



## Temperature Difference Controllers TDC

### Thermal Control Made Simple

# Temperature Difference Controller TDC

## General

Temperature difference controllers by SOREL: versatile and easy to use. With their crystal clear operator guidance, all kinds of solar systems can be handled intuitively - from small to complex.

### ✓ Full Text Menu

Context dependant help texts explain every setting for easy understanding.

### ✓ Setup Wizard

Guides step by step through all necessary settings for quick and easy commissioning.

### ✓ Graphic Display

Animated system visualisation, illustrative heating curves and energy statistics.

### ✓ Modular System

By activating additional functions via free relays, the basic systems can be extended easily and flexibly.

### ✓ Multilingual

Up to 18 menu languages freely selectable for clear understandability.

### ✓ 0...10V/PWM-Outputs

For speed control of high-efficiency pumps.



### ✓ PC-Simulation

Free Windows software facilitates product trainings, performance tests and technical support.

### ✓ Network-compatible

Convenient monitoring and remote control of the solar system via PC, smartphone or tablet.



### ✓ Data-Logging

Via microSD card for recording and analysing system data.



### ✓ CAN-Bus

For internet connection via data logger or to system optimization by communication with our heating controllers.



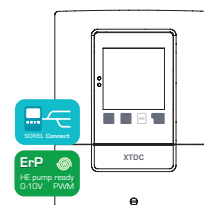
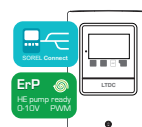
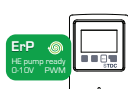
## Model Overview

### STDC

### MTDC

### LTDC

### XTDC

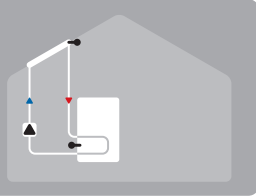


	STDC	MTDC	LTDC	XTDC
Temperature sensor inputs Pt1000	3	4	6	8
Relay outputs 230VAC	1	2	3	7
0-10V or PWM outputs	1	1	2	2
Number of applications	9	27+	37+	48+
LEDs red/green for display of operating status	✗	✓	✓	✓
Simple heat metering	✓	✓	✓	✓
Flow based heat metering (VFS sensor)	✗	✗	2	2
Pressure monitoring (RPS sensor)	✗	✗	✓	✓
Antilegionella function solar	✓	✓	✓	✓
Antilegionella function additional heating	✗	✓	✓	✓
RTC battery-backed Real Time Clock	✓	✓	✓	✓
Setup wizard	✓	✓	✓	✓
Collector- and protection functions	✓	✓	✓	✓
Menu blocker against unintentional changing	✓	✓	✓	✓
Error memory and analysis with date and time	✓	✓	✓	✓
System monitoring and control function	✓	✓	✓	✓
Data storage with statistics and graphic analysis	✓	✓	✓	✓
Data logging on microSD card	✗	(via data logger)	(via data logger)	✓
Networkable / CAN-Bus / SOREL Connect	✗	(via data logger)	(via data logger)	✓

# Temperature Difference Controller TDC

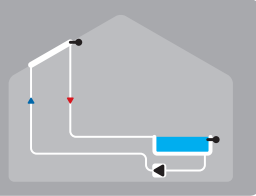
## Hydraulic Variants TDC

STDC  
MTDC  
LTDC  
XTDC



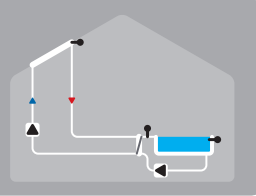
Solar with storage

STDC  
MTDC  
LTDC  
XTDC



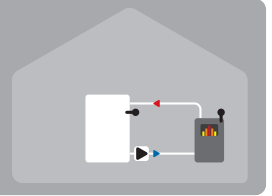
Solar with swimming pool

STDC  
MTDC  
LTDC  
XTDC



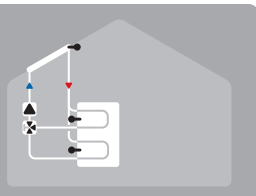
Solar with heat exchanger (sensor in secondary circuit) and pool

