	●	●	●	●
Connectivity to the SeltronHome platform providing remote control using a smartphone or tablet	●	●	●	●
Setup and installation				
Wizard for an easy and quick device start-up	●	●	●	●
13-language user interface: EN, DE, FR, NL, PL, ES, SL, IT, CS, LT, GR, HU, HR	●	●	●	●
Setting up the operation by selecting the hydraulic scheme	●	●	●	●
“Help” button for quick help with the setup	●	●	●	●
Graphically adjustable time programmes	●	●	●	●
Option to simulate the system operation	●	●	●	●
Logging and display of changes made to the setup	●	●	●	●
Option for retrieval of the basic setup in the event of data loss or unwanted changes	●	●	●	●
Option for programming free outputs	●	●	●	●
Possibility of wall or DIN rail installation	●	●	●	●
Simple installation and connection	●	●	●	●

Outlined functions

Step 1



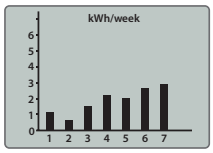
Step 2

Start-up wizard

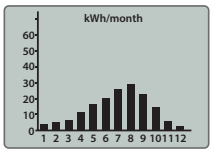
The SGC controller is equipped with a start-up wizard, which takes you through the initial setup of the controller in 2 steps.

Step 1: language selection.

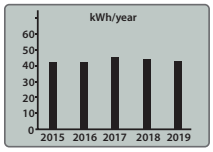
Step 2: hydraulic scheme selection.



Display by days



Display by months



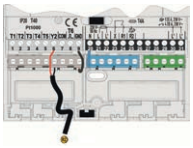
Display by years

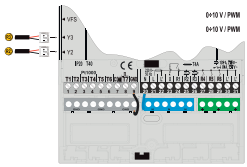
Measurement of the energy obtained

When the solar system is also used for domestic hot water heating, we want to know how much heating energy has been obtained from the solar system.

The SGC controllers provide an informative and accurate measurement of the solar energy obtained and the display of the data in weekly, monthly and yearly diagrams.

- For informative measurements of the solar energy obtained, the maximum reading of the medium flow from the mechanical meter must be entered in the controller setup.
- For accurate measurements of the solar energy obtained, a flow meter with a pulse generator or a Vortex flow meter (VFS) must be installed in the solar system.


SGC16H, SGC26H

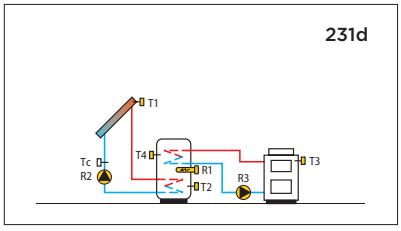

SGC36HV, SGC67HV

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

The SGC controller features the speed control of energy-saving circulation pumps with external controlled PWM signal or 0÷10 V. This type of speed control is possible with R2 and R3 relay outputs. All SGC controllers feature the R2 relay output, while the SGC36HV and SGC67HV controllers feature the R3 relay output.

Remote control with the help of SeltronHome system

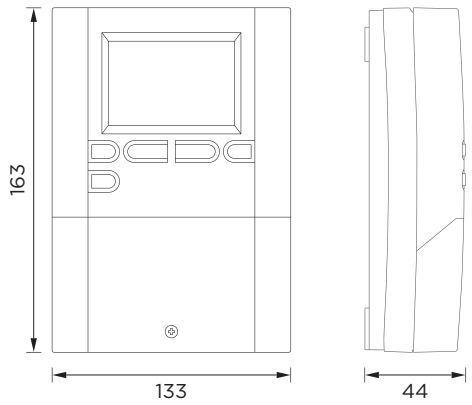
The SGC controllers may be connected to the SeltronHome platform, which provides the heating remote control using a smartphone or tablet.
Remote control is enabled through the CLAUSIUS application for the end user and the KELVIN app for service technicians.
With the application you can, for example, switch on one-time domestic hot water heating process outside of a time programme.



