



Your competent partner in solar and heating controllers,
visualisation and more

Welcome!



I am your host today

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Product manager

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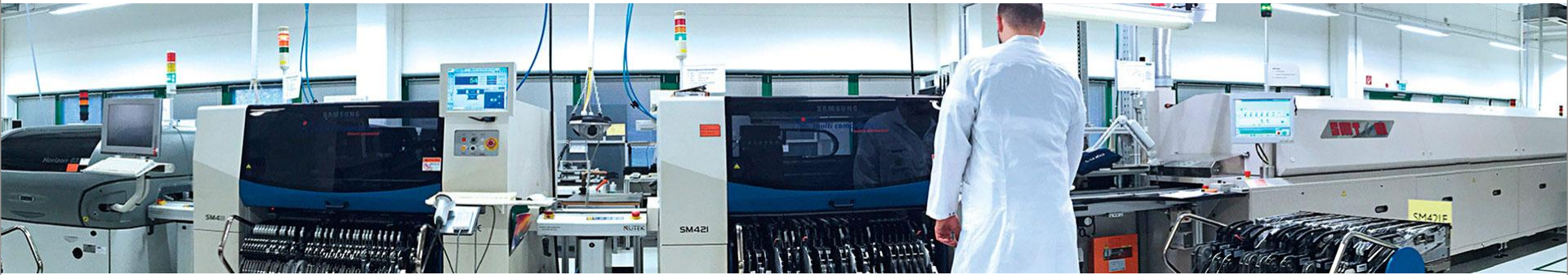
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About us



- 40 years of experience in engineering and production of control solutions for heating systems
- Our products control more than 4 million systems in over 70 countries
- Based in Hattingen, Germany
- More than 100 employees
- International partners enable market-specific developments and certifications

Production



We set standards

- Modern production technology and a high production depth
- Up to 2000 controllers per day
- 100 % Germany-based production
- State-of-the-art quality assurance technology such as an AOI station etc.
- TÜV-certified according to ISO 9001



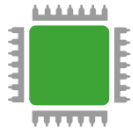
Research & Development



Our own ideas

- In-house Research & Development division
- Cooperations with universities and research institutes
- Extensive in-house lab facilities for EMC and hydraulic testing
- Testing of our own as well as, if our customers so wish, third-party products under real-life conditions

RESOL – Your partner in control technology & solar thermal energy



Customised hardware design
– the optimum basis for your
product



All products are tested in our
in-house EMC and hydraulics
laboratories



Controls after each individual
manufacturing step ensure
a 100 % quality assurance

We develop your product – custom-made, if you wish!



Our standard softwares can be extended to suit your individual wishes



Pre-connected sensors and cables to suit your requirements



Adaptation to your corporate design and target markets

Our products



Discover our product portfolio



Solar & system controllers



DHW exchange controllers



Pump stations



Heating controllers



Heat transfer



PV heating

Solar & system controllers



We offer the right controller to suit your system...

- From simple controllers for standard solar thermal systems up to individually programmable system controllers
- Up to 14 relay outputs, with extension modules even up to 39
- Many different sensor inputs: Pt and semiconductor temperature sensors, Grundfos Direct Sensors™, impulse inputs etc.
- Pump speed control of high-efficiency pumps

Heating controllers



Space and DHW heating

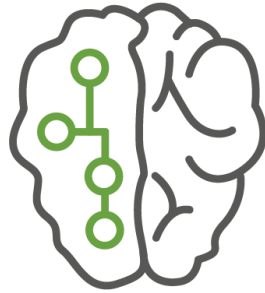
- From small water heating stoves up to large multivalent systems
- With extension modules up to 7 heating circuits possible
- Your advantage for energy labelling: Energy efficiency contribution of up to 5 %
- The DeltaTherm® HC / HC MAX is available in different ErP kits with the accessoires required for different temperature controls classes

Customised developments

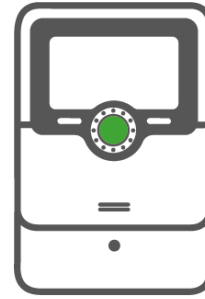
New comfort demands
and ecological
requirements



