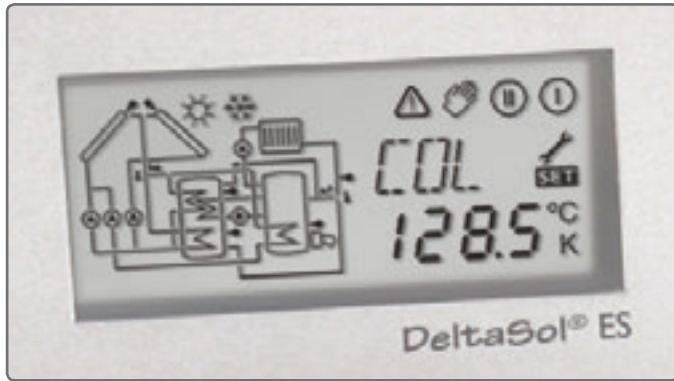




## Solar- and differential temperature controllers

Solar thermal systems are operated and controlled by solar controllers. RESOL differential temperature controllers are used in solar, heating and air-conditioning systems to initiate switching processes depending on thermal, hydraulic and environmental conditions. Apart from these basic functions, RESOL controllers offer a variety of options and functions for the optimum use of individual solar and heating systems.

The system-monitoring-display...


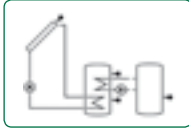
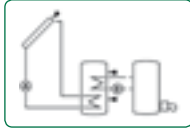
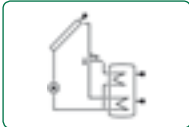
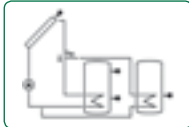
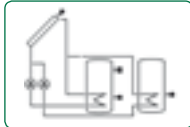

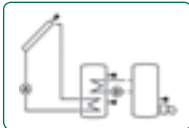

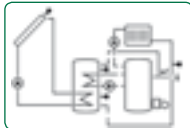
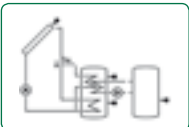
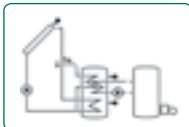
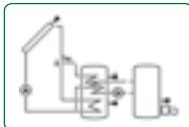
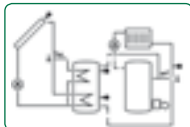
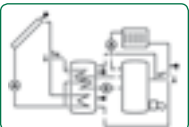
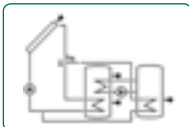
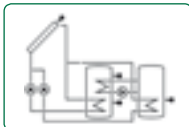
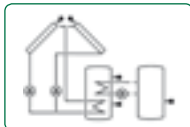
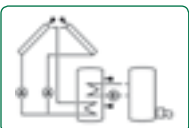
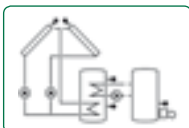
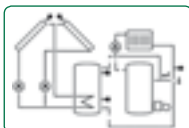
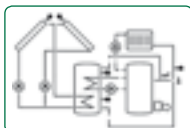

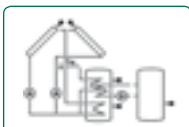
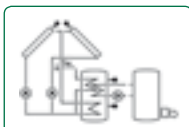
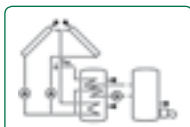
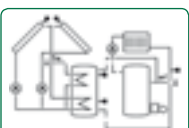
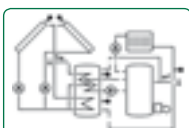
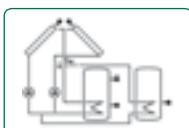
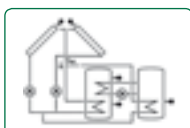










The installer or user will not benefit from ingenious controller functions if the relationship in the solar system does not become clear.

Therefore, RESOL has developed a display for several controllers of the *DeltaSol*®-series. The display meets the demand for simple system visualisation which gives the user an idea of the status of the system and the controller at a glance.

More than 30 different solar systems can be visualised with the display. Flashing symbols for sensors, pumps and valves enable an immediate allocation of temperatures, temperature differences and active actuators. Therefore, adjustment and control of the solar system are also possible without the necessity of reading the manual.

...the whole system at a glance!