Typical hydraulic scheme

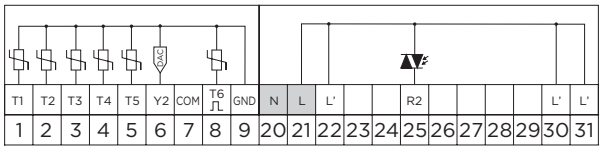
Solar collectors, domestic hot water storage tank, solid fuel boiler, auxiliary heating with electricity.

Example: hydraulic scheme 231d.

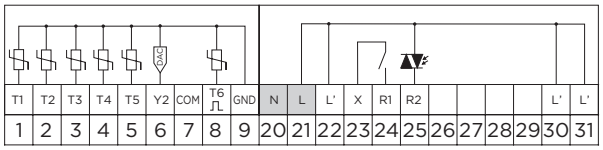
Technical specifications	SGC16H	SGC26H	SGC36HV	SGC67HV
Backlit graphic display	•	•	•	•
Operating hours meter	•	•	•	•
Weekly program timer	•	•	•	•
Connection voltage	230 V~, 50 Hz			
Own consumption	2.5 W			
Energy consumption in the standby mode	Max. 0.5 W			
No. of inputs	6 pcs temperature sensor (Pt 1000) 1 pc pulse input			7 pcs temperature sensor (Pt 1000) 1 pc pulse input
Additional inputs	—	—	1 pc Grundfos VFS flow meter	
No. of outputs	1 pc Triac for speed control (R2) 1 pc PWM or analogue 0÷10 V	1 pc Triac for speed control (R2) 1 pc PWM or analogue 0÷10 V (Y2)	2 pcs Triac for speed control (R2, R3) 1 pc relay (R1) 2 pcs PWM or analogue 0÷10 V (Y1, Y2)	2 pcs Triac for speed control (R2, R3) 4 pcs relay (R1, R4, R5, R6) 2 pcs PWM or analogue 0÷10 V (Y2, Y3)
Relay outputs	4 (1) A~, 230 V~			
Triac outputs	1 (1) A~, 230 V~			
Clock power supply	Battery CR2032 (Li-Mn) 3 V			
Clock accuracy	+/-1 s (24 h) at 20 °C			
Degree of protection	IP20/EN60529			
Safety 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÷65 °C			
Product weight	400 g	400 g	440 g	460 g
No. of pieces in the packaging unit	6 pcs			
Dimensions				

Electrical connection

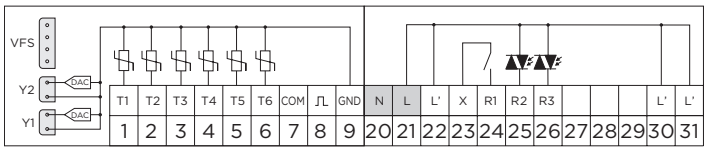
SGC16H



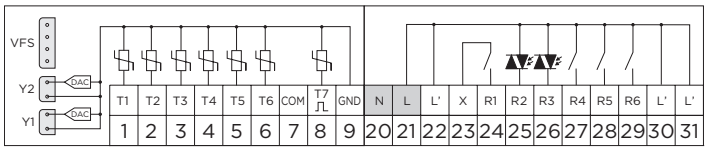
SGC26H



SGC36HV

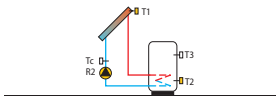


SGC67HV



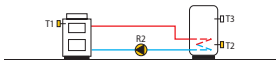
Hydraulic schemes for SGC16H, SGC26H, SGC36HV, SGC67HV

201



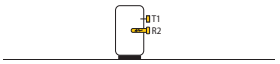
Solar collectors, domestic hot water storage tank.

202



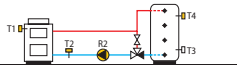
Solid fuel boiler, domestic hot water storage tank.

203



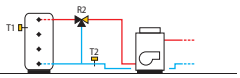
Domestic hot water storage tank, electric heater.

204



Solid fuel boiler, storage tank.

205



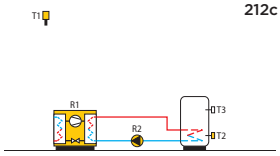
Heating support with a storage tank.

