DeltaSol® MX – the all-rounder

- 14 relay outputs and 12 inputs for Pt1000, Pt500 or KTY temperature sensors
- Up to 5 extension modules via RESOL VBus® (45 sensors and 39 relays in total)
- Inputs for analogue and digital Grundfos Direct Sensors™
- Integrated control of up to 4 high-efficiency pumps via PWM outputs
- Data logging, storing, easy transfer of controller adjustments prepared and firmware updates via SD card
- Cooling over the heating circuit with condensation detection by means of a dew point switch
- Simplified timer, 0-10 V boiler control and DHW preheating
- Remote access to the heating circuits with room control unit(s) or the VBus® Touch HC App
- Extended optional functions, e.g. solid fuel boiler function with mixer and target temperature control

* The cLCus certification confirms that the controller is certified to UL 60730-2-9 and CSA - E60730-2-9-01.
The DeltaSol® MX is the most versatile system controller for complex solar and heating systems in our product range. It is ideal to control a combination of solar and non-solar parts of the system.

Easy combination and parameterisation of pre-programmed functions for several millions of hydraulic variants.

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

### Electrical connection

![Electrical connection diagram](image)

### Technical data

- **Inputs:**
  - 12 Pt1000, Pt500 or KTY temperature sensor inputs (can optionally be used for remote controls, operating mode switches or potential-free switches),
  - 3 impulse inputs for V40 flowmeters, 1 input for a FlowRotor, 1 CS10 solar cell, 4 Grundfos Direct Sensors™ (2 x analogue, 2 x digital)

- **Outputs:**
  - 14 relays, 13 of them semiconductor relays for pump speed control, 1 potential-free relay and 4 PWM outputs (convertible to 0-10 V signal outputs)
  - **PWM** frequency: 512 Hz
  - **PWM** voltage: 10.5 V

- **Switching capacity:**
  - 1 (1) A 240 V~ (semiconductor relay)
  - 4 (2) A 24 V / 240 V~ (potential-free relay)

- **Total switching capacity:** 6.3 A 240 V~

- **Power supply:** 100 ... 240 V~ (50 ... 60 Hz)

- **Supply connection:** type Y attachment

- **Standby:** 0.84 W

- **Temperature controls class:** VIII

- **Energy efficiency contribution:** 5 %

- **Mode of operation:** type 1.B.C.Y action

- **Rated impulse voltage:** 2.5 kV

- **Data interface:** RESOL VBus®, SD card slot

- **VBUs® current supply:** 35 mA

- **Functions:** 7 integrated calorimeters and control of weather-compensated heating circuits. Adjustable system parameters and add-on options (menu-driven), balance and diagnostics functions, function control according to VDI 2169

- **Housing:** plastic, PC-ABS and PMMA

- **Mounting:** wall mounting, mounting into patch panels is possible

- **Indication/Display:** full graphic display

- **Operation:** 7 push buttons

- **Ingress protection:** IP 20 | EN 60529

- **Protection class:** I

- **Ambient temperature:** 0 ... 40 °C

- **Pollution degree:** 2

- **Dimensions:** 253 x 200 x 47 mm

For the digital inputs, the following sensor combinations are possible:

- 1 x RPD, 1 x VFD
- 2 x VFD, but with different measuring ranges only

---

Visit [www.resol.de/videos](http://www.resol.de/videos) for a product video about this controller.
Operating concept

Pre-programmed optional functions facilitate parameterisation:

### Drainback
- Filling time: 5 min
- Stab. time: 2.0 min
- Initials.: 60 s
- Booster
  - Output: R7
- Drain Impulse
  - Delay: 3 min
  - Duration: 10 s

### External HX
- Output: R7
- Store: 1
- Sensor HX: S9
- Target temp.
  - Sensor: S10
  - Targ. temp.: 60 °C
- ∆Ton: 10.0 K
- ∆Toff: 5.0 K
- Overrun: 2 min

### Return mixing
- Mixer open: R7
- Mixer closed: R8
- Sen. Store: S9
- Sen. HC ret.: S10
- Sen. boiler ret.: S11
- ∆Ton: 5.0 K
- ∆Toff: 3.0 K
- ∆Tset: 7.0 K
- Tmax: 60 °C
- Interval: 2 s

### Basic settings
- Language: English
- Auto DST
- Date: 01.03.2016
- Time: 12:01
- Temp. unit: °C
- Flow unit: Litre
- Press. unit: bar
- Energy unit: Wh
- Blocking protection
- Reset

### DHW preheating
- Pump: R7; C
- Valve: R8
- Temp. sensor: S9
- Flow rate sen.: Imp.1
- Tmax. DHW: 60 °C
- Starting speed: 50 %
- Increment: 10 %
- Hysteresis: 5.0 K
- Delay: 5 s
- ∆T function

### Main menu
- Solar
- Arrangement
- Heating
- HQM
- Basic settings

### HC internal
- Heat. sys. >>
- Mode
- Curve
- Curve: 1.0
- Tflowmin: 20 °C
- Tflowmax: 50 °C
- Interval: 4
- HC pump: R5
- Mixer open: R6
- Mixer closed: R9
- Flow sen.: S7
- Sen. outd.: S8
- Day correction: 0 K
- Night correction: -5 K
- Timer
- Summer oper.
- Summer oper. >>
- Remote access
- Remote access >>
- Room therm.
- Remote access >>
- Backup heating...
Functional possibilities

- Twin pump or booster pump, with optional flow rate monitoring – in a pre-programmed optional function
- Circulation, heat exchange control, thermal disinfection – in pre-programmed optional functions
- Floor heating with optional room temperature monitoring, solid fuel boiler
- Irradiation-controlled bypass, irradiation switch
- Error relay function for optimum function control
Valve or pump logic

2 internal, with EM extension modules up to 5 additional weather-compensated heating circuits for heating and cooling application

Basic solar systems also for 3 collector fields

Up to 5 solar stores, external heat exchanger with priority logic etc.

Implementation of a heat pump for heating and cooling purposes
Visualisation

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.

Why VBus.net?

- Suitable for all RESOL controllers connected to a Datalogger
- Basic version free of charge
- For every operating system and all mobile devices worldwide – no software installation required

VBus.net

Live system editor with extended format and layout functions

Customise and design your own diagrams

Automatic e-mail notifications and reports

DeltaSol® MX

DL3/DL2 Datalogger or KM2 Communication module

Router