			
Solar system with 1 storage	Solar system with 1 storage and heat exchange controller	Solar system with 1 storage and thermostatic after-heating	
			
Solar system with storage loading in layers	Solar system with 2 storages, valve logic	Solar system with 2 storages, pump logic	
			
Solar system with east-/west collectors and 1 storage	Solar system with 1 storage and solid fuel boiler	Solar system with 1 storage and heating circuit reverse raising	Solar system with 1 storage, heating circuit return preheating and thermostatic afterheating
			
Solar system with storage loading in layers and heat quantity exchange controller	Solar system with storage loading in layers and thermostatic after-heating	Solar system with storage loading in layers and solid fuel boiler	Solar system with storage loading in layers and heating circuit return preheating
			
Solar system with storage loading in layers, heating circuit return preheating and thermostatic after-heating	Solar system with 2 storages, valve logic and heat exchange controller	Solar system with 2 storages, pump logic and heat exchange controller	Solar system with east-/west collectors and heat exchange controller
			
Solar system with east-/west collectors and thermostatic after-heating	Solar system with east-/west collectors and solid fuel boiler	Solar system with east-/west collectors and heating circuit return preheating	Solar system with east-/west collectors, heating circuit return preheating and thermostatic after-heating
			
Solar system with east-/west collectors and storage loading in layers	Solar system with east-/west collectors, storage loading in layers and heat exchange controller	Solar system with east-/west collectors, storage loading in layers and thermostatic after-heating	Solar system with east-/west collectors, storage loading in layers and solid fuel boiler
			
Solar system with east-/west collectors, storage loading in layers and heating circuit return preheating	Solar system with east-/west collectors, storage loading in layers, heating circuit reverse raising and thermostatic after-heating	Solar system with east-/west collectors and 2 storages, valve logic	Solar system with east-/west collectors, 2 storages and heat exchange controller

		Max. number of collectors	Max. number of storages	Display (System-Monitoring illuminated)	Display (4 line text illuminated)	Sensor inputs (temperature)	Total relay outputs	Number of semiconductor relays (pump speed control)	Number of potential-free relays	Input CS10 (irradiation)	Impulse input (V40)	WMZ with flowmeter	WMZ with V40	Weather-compensated heating circuits	VBus®
	DeltaSol® AX	1	1	-	-	2	1	-	-	-	-	-	-	-	-
	DeltaSol® BS	1	1	✓	-	4	1 (BS/1; 2) 2 (BS/3; 4)	1 (BS/2) 1 (BS/4)	-	-	-	✓	-	-	✓
	DeltaSol® BS Plus	2 <sup>1</sup>	2 <sup>1</sup>	✓	-	4	2	2	-	-	-	✓ <sup>1</sup>	-	-	✓
	DeltaSol® C HE*	1	1	-	-	3	1 + 1x PWM	1 <sup>9</sup>	-	-	-	✓	-	-	✓
	DeltaSol® DB	1	1	✓	-	4	1 (DB/1; 2) 2 (DB/3; 4)	1 (DB/2) 1 (DB/4)	-	-	-	✓	-	-	✓
	DeltaSol® ES	2	2	✓	-	8	7	3	1	✓	1	-	1	-	✓
	DeltaSol® E	2 <sup>1</sup>	4 <sup>1</sup>	-	✓	10	7	3	1	✓	1	1 <sup>7</sup>	1 <sup>3</sup>	4 <sup>1,6</sup>	✓
	DeltaSol® M	2 <sup>1</sup>	4 <sup>1</sup>	-	✓	12	9	4	1	✓	2	2 <sup>2/7</sup>	2 <sup>2/3</sup>	2 <sup>6</sup>	✓

<sup>1</sup> system-dependent

<sup>2</sup> 2 calorimeters are possible in total

<sup>3</sup> another calorimeter with V40 via module WMZ is possible

<sup>4</sup> a second heating circuit via module HKM2 is possible

<sup>5</sup> switchable collector minimum limitation or storage maximum limitation

<sup>6</sup> possible by module HKM2 (external only)

<sup>7</sup> internal counter switchable

<sup>8</sup> measured value only

<sup>9</sup> speed control by means of PWM-signal

\* for high-efficiency pumps

	Additional $\Delta T$ -regulation (e.g. heat exchange)	Thermostat function	Bypass solar circuit	External heat exchanger	Pump speed control	DVGW-protection against legionella	Frost protection	Heating circuit backup	Collector cooling function	Minimum collector limitation	Collector emergency shutdown	Cooling function	Mixer regulation heating circuit	Tube collector function	Recooling function	Timer / Time	Storage loading in layers	Priority logic / parallel loading / oscillating loading
	-	-	-	-	-	✓	-	-	✓ <sup>s</sup>	-	-	-	-	-	-	-	-	-
	-	(BS/3; 4)	-	-	(BS/2; 4)	-	✓	-	✓	✓	✓	-	-	✓	✓	(BS/3; 4)	-	-
	✓	✓	-	-	-	✓	-	✓	-	✓	-	-	✓	-	✓	✓	✓	✓
	-	-	-	-	✓	✓	-	✓	✓	✓	-	-	✓	✓	✓	✓	-	-
	-	(DB/3; 4)	-	-	(DB/2; 4)	-	-	-	✓	✓	-	-	-	-	-	-	-	-
	✓	✓	-	-	✓	-	✓	-	✓	✓	✓	-	-	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