STDC  
MTDC  
LTDC



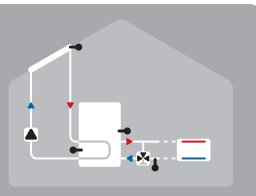
Solid fuel boiler with storage

MTDC  
LTDC  
XTDC



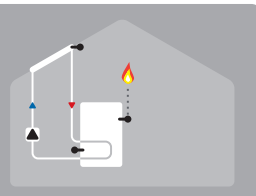
Solar with two-zone storage

MTDC  
LTDC  
XTDC



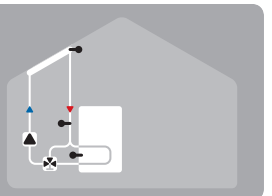
Solar with return flow increase

MTDC  
LTDC  
XTDC



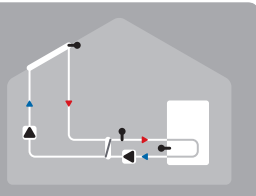
Solar with thermostat (backup heating)

MTDC  
LTDC  
XTDC



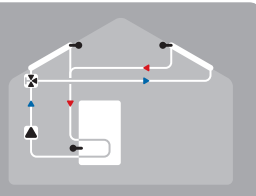
Solar with bypass

MTDC  
LTDC  
XTDC



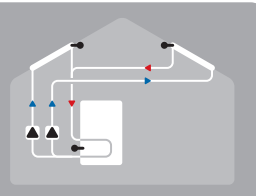
Solar with heat exchanger

MTDC  
LTDC  
XTDC



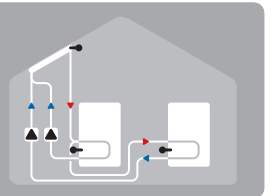
Solar with 2 collector surfaces and switching valve

MTDC  
LTDC  
XTDC



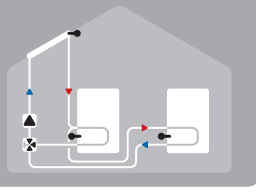
Solar with 2 collector surfaces and 2 pumps

MTDC  
LTDC  
XTDC



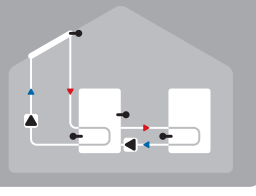
Solar with 2 storages and 2 pumps

MTDC  
LTDC  
XTDC



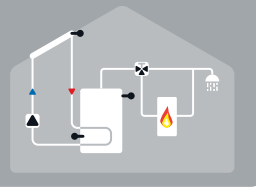
Solar with 2 storages and switching valve

MTDC  
LTDC  
XTDC



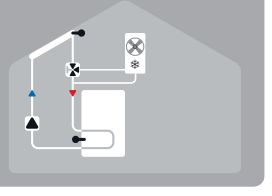
Solar with storage transfer

MTDC  
LTDC  
XTDC



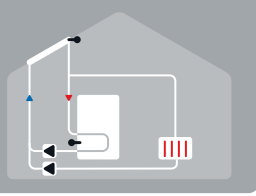
Solar with thermostat and switching valve

MTDC  
LTDC  
XTDC



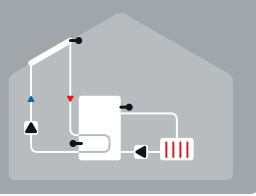
Solar with cooling 1 (collector cooling)

MTDC  
LTDC  
XTDC



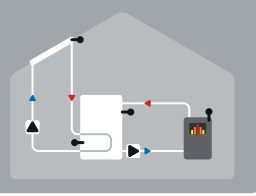
Solar with cooling 2 (collector cooling)

MTDC  
LTDC  
XTDC



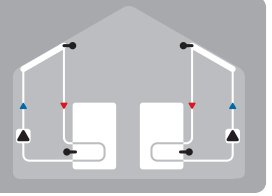
Solar with cooling 3 (collector cooling)

MTDC  
LTDC  
XTDC



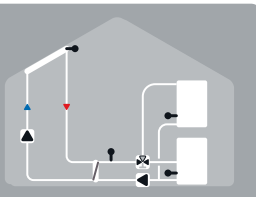
Solar with storage and solid-fuel boiler

