



## 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 a PWM output 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.

Customised and OEM versions are available on request. Please contact our sales team.



## 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

### DeltaSol® CS Plus bidirectional

- Status display possible with a bidirectional HE pump
- 2 PWM feedback inputs

#### RESOL DeltaSol® CS

Price bracket A | Article no. CS/2: **115 004 73**  
Price bracket A | Article no. CS/4: **115 004 53**

#### RESOL DeltaSol® CS – Full kit

Incl. 3 Pt1000 sensors (1 x FKP6, 2 x FRP6)  
Price bracket A | Article no. CS/2: **115 004 63**  
Price bracket A | Article no. CS/4: **115 004 43**

#### RESOL DeltaSol® CS Plus

Price bracket A | Article no.: **115 003 13**

#### RESOL DeltaSol® CS Plus – Full kit

Incl. 4 Pt1000 sensors (2 x FKP6, 2 x FRP6)  
Price bracket A | Article no.: **115 003 03**

A PWM adapter cable is included with the controller. For our range of Grundfos Direct Sensors™ see page 90!

#### RESOL DeltaSol® CS Plus bidirectional

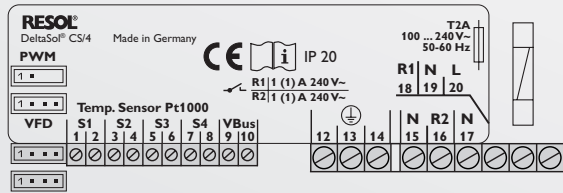
Price bracket A | Article no.: **115 005 43**

#### RESOL DeltaSol® CS Plus bidirectional – Full kit

Incl. 4 Pt1000 sensors (2 x FKP6, 2 x FRP6)  
Price bracket A | Article no.: **115 005 53**

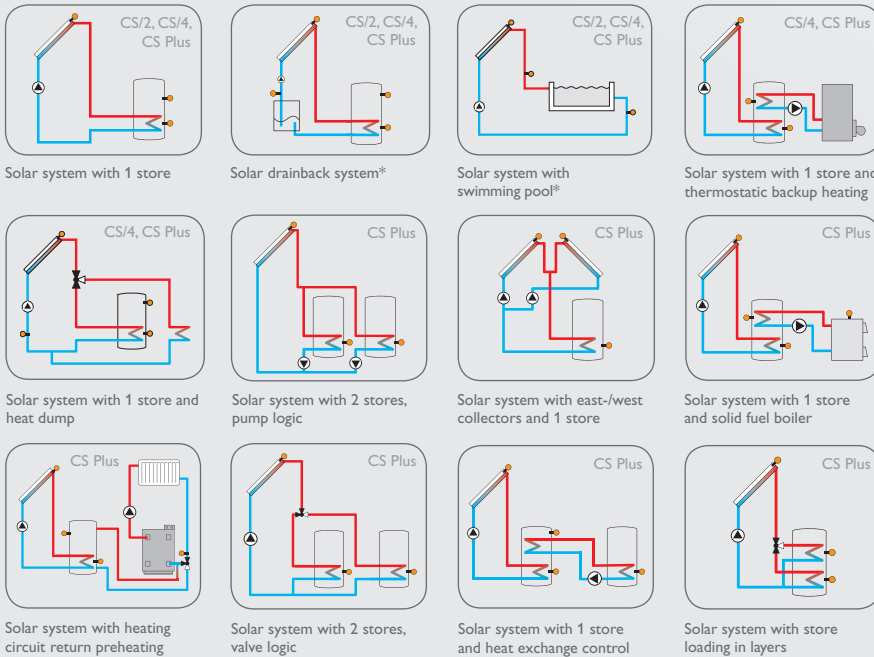
2 PWM adapter cables are included with the controller.

## ELECTRICAL CONNECTION



Example DeltaSol® CS/4

## EXAMPLES



\* Application examples

## ACCESSORIES

### RESOL Moisture-proof housing (IP 66/67)



Moisture-proof housing for controller installation outdoors or in highly humid locations (without controller)

Price bracket B | Article no.: **290 028 70**

### VFD Grundfos Direct Sensor™



Digital sensors in different versions

### RESOL SP10



Sensor overvoltage protection

Price bracket A | Article no.: **180 110 70**

### RESOL AM1



Alarm module for signalling system failures

Price bracket B | Article no.: **180 008 70**

### RESOL VBus® / USB interface adapter



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

Price bracket B | Article no.: **180 008 50**

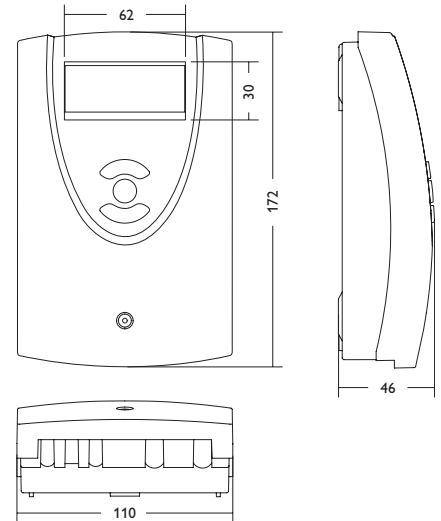
### RESOL KM1 Communication module



For visualisation via VBus.net, incl. network cable, mains adapter and VBus® cable pre-connected

Price bracket A | Article no.: **180 011 30**

## TECHNICAL DATA



**Inputs:** 4 Pt1000 temperature sensors, 1 VFD Grundfos Direct Sensor™, 2 PWM feedback inputs (CS Plus bidirectional)

**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 Y attachment

**Standby:** 0.58 W (CS/2), 0.60 W (CS/4), 0.59 W (CS Plus), 0.61 W (CS Plus bidirectional)

**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 visualisation of systems, 16-segment and 7-segment display, 8 symbols for indication of system status

**Operation:** 3 push buttons

**Ingress protection:** IP 20/EN 60529

**Protection class:** I

**Ambient temperature:** 0 ... 40 °C

**Pollution degree:** 2

**Dimensions:** 172 x 110 x 46 mm