



Discover our product portfolio!

SOLAR THERMAL | HEATING | POWER-TO-HEAT | HEAT TRANSFER
BIOMASS | DHW | BUILDING MANAGEMENT | VISUALISATION



SOLAR CONTROLLERS



DeltaSol® AL E HE

For standard solar systems with electric backup heating

- Direct connection of an electric immersion heater up to 3 kW
- Solar backup heating suppression
- Rapid heat-up also with RCTT remote control
- Drainback option, tube collector function, thermal disinfection

DeltaSol® CS series

The versatile solution for many standard applications

- Input for a VFD Grundfos Direct Sensor™, suitable for heat quantity measurement
- Up to 10 pre-programmed basic system layouts
- Commissioning menu
- Drainback option

- More than 45 years of experience in the solar thermal and control technology field
- From simple differential temperature controllers up to controllers for solar thermal and combined systems

- Many different sensor inputs: Pt and semiconductor temperature sensors, Grundfos Direct Sensors™, impulse inputs, etc.
- RESOL apps for visualisation

- RESOL VBus.net Internet portal
- Remote parameterisation with RPT



DeltaSol® SL

27 basic system layouts with up to 3 hydraulic variants each to choose from

- Heat quantity measurement also by means of a Grundfos Direct Sensor™ or impulse input
- With a potential-free relay for boiler demand
- Integrated MicroSD card slot
- Microbuttons for quick access to the manual mode and the holiday function

DeltaSol® SLT

The smallest freely configurable solar controller

- Heat quantity measurement also by means of a Grundfos Direct Sensor™ or impulse input
- Microbuttons for quick access to the manual mode and the holiday function
- Integrated MicroSD card slot
- 27 basic systems to choose from

DL2 Plus Datalogger



For remote access to 2 controllers, integrated data logging and connection to a BMS

SPI0



Sensor overvoltage protection

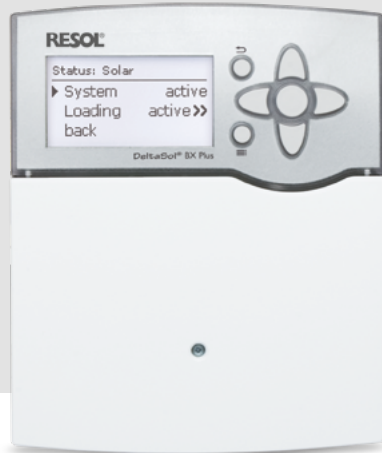
V40



V40 flowmeter in different versions



MULTIFUNCTION CONTROLLERS



DeltaSol® BX Plus

Multifunction controller for multi-store solar and heating systems

- Up to 2 extension modules via VBus® (21 sensors and 15 relays in total)
- Weather-compensated heating circuits
- Modulating heating control with 0-10V boiler control
- Cooling over the heating circuit with condensation detection

DeltaSol® MX

Multifunction controller for complex solar and heating systems

- Up to 5 extension modules via VBus® (45 sensors and 39 relays in total)
- Cooling over the heating circuit with condensation detection
- Dew point calculation by means of the FRH(d) humidity sensor to avoid condensation

- Optimum collaboration of solar, arrangement and heating system parts
- Different energy-saving and efficiency-boosting functions
- Many pre-programmed optional functions from bypass to zone loading

- Data logging, storing and firmware updates via SD memory card
- Automatic function control according to VDI 2169
- Remote parameterisation with RPT

- RESOL VBus.net Internet portal
- Heat pump demand (optional)



DeltaSol® MX Plus

Versatile multifunction controller with an integrated web server

- 15 relay outputs and 15 inputs for temperature sensors
- Inputs for analogue and digital Grundfos Direct Sensors™ as well as for FRH and FRHd humidity sensors
- Integrated control of up to 4 high-efficiency pumps via PWM outputs
- Cooling over the heating circuit with condensation detection
- Remote access to the heating circuits via the Web interface, room control unit(s) or the VBus®Touch HC App
- Integrated Web server for configuration and function control
- LAN interface, WLAN functionality, WLAN access point and optional Modbus RTU interface
- Heat pump demand (optional)

EM Extension module



Sensor and relay extension module with 5 outputs and 6 inputs

RTS Room control unit



For measuring the relative humidity and the room temperature as well as for adjusting the set room temperature

