



Temperature Differential Controller

The things.al TDC is one of the first compact industrial controllers in heating systems that has an integrated communication to the online world with extended features such as protection against high/low temperatures, notifications in case of system malfunctions and online data history. This device can facilitate the routine of a technician by controlling the device in remote, prevention of defects in big systems by analyzing the data gathered, setting up parameters as easy as “copy-paste” and editing them remotely.

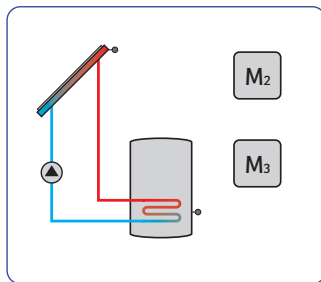
Main features

- Multiple configurations for controlling heating systems: thermal solar panels, thermostats, heat pumps, etc.
- Dynamic scheduling with configurable setpoints according to your needs.
- Integrated Wi-Fi connectivity for remote monitoring and controlling in real time.
- Online dashboard for data logging and device history visualization.
- Data analytics for increasing efficiency and a better understanding of the system.
- In time notification of system errors.

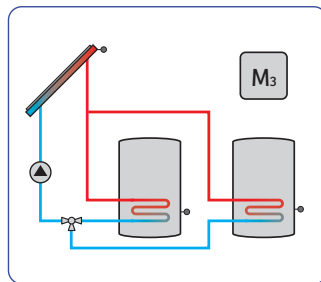
Benefits for the installer/maintainer

- Understanding problems of the hydraulic system because of faulty or worn-out industrial parts.
- Notifications in real time in case of exceeded thresholds in high or low temperatures.
- Integrated Wi-Fi connectivity for remote monitoring and controlling in real time.
- Understanding if the system is over or under engineered due to graphical visualization of the temperatures.
- Sharing the data with your client to build trust

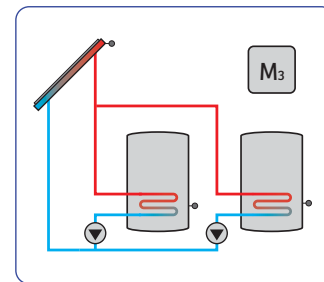
Use cases



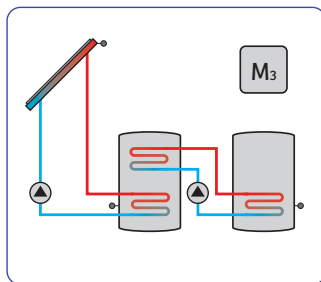
Solar system with 1 storage and 2 configurable modules



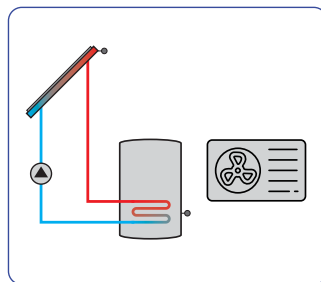
Solar system with 2 storages, valve logic & 1 configurable module



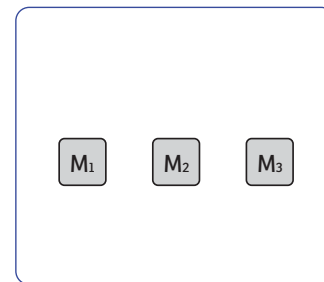
Solar system with 2 storages, pump logic & 1 configurable module



Solar system with 1 storage, heat transfer & 1 configurable module



Solar system with 1 storage and heat pump controller



3 configurable modules

The TDC comes with some preconfigured basic hydraulic systems, some of them are shown above. Besides the fact that customized hydraulic variants can be created on requests, one of the unique features of this device is the modularity concept. In the schematics above the squares marked M1, M2, M3 are independent configurable modular logics which can be activated on the free (unused) relays. These modules can be configured as:



heating
thermostat



cooling
thermostat



recycle
control



on-off
control

This feature increases the flexibility of the device and the variety of the heating schematics making it highly usable in all kind of systems.

