



rosenthal design



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

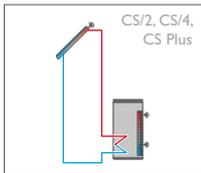
DeltaSol® CS/4, CS Plus

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

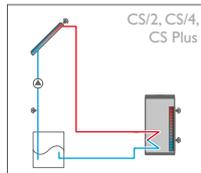
A PWM adapter cable is included with the controller.

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

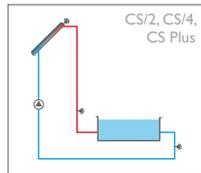
EXAMPLES



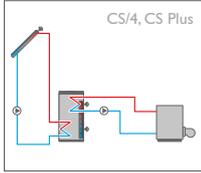
Solar system with 1 store



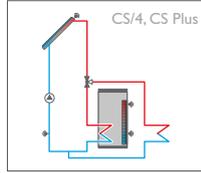
Solar drainback system
(Application example)



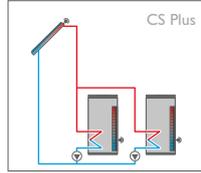
Solar system with swimming pool
(Application example)



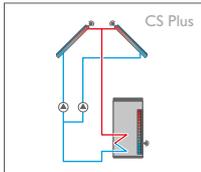
Solar system with 1 store and thermostatic backup heating



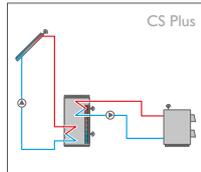
Solar system with 1 store and heat dump



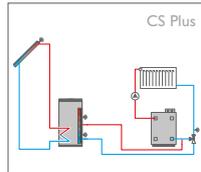
Solar system with 2 stores, pump logic



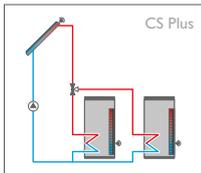
Solar system with east-/west collectors and 1 store



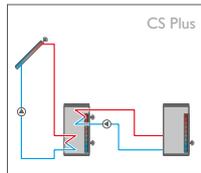
Solar system with 1 store and solid fuel boiler



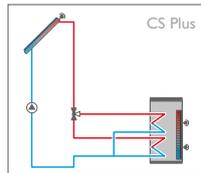
Solar system with heating circuit return preheating



Solar system with 2 stores, valve logic



Solar system with 1 store and heat exchange control



Solar system with store loading in layers

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

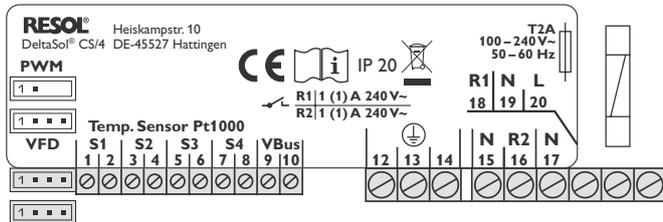
Fuse: T2A

Maximum altitude: 2000 m above MSL

Dimensions: 172 x 110 x 46 mm

ELECTRICAL CONNECTION

Example DeltaSol® CS/4



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