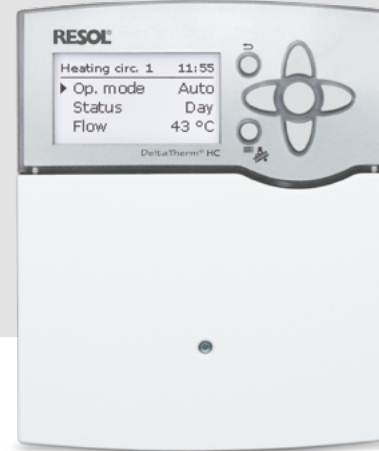
FRH (analogue) and FRHd (digital)



For measuring the relative humidity and the room temperature



HEATING CONTROLLERS



DeltaTherm® HC mini

Controls a weather-compensated heating circuit and its backup heating demand

- Modulating heating control with 0-10V boiler control
- 5 operating modes, boiler protection, room thermostat and night correction
- Heat pump demand (optional)

DeltaTherm® HC

Controls a weather-compensated heating circuit (up to 6 with EM Extension Modules), the DHW loading and the afterheating demand for both

- Weather-compensated control with room influence or demand-based room control with up to 5 room temperature sensors
- Screed drying function

- From small water heating stoves up to large multivalent systems
- Room thermostats from all manufacturers can be connected
- Remote parameterisation with RPT

- Remote access with a room control unit or the VBus®Touch HC App
- RESOL VBus.net Internet portal

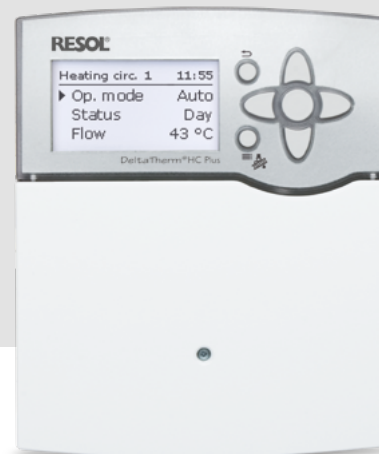
- Data logging and storing via SD memory card and/or Datalogger.
- Heat pump demand (optional)



DeltaTherm® HC MAX

Controls up to 4 weather-compensated heating circuits (up to 7 with EM Extension modules), the DHW loading and the backup heating demand for both

- Dew point calculation by means of the FRH(d) humidity sensor to avoid condensation
- Modulating heating control with 0-10V boiler control



DeltaTherm® HC Plus

Controls 2 weather-compensated heating circuits (up to 7 with EM Extension modules) and their backup heating demands

- Cooling over the heating circuit with humidity sensor
- 11 pre-configured basic systems and numerous optional functions
- Connection possibility of a central outdoor sensor unit for several controllers

KM2 Communication module



For remote access to the controller via VBus.net

RCPI2 Room control unit



The heating curve can be comfortably adjusted, incl. operating mode switch

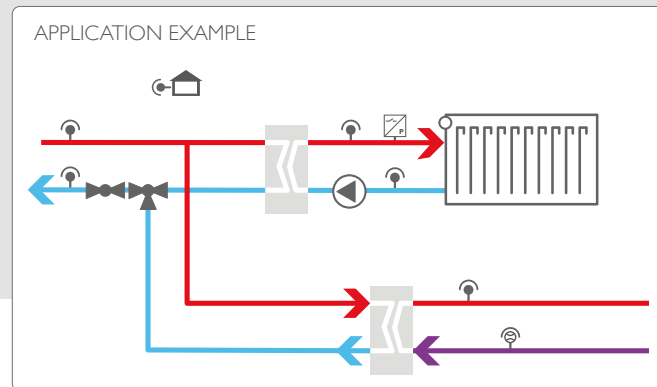
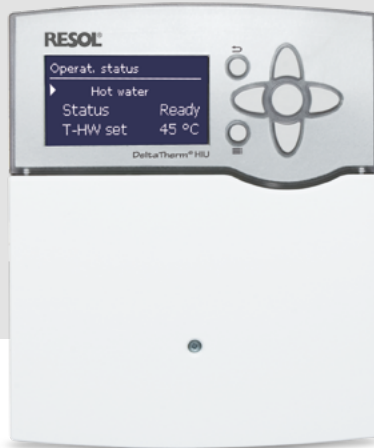
Central outdoor sensor unit



Measures the outdoor temperature and transmits this value to the controllers connected



HEAT TRANSFER



DeltaTherm® HIU

Controller concept for heat interface units

RESOL offers individual solutions for the control of OEM heat interface units.