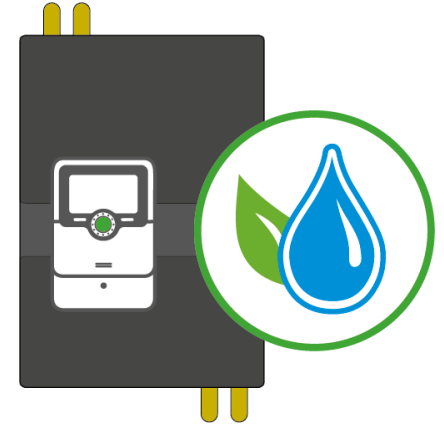
Intelligent control



System-specific
developments



Stations with modern
comfort and
energy-saving functions



Customised developments

Adaptation to your individual requirements



DeltaSol Fresh®

DHW exchange controller platform



DeltaTherm® DH

Controller concept for heat interface units

Customised developments – DHW exchange controllers

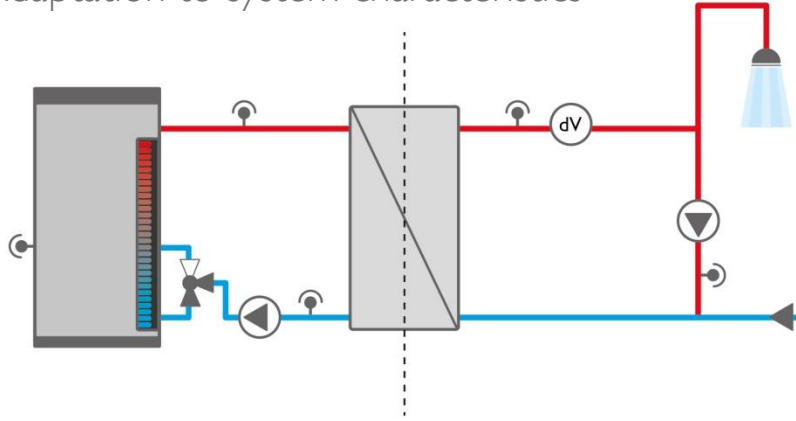


Individual solutions for the control of OEM DHW exchange modules

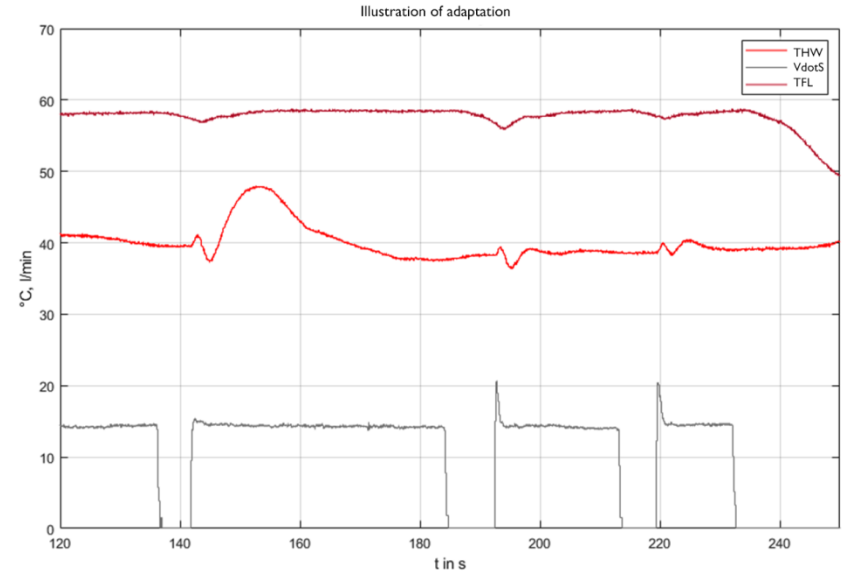
- Precise and energy-efficient control of the draw-off temperature
- Fast R&D process to meet your product requirements
- Cascades of up to 6 DHW exchange modules
- High control quality by means of self-learning neural network