MTDC  
LTDC  
XTDC



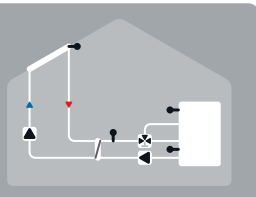
2x Solar

LTDC  
XTDC



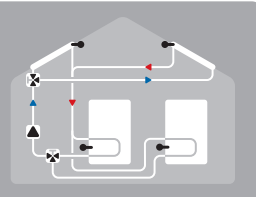
Solar with heat exchanger 2 storages

LTDC  
XTDC



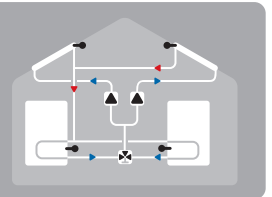
Solar with heat exchanger 2 zones

LTDC  
XTDC



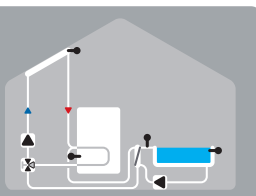
Solar with 2 collector surfaces, 2 storages and 2 valves

LTDC  
XTDC



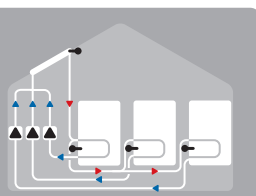
Solar with 2 collector surfaces, 2 storages and 2 pumps

LTDC  
XTDC



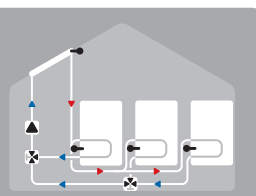
Solar with swimming pool, storage, heat exchanger and valve

LTDC  
XTDC



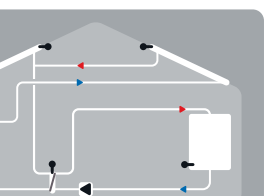
Solar with 3 storages and 3 pumps

LTDC  
XTDC



Solar with 3 storages and 2 valves

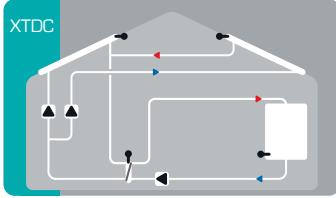
XTDC



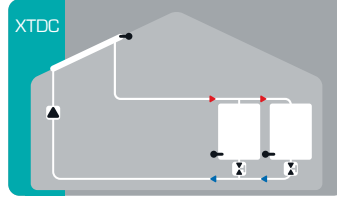
Solar with 2 collector surfaces, switching valve and heat exchanger

# Temperature Difference Controller TDC

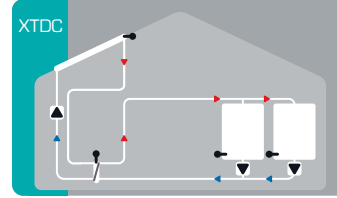
## Hydraulic Variants TDC



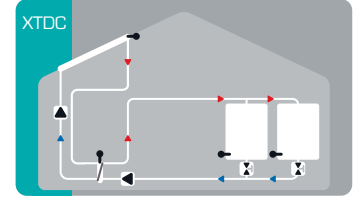
Solar with 2 collector surfaces with 2 pumps, 1 storage, heat exchanger and pump



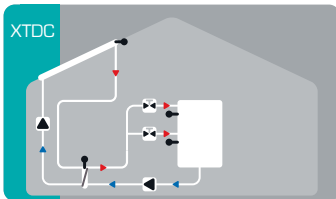
Solar with 2 storages and 2 stop valves



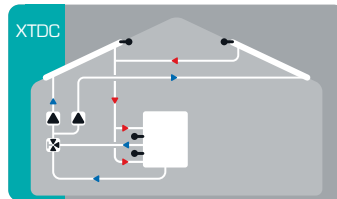
Solar with 2 storages, 2 pumps and heat exchanger



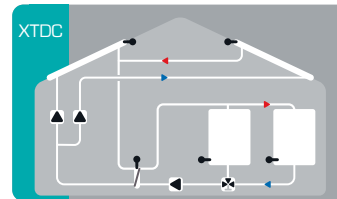
Solar with 2 storages, 2 stop valves and heat exchanger