The **DeltaTherm® HIU** is a controller for heat interface units and can be used for heating circuit control as well as for DHW heating.

The controller concept enables adaptation to the individual requirements. Pre-programmed functions ensure a high operating comfort.

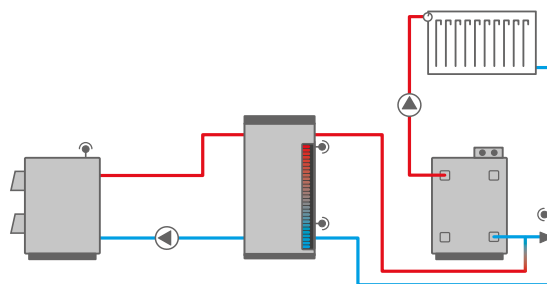
- Heating circuit control with DHW exchange switchover
- Return limitation, night correction, summer operation, etc.
- DHW with standby function
- Weather-compensated control or demand-based room control
- Control of PWM pumps and valves
- Adaptable to many commonly used flow rate sensors
- Remote access with a room control unit
- Data logging and firmware updates via SD card



BIOMASS



APPLICATION EXAMPLE



DeltaTherm® FK

The biomass specialist!

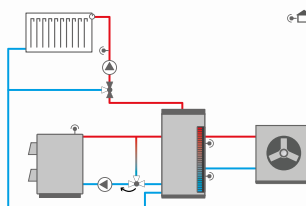
The **DeltaTherm® FK** solid fuel boiler controller has been especially developed for systems with solid fuel boilers, water heating stoves or pellet stove heating systems. With the integrated PWM outputs, the FK can manage the speed control of 2 high-efficiency pumps.

- Control of an electronic mixer for the return mixing function
- Heat exchange function
- Heat pump demand (optional)

Pure biomass or combined system?

We have the right controller to meet your system requirements!

e.g. **DeltaTherm® HC**, **HC Plus** and **DeltaSol® BX Plus**
I mixed heating circuit with solid fuel boiler and backup heating with heat pump (demand)



Further combined system examples

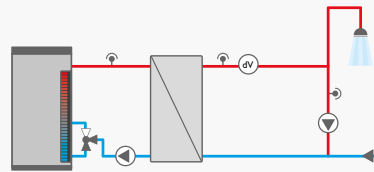




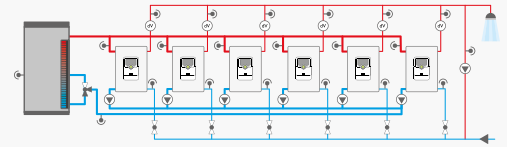
DHW EXCHANGE CONTROLLERS



APPLICATION EXAMPLE



APPLICATION EXAMPLE



DeltaSol Fresh®

DHW exchange controller platform

RESOL offers a range of solutions for the control of DHW exchange modules. The controller platform is equipped with an enhanced and faster control algorithm and enables the precise and energy-efficient control of the draw-off temperature.

In order to achieve the best possible control quality, our laboratories run a number of dimensioning tests and check measurements. Classification of control quality is conducted on the basis of research results of the Rapperswil Institute for Solar Technology and the Institute for Solar Energy Research in Hamelin (ISFH).

- Constantly high control quality by adaptation to the end user system by means of self-learning neural networks
- Customised control for systems with or without circulation
- Flexible circulation function for different user profiles, also available with thermal disinfection
- Reliable DHW heating even in the case of a fault condition
- Control of PWM and LIN bus pumps
- Adaptable to many commonly used flow rate sensors
- Cascades of up to 6 DHW exchange controllers or stations
- Fine-tuning of the control algorithm to customer requirements
- Also available as a Modbus version



PUMP STATIONS & ACCESSORIES



FlowSol® S HE

Single-line pump station

- Safety assembly with connection for the expansion vessel, safety valve and pressure gauge
- Fill and drain valves