Hydraulic schemes for SGC26H, SGC36HV, SGC67HV

212b

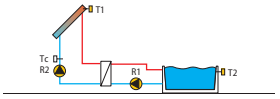
Liquid fuel boiler, domestic hot water storage tank.

212c



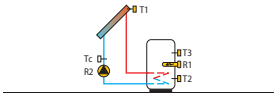
Heat pump, domestic hot water storage tank.

213



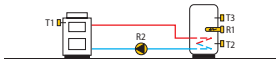
Solar collectors, pool.

214



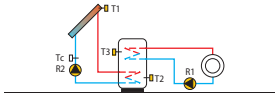
Solar collectors, domestic hot water storage tank, auxiliary heating with electricity.

215



Solid fuel boiler, domestic hot water storage tank, auxiliary heating with electricity.

216

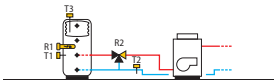


Solar collectors, domestic hot water storage tank, removal of excess heat.

217

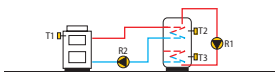
Domestic hot water storage tank, thermostat for heating R2, cooling thermostat R1.

218



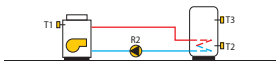
Heating support with a storage tank, auxiliary heating of domestic hot water with a storage tank.

219



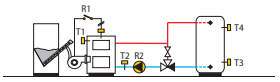
Solid fuel boiler, domestic hot water storage tank.

220



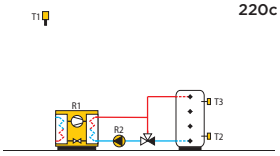
Liquid fuel boiler, domestic hot water storage tank.

220b



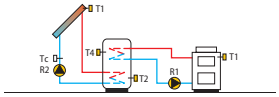
Pellet boiler, storage tank.

220c



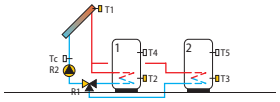
Heat pump, storage tank.

221



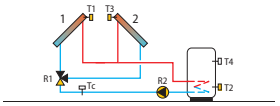
Solar collectors, domestic hot water storage tank, solid fuel boiler.

222



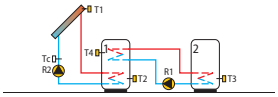
Solar collectors, two domestic hot water storage tanks, switchover.

223



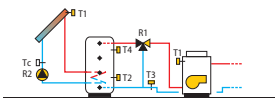
Solar collectors east-west, domestic hot water storage tank, switchover.

224



Solar collectors, two domestic hot water storage tanks, heat transfer to domestic hot water heater No. 2.

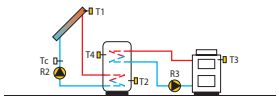
225



Solar collectors, heating support with a storage tank.

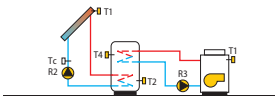
Hydraulic schemes for SGC36HV, SGC67HV

231



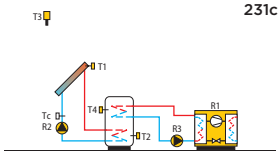
Solar collectors, domestic hot water storage tank, solid fuel boiler.

231b



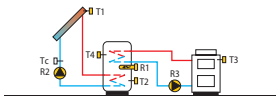
Solar collectors, domestic hot water storage tank, liquid fuel boiler.

231c



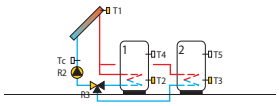
Solar collectors, domestic hot water storage tank, heat pump.

231d



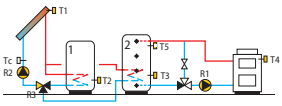
Solar collectors, domestic hot water storage tank, solid fuel boiler, auxiliary heating with electricity.

232



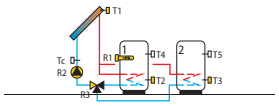
Solar collectors, two domestic hot water storage tanks, switchover.