Customised developments – DHW exchange controllers

Adaptation to system characteristics



- Draw-off secondary circuit (shower, circulation)
- Determination of deviation ($T_{\text{HW set}} - T_{\text{HW}}$)
- T_{HW} control to $T_{\text{HW set}}$
- Adaptation of primary pump speed PI (loading pump)
- Determination of deviation ($T_{\text{HW set}} - T_{\text{HW}}$)



Customised developments – Controller for heat interface units

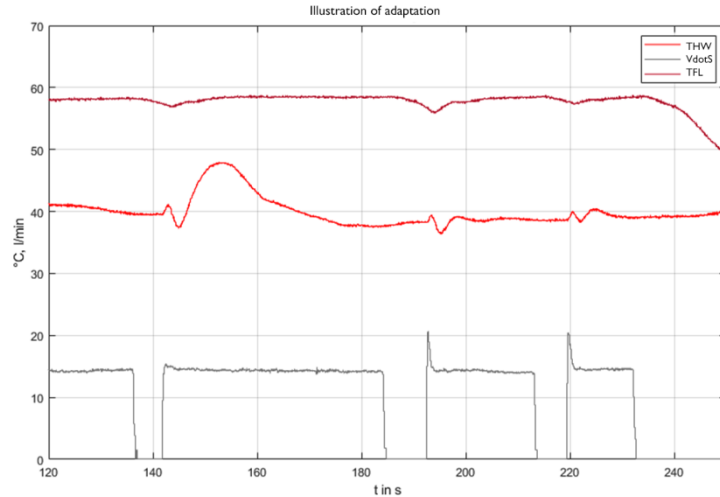


Compact and user-friendly solutions
for heat interface units

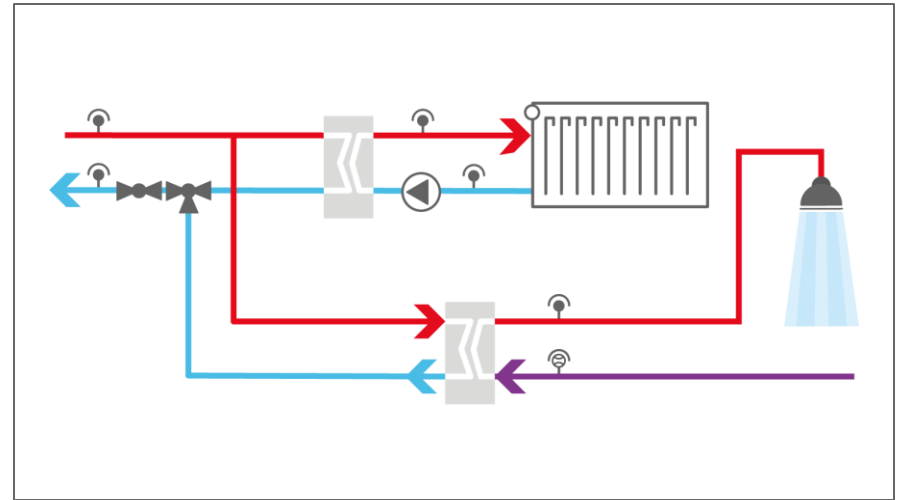
- Up to 3 heat quantity measurements can be read
- Control of PWM pumps and valves
- Remote access with a room control unit
- Weather-compensated control with room influence or demand-based room control with room temperature sensor
- Pre-programmed functions such as return limitation, power limitation etc.

Customised developments – Controller for heat interface units

Precise DHW exchange control



Heating circuit control



PV heating



POWER TO HEAT

Intelligent use of excess PV current!