Technical data

Inputs: 4 Pt1000 / NTC 10k temperature sensors

Outputs: 3 electromechanical relays, 1 PWM / 0-10V output

Switching capacity: 3 x 8A / 16A (potential free or powered contacts)

Power supply: 100-240V~ 50/60Hz

Power consumption: <5W

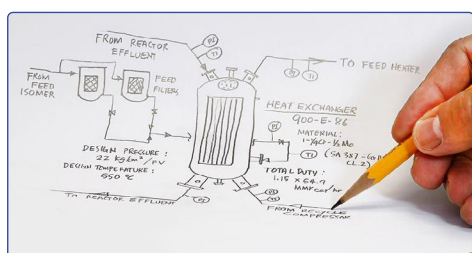
Functions: ΔT control, storage protection, collector protection, frost protection, siezing protection, dynamic setpoint scheduling, manual operation, temperature monitoring

Interface: 1.44" TFT Colored LCD, 4 push-buttons

Connectivity: Wi-Fi 2.4 GHz 802.11b/g/n

Housing: PC-ABS, DIN (EN 60715) rail enclosure

Dimensions: 91 mm x 54 mm x 62 mm

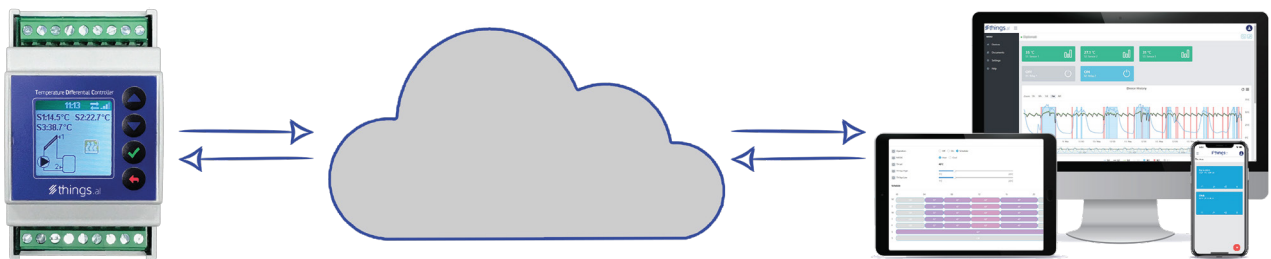


We develop your product

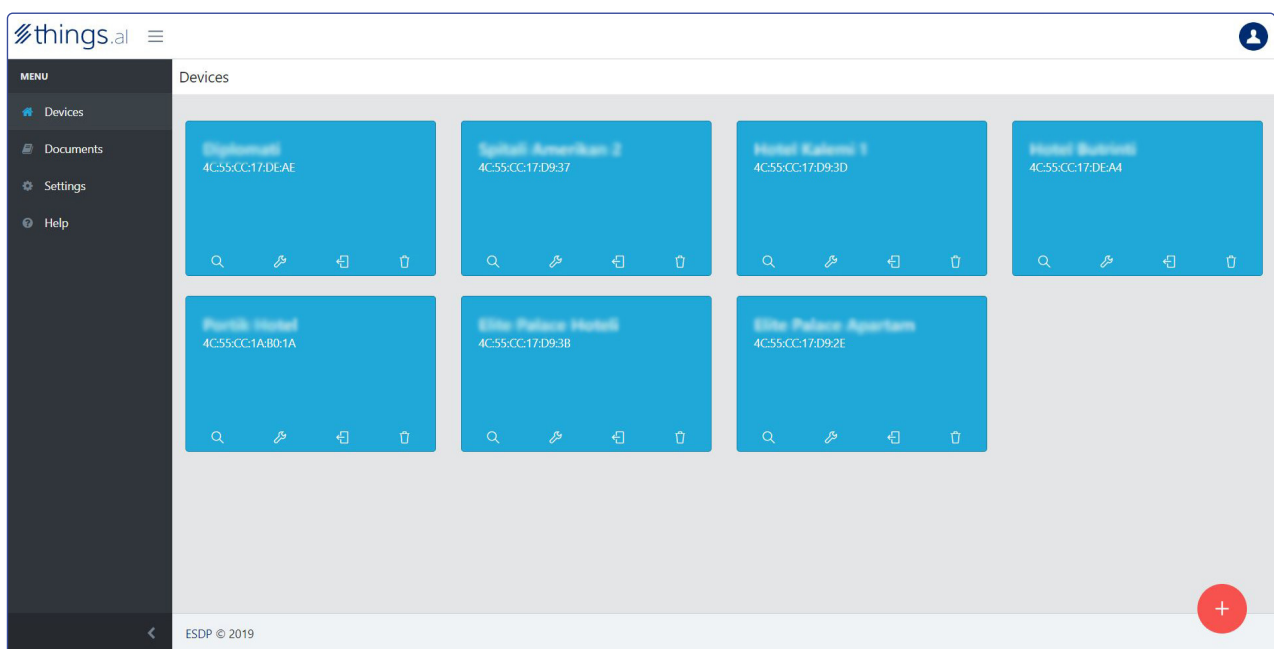
One of our strong point as a company is the flexibility on design and development of hardware and firmware based on our clients requests. Features like customized system logics, industrial communication protocols, wireless networks, extended hardware version with a variety of inputs/outputs can be developed on demand.