232b



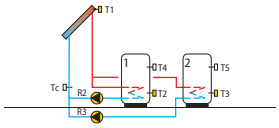
Solar collectors, domestic hot water storage tank, storage tank, switchover, solid fuel boiler.

232c



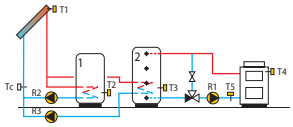
Solar collectors, two domestic hot water storage tanks, switchover, electric heater.

233



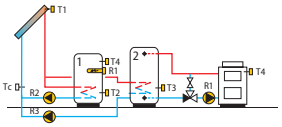
Solar collectors, two domestic hot water storage tanks, two pumps.

233b



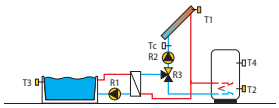
Solar collectors, domestic hot water storage tank, storage tank, switchover, solid fuel boiler.

233c



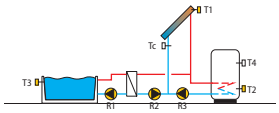
Solar collectors, domestic hot water storage tank, storage tank, switchover, electric heater, solid fuel boiler.

234



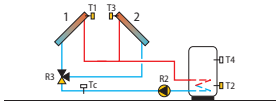
Solar collectors, domestic hot water storage tank, pool, switchover.

234b



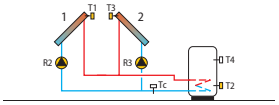
Solar collectors, domestic hot water storage tank, pool, two pumps.

235



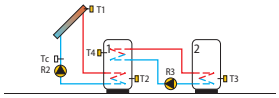
Solar collectors east-west, domestic hot water storage tank, switchover.

236



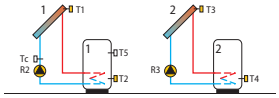
Solar collectors east-west, domestic hot water storage tank, two pumps.

237



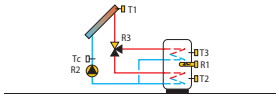
Solar collectors, two domestic hot water storage tanks, heat transfer to domestic hot water storage tank No. 2.

238



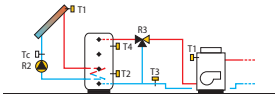
Solar collectors, domestic hot water storage tank, two separate circuits.

239



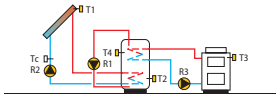
Solar collectors, domestic hot water storage tank, switchover up/down, auxiliary heating with electricity.

240



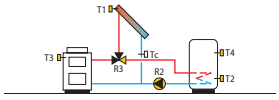
Solar collectors, heating support with a storage tank.

241



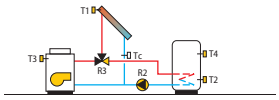
Solar collectors, domestic hot water storage tank, solid fuel boiler.

243



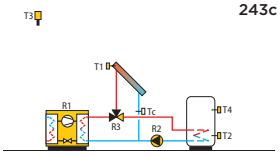
Solid fuel boiler, solar collectors, domestic hot water storage tank, switchover.

243b



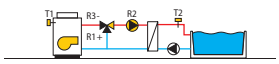
Liquid fuel boiler, solar collectors, domestic hot water storage tank, switchover.

243c



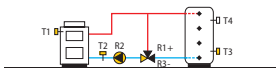
Heat pump, solar collectors, domestic hot water storage tank, switchover.

244



Pool heating control.

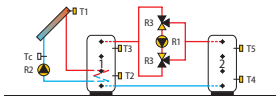
245



Solid fuel boiler, return line control.

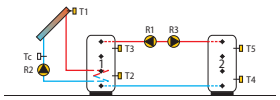
Hydraulic schemes for SGC36HV, SGC67HV

246



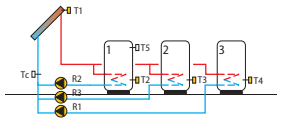
Reversible heat transfer between the main and auxiliary storage tank, switchover.

246b



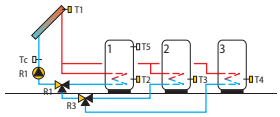
Reversible heat transfer between the main and auxiliary storage tank, two pumps.