The connection between PV system and heat generator

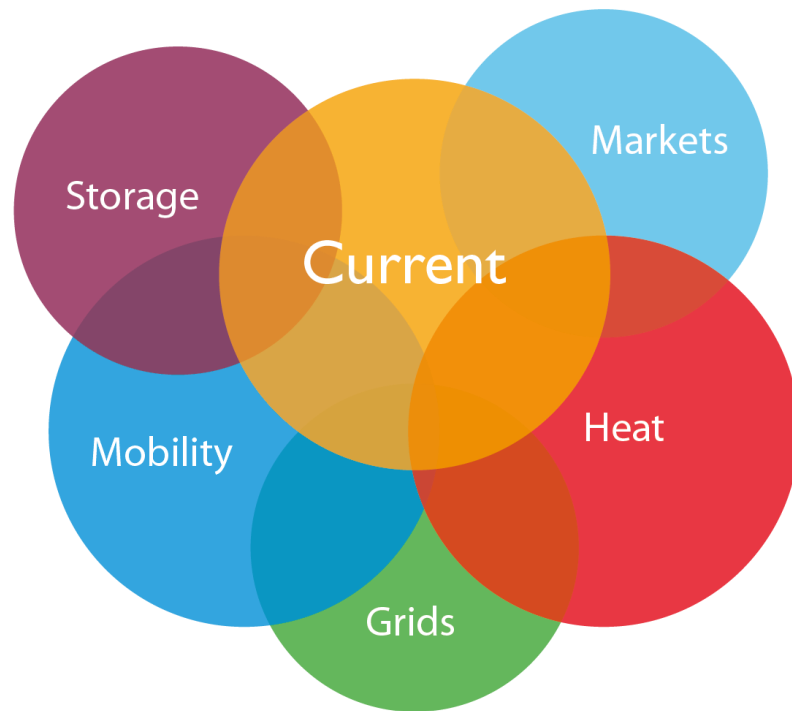
– for more independence, lower heating costs and less CO₂ emissions

PV heating – DeltaTherm® PHM



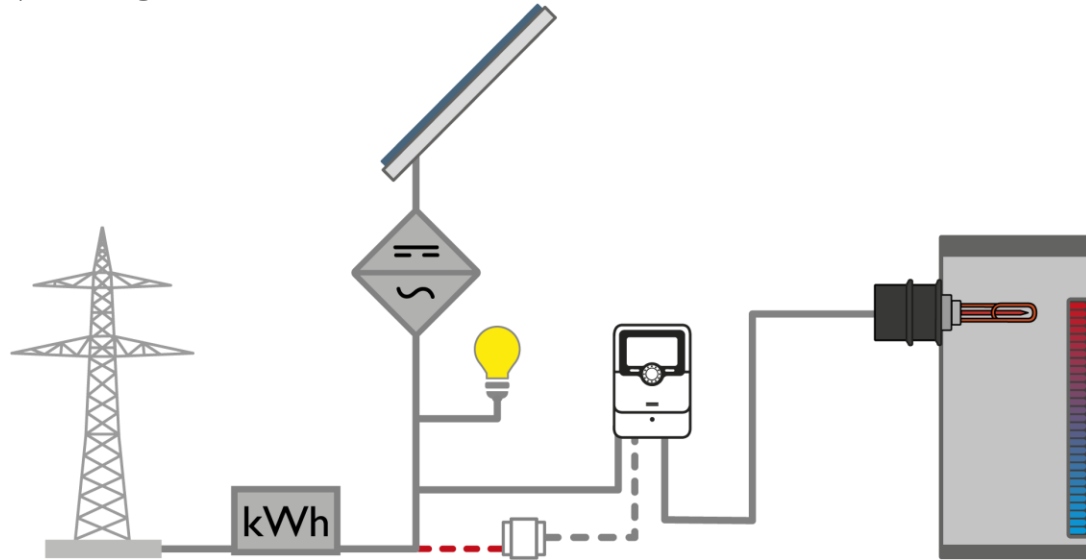
Power-to-Heat manager

- Ideal solution for using excess energy
- Control of different loads
- Time-controlled use of mains current possible
- For all PV systems