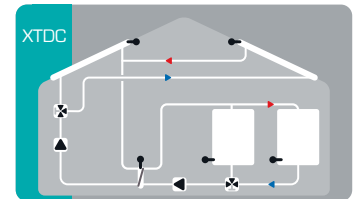
Solar with two-zone storage and stop valve



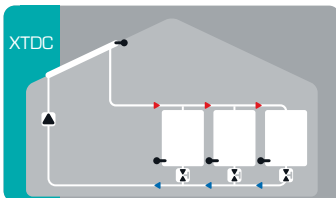
Solar with 2 collector surfaces, two-zone storage, 2 pumps and switching valve



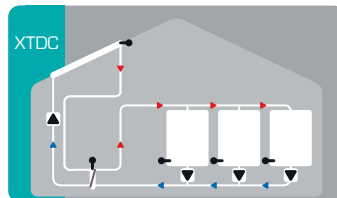
Solar with 2 collector surfaces with 2 pumps, 2 storages, heat exchanger and pump



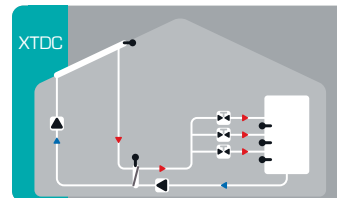
Solar with 2 collector surfaces with 1 valve, 1 pump, 2 storages, heat exchanger and pump



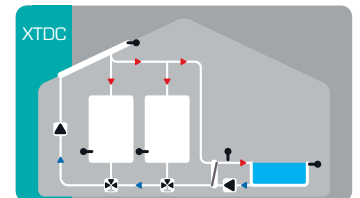
Solar with 3 storages and 3 stop valves



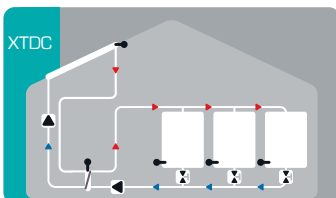
Solar with 3 storages, 3 pumps and heat exchanger



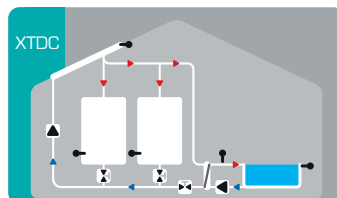
Solar with three-zone storage, 3 stop valves and heat exchanger



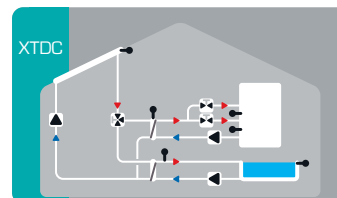
Solar with 2 storages, switching valve and swimming pool with heat exchanger



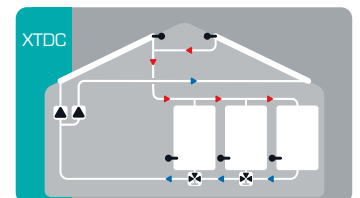
Solar with 3 storages, 3 stop valves and heat exchanger



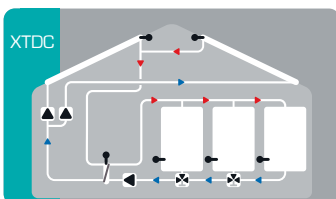
Solar with 2 storages, 3 stop valves and swimming pool with heat exchanger



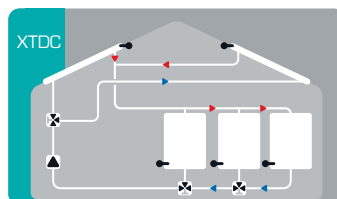
Solar with two-zone storage, switching valve, heat exchanger and pool with heat exchanger



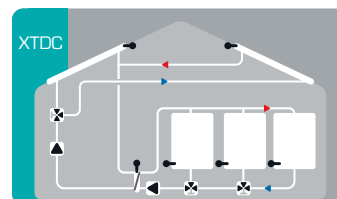
Solar with 2 collector surfaces and 3 storages with 2 switching valves



