RESOL®
CONTROL TECHNOLOGY



rosenthal design

VBus.net
RPT
HE pump control

DeltaSol® CS series

The controllers of the DeltaSol® CS series are used for speed control of a HE pump in small standard solar thermal and heating systems.

They are equipped with up to 2 PWM outputs as well as with an input for a VFD Grundfos Direct Sensor™ which enables precise heat quantity measurement. The commissioning menu ensures an easy and quick configuration.

The DeltaSol® CS series is available in 3 versions, depending on the demands. Details concerning the number of the relays as well as additional functions are shown in the technical data.

High-efficiency even for small systems!

DeltaSol® CS series

- 1 input for a VFD Grundfos Direct Sensor™
- Heat quantity measurement
- Commissioning menu
- Drainback option

DeltaSol® CS/4, CS Plus

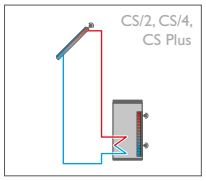
- 3 basic system layouts (DeltaSol® CS/4), 10 basic system layouts (DeltaSol® CS Plus) to choose from
- Tube collector function, thermal disinfection function

A PWM adapter cable is included with the controller.

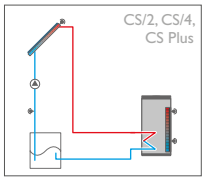
Article no.	Article	Price bracket
115 004 73	DeltaSol® CS/2 – Solar controller	A
115 004 63	DeltaSol® CS/2 – Full kit » incl. 3 Pt1000 sensors (1 x FKP6, 2 x FRP6)	A
115 004 53	DeltaSol® CS/4 – Solar controller	A
115 004 43	DeltaSol® CS/4 – Full kit » incl. 3 Pt1000 sensors (1 x FKP6, 2 x FRP6)	A
115 003 13	DeltaSol® CS Plus – Solar controller	A
115 003 03	DeltaSol® CS Plus – Full kit » incl. 4 Pt1000 sensors (2 x FKP6, 2 x FRP6)	A

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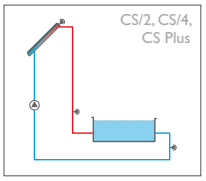
EXAMPLES



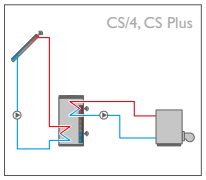
Solar system with 1 store



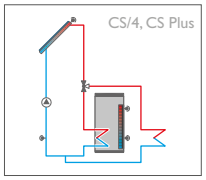
Solar drainback system
(Application example)



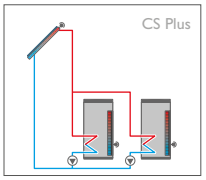
Solar system with swimming pool (Application example)



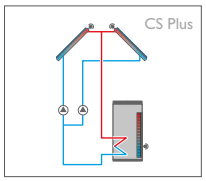
Solar system with 1 store and thermostatic backup heating



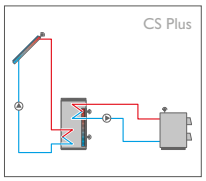
Solar system with 1 store and heat dump



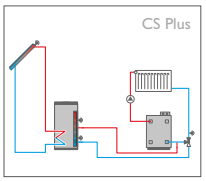
Solar system with 2 stores, pump logic



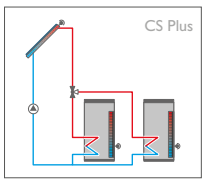
Solar system with east-/west collectors and 1 store



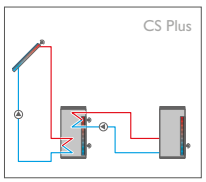
Solar system with 1 store and solid fuel boiler



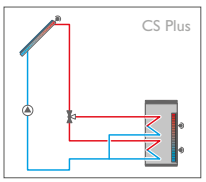
Solar system with heating circuit return preheating



Solar system with 2 stores, valve logic



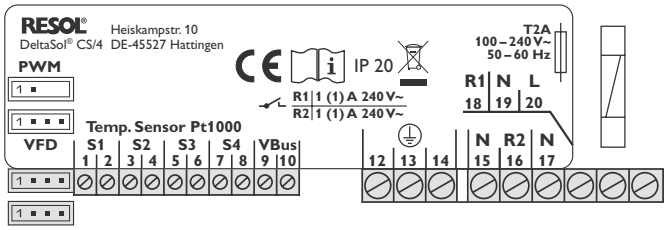
Solar system with 1 store and heat exchange control



Solar system with store loading in layers

ELECTRICAL CONNECTION

Example DeltaSol® CS/4



TECHNICAL DATA

Inputs:
4 Pt1000 temperature sensors, 1 VFD Grundfos Direct Sensor™
Outputs 1 semiconductor relay, 1 PWM output (CS/2),
2 semiconductor relays, 1 PWM output (CS/4),
2 semiconductor relays, 2 PWM outputs (CS Plus)
PWM frequency: 512 Hz
PWM voltage: 10.5 V
Switching capacity: 1 (1) A 240 V~ (semiconductor relay)
Total switching capacity:
1 A 240 V~ (CS/2)
2 A 240 V~ (CS/4, CS Plus)
Power supply: 100 – 240 V~ (50 – 60 Hz)
Supply connection: type X attachment
Standby: 0.58 W (CS/2),
0.60 W (CS/4), 0.59 W (CS Plus)
Temperature controls class:
I (CS/4, CS Plus)
Energy efficiency contribution:
1 % (CS/4, CS Plus)
Mode of operation: type 1.C.Y action
Rated impulse voltage: 2.5 kV
Data interface: RESOL VBus®
VBus® current supply: 35 mA
Functions: tube collector function and thermostat function (CS/4, CS Plus), function control, operating hours counter, speed control, drainback option and heat quantity measurement
Housing: plastic, PC-ABS and PMMA
Mounting: wall mounting, mounting into patch panels is possible
Indication / Display: System-Monitoring-Display for system visualisation, 16-segment and 7-segment display, 8 symbols for indication of system status
Operation: 3 buttons
Ingress protection: IP 20 / EN 60529
Protection class: I
Ambient temperature: 0 … 40 °C
Degree of pollution: 2
Fuse: T2A
Maximum altitude: 2000 m above MSL
Dimensions: 172 x 110 x 46 mm

ACCESSORIES

KM2 Communication module


Incl. service CD, network cable and mains adapter, VBus® cable pre-connected

VBus® / USB interface adapter


PC connection kit for RESOL controllers with VBus® incl. Service CD

VFD Grundfos Direct Sensor™


Digital sensors in different versions

SP10


Sensor overvoltage protection

AM1


Alarm module for signalling system failures

SD3 Smart Display


Display module with 3 displays for collector and store temperature as well as for heat quantity