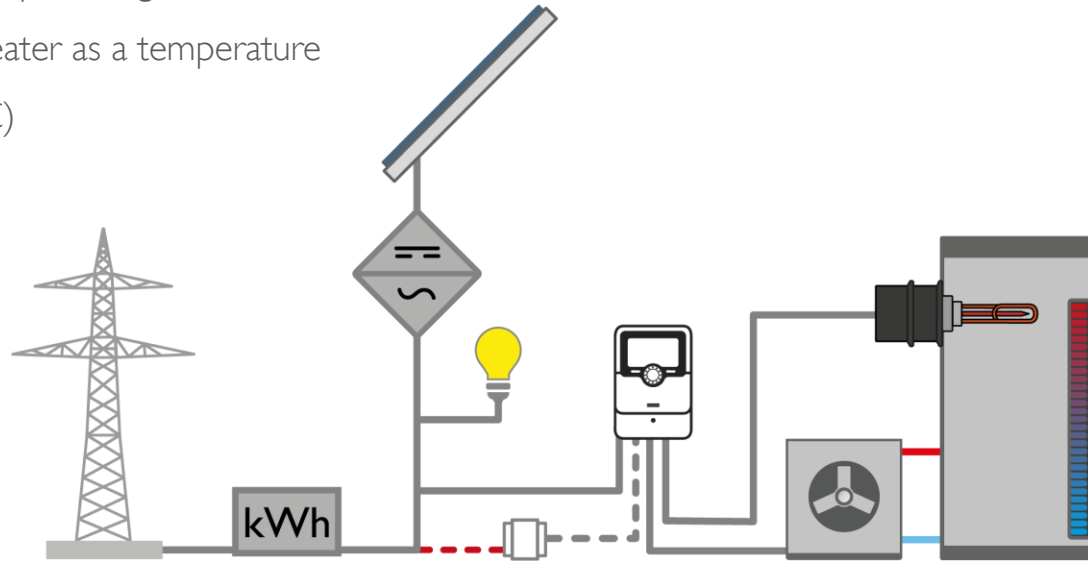
PV heating – DeltaTherm® PHM

- Household current priority
- Priority control of loads
- Temperature-dependent control
- Time-controlled backup heating with mains current
- Control of up to 3 electric immersion heaters



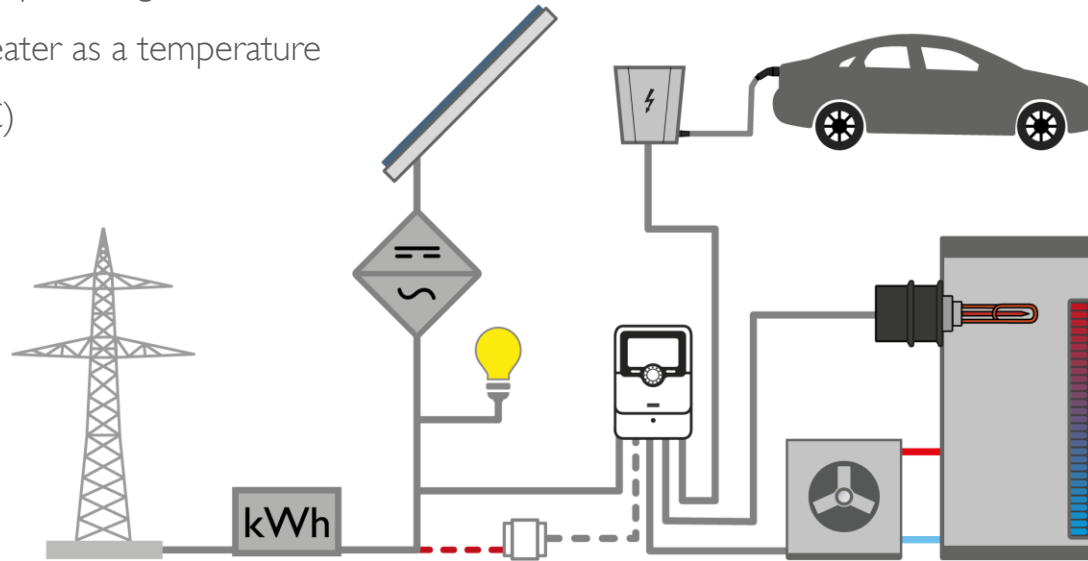
PV heating – DeltaTherm® PHM

- Household current priority
- Priority control of loads
- Temperature-dependent control
- Time-controlled backup heating with mains current
- Electric immersion heater as a temperature booster (up to 90 °C)
- Control of up to 3 electric immersion heaters
- Control of a heat pump (SG ready)