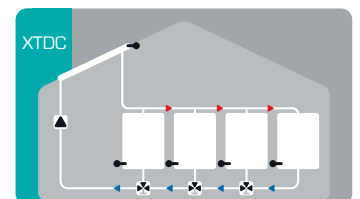
Solar with 2 collector surfaces, 3 storages with 2 switching valves and heat exchanger



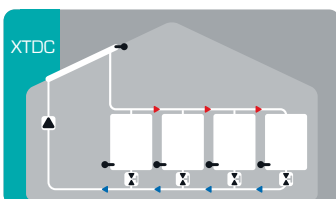
Solar with 2 collector surfaces with 1 valve, 1 pump, 3 storages with valves



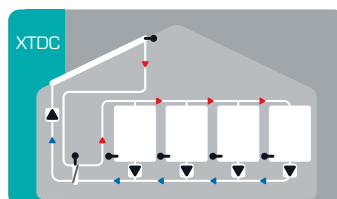
Solar with 2 collector surfaces with 2 pumps, 2 storages, heat exchanger and pump



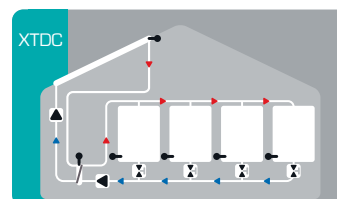
Solar with 4 storages and 3 valves



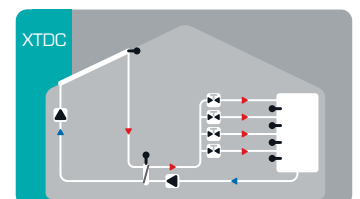
Solar with 4 storages and 4 stop valves



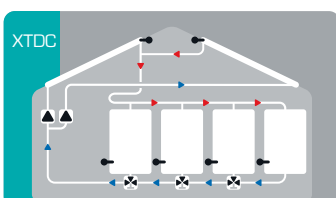
Solar with 4 storages, 4 pumps and heat exchanger



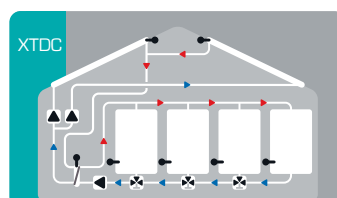
Solar with 4 storages, 4 stop valves and heat exchanger



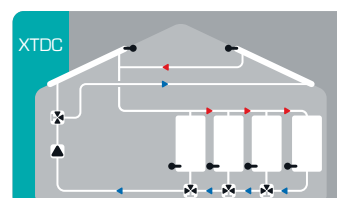
Solar with four-zone storage and 4 stop valves



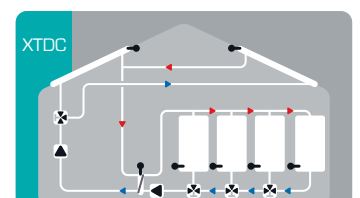
Solar with 2 collector surfaces, 4 storages, 2 pumps and 3 switching valves



Solar with 2 collector surfaces, 4 storages, 2 pumps, 3 switching valves and heat exchanger



Solar with 2 collector surfaces, 4 storages and 3 switching valves



Solar with 2 collector surfaces, 4 storages and 3 switching valves and heat exchanger


# Temperature Difference Controller TDC

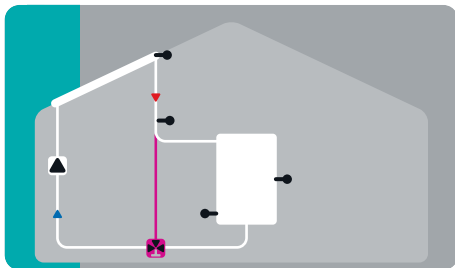
## Additional functions to extend predefined systems

In the new TDC generation, the predefined systems can be extended by free relays in an easy and flexible way. Whenever the controller is equipped with more outputs than the chosen schematic requires, the remaining relays can be assigned to a broad selection of additional functions. The user is then guided through the corresponding settings step by step.

Functions that complement one another, such as thermostat and anti-legionella function, can be controlled by the same relay. Also the sensors can be used for multiple functions at the same time.