247



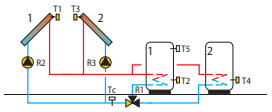
Solar collectors, three domestic hot water storage tanks, three pumps.

247b



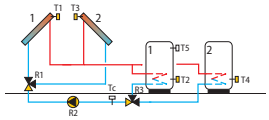
Solar collectors, three domestic hot water storage tanks, switchover.

248



Solar collectors east-west, two pumps, two domestic hot water heaters, switchover.

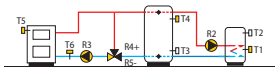
248b



Solar collectors east-west, domestic hot water storage tank, two pumps.

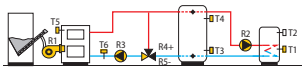
Hydraulic schemes for SGC67HV

261



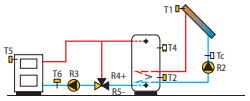
Solid fuel boiler, storage tank, domestic hot water storage tank.

261b



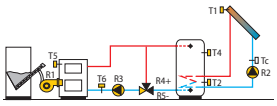
Pellet boiler, storage tank, domestic hot water storage tank.

262



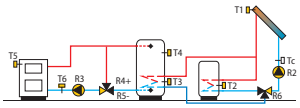
Solid fuel boiler, storage tank, solar collectors.

262b



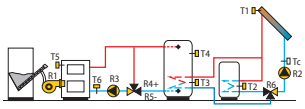
Pellet boiler, storage tank, solar collectors.

263



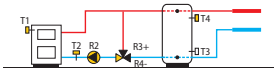
Solid fuel boiler, storage tank, domestic hot water storage tank, solar collectors, switchover.

263b



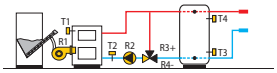
Pellet boiler, storage tank, domestic hot water storage tank, solar collectors, switchover.

291



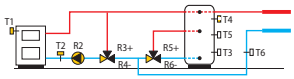
Solid fuel boiler, constant return line temperature control, storage tank.

291b



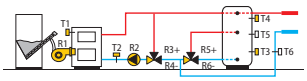
Pellet boiler, constant return line temperature control, storage tank.

292



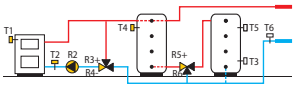
Solid fuel boiler, constant return line temperature control, storage tank – stratified loading.

292b



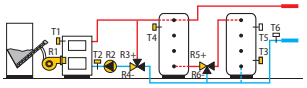
Pellet boiler, constant return line temperature control, storage tank – stratified loading.

293



Solid fuel boiler, constant return line temperature control, two storage tanks – stratified loading.

293b



Pellet boiler, constant return line temperature control, two storage tanks – stratified loading.

Item	Order code	Description
	2SGC16H00-010	Differential controller SELTRON SGC16H
	2SGC26H00-010	Differential controller SELTRON SGC26H
	2SGC36HV00-010	Differential controller SELTRON SGC36HV
	2SGC67HV00-010	Differential controller SELTRON SGC67HV
	2SGC16H30-010	Differential controller SELTRON SGC16H, with sensors (3×TF/Pt)
	2SGC26H40-010	Differential controller SELTRON SGC26H, with sensors (4×TF/Pt)
	2SGC36HV40-010	Differential controller SELTRON SGC36HV, with sensors (4×TF/Pt)
	2SGC67HV50-010	Differential controller SELTRON SGC67HV, with sensors (5×TF/Pt)
Accessories		
	1TFPT-000	Immersion temperature sensor SELTRON TF/Pt
	1VFPT-000	Surface temperature sensor SELTRON VF/Pt
	1AVD0532M210-030	Actuator SELTRON AVD 05, 3-point, 5 Nm, 2 min, 230 V~
	1AVD0521M210-030	Actuator SELTRON AVD 05R, 2-point, 5 Nm, 1 min, 230 V~
	1SVC25+NN0	Pulse flow meter SVC 25 (up to 2.5 m³/h, 40 l/min)
	1GWD3E-050	Communication module SELTRON GWD3E

Notes

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