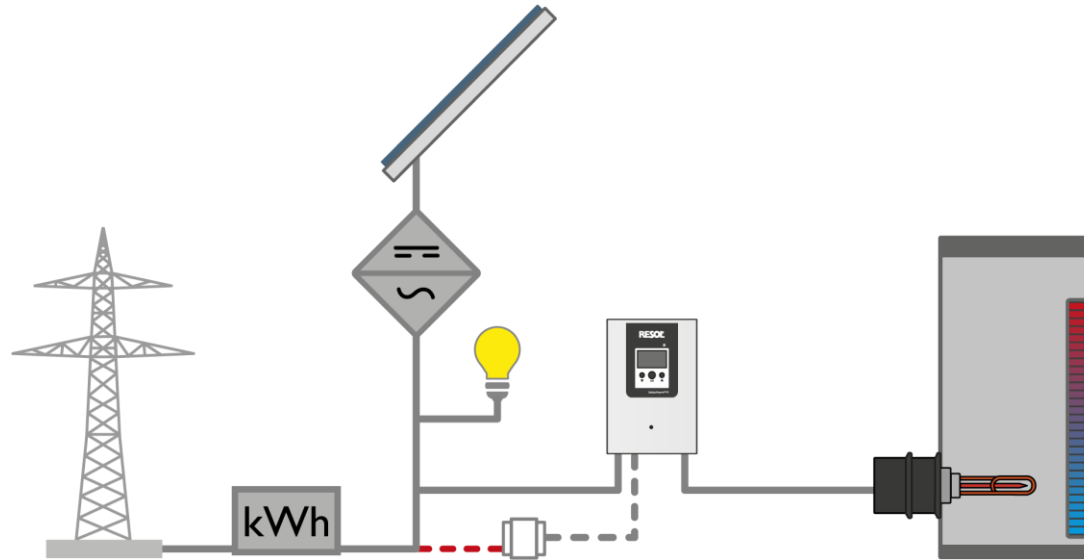
PV heating – DeltaTherm® PHM

- Household current priority
- Priority control of loads
- Temperature-dependent control
- Time-controlled backup heating with mains current
- Electric immersion heater as a temperature booster (up to 90 °C)
- Control of up to 3 electric immersion heaters
- Control of a heat pump (SG ready)
- Control of a wallbox for electric vehicles