FlowSol® B HE

Twin-line pump station

- Innovative hinged controller panel for easy access to the hydraulic components
- Safety assembly with connection for the expansion vessel, safety valve and pressure gauge

SBS 2000

Filling and flushing station for heat transfer fluids and cleaning fluids

- Extra-large filling opening
- Safety plug and switch at an ergonomic height
- Powerful pump

- As a control technology specialist, we develop pump stations and controllers in perfect sync – for an optimum outcome
- Available with different pumps and controllers

- All units necessary for the operation of a solar system combined in one pre-assembled station
- Broad range of accessories – perfectly matched with station and controller

- OEM versions and customised housing prints possible even for small-batch series
- Award-winning functionality and design



POWER-TO-HEAT

Intelligent distribution of excess PV current



DeltaTherm® PHM

Intelligent distribution of excess PV current to different loads

DeltaTherm® PV / PV MAX

Direct control of 1 / up to 3 electric immersion heaters in the store

FlowSol® E

Optimum store stratification and energy use

The products from our "Power-to-Heat" category enable you to use your PV current e.g. by converting excess current into thermal energy.

They form the missing link between the photovoltaic system and the heat generator – for more independence, decreased heating costs and less CO₂ emissions.

Electric immersion heater
3 kW 230V~



Electric immersion heater
9 kW 400V~

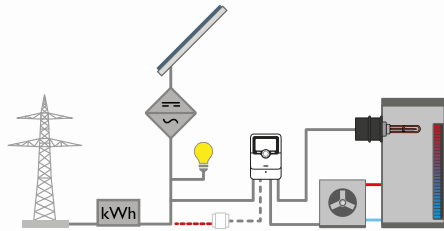


Sensor module
DeltaTherm® E sensor XL

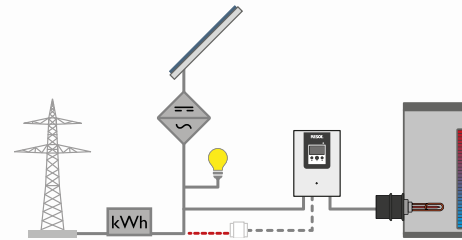
for power measurement up to approx. 200 kW, SW24 current sensors included

APPLICATION EXAMPLES

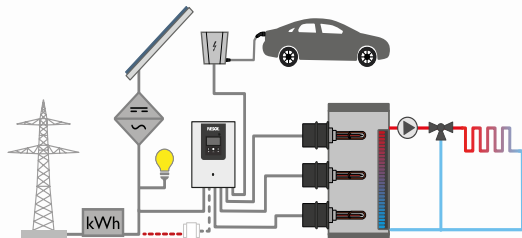
DeltaTherm® PHM



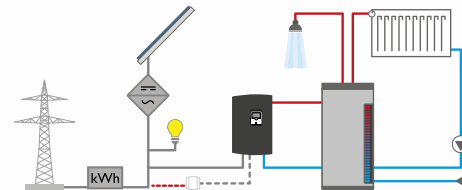
DeltaTherm® PV



DeltaTherm® PV MAX



FlowSol® E



	DeltaTherm® PHM	DeltaTherm® PV	DeltaTherm® PV MAX	FlowSol® E
Electric immersion heater, stepless variable	-	✓ up to 3 kW	✓ up to 9 kW	✓ up to 3 kW
Electric immersion heater, constant power stage	3 x via auxiliary relays	-	-	-
Control of a heat pump	✓	-	✓	-
Control of a wallbox	✓	-	✓	-
Control of external loads	-	-	✓	2 x via auxiliary relays
Backup heating with mains current (optional, time-controlled)	✓	✓	✓	✓
SmartRemote access	✓ (on/off)	✓	✓	✓
0-10V power control	-	✓	✓	✓
Inverter power limitation	-	✓	-	✓
Suitable for all grid-connected systems	✓	✓	✓	✓
Can be easily fitted to existing systems	✓	✓	✓	✓
Household current priority	✓	✓	✓	✓
Visualisation via VBus.net	✓	✓	✓	✓
MircoSD card slot	✓	inside the housing	inside the housing	✓
Optional functions	✓	-	✓	-
Mixed heating circuits	-	-	✓ (in preparation)	-