things.al Application

System management made smart and easy



things.al is a web and mobile application platform designed to manage and control all your devices in one simple and easy to use dashboard. Everything is cloud based and fully secured. You are in control of your installed systems by having them in the palm of your hand wherever you are in the world. **things.al** is the best tool for you and your company by saving you money, time and being always one step ahead of your problems. By using this platform you can transform the old time consuming management in the new smart industrial IoT connected systems.



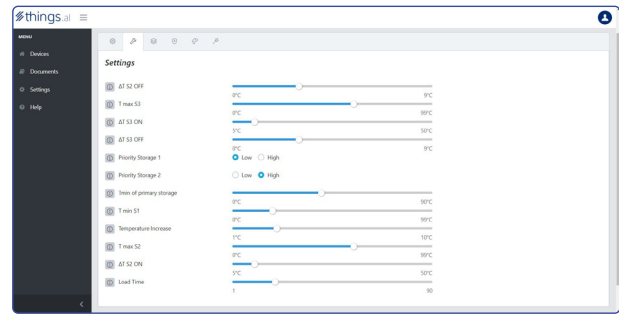
Application features

- Easy to use Dashboard where you can monitor and control all the parameters of the device in real time.
- Data processing to create analytics that can help improve the configuration of the system parameters.
- Archive of technical data so you don't have to remember how a project was implemented.
- Dynamic scheduling with variable setpoints during different times of the day to reduce the energy consumption.
- Notifications in real time of errors and malfunctions in the heating system.
- Sharing of your device to other users with permission levels.

things.al Screenshots



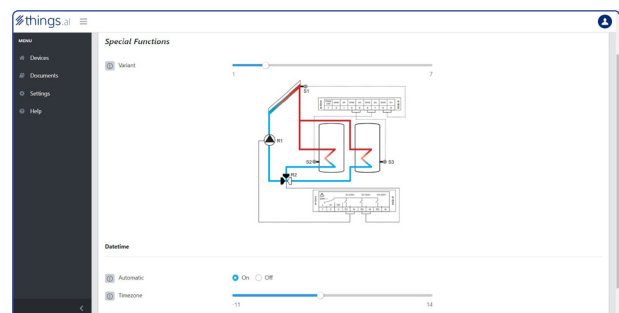
Monitor your device online in realtime and check its working history



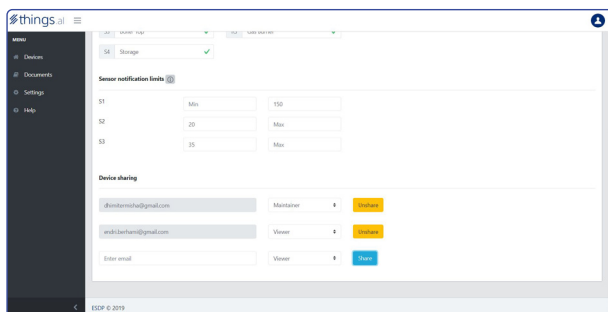
Control your device settings remotely without needing to physically access it



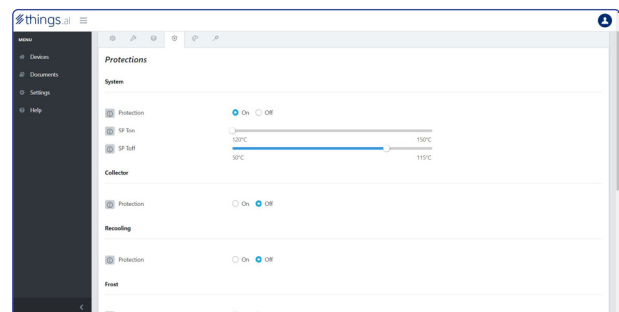
Set your schedules depending on your needs



Select preconfigured system variant that meets your requirements



Share your device with other users and get notified by email when temperature limits are exceeded



Activate system protections in order to increase system's lifetime

Custom Dashboard

Our software developers are always improving and adding new features to our web app and mobile app platform. Features like, the way you visualize the data, statistics, data analysis, your company logo, and a lot of other options and functionalities can be developed on demand for your custom dashboard. We work hard to meet our clients requirements and design the best software solution platform to manage all of your devices in an easy and efficient way.