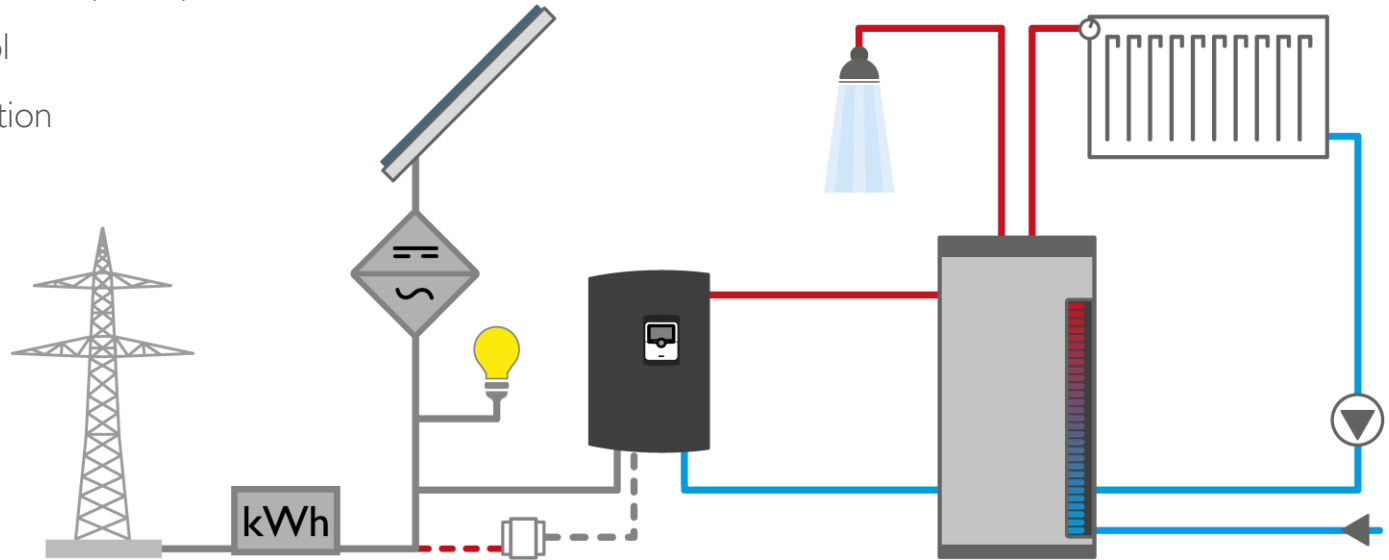
PV heating – DeltaTherm® PV

- Increase in self-consumption
- Stepless control of an electric immersion heater
- Household current priority
- Smart Remote access
- 0-10 V control (optional)
- Internal backup heating with mains current (optional)
- Inverter power limitation (optional)



PV heating – FlowSol® E

- Integrated electric heater of up to 3 kW, stepless variable and grid compliant, up to 12 kW with external loads
- Reliable household current priority
- 0-10 V power control
- Inverter power limitation
- External backup heating demand (optional)
- Internal backup heating with mains current (optional)
- Smart Remote access (optional)



Our products



Accessories around solar and heating systems



Dataloggers / communication modules



Thermostats, measuring instruments & calorimeters



Sensors & valves



Tools & HE accessories

Accessories around solar and heating systems NEW



LIN-Check

Control of a LIN bus pump, readout of data



Radon FRn

Measurement and display of radon concentration, temperature and humidity measurement



Our products



Visualisation & Data evaluation



VBus.net internet portal



VBus®Touch apps



BACnet



Modbus

Visualisation



- Controllers, dataloggers and visualisation solutions from one and the same developer team
- Apps for different purposes
- Software solutions for remote parameterisation, data evaluation and visualisation
- Configure your controllers from your PC, free of charge, with the RESOL Parameterisation tool RPT