VISUALISATION



RESOL controller



DL2 Plus Datalogger or KM2 Communication module



Router



VBus.net



RPT



VBus Apps

- Controllers, Dataloggers and visualisation solutions from one and the same developer team
- Software solutions for remote parameterisation, data evaluation and visualisation
- Connection to a building management system via BACnet/IP or Modbus/TCP
- Apps for different purposes
- VBus.net – the Internet portal for your system
- Configure your controllers from your PC, free of charge, with RPT
- The best solution for each computer and all mobile devices
- OEM versions of all solutions possible with your design

VBus®Touch apps



VBus®Touch HC



VBus®Touch FK

VBus®Touch HC

Adjust your heating via app
Use mobile devices to adjust your RESOL heating controller:

VBus®Touch

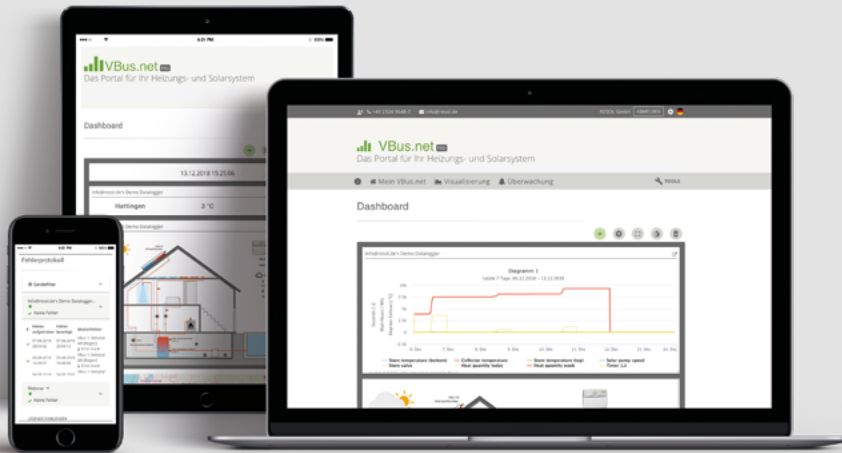
Keep an eye on your solar system
View detailed temperature charts, generate yield balances and monitor the status of your system.

VBus®Touch FK

Your mobile remote display
Turn your mobile devices into a remote data display for your RESOL controller with a solid fuel boiler function.

VBus®Touch Trainer

Your controller as an app
Ideal for all who wish to train – themselves or others – in operating RESOL controllers.



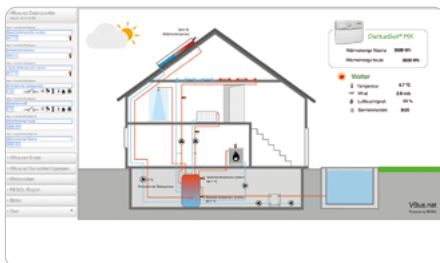
Freely configurable Dashboard
– your live system or diagram incl.
weather data at a glance.

VBus.net

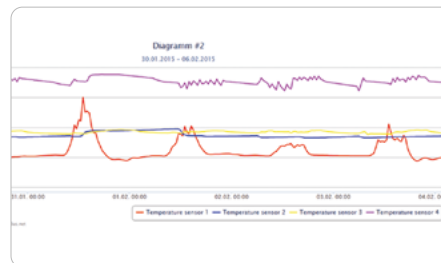
The Internet portal for easy and secure access to your system data – www.vbus.net.

With VBus.net, you can display live data of your system. Furthermore, you can create and download diagrams for defined periods of time from the data stored.

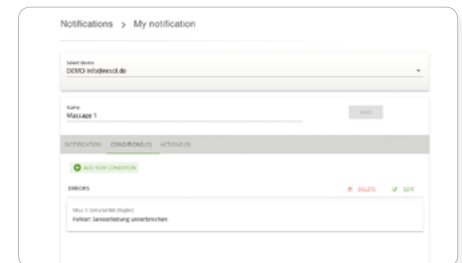
- Suitable for all RESOL controllers connected to a datalogger / communication module
- Basic version free of charge
- For every operating system and all mobile devices worldwide – no software installation required
- Setup assistant – step-by-step guide for quick and easy visualisation



Live system editor with extended format and layout functions



Customise and design your own diagrams



Automatic e-mail notifications and reports