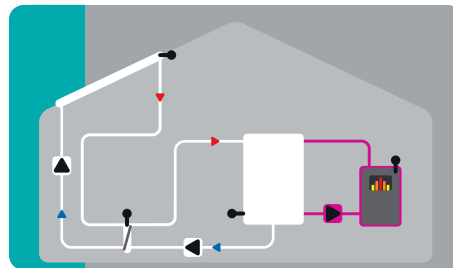
### Example:

MTDC system 1 with 



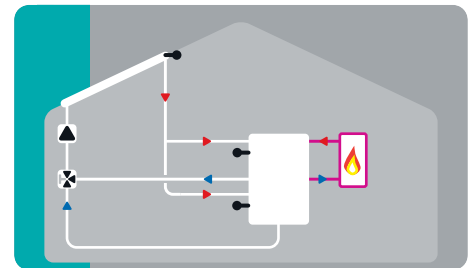
Solar with storage with additional function solar bypass

LTDC system 14 with 




Solar with heat exchanger with additional function solid fuel boiler

XTDC system 20 with 





Solar with 2 zone storage and switching valve with additional function thermostat (backup heating)

### Example for extend functions:

 Temp. difference

 Always on


 Pressure monitor

 Anti legionella

 Heating circuit


 Storage transfer

 Cooling


 Return increase

 Solar bypass

 Backup heating

 Solid fuel boiler

 Booster pump

 Error message

 Parallel operation

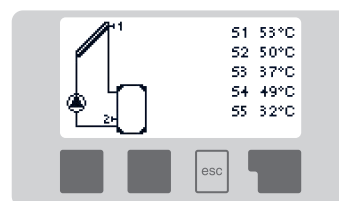
## Intuitive operator guidance



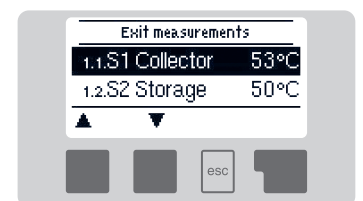
Setup wizard



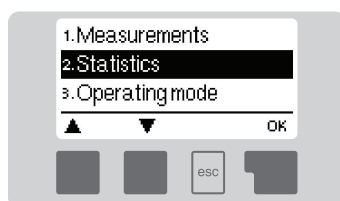
Setup with full text explanation



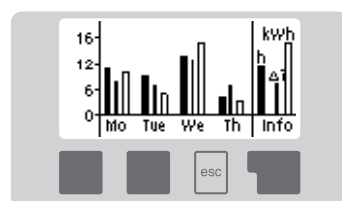
Overview



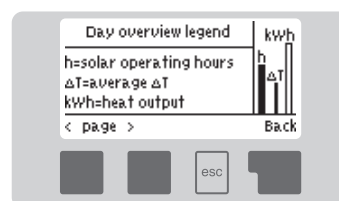
Zoomed overview



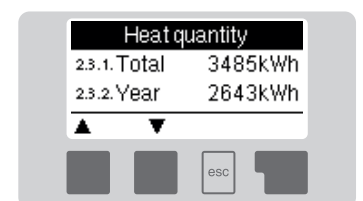
Main menu



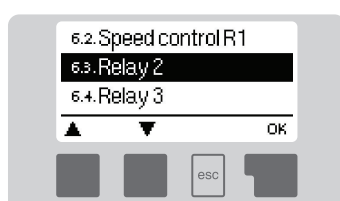
Graphical analysis



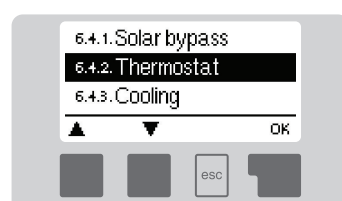
Graphical analysis legend



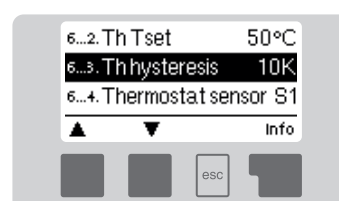
Heat quantity



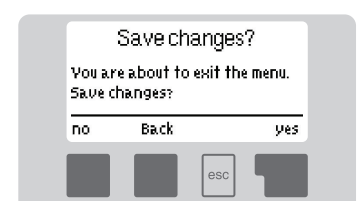
Configuration additional function:  
Selecting relay



Selecting additional function (thermostat)



Setup of additional function thermostat



Confirmation dialog

# Temperature Difference Controller TDC



## SOREL Connect

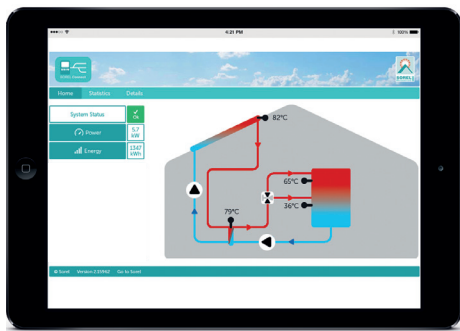
SOREL Connect is the new Plug & Play concept which does not require any particular network skills.

Using a CAN-bus interface, the controllers can communicate with each other, or be connected with local networks or the Internet via Ethernet.

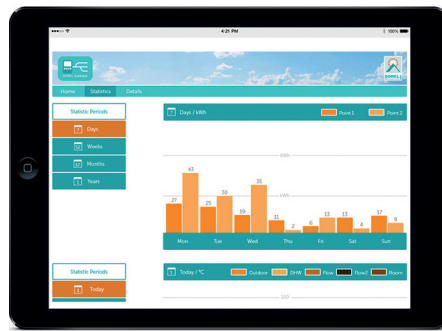
The user can monitor his solar heating system by PC, tablet and smartphone - anywhere, anytime.

Key features: visualisation of the solar system with status messages, temperatures and heat-yield data.

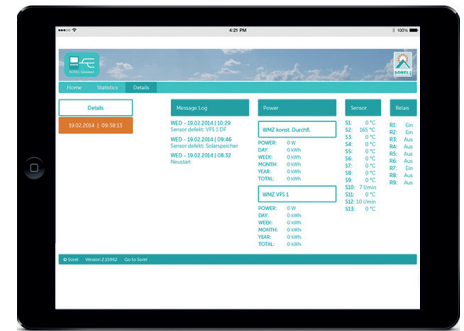
Data logging is realised by a microSD card, so that all system data can be recorded and analysed extensively.



System Overview

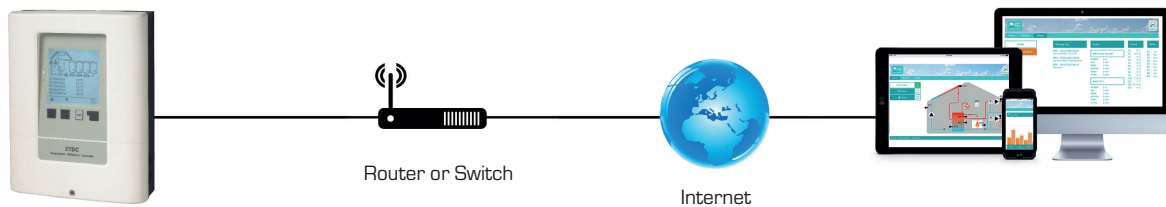


Energy Statistics

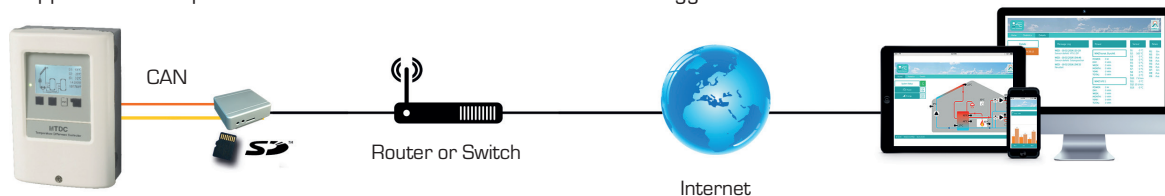


Technical Details for the Expert

### Application example 1: XTDC with direct Ethernet connection



### Application example 2: MTDC with Ethernet connection via data logger



## SOREL

SOREL GmbH Mikroelektronik  
Reme-Str. 12  
D - 58300 Wetter (Ruhr)  
Tel. +49 (0)2335 682 77-0  
Fax. +49 (0)2335 682 77-10  
info@sorel.de | www.sorel.de

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