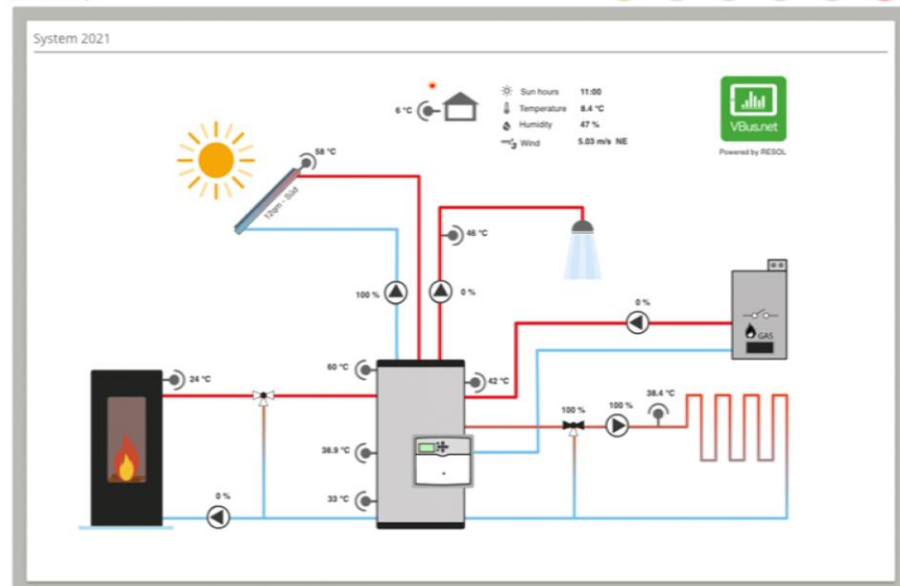


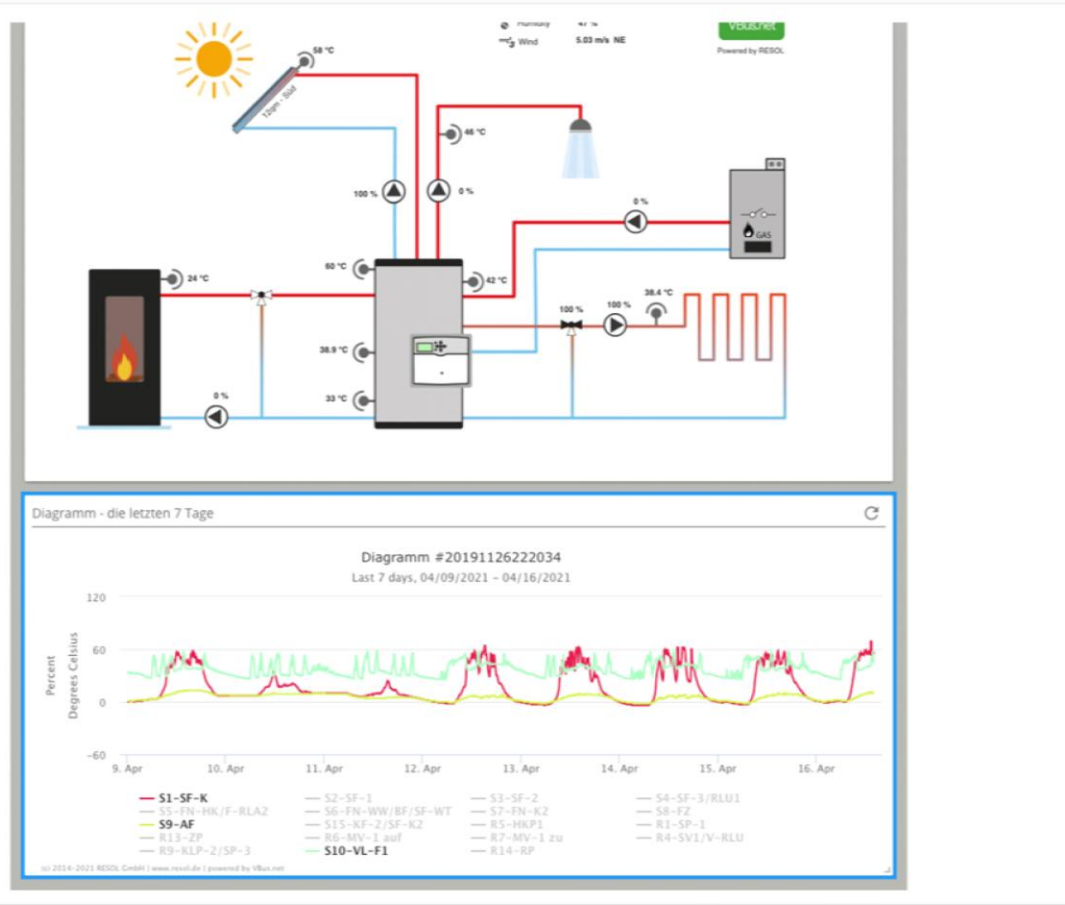
The internet portal for easy and secure access to your system data

- Display live data of your system
- Suitable for all RESOL controllers connected to a datalogger or communication module
- Basic version free of charge
- For every operating system and all mobile devices
- No software installation required

Dashboard

Dashboard





Expert advice all over the world



We will be there for you
– on-site as well as online!



Have a look – our Youtube channel shows our company and products in videos

www